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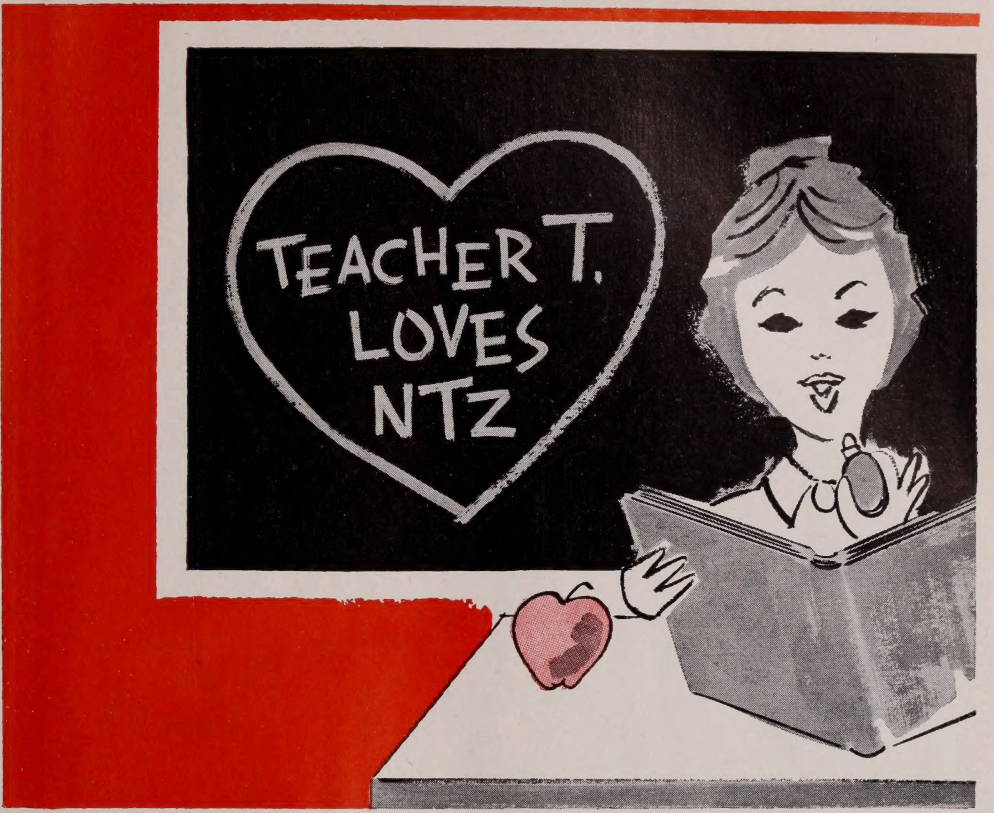

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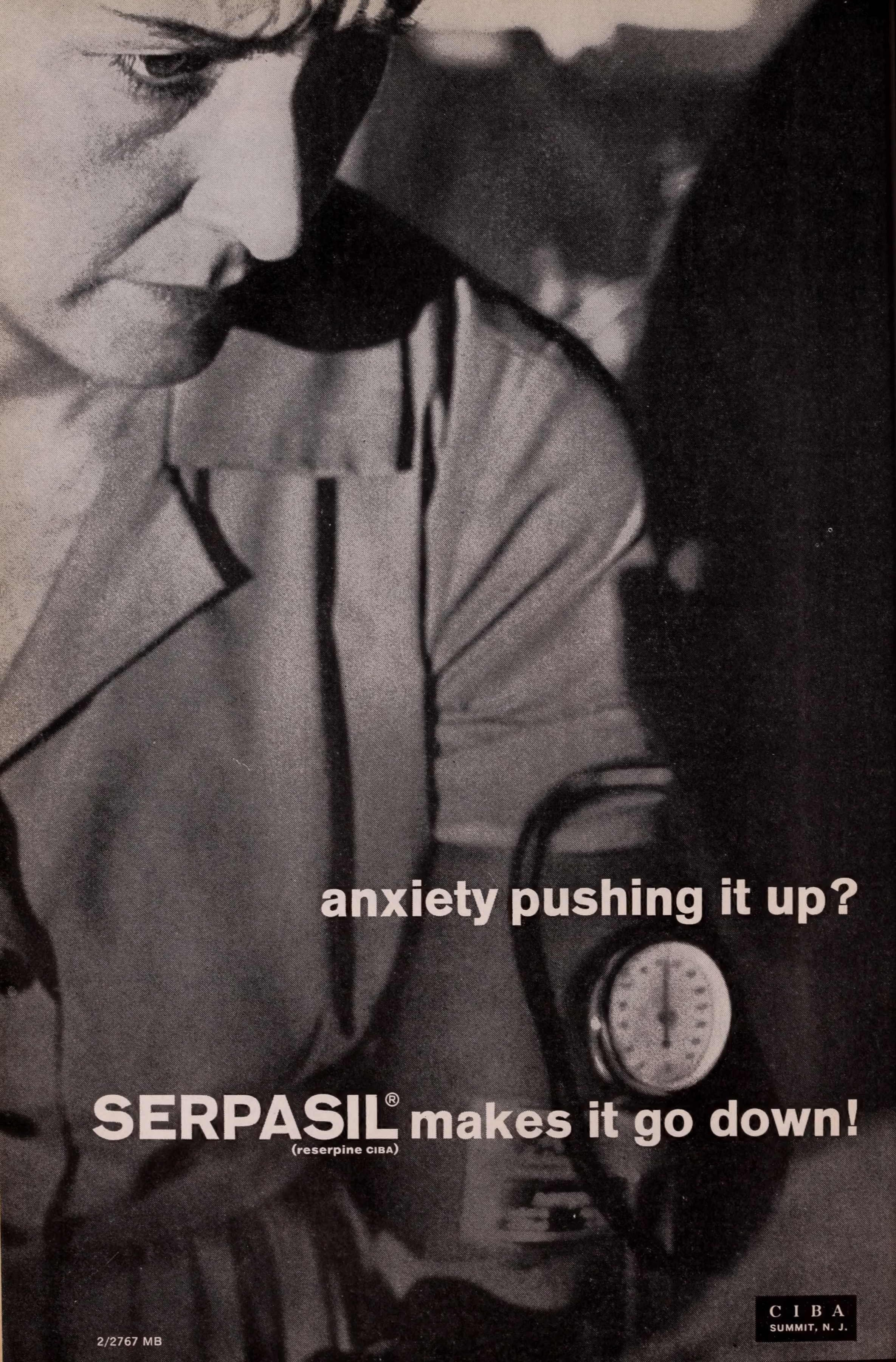
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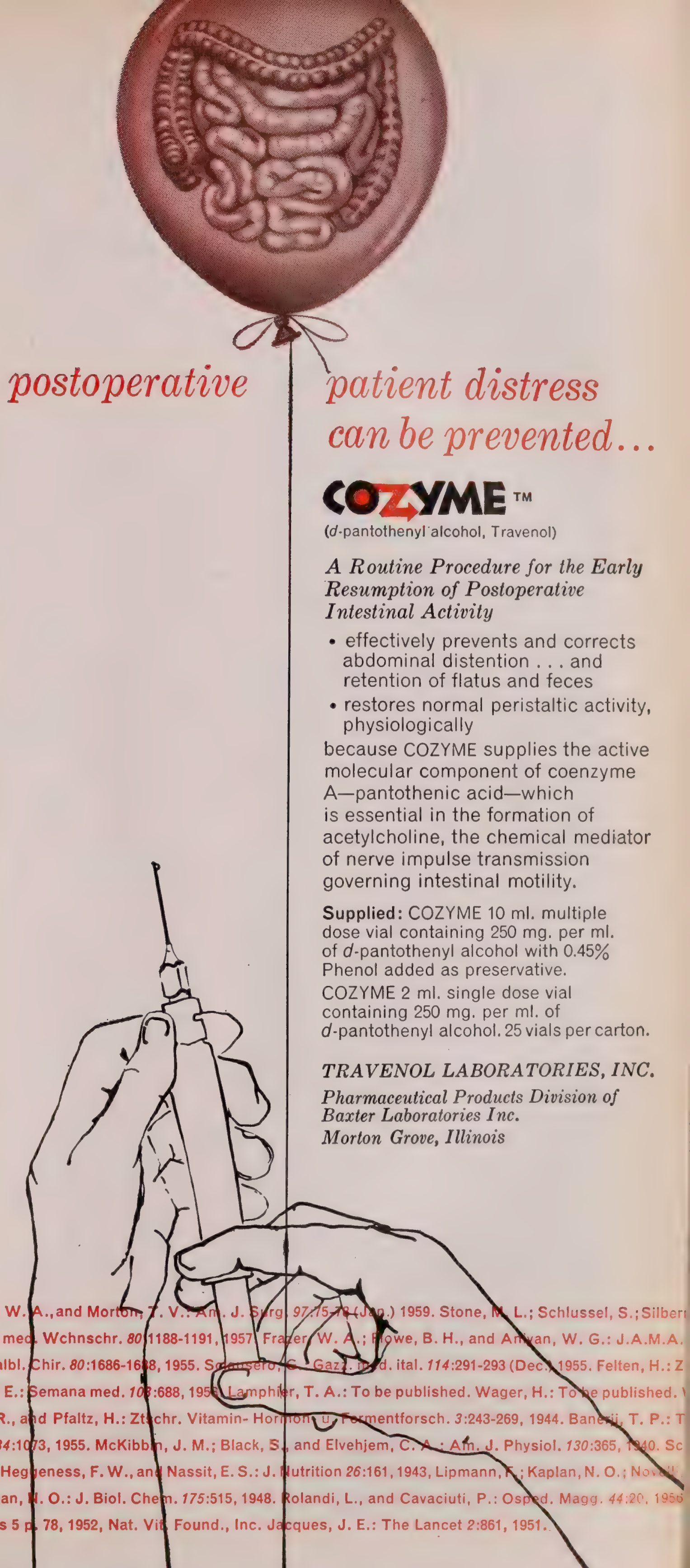

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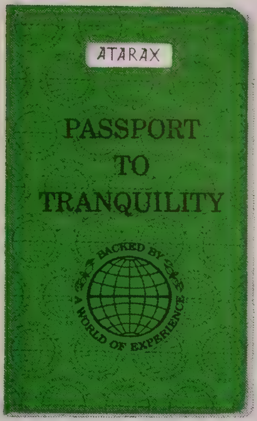

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IN HYPEREMOTIVE ADULTS does not impair mental acuity	"...especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

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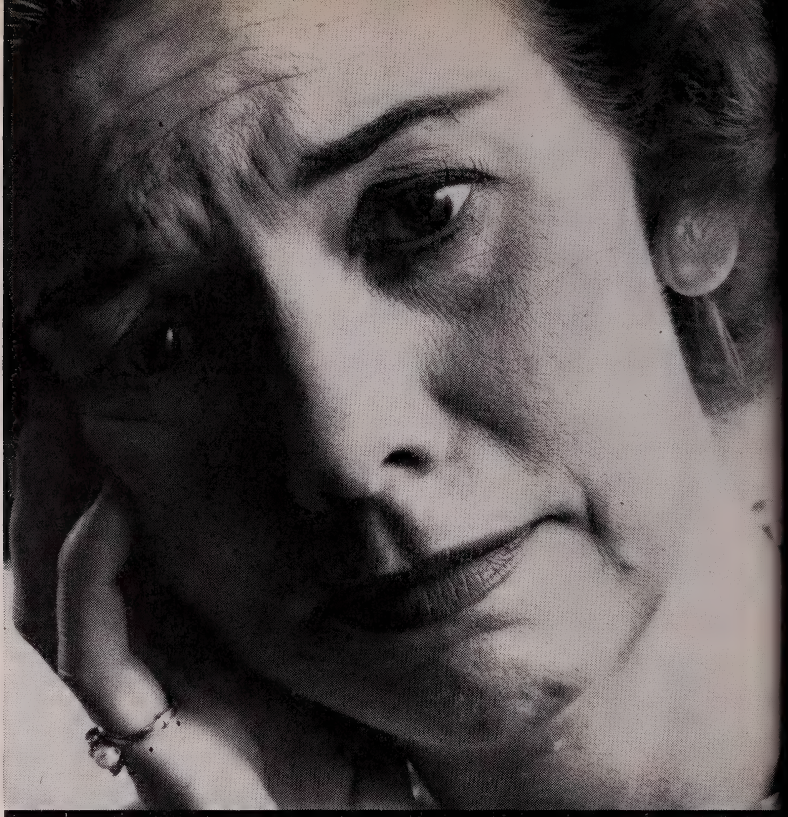

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"The first evidence of inflammatory
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often is vesical irritability."[2]

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Rapid bactericidal action against a wide range of gram-positive and gram-negative bacteria including organisms such as staphylococci, Proteus and certain strains of Pseudomonas, resistant to other agents ▪ actively excreted by the tubule cells in addition to glomerular filtration ▪ negligible development of bacterial resistance after 7 years of extensive clinical use ▪ excellent tolerance—nontoxic to kidneys, liver and blood-forming organs ▪ safe for long-term administration

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REFERENCES: 1. Editorial: J.M.A. Georgia **46**:433, 1957. 2. Colby, F. H.: Essential Urology, Baltimore, The Williams & Wilkins Co., 1953, p. 330.

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[1] Gross, P., Blade, M. O., Chester, B. J., and Sloane, M. B.: A.M.A. Arch. Dermat. & Syph. *70*:94, 1954.

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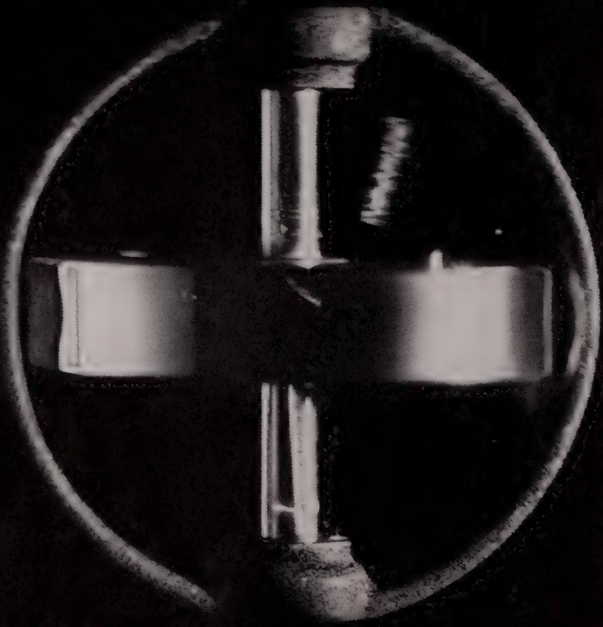
of the patient's chemical and psychic balance . . .



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List of References 1-20 supplied on request.

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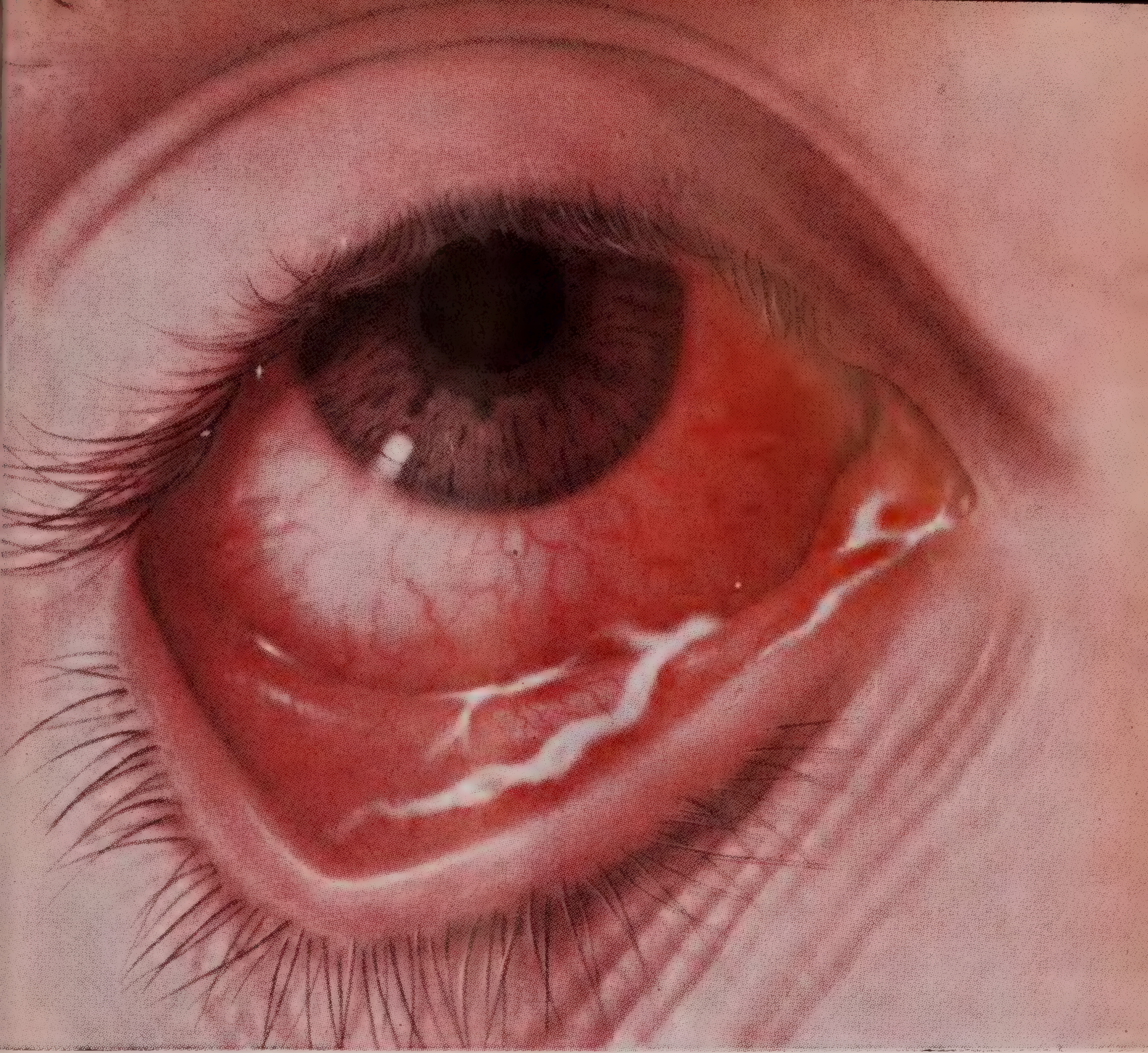

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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Whenever the diet is faulty, the appetite poor, or the loss of food is excessive

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stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

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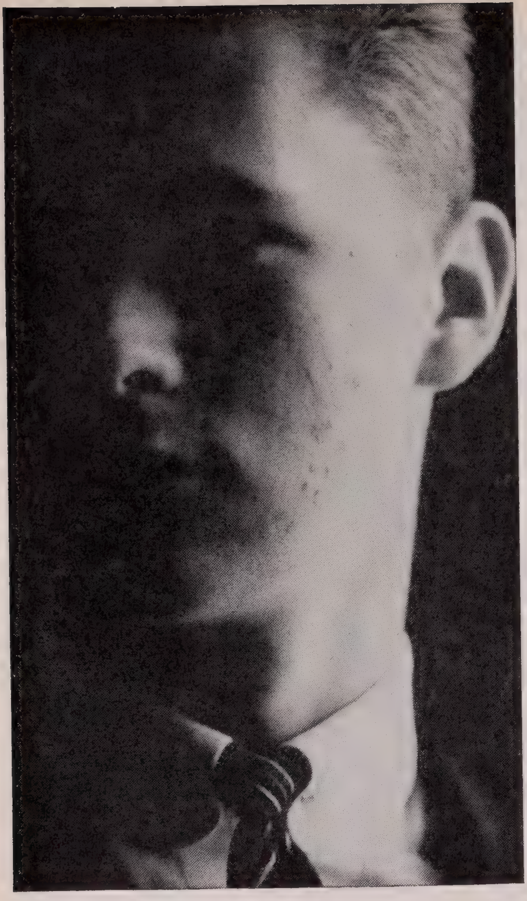

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1. Hodges, F.T.: GP 14:86, Nov., 1956.

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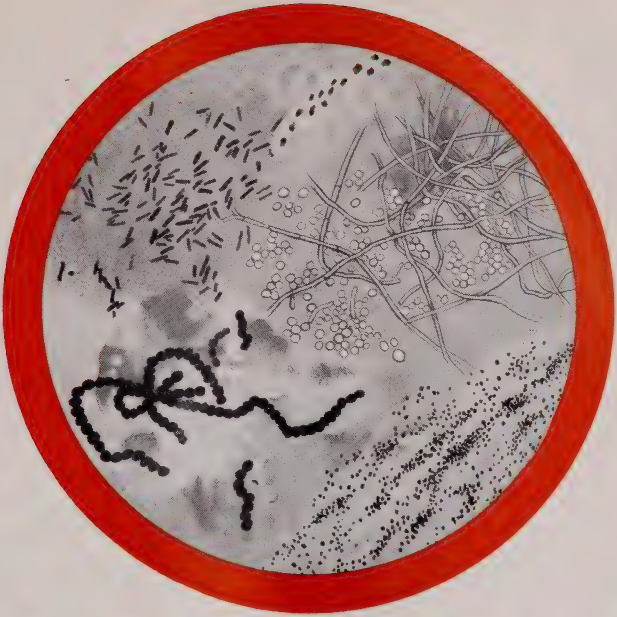

KILLS THEM ALL

In Topical Infections, regardless of etiology, BETADINE OINTMENT destroys all pathogens present. BETADINE OINTMENT, a single topical agent, is a full-range pathogenicide—kills bacteria, fungi, protozoa, yeasts, and viruses on contact. Yet it is nonsensitizing, nonirritating, and nontoxic to normal skin tissue.

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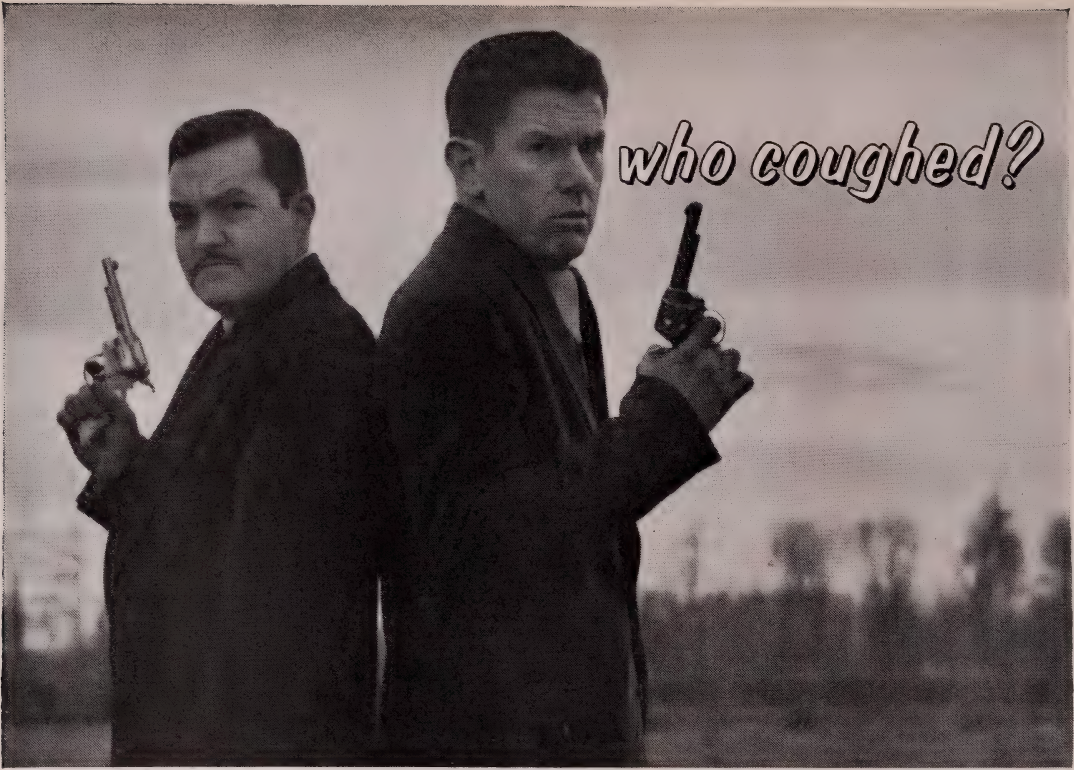
established in 1905 TAILBY-NASON COMPANY, INC., DOVER, DELAWARE


who coughed?

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THE *complete* Rx FOR COUGH CONTROL

cough sedative / antihistamine / expectorant

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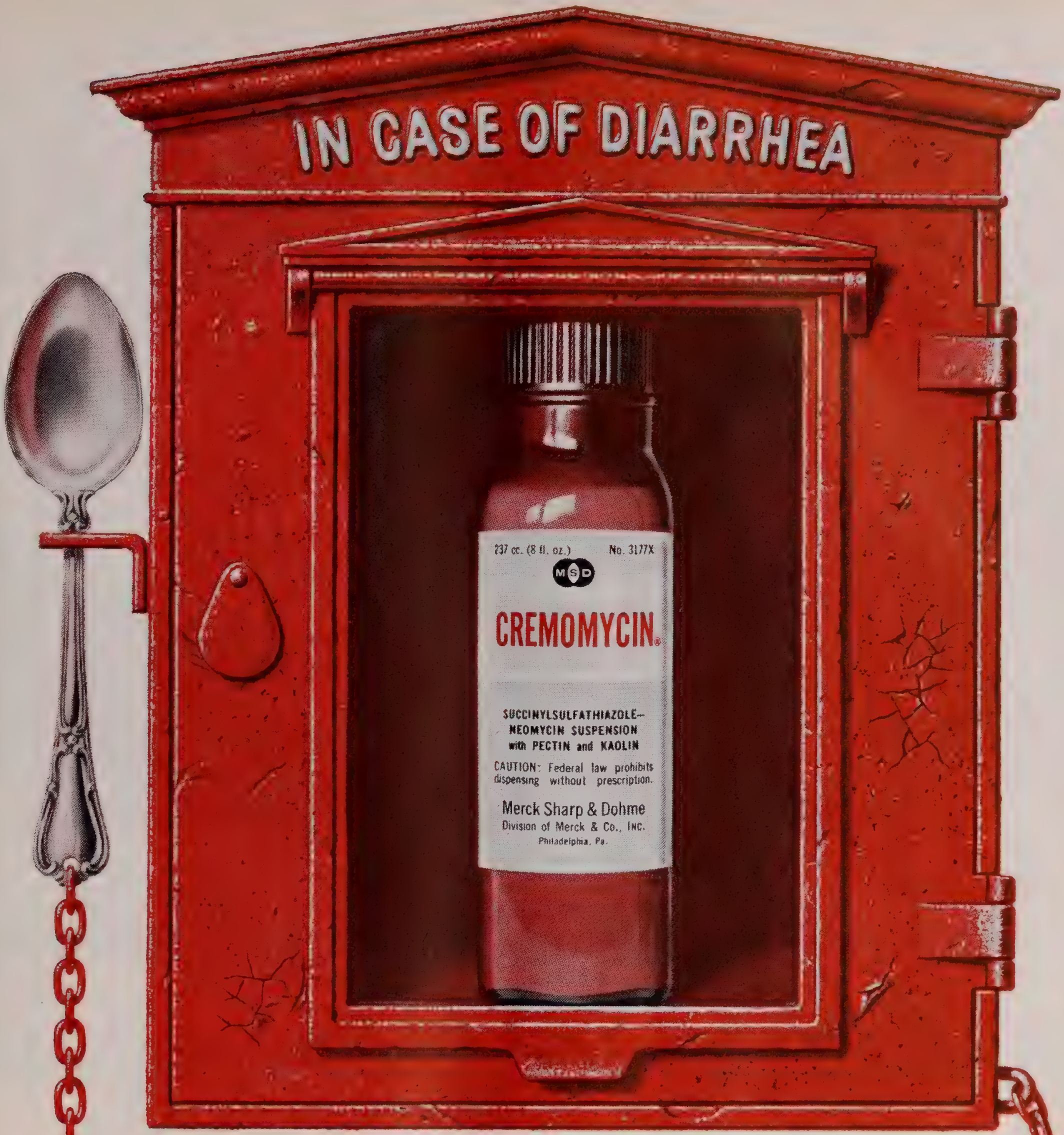
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Phenobarbital (¼ gr.)	16.2 mg.

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Same formula, plus

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(Equal to neomycin base, 210 mg.)

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duodenal ulcer
KEEPS THE
MIND OFF THE
STOMACH....
THE STOMACH
FREE OF PAIN

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relieves anxiety and tension
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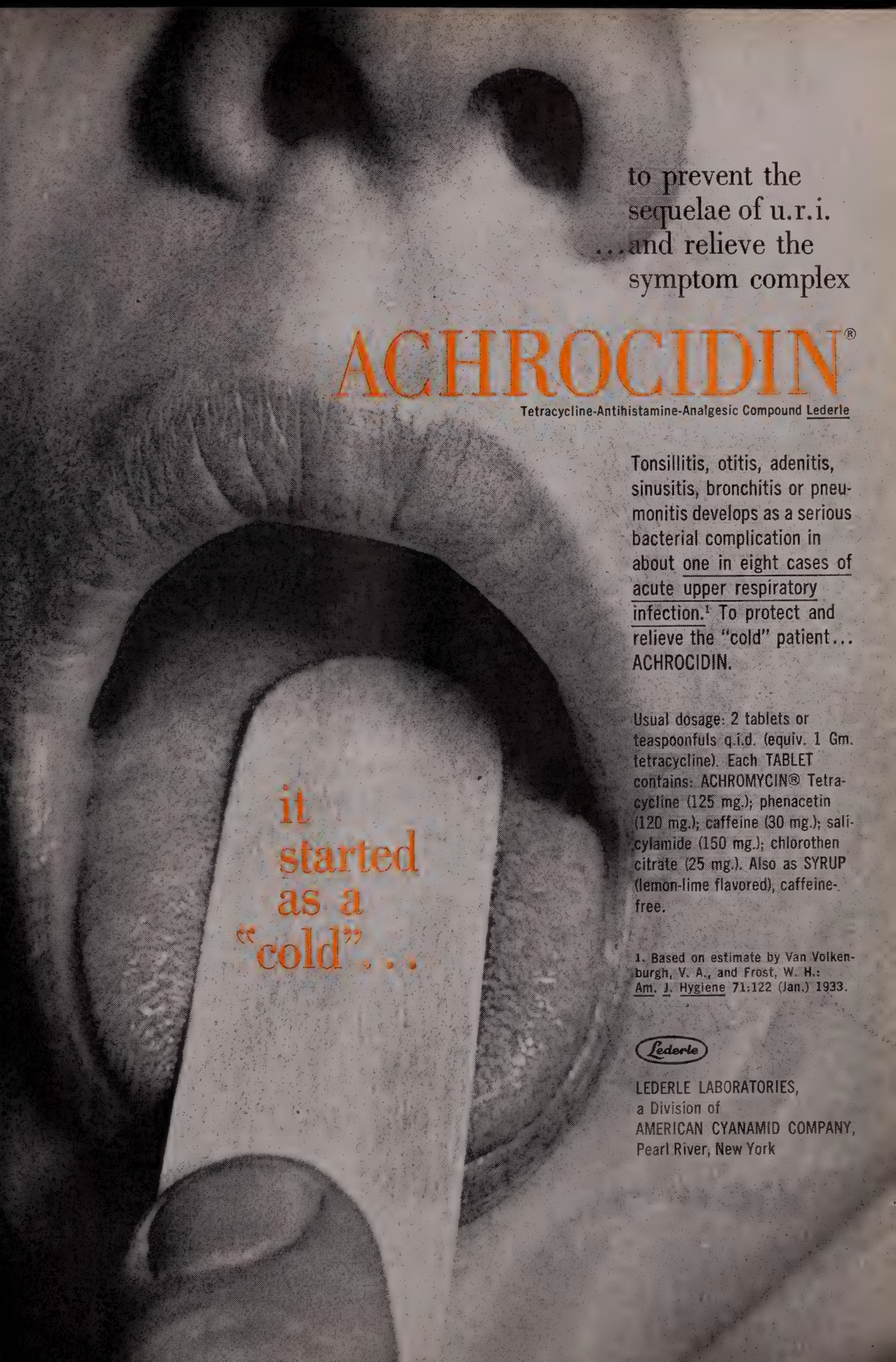

to prevent the
sequelae of u.r.i.
...and relieve the
symptom complex

ACHROCIDIN®

Tetracycline-Antihistamine-Analgesic Compound Lederle

Tonsillitis, otitis, adenitis, sinusitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

[1] Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933.

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It is a common misconception that the higher-priced cuts of meat are "more nourishing" than the lower-priced cuts.

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Chops, roasts, pot roasts and stews made from shoulder, breast, and shank meat.

Dishes prepared with these low-priced cuts of meat are among the most delectable. Furthermore, meat, because of its outstanding nutritional value, is an ideal food to recommend in high protein diets in both health and disease without burdening the food dollar.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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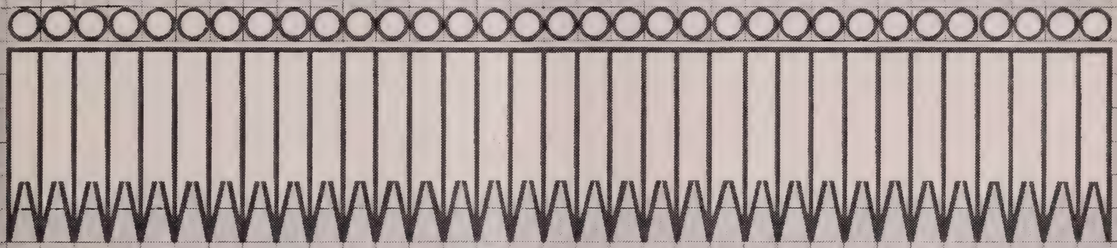
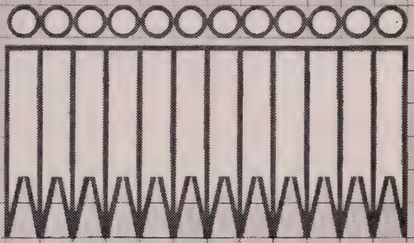
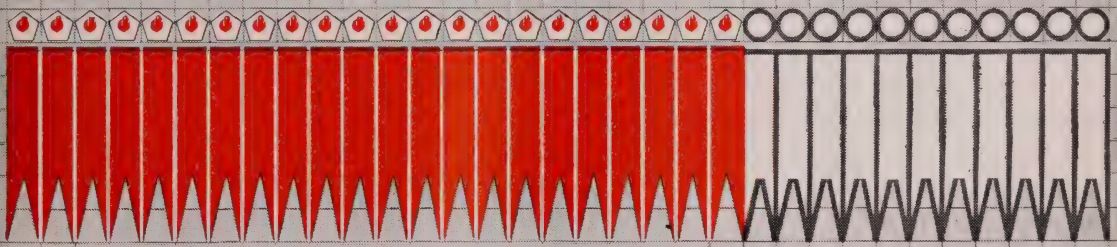
DEXAMETHASONE

treats more patients more effectively...

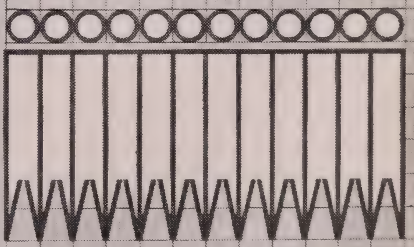


Of 45 arthritic patients who were refractory to other corticosteroids*





22 were successfully treated with **Decadron**[1,2]



1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

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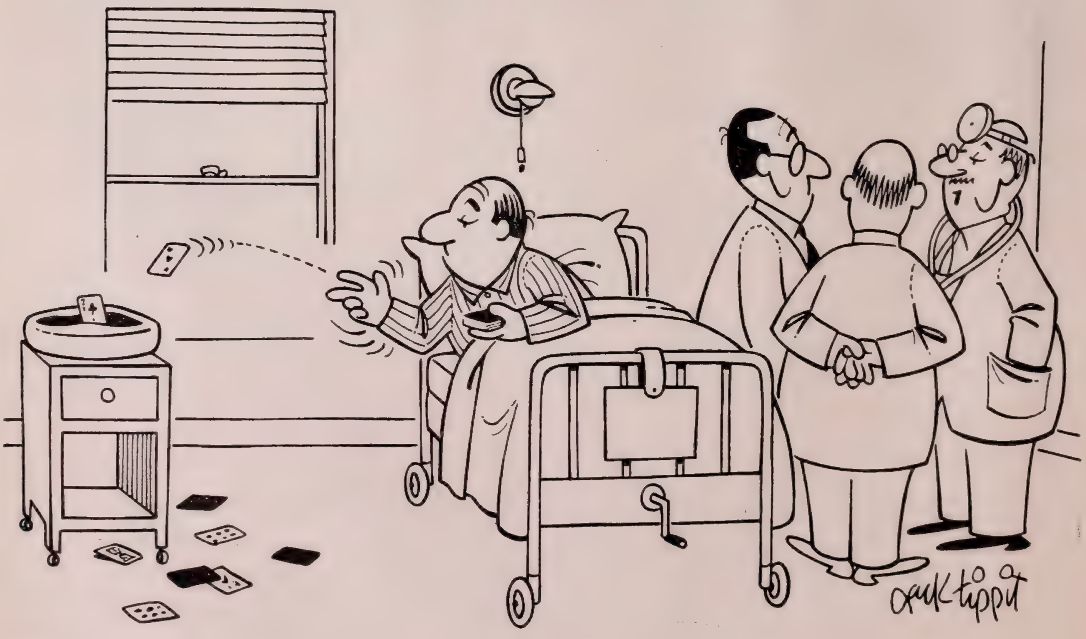

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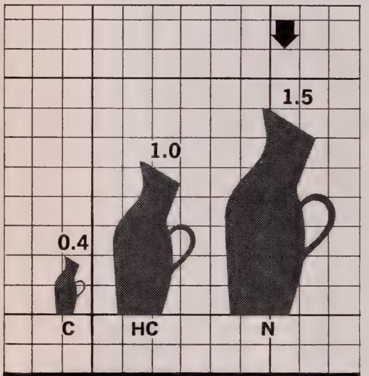
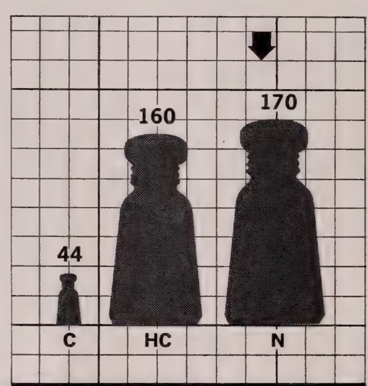
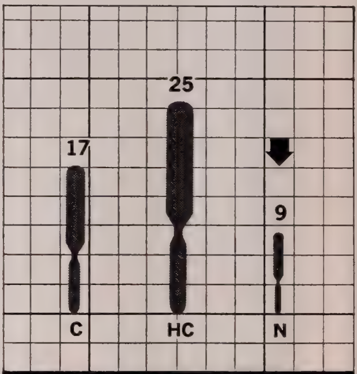
Comparison of electrolyte excretion pattern for the 24 hours following typical doses of chlorothiazide, hydrochlorothiazide, and Naturetin[1]



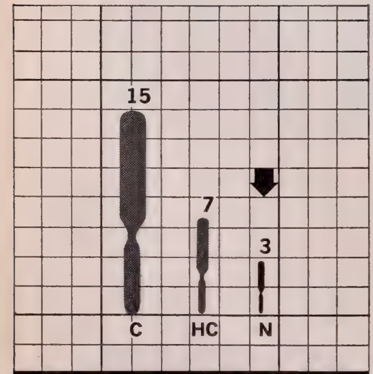
Urinary Volume (liters) significantly increased with Naturetin



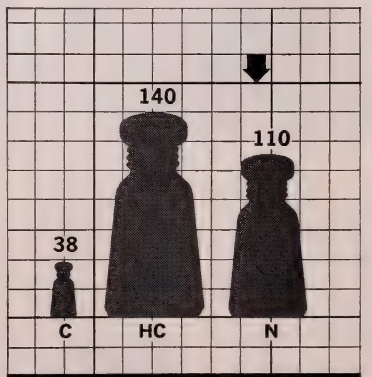
Natriuresis (mEq./24 hr.) sodium excretion significantly increased with Naturetin



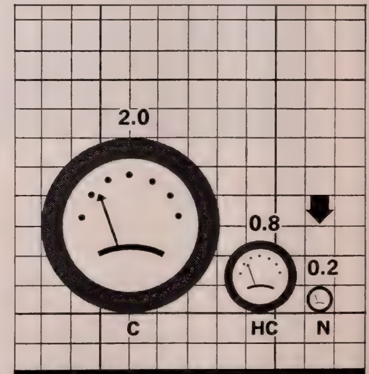
Potassium Excretion (mEq./24 hr.) least with Naturetin



Bicarbonate Excretion (mEq./24 hr.) least with Naturetin



Chloride Excretion (mEq./24 hr.) marked increases



Urinary pH least increase with Naturetin

Typical Doses: Chlorothiazide – 1,000 mg.; Hydrochlorothiazide – 50 mg.; Naturetin (Benzydroflumethiazide) – 5 mg.

In these comparative determinations, meralluride, given intramuscularly, was used as a "standard of one" to compare differences in excreted urinary metabolites and urinary volumes. *1. Adapted from: Ford, R. V., Squibb Clin. Res. Notes 2:1 (Dec.) 1959.*

A single 5 mg. tablet once a day provides all these advantages[2]

- prolonged action – in excess of 18 hours
- convenient once-a-day dosage
- low daily dosage – more economical for the patient
- no significant alteration in normal electrolyte excretion pattern
- repetitively effective as a diuretic and antihypertensive
- greater potency mg. for mg.—more than 100 times as potent as chlorothiazide
- potency maintained with continued administration
- low toxicity – few side effects – low salt diets not necessary
- comparative studies with chlorothiazide, hydrochlorothiazide, and Naturetin disclose that smallest doses of Naturetin produce greater weight loss per day
- in hypertension, Naturetin, alone or in combination with other antihypertensives, produces significant decreases in mean blood pressure and other favorable clinical effects
- purpura and agranulocytosis not observed
- allergic reactions rarely observed

[2] Reports (1959) to the Squibb Institute for Medical Research.

Naturētin –*Indications:* in control of edema when diuresis is required, in congestive heart failure, in the premenstrual syndrome, nephrosis and nephritis, cirrhosis with ascites, edema induced by drugs (certain steroids); in the management of hypertension, used alone, combined with Raudixin (Squibb Rauwolfia Serpentina Whole Root), or with other antihypertensive drugs, such as ganglionic blocking agents.

Contraindications: none, except in complete renal shutdown.

Precautions: when Naturetin is added to an antihypertensive regimen including hydralazine, veratrum, and/or ganglionic blocking agents, immediate reduction must be made in the dosage for all preparations; the dosage for ganglionic blocking agents must be decreased by 50% to avoid a precipitous drop in blood pressure. This also applies if these hypotensive drugs are added to an established Naturetin regimen . . . in hypochloremic alkalosis with or without hypokalemia . . . in cirrhotic patients or those on digitalis therapy when reductions in serum potassium are noted . . . in diabetic patients or those predisposed to diabetes . . . when increased uric acid concentrations are noted . . . when signs—leg or abdominal cramps, pruritus, paresthesia, rash—suggestive of hypersensitivity, are noted.

Naturētin –*Dosage: in edema,* average dose, 5 mg., once daily, preferably in the morning; to initiate therapy, up to 20 mg., once daily or in divided doses; for maintenance, 2.5 to 5.0 mg., daily in a single dose. *In hypertension:* suggested initial dose, 5 to 20 mg. daily; for maintenance, 2.5 to 15 mg. daily, depending on the individual response of the patient. When Naturetin is added to an antihypertensive regimen with other agents, lower maintenance doses of each drug should be used.

Naturētin –*Supplied:* tablets of 2.5 mg. and 5 mg. (scored).

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EDITORIALS

The Year and Decade

The beginning of a new year and a new decade is a time to look forward. The aim of your editors is to make and keep this JOURNAL a first-rate medical publication.

We solicit your views on how this is to be accomplished as we tell you ours. Our address is 750 Third Avenue, New York 17.

There are a great many medical periodicals, and all have their particular virtues and uses. We believe that your JOURNAL has the unique function of pulling together the medical thought of a large membership widely diversified and widely dispersed throughout this vast Empire State.

With roots in rural, suburban, and urban areas, with ten medical schools, with more than 400 hospitals, many of them important teaching centers in their own right, with active and perceptive health departments at all levels of government, the sources of material are tremendous.

We cultivate these sources constantly and will continue to do so. We will endeavor to make this JOURNAL a prime means of communication for all who study, teach, and write. We have enlarged our associate editorial board—this will greatly improve our critique. We are taking steps to cut down the time lag between acceptance of a paper and its publication. We have in process an outline guide for authors which sets forth what we consider the essential qualities of a good scientific article.

In the coming years your JOURNAL will continue to go forward. Our only desire is that it will be read and used.

Why Blame Blue Cross?

Hospital insurance under Blue Cross administration has accomplished wonders, almost the impossible. It has taken millions of our citizens out of the charity wards and made them private self-reliant patients with the aid of the companion plan for doctor care, Blue Shield. This great performance began when the old established insurance industry pronounced hospital care costs to be uninsurable risks.

After twenty-five years of successful pioneering services, Blue Cross is being blamed today for the increasing charges for hospital care. Public officials, politicians, labor leaders, and others are criticizing Blue Cross for demands made by hospitals for higher per diem charges. Blue Cross is no more responsible for regulation of hospital costs than are those who criticize Blue Cross rates.

"Public hearings" on proposed rate increases for insurance may satisfy the desire of some leaders and officials for spotlight publicity, but they contribute little or nothing toward lowering the need for increased rates. Surveys, "investigations," and collegiate "studies" seem to be aimed at Blue Cross . . . as though Blue Cross could regulate hospital operating costs. The real truth is that Blue Cross can only calculate how much money must be in hand to pay the charges of the hospitals for the contract benefits allotted to subscriber members of the plan.

To say, as some do, that hospital costs will go on mounting, at least by a 5 per cent increase year after year, is a challenge which must be met. It takes no wizard in mathematics to know we do not have resources to meet such drains.

Present-day hospital activities are made up of customs, procedures, and rituals handed down from the nebulous past. Necessity now demands a going-over of these institutional affairs by a carefully selected group of persons who have the know-how to bring the rocketing costs back to earth. Doctors should be in the front rank of this assembly of talent; this is no place for boys with fanciful dreams of utopian perfection. The thinking must be practical and regular expenditures limited to real necessities. The voluntary hospital is a place to help doctors restore patients to their usual levels of health. Should patients continue to be burdened with the disbursements for "research" and for maintenance of nurse education? Educated and skilled talent surely should not continue to be wasted on clerical records and manual duties.

These and other considerations should be directed at what goes on in the hospital, not at Blue Cross. "Can the costs of hospitalization be lowered?" is an academic question. The crisis is here. Action and revisions of procedure must be developed.

Why not put away recrimination and give the Blue Cross officers and their staffs the recognition they have earned. They have done much for many. They have taken much undeserved blame because hospitals have increased the charges for their services. Why not look for the real facts, for what must be done if the free, voluntary hospital system is to survive?

Population Growth

At certain times in history there have occurred rapid, unexplained increases in populations. We note that presently

> A special congressional study calls for stepped-up research on ways to brake an "explosive" world population that might reach seven billion within forty years.
>
> According to the study, made for the Senate Foreign Relations Committee by the Stanford Research Institute, "it is most likely that in the coming decade the explosive growth of population in many parts of the world will be accelerated by new scientific advances in public health and medicine."
>
> *Social Unrest:* The rising population, coupled with economic advancements and the competition of communist nations, "will lead to social unrest or even war unless the resources of science can be more effectively brought to bear on world problems of food, economic and social development, and population control," the report said.[1]

Writing in 1930, Sr. José Ortega Y Gassett in his book *La Rebelion de las Masas* asked, "Whence have come all these multitudes which nowadays fill to overflowing the stage of history?"[2] As the then incumbent of the chair of philosophy at the University of Madrid he called attention to the writings of the economist Werner Sombart to provide a possible answer.

> The fact is this: from the time European history begins in the VIth Century up to the year 1800—that is, through the course of twelve centuries—Europe does not succeed in reaching a total population greater than 180 million inhabitants. Now, from 1800 to 1914—little more than a century—the population of Europe mounts from 180 to 460 millions! I take it that the contrast between these figures leaves no doubt as to the prolific qualities of the last century. In three generations it produces a gigantic mass of humanity which, launched like a torrent over the historic area, has inundated it. So much for the teeming fertility of Europe, Asia, Africa, and the Far East, but especially of Europe in the last century."

Here in the United States:

> The average length of life (expectation of life at birth) in the United States was 69.3 years in 1957, or 0.3 years below the all-time high registered in 1954 and again in 1956. The slight setback in 1957 resulted largely from the widespread prevalence of Asian influenza and other upper respiratory infec-

> tions during the late months of the year. Even so, the 1957 experience was more favorable than that for any year prior to 1954, the average length of life being two and one-half years greater than in 1947 and twenty years above that around 1900. A century ago the average lifetime was only about forty-two years—three fifths the current figure.[3]

It appears that not only are there more people but they now live longer than they did in the last century. Apparently the end is not yet in sight.

> The population of the United States, including Alaska and Hawaii, is expected to continue the vigorous growth it has been experiencing in recent years. From April, 1950, to July, 1957, the population increased at the rate of 1.7 per cent a year; in the period to 1970, the annual increment is likely to average 1.5 per cent. By that time there may be over 208 million residents in the United States, according to projections by the Statistical Bureau of the Metropolitan Life Insurance Company based in part on estimates by the Bureau of the Census.[3]

Assuming that progress in public health and the art and science of medicine as reflected in the practice of medicine and surgery can continue to cope successfully with the problem of such a population "explosion," what may we expect in the matter of longevity in the far distant future? Are new sudden increases in fertility to be expected with increased longevity as well? Apparently the Surgeon General expects that it will and that something must be done.

> A special advisory group recently advocated a crash program of government and private medical school aid to prevent a serious shortage of doctors and dentists by 1975.
>
> Their report to United States Surgeon General Leroy E. Burney declared drastic action must be taken immediately if the supply of doctors and dentists is to cope with the nation's fast-growing population.
>
> The twelve-man group on medical education was created by Dr. Burney toward the end of last year. It was headed by Frank Bane, executive director of the Council of State Governments. . . .
>
> Because of the expected population growth, the number of physicians graduated annually must be increased from the present 7,400 a year to 11,000 by 1975.
>
> The group expected, however, that the present ratio will drop about 5 per cent in the next few years even if all its recommendations are put into effect.
>
> The report said the greatest problem is financing construction of medical schools.
>
> The report estimated that only 10 per cent of the nation's medical students receive scholarship aid, averaging about $500 a year. This contrasted with the other sciences where about 65 per cent received scholarship aid averaging $1,200 annually.
>
> The report said that increased support for medical students through loans and grants from private and public sources was imperative.[4]

---

[1] AMA News, October 5, 1959, p. 6.

[2] Ortega y Gassett, J.: La Rebelion de las Masas, New York City, W. W. Norton and Company, 1932, p. 53.

[3] Statist. Bull. Metrop. Life Insur. Co. **40**: 1 (July) 1959.

[4] New York Herald Tribune, November 1, 1959, p. 50.

Comment on Morwin V. Albany Hospital

In a recent case the Appellate Division, Third Department, resisted an attempt to enlarge the decision in the now famous *Bing* case to an extent that was never intended. In the *Bing* case (Bing *v.* Thunig 2 N.Y. 2d 656) the Court of Appeals held that hospitals were to be responsible for the acts of all of their employes, including professional personnel. In the present case (Morwin *v.* Albany Hospital 185 N.Y.S. 2d 85), the plaintiff took the position that because of the *Bing* case it was not necessary to prove malpractice in the usual manner in order to recover from a hospital for the act of an employe-physician. The plaintiff contended that the jury could be allowed to determine negligence on the part of the physician without proof by expert testimony that the physician departed from proper and approved practice.

The trial judge adhered to this position and submitted the case to the jury, which returned a $2,500 verdict for the plaintiff. The basis of this decision apparently was a statement in the *Bing* case that "the hospital's liability must be governed by the same principles of law as apply to all other employers" (supra at p. 667).

In this case, the patient had been suffering for some months from pyorrhea alveolaris and had undergone a series of gingivectomies; however, a molar in the upper left side of his mouth developed an abscess and he was unable to open his mouth normally. He was admitted to the hospital by an oral surgeon for the removal of the abscess under endotracheal anesthesia. In the course of the insertion of a laryngoscope by an assistant resident in anesthesia employed by the hospital, the plaintiff's upper right central incisor tooth was knocked out. The tooth apparently was a sound one.

The plaintiff did not offer any competent medical testimony to prove that the anesthetist had departed from approved practice. The trial judge did permit testimony by a dentist to the affect that an anesthetic by endotracheal intubation could have been safely administered to the plaintiff, but the Appellate Division properly ruled that the dentist was wholly unqualified to testify on the subject.

The Appellate Division, Third Department, unanimously held that the case should not have been submitted to the jury and ordered a new trial. In the light of testimony by the anesthetist that the circumstances required that he continue with the intubation even though he felt the tooth giving way, the court felt that a lay jury could not determine whether the intubation was negligently continued in the absence of expert testimony. The court unequivocally denied that the *Bing* case supported the plaintiff's theory . . . As the court said:

> In order to hold a hospital liable under Bing *v.* Thunig * * * there must be negligence. If the acts complained of as being negligent are such as require professional skill and knowledge, then it is a case of malpractice. Being malpractice, the case must conform to the evidential rules long invoked in such cases. Any argument that Bing *v.* Thunig * * * altered the standard of proof in malpractice cases is without foundation.

It should be noted that the court did not decide the question of whether the doctrine of *res ipsa loquitur* was applicable (under the res ipsa doctrine, the plaintiff is entitled to an inference of negligence because of certain factual situations) because the case was not tried on that theory.

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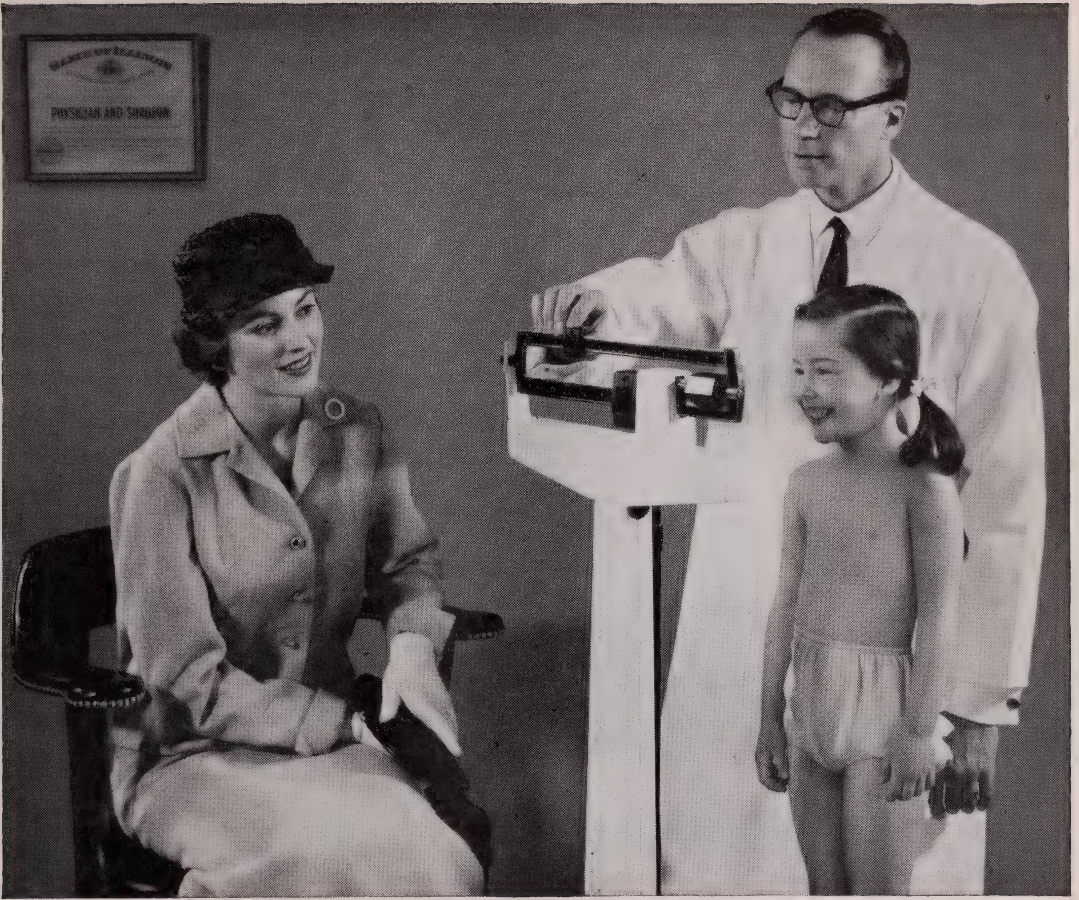

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*Brown, S. S.; Libo, H. W., and Nussbaum, A. H.: Norethandrolone in the Successful Management of Anorexia and "Weight Lag" in Children, Scientific Exhibit presented at the Annual Meeting of the American Academy of Pediatrics, Chicago, Oct. 20-23, 1958.

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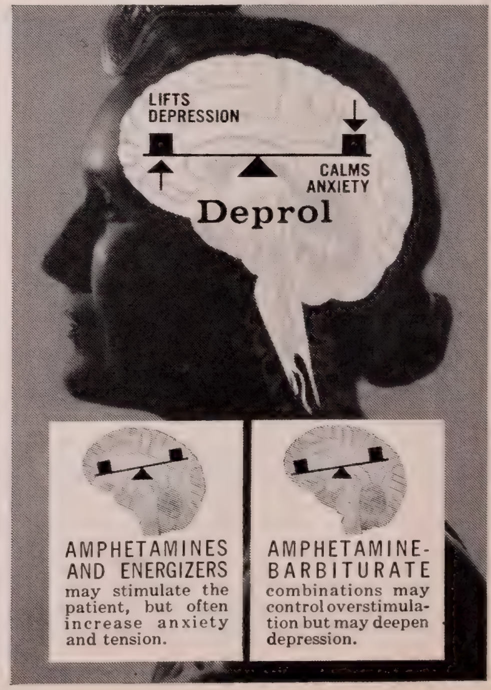

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SCIENTIFIC ARTICLES

Mold Allergy During the Winter Months

NATHAN SCHAFFER, M.D., F.A.C.A., EAST ORANGE, NEW JERSEY

(From the Department of Allergy, East Orange Hospital and Orange Memorial Hospital)

MOLD allergies during the winter season—from mid-October until the end of April—present a definite problem to the allergist in this section of the country. This is the season of closed windows and furnace heating, resulting in closer contact with dust-borne molds, with consequent exacerbation of symptoms in a considerable percentage of mold-sensitive patients. The symptoms which may occur can be asthma; bronchitis, with or without expectoration; vasomotor rhinitis; so-called sinusitis; itching and running eyes, and, at times, eczema.

Fungus spores are brought into the home in many ways. They are always present in the outside air; that most mold comes into the home from outdoors is borne out by the fact that studies have shown that the mold content of indoor air and of house dust mirrors the mold content of the outdoor air. Once carried into the house, the spores can be deposited on any and all substances and materials there and can flourish in the warm heated atmosphere. Fungi need a moisture content of only 15 per cent in air to thrive and grow, and no home is lower in humidity than this. A bellows-like action which is constantly caused by movement, sitting on and arising from upholstered furniture and mattresses, pulls the spores into materials and keeps them in constant contact with individuals within the house.

Molds are found also in house plants and in the soil in which they grow; in wallpaper, applied usually with a paste of wheat flour, a wonderful nutrient for molds; in contaminated foods, especially fruits, vegetables, bread, and flour; in firewood; and in damp cellars and crawl spaces. Since there is practically no substance on which molds will not grow, and since the temperature and humidity of a well-heated house during the winter present ideal conditions, molds flourish. This is also true of homes closed for long periods of time, such as vacation houses visited infrequently during the winter months.

Surveys of house air and dust and of outdoor air in the New England and Middle Atlantic States duplicate each other; the only important difference is that 2 molds —Rhizopus and Mucor—are usually present in larger quantities indoors. The following molds have been recovered and identified in New York and New Jersey:

Phycomycetes
- Absidia
- Rhizopus
- Mucor
- Zygorhynchus
- Mortierella
- Choanephora
- Cunninghamella
- Syncephalastrum

Ascomycetes
- Gymnoascus
- Chætomium
- Coniothyrium
- Yeast
- Neurospora
- Trichosporium
- Pestalozzia
- Pleospora
- Diplodia

Fungi Imperfecti
- Phoma
- Coniothyrium
- Rhodotorula
- Oospora
- Geotrichum
- Fusidium
- Monilia
- Cephalosporium
- Trichoderma
- Hyalospora
- Aspergillus
- Penicillium
- Scopulariopsis
- Gliocladium
- Spicaria
- Paecilomyces
- Trichothecium
- Mycogone
- Streptomyces
- Oedocephalum
- Botryosporum
- Gonatorrhodiella
- Helicoma
- Pullularia
- Hormiscium
- Torula
- Stachybotrys
- Bispora
- Cladosporium
- Diplococcus
- Curvularia
- Helminthosporium
- Monotospora
- Spondylocladium
- Acrothesium
- Stemphylium
- Macrosporium
- Alternaria
- Coniothecium

Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Allergy, May 14, 1959.

Sporotrichum
Monosporium
Botrytis
Sepedonium
Verticillium
Acrostalagmus
Trichosporium
Nigrospora
Humicola
Hormodendrum
Botryotrichum
Dicoccum
Coremium
Stysanus
Trichuris
Fusarium
Cylindrocarpon
Epicoccum

On exposure slides we have identified spores of rusts, smuts, mildew, bacteria, and puff ball. House dust culture surveys done by quantitative method on dusts collected only from upholstered furniture and mattresses showed as many as $5^{1}/_{2}$ million viable culturable spores per gram of dust. In 20 dusts so studied, the number of spores ranged from 69,000 to the previously mentioned $5^{1}/_{2}$ million, the average being 125,000 spores per gram of dust.

Qualitative studies are done in the home of every patient in whom mold allergy is suspected. Petri dishes containing Sabouraud's medium are opened for a fifteen-minute exposure in every room of the house, including cellar and attic. In larger areas 2 dishes are used. These plates are cultivated at room temperature and watched daily for a period of from two to four weeks. The faster-growing molds are identified as the characteristic growth features are noted. In certain cases, very low power microscope magnification may be necessary. Isolates of all suspicious or unknown molds are transferred to test tube slants with Sabouraud's medium, and identified by low power microscopic examination directly through the tube. Sometimes slide cultures have to be made in an attempt to achieve positive identification. The assistance of a state department of plant pathology can be sought, and at times this is very desirable for identification. In spite of this help, it is not possible to identify some molds since they will not produce any fruiting bodies and are classified as sterile mycelia. The reason for the two-to-four-week study is that certain slower-growing molds do not produce their identifying fruiting bodies before a lapse of some time. As many as 150 colonies have been counted on one plate, and in certain homes, averaging 6 rooms, as many as 700 colonies have been recovered. When identified, these rarely exceed more than 20 different varieties. These are classified only as to genus, and not as to species; for example, Aspergillus is Aspergillus rather than Aspergillus niger, glaucus, and so forth.

The following molds, which on a review of the literature have been found to be the most prevalent in both outside and indoor air, are used routinely for testing:

Alternaria
Hormodendrum
Penicillium
Aspergillus
Pullularia
Botrytis
Rhizopus
Fusarium
Trichoderm
Phoma
Stemphylium
Chætomium
Curvularia
Helminthosporium
Mucor
Spondylocladium
Epicoccum
Mildew

While the skin-testing procedures are being carried out in the office, a mold survey of the home is done using the Petri dish method discussed previously. Any molds recovered from the dishes which are not included in the staple list are then tested for; I have a bank of over 75 mold extracts, and even with that number I occasionally come up with one or two new ones on a plate from which new ones have to be made for testing.

A positive skin test to a mold itself means nothing. However, if the patient does give a positive skin test and house cultures show that that mold is present in quantity, there is a definite correlation. A further check can be made by inhalation, using pure cultures; if there is an acute exacerbation of symptoms following inhalation there is no doubt of sensitivity. I have had patients who have given multiple skin reactions to fungi, but have only reacted positively to sniff tests of one or two of the molds found in their homes. This is a heroic measure and is not recommended for constant use.

For skin testing, a dilution of 1,000 protein nitrogen units per cubic centimeter for intradermal testing is recommended. To cut down constitutional reactions do not test for more than 2 molds in any one class of fungi at one time. Referring to the list we have given of the common molds routinely used, the breakdown is as follows:

Phycomycetes: Mucor
    Rhizopus
Ascomycetes: Chætomium
    Mildew
Fungi Imperfecti: Four families
1. Phoma
2. Moniliaceae: Trichoderma
    Aspergillus
    Penicillium
    Botrytis
3. Dematiaceae: Pullularia
    Hormodendrum
    Spondylocladium
    Helminthosporium
    Alternaria
    Curvularia
    Stemphylium
4. Tuberculariaceae: Fusarium
    Epicoccum

Certain allergists feel that Phoma and Alternaria give cross reactions; I have not found this to be true. Using this classification and the procedure mentioned, very few constitutional reactions will occur.

The treatment of mold allergy follows the same general rules as treatment of pollen allergy. Individual mixtures for each patient are made with specific molds and house dust if indicated. No more than 1,000 protein nitrogen units per mold for the concentrated mixture should be used, and serial dilutions of 1:10 and 1:100 are made. Treatment is started with $^1/_{10}$ cc. of the 1:100 dilution and increased by tenths. If the patient has any reaction, a further dilution of 1:1,000 is made and treatment started at that level. The interval of injections is from three to four days until the patient shows improvement. Dosage is maintained at this level, and the time interval between injections is increased to from seven to fourteen days. Injection therapy is maintained on a perennial basis, and treatment should be continued until the patient has been completely symptom-free for two years, when it may be discontinued.

Part of the treatment for mold allergy is an attempt to stop contact. All suspect material, such as house plants, must be removed; crawl spaces under the house must be cleared of all debris, especially of old wood; and damp cellars must be dried up. A good, simple way of drying a cellar is to use a low speed window exhaust fan. Old furniture and mattresses must be renovated. The use of foam rubber is recommended; although molds can grow on rubber, it is preferable to other materials. Mold-proof paint is to be chosen rather than wallpaper. Patients sensitive to Penicillium and Aspergillus should be warned against any aged cheese. Homes can be sterilized in the following manner: formalin, which is a 39 per cent solution of formaldehyde and purchasable in any drug store, is placed in tins (such as from coffee, or on small pie plates) to a depth of $^1/_2$ inch, using 1 tin per 100 square feet of floor space. The house is tightly closed, and the family must leave it for three days, leaving the formalin to evaporate. This will not harm furniture or foodstuffs. Airing the house for one hour will dissipate the fumes and make the house habitable once more. This sterilization will last for from three to four months and may have to be repeated at that interval. All patients who have vacation houses closed all winter are cautioned especially to follow this procedure before they open their houses for the summer season. An ammonium compound called Teramine* can be sprayed or painted on walls of cellars and crawl holes to inhibit the growth of molds in those areas. This material has wide usage in industry for this purpose. A third method of sterilization using a formaldehyde compound in lower concentration than formalin has been described. Also recommended is the use of a 23 per cent zephiran chloride solution as a spray directly on furniture and walls.

Using the technics that have been described, good results in the management of the winter mold allergies can be obtained.

98 South Munn Avenue

Discussion

Hyman Sherman, M.D., *Brooklyn, New York.* —During the past ten years Dr. Schaffer and his coworkers have devoted a great deal of time and effort to the study of molds, and have contributed much to the knowledge of molds and their role in the causation of allergic symptoms. For this they are to be congratulated.

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* Made by the West Chemical Products, Inc., Long Island City, New York.

As early as 1931, Flood,[a] and later Morrow and Prince,[b] Rackemann and Wagner,[c] and Feinberg[d] called attention to the etiologic importance of fungi and house dust. However this relationship is still obscure, as well as the nature of the house dust antigen itself. The findings by Schaffer of the existence of hundreds of thousands to a million mold spores per gram of dust is fantastic and incredible but, true, nevertheless.

Christensen,[e] and Feinberg[f] and their surveys of mold in the outside air during the winter months found very little mold in the air, particularly when the ground was frozen. Christensen, in culturing the dust from mattresses and furniture, found Penicillium and Aspergillus routinely as the predominating fungi. He also found mold spores in new foam rubber pillows and mattresses.

I agree with Dr. Schaffer when he says that the "sniff" or inhalant test is a heroic measure and can be dangerous. Constitutional reactions have occurred merely from a single intradermal test, and his warning about care in testing with molds should not go unheeded. Likewise, great care should be observed in the treatment of mold cases.

Regarding skin testing with molds, I wish to call attention to some possible errors in technic. Since many of the commercial testing extracts are glycerinized it is not unusual to obtain many slight and moderate reactions, particularly when concentrated extracts are used or one is dealing with a sensitive skin, or more than $^1/_{50}$ cc. is introduced as a skin test. As a consequence many false-positive reactions are obtained, and an erroneous diagnosis is thus made. To obviate this, Dr. Schaffer's suggestion of exposing plates in the patient's home in an effort to correlate the positive skin tests with the molds found in the home is a good one and should always be done when indicated and before treatment is begun.

Regarding the relationship of mold and dust as common antigens, and the role of molds as part of the dust antigen, I am sure that Dr. Schaffer will agree with me that as important as the role of the mold may be in the whole dust antigen, it is only a small part of it. The problem has been studied since 1922 and elaborated on by such well-known investigators as Cooke, Feinberg,[d] Pratt,[g] and Rackemann and Wagner.[c] The latter (in 1937) thought there was an interaction between dust and mold which produced an "active principle." Feinberg[d] (1937) found only a small per cent of mold sensitivity in dust-sensitive cases. Walzer and Albert[h] in 1938 did passive transfer studies in very sensitive dust cases and found positive transfers to such antigens as wool, feathers, silk, cotton, kapok, and animal danders. They did not test to fungi. This might have thrown more light on the subject of dust sensitivity.

I would like to ask Dr. Schaffer:

1. Which molds did he find to be the most antigenic among house molds, as compared with outside molds?
2. Of the 18 molds he uses for testing, which molds give the least or no reactions at all?
3. Did he test his cases with the same house dusts he got his molds from, and what reactions or correlations did he obtain?

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[a] Flood, C. A.: Observation on sensitivity to dust fungi in patients with asthma, J.A.M.A. **96**: 2094 (June 20) 1931.

[b] Prince, H. E., Selle, W. A., and Morrow, M. B.: Molds in the etiology of asthma and hay fever, Texas J. Med. **30**: 340 (Sept.) 1934.

[c] Wagner, H. C., and Rackemann, F. M.: Kapok and molds: An important combination, Ann. Int. Med. **11**: 505 (Sept.) 1937.

[d] Feinberg, S. M.: Allergy in Practice, Chicago, Year Book Publishers, 1944.

[e] Swaebly, M. A., and Christensen, C. M.: Molds in house dust, furniture stuffing, and in air within homes, J. Allergy **23**: 370 (July) 1952.

[f] Feinberg, S. M., and Little, H. T.: Studies in relations of microorganisms to allergy. III. Year's survey of daily mold spore content of air, *ibid.* **7**: 149 (Jan.) 1936.

[g] Pratt, H. N., Colmes, A., Fromer, J., Greene, J. E., Chafee, F. H., and Clapp, W. B.: Pollen and mold survey of New England, New England J. Med. **225**: 533 (Oct. 2) 1941.

[h] Albert, M., Bowman, K., and Walzer, M.: Relation of dust reaction to other inhalant reactions, J. Allergy **9**: 392 (Nov.) 1937.

Douglas E. Johnstone, M.D., *Rochester, New York.*—Are there any other questions or discussion? Yes, Dr. Cohen?

Victor L. Cohen, M.D., *Buffalo, New York.*—I'd like to make just one comment in regard to pseudoreactions with molds. We have been working with molds since about 1937 in Buffalo, and one of the sources of pseudoreactions was the Sabouraud's medium. There is peptone in Sabouraud's medium and, if it's used in any concentration at all, and some people are more sensitive to peptone than others, you will get a positive reaction which is entirely due to the Sabouraud's medium and not to the mold at all. In descriptions of autogenous mold extract given in Sheldon's book,[a] I see that a Sabouraud's plate is used which is very likely to give a positive reaction in such cases.

We have long used a Czapek's medium to raise our molds and have since changed to tomato juice that has been sterilized and gives very much less reaction than is found with the use of the Sabouraud's plate.

Dr. Johnstone.—Are there any other questions or discussion? Dr. Schaffer, would you close, please.

Dr. Schaffer.—I do not use glycerinated extracts. I check my extracts against other extracts, those that are glycerinated and those that are not.

Now, Dr. Sherman said that house dust does not cover mold sensitivity. There is a fallacy in our mold extract. The molds which we grow in artificial media are not the same as those grown in nature. Therefore, our spores or the material we make our extracts from are not the same as those the patient inhales. It isn't the same as working with pollen. There must be some biologic chemical change in artificially grown molds.

I want to thank Dr. Sherman for his discussion. He gave 3 questions that he'd like me to answer. Which molds do I find most antigenic in house dust? Alternaria is still the top mold as far as both indoors and outdoors are concerned.

None of the molds that I mentioned give negative reactions and I can prove that all of them do give reactions.

As far as autogenous dust is concerned I habitually use autogenous dust on every test, for each dust case that I have. I have patients who do not react to stock dust and I get the dust from furniture and mattresses in their homes with a special vacuum cleaner. If you use floor dust you weaken your material because you have at least 50 per cent inert material on the floor. Accordingly, I have used autogenous dust. The dust that you get looks like pollen extract. It's a golden color, not the dark black-brown that you get with stock dust, and it is specific for that patient or for that family.

I've certainly tried to cross-check a large number of dust cases and I usually get a negative reaction. As far as slight reactions are concerned, the only time slight reactions are important is in elderly people. Slight reactions in people under forty-five don't mean anything. I usually could classify my mold cases as moderate or better in people under forty-five. In people over forty-five slight reactions may be important.

Delayed reactions do have some significance. I have patients who are very sensitive to molds who give no immediate reaction, but who will give delayed reactions. Some of them will give delayed reactions that are almost a sloughing.

The extracts in material that we use make a completely artificial medium. We used to use Czapek's medium; we stopped using it because the growth was too small or too slow and we got very poor mold formation. Jack Center from Center Laboratories and I have devised a medium which contains 23 materials, all of which, some in very minute bodies, are trace elements.

After the molds are grown, we mash the mold in a Waring blender with the mother medium. We do not filter off the mother liquor. We let the combination stew in the ice box or a cold room for forty-eight hours and then filter it. We dialyze it and remove all unused chemicals, as can be proved. All we have left is a pure mold extract.

When you are growing molds in a liquid medium, the liquid medium will extract some of the mold material. It has to because it's basically water.

As far as Sheldon's method for making mold extract is concerned—it's a rough extract as I said—if you use a peptone as a control, you can cover some of the false reactions; but if you do a check to correlate your patient's symptoms with skin tests and what you find in his home, you can get a pretty accurate picture of what the patient is sensitive to.

One thing, I infer that everybody here is an allergist or is hoping to be an allergist. As allergists, we have to be the final word on when and what the patient is sensitive to. Now, I disagree with the opinion that it is necessary to use only 2 molds for skin testing. Unfortunately, through the slide method of doing mold survey you can identify only about five molds that are culturable. You can identify Alternaria and Hormodendrum, when they grow in clumps, and Stemphylium, Curvularia and, Helminthosporium. Then you can identify mildew, the rusts, and smuts. Nothing else is identifiable on the slide. All other spores may look alike or, again, you cannot pick them up. It is by culturing what comes out of the air that you get a picture of the mold population of the air.

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[a] Sheldon, J. M., Lovell, R. G., and Mathews, K. P.: A Manual of Clinical Allergy, Philadelphia, W. B. Saunders Co., 1953, p. 310.

Modern Concepts in Treatment of Hay Fever

HAROLD D. DUNDY, M.D., BROOKLYN

(*From the Beth-El Hospital and from the New York University Post-Graduate Medical School, New York City*)

THE modern treatment of hay fever dates back to 1911 when Noon[1] and Freeman[2] treated their cases with injections of aqueous pollen extracts given every week for fifty-two weeks a year. Since that time, hundreds of reports have appeared in the literature and many variations in the treatment have been introduced in attempts to improve therapeutic results. There have been many patterns of treatment, including the perennial, the preseasonal, and the coseasonal. Each form has its advocates. There have been the "shock method," which begins with the strongest available solutions in small doses, increasing rapidly to a top level, and the "rush method," which completes treatment in five days. There have been advocates of injections combining pollen extracts with antihistaminic agents, with ephedrine, or with epinephrine. Some allergists feel that the larger the dose the greater the immunity. Others use only one concentration, with top doses reaching as high as 30,000 Noon pollen units. On the contrary, some use a homeopathic dosage of a 1 to 1 million concentration. There are some who stress the complete elimination of all supposedly allergenic foods. There have been advocates of the intracutaneous, subcutaneous, and even of the intravenous method of injection. Others treat hay fever by iontophoresis. Many types of extracts have been used, such as whole pollen in suspension, defatted or nondefatted, dialyzed or nondialyzed, glycerinated, or salted. Some combine pollen injections with dust or with vaccine, and others mix pollens with other inhalants on the basis of positive skin tests or even on the basis of a recorded seasonal history.

Method of Treatment

I shall now describe the modern orthodox method of treatment.[3] In the first place, an accurate and complete history of the onset and cessation of symptoms is essential: their duration in years; their increase or decrease in severity over the years, whether night or day, whether indoors or outdoors; and whether or not they are associated with exposure to animals, dusts, or pets. The history should stress whether or not eye or nasal or chest symptoms are present. A physical examination should include a detailed nose, throat, and chest survey. Repeated nasal smears are studied to rule out infection as a complicating factor. The pollinating period includes the tree season, April and May; the grass season, June and July; and the weed season, August to frost. Plantain, an important weed, pollinates during the grass season. Although many plants pollinate during the period from April to October, it is enough in the usual case to be concerned with the pollinating season of only 11 pollens. This information, together with awareness of a few common molds and dusts, usually suffices to make a diagnosis. We then confirm these findings by positive skin tests.

The 11 pollens, and the molds and dusts, are:

Trees
- Elm
- Maple
- Poplar
- Beech
- Birch
- Ash
- Oak
- Hickory

Grasses
- Timothy
- Plantain

Weeds
- Ragweed

Molds
- Alternaria
- Hormodendrum

Dusts
- House dust

Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Allergy, May 14, 1959.

TABLE I.—EFFECT OF RAGWEED POLLEN EXTRACT

Protein Nitrogen Units	Class A	Class B	Class C	Class D
10	Marked	Moderate	Slight	None
100	Marked+	Marked	Moderate	Slight
1,000	...	Marked+	Marked	Moderate
Top treatment dose (units)	500	2,500	5,000	10,000

TABLE II.—AVERAGE DOSE SCHEDULE

Dose Number	Class A	Class B	Class C	Class D
1	5	10	10	20
2	10	20	20	40
3	20	40	40	70
4	30	70	70	100
5	50	100	100	200
6	70	200	200	400
7	100	300	400	700
8	150	400	700	1,000
9	200	600	1,000	1,500
10	300	800	1,500	2,000
11	400	1,000	2,000	2,500
12	500	1,250	2,500	3,000
13		1,500	3,000	4,000
14		1,750	3,500	5,000
15		2,000	4,000	6,000
16		2,250	4,500	7,000
17		2,500	5,000	8,000
18				9,000
19				10,000

Thus, a total of 14 allergens are all generally needed for diagnosis and treatment.

Although intradermal testing is slightly more apt to produce constitutional reactions because of its greater accuracy and sensitivity, it is preferred to scratch testing. Extracts for testing are made up in strengths 10, 100, and 1,000 protein nitrogen units, and each patient is tested with the following dilutions (Tables I and II):

Approximate equivalents of the various units are given as follows:

1 Protein nitrogen unit (Cooke) = 2 Noon pollen units = 0.000,026 mg. of total nitrogen = 2.6 total nitrogen units = 1:500,000 diluting extract (pollen weight by volume)

By means of these dilution tests, one can judge the approximate degree of sensitivity of the patient, whether class A, B, C, or D. This classification regulates the rapidity of increase of dosage and the maximum dosage for each class for the season. This, of course, is a rule-of-thumb gauge. Some patients will not tolerate the scheduled dose. On the basis of local or general reactions of the preceding injection, the dose at each visit is adjusted to avoid large local or general constitutional reactions which are, at best, disturbing and, at times, dangerous. It takes from 12 to 19 injections to reach the maximum dose. With each new patient, preseasonal treatment is begun about three to five months before the expected onset of the season's symptoms, and then continued at intervals of from four to seven days. When the pollinating season begins, the top dose attained is then reduced by one-third and this amount is given weekly during the season. For example, when the top dose of 5,000 units is reached by August 10, the dose is reduced to 3,500 units and given weekly until the end of the season. This is known as the preseasonal method of treatment.

The perennial method, as its name implies, is an all-year-round treatment which is begun after the first year of preseasonal treatment. The maximum dose attained by the end of the previous season is continued every four weeks until the following August when injections are repeated at a reduced dosage until October. The previously lowered dose is again raised gradually to the maximum dose before the onset of the next season. The results are generally better with the perennial method than with the preseasonal method. These results tend to produce a more lasting immunity. Moreover, fewer injections are required for the year to maintain this immunity. Many reports have shown that with the perennial method the results are at least 20 per cent better than with the preseasonal form of treatment. However, after the eighth year of treatment, the results of the preseasonal or the perennial method are equally successful.

It is occasionally necessary to use the coseasonal form of treatment. When a patient presents himself with severe symptoms during the active hay fever season, injections are given every one to three days during the season. Small doses of from 5 to 20 units are used, increasing very gradually to a maximum dose of 100 units by the end of the season. This will often give gratifying results. At the end of the season, the regular preseasonal treatment schedule may then be followed, with injections given every two weeks until the top dose is reached. Thereafter, the perennial form of treatment is used until the following hay fever season.

Treatment Modifications

This, in brief, is the accepted method of treatment of hay fever. There are, however, many modifications that may be mentioned.

What of patients who have symptoms well after the regular pollen seasons in October and in November? Here there are several considerations, beginning with the possibility of molds. It is now generally agreed that molds have an important etiologic part in hay fever. Alternaria and hormodendrum are the most important molds because they include over 90 per cent of the probable incriminating agents. Any patient whose symptoms begin at the end of July or in October or November should be suspected of being mold-sensitive, and mold therapy should be included in the treatment schedule if the history is confirmed by positive skin tests with mold extracts. Another consideration may be the presence of infection, especially of the sinuses. Repeated nasal smears may well differentiate between the presence of allergy and of infection. It may also be necessary to include intradermal testing with the common inhalants and foods. In patients with unsuccessful response to treatment, a thorough search should be made for other offending allergens and combined treatment should be instituted as indicated. Foods causing symptoms should be avoided, and foci of infection in the upper respiratory tract should be sought for and eliminated.

In general, one may expect at least 85 per cent of the results will be satisfactory with the present accepted method of treatment. The 15 per cent of failures may be further reduced by studying the cases, avoiding foods, adding other inhalant allergens, and eliminating infection. In some resistant cases, the steroids are very useful for symptomatic treatment during the season. Since the hay fever season rarely involves more than two weeks of severe symptoms, the steroids may be used without fear of complications. Many patients prefer to vacation in so-called hay fever resorts instead of taking a long series of injections of several months duration. These patients, of course, run the risk of developing asthmatic complications. Their lot is not a happy one.

Much interest has been aroused recently by the repository type of treatment of hay fever, proposed by Mary Loveless, M.D., and others. In 1947, following an excellent review of basic immunologic principles in allergy, she[4] suggested a short booster preseasonal type of hay fever treatment. By limiting the seasonal dose to that amount of antigen which would lower the conjunctival sensitivity by a series of testing concentrations, it was found that most individuals needed far less therapy than was previously deemed necessary. The average patient achieved optimal results with 7 or 8 injections for a total dose of 5,000 to 10,000 protein nitrogen units. A modified Freund adjuvant was prepared consisting of mineral oil and Falba (a lanolin-like substance) emulsified with ragweed antigen. The immunologic response was gauged by the conjunctival threshold test. Of the 33 cases treated, 21 received results ranging from good to perfect. This, admittedly, was in its developmental stage and was not yet ready for general application.

By July, 1957, Loveless[5] felt that a single repository injection of an emulsified antigen could duplicate the results of conventional multiple injections. The average patient regained his protective titer following a single booster stimulation as well as he did with the 7 weekly injections.

At a meeting of the New York Allergy Society held in November, 1958, the repository form of hay fever treatment was discussed. Mitchell[6] presented a report on 30 cases, using material for treatment obtained from Dr. Loveless. He used an emulsified extract containing 60,000 units per cc. Conjunctival tests were done with dilutions of increasing strengths performed every five minutes. A positive reaction was interpreted as a reddening of the caruncle. Those patients with a positive eye test to the 10-to-20-to-40-unit concentration were labeled as very sensitive and received a total single dose of 5,000 units. Those with positive eye tests between 80- and 320-unit concentration were labeled of average sensitivity and received a top single dose of 7,500 units. Those with positive eye tests of 640 and above were given a single top dose of 10,000 units.

Brown[7–9] used a slightly different dosage. Patients with positive eye tests at 80 units were given a total dose of 2,500 units. Those with a positive eye test at the 640 level were given 5,000 units. Those with a positive eye test at 2,500 were given a top dose of 7,500 units. Those with an eye level above 2,500 were given 10,000 units. Mitchell reported excellent results in from 77 to 83 per cent, with a reaction rate of 35 per cent. Some patients developed residual lumps or nodules lasting for many months. He also reported that 29 of the 30 cases preferred the repository over the conventional methods. In 1958, Brown[9] treated 164 tree pollen cases with a single injection, reporting excellent results in 90 per cent of his cases: completely well, no symptoms and minimal reactions. In conjunction with the repository treatment, Brown[7] protected his patients with prophylactic doses of epinephrine, Sus-Phrine, and Chlor-Trimeton. Patients remained in the office for one hour following the injection. Six antihistamine tablets were prescribed over the next forty-eight hours. In another series of 38 patients,[8] only 2 developed mild reactions. In a voluminous report Brown[10] gave his unquestioning approval to the repository type of treatment. He feels that systemic reactions do occur, but he is not concerned because he thinks they are easily controlled and are less frequent with this type of treatment than with the conventional form of treatment.

We do not agree that all constitutional reactions are easily controlled, especially in patients after they have left the office. He reports a better than 90 per cent perfect result considering a failure any patient with any symptom whatsoever during the hay fever season. This is truly a phenomenal result, better than that claimed by Loveless, who reports results equal in effectiveness only to those achieved by conventional methods. However, Mitchell[6] admitted having had patients not only with lumps but also with 2 or 3 large abscesses. One patient had abscesses due to staphylococcus. Whether these injections might be carcinogenic was left for the future to answer. It takes a strong heart to give massive doses to new patients when there is the possibility that severe reactions may occur not only in the hospital but also later in the home. In summarizing the reports to date on repository treatment, we have one report by Loveless,[5] who claims effectiveness equal to conventional treatment; a second report by Brown,[7] who claims effectiveness greater than that achieved by orthodox methods; and still a third by Mitchell,[6] who claims results as good as those of Loveless but with a reaction rate of 35 per cent. Obviously this is a promising case, but the jury is still out. Until a firm verdict is returned, the conventional patterns of treatment must be considered the safe method and the present method of choice.

Conclusion

I quote, in closing, from the editorial page of the *Annals of Allergy*:[11] "For the moment, it appears from the literature, that the best way to treat hay fever is to have a patient with a normal nose. He must be relatively free of anxiety and conflicts. His other inhalant and food sensitivities must be minimal. It helps if he lives in an air-conditioned home and works in an air-conditioned office. His hobbies should preferably keep him indoors. He should like injections and be willing to pay for them. His vacation should be taken during the peak of the pollen season, in any pollen-free area. He should not object to symptomatic medicine which must give him excellent relief with an absence of side-reactions. Of greatest importance is a short season with a low pollen count, rain every three days, especially on the weekends."

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Discussion

Murray Dworetzky, M.D., *New York City.*—Dr. Dundy has given a most excellent and concise summary of the present treatment of hay fever. We often hear the term "modern concepts" rather than "current" or "present concepts." I prefer the latter terms since to call a thing "modern" implies that it is better than what has gone before, and this is not necessarily the case.

For instance, the current publicity about the repository method of hay fever treatment has aroused enthusiasm for a method which is said to consist of one visit to the office per year. It became evident at the meeting of the New York Allergy Society last November,[6] to which Dr. Dundy has referred, that while the results of the single repository injection treatment were certainly no better than those obtained with traditional methods of injections of aqueous extract, the repository method carried more risk. How much more is still to be evaluated completely. We must recognize that therapeutic risk is justified to a degree which varies directly with the seriousness of a disease. For example, in treating a disease which has a 100 per cent mortality, one might be justified in using a drug which kills 90 per cent of patients, if it cures the other 10 per cent. On the other hand, in the treatment of hay fever, which carries no mortality, safety must be the first prerequisite and one with which there can be no compromise. As Dr. Dundy has said, constitutional reactions are not to be taken lightly and are not always easily controlled. I agree with Dr. Dundy and with the remarks of Cooke,[6] who moderated the meeting to which we have referred, that at the present time the single repository injection is still in the investigative stage and is not ready for general use by practitioners, including those who specialize in the field of allergy.

Getting back to the traditional immunization treatment of hay fever, I would like to say a word about dosage. The dosage schedules which Dr. Dundy has shown us have been established on an empiric basis. We begin very low and gradually raise the dose to a level varying from 500 to 10,000 or more protein nitrogen units, depending on the patient's sensitivity. The upper limit is established in the interest of safety rather than on any clear-cut immunologic principle.

What, then, determines the lowest dosage level? Most allergists have the occasional patient who is so sensitive that he can never tolerate more than a tiny dose; yet these patients usually do very well. Therefore, one might question the need for raising the dosage to very high levels in the less sensitive cases. Perhaps most patients would do as well with smaller doses than are generally used and with even less risk of constitutional reactions.

The grading of patients from the markedly sensitive to the relatively insensitive may be a convenience in giving a rough idea as to dosages to be given to those patients, but in many instances it may actually give us a false sense of security. Each patient should be treated individually and his dosage determined by the degree of local and of constitutional reactions rather than by a dosage schedule. The most conservative approach to the immunization schedule, and the one to which I subscribe, is to treat all patients as though they were in the highly sensitive group, at least for the first 8 or 10 injections: beginning with small doses, raising them gradually, observing the injection site for local reactions in fifteen minutes, and questioning the patient carefully on the next visit about any local reactions he had after he left the office. If there is no reaction the dosage is increased. If there is a local reaction, consisting of slight swelling, the dosage remains the same. Following larger reactions the dosage is reduced. If the patient does not do well on the regimen, the dosage is raised cautiously the next year. No one would question the fact that this is the safest way, and, as stated before, safety should be the prime consideration in treatment.

I also endorse Dr. Dundy's preference for the perennial method over the preseasonal or the pre- and coseasonal schedules. Most allergists concede that the results with perennial treatment are better. Actually there is not a tremendous difference between perennial and the other methods, in terms of numbers of visits to the office. In any case, patients usually come to the office every three or four weeks from September through the following February, with a total of perhaps 6 or 8 additional visits, which is hardly a marked inconvenience.

As Dr. Dundy indicated, the examination of nasal secretions is a most helpful diagnostic tool in distinguishing between an infectious and an allergic episode. Respiratory infections occur with fair frequency during the pollen season but will often be mistaken for an allergic episode in a hay fever victim. The finding of neutrophils will prevent labeling the patient a poor result from immunization therapy and will lead to proper treatment of the infection.

It is interesting, and I think significant, that Dr. Dundy in his discussion of the subject has made practically no mention of symptomatic medication in the management of hay fever, with the somewhat surprising exception of steroids. I am sure that Dr. Dundy uses ephedrine, antihistaminic agents, and the many other useful nostrums with which the detail men plague us; but I think the omission of symptomatic medications in this discussion is testimony to the allergist's realization that in using them he is doing nothing to change the basic mechanism of the disease. Dr. Dundy's discussion was mainly of the specific management of hay fever, and this means removal of the allergens when possible, or treatment for immunization with extracts of these allergens. I hope that Dr. Dundy's reference to steroids in the treatment of hay fever was merely in recognition of this latest symptomatic medication in our armamentarium, although I am sure that he uses this potentially dangerous drug very rarely, if at all, in this problem. Certainly, adequate, if not ideal, symptomatic control may be obtained with less drastic medications, such as ephedrine, atropine, or antihistaminic agents.

Finally, to the editorial quoted in Dr. Dundy's closing remarks, describing the perfect hay fever patient, should be added that he should have no serious constitutional reactions. It is the physician's responsibility to do his utmost to prevent them.

Paul F. deGara, M.D., *New York City.*—I'd just like to mention the fact that in the last meeting of the American College of Allergists in March (1959) in San Francisco the topic of repository injections came up on a nationwide basis and the consensus there was very similar to ours here that caution is still necessary and that not enough experience is available at the present time.

It is interesting to me to notice that Ethan Allan Brown, M.D., has stated that in his opinion this method would have to remain in the hands of an allergist. It would never be possible for the general physician to use it.

All excellent things are as difficult as they are rare.—Spinoza

Radiologic Health Program, Erie County Health Department

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(From the Erie County Health Department)

WHILE radiation problems are by no means new to the public health field, it has been only since the 1940's that the use and presence of high energy radiation in the world has reached the point where radiologic health has become more than merely a series of personal protective measures.

Shortly after World War II the State Department of Health became involved directly in radiologic health problems, primarily the potential hazards related to the discharge of wastes from atomic energy facilities. In 1953 regulations went into effect controlling shoe-fitting fluoroscopes, and finally, in 1955, State Sanitary Code regulations were adopted, providing comprehensive control over all radiation installations under its jurisdiction.

The approach to radiologic health problems of the general population in New York State has been on the following basis:

1. Ionizing radiation is a harmful agent.
2. Ionizing radiation can cause a variety of illnesses and genetic changes in human beings.
3. There is no perfectly safe threshold level of radiation, since the effects of exposure are cumulative, but there are some maximum permissible allowances based on experimental work.
4. It appears that a large segment of the population is receiving radiation from various sources.
5. Certain radiation sources are amenable to control: industrial by the Labor Department; medical by the Health Department.

In 1955, the New York State Health Department, in chapter XVI of the State Sanitary Code, set some standards for radiation limits for persons affected by radiation installations, but specifically exempted radiation applied by licensed practitioners to patients for diagnosis and treatment. It holds local health departments responsible for determining the extent of human exposure from radiation installations and for regulating it.

Erie County Health Department

Our objectives have been to survey approximately 900 radiation installations under our jurisdiction for intensity of radiation emitted, and to recommend methods for decreasing exposure. In other words, a toxic agent is being used in our population for beneficial purposes, and so we are attempting to measure its occurrence and encourage the greatest possible economy in its use. We realize that human beings are subject to other sources of radiation, but since it is well accepted that damage from radiation is essentially cumulative, it will be worth-while to eliminate all unnecessary exposure.

The most significant features of chapter XVI include:

1. The requirement that each radiation installation be registered with the Health Department.
2. A definition of "maximum permissible doses."
3. Means of protection of operating and allied personnel. These will be discussed in detail later in this report.
4. Methods of protecting the patient by—Requiring filtration on diagnostic equipment.

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Requiring automatic timers on fluroscopy equipment and by limiting the focal skin distance to not less than 12 inches.

5. Directions for maintaining records and accounting for radioactive materials.
6. Descriptions of safety devices and special protective requirements for x-ray therapy and teletherapy rooms.
7. The requirement that, effective July 1, 1958, "no person shall apply radiation to a human being unless such person is licensed or otherwise authorized to practice medicine, dentistry, podiatry, or osteopathy under the provisions of the Education Law."

We are required routinely to reinspect all radiation installations at prescribed intervals varying from one to three years, depending on the type of installation. While the technics utilized will vary with the type of installation, the basic principles would be the same: (1) to determine the presence and intensity of stray ionizing radiation in the environment; (2) to evaluate the effectiveness of personnel protective measures; and (3) in the case of radioactive isotopes to detect any radioactive contaminants which might be spilled, be airborne, or be otherwise improperly or dangerously disposed of.

Equipment

Our personnel are equipped with three basic items of monitoring equipment. The Geiger-Mueller counter is one of the most sensitive instruments and is particularly useful for low and moderate radiation intensities. It would be much too inaccurate for monitoring medical and dental x-ray installations which are usually operated at a potential of 50 to 70 kv., with a current of about 10 ma. It can be used here, however, for scanning in adjacent rooms. The use of earphones makes it possible to scan without having to watch the meter. For monitoring the usual x-ray installation we use an ionization chamber survey meter of the type commonly called a "Cutie-Pie." Both the Geiger counter and the Cutie-Pie give us dose rate measurements, measured in milliroentgens per hour. The final type of equipment is the personnel dosimeter which we have in different ranges. The lowest range which goes up to 200 mr. would be used for monitoring our own inspection personnel whereas those with 5- and 20-roentgen ranges would be utilized in measuring the intensities within the direct or useful beam. These dosimeters measure total dose rather than a rate of dose as in the previously described meters.

So that we may make a realistic scatter determination, it is necessary that we use a masonite phantom representative of the specific portion of the patient being subjected to the roentgen-ray beam.

There are, of course, several features which must be considered in interpreting meter readings. In the case of x-ray installations which are operated only for seconds or portions of a second at a time, we must take into account not only the dose rate but the use factor as well so that our final calculations will be in actual total doses. Also, when considering the effect of radiation on the human body, we must calculate our dose in terms of rems which is the radiation actually absorbed by tissue. This is in contrast to roentgens which are by definition radiation doses measured in air. To correlate our meter readings which are actually air doses to the tissue absorbed dose, we must know the type of radiation being measured. In the case of x-ray installations we must know the operating conditions of the equipment, and in the case of isotopes we must know the source. The instruments themselves must also be maintained in proper operating condition and must be calibrated routinely with known sources of radiation.

Program Findings

The radiologic health program of the Erie County Health Department was officially launched in the spring of 1956. The first phase of the program centered on the shoe-fitting fluoroscope. Of the 54 then operating in Erie County, not one was found in perfect operating condition. Since this type of equipment is now outlawed in New York State and no known installation is in operation in Erie County, there would be nothing gained by summarizing our findings in detail. Our results did establish the fact that these installations constituted a serious hazard and by their very nature were undesirable.

We then turned to a survey of those installations which are necessary in medical practice. Since the dental radiographic units were more standardized and presented the least complicated problems, we felt these would be best for "getting our feet wet." We have since inspected 585 dental installations. Since the provision of filtration was a relatively new requirement, it was not a surprise to find that approximately 75 per cent of these installations lacked the required filtration at the time of the initial visit. Since the installation of the aluminum disks was a relatively simple matter and the supply houses made them readily available, most, if not all, have already made this correction. In the beginning there was some confusion relative to the inherent filtration of the x-ray tube itself, but the manufacturers have since made complete information available.

Personnel protection presented a more serious problem. Dental offices are generally small in area. The x-ray machine is generally an adjunct and it is an exceptional dental office that has protective shielding included in its basic design and layout.

Based on measured dose rates of exposure of the operator to scatter radiation and the operator's estimate of the frequency of use of the equipment, no operator would appear to be receiving in excess of the maximum permissible dose of 300 mr. per week. However, the majority of operators were receiving considerably more exposure than was necessary. While the Sanitary Code contains tables of maximum permissible doses of exposure to radiation workers, the most desirable dose of unnecessary radiation is zero.

Although the provision of filtration is primarily for the protection of the patient, it is also an important factor in reducing the intensity of scatter. The operators of 88 per cent of the inadequately filtered installations were subjected to dose rates in excess of 1,000 mr. per hour whereas only 58 per cent of the operators of the filtered installations were subject to this dose rate. This is not to infer that 1,000 mr. per hour is a reasonable rate of dose.

With respect to actual accumulated doses, 43 per cent of the inadequately filtered installations were subjecting their operators to a weekly dose in excess of 30 mr. Of the filtered installations 29 per cent subjected their operators to such a dose.

Little has been done to protect operating personnel effectively. While electric cords have been lengthened to permit the operator to stand a greater distance from the machine, it is felt that this is only a temporary solution and that the operator will gradually adopt a closer position. By far the most desirable would be the provision of radiation shields, including protective windows, so that the desired contact with the patient could still be maintained without sacrificing safety of the operator.

While the code does not control or limit the dose to the patient, we felt that the operator should at least be aware of its extent. The inadequately filtered installations delivered an average dose of 4.3 r per exposure, while the filtered installations delivered an average dose of 1.9 r per exposure. It is hoped that with high speed films and better and more controlled developing technics these exposures can be reduced drastically.

A survey of the 31 x-ray-equipped podiatrists in Erie County produced results similar to those of the dental survey, although the podiatry equipment is used much less frequently (the maximum weekly dose to the operator was 15 mr., the average being less than 5 mr.), and the dose per exposure to the patient was also much less, the maximum being 1.7 r and the average being slightly over 0.1 r.

The inspections of some 125 diagnostic medical units could not be reduced to as simple statistics as was the case in the dental x-ray units where the use of the machine does not vary nor does the usual operating tube voltage and tube current. Of these 125 units, 25 were radiographic, 50 were fluoroscopic, and 50 were combination radiographic-fluoroscopic units.

The Sanitary Code requires that in the case of fluoroscopes the dosage rate at the table top shall not exceed 10 r per minute. This is by no means a purely arbitrary figure but is actually a practical maximum operating level. It was expected at the time the code was drafted that most fluoroscopes would be found so adjusted and so operated that the dose to the patient would be in the order of 5 r per minute. Actually, of the 87 units actually checked for compliance with this particular requirement, 43 or approximately 50 per cent of the units were adjusted to provide a table top dose of 5 r or less per minute. Sixty-nine or just under 80 per cent of the units complied with the required maximum of 10 r per minute.

It is interesting to note that all of the 11 units which lacked adequate filtration had excessive table top dosages. In fact, 15 r per minute was the minimum dose, while 8 units had a dose of 20 r per minute or greater.

In the case of many of the older fluoroscopic units, the operators were unaware of and had no ready means of determining or setting the tube current. In most cases this had been preset by the installer. In at least one fluoroscopic unit a tube current in excess of 15 ma. was in use. Without doubt, lowering the tube current to 5 ma. or less and providing the required filtration would bring the table top dosage to within the prescribed limits.

As far as the physician or radiologist operating the machine is concerned, it would appear that his exposure can be held well below tolerable or maximum limits providing he takes such precautions as wearing leaded rubber aprons and leaded gloves which are maintained in good condition. We would point out, however, that in two fluoroscopic installations we found ordinary window glass being used in the viewing screen. These were both old machines. The original leaded glass had probably been cracked or damaged and the replacement turned over to an unsupervised layman who was not aware of the factors involved. This means that for years the physicians involved with the operation of these two machines had been continually putting their faces in the path of the direct beam. Such occurrences have been reported elsewhere, even in hospitals, though the total number of such occurrences might be low. The hazards of this type of condition are such that all of us should exercise extreme caution when called on to operate a unit we are not familiar with, particularly if it is an old machine.

Although less serious, another significant and more prevalent item would be the failure to have an unilluminated (preferably $^1/_4$-inch) margin on the viewing screen. The absence of such a margin probably indicates that the useful beam is spilling over and subjecting a portion of the viewer's body to the useful beam. We would also point out that the scatter coming over and around the viewing screen is by no means insignificant even in proper installations. It was the rule rather than the exception for the dose rate over the top of the viewing screen to be in excess of 1,500 mr. per hour.

The radiographic installations did not present nearly the serious problem that the fluoroscopic installations did. Thirteen of the 25 installations had the required filtration, and most of these (8) were exposed to a dose rate from scatter of less than 100 mr. per hour. The maximum exposure rate of these 13 was 300 mr. per hour. Those lacking the filtration did not fare so well, 4 of the 12 being subjected to dose rates in excess of 1,500 mr. per hour and only 4 being subjected to dose rates less than 900 mr. per hour.

However, when considering the operators of the units, all 25 received well below the maximum permissible dose, 24 receiving less than 10 mr. per week and the 25th receiving less than 20, and this from a unit that lacked filtration.

Of the 19 x-ray therapy installations, most had adequate shielding to protect the operator—none had ignored the problem. In the case of 2 of the 6 deep therapy units (where the units are operated at a potential above 150 kv.) the required interlocks were not provided to preclude a person from entering the room without turning off the equipment. Probably the biggest source of trouble was shielding doorways. Too often attempts were made to place lead shielding on doors without giving due consideration to the added stress being placed on the hinges. As a result, the hinges would give slightly, the door would sag, and radiation would escape.

Inspection of those 8 medical therapy installations utilizing encapsulated radium sources uncovered one serious hazard. Too much dependence was being placed on the shielding provided by the lead pigs used for storing the radium when not in use.

In one installation, the radium sources totaling 100 mg. were stored in a pig kept in a walk-in linen closet; 1,300 mr. per hour of gamma radiation were leaking through the pig in the vicinity of the hinged portion of the cover and 70 mr. per hour were present at the doorway.

In another installation sources totaling 25 mg. were stored in a pig kept in a filing cabinet in the secretarial office. Immediately adjacent to the pig we detected 60 mr. per hour of radiation, while just outside the cabinet door the dose rate was 3 mr. per hour. Fortunately, the secretary's desk was at the far end of the room so that she was not continually subjected to this concentration.

In another situation, a 20 mg. plaque was stored openly in the top drawer of the physician's desk. The dose immediately over the working area of the desk was 50 mr. per hour, while at the sitting position the dose was 6 mr. per hour.

In each of these as well as in other cases, it took only a short conference to demonstrate the disadvantage of the existing storage facilities. In each case a more suitable, remote storage location was made available, and in some cases the lead pigs were replaced with more efficient ones.

There also appears to be a problem where a physician's office may not have a definite area reserved for therapy treatment, particularly in the older offices. In such cases, the source may be applied to the patient, who is then returned to the waiting room for the prescribed time. During the actual treatment he may sit immediately adjacent to another patient who would be unknowingly absorbing an unknown dose.

The 15 hospitals located within Erie County presented quite a radiologic health workload in themselves. There were 55 radiographic units, 31 fluoroscopic units, 14 therapeutic units, and 7 locations with radioactive sources. While the radioactive materials consisted primarily of Ra^{226} and I^{131} there were also quantities of Cr^{51}, Au^{198}, Co^{60}, Fe^{59}, and K^{32}.

Basically, the survey results of the radiographic and fluoroscopic installations were similar to our findings in the individual medical installations, although problems which might affect the general public were much more prevalent in the hospitals.

With respect to protection of operating personnel, conditions varied greatly from installation to installation, even within the same hospital. While some installations approached perfection, it was not uncommon to find the unilluminated margin missing on fluoroscopic units, no added or insufficient filtration, defective or badly worn leaded aprons and gloves, and ineffective shielding, particularly in the older installations. It was also found that cones or other collimating devices were missing from many units.

Of serious import were the occasional findings that useful beams were being directed at interior walls subjecting adjacent rooms to doses as high as 700 mr. per hour in the path of the beam. In one instance the adjacent room was occupied by 2 stenographers who were periodically being subjected to this exposure. Radiation from scatter was measured in corridors at rates as high as 300 mr. per hour near the entrance door. In one hallway, we measured an exposure rate of 900 mr. per hour. An adjacent dressing room was receiving a 100 mr. per hour dose rate from a fluoroscopic unit. Portable units also presented a sizable problem from the standpoint of shielding. In general, we found that radioisotopes obtained through AEC licenses were handled very well and with extreme care. In fact, the only recommendation we have made to date in this regard is for improved record keeping for the accounting of the receipt, use, storage, and disposal of radioactive material. Ra^{226} was frequently not being handled with equal care, perhaps due to familiarity, although it is one of the most hazardous of radioactive materials. In fact some institutions are of the mistaken impression that radium is exempt from registration.

In one instance 375 mg. of Ra^{226} in lead pigs were being stored by a hospital in an ordinary steel filing cabinet located in a room used as a meeting room, a classroom, and for secretarial and stenographic purposes. At the time of our visit, a stenographer was working at a desk in this room. Just outside the cabinet door our monitoring instruments indicated a dose rate of 100 mr. per hour. At the stenographer's desk which was occupied, we noted a dose rate of 35 mr. per hour. This condition was terminated immediately by provision of more effective storage and shielding facilities.

At another hospital 250 mg. of Ra^{226} in lead "bombs" were stored in a steel locker in the surgeon's dressing room. In spite of the protection afforded by the lead shielding, radiation emanating from these sources was excessive. Just outside the cabinet door we measured gamma radiation at an intensity of 200 mr. per hour. It was then learned that this room was also being used as a lounge by medical and allied personnel who, of course, would be unaware of the radiation they were being subjected to. The adjoining room used for postoperative recovery was also receiving radiation from this source at a rate of about 2 mr. per hour. Similar readings (2 to 5 mr. per hour.) were also noted in other adjacent rooms, including the rooms immediately below the room in which the radium was being stored.

Another startling fact brought out during our visit was the admission by some residents that they were using these lead "bombs" for door stoppers in their rooms. This would occur when they removed radium from a patient in the evening or during the night but delayed returning it to the storage locker until the following morning.

A second serious hazard involved in the use of radium is the possibility of leakage as well as of actual breakage. While we have no records of any actual leakage or breakage, we can only hope that such accidents have not occurred. The real danger of a leak in a radium needle or capsule is, of course, the fact that radioactive radon gas is given off. Such leaks are not uncommon, particularly when we consider the long useful life of these sealed sources. Testing for leaks appears to be neither a standard nor a routine practice by those using such sources. Such a test may be made simply by wrapping the source in absorbent material such as cotton or filter paper, leaving it for a day, preferably in a small sealed container, and then checking the absorbent material with a Geiger-Mueller counter or other suitable instrument.

The actual breaking of a needle or capsule would constitute a much greater hazard. As a precautionary measure, radium hazard tags have been developed, not only to identify the source, but also to list emergency procedures to be followed in case of an accident. It is unfortunate that such tags are not receiving more widespread recognition and use.

Another institutional problem which may not be receiving the attention it deserves is that of the patient rendered radioactive during treatment by injection of pellets or by the use of needles or plaques. The Sanitary Code is very specific on the handling and labeling of cadavers containing radioisotopes, but how often is a radioactive patient returned to his room to expose his roommates, the attending physicians, nurses, and aides, as well as visitors, to radiation.

Conclusions

It is evident that more medical uses of radiation are being developed all the time and that these efforts should be encouraged. It is important however, that the licensed practitioner know and recognize the potential hazards involved in the use of radiation. Recognizing the hazards, he has both a moral and a legal responsibility to see that unwitting persons, including his own employes, are not subjected to unnecessary and avoidable radiation, no matter what the intensity, and certainly that he take steps to protect his own person from avoidable radiation. There remains much to be done to provide more effective shielding, particularly in the dental offices, and to reduce further exposure of the operating personnel to scatter, even though present exposures may be within present permissible limits.

In hospitals and institutions there is need to impress the administrative heads of the necessity for the radiation safety office to devote more time to this increasingly important task and that its recommendations not be compromised for economy. There is also need here for a continual education program to alert all personnel to and to stress the need for radiologic safety precautions in the handling of radium and other radioactive materials.

The physician must also see that his patients are exposed to the smallest total amount of radiation consistent with good diagnosis and treatment. He should know the output of his machine and materials. New machines with higher potentials, improved filters, high speed films, and improved developers all produce better films with less radiation of the patient. Physicians should also be careful to avoid repeating roentgenograms when previous results are available from other sources.

Discussion

Theodore Rosenthal, M.D., *New York City.*—The paper by Dr. Thomas and Mr. Friedman is a very complete description of a comprehensive program on radiation control. The authors should be complimented on it. Our experiences in New York City parallel closely those of the Erie County Health Department.

Several comments have occurred to me as the paper was read. The authors refer to the oft-quoted statement that "there is no perfectly safe threshold level of radiation." This statement is quite true but when presented without qualifications is apt to be alarming. As practical public health workers, every one of us realizes that there is a calculated risk inherent in many of the important diagnostic procedures used daily in medicine, and to do without roentgen rays, for example, would be unthinkable.

In the New York City program there is less emphasis on radiation measurements as such. It has been found that if the kilovoltage and milliamperage of an x-ray machine are known and if the inherent filtration of the tube is also known, the output corresponds very closely to the value given in a National Bureau of Standards table.* It is only where these factors cannot be predetermined that we find it necessary to take measurements, thereby eliminating considerable loss of time and inconvenience to the user of the equipment. For persons occupationally exposed we are now thinking in terms of 100 mr. as the maximum permissible dose per week.

We certainly agree that the most desirable solution to the problem of exposure of operators of dental x-ray equipment would be the use of radiation shields, including protective windows. We were quite surprised to note that window glass had been found in a view screen; to date, we have not found this substitution made in our part of the country.

In many places the authors refer to dose rates in milliroentgens per hour at occupied locations. We prefer to avoid this terminology because an exposure of hundreds of milliroentgens per hour in terms of seconds still constitutes a relatively small exposure to the individual, whereas the statement of dose rate in hundreds of milliroentgens per hour can sometimes be alarming if the time of exposure is not indicated.

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* National Committee on Radiation Protection: X-Ray Protection, Handbook 60, National Bureau of Standards, table 4, p. 16.

Reference is made to the direction of useful beams at interior walls beyond which are occupied rooms. We find that such occasions usually occur only where chest x-ray films are being taken, and that a more serious problem generally exists where an x-ray room is installed on the floor above an occupied room. In an old building with wooden floors this can be quite serious because of the much heavier exposure used in technics where the beam is pointed downward.

With regard to the consideration of fluoroscopic units not having the specified border around the illuminated screen, we have standardized on a distance of 15 inches from the panel to the fluoroscopic screen; otherwise different inspectors will arrive at different conclusions with the same equipment. After observing many fluoroscopes in use, the 15-inch distance was agreed on in terms of the number of persons so examined. The difference between an examination with the gonads unshielded as compared with those in which the gonads are shielded can result in an increased gonadal dose larger by a factor of 50. This should have an important bearing on the total population dose in any community.

Our experiences in New York may be summarized as follows: The program, operating under a new portion of the Sanitary Code which went into effect October 1, 1958, required registration with the Health Department by owners or persons in charge of all equipment emitting ionizing radiation. As of May 1, 1959, the following had registered with the Department of Health and paid the required fee:

Physicians	4,775
Dentists	6,115
Podiatrists	431
Veterinarians	69
Osteopaths	61
Hospitals	24
Industrials	145
Chiropractors	5

Not included in these totals are hospitals and other types of nonprofit installations which are exempted from payment of the statutory fee, although they registered their equipment with the Department of Health.

At the inauguration of the program registration forms were mailed to approximately 30,000 potential users in the medical and dental professions and in industry. The surge of telephone calls as a result of the mailing forced us to provide a bank of telephones and a crew of sanitarians to man them. The phone calls began on a note of protest and resistance, particularly from the dental profession, which was organized against the program in one district. Each one asked the same question . . . "What am I getting for my $15?" Usually an explanation of the program goals, pointing out that there was no intent to curtail use of x-ray equipment, resulted in agreement that "this was a good thing." After a week or ten days the character of calls changed from one of protest and resistance to calls for assistance in filling out the survey form and clarification of the code, with many physicians and dentists showing increased interest in improving the safety of their installations, particularly for themselves and for their aides.

An interesting note is that many doctors returned their registration forms stating they were not required to register as they did not use x-ray equipment, only a fluoroscope; in these instances it was necessary to call them up and advise them that they fell within the scope of the program. They registered!

It was also amazing that about 20 doctors and dentists from upstate New York cities and villages who were inadvertently included in our mailing list, which was obtained from the New York State Department of Education, simply filled in the form and paid the fee without questioning the right of the City of New York to register their equipment.

The next phase of the program is the tabulation and analysis of the findings from this survey and the initiation of the inspection program which was begun with the hospitals and institutions within the city. This work will be done by the Radiation Control Unit, which consists of a total of 18 persons.

I should like to re-emphasize and underline the importance of the conclusions of the authors of this most interesting paper. Only by having all of the individuals concerned with the use of ionizing radiation understand fully the nature of the modality employed, the actual and potential hazards involved, and the proper methods for shielding and protection, can our objectives be attained. This, of course, requires continuous and relentless information and education programs to all concerned in this activity.

Roentgen Diagnosis of Suprarenal Densities

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THE purpose of this paper is to present some criteria which we have found useful in the identification of radiographic densities in the suprarenal space. With the rapid advance in knowledge of disease of the adrenal glands, the need for accurate diagnostic methods has increased. Although a study of the differential diagnosis of renal disease is not included, many of these criteria can be applied to the diagnosis of tumors of the upper pole of the kidney.

Method

The injection of gas into the retroperitoneal space by the precoccygeal route, either alone or in combination with excretory urography, retrograde pyelography, aortography,[1] gaseous distention of the stomach,[2] or tomography, aids in the localization of retroperitoneal tumors and in the elucidation of confusing shadows produced by other organs. The precoccygeal method of gas injection is a simple and relatively safe procedure which provides contrast about both adrenals.[3,4] It is regrettable that serious side-effects have been reported following its use but we feel that serious sequelae can be avoided if the accepted technic is strictly adhered to. A total of 857 injections have been made by members of the urologic divisions* without fatalities or serious complications.

Interpretation

Some of the difficulties of interpretation are:

1. The normal adrenal gland is a small structure offering little contrast on the x-ray film.
2. The adrenal gland varies markedly in size, weight, and position in the normal individual.[5]
3. The amount of periadrenal fat may be increased, especially in the obese patient, causing a large radiodensity which may be misinterpreted as hypertrophy or tumor.
4. Because of ascent and absorption, the concentration of gas about the adrenal is constantly changing.
5. Adjacent structures on both sides may cast shadows over the adrenals and make differential diagnosis difficult.
6. Retroperitoneal inflammation or infiltration with tumor tissue may prevent ascent of the gas.

VISUALIZATION OF ADRENAL GLAND.—The normal adrenal shadow is rarely seen on the plain roentgenogram but it may be outlined after gas has been injected into the retroperitoneal space. It is visualized as a faint, slightly irregular, triangular density which may have radiolucent areas as the result of gas lodging in the periadrenal fat. It usually lies above and slightly medial to the upper pole of the kidney. However, aberrant positions are not uncommon, and we have found it on the posterior aspect of the upper pole of the kidney and overlying the renal pedicle. The right adrenal gland lies between the liver and the vena cava. The left adrenal gland is posterior to the fundus of the stomach, medial and inferior to the spleen, and posterior and superior to the

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Presented at the 152nd Annual Meeting of the Medical Society of the State of New York, New York City, Section on Urology, May 16, 1958.

* Section of Urology, Division I and Division II, Kings County Hospital, 1953–1958, 520 insufflations; Brooklyn Hospital and Veterans Administration Hospital, 1951–1953, 200 insufflations;[3] Brooklyn Hospital, 1953–1958, 157 insufflations.

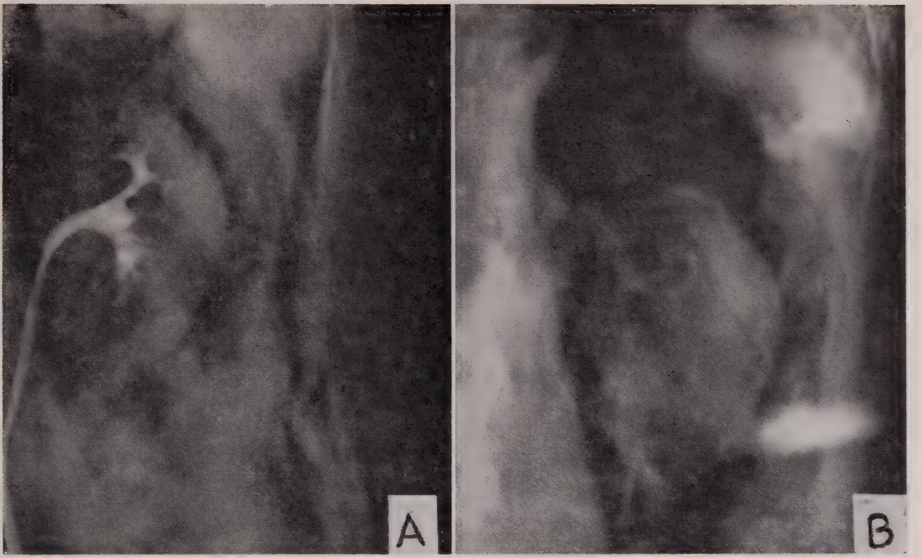

FIG. 1. Changes in radiodensity with different concentrations of gas. (*A*) Dense periadrenal fat outlined by gas. (*B*) Outline of a normal adrenal and elimination of fat shadow in same patient four hours later.

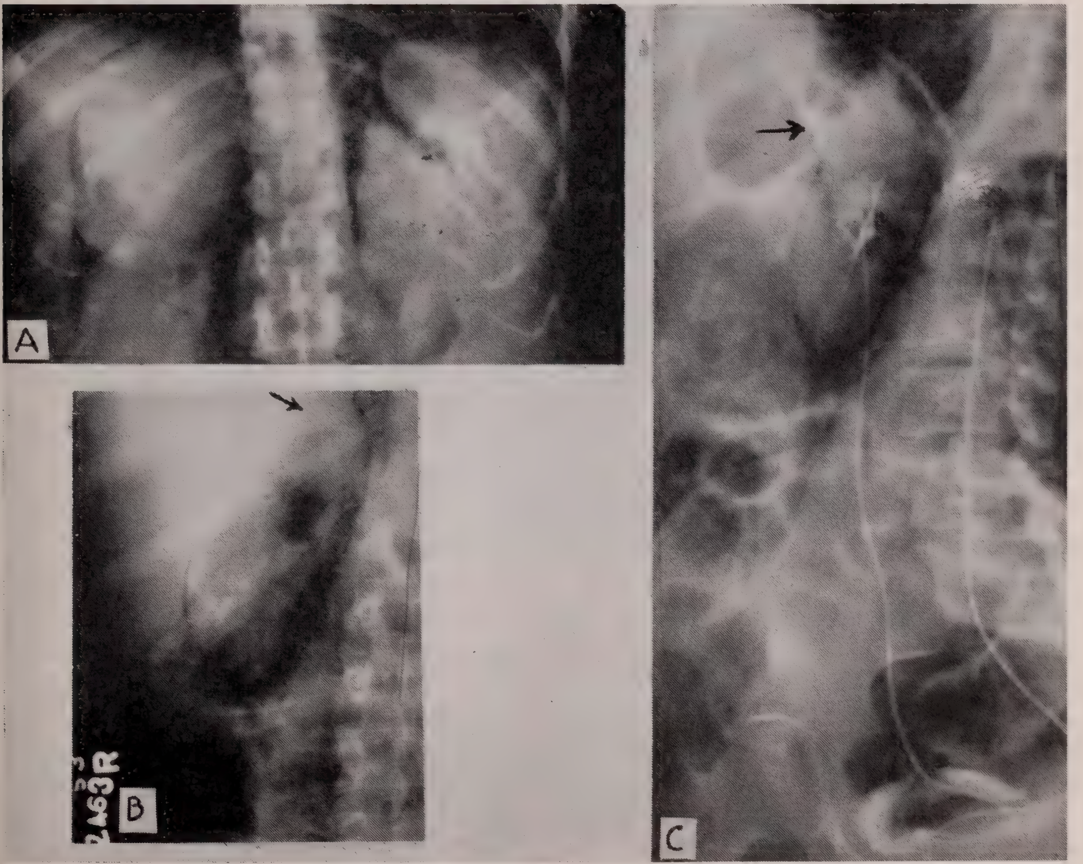

FIG. 2. Gas study revealing (*A*) large right adrenal tumor (pheochromocytoma) with smooth outline and homogeneous density and (*B*) small right adrenal tumor (pheochromocytoma). (*C*) Oblique study on same patient.

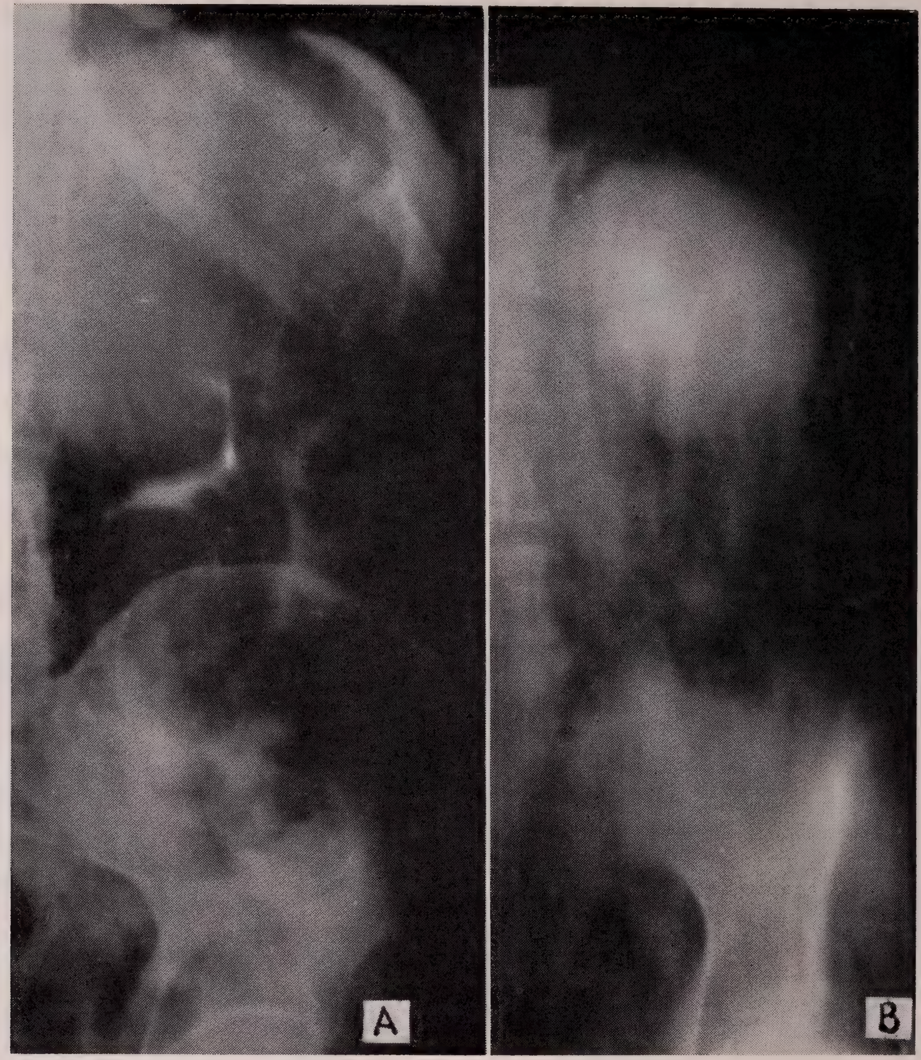

Fig. 3. (*A*) Left adrenal tumor (cortical adenocarcinoma) with failure of gas to ascend around it. (*B*) Tomogram of same patient.

tail of the pancreas.

The amount of adipose tissue surrounding the adrenal gland is variable. An abundant quantity of thickened periadrenal fat may cast a large suprarenal density that may be misinterpreted as hypertrophy or tumor since it is often seen in patients suspected, because of their adiposity, of having Cushing's disease (Fig. 1A). We have surgically explored 4 patients because of this finding. Dense periadrenal fat has a feathery appearance, is not of uniform density, is irregular in outline, and does not displace the kidney.

The radiodensity changes with varied concentrations of gas (Fig. 1). To demonstrate this phenomenon, hourly serial roentgenograms may be necessary. An adrenal tumor causes an oval shadow which is smooth in outline, homogeneously dense, and constant in all studies (Fig. 2). In order to identify a small neoplasm it is helpful to compare the contrast on both sides. A large tumor may displace the kidney downward and also prevent ascent of gas about it because of infiltration (Fig. 3). If the gas is able to circumscribe a large opacity, it is a

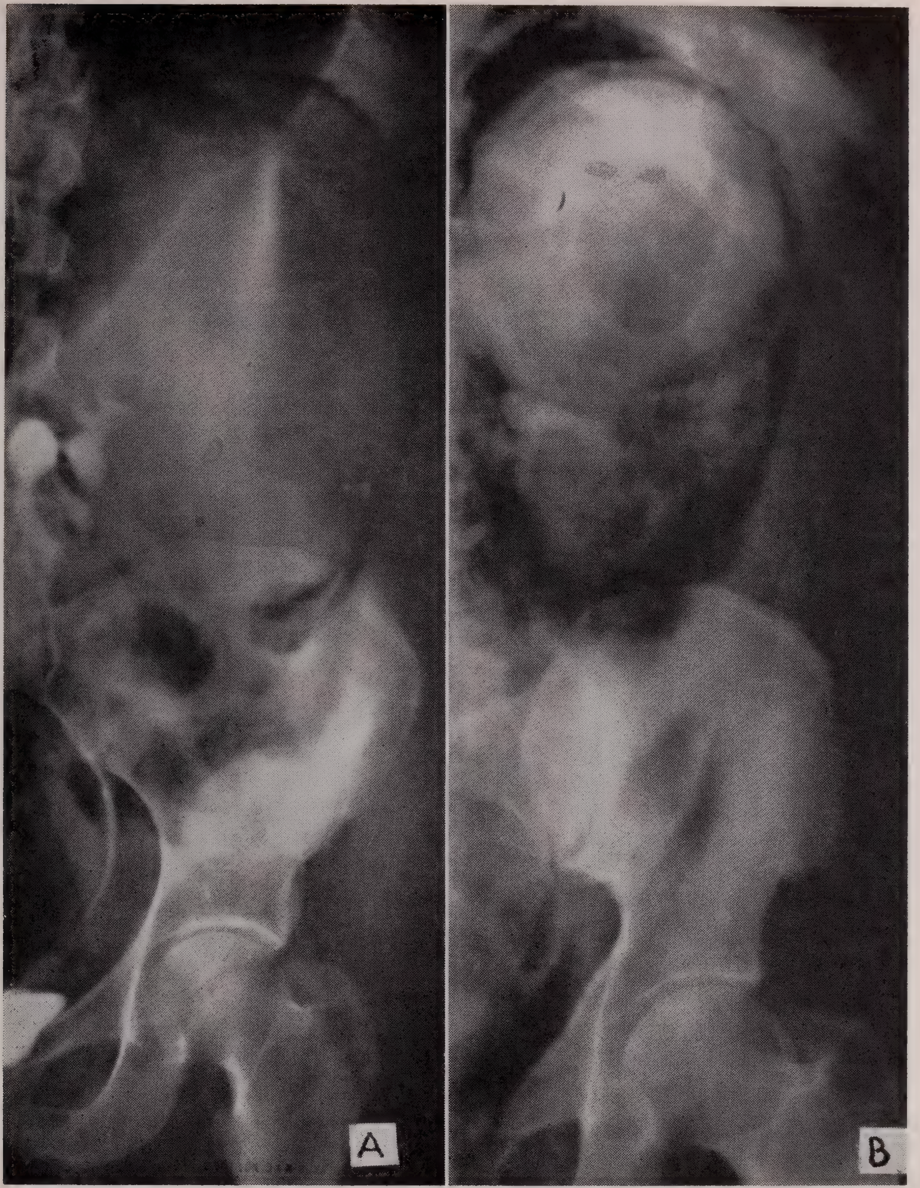

FIG. 4. (*A*) Left adrenal tumor (benign cyst) and ascent of gas around it. (*B*) Left renal cyst and ascent of gas around it.

sign of benignity (Fig. 4).

Calcification may occur following infection and in cysts or tumors of the adrenal gland. Calcification of the left adrenal gland is shown in Figure 5A. On 2 occasions we have seen calcifications in the right suprarenal area which were initially diagnosed as Echinococcus cysts of the liver. On both occasions the correct diagnosis was calcified adrenal cyst. Pneumoretroperitoneum is necessary for correct interpretation since it allows visualization of the posterior position of the tumor and helps distinguish it from the liver shadow (Fig. 6).

OTHER DENSITIES IN LEFT SUPRARENAL SPACE.—*Fundus of Stomach.*—The fundus of the stomach may appear as a constant density, thus adding confusion to the interpreta-

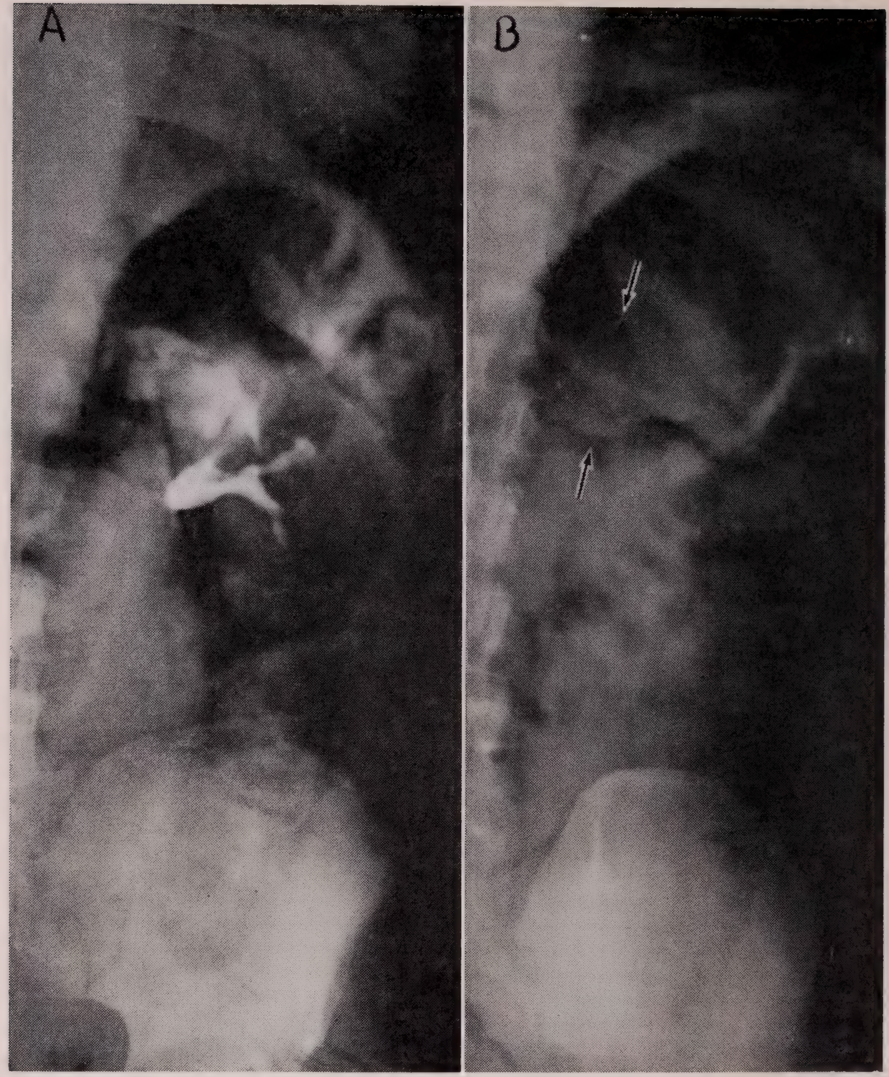

FIG. 5. (*A*) Calcification in left adrenal gland. (*B*) Detached pole of left kidney.

tion of shadows in this area. It varies in size, shape, and position and is caused by a puddling of gastric contents in the dependent fundus when the patient is supine. It usually is round in shape and smooth in outline and lies a few centimeters above and slightly lateral to the upper pole of the left kidney (Fig. 7A). Its shadow may be accentuated by the introduction of gas into the retroperitoneum, which gives it the appearance of an adrenal neoplasm (Fig. 7C).

It may be eliminated by two means: (1) by a flat plate of the abdomen taken in the erect position, thereby making the pylorus dependent or (2) by distention of the stomach with gas. The latter is a simple and satisfactory method, best accomplished by giving the patient a mixture of sodium bicarbonate and tartaric acid by mouth. A roentgenogram is made a few minutes after the mixture has been swallowed. A combination of distention of the stomach and retroperitoneal insufflation often outlines the left suprarenal space, thus aiding in the resolution of obscure suprarenal shadows (Fig. 8).

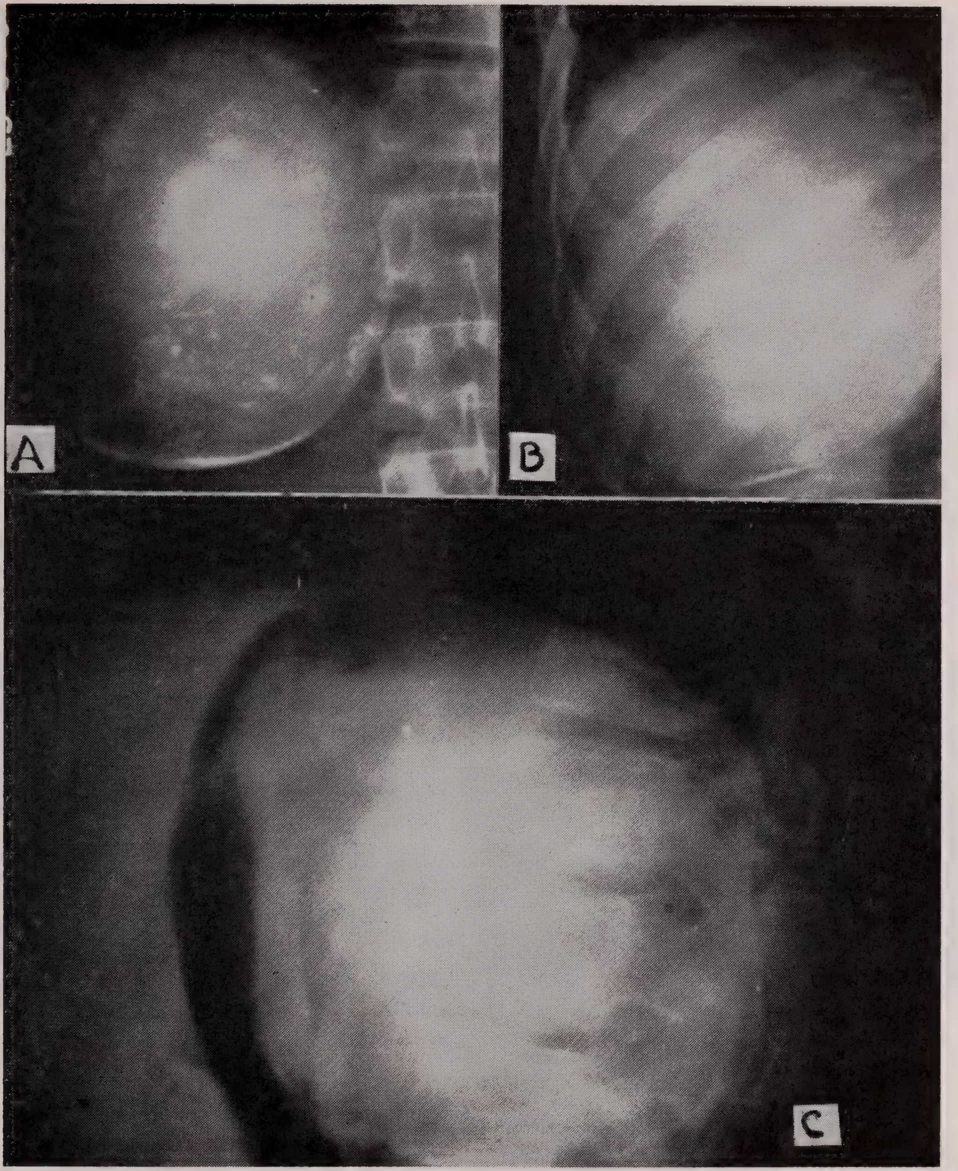

FIG. 6. Two examples of calcified cyst of adrenal gland (*A* and *B*). (*C*) Lateral film of *B* after retroperitoneal insufflation showing posterior position of tumor and ascent of gas anteriorly.

Spleen.—The normal splenic shadow is not seen below the costal margins on a flat plate of the abdomen. Although the situation is not common, an enlarged spleen may extend posteriorly, displacing the kidney inferiorly, and giving the appearance of a suprarenal mass (Fig. 9). We have seen this condition on 5 occasions and explored the first 3 surgically; it is interesting that the spleen was not palpable on abdominal examination. In these instances roentgen visualization may show the stomach to be displaced medially and the splenic flexure of the colon to be pushed inferiorly.

Pancreas.—Goodwin, Moore, and Peirce[1] report a case of a left suprarenal density which on exploration proved to be the tail of the pancreas. We have not encountered this,

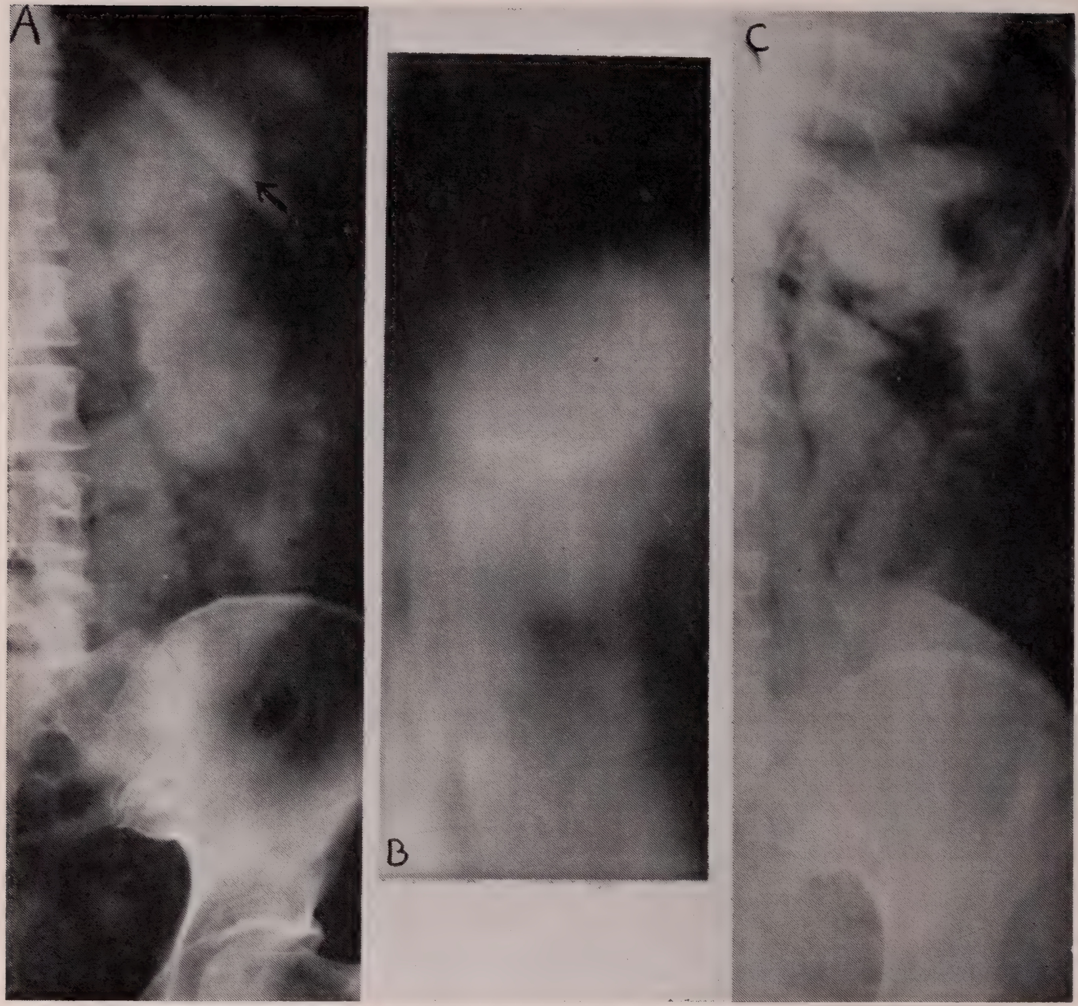

FIG. 7. (*A*) Flat plate showing outline of fundus of stomach. (*B*) Tomogram of same patient with outline accentuated. (*C*) Outline of fundus enhanced by retroperitoneal insufflation.

but we have seen roentgenograms in which large pancreatic cysts caused downward displacement of the kidney (Fig. 10). We explored these patients and can at this time offer no criteria for distinguishing these shadows from those caused by tumors of the adrenal gland.

Upper Pole of Left Kidney.—Figure 5B is the x-ray film of a patient with a traumatic fracture of the upper pole of the left kidney. The dissociated upper pole, found at surgery, causes the x-ray appearance of a tumor of the adrenal gland.

OTHER DENSITIES IN RIGHT SUPRARENAL SPACE.—*Liver.*—The liver usually produces a shadow distinct from the adrenal. On rare occasions a lobe may project posteriorly and appear as a suprarenal density (Fig. 11A). Its superior and lateral position, together with identification of the adrenal outline, aids in its identification.

Duodenum.—A density caused by the second portion of the duodenum may be seen. This shadow is elliptic in shape, smooth in outline, and usually situated at the level of the second lumbar vertebra. It can be distinguished from the adrenal shadow by its medial position and a normal adrenal outline above the kidney (Fig. 11 B).

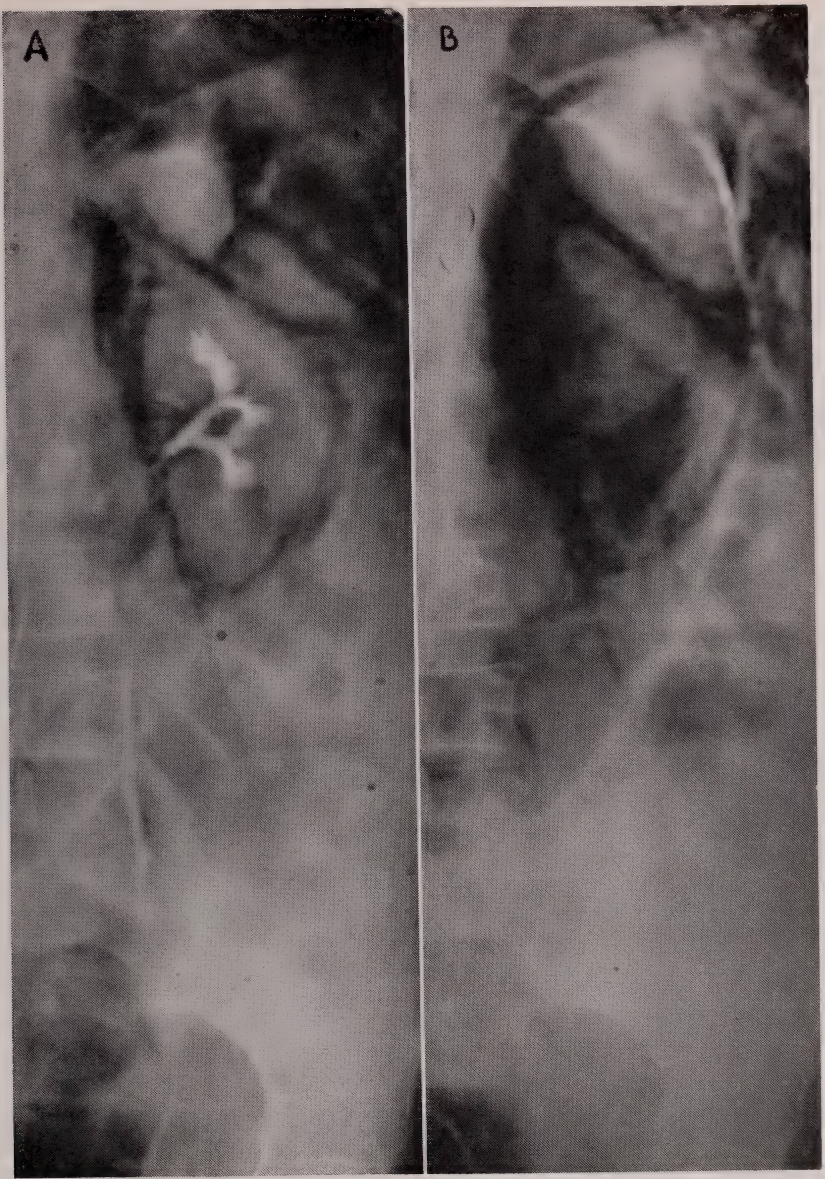

FIG. 8. (*A*) Density above left kidney, probably caused by a combination of shadows of fundus and spleen. (*B*) Density is eliminated and spleen is clearly seen in same patient after distention of stomach with gas. (*Reprinted by permission from J. Urol., May, 1955.*[2]

Comment

The interpretation of suprarenal densities in roentgenograms is difficult due to wide variations from what is accepted as normal. We have found retroperitoneal air insufflation and dilatation of the stomach with gas to be of help, but equally important is the awareness that structures other than the adrenal glands may cause shadows in the suprarenal areas and that these shadows may be enhanced rather than eliminated by retroperitoneal insufflation. Most of the patients were explored surgically, and, as noted, on 4 occasions the suspicious mass was found to be thickened periadrenal fat and on 3 occasions to be the spleen.

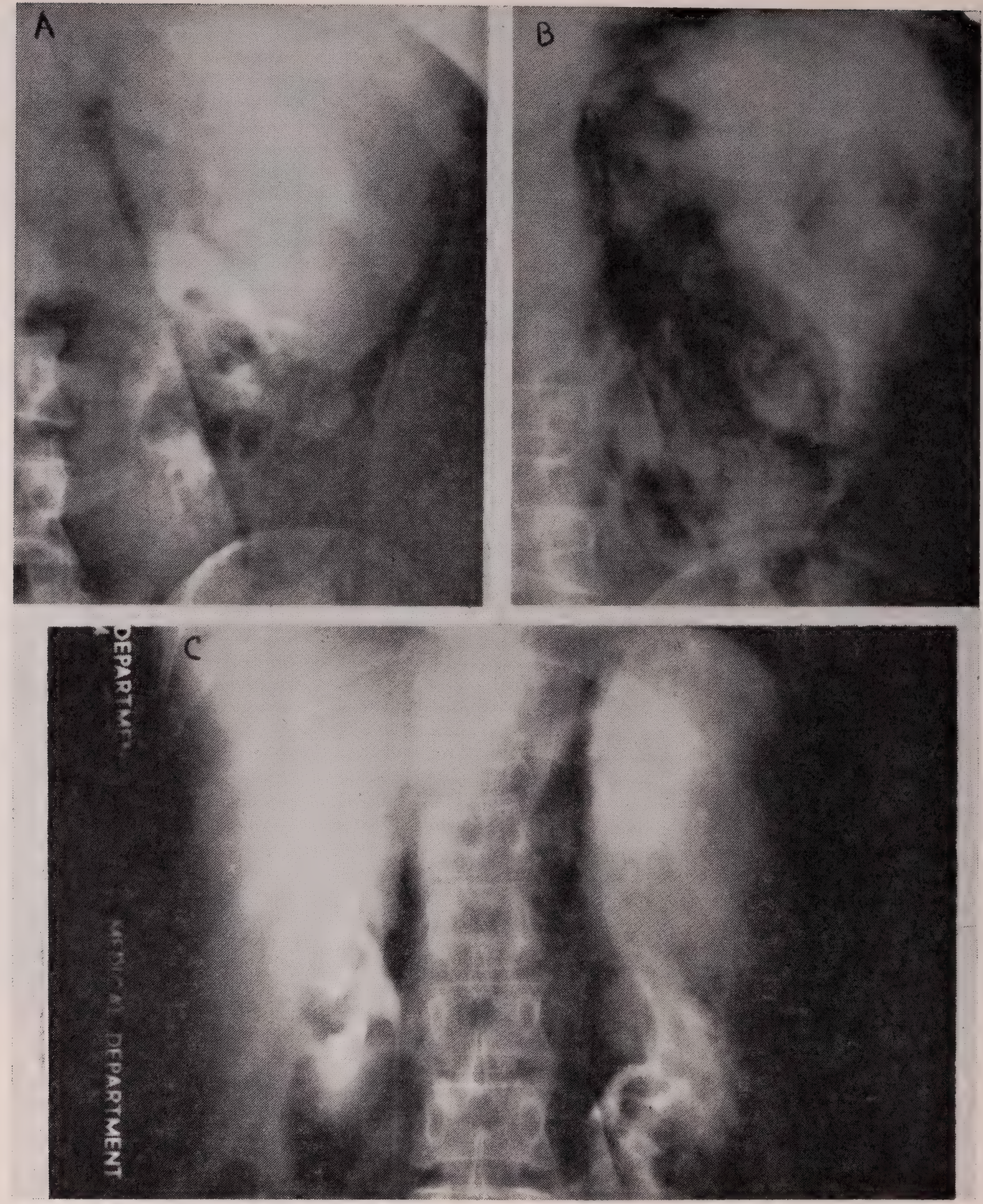

Fig. 9. Spleen displacing left kidney inferiorly in 3 patients. (*B*) After retroperitoneal insufflation. (*C*) Stomach displaced medially and splenic flexure inferiorly.

Presacral retroperitoneal insufflation can be performed with minimal complication if the amount of gas is limited to from 350 to 500 cc. We have found that an excessive amount of gas may obliterate completely the density caused by the adrenal glands. Most of the difficulties and serious side-effects have occurred after the injection of much larger amounts of gas. In our earlier cases we used air but changed to oxygen since it is more soluble. Carbon dioxide is the most soluble gas which is readily available; it has been injected intravenously in dogs[6] and in man[7] causing no signs of embolism and has been widely used by gynecologists in tubal patency tests. We have used it but have not obtained satisfactory roentgenograms since it is so rapidly absorbed.

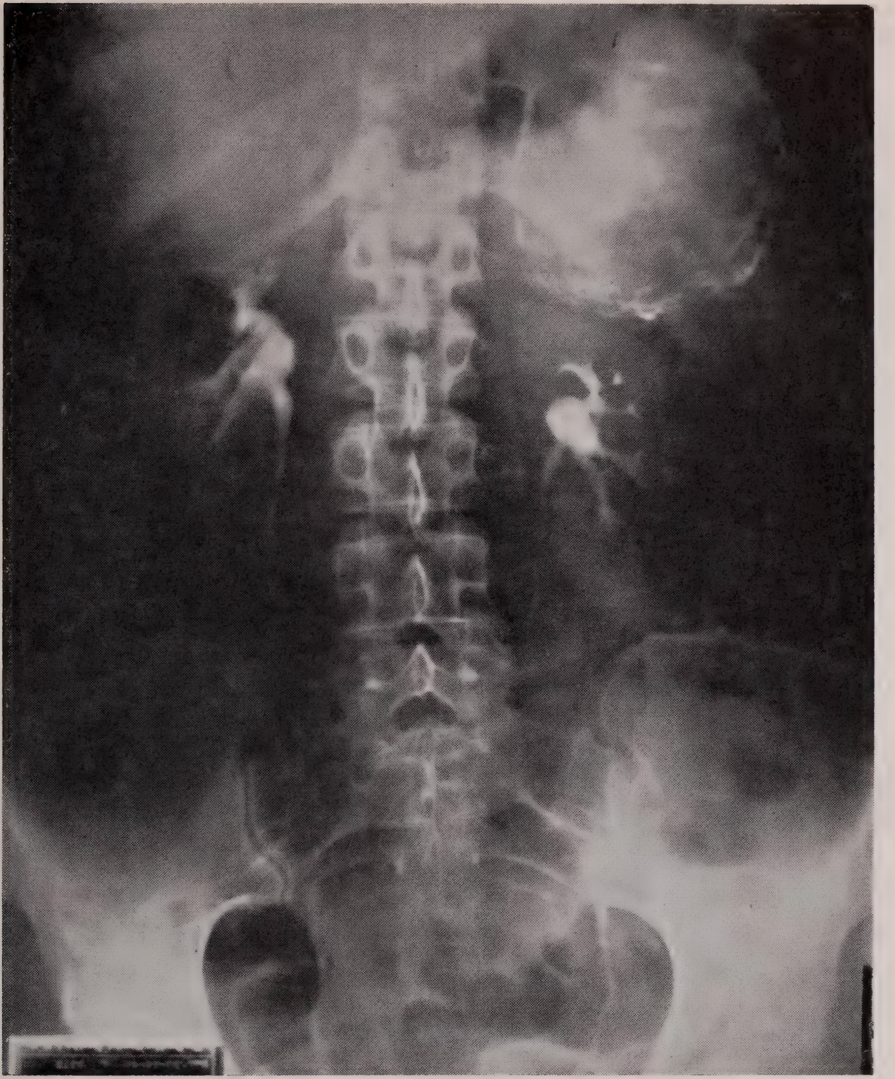

FIG. 10. Calcified cyst of pancreas (confirmed at surgery) displacing left kidney inferiorly.

We have not been able to obtain satisfactory hourly serial x-ray films with it, which we have found to be of value in the differentiation of thickened periadrenal fat from tumors of the adrenal gland.*

Summary

1. The need for accurate diagnosis of densities in the suprarenal space is emphasized and reasons for difficulties adduced.

2. The density caused by the normal adrenal is described and compared with that of periadrenal fat and of a tumor.

3. It is pointed out that on the right side a lobe of the liver or the second part of the duodenum may cause confusion. Similarly, confusing shadows on the left may be caused by the fundus of the stomach, the spleen, and cysts or tumors of the pancreas.

4. Aids in the differential diagnosis of these conditions are discussed.

4 SCHOENFELD BOULEVARD
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* Since the preparation of this paper a satisfactory technic for retroperitoneal gas insufflation using carbon dioxide has been developed.

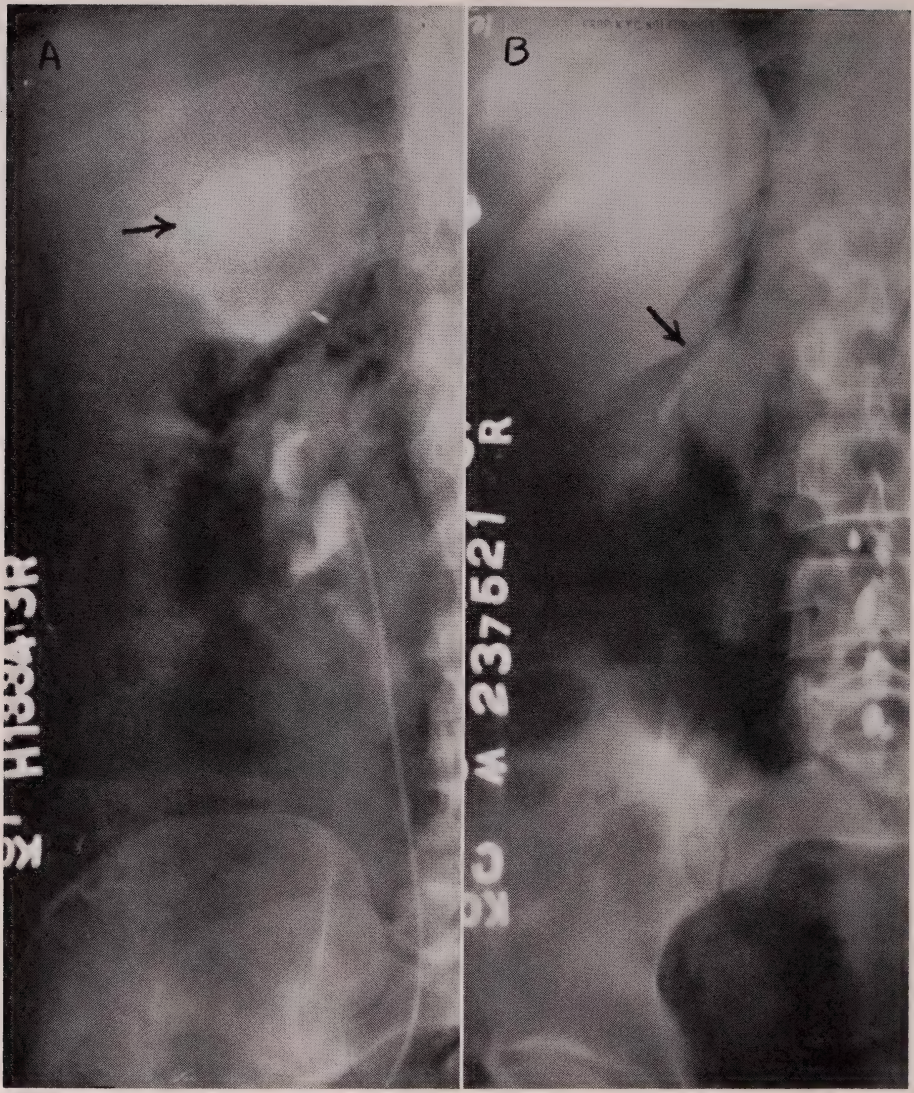

FIG. 11. (*A*) Lobe of liver, presented as suprarenal density. (*B*) Second portion of duodenum, presented as suprarenal density.

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Management of Decubitus Ulcers

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THE term "decubitus ulcer" is one of the few instances in which the professional terminology is less accurate than the lay expression. These ulcers occur not only in bed-fast patients but quite frequently in those who are up and about in wheel chairs. "Pressure sore" is more descriptive and more accurate, since prolonged pressure on the skin, particularly over bony prominences, is the most important single factor leading to the formation of these ulcers.[1,2]

Etiology

Sir Thomas Lewis[3] has shown that a pressure of 50 to 60 mm. Hg is sufficient to arrest circulation in the skin. If maintained for several hours the ischemia thus produced can lead to skin necrosis. Under normal circumstances the discomfort due to pressure on the skin leads to subconscious frequent shifting of position, preventing damage to the skin. This protective mechanism is lost when the cutaneous sensation is impaired, as in patients with spinal cord injuries or in severely ill patients whose sensorium is obtunded.

The neurogenic concept of decubitus ulcers[4,5] has never been adequately proved and appears untenable. Decubiti are frequently found in upper motor neuron-type cord injuries, in which the lower motor neuron is intact including whatever neurotrophic influences it may exert. These ulcers are rare in poliomyelitis, in which the anterior horn cell is damaged but skin sensation remains intact. They may often be seen in severely ill, debilitated patients without any neurologic deficit in whom the sensorium is dulled. Ulcers may be found with spinal cord injuries above as well as below the level of the lesion in severely ill or neglected patients. Sympathetic nervous system disturbance has also been mentioned as contributory to the formation of decubiti,[5] but this too is unlikely since ulcers are not found after sympathectomy. Although prolonged pressure is the most important single cause of ulcer formation, malnutrition (hypoproteinemia, anemia, and avitaminosis) is a factor and must be prevented or corrected.[6–9]

Prevention

Prevention of bed sores depends primarily on good nursing care, in which avoidance of prolonged pressure over any part of the body is the most important aspect. To accomplish this, patients must be turned every two hours day and night. A foam rubber mattress is used to minimize pressure. An alternating pressure pad on a standard mattress may be used instead of foam rubber. This pad consists of a heavy plastic material with interdigitating air cells which are alternately inflated and deflated by means of an electric compressor. The bed sheets must be kept free of wrinkles and changed immediately when they become soiled.

Enemas should be given as needed in order to prevent involuntary defecation into the abdominal pad since this kind of defecation causes heavy contamination of the skin. Such contamination could lead to infected decubitus ulcers and delayed healing. The skin must be kept scrupulously clean. The heels and the malleoli must be protected with rubber doughnuts, abdominal pads, or foam rubber boots. Protective dressings may be necessary over the sacrum, anterior

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superior iliac spines, tibial crests, and elbows. Rolled towels or pillows may be used to keep the knees apart in the presence of adductor spasticity. The skin is inspected daily for evidence of irritation. Patients with paraplegia are taught to examine themselves with the aid of long-handle mirrors and to report immediately any signs of irritation.

The precautions against pressure over the denervated skin are continued when the spinal cord injury patient has reached the stage when he is allowed to sit in a wheel chair. For this reason armrests of the chair should be removable to avoid trauma while the patient is getting in and out of the wheel chair. Seat cushions of 4-inch foam rubber are used with scooped-out areas to avoid pressure over previous ulcer sites. A piece of plywood under the rubber cushion may prevent sagging in the center and thereby pressure over the trochanters. Some paraplegic patients prefer a commercially available inflatable rubber cushion with open areas to avoid localized pressure. Patients are instructed to shift position frequently and to inspect their skin for signs of irritation. The length of time permitted in the wheel chair must be less than that which produces skin irritation.

In the prevention of decubitus ulcers the maintenance of proper nutrition ranks second in importance to avoidance of pressure. There is a marked negative protein balance during the spinal shock phase which follows spinal cord injury. In the presence of hypoproteinemia and anemia, decubitus ulcers occur more frequently and heal more slowly. As much as 50 Gm. of protein may be lost daily from large ulcers.[10] In bedfast patients anorexia is common—due to lack of physical activity, constipation, and psychologic factors. The latter may vary from an understandable degree of worry about the illness, length of hospitalization, complications, and ultimate outcome to severe depression with refusal to eat and to cooperate in any way, the so-called "physiologic suicides." Fever due to intercurrent infections increases metabolism and at the same time further depresses the appetite.

Because anemia is frequently present, repeated blood transfusions are recommended by some for the correction of both the anemia and the hypoproteinemia.[11–13] Others, including the author, limit transfusions because of the danger of serum hepatitis and recommend them only for patients with marked anemia or prior to plastic surgery in which a large amount of blood loss is anticipated. Iron, with or without cobalt, is usually prescribed. Testosterone has been used for its protein anabolic effect, but the lack of startling benefit and the possible anaplastic effect on the prostate led to the discontinuance of this form of therapy. Regular insulin in small doses[14] and bitter tonics are frequently used to stimulate the appetite. A high-protein, high-calorie, and high-vitamin diet is prescribed except for overweight patients, in whom the total caloric intake is reduced. Meals should be well balanced, attractively prepared, and served while hot; special personnel to feed the patient are used when necessary. Early mobilization of the patient, prompt attention to all his problems, and a cheerful and truly sympathetic attitude on the part of all personnel are the most effective ways of coaxing the patient to eat all that is prescribed for him.

Nonsurgical Treatment

Nonsurgical treatment of decubitus ulcers may be attempted if the ulcers are not too deep and in the absence of infection of underlying bursae and bones. The extent of the ulcer area is not important. A large superficial ulcer heals faster than a small but deep sinus with undermined edges. The principles of preventive care are adhered to. Further pressure on the ulcer area is avoided, and hypoproteinemia and anemia are corrected.

In the absence of drainage, exposure to the air is the preferred treatment for shallow ulcers. Scarlet red, bacitracin, and neomycin ointments are used by some. Ultraviolet therapy is often beneficial in stimulating granulation tissue. Wet dressings of saline or acetic acid are useful in converting a grayish unhealthy-appearing granulation bed to healthy red tissue. When extensive purulent drainage is present, dressings saturated with half-strength Dakin's solution of 0.2 per cent Clorpactin solution is used. The surrounding skin must be protected with zinc oxide ointment. When the purulent discharge has been converted to a serous one, saline dressings replace the Dakin's. The local use of antibiotics is to be condemned since they are not needed and may cause sensitization reactions.

Surgical Treatment

Surgical closure of decubitus ulcers has several objectives. It prevents the loss of serum, a loss which may cause a 50-Gm. protein loss daily. It closes a large raw surface which serves as a portal of entry for bacteria. The incidence of secondary amyloidosis, which frequently is found in patients with paraplegia and long-standing decubitus ulcers, may be reduced. Earlier mobilization of the patient and speedier rehabilitation may result. Successful surgery helps to improve the patient's morale and makes him more cooperative. Finally, surgical closure places the scar in a nonpressure area and results in a well-vascularized scar which is less likely to break down.

In preparation for plastic surgery, necrotic skin must be removed from the ulcer. In our experience the surgical excision of necrotic tissue was found to be far superior to enzymatic debridement. Before surgery, wet dressings are employed until the ulcer appears clean. Split-thickness grafts may at times be employed as a preliminary surgical procedure in order to prevent continued loss of serum proteins from the ulcer and to permit improvement in the patient's general health.

Buried grafts are used at times prior to definitive surgery except in ulcers over the ischium.[15-17] These consist of small (0.3 by 0.3 cm.) pieces of split-thickness skin grafts buried beneath the surface of the granulation tissue about 1 to 1.5 cm. apart. There are several advantages to their use: (1) they increase resistance to infection; (2) small amounts of donor skin are sufficient (6 to 8 per cent of the ulcer area); and (3) immobilization of the patient is made unnecessary. Severe spasticity prevents successful closure and must be eliminated prior to surgery.

The important surgical principles which must be observed are: (1) excision of the ulcer and underlying bursa if present, (2) meticulous hemostasis to prevent hematoma formation, (3) removal of bony prominences, (4) elimination of dead spaces, and (5) closure without tension on the suture lines. Large rotated regional pedicle flaps of skin and subcutaneous fat are used by some surgeons with thick-split skin grafts to cover the donor site of the flap. Others prefer elliptic or S-shaped incisions, freeing the skin and subcutaneous tissue extensively and closing the defect without the use of pedicle flaps. By adhering to these principles in the surgical treatment of 1,000 decubitus ulcers over a ten-year period, successful surgical closures were accomplished in 84 per cent of the sacral ulcers, 86 per cent of the trochanteric ulcers, and 97 per cent of the ischial ulcers.

Recently we have become more conservative in our attitude toward closure of ischial ulcers. Radical ischialectomy was frequently followed by pelvic tilt, scoliosis, and the development of a decubitis ulcer over the other ischial tuberosity, necessitating ischialectomy on the other side. With removal of the supports of the pelvic floor the posterior urethra sags and becomes tortuous and dilated, a condition which leads in a large proportion of patients to diverticulum or fistula formation. Ulcerations of the perineum and skin over the upper posterior portion of the femora are frequent complications following bilateral ischialectomy. In a few patients excision of the ulcer and bursa without removal of the ischium was attempted. Postoperatively the patients sat on rubber cushions with relief for the area over which the patient's ischial tuberosities rest. The results so far appear promising in the limited number of patients in whom this conservative approach has been used.

Summary

1. The etiologic factors leading to the formation of decubitus ulcers are enumerated.
2. Prolonged pressure is considered the most important cause.
3. Preventive care is stressed and described.
4. Nonsurgical methods of treatment are presented.
5. The advantages of surgical closure are given. The principles of surgical closure are: excision of the ulcer and any bursae present, careful hemostasis, removal of bony prominences, and closure without tension.
6. Experience with 1,000 decubitus ulcers over a ten-year period showed successful surgical closure in 84 per cent of the sacral ulcers, 86 per cent of the trochanteric ulcers, and 97 per cent of the ischial ulcers.
7. Late complications of bilateral ischialectomy are discussed.

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Is Cerebral Palsy Connected With Premature Birth?

Cerebral palsy is found much more frequently in premature babies than in full-term babies. In one study 22 per cent of patients with cerebral palsy were born prematurely while only 5 per cent of total births in the population are premature. But whether or not prematurity is a cause or effect of the disease has not yet been determined.—*Patterns of Disease, Parke, Davis & Company*

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

MARCH 25, 1959

Discussed by MICHAEL S. BRUNO, M.D.

Case History

HENRY H. MURPHY, M.D.: A thirty-three-year-old Negro female was admitted to Knickerbocker Hospital on November 10, 1958, in status asthmaticus. She had been well until two and a half years previously when she experienced her first episode of shortness of breath and wheezing. She had had a long history of hay fever during the spring and summer months, but this was mild and she did not consider it of significance. Shortly after her first asthmatic attack she was admitted to another hospital because of severe respiratory distress. An abstract of the clinical records of that institution reports a diagnosis of bronchial asthma, probably allergic in type, in a markedly obese patient. At that time laboratory data were within normal limits. An x-ray of the chest showed pronounced exaggeration of both hilar shadows, atelectasis in the base of the upper right lobe, and definite nodularity in the right hilar region (Fig. 1). These findings were not felt to be usual ones for Hodgkin's disease or Boeck's sarcoid but were felt to be more consistent with a lesion such as tuberculosis or tularemia. She was given symptomatic and supportive treatment and improved sufficiently to be discharged after ten days.

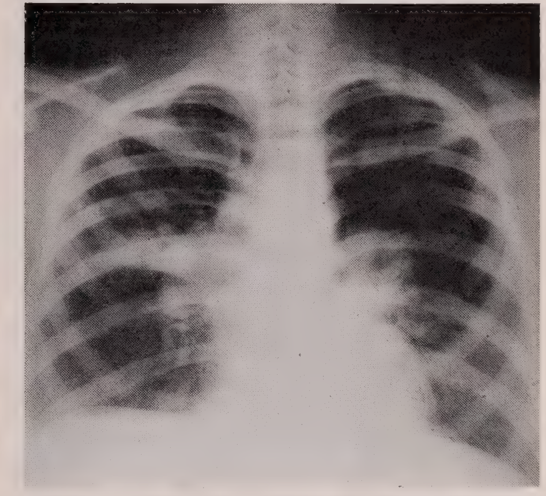

FIG. 1. X-ray film of chest two and a half years before final admission showing bilateral hilar enlargement and zone of infiltration at inferior margin of upper right lobe.

From the time of her initial illness until her present admission she experienced many asthmatic attacks which required treatment in the emergency rooms of various hospitals and care in an allergy clinic in a local hospital. She had been shown to be strongly allergic to tobacco but could not specify the nature of any desensitization procedures. At the time she developed asthma she weighed 265 pounds but on admission she weighed less than 150 pounds. She denied anorexia, dysphagia, nausea, vomiting, and

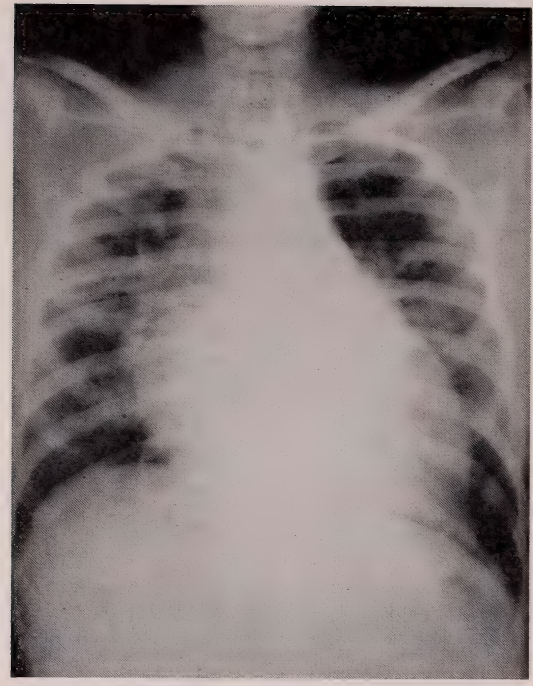

FIG. 2. X-ray film of chest during last admission showing reduction is size of hilar masses, persistence of density in upper right lobe (also reduced in size), and general cardiac enlargement.

diarrhea. For six weeks prior to the present admission the asthma had been particularly severe, necessitating multiple visits to the emergency room. During the two weeks before admission she had noted progressive swelling of both lower extremities. The remainder of her history was unremarkable except for menometrorrhagia of several months duration; prior to this her menses had been regular. She had worked in a tuberculosis hospital for several years, until two years previously, but denied any knowledge of having been infected.

Physical examination on admission revealed a poorly nourished, acutely ill young woman in severe respiratory distress. Her temperature was 101 F., pulse 144, respirations 24, and blood pressure 105/85. Examination of the head, eyes, ears, nose, and throat gave unremarkable findings. The neck was supple with no tracheal deviation, thyroid enlargment, or lymphadenopathy. The hepatojugular reflux test result was positive. The chest was symmetric and the anteroposterior diameter was enlarged. The lungs were clear to percussion but revealed diffuse inspiratory and expiratory wheezes. There were moist rales at the right base and coarse rhonchi scattered throughout both lung fields. The heart was enlarged with the maximal impulse beyond the midclavicular line in the sixth left intercostal space. There was regular tachycardia but no thrills, rubs, or murmurs were heard nor was there a gallop rhythm. The abdomen was distended and soft. The liver was markedly enlarged and somewhat tender. Its description varied from observer to observer, apparently due to its great size, the presence of an appendectomy scar in the right lower quadrant, and the patient's dyspnea. The surface of the liver appeared smooth, and the right and left lobes were both enlarged. No other organs or masses were palpable. Pelvic examination was difficult but demonstrated a firm, slightly movable, nontender right adnexal mass. The uterus was not clearly outlined but did not appear enlarged. There was no generalized lymph node enlargement, and the neurologic examination was unrevealing. There was 2 plus pitting edema of both legs at the ankles and pretibially, but there were no varicosities and the pulses were strong.

The urine concentrated to a specific gravity of 1.010 and had a trace of albumin, a trace of reducing substance, and many white blood cells in the sediment. The hemoglobin was 10.2 Gm. per 100 ml., red cell count 4 million, hematocrit 35, and sedimentation rate 68 mm. per hour. The white cell count was 24,500, with 93 per cent neutrophils and 7 per cent lymphocytes. X-ray of the chest showed moderate generalized cardiac enlargement and prominence of the pulmonary markings consistent with minor congestive changes (Fig. 2). An ill-defined infiltrate was present in the middle right lung field which was felt to represent either inflammatory changes or an area of local atelectasis. An electrocardiogram showed a sinus tachycardia of 136 and peaked P waves in several leads. Small

QRS complexes and nonspecific T-wave inversions were seen in limb leads. The zone of transition occurred in V_3.

Initial therapy was directed at the correction of the severe respiratory distress and consisted of aminophylline, mercuhydrin, and sedation. Its failure was striking, and a course of tetracycline was begun on the second hospital day. Coincident with this therapy the temperature fell to 100 F., but leukocytosis of 26,000 and the respiratory and distress and tachycardia continued unabated.

Additional laboratory determinations on the third hospital day gave negative serologic findings. A lupus erythematosus (L. E.) preparation was negative. The bleeding time was just over one minute, and the clotting time just over two minutes. The prothrombin time was fifteen seconds (control twelve seconds). The fasting blood sugar was 85 mg. per 100 ml., blood nonprotein nitrogen 58 mg., creatinine 2 mg., cholesterol 140 mg. (with 81 per cent esterification), and serum bilirubin 0.25 mg. The alkaline phosphatase was 12.8 units and cephalin flocculation 4 plus. The total serum protein was 6.2 Gm. per 100 ml., with 2.3 Gm. albumin and 3.9 Gm. globulin. The carbon dioxide was 20 millimols per liter. The first strength of purified protein derivative was negative.

Physical examination findings on the third hospital day were substantially unchanged from those on admission. The patient was digitalized with digoxin, but her response to this and to further diuretic medication was slight. Although the rales at the right base diminished somewhat, the other pulmonary findings as well as the hepatic enlargement and positive hepatojugular reflux continued unabated. A liver biopsy demonstrated mild fatty metamorphosis. Another x-ray of the chest showed no changes from the film taken on admission.

On the fifth hospital day the patient was found to have a blood pressure of 80/0 with cold sweaty extremities, a gallop rhythm of 140, and profound respiratory incapacity. She was incoherent and appeared moribund. Treatment for cardiac asthma restored the blood pressure to normal limits and lessened the dyspnea, but she remained semistuporous and was unable to take food or fluids. She was found to have developed an electrolyte imbalance, with serum chloride 68 mEq. serum sodium 119 mEq., serum potassium 6 mEq., and carbon dioxide 22 millimols per liter. Her temperature showed a steady rise and by that evening reached 103 F. At this point she suddenly vomited a large amount of "coffee-ground" material. Examination of the abdomen revealed it to be distended but dull to percussion. The right upper quadrant was guarded, but there was no evidence of rigidity or rebound. A gastric tube was passed and 1,600 ml. of "coffee-ground" material was aspirated. Before further studies could be carried out, she experienced a short episode of extremely severe dyspnea and expired.

Discussion

Michael S. Bruno, M.D.: This acutely ill thirty-three-year-old Negro female had been well until two and one-half years prior to admission, when she first developed respiratory distress associated with bronchospasm. Her past history was completely negative except for hay fever during spring and summer. She subsequently was found to be strongly allergic to tobacco, a rather uncommon allergen, and was followed and treated in the allergy clinic of another institution without much success. I stress the allergy background of this individual because it may be of vital importance in the differential. With the development of asthma the patient was admitted elsewhere; a work-up gave apparently unremarkable results except for the chest x-ray. This revealed hilar markings that were markedly exaggerated bilaterally, suggestive evidence of atelectasis at the base of the upper right lobe, and definite nodular infiltration of the right hilum. Laboratory studies were otherwise unremarkable. Although tuberculosis is mentioned in an abstract received from that institution, no mention of tuberculin skin tests or sputum and gastric concentrates for tubercle bacilli were reported. The patient was treated symptomatically for a ten-day period and was discharged. This entire series of events is disturbing and adds to the difficulties of formulating a differential. A significant part of the patient's past history is that she worked in a tuberculosis hospital; we are not told more. One wonders about the length of service there, her employment age, her reasons for leaving, etc. We will have to assume that reasonable health precautions were exercised while she was so employed, that her chest x-rays were followed and were negative, and that she was tuberculin tested and followed at intervals if the tests gave negative results. We can at least assume that she did not have radiographic evidence of tuberculosis during this period but unquestionably had exposure to the disease.

For the next two and one-half years the patient had innumerable episodes of severe bronchospasm, for which she was treated on an outpatient basis. She unfortunately was not deemed ill enough to require hospital admission, or, if this was recommended, the patient apparently refused. In any case, the patient was quite ill and lost a great deal of weight, dropping from a rotund 265 to 150 pounds at the time of her Knickerbocker Hospital admission. She was admitted to this institution without anorexia, dysphagia, vomiting, or diarrhea.

Six weeks prior to admission the course of her illness became more acute. She had great difficulty in breathing and was seen in a number of hospital emergency rooms, where she received treatment, one would assume with bronchodilators, but she rapidly lost further ground. For the first time ankle and leg edema was noted, and it progressed in severity. By the time she was admitted to Knickerbocker Hospital she was in critical condition. For six weeks prior to admission, during the same interval her clinical course had so rapidly deteriorated, menometrorrhagia developed for the first time.

The pertinent physical findings on admission included the obvious malnourishment of a young Negro female who was acutely ill and in marked respiratory distress. Her blood pressure was normal and remained so thereafter, except when she went into shock on the fifth hospital day, twenty-four hours before she expired. Her heart rate was rapid, recorded at 144 beats per minute; it so remained almost continuously and seemed disproportionately high during her entire hospital stay. Respiratory distress was obvious and extreme. The patient was febrile and remained so for the next six days in spite of Achromycin therapy. Examination of her lungs revealed inspiratory and expiratory wheezes and evidence of minimal emphysema.

The patient was obviously in heart failure. A chest x-ray revealed generalized cardiomegaly without specific chamber enlargement. The cardiac contour was not the classic silhouette that one associates with significant accumulation of fluid in the pericardial sac, and there was no unusual calcification. The outflow tract of the right ventricle and the pulmonary artery segment was not prominent although there were increased pulmonary markings thought to be compatible with minor pulmonary congestive changes. The lungs did not reveal much evidence of emphysematous change, the apices were clear, and there was no evidence of a recent or old pleural reaction. However, an ill-defined infiltrate was noted in the right midlung field. There was no cavitation or calcification.

The other significant features of the initial and subsequent examinations included the presence of a markedly and symmetrically enlarged liver, which was smooth and slightly tender. There was no evidence of portal hypertension. A liver profile revealed evidence of considerable alteration of function. A liver biopsy revealed only minimal fatty metamorphosis. Pelvic examination revealed the presence of a firm, movable, nontender, 10-cm. right adnexal mass apparently separated from the uterus, which was described as normal. No other information is recorded in the protocol concerning the mass, which is disconcerting to say the least, and I would hope this was to minimize its importance and not to further confuse us. There were no other positive findings recorded.

Other significant laboratory data included a persistent leukocytosis of over 20,000 without any eosinophilia, 2 urinalyses which gave unremarkable findings except for pyuria in the first (but not the second), mild anemia which was not progressive in character, a moderately elevated sedimentation rate, negative serologic findings, and a negative L.E. cell preparation. The albumin-globulin ratio was reversed, chiefly because of a low serum albumin. There was a mild increase in blood creatinine and marked alteration in all electrolytes, with a depression of serum sodium, chlorides, and carbon dioxide associated with some elevation of serum potassium. The laboratory procedures that were not, perhaps could not be, done for obvious reasons and which might have helped in the differential were sputum and gastric concentrates and cultures for tubercle bacilli, a muscle biopsy, other L.E. cell preparations, and serum electrophoresis.

The patient's course in the hospital was stormy. She remained acutely ill, with marked respiratory distress, continued evidence of heart failure, fever, and persistent striking tachycardia. Attempts to control the symptoms and signs of heart failure were unsuccessful. Her condition was grave.

On the fifth hospital day the patient went into shock. This was associated with a striking electrolyte imbalance and moderately severe upper gastrointestinal hemorrhage. Examination of the abdomen gave unremarkable findings except for distention. A flat film of the abdomen revealed prominent gas-filled loops of the large intestine. Before other more pertinent studies could be done the patient expired on the sixth hospital day.

This is a most difficult case to discuss for a number of reasons. For over two years the patient was seriously ill and was under direct observation for only the last six days of her life. During this very short period the very gravity of the situation made some procedures impossible to perform. In the two-and-one-half-year period prior to her short terminal admission her condition was never fully documented since there was hospitalization for only a ten-day interval at the very onset of her difficulties. In addition, the work-up at that institution would appear to have been incomplete. I also have the impression that we are dealing either with an uncommon disease which had not fully developed in terms of all its manifestations or a most unusual form of a more prevalent condition. This combination of factors—short terminal hospitalization, incomplete documentation, and perhaps an unusual clinical entity not fully manifested at the time of our observation—makes me feel insecure about my ability to arrive at a correct diagnosis.

The relatively short clinical course associated with a loss of more than 100 pounds in weight, in spite of the absence of anorexia, certainly brings the possibility of malignancy to mind. In a thirty-three-year-old female with her physical findings the possibility of a lymphoma or a primary ovarian carcinoma must at least be considered. In the former group Hodgkin's disease would appear the most likely. The absence of lymphadenopathy or splenomegaly is somewhat unusual although we all have seen numerous examples of localized intra-abdominal or retroperitoneal lymphoma without peripheral adenopathy. Hepatomegaly is, of course, quite common in this condition. The features which make the diagnosis of lymphoma seem most unlikely are primarily clinical in nature. The history of severe asthma progressing quite rapidly in a period of two years and associated with the development of congestive heart failure would be difficult to explain on this basis alone. The radiographic findings would also be rather uncommon. Patients with Hodgkin's disease often have massive involvement of the mediastinal and intrathoracic structures and yet have few, if any, symptoms referable to this area. Direct invasion of the myocardium from contiguous structures does not usually occur, but when this relatively uncommon situation develops the entire thorax is usually almost completely involved by this process. Although obstruction to venous return is not uncommon in lymphoma, because of a predilection for the mediastinal lymph nodes and the invasiveness of the process, heart failure attributed to lymphoma alone is very uncommon. I might say the same for bronchospasm and asthma.

A neoplasm of the right ovary is obviously another possibility that we must consider. If this were the case, could we explain the patient's cardiac and pulmonary symptoms on the basis of metastatic encroachment on these vital structures? I do not believe so. There is no obvious evidence of metastasis in her chest x-ray films. Myocardial involvement would be extremely hard to visualize with the facts at hand. Metastases to the liver in spite of the negative biopsy result would be entirely possible. Our protocol does not help us at all. Before I would be willing to consider the possibility of carcinoma of the ovary more seriously I would have to have other information. Even if she were so afflicted, which is rather uncommon at her age, the obvious unusual pulmonary and cardiovascular symptoms could not be so explained. I would suspect that a nonmalignant condition of the right ovary, such as a cyst, might well have been present.

Another condition which I believe warrants mentioning because of the course of events is chronic cor pulmonale due to repeated pulmonary embolization. This is a rare condition occurring most commonly in middle-aged individuals. There may be no history suggesting peripheral venous thrombosis or thrombophlebitis. Occasionally there may be a history of repeated episodes of acute respiratory distress that is presumed to be due to pneumonia and, very rarely, to asthma. In most instances the span of the disease appears to be only a few weeks to months. Hemoptysis and chest pain are frequent complaints when pulmonary infarction develops; cyanosis is also quite common and is usually episodic in nature. Evident pulmonary hypertension for no apparent pulmonary reason is dominant. In late stages these patients present classic signs of right-sided heart failure: dependent edema, ascites, hepatomegaly, and distended neck veins which may show marked pulsation because of functional tricuspid insufficiency.[1,2] Cardiac murmurs are common as well as a left parasternal heave due to dilatation of the outflow tract of the right ventricle. The electrocardiogram almost invariably shows evidence of considerable pulmonary hypertension with complete or incomplete right bundle branch block or right ventricular hypertrophy along with clockwise rotation of the heart on its long axis. In a situation such as that described in today's protocol, multiple emboli with the development of cor pulmonale should be considered. This I did, and, for reasons mentioned in considering the usual case of this uncommon disorder, I do not believe that she was so afflicted.

Because of the chest roetgenograms taken two and one-half years before, in which bilateral hilar adenopathy was the most striking feature, the possibility of sarcoidosis must be seriously considered. The very fulminating nature and relatively short clinical course of this patient's condition would amost exclude sarcoidosis as a possibility from the outset. Sarcoidosis is invariably a disease running a protracted course of many years with frequent remissions and exacerbations.[3] Even with massive involvement of mediastinal lymph nodes, which incidentally is a rather common feature in this condition, the patient is surprisingly free of all symptoms. In very occasional cases the myocardium may be involved. However, when heart failure does occur, it usually is not on the basis of direct invasion of the myocardium but because of extensive pulmonary cicatrization evolving over a period of years causing pulmonary hypertension and eventually chronic cor pulmonale. In at least one series with which I have had some personal experience the development of chronic cor pulmonale was not uncommon.[4] This complication evolves over a period of many years and is associated with massive pulmonary sarcoidosis. It might also be stressed that the cases in this series were collected almost exclusively from the Bellevue Chest Service and undoubtedly because of this fact do not represent a true sampling of the usual instances of sarcoidosis. The incidence of tuberculosis as a coincidental finding in the same group was quite high as was the over-all mortality rate. All other series and reviews of sarcoidosis stress its benignity. Longcope and Freiman's monumental review of sarcoidosis, written in 1952,[3] documented less than 20 autopsied cases for that was all he considered acceptable. The tissue diagnosis of sarcoidosis is almost invariably established as a result of biopsy or as an incidental autopsy finding. Could we be dealing with an extraordinary case of sarcoidosis which, by reason of very crucial localization, caused the function of the cardiovascular and pulmonary systems to be compromised? All other facts being considered, if this was so, in my experience and according to those series I have reviewed, this morning's case would be unique. For this reason I am forced to put aside the diagnosis of sarcoidosis, but hesitantly.

I believe the main differential revolves around two conditions or groups of conditions, the first disseminated tuberculosis and the second that group in which the primary alteration occurs within connective tissue or its ground substance—the so-called collagen disease group. In the second group systemic lupus erythematosus (S.L.E.) and polyarteritis must be considered primarily.

The diagnosis of tuberculosis has to be considered because of the chest roentgenograms, the history of extreme weight loss, and the knowledge that the patient probably had more than the usual tuberculosis exposure because of her past work in a tuberculosis hospital. Working in a tuberculosis hospital, however, can be looked on from two points of view. We can assume that the usual precautions were taken during her employment—that she was examined, had serial chest x-rays, and had tuberculin tests which, if negative, were repeated. We can also assume that proper hygiene habits were exercised and that she was indoctrinated as to the hazards of this disease. As a result, I have to assume that during this period she did not contract pulmonary tuberculosis. We certainly can assume that she had repeated chest x-rays which were negative.

Let us next consider the chest films. Are they consistent with the diagnosis of pulmonary tuberculosis? Practically any type of lung infiltrate that persists over a period of time, especially in a Negro, must be considered tuberculosis until proved otherwise. However, although compatible in this sense, they certainly are not typical or even highly suggestive of the disease. Bilateral hilar adenopathy was present in the films taken at the inception of the disease. Although reinfection tuberculosis in the adult Negro may have some of the characteristics that usually are seen in cases of primary infection in Caucasians, for example, significant hilar adenopathy,[5] this is not usual. When hilar adenopathy does occur, it is unilateral in distribution. There is no mention of apical lung involvement, pleural exudation, or cavitation. Of course, a patient may have serious systemic tuberculosis, originally seeding from a primary pulmonary focus, with the focus no longer obvious because of healing or the limitations of chest roentgenograms. In the usual case, however, the pulmonary focus is obvious and serious in itself.

I do not believe that this patient's death was caused by tuberculosis, for the following reasons: The total course of her illness was less than three years and her primary complaints were related to recurrent episodes of severe bronchospasm and later to congestive heart failure. Tuberculosis may affect cardiac function by involvement of the pericardium, resulting in massive pericardial effusion and tamponade. Later, with attempts at healing and resultant calcification, constrictive or restrictive pericarditis may develop. With pericardial effusion of even massive degree, congestive heart failure usually does not occur; this patient had none of the stigmata associated with significant accumulations of pericardial effusion. She did not have peripheral lymphadenopathy or splenomegaly. She had striking leukocytosis and her tuberculin test result was negative. Although anergic responses to tuberculin are known to occur in occasional instances of advanced tuberculosis, the incidence is very rare and makes up less that 1 per cent of all cases.

By the process of elimination we have apparently narrowed ourselves down to the collagen diseases, and of this group, only two should receive serious consideration, namely systemic lupus erythematosus (S.L.E.) and polyarteritis. Connective tissue provides a framework for specialized parenchymatous cells and thereby plays an important role in the construction of all organs. Connective tissue has a mechanical function, giving tensile strength to the body and its various structures; it also enters into many metabolic functions by reason of its chemical make-up. The basic foundation of connective tissue is the cells, which are of two types, fibroblasts and mesenchyme. The fibrous elements consist of various types of collagen, reticulin, elastin, and the ground substance—an amorphous matrix of mucopolysaccharides, protein, and water.[6] The relative amounts of fibers, cells, and ground substance show considerable variations in different kinds of connective tissue. A tendon will contain up to 35 per cent collagen yet the vitreous humor has only about 0.05 per cent collagen.

Because of its widespread distribution, when a significant alteration occurs in connective tissue, the manifestations of this change may be diffuse. However, because only one element of connective tissue may undergo change and since the concentrations of the various constituents of connective tissue varies considerably, the manifestations of changes occurring in a specific constituent, for example, collagen, will vary greatly.

For many years the role of hypersensitivity or hyperimmunologic response as an important manifestation, if not a possible cause, of the collagen group of diseases has been stressed. This is particularly true of polyarteritis.[7-9] Rich[8] was able to produce the lesions of polyarteritis in sensitized laboratory animals by administering horse serum, sulfonamides, and iodides. In our patient I am impressed by the history of hay fever, the development of asthma (which started later in life than usual and which was very severe), and the subsequent development of heart failure for no apparent cause. There were other bizarre manifestations of disease and an abrupt ending with an episode of severe gastrointestinal hemorrhage preceded by a six-week history of menometrorrhagia. In addition, a bizarre chest film (Fig. 2) and hepatomegaly with considerable alteration of liver chemistries has to be explained in a patient who had a rather fulminating illness.

Systemic lupus erythematosus (S.L.E.) is a condition which usually runs a rather prolonged clinical course with numerous remissions which may last for years. However, in a smaller group of cases the condition may progress rapidly. The pathologic changes observed in this condition are found in the alteration in appearance and staining qualities of the collagen fibers and changes in the ground substance.[10] There usually is a paucity of gross anatomic lesions at autopsy, even in those cases with the fulminating picture. Among those occasionally found are the nonbacterial verrucal endocardial lesions, first described by Libman and Sachs.

Clinically S.L.E. is a disease of women of child-bearing age. The clinical picture varies considerably. In the fully developed chronic case the diagnosis is usually quite evident. In others the course may be more fulminating and many of the classic manifestations either will not develop or, if they do, may go unrecognized. Constitutional symptoms, such as fever, asthenia, malaise, and weight loss, occur in practically all cases. Articular manifestations may also be prevalent, varying from mild polyarthralgia to a debilitating form of arthritis which can exactly simulate the textbook picture of rheumatoid arthritis.[11] Cutaneous eruptions of all types are also seen but may be absent, especially in the fulminating cases. Cardiovascular symptoms or signs may predominate since all portions of the heart—endocardium, myocardium, and pericardium—may be involved. As a result, cardiomegaly with manifestations of congestive heart failure may be striking. A pericardial friction rub or evidence of a pericardial effusion may be found on physical examination or by x-ray. Polyserositis occurs in half the cases with the pleural space most commonly involved. Generalized lymphadenopathy without splenomegaly is an early manifestation. Localized or diffuse neurologic manifestations are occasionally seen. Anemia is usually present as well as leukopenia and eosinopenia. Thrombocytopenia with resultant bleeding or manifestations of hemolytic anemia may be the initial presenting problem. Hepatomegaly is not a common feature, jaundice is unusual, and alterations of hepatic function are uncommon. Splenomegaly occurs in 15 per cent of cases. Pulmonary manifestations are uncommon, but alteration of renal function may not only occur but be predominant.

One of the prominent features of many cases of S.L.E. is the multitude of serum protein abnormalities. There usually is an elevation of the globulin fraction, which electrophoretically is found to be caused by an increase in the gamma or alpha-2 fractions. As a consequence, flocculation studies may be reported as giving strongly positive results, and false positive serologic tests results for syphilis are common. L.E. cells are almost invariably found at some point in the disease if enough determinations are performed.

This patient could very well have had S.L.E. of the fulminating variety. The clinical course was short and subjective symptoms were quite obvious. Congestive heart failure with cardiomegaly for no obvious reason was manifest. The patient was toxic and febrile. She had a reversed albumin-globulin ratio with positive flocculation test results. She was also azotemic. On the other hand, her history of asthma would be unusual and she had marked alterations in liver chemistries, a bizarre pulmonary infiltration which would be more usual for polyarteritis, persistent leukocytosis, and a negative L.E. cell preparation. Of course, only one determination was done. As I indicated in my initial remarks, this case is extremely bizarre and is not, in my opinion, a classic example of any one condition. What we are doing, therefore, is attempting to arrive at a diagnosis that would be most plausible for the few basic facts. Although S.L.E. could well be the underlying disease, for reasons that I shall mention, I favor polyarteritis as my diagnosis.

Polyarteritis is a relatively rare disease which usually occurs in males in their fourth or fifth decade of life and which pathologically is an obliterative, inflammatory vascular disease chiefly involving medium-sized and small arteries and arterioles. Periarteritis nodosa, as it is usually known, is really an inadequate descriptive term since all coats of the vessel wall are involved and since nodules, which really represent small aneurysms, occur in less than 10 per cent of all cases. Reports of cured cases are infrequent, but remissions are apparently occurring with increasing frequency with steroid therapy.[12] The mortality rate is above 95 per cent, and although an occasional case may be chronic in nature, in the vast majority of instances the clinical picture is rapid and fulminating.

The etiology is unknown but hypersensitivity and a hyperimmune response to a particular allergen not only occurs but may be prominent in a given instance. Many investigators feel that polyarteritis is a manifestation of an anaphylactic hypersensitivity produced by a variety of different antigens. The incidence of hay fever, urticaria, allergic rhinitis, and asthma is significant. Wilson[9] studied this aspect of the problem in a review of the literature and discovered that in 20 per cent of all proved cases of polyarteritis there was coincident asthma and that in almost every case the asthma antedated the development of polyarteritis. Also, the age of onset of asthma is much higher, thirty-five years, in cases anteceding polyarteritis than in the average case, with only 11 per cent of cases occurring before age twenty-one, and, once it begins, it usually is severe and progressively incapacitating. He also noted that although most patients with polyarteritis do not have eosinophilia, practically all those with an associated asthmatic condition do have eosinophilia. He likened polyarteritis developing subsequent to asthma to a clinical demonstration of the Arthus phenomenon, readily producible in laboratory animals. An animal is sensitized to a specific allergen and is then challenged by the intracutaneous administration of small amounts of the same allergen. With each increase in amount of allergen, there is a proportionate increase in hyperactive response but the reaction, up to a point, remains reversible. When the reaction is associated with local tissue necrosis, the response becomes irreversible. Sections of the locally necrotic tissue reveal significant arteritis. The author therefore likens that situation to the one often seen in a hyperreactive individual, the recurrent asthmatic seizures being the result of the host's response to a given allergen. The reaction remains reversible up to a point and then arteritis develops with resultant tissue infarction and necrosis and the reaction becomes irreversible. This may well have occurred in the case we are considering.

With the development of arteritis the pathologic pattern evolves. There is intensive inflammation of the entire thickness of the vessel wall with surrounding inflammation and granuloma formation. With necrosis of the vessel wall, aneurysmal dilation may occur, with rupture causing frank hemorrhage or hemorrhagic extravasation. As a result of this pathologic process, interference with the blood supply to various organs and tissues occurs, resulting in necrosis, infarction, or ischemia. Healing with recanalization may occur, and all stages of activity and healing may be present at a given time. The tissues involved in the two largest reported series of cases, in order of frequency, were: kidneys, heart, liver, spleen, lungs, gastrointestinal tract, central and peripheral nervous systems, and skin.[13,14]

Since the manifestations may be widespread, symptoms may simulate any disease. Generally, polyarteritis creates the impression of an infectious disease. The patient is acutely ill and has significant leukocytosis and a septic fever curve. There usually is marked weakness, significant weight loss, and striking constitutional symptoms. Muscular pain may be widespread. Symptoms and signs referable to the peripheral or central nervous system may be prominent, with anything from a series of focal Jacksonian seizures to foot and wrist drop.

Various gastrointestinal symptoms may predominate, and the clinical picture may present itself as an acute abdominal emergency. There is a high incidence of ulcerations and/or hemorrhage in this area. I recently was asked to see a patient with evidence of generalized peritoneal irritation, severe azotemia, and a pericardial friction rub. It had been previously suggested that the entire picture was probably the result of uremia. Because the abdominal findings had become more prominent and were later referred more specifically to the right upper quadrant, an exploratory laparotomy was advised and was performed. A gangrenous gallbladder was found. Numerous biopsies were taken and it was found that the patient had polyarteritis of the gallbladder, liver, and kidneys. The entire process could be explained on a single basis. Hepatomegaly was prominent. In addition, the patient had evidence of so-called obstructive jaundice with a very high alkaline phosphatase. The common bile duct and hepatic ducts were essentially normal.

Involvement of the liver is frequent in polyarteritis but jaundice is not a common feature, being recorded in only 12 per cent of the largest series. When ascites and considerable impairment of hepatic function are found in a case that otherwise is typical of polyarteritis, one must consider the possibility of the presence of an unrelated disease. Such was the situation in a case in which the patient had ascites and marked hepatic dysfunction but otherwise had typical polyarteritis and was found to have cirrhosis as well.[15]

The most prominent clinical manifestations are those referable to the kidneys and heart. The patient may appear to have either acute or chronic glomerulonephritis. Urine changes are prominent and azotemia is common. With significant renal changes hypertension may develop and become very severe. The clinical picture may then exactly mimic that seen in accelerated or so-called malignant hypertension. Cardiac signs and symptoms may be the outstanding feature, and when so, the development of congestive heart failure is almost the rule. These patients may develop myocarditis, aseptic pericarditis, and verrucal endocarditis not unlike that seen in S.L.E. Cardiomegaly, gallop rhythm, a pericardial friction rub, and overt congestive heart failure are common.

Pulmonary findings, in addition to the symptoms already described, may be prominent although not characteristic by any means. Hilar adenopathy and ill-defined areas of consolidation, infiltration, and atelectasis due to anaphylactoid pneumonitis or adenitis may be present. This picture is also seen in any type of severe anaphylactoid reaction, with alveolar-capillary damage associated with exudation, hemorrhage, and thrombosis and necrosis of the affected alveolar walls. This results in a bizarre chest roentgenogram. Any variety of skin lesion may be seen.

The most prominent laboratory findings other than those already described include leukocytosis, anemia, an elevated sedimentation rate, and eosinophilia in one third of the cases. Laboratory evidence of deranged hepatic function may be present. Hyperglobulinemia is an uncommon finding. Biopsy of a subcutaneous nodule or a muscle biopsy may establish the diagnosis. A recent review, however, stresses the fact that only a small percentage of cases have a positive biopsy result; therefore a negative result does not rule out this condition.[16]

In the light of all that I have said, let us return to the case under discussion. The patient had severe asthma with her first episode at the age of thirty-one. She was markedly debilitated and incapacitated by recurrent bronchospasm for the next two years. She had an allergy background and was being treated for this in an allergy clinic. Her clinical course was stormy. Six weeks before death she developed congestive heart failure which was severe and associated with cardiomegaly, tachycardia, and a gallop and which did not respond to vigorous therapy. This heralded a fulminating deterioration. She also developed menometrorrhagia for the first time. Her chest roentgenograms were bizarre and atypical, with bilateral hilar adenopathy and later an infiltration with atelectasis in the right lung. The patient had hepatomegaly and abnormalities in liver function. I do not believe that her liver was as large at postmortem examination as it seemed on clinical inspection, due to some degree of emphysema. Her clinical course suggested the presence of inflammation but without an obvious focus. Leukocytosis and a spiking temperature prevailed for the six days of hospitalization.

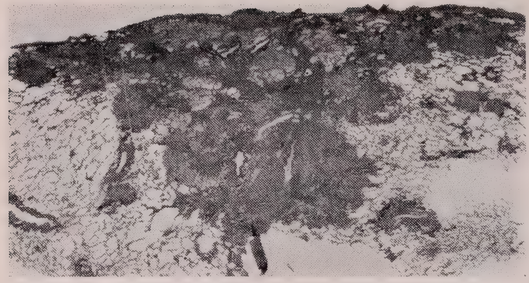

Fig. 3. Low-power view of lesion at inferior margin of upper right lobe showing confluence of a multinodular lesion by hyaline scarring.

As far as the terminal event is concerned, the patient, already seriously ill and debilitated with status asthmaticus, congestive heart failure, and marked electrolyte imbalance, developed a moderately severe upper gastrointestinal hemorrhage with some ileus. This may well have been another manifestation of polyarteritis. If so, involvement of the mesenteric vessels and possibly a perforated or infarcted viscus may also have developed.

I predict that aside from the cardiomegaly and hepatomegaly with possibly some local findings in the gastrointestinal tract our pathologist's diagnosis will hinge almost exclusively on microscopic findings.

Diagnoses

Clinical.—(*1*) *Bronchial asthma,* (*2*) *cor pulmonale, and* (*3*) *congestive heart failure.*

Dr. Bruno.—*Disseminated disease of connective tissue with polyarteritis associated with or related to anaphylactic hypersensitivity.*

Anatomic.—(*1*) *Sarcoidosis involving lungs, hilar lymph nodes, and heart;* (*2*) *obstructive emphysema;* (*3*) *pulmonary hypertension, acute;* (*4*) *cardiac dilatation and hypertrophy, both ventricles;* (*5*) *passive congestion of liver with centrilobular necrosis; and* (*6*) *chronic adhesive salpingo-oöphoritis with hydrosalpinx.*

Pathologic Report

William B. Ober, M.D.: At autopsy the heart weighed 500 Gm. The wall of the left ventricle was thickened to 20 mm. and the right ventricle was dilated. The lungs were hypercrepitant. At both hila the main and primary bronchi were narrowed and held in a rigid position by dense, confluent nodular tissue which extended along the walls of the secondary bronchi only for about one third of the distance from the hilum to the periphery. At the inferior margin of the upper right lobe there was an indurated plaque of nodular grayish tissue (Fig. 3). Elsewhere the pulmonary parenchyma was composed of hyperaerated and hyperdistended alveoli, grossly appreciated as such. Microscopic examination showed the pulmonary infiltrates to be composed of discrete, noncaseating granulomas consisting of epithelioid cells and some giant cells. Most of the hilar granulomas had undergone fibrosis to the extent of hyalinization, as had the plaque in the upper right lobe, but occasional discrete granulomas without evidence of healing were found beyond the gross margins of the fibrotic hilar infiltrates (Fig. 4). Many of the giant cells contained asteroid bodies (Fig. 5) and a few contained Schaumann bodies. In the absence of a demonstrable specific etiologic agent and in the presence of characteristic microscopic features, the diagnosis of sarcoidosis (Boeck's sarcoid) seems inescapable. The hilar lymph nodes were extensively replaced by granulomatous tissue and were partly incorporated into the masses. Isolated granulomas which were not fully matured were found in the myocardium

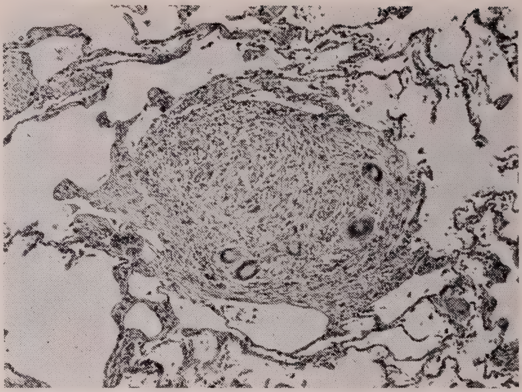

Fig. 4. Low-power view of an active granuloma composed of epithelioid cells and a few giant cells with emphysematous alveoli surrounding lesion and no necrosis.

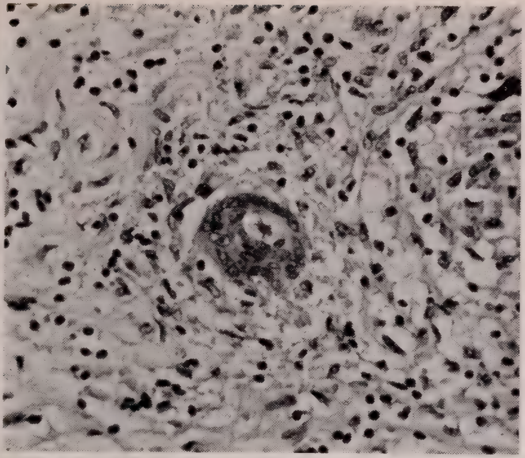

FIG. 5. High-power detail showing a giant cell with an intracytoplasmic asteroid body in a field of epithelioid cells and a sprinkling of lymphocytes.

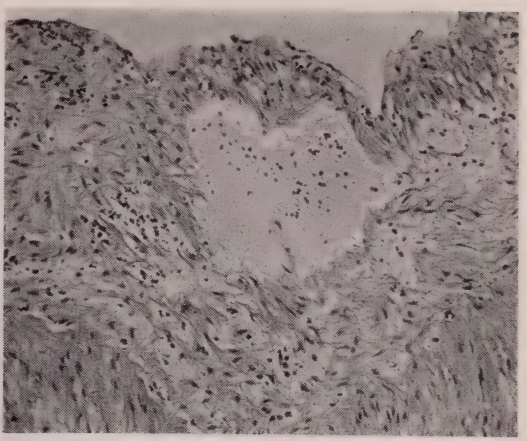

FIG. 7. Low-power detail of intima of right pulmonary artery showing fibrous thickening of intima, loosening of ground substance, vesicle formation, and modest leukocytic infiltration.

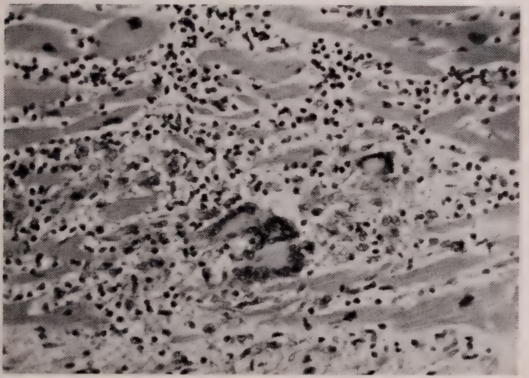

FIG. 6. High-power view of an early granulomatous lesion in myocardium showing destruction of fibers, infiltration by lymphocytes and epithelioid cells, and formation of a few giant cells.

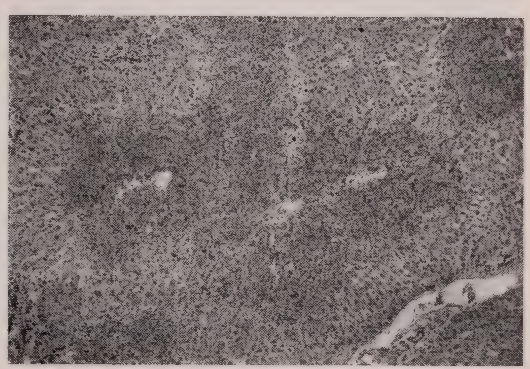

FIG. 8. Low-power view of liver specimen showing congestion and acute centrilobular necrosis of liver with centrizonal hemorrhage.

(Fig. 6). The pulmonary artery and its major branches showed grossly a few scattered plaques and microscopically occasional vesicles in the thickened intima with loosening of the ground substance, slight inflammatory exudate, and disruption of the internal elastic lamella (Fig. 7). The liver weighed 1,600 Gm. and showed extensive central congestion with centrilobular necrosis and agonal hemorrhage in the necrotic areas (Fig. 8). The pelvic mass and menometrorrhagia can be explained on the basis of chronic adhesive salpingo-oöphoritis with hydrosalpinx.

I would interpret the reduction in the size of the bilateral hilar masses as healing of the granulomas by fibrosis. As the peribronchial fibrosis developed, the asthma, which originally may have been allergic, became obstructive. The granulomas in the heart were quite young, and it is plausible to believe that the cardiac failure of six weeks duration is associated with extension of the disease to the heart. I would interpret the vesicles in the intima of the pulmonary artery as early stigmata of pulmonary hypertension.

As Dr. Bruno has pointed out, most cases of sarcoidosis pursue a benign indolent course. A minority will lead to chronic cor pulmonale because of extensive replacement of the lungs by granulomas and scars.

This case is exceptional in the acuteness and severity of its course.

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Special Language of Drug Addicts

"Cap," "hop," and "salt and pepper" have harmless enough meanings in everyday usage but take on a completely different connotation for the drug addict.

"Addicts have a special language as do members of the underworld and others who defy social and legal convention," according to *Patterns of Disease,* a publication for the medical profession.

The publication lists some of the most commonly used terms in this special vocabulary as an aid to physicians who may come into contact with an addict. "Cap," for example, means a standard dose, and "hop" can be interpreted as either opium or, loosely, narcotics in general. "Salt and pepper" is marihuana or any other essential drug, and "on the nod," as the phrase implies, means sleepy or stuporous from opiates.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
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Cardiovascular Collapse Due to Air Embolism

PROMPT adequate replacement of blood lost during surgical procedures is the responsibility of the anesthesiologist. The occurrence of sudden hemorrhage may require rapid transfusion, a procedure whose inherent hazards are multiplied in emergencies, as illustrated in the following case.

Case Report

A forty-year-old woman in good general health was admitted in the hospital for excision of a herniated nucleus pulposus at the right fifth lumbar space to be followed by a lumbosacral fusion. Her preoperative arterial blood pressure was 120 mm. Hg systolic and 80 diastolic. Her pulse was regular at 80 per minute. The hemoglobin content of her blood was 12 Gm. per 100 cc.

For preanesthetic medication she was given by intramuscular injection 75 mg. of Demerol and 0.4 mg. of scopolamine. An hour later she arrived in the induction room calm, drowsy, and dry. Anesthesia was induced with thiopental sodium by intravenous drip in a 0.4 per cent concentration. Oxygen was administered for five minutes by means of a face mask. Succinylcholine 50 mg. was injected intravenously prior to endotracheal intubation which was performed under direct vision with a number 32 cuffed anode tube. Anesthesia was then continued and was maintained by the administration of nitrous oxide 3 L. per minute and oxygen 2 L. per minute in a semiclosed circle-filter carbon dioxide absorption system. The patient's blood pressure at this time was 90/65. She was given 15 mg. of *d*-tubocurarine intravenously, and she was then turned onto a prone position. A Stephenson respirator was set at 25 mm. Hg pressure and the tidal volume at 1,100 cc. at a rate of 20 per minute. Anesthesia was maintained with nitrous oxide and oxygen in a semi-

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Discussed at a conference held at the Hospital for Special Surgery, New York City, June 1, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

closed system with intermittent intravenous administration of thiopental sodium.

During the surgical procedure it was noted that there was a great amount of blood loss. It was necessary to pump blood into the patient in order to maintain her arterial blood pressure at 95/65. Over a period of one hour and twenty-five minutes a quantity of 2,000 cc. of blood was pumped in through a saline bath (2-bottle system), a bulb from an atomizer being used as the source of air pressure. When approximately 50 cc. of blood remained in the bottle, the surgeon inquired if the amount of blood transfused was sufficient. It was remarked that the patient's blood pressure and pulse were stable at 100/80 and 80 per minute respectively. The surgeon announced that he was almost ready to start closing the operative wound. The level of blood in the primary bottle (going directly into the patient's vein) was allowed to fall as low as possible. A sucking noise was heard, and the anesthetist immediately noted that air was present in the tubing leading to the patient. The tubing was clamped and a solution of 5 per cent dextrose in water replaced the empty bottle. The tubing was then disconnected from the intravenous needle and unclamped and the dextrose solution was flushed through. The patient's blood pressure was again taken, approximately half a minute or less after the sucking noise was heard, and was unobtainable.

The patient's color at this time was good, and she started to move and lift her head. An additional 12 cc. of 3 per cent thiopental was administered intravenously. Following this, the patient's color became cyanotic. It was not possible to obtain a blood pressure. The possibility was mentioned, on the basis of the sucking noise which had been heard at the site of the intravenous needle, that the patient had suffered an air embolus. The patient was turned supine and the chest was opened immediately. The heart was pumping inadequately. The surgeon started cardiac massage, and a needle attached to a syringe was inserted into the patient's heart three times with a total of 50 cc. of air aspirated. One minute later the heart began beating effectively. Epinephrine and Cedilanid were injected into the heart. The blood pressure was maintained at 70 systolic with a Neo-Synephrine intravenous drip. The patient was breathing spontaneously. She was placed under hypothermia and returned to her ward. She was breathing spontaneously but was unresponsive.

Her urinary output was approximately 150 cc. the first day postoperatively and 400 cc. on the second day postoperatively. On the succeeding days it was 800 cc. and then 1 L. No pathologic reflexes developed. The patient's pupils reacted to light and were not markedly dilated but they were unequal. She responded to her name by opening her eyes and moving her extremities. Two days postoperatively a tracheotomy was required for better ventilation. However, the patient developed rales in both lung fields. Her blood pressure remained at a systolic of 70 to 90. She died eight days postoperatively.

At autopsy the organs were grossly normal. No encephalomalacia was found in the brain. The lungs were congested and a 2 cm. laceration was found in the lower left lung. There was also a retroperitoneal hemorrhage of 500 cc.

Comment

When rapid replacement of blood is necessary, the transfusionist must be ever vigilant to avoid air embolism. To this end numerous technics have been devised. The one described here depends on a reservoir bottle containing saline interposed between the blood bottle and the patient. Air pressure applied to the contents of the blood bottle forces the blood into the saline reservoir, thereby increasing pressure in the latter and hastening the flow of blood (and saline) into the patient. Just as it empties completely into the saline reservoir, the blood bottle should be clamped off to avoid the entry of additional air into the saline reservoir. If this is done correctly, the pressure drops and the system reverts safely to gravity flow as the extra volume leaves the bottle. If the blood bottle is not clamped off and removed when empty, air under pressure may enter the reservoir and, in an unguarded moment, into the patient.

Other variations of the method utilize mechanically compressed air or oxygen as the driving force with some sort of pressure-limiting device as a safety valve. It has also been proposed that tanks of carbon dioxide be used instead of air or oxygen, on the premise that the highly soluble carbon dioxide gas would be readily absorbed should gas embolism occur inadvertently.

The only safe way to eliminate air embolism as a problem of rapid transfusion is to avoid introducing any gas under pressure into the fluid system. Several methods accomplish this. In one an appropriately sized syringe is attached to the tubing by means of a 3-way stopcock. The syringe can then be loaded from the blood bottle and its contents discharged into the patient precisely as desired with no danger of embolism. Although this technic is quite feasible in small children, it is inefficient when massive rapid replacement is required in adults. In another method special tubing featuring a flexible dilatation in a portion of the length is utilized. By manual squeezing of this dilated area, which is equipped with unidirectional check valves, an accelerated blood flow into the patient is maintained. Unfortunately the system is liable to slowdowns and stoppages so that the desired flow cannot be maintained. For blood supplied in plastic bags there is available a strong netlike cover into which an inflatible rubber bladder can be fitted together with the bag of blood. Inflating the rubber bag forces the blood into the patient under pressure. When the bag is emptied, flow ceases but air embolism is eliminated.

Unfortunately this system also has mechanical flaws which interfere with proper blood flow.

Whatever the method utilized, the hazard of air embolism can only be avoided by a vigilant transfusionist.

(Number seventy-nine in a series of Clinical Anesthesia Conferences)

ANNOUNCEMENT

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BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Accidental and Intentional Poisonings

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Carbon Tetrachloride	18 years	Female

The patient, who lives in New Jersey, ingested 250 cc. of carbon tetrachloride with suicidal intent eight days prior to admission to the hospital. Two hours following ingestion she vomited and she continued to vomit all day. On the following day she felt better. There is no information available whether a physician was consulted at that time. Two days following ingestion the patient became tired and irritable and had repeated episodes of vomiting. Her condition gradually worsened, and she told her parents what she had done. She was taken to the hospital immediately.

After two days of unknown therapy and observation in the hospital the patient failed to show any improvement. She was therefore transferred at this Center's advice to a New York hospital for dialysis. This was carried out on admission, the evening of the tenth day following ingestion. Stupor and vomiting were noted on admission to the second hospital. Laboratory findings were as follows: The blood had a urea nitrogen of 200 mg. per 100 ml., carbon dioxide combining power 19 volumes per cent, chlorides 88 mg. per 100 ml., sodium 124 mg. per 100 ml., potassium 4.5 mEq. per liter, and calcium 9.7 mg. per 100 ml. The urine had a specific gravity of 1.017, a trace of albumin, 100 over red blood cells, and many casts.

After the dialysis the blood urea nitrogen fell from 200 to 93 mg. per 100 ml. and there was gradual improvement thereafter. Three days following the dialysis the serum potassium was rising and a new ion exchange resin was used with excellent results. After twenty-one days of hospitalization, or twenty-nine days following ingestion, the patient's medical condition was excellent and she was referred for psychiatric care.

Unfortunately in cases of suicide attempts patients usually are provided emergency medical care without referral for indicated psychiatric care, although in many instances, particularly those in which medical symptoms are minimal, medical emergency care is perhaps of lesser importance than psychiatric care for the underlying emotional disturbance. This case also re-emphasizes the danger of forgetting the latent toxic manifestation of carbon tetrachloride. There is at times considerable reluctance to hospitalize such patients for possible development of late symptoms.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Black Leaf 40	12 years	Male

The patient was using this insecticide and accidentally splashed it into his mouth. Fifteen minutes later he vomited, was nauseous, had abdominal pains and burning in the mouth and throat, and became dyspneic. He was taken to the hospital and received emergency care from his physician. He showed notable improvement within fifteen minutes.

This produce contains 40 per cent nicotine and is one of the most dangerous of the commonly used household insecticides. The toxic symptoms in nicotine poisonings appear early. In addition to the local symptoms, such as burning in the mouth and throat, nicotine also produces stimulation followed by depression of the central nervous system. The smooth muscle cells may also be directly excited by the alkaloid. The complex pharmacologic effect of nicotine is responsible for the variety of symptoms produced. Among the garden supplies nicotine should be segregated and should not be permitted to be used by a child.

Under the Black Leaf trademark there is an unusually large number of insecticides, ranging from very toxic to "safe" ones. It is very important for the physician to know the exact composition. We have had several cases in which the Black Leaf product was assumed to be associated with a high nicotine content and it later turned out to be of the less toxic group.

Although this patient was not lavaged because of the recurrent vomiting, gastric lavage with sodium permanganate is recommended in cases of nicotine poisoning. Artificial respiration and oxygen should also be administered when indicated.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Meprobamate	14 years	Female

This patient ingested 40 meprobramate tablets (400 mg. each) with suicidal intent. She left a note which was found by her father, and he immediately took her to the hospital. On admission the patient was in coma but not cyanotic. Her blood pressure was 100/75, pulse 88 and regular, and respirations 20. There was a reasonably good tidal volume. A minimal amount of mucus was observed in the trachea. Most symptoms related to the central nervous system, such as general depression and absence of all deep tendon reflexes. A diagnosis of acute meprobromate intoxication was made.

This Center was called for advice, and the hospital was advised that maintenance of the airway and fluids administered intravenously was the best course of treatment. Within twenty-four hours the patient was fully conscious and responded well to therapy. A psychiatric consultation was arranged, and the diagnosis of character neurosis was made with the recommendation for psychiatric testing and outpatient follow-up.

The parents of this patient are separated and the patient lives with the mother, with whom she is in constant conflict. She apparently favors the father and left home to spend the weekend with him. Not wishing to return home, she decided to take the drug on Sunday evening, April 12, in order to "end it all" and left a note for her father to that effect.

A careful review of the attempted suicides in adolescents indicates that it is perhaps the family environment and not inherent enzymatic aberrations which is responsible in many episodes.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Rubbing Alcohol	16 months	Female

This child obtained a bottle of rubbing alcohol from a shelf over the chifforobe. The child opened draws of the chifforobe and used them as steps. Although this child was described as of average growth and development, she showed great ingenuity for her age to get to her desired goal. Happily, no ill effects followed this episode. (It is not known whether the child ingested the alcohol.)

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Dro (Insecticide)	15 months	Female

At the time of the accident the father and older siblings were away at camp. The mother was at home with 2 younger children. The mother noticed a swarm of ants at the entrance to the house and also in the kitchen. She poured the Dro into a jar from the original container in order to apply it in the corners of the kitchen and at the entrance of the house. At this moment the telephone rang and the mother hurried to answer the call. She picked up the phone with the infant in her arms. The child's wiggles annoyed the mother, and she put the infant on the floor. Almost within a few seconds the child obtained the jar from the top of a shelf and swallowed some of its contents. She began to cry and attracted the mother's attention.

She was taken to the hospital, and the following symptoms were noted: burning in mouth and throat, nausea, and dyspnea. Gastric lavage was done in the emergency room, and the child responded almost immediately. She was observed for several hours and then sent home, apparently fully recovered. Incidentally, this child was described as being intelligent, active, curious, and mischievous.

This incident illustrates the lightning rapidity with which accidental ingestions can occur. The petroleum solvent in most household insecticides is frequently more dangerous than the insecticidal component itself.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Quinine	18 years	Female

The information relating to this incident was given by the twin brother. The patient presumably took the quinine pills to relieve constipation (a use unfamiliar to the Center). On a visit to the home the public health nurse obtained the following information. The patient came home for a weekend visit with her parents from a summer job in the mountains. In the afternoon she complained of discomfort and constipation and resorted to an enema, from which she obtain no relief. According to the mother she saw the patient writhe in acute discomfort which to her resembled "labor pains." The mother was apparently an expert on labor pains since she had five children. The mother inquired whether the daughter had taken any medication; this was denied. The patient was rushed in an ambulance to the hospital emergency room. There the patient did admit taking the quinine pills at about 5:00 P.M. on the day of admission on the advice of a friend for the relief of "constipation."

The patient was lavaged in the emergency room and admitted the the inpatient service. The mother was assured that the patient was not pregnant. Immediately following admission the patient began to bleed profusely from the uterus. She remained in the hospital for five days and improved under symptomatic therapy.

The effectiveness of quinine as an abortifacient appears to be greatly overrated by the layman. In addition, it may be pointed out that the newer antimalarial agents make the use of quinine considerably outmoded, particularly because of its frequent misuse as a general household remedy.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Antihistamine	17 years	Female

The patient took the chlorprophenpyridamine with suicidal intent because of recurrent fits of depression. One of the symptoms, not previously reported to the Center in connection with antihistamines, was roaring in the ears. It is a prominent symptom in quinine poisoning, however, although it was not reported in the previous case. The patient also related that she previously had attempted suicide in a fit of depression by taking 25 to 50 aspirin tablets but had suffered no ill effects.

The patient is a married woman who has a six-month-old infant. The nurse who interviewed her at home relates that she is of average intelligence but unusually depressed. The public health nurse was able to obtain a preferential appointment for this patient in a mental hygiene clinic. In answer to the question whether this accident could have been prevented the interviewing nurse stated that she did not feel this would have happened if the patient had been a happy well-adjusted person. The nurse did not think that the patient was really trying to kill herself but that her actions were bids for attention. Further follow-up in the home by a public health nurse is planned.

In this case, too, the mental hygiene therapy is of far greater significance than the first aid measures, which included gastric lavage, for the poisoning. The physician should remember that chlorprophenpyridamine is now appearing in a more concentrated form and that the ingestion of large amounts of the highly concentrated form may cause severer symptoms than were manifested in this case.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Cyanide	2 years	Female

The child obtained the chemical in the kitchen and was playing with it. It was brought into the home as a metal polish by the father. The child soon became drowsy and unconscious and was rushed to the hospital emergency room in a stuporous condition. Her stomach was lavaged with warm water and the universal antidote was administered. After three days at the hospital the patient made an uneventful recovery.

Luckily this was one of the very rare marginal cyanide poisonings; just enough was ingested to produce unconsciousness but not enough to produce irreversible damage to the oxygenation of blood.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Aspirin	3 years	Female

This infant obtained a bottle of aspirin and ingested 77 $1^1/_4$-grain tablets. She was taken to the hospital, where her stomach was lavaged. She was then admitted to the inpatient service. She was in mild acidosis and also had acute bilateral otitis media. The blood had a carbon dioxide combining power of 20.7 volumes per cent and the urine had 2 plus acetone. Treatment consisted of fluids and Gantrisin. After twenty-four hours the patient was well enough to be discharged home.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Lye	23 years	Female

This patient ingested lye with suicidal intent. She experienced burning in the mouth and throat and was taken to the hospital. On admission lye burns of the pharynx and esophagus were noted. The blood had a carbon dioxide combining power of 15.6 volumes per cent and 96 mg. per 100 ml. chlorides. The urine had a specific gravity of 1.025 and 4 plus albumin. After twelve days in the hospital the patient expired, and an autopsy revealed perforation of the esophagus.

The fatalities with this product in the accidental ingestion group are very low.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	3 years	Female

This patient accidentally ingested 10 cc. of oil of Wintergreen. He had burning in the mouth and throat and diarrhea. He was taken to the hospital fifteen minutes following ingestion, where his stomach was lavaged with sodium bicarbonate. Since he was asymptomatic after the lavage, he was sent home. This incident is cited because of the age of the patient and particularly because of the absence of sequelae, perhaps due to the promptness of the gastric lavage.

INCIDENT 12

Toxic Agent	*Age*	*Sex*
Aspirin Compound	38 years	Female

This patient ingested 25 tablets of aspirin compound. She vomited immediately and had nausea. She was taken to the hospital three hours after ingestion because of recurrent vomiting and nausea. Her stomach was lavaged with water, and after the emergency treatment the patient left the hospital against the advise of the physician.

INCIDENT 13

Toxic Agent	*Age*	*Sex*
Barbiturate	66 years	Male

This patient ingested 24 barbiturate tablets with suicidal intent on the day of admission. He had ingested 8 to 9 of these tablets daily for three days prior to admission. This patient is an alcoholic and had been drinking a "fair amount" of gin on the day of admission. He was admitted to New York Hospital in comatose condition.

His blood pressure on admission was 92/62. Several hours following admission his blood pressure returned to normal. The patient also had generalized areflexia except for the corneal and pupillary reflexes. Five hours after admission he was responsive, although he had received no specific therapy. Twenty-four hours following admission the physical findings were entirely within normal limits, but he was kept for psychiatric observation for an additional six days.

The prompt recovery in this case of barbiturate intoxication and particularly with concurrent use of alcohol is interesting.

(*Number forty-five in a series of Briefs on Accidental Chemical Poisonings*)

If you do not think about the future, you cannot have one.—JOHN GALSWORTHY

CASE REPORT

Severe Reactions Following Previously Uneventful Intravenous Pyelograms

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It is our purpose to present evidence of the development of serious allergies in patients who have had previously uneventful intravenous pyelograms. Three cases are cited in which the phenomenon of profound sensitivity to the medium occurred after multiple uneventful intravenous pyelogram studies. Patients in all the cases had been given 200 mg. of chlorprophenpyridamine maleate (Chlor-Trimeton) intramuscularly fifteen minutes prior to urography and a test dose of the dye in the amount of 1 cc. intravenously three minutes prior to administering the entire 30 cc. The injection of the medium was administered slowly (10 cc. of dye per minute). Reactions occurred in all patients before 5 cc. of dye had been given.

A good deal has been written concerning the necessity of testing for allergic reactions to intravenous iodides given for urographic studies.[1] Many authors have advocated the concurrent use of antihistaminics.[2] Nine per cent of radiologists give some preliminary medication. It is well documented[3] that severe reactions and deaths have occasionally followed this diagnostic procedure. At present it is an accepted procedure to pretest patients with small intravenous doses of the contrast medium prior to slow injection of the definitive dose of dye.

Pendergrass *et al.*[1] called attention to reactions associated with intravenous urography, listing 86 deaths in a recent survey. Sixty-nine of these deaths were immediate and the rest were delayed or indeterminate. Five patients in this series had had previously uneventful intravenous pyelograms; 1 had had 4 pyelograms without any incident.

The following is a summary of cases in which a deep, shocklike picture ensued, entailing unconsciousness, stupor, and hypotension.

Case Reports

Case 1.—A fifty-six-year-old white female had been admitted to Lebanon Hospital with gross hematuria. Intravenous pyelography (using neo-iopax) revealed a nonopaque shadow in the lower right ureter interpreted as papilloma. This was confirmed by retrograde studies. In May, 1952, a right nephro-ureterectomy was done for papillary carcinoma of the ureter. Owing to the possibility of a recurrence, follow-up pyelograms were done at varying intervals. Several preparations, including neo-iopax, were used without untoward effect. In March, 1955, a routine intravenous pyelogram was begun with neo-iopax. Following the usual precautions and the slow injection of 2 cc. of the material, a severe reaction ensued, entailing shock, cyanosis, and syncope. The patient responded to the emergency measures given.

Case 2.—A twenty-five-year-old white male was first seen in January, 1950, with hematuria due to a large right ureteropelvic calculus. A pyelolithotomy was performed. The patient was well for one and one-half years, and, despite ureteral dilatations for the prevention of postoperative stricture, he developed pyelonephritis at that time. Parenchymal destruction necessitated a right nephrectomy in 1951. Owing to the presence of calculi in the remaining kidney, the patient had intravenous pyelograms every four months. After several bouts of colic, he passed one of the stones. In March, 1955, an intravenous pyelogram was done and resulted in a complete vasomotor collapse which responded

TABLE I.—SUMMARY OF CASES

Case	Sex	Age (Years)	Number of Previous Intravenous Pyelograms	Indications	Iodide
1	F	56	8	Papillary carcinoma of ureter	Neo-iopax
2	M	25	9	Recurrent calculi	Diodrast
3	M	46	6	Gout, uric acid calculi	Hypaque

to emergency treatment.

CASE 3.—A forty-six-year-old white male had a history of gout associated with elevation of the blood uric acid and a periodic passage of uric acid stones. Intravenous pyelograms were done twice a year for three years. On the sixth injection severe collapse occurred and was reversed by emergency measures.

Comment

Three cases have been presented in which patients with no adverse experience previously to intravenous iodides received unexpected reactions to the media (Table I). In each case a different preparation precipitated the episode. Resuscitation was effected on all occasions with the methods advocated by Pendergrass, *et al.*:[4] Adrenalin, 1 to 1,000, 1 cc. intravenously; Pyribenzamine, 50 mg. intramuscularly; shock position; oxygen by mask; artificial respiration; and blankets. No convuslions were present in these cases. Should convulsions occur, the administration of intravenous barbiturates is a required therapy.

Summary

1. It is conceivable that certain patients may build up a gradual and subclinical sensitivity to the media used in urography over a period of time. Finally an anaphylactoid reaction occurs.

2. The same precautions should be maintained in intravenous urography irrespective of a history devoid of previous adverse reactions.

3. Measures to combat these reactions have been discussed.

4. It is advised that emergency measures to combat pyelographic shock be ready and available for immediate use when an intravenous pyelogram is performed.

1749 GRAND CONCOURSE, BRONX 53
(DR. BERGMAN)

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Cerebral Palsy

About 3 in every 1,000 Americans has cerebral palsy. The disease ranks below two other neurologic disorders—epilepsy and Parkinson's syndrome—but occurs more often than multiple sclerosis and twice as often as muscular dystrophy. More than half a million persons in this country are afflicted by cerebral palsy, but the classification is very broad and may include disorders arising from brain lesions from any cause including cerebral hemorrhage in the aged. If these disorders of the adult brain are included, the incidence of cerebral palsy is estimated at 2,500,000 persons.

SPECIAL ARTICLES

The British Narcotic System

Report of Study

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MUCH has been written in recent years about the problem of narcotic addiction. Numerous "solutions" have been advanced. One such solution which has had a number of proponents is the so-called "clinic plan," which proposes, under various schemes, to provide narcotic drugs without cost to addicts on demand under the premise that an available supply would deter addicts from committing crimes and would remove from the scene the pusher and the peddler of illicit narcotics.

The clinic scheme was tried in this country in the 1920's, was judged a failure, and was discontinued. Its advocates, however, contend that the experience of the early twenties was not a fair trial and urge that it be attempted again. As proof of the potential benefits of the clinic plan they cite the British narcotic system which is depicted as being based on the general principle of freely available narcotic drugs, administered completely under medical auspices, without such legal restrictions as are imposed in this country by the Harrison Anti-Narcotic Act.

The study of narcotic control in England, which forms the basis for this report, was instituted to obtain factual material about the British experience in narcotic control and on the basis of such material to test the thesis as to whether the British experience actually provides support for the clinic plan. In addition we hoped to determine whether all or part of the British system might be applied in this country.

It is not the purpose of this report to examine the merits or deficiencies of the clinic plan although it might be noted in passing that the concept of providing an addicted individual with a plentiful supply of the noxious agent with which to seal his doom is, in certain aspects at least, ethically and morally repugnant, whether that agent be alcohol, a narcotic, or some other substance. There is no question, however, that we do need to seek a solution to the narcotic addiction problem and nowhere is the need more manifest than in New York State where it is judged that some 40 per cent of the nation's estimated 60,000 addicts reside. Public anxiety about the narcotic situation has been great and there has been steady pressure for some constructive move. It was within this framework that the British study was undertaken.

Methodology of the Study

The study technic consisted first of a survey and a scrutiny of available documents, reports, and articles dealing with the British system. Following this, a list of persons to be interviewed was prepared. This list was made up of those who, we felt, could contribute significantly to the study. Thanks to the efforts of Sir John Charles, Chief Medical Officer, British Ministry of Health, we were able to consult every individual on the list. Tentative lists of questions were prepared for posing to the appropriate individuals interviewed. In addition, every effort was made to encourage those whom we interviewed to speak freely from their own experience and knowledge. Each was assured that he would not be quoted directly and could speak without any fear of subsequent embarrassment as a result of the information he gave us.

The study, which occupied over a month, included coverage of the British Ministry of Health; the British Home Office; the National Health Service; the Scottish Department of Health; the British Medical Association; the British Prison Commission; the Office of the Commissioner of Metropolitan Police for London (Scotland Yard); the Maudsley and St. Luke's Woodside, 2 psychiatric hospitals in the London area experienced in care of narcotic addicts;

and a considerable number of psychiatrists and other physicians interested in the treatment of narcotic addiction. In addition, the World Health Organization and the United Nations Narcotic Control Sections were visited in Geneva.

It is an interesting side light of the study that we were told by many of those whom we saw—and these included persons intimately concerned with the administration of narcotic control in England—that we were the first persons from the United States to visit them and discuss in detail the operation of the British narcotic system. We found this somewhat startling since there has been no dearth of material in both the lay and medical press in this country about the workings of the British narcotic system. The British, incidentally, do not look with favor on references to the British system. They feel that the nature of their problem and what they consider a simple collection of administrative practices do not justify the designation "system," a term which they point out was invented by the Americans. While the British feelings in this regard are appreciated, for convenience we will use the term "system" in this report.

Statutory Authority for Narcotic Control in England

The legal basis for the handling of narcotic drugs in England is contained in the Dangerous Drug Act, 1951,[1] which covers the importation, exportation, and handling of opium, cocaine, Indian hemp, and their derivatives and synthetic analogs. (From an administrative standpoint "dangerous drugs" and "narcotic drugs" are essentially interchangeable terms.) Section 9 of the Dangerous Drugs Act, 1951, authorizes "a Secretary of State" to issue regulations for controlling the manufacture, sale, possession, and distribution of drugs covered by the Act. Responsive to this authority are the "Dangerous Drugs Regulations, 1953," made March 21, 1953, by one of Her Majesty's Principal Secretaries of State. Sections 10 and 11 of the Dangerous Drugs Act, 1951, also gave Her Majesty the authority to add or remove drugs from control under the Act. This authority has been used a number of times since 1951 to keep the provisions of the Act in accord with developments in the pharmacology of narcotic drugs.

The Home Office is the department responsible in Great Britain for the administration of the law relating to dangerous drugs. Within the Home Office responsibility is assigned to the A-1 Division which administers a variety of activities, including beside Dangerous Drugs the Channel Islands. The A-1 Division has a Dangerous Drugs Branch to which is posted Her Majesty's Chief Inspector for Dangerous Drugs. The Home Office has issued a Memorandum entitled *The Duties of Doctors and Dentists under the Dangerous Drugs Act and Regulations.*[1]

This Memorandum draws not only on the Act and the Regulations themselves but also on the *Report of the Departmental Committee on Morphine and Heroin Addiction,* which was issued in 1926 by a committee headed by Sir H. D. Rolleston. It is familiarly known in England as the Rolleston Report. An extract from the report which forms the Appendix IV of the Memorandum on *Duties of Doctors and Dentists* . . . is as follows:

> (i) Precautions in the treatment of addicts
>
> 51. In the preceding section, the conclusion has been stated that morphine or heroin may properly be administered to addicts in the following circumstances, namely, (a) where patients are under treatment by the gradual withdrawal method with a view to cure; (b) where it has been demonstrated, after a prolonged attempt at cure, that the use of the drug cannot be safely discontinued entirely, on account of the severity of the withdrawal symptoms produced; and (c) where it has been similarly demonstrated that the patient, while capable of leading a useful and relatively normal life when a certain minimum dose is regularly administered, becomes incapable of this when the drug is entirely discontinued.

While Appendix IV represents what has come to be in this country the most popular concept of the British narcotic control system, the actual narcotic control administration as carried out by the Home Office is in fact more nearly based on the following section of the Memorandum:

> 7. The authority granted to a doctor or dentist to possess and supply dangerous drugs is limited by the words *so far as may be necessary for the practice or exercise of his profession.* In no circumstances may dangerous drugs be used for any other purpose than that of ministering to the strictly medical or dental needs of his patients. The continued supply of dangerous drugs to a patient solely for the gratification of addiction is not regarded as "medical need.". . .

Other sections of the Memorandum provide that: "A doctor or dentist who obtains or attempts to obtain dangerous drugs for a purpose not covered by this authority, or who administers (or, in the case of a doctor, supplies) otherwise than for the purpose of bona fide medical or dental treatment, or who fails to observe the requirements of any of the Regulations, commits an offense against the Act . . . . Offenses may be dealt with summarily or on indictment. If tried summarily the accused is liable on conviction to a fine of 250 pounds or 12 months' imprisonment or to both fine and imprisonment; if on indictment to a fine of 1,000 pounds or 10 years' imprisonment or to both fine and imprisonment . . . ."

Doctors and dentists are also directed to keep adequate records including a dangerous drugs register into which must be entered each item of drug supplies obtained and each amount furnished a patient. All prescriptions for drugs covered under the Act must be in writing, be dated, signed, and bear the name and address of the patient. No special blank is required for narcotic drugs and no special license or permit is needed by physicians or dentists to prescribe narcotic drugs. Except for the last provision, striking similarity exists between narcotic drug administration in the United States and in England.

The relationship of the Ministry of Health to the Home Office Dangerous Drugs administration is worth mentioning. The staff of the Chief Medical Officer of the Ministry of Health serves in a consultant capacity to the A-1 Division, Dangerous Drugs Branch, of the Home Office. Currently, a medical staff member of the Chief Medical Officer is serving as secretary to an Interdepartmental Committee on Drug Addiction. This Committee is charged with developing a report which will bring up to date the Rolleston Committee Report of 1926. Chairman of the new Committee is Sir Russell Brain, a prominent English neurologist, and the Committee is referred to as the "Brain Committee." The terms of reference to this Committee are:

> To review in the light of more recent developments the advice given by the Departmental Committee on Morphine and Heroin Addiction in 1926; to consider whether any revised advice should also cover other drugs liable to produce addiction or be habit-forming; to consider whether there is a medical need to provide special, including institutional, treatment outside the resources already available for persons addicted to drugs; and to make recommendations, including any proposal for administrative measures that seem expedient, to the Minister of Health and the Secretary for Scotland.

The first meeting of the Committee was held on July 16, 1958. No target date has been set for its report and the view was expressed that the Committee would be "sitting for quite a while." The Committee's first job is to approach a number of official bodies and organizations in the United Kingdom and to ask for information regarding drug addiction and other items pertinent to the terms of reference of the Committee. It was made perfectly plain to us that the Committee was not set up because of any official belief that drug addiction is increasing in England. While it was admitted that drug addiction may be increasing, the primary reason for establishing the Committee was international, in other words, an effort on England's part to cooperate fully with other nations in the international control of narcotics. There was also a feeling, partly expressed and partly referred to indirectly, that there was a need to re-examine certain sections of the Rolleston Report, particularly to determine whether or not the prescribing of dangerous drugs should be more restrictive. This feeling may reflect partially at least the international pressures that England receives regarding narcotic control. These may be based somewhat on the fact that England permits the use of heroin which is banned in the United States and in many other countries; and partly on the dissatisfaction expressed by some with the ethical and other considerations involved in supplying addicts with drugs, in accordance with the provisions of Appendix IV of the Memorandum on *Duties of Doctors and Dentists.*

The staff of the National Health Service of the Ministry of Health also assists the Home Office in the administration of the Dangerous Drugs Act and Regulations. This assistance is provided directly by the regional medical officers of the National Health Service. In this connection it is to be remembered that under the British medical care system each individual selects the physician whom he desires to have treat him. If he is accepted by the physician he is then assigned to that physician's "panel" and all costs for his treatment (exclusive of minimal charges for prescription drugs and other items) are covered by the government out of tax funds. The regional medical officers are the regional supervisors of the National Health Service, although they look on their relationship with the individual practitioners as more in the nature of a consultant or, as it was explained, they are on an "Old Boy" basis with the individual physicians in their respective regions.

Enforcement Measures

The backbone of the enforcement of the Dangerous Drugs Act and Regulations is the periodic inspection of chemists' shops (drug stores), wholesalers, and manufacturers, carried on in the case of the first by local police and among the latter two by Her Majesty's Inspectors of the Dangerous Drugs Branch of the Home Office. To implement the inspection activities of local police officers the Home Office has issued a guide, *Notes for the Guidance of Police Officers*."[2]

In the London area inspections are carried out by the staff of the Commissioner of Metropolitan Police (Scotland Yard), except within the limited area of the "City" of London which maintains its own police force. Elsewhere in England, local constables are responsible. Only the larger centers such as London, Liverpool, and Birmingham have special narcotic squads in the local police force. Even in these instances the squads are small and consist often of only a few men. The tendency in British police work, it was explained, is for personnel to do more in the way of general enforcement than is the case in many police departments in the United States.

In the *Notes for Guidance of Police Officers*, local officials are informed that the frequency of inspections should never fall below twice a year. It is stated that more frequent inspections, such as once a quarter, are found to be practicable in most cases. The inspections, which are authorized by Section 14 of the Dangerous Drugs Act, 1951, empower a constable to "enter the premises of any producer, manufacturer, seller, or distributor of dangerous drugs and to demand the production of, and to inspect, stocks of drugs and any books or documents relating to dealings in such drugs." As has been noted, local constables are by administrative decision not currently required to inspect wholesalers and producers, although they may do so if they wish as a supplement to the inspections by Her Majesty's Inspectors.

The inspection of documents and books is facilitated by another section of the Dangerous Drugs Act, 1951, which requires that a retail chemist (pharmacist) preserve his registers, prescriptions, and signed orders for a period of two years. Local constables look for evidence of carelessness or fraud on the part of the chemist in maintaining his registers or in the handling of dangerous drug stocks. They are also directed to look especially for instances of the "regular supply" of dangerous drugs to individuals for any purpose whatsoever and to report such instances directly to the Home Office. Regular supplies are interpreted to mean the provision to any individual, over a period of time, of an average daily dose of narcotics in excess of $^1/_2$ grain of morphine, cocaine, or heroin; 300 mg. of pethidine hydrochloride; 30 mg. of methadone hydrochloride or phenadoxone; or 3 mg. of levorphan (Levo-Dromoran). The period of time to be used in determining what constitutes a regular supply is not defined specifically, but inspecting officers are cautioned to watch especially for the continuance of supplies noted at a previous inspection and to make a report of any such instance.

Inspecting officers are asked to be not only on the lookout for repeated supplies to one individual on the register of a particular chemist, but also to watch for the appearance of the same individual's name on the register of more than one chemist. Similarly, if the names of physicians appear as the purchasers of substantial amounts of drugs on the register of one or more chemists, the matter is to be reported without delay. (These activities pertaining to the inspection of chemists' shops closely parallel those carried on by the narcotic investigators of the New York State Department of Health, except that the number of inspectors—presently 9 for the entire State—does not permit the minimal semiannual inspections carried out in England.)

Reports from local inspecting officers are forwarded to the Home Office where they are checked for any indication that (a) unusual or continuing amounts of dangerous drugs are being prescribed or that (b) the doctor himself is taking dangerous drugs. If there is such an indication, a request is made to the National Health Service for a "special inquiry" to be made by a regional medical officer. The regional medical officer "Minute" (memorandum) of May, 1957, states that ". . . as regards (a): confirmation is generally wanted (from the prescribing physician) that the drug is needed for legitimate therapeutic reasons. It is not intended that any suggestion should be made of reducing the dose below what the doctor thinks is necessary. He should, however, be reminded of the need to keep a close watch on the frequency and amount of the prescriptions. When the condition is not a terminal one (such as asthma or rheumatoid arthritis) the possibility of giving relief by some nonhabit-forming preparation can quite properly enter into the discussion. It is always advisable that, where dangerous drugs are being given, the doctor should share his responsibility with a consultant. Where (b) the doctor himself is an addict, it is of the utmost importance that he place himself under the care of a colleague, usually a consultant, and preferably not a partner. Admission to a hospital for a cure is, in most cases, clearly advisable."

Physicians are not required by law to give information to, accept the advice of, or cooperate with the regional medical officer in the handling of a narcotic addiction problem in one of his own patients (or his own addiction for that matter). Nevertheless, the National Health Service was not aware of instances in which physicians refused to give information or had otherwise not cooperated. The regional medical officer urges the physician treating an addicted individual to secure first a consultation with another general practitioner, or if possible with a psychiatrist, or to send the patient with a note to the local hospital or to the outpatient division of the hospital. The opinion was expressed at the National Health Service that it is essential to get the addict into a hospital on a closed service where he can be withdrawn from his drugs and psychiatric treatment can be provided.

One other check on the extent of the prescribing of dangerous drugs is provided by the routine visits of regional medical officers to physicians in their regions. These visits are not made on any set schedule, but as it was explained, each regional officer "tries to get to the doctors in his area," first visiting those who have requested assistance, or from some indication appear to need advice or consultation. During these visits, the officer checks the dangerous drugs register which each physician is required to keep. Into this register the physician must enter all drugs received and in a separate entry all drugs supplied to patients, giving the amount, date, and name of the patient supplied. Failure to keep a proper register may subject a physician to a fine as noted previously, under Section IV for an offense against the Dangerous Drugs Act.

As a result of the checks made on chemists (pharmacists), wholesalers, manufacturers, physicians, and other professional personnel (hospitals, nursing homes, and similar institutions are also checked) the Home Office expressed the opinion that most drug addicts in England sooner or later come to its attention. Just how many of the addicts thus turned up are successfully cured of their addiction is not known. It is a fact, however, that currently the Home Office is aware of about 350 addicts among the British population of about 50,000,000. The opinion was expressed that most of these represent a "hard core" of addicts, the treatment of whom has failed.

While there is no law or regulation requiring them to do so, most physicians, just as soon as an addict comes to their attention, report the name and circumstances to the Home Office. Physicians, we were told, do this because they just don't want to "get mixed up with an addict" since, if they do, they will sooner or later come to the attention of the Home Office and of the National Health Service. We were told on a number of occasions that this feeling is so strong that many physicians believe they are required to report addicts to the Home Office.

This belief and the current list of narcotic addicts maintained by the Home Office has apparently given rise to the erroneous belief that there is a formal registry of addicts in England* and that addicts are provided with some means of identification enabling them to obtain narcotics at will from physicians. Neither of these is an actuality. Nor are there any "narcotic clinics" operated in England to which addicts may report for drugs.

Extent of the Narcotic Problem in England

The British report on narcotic drugs to the United Nations for 1957[4] lists 359 addicts, 90 of whom were newly reported during the year. Of the total, 149 were reported as addicted to morphine, 74 to pethidine hydrochloride, 52 to heroin, and the balance to a miscellany of drugs. Addiction among persons in the health professions is an unfortunate part of the picture. About 75 of the reported addicts are physicians, dentists, nursing sisters, or pharmacists.

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* "Addicts are not registered as such. A practice of this nature is undesirable as it would suggest both that a cure was no longer possible and that some immunity from responsibility was conferred."[3]

Another index to the extent of the British narcotic problem is the admission of addicts to mental hospitals. An examination of the first and subsequent admissions of drug addicts into mental hospitals for the years 1949 to 1956 is as follows:

	1949	1950	1951	1952
First admission	33	26	22	29
Readmission	15	16	17	15
	1953	1954	1955	1956
First admission	21	27	39	54
Readmission	25	23	38	53

While a definite increase in the number of admissions is shown in the last few years, the numbers are small and could well be accounted for by a greater willingness to accept treatment rather than by any actual increase in addiction.

To seek yet another index of the problem within England, officials of the British Prison Commission were consulted about the number of addicts admitted to prisons in England and the general relationship of narcotics to crime. Information on the latter point was also sought from the Office of the Commissioner of Metropolitan Police (Scotland Yard). These groups indicated that narcotic addiction is virtually no problem for the British prison system and that there is little relationship between crime and narcotic addiction in England.

Currently the British prison system, which handles all types of prisoners throughout the country, has a total population of about 40,000. In 1954, among a similar number of prisoners there was a total of 24 addicts. No figures on addiction have been kept since 1954 since it was felt that the numbers were too small to warrant the effort of collecting them. The Commission operates all of the prisons in England. There are no jails or similar custodial facilities operated by counties, towns, or cities. Of the 24 addicts, 18 were addicted to morphine, heroin, or pethidine hydrochloride; 1 was addicted to amphetamine; 2 were addicted to barbiturates; and 3 were users of marihuana.

There are very few peddlers and pushers of narcotics in England. The few who exist are reported to be located mostly in the London area. Penalties for pushers and peddlers are rather severe by British standards. The minimum is two years probation and, if the person is indicted and convicted, a fine of 1,000 pounds and a jail sentence may be meted out. Organized crime, such as we know it in the United States, does not exist in England in the opinion of law enforcement officials, and never has except for a brief flurry in connection with black market activities immediately after World War II.

Information obtained regarding the drug preference of addicts in England indicates that morphine is preferred to heroin in a ratio of about 10 to 1. This in spite of the fact that physicians are free to prescribe heroin in England, while in this country it is a prohibited drug. In response to international pressures, the Home Office took tentative steps toward banning heroin in England. British physicians, led by the British Medical Association, battled valiantly against this invasion of what they considered their professional prerogatives, and efforts to ban the drug were abandoned. Although physicians are still free to prescribe it, the drug is used only occasionally in England (1 in a 1,000 narcotic prescriptions was one estimate) and physicians were obviously fighting for a principle, not for a widely used drug. The great infrequence with which it is used medically very possibly contributes to its lack of popularity among addicts.

It appears obvious that, by any available index, narcotic addiction is currently not a major problem in England. It is equally apparent that there is little crime associated with narcotics in England and that the British narcotic problem in England is almost exclusively one of medical addiction: that is, addiction occurring in susceptible individuals exposed to narcotic drugs as a result of medical treatment. In short, England's problem is one of medical addiction not criminal addiction, which, is addiction supported by illicit supplies of narcotic drugs, while in the United States we have both, with the latter being a larger contributor to the problem.

Why Is the Narcotic Problem No More Serious in England?

Since the problem of narcotic addiction is by any index a relatively minor one in England, the logical question arises: Why is this fortunate state of affairs? Logical as this question is, it is not easy to answer. One might first ask, is the favorable British situation the result of the British system, which while not vastly different from that of the United States, is dissimilar to a degree? This question was asked in the course of practically all of our interviews. The answers were unanimously to the effect that the British system was the result of the favorable British situation, and not the cause of it.

If it is not the system, then what is it? A psychiatrist at the Maudsley probably stated it as well as anyone when he said the answer lay within the British people themselves, or, as he put it succinctly, "in the nature of the beast." The English have a definite abhorrence of narcotic drugs, which has become incorporated into their mores and culture. This apparently extends to all levels of society from the upper class down to the lowest criminal element. Both Prison Board officials and police reported to us that in the classes of English criminals the narcotic addict is considered to be at the lowest level, below the meanest pimp or pickpocket. Other criminals will have nothing to do with the addict, not only because they don't trust his judgment, but also because they despise him.

The lack of a serious narcotic problem among the English is possibly more easily understood by a reference to the epidemiology of drug addiction itself. In order to have addiction flourish, the elements of host-agent-environment must be present just as with a communicable disease.[5] In typhoid fever, for example, we must have the agent, the typhoid bacillus; a favorable host in the form of an individual susceptible to the disease; and an environment, such as one contaminated by human wastes, to promote the spread of the agent and its introduction into the host. In narcotic addiction we must have:

Host	Agent	Environment
A susceptible individual	An addiction-producing drug	An area where the drug is readily available and conditions promote its spread, such as the Harlem area in New York City

Individuals vary in their tendency to develop addiction; many seem able to be exposed without becoming addicted, indicating the presence of a specific and potentially identifiable difference among individuals. It still remains for research to prove and clarify this fact. Addiction to narcotic drugs is basically a psychiatric problem and remission or liberation from the habit is achieved by the same psychic processes as are involved in remission from various psychoses, neuroses, and personality problems. Narcotics addiction is a special form which is related closely to other forms of addiction, such as alcohol or drug abuse of barbiturates and amphetamines, but the nature of this relationship remains obscure. Each culture tends to have its own characteristic drug abuses although the availability of a specific agent helps to determine the choice of the substance. Taken together, these facts indicate a rather wide dispersion of vulnerable individuals and until there is better basic understanding of the problem we are not safe from such epidemic-like experiences as that which suddenly created many tens of thousands of amphetamine users in Japan after World War II.

In England what appears to be the major gap in the epidemiologic picture, probably for cultural reasons, is the susceptible individual. Certainly the drugs are available (even though limited) through medical channels and by our standards an environment conducive to spread exists in certain areas although admittedly there is no environment which appears to be as heavily seeded with narcotics as are certain areas in this country. The lack of organized crime with a criminal element interested in the narcotic traffic is, of course, a factor. However, the fact that traffic is carried on in marihuana in spite of efforts to control it does not lend credence to the belief that it is superior law enforcement that is the sole reason that narcotic addiction does not flourish in England. There is also little to suggest that the availability of drugs through medical channels is the only reason why there is little or no criminal activity in connection with narcotics. While theoretically narcotics are available through medical channels, they are, as one British official told us, actually quite "hard to come by" in England so that if there was widespread susceptibility to addiction and a consequent demand for the drugs criminal activity might be able to supply the demand. Law enforcement is obviously good in England, but it has sufficient failures, such as the control of marihuana, to indicate that it would not be omnipotent in coping with criminal forces bent on supplying a real demand for narcotics if such actually existed. Thus the answer must lie, for the most part, in the British people themselves and their apparent lack of a cultural susceptibility to narcotic addiction.

Treatment of Narcotic Addiction in England

As has been noted, cases of addiction are relatively few, they seem to occasion far less concern than they do in this country, and they are treated as one among many other psychiatric problems, especially in small private institutions. There is general skepticism about the effectiveness of existing methods of treatment as well as a general dissatisfaction with the long-term results which are generally described as marked by a very large proportion of recidivism or relapse. However evaluation to the point of scientific proof has not actually been carried out.

Reports of treatment varied from one physician's group of 7 cases, all of whom he considered successes, to another physician's series of 400 over the past twenty-five years, among whom he said he could be sure of only 5 cures. In any event, it appears evident that the English no more have the answer to the successful treatment of the narcotic addict then do we. Placing the patient in a hospital for withdrawal is certainly sound. Beyond that, in the treatment of the underlying condition, it must be recognized that neither we nor the British have at the present time a satisfactory treatment method for narcotic addiction.

Nevertheless there are a number of important reasons to believe that addiction is treatable and that better methods should be sought since "spontaneous cures" do occur, especially with increasing maturity, and it is a well-known fact that older narcotic addicts are far fewer in number than young ones. Further, some cases respond even to present treatment methods.

However, the development of more successful treatment must await the results of research. Unfortunately there is currently little research in the field of narcotic addiction being carried out in England. What research is in progress follows essentially the same lines as it does in the United States, but it is even smaller in volume and its orientation reflects the basic differences in the types of problems. However, in both countries there is strong agreement as to the need for much basic research to be done in this field. Because of recent advances in chemical and other technologies and in the theory of psychiatric drugs, there is better reason than ever before to expect constructive results from research.

Conclusions

1. England has a relatively minor narcotic addiction problem at the present time and this problem is one of medical rather than of criminal addiction.

2. The British narcotic control system which appears superficially to be vastly different from that of the United States is found on closer inspection to be not dissimilar.

3. The theoretic freedom that British physicians have under the law to prescribe narcotics, while not taken advantage of widely, still is not believed applicable for adoption in the United States. The operation of the National Health Service of England, which practically prevents patients from going freely from one physician to another, effectively deters addicts from obtaining drugs from more than one physician at a time. The absence of such a deterrent in the United States is in itself a compelling reason not to introduce the British system in this country.

4. The British experience with maintenance of addicts on stabilized doses of narcotic drugs is not adequate enough nor are its results sufficiently applicable to the United States to warrant the adoption of such a procedure in this country without further study under controlled conditions. In short, the British experience to date does not provide support for the adoption of the "clinic plan" in this country.

5. The favorable British narcotic situation is not the result of the British narcotic control system. Rather the collection of administrative practices referred to as the British system has developed over a period of years to cover the existing situation.

6. The lack of fundamental research and study of the narcotic problem in England is somewhat parallel to a similar deficiency in this country and serves to emphasize the urgency of developing research efforts in this area.

7. The United States has the most serious narcotic problem of any of the western nations. The fact that other nations do not share our concern for the problem may account for the relative inattention they give narcotic control, an inattention which may not always appear to be commensurate with the seriousness of the problem from the United States viewpoint. This is in no way an implied criticism of the excellent job being done by the limited staff of the World Health Organization but simply a reflection of

the attitude of nations who feel that there are other problems of more serious concern.

8. There is at the present time no satisfactory method that will achieve a high rate of permanent cure of narcotic addiction. The treatment efforts of the British do not appear to have accomplished very much better results than those employed here. This points up the urgent need for a coordinated program of research in this area.

9. At the present time there appears to be no practical method of preventing the occurrence of drug addiction, given a susceptible individual, an available drug supply, and an environment conducive to the fostering of addiction. For example, the British have what appeared to us to be a potentially serious situation from a narcotic standpoint in the Notting Hill section of London, yet there are no practical preventive measures that might be employed to forestall the development of widespread addiction in that area other than strict law enforcement which would reduce the risk of the introduction of drugs on a large scale. Thus the area of prevention is yet another facet of the problem in which research and study are badly needed.

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ANNOUNCEMENT

Medical Society of the State of New York
1960 Convention

SCIENTIFIC MOTION PICTURES

Colgate Phillips, M.D., *Chairman,* Scientific Motion Picture Subcommittee of Convention Committee, is interested in hearing from members who have 16-mm. motion picture films suitable for presentation at the 1960 convention, to be held at the Statler Hilton Hotel in New York City, May 9 through 13, 1960.

For applications, write to Colgate Phillips, M.D., 55 Avon Road, Bronxville, New York.

Government in Medicine

CONGRESSMAN ALBERT H. BOSCH, WOODHAVEN, NEW YORK

(*From the Committee on Ways and Means, Washington, D. C.*)

President Eisenhower has said: "A healthy citizenry is the first defense line of the Republic." There can be no doubt that the health of the American polity is fundamental to America's intellectual attainments, economic accomplishments, and social advancements. It is also true that national health cannot be successfully fostered exclusively through the widsom, ability, and endeavors of the medical practitioner.

The health complex requires the combined energies of the doctor, the public health worker, the nurse, the government official, the businessman, and indeed, most important of all, the citizen himself. In the enumeration of persons vital to the maintenance of community health, we find an indication of the reason for the great contribution to community health made by the Queensboro Tuberculosis and Health Association. You have among your membership outstanding medical practitioners, dedicated welfare workers, and community leaders from private life. You also have the confidence of the citizens you serve so well.

Before undertaking to discuss with you my views with respect to the role of government in medicine, I thought it might be appropriate if I gave you a brief report on the manner in which medicine was affected by the legislative activity of this past session of Congress. Following that, I will undertake a discussion of legislative considerations that will be before Congress next year. Because of the subject matter of that legislation, it will inevitably bring me to my principal topic for the evening, namely the role of government in medicine.

During this recently completed first session of the 86th Congress there were many important national issues of concern to America's doctors specifically and to medicine generally on which legislative action in some form or another was taken.

One of the bills, H.R. 10, on which both the Committee on Ways and Means and the House of Representatives took favorable action is of direct interest to doctors and was in my judgment of particular merit because it involved a matter of important tax equity. As a member of the Committee on Ways and Means it was my privilege to assist in successfully leading H.R. 10 through the Committee and through the House. This bill would give to self-employed individuals a tax deferment on self-employment income paid into a restricted retirement program. As I have indicated, the legislation would remove from our Federal tax structure the present discrimination against the self-employed individual and would tend to give a self-employed taxpayer comparable retirement opportunities with that accorded under present law to other employed persons. This bill is now pending before the Senate Finance Committee and it is my hope that this meritorious proposal can be successfully completed next year.

Other important legislative high lights in the past session of Congress included an expanded program of nursing home development, a health insurance program for civilian Federal workers, progress in providing medical care for dependents of military personnel, an augmented Hill-Burton program of Federal aid for hospital construction, and an increase in the appropriation for the National Institutes of Health. All of these legislative proposals represent significant developments in the field of medicine and health. They were actions taken over and above the usual provisions made for public health and veterans' care.

During the forthcoming second session of the 86th Congress I see two matters of particular significance to doctors within the framework of the Social Security Act.

The first of these concerns the question of whether doctors should be mandatorily brought within the coverage of the Social Security Program. This is a problem that the Congress has had pending for several years. There are valid arguments both for and against such an extension of coverage.

The arguments in favor of Old-Age and Survivors Insurance coverage for doctors include the fact that as a consumer the doctor, as is true of

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Presented at the Annual Joint Meeting of the Medical Society of the County of Queens, Inc., and the Queensboro Tuberculosis and Health Association, Forest Hills, New York, October 27, 1959.

other citizens, pays at least in part the cost of covering other individuals under the Act. This occurs because the employment taxes to some extent are passed on as a cost of doing business. It can be contended that if the doctor is required to pay for the protection of others under the program, he might just as well participate in the program himself. Social Security benefits are tax-free and as such could be an important consideration in a doctor's retirement plan either for age or disability as well as protection for his survivors.

The arguments against Old-Age and Survivors Insurance coverage for physicians are based largely on a recognition of the fact that doctors for the most part do not retire as early as most other groups and that they would therefore not have a reasonable expectation of recouping in benefits the amount of their tax contributions.

In the past, Congress has been guided largely by the wishes of occupational groups in determining whether to bring a group under the Social Security Act. It is therefore important that physicians should inform themselves with respect to the merits or lack thereof of Social Security coverage so that their wishes may be made known.

The second matter of importance to medicine that most likely will be introduced before the second session of the 86th Congress in the form of amendments to the Social Security Act is the proposal to provide medical and hospital care payments for Old-Age and Survivors Insurance beneficiaries out of the Old-Age and Survivors Insurance Trust Fund. This proposal is embodied in a bill, H.R. 4700, introduced by Mr. Aime J. Forand of Rhode Island. The legislation was the subject of public hearings by the Committee on Ways and Means this past July. I am confident that further consideration of the proposal will be presented before the Committee next year. I am sure that I need not tell you that those who do not believe that H.R. 4700 would represent a workable solution to medical care needs for the aged should develop alternative proposals for dealing with the problem of providing for the cost of our own health needs.

I am one who happens to believe that the existence of a problem does not inevitably require intervention by the Federal government to provide a solution. Medical care is a great problem to most of our citizens but it is a no greater economic problem than payments on our mortgages, tuition expenses for our children's education, and the myriad of other activities comprising our daily living. It is my conviction that the Federal government has no dominant role to play in providing the economic means of solving these problems. With government paternalism must also come government supervision; when we look to the Federal government for help, we must also expect that we will also receive Federal government direction.

I can respectfully assure you that in our own State of New York, because of the outstanding work that is done by capable and patriotic organizations such as your own, there is no human being who has sought medical care who has not received it regardless of his economic circumstances. If we are able to take care of our own with our own tax money and other resources effectively used on the local level, other communities either are doing or can do the same thing.

In finding solutions to health care problems, I believe it is fundamental that we remember that these problems can best be solved at the local level without superimposing a Federal bureaucracy as an encumbrance to efficient medical care and administration.

In considering the Forand proposal we should remember that once we have undertaken a program of compulsory medical insurance, the decision will be virtually irrevocable in the absence of some catastrophic experience. We could be jeopardizing the ability of the Old-Age and Survivors Insurance Trust Fund to meet not only its newly assumed hospital and medical care cost functions but also its present obligations of paying existing retirement, survivor, and disability benefits. As I have indicated, it is my view that by acknowledging the existence of a problem with respect to providing medical care for the aged we do not imply or expressly acknowledge that the solution can best be provided under the auspices of the Federal government.

The proponents of the Forand proposal argue that they are not advocating either socialized medicine or its counterpart, a system of national health insurance. However, I assert that their proposal is a step in the direction of these types of governmental health programs. The ultimate consequence would inevitably be a nationalization of medicine in the United States.

Presumably we would be taking this course in total disregard of the recent disastrous experience in England in this same sort of venture. The results of that British experience were the depressing opposite of the venture's original glowing promises. The British system broke down because government paternalism was substituted for individual initiative and family responsibility and because it created the atrophication of organizations such as you distinguished people comprise in our home community.

In view of the fact that I have expressed opposition to the proposed solution to the problem of medical and hospital care as proposed by my colleague, Mr. Forand, it may be appropriate that I offer my recommendations for the ways in which I believe proper steps could be taken to meet this problem.

First, I believe that a comprehensive medical health survey of national significance should be undertaken to determine authoritatively what our needs actually are and the extent to which there are existing facilities to meet those needs.

Second, I would propose and have proposed a soundly augmented Hill-Burton program to stimulate the development of health facilities with particular emphasis on an expanded program of nursing home construction for the convalescent care of our aged.

Third, I would propose that if Federal funds are necessary, the Public Assistance Titles of the Social Security Act should be amended to provide an expanded program of medical care payments on a 50–50 Federal-state matching basis to provide medical, hospital, and nursing home care for the indigent.

Fourth, I recommend that the medical profession, the insurance industry, the hospital administrators, and other interested private groups establish effective working committees within their own organizations to deal constructively with the development of meaningful solutions to these problems.

If these steps are taken, I am convinced that we will be taking up any slack that may exist in existing arrangements while at the same time we will be safeguarding ourselves against the costly disappointments inherent in any plan designed to foster socialized medicine.

I will try to be brief in giving you my views with respect to the proper role of government in medicine. In commenting on what I regard as the dangers inherent in any socialized medicine proposal I have already given you an important clue to my convictions on this matter.

Until the last two or three decades the Federal government played a very limited role in matters concerning family and community health. Indeed, as recently as 1940, a year in which the Federal budget was 6.2 billion dollars, only 3 million dollars were spent for medical research by the Federal government, and an additional 19 million dollars were spent for all other health purposes including grants to the states. During the late 1940's a trend developed for greater federalization of health service facilities. It is not my purpose to make a political speech, but I am grateful for the fact, and it is a fact, that with the advent of the Eisenhower administration we found a cessation in this trend toward federalization, and we substituted for it a cooperative approach in the field of medical activity in which we found participation by public groups, universities, foundations, industries, and government at local, state, and Federal levels working together to promote the national health. Instead of Federal domination of our endeavors to promote the health of our citizens, we now find a realization that governmental bureaucracy cannot be a substitute for medical proficiency and for coordinated wise human endeavors.

Today we have reached the point where we find the Federal government spending in the neighborhood of 3 billion dollars for medical-health purposes. We find these expenditures being administered by such agencies as the Department of Health, Education, and Welfare; the Veterans Administration; the Atomic Energy Commission; and indeed the Small Business Administration. Medical research, grants for professional training, assistance to research and training institutions, and disease prevention programs are appropriate functions and activities in which the Federal government can, and does, participate and makes funds available.

The role of the Federal government should never in the absence of a national emergency be anything more than a partnership capacity vis-à-vis medical practice. Better health is one of the deepest and most persuasive aspirations of the American people. The cost of maintaining that health is a matter of concern to us all, but I submit that the solution does not lie in the socialization of medicine. The solution does lie in an expanded utilization of group hospitalization programs as far as the public is concerned, and as far as medical practitioners are concerned the solution lies in more effective utilization of our health resources. Except in the case of diseases requiring isolation because of their contagious character, there is a need to keep people out of hospital beds if at all possible, to make the most intelligent use of existing medical care facilities, and to plan future hospitals imaginatively so that they are in design and operation best suited to the needs of the patients to be served.

There has recently been developed a concept of hospital service that is divided into three zones of care: a special care unit for patients who are critically ill, an intermediate care unit for those who are not dangerously sick, and a self-care unit for ambulatory patients. In addition to these three general divisions in the hospital, a comprehensive graduated care plan would include an adjoining nursing home unit for long-term care and a home-care program. There are several advantages in this type of a plan: better patient care in a shorter period of time; more effective use of medical and nursing staffs; greater satisfaction for patient, family, physicians, and nurses; and lower cost to the patient. Traditionally we have given insufficient attention to the classification of patients according to the kind and amount of care required, such as would be accomplished under this zone approach.

In closing, permit me to acknowledge that it is necessary for us to recognize the basic fact that the health and well-being of every American citizen are in a large sense the concern of us all. Let us also remember that such concern cannot be as effectively translated into efficient action through the paternalism of the Federal government as it can be by dealing with these problems on the state and local level.

I have termed the role of the Federal government as being that of a partner and I wish to emphasize that the basic aim of the Federal government in health affairs must be to continue that partnership capacity with the medical profession, educational institutions, foundations, industry, and the other levels of government. The Federal partner should endeavor to encourage individual initiative. The Federal partner should attempt to make possible a vigorous and continuing attack on our health problems to the end that we may continue to make gains in the unending war against disease and disability.

As a corollary of that I would state my conviction that the issues confronting our nation are so crucial in terms of human welfare, the preservation of our free enterprise way of life, and the continued greatness of our nation that America's doctors must find opportunities to become patriotic political forces so that our communities, states, and nation can benefit from their informed viewpoints.

Future Gains in Life Expectancy to Be Small

Future gains in the life expectancy of the American people, which now is close to seventy years, are expected to be much more modest than those of the last two generations.

By the year 2000, the expectation of life at birth in the United States is expected to be just over seventy-four years. This anticipated gain of less than five years contrasts with the twenty years added to the average lifetime between 1900 and 1957, the last year for which complete figures are available.—*Metropolitan Life Insurance Company, Information Service*

NEW YORK STATE JOINT COUNCIL TO IMPROVE HEALTH CARE OF THE AGED

United for the Aged of New York State

JOSEPH J. WITT, M.D., UTICA, NEW YORK

(*Chairman, Subcommittee on Aging and Nursing Homes, Committee on Public Health and Education, Medical Society of the State of New York*)

In New York City on November 24, 1959, a major step toward a common goal—better health care for the Empire State's senior citizens—was taken jointly by the New York State Nursing Home Association, the New York State Hospital Association, the Dental Society of the State of New York, and the Medical Society of the State of New York.

This was the formation of the New York State Joint Council to Improve the Health Care of the Aged.

The organizational meeting was held by official representatives of the 4 associations in the Council chamber of the headquarters of the State Medical Society, 750 Third Avenue.

By virtue of a unanimous vote taken at the meeting, the New York State Joint Council became the newest independent state affiliate of the National Joint Council to Improve the Health Care of the Aged. Mr. Howard I. Wells, Jr., national executive secretary, attended the meeting in an advisory capacity and provided valuable assistance in the formation of New York's Council. The national body has its headquarters in Chicago.

Presiding at this significant event was Joseph J. Witt, M.D., chairman of the Subcommittee on Aging and Nursing Homes of the Committee on Public Health and Education of the State Medical Society. Also in attendance as official representatives of the Society were Norman S. Moore, M.D., chairman of the Committee on Public Health and Education, and Herbert T. Wagner, M.D., executive director.

Representing the State Dental Society were Joseph P. Scola, D.D.S., chairman of the Council on Dental Health, and Oscar D. Stage, D.D.S., also a member of the Council and a representative of the Eighth District Dental Society in Western New York.

The State Hospital Association was represented by its president, Ambrose P. Merrill, M.D., and its assistant executive director, Mr. William P. Robinson.

Representatives of the State Nursing Home Association included its president, Mr. A. E. Barlow, who is also first vice-president of the American Nursing Home Association, and Mr. Harold Christie, a vice-president of the State Association and president of the Westchester Nursing Home Association.

The New York State Joint Council to Improve the Health Care of the Aged elected the following as officers: Joseph J. Witt, M.D., chairman; Mr. Barlow, vice-chairman; Charles A. Wilkie, D.D.S., executive secretary of the State Dental Society, secretary; and Martin Cherkasky, M.D., member of the board of governors of the Greater New York Hospital Association, a component of the State Hospital Association, treasurer.

The stated objectives of the Joint Council were declared to be:

1. The exchange of information on activities and plans of its members and other organizations in the field of aging;
2. Coordination of related programs conducted by member organizations;
3. Development of jointly sponsored projects;
4. Dissemination to the general public of information on health care of the aged.

Participation in the organization of the New York State Joint Council to Improve the Health Care of the Aged is the latest in a series of activities of the Medical Society of the State of New York in this field. While these activities have already been reported, perhaps a brief recapitulation would be appropriate.

At Utica on March 7, 1959, New York's first

State-wide Conference on Medical Society Activities in the Field of Aging was conducted by the Society and the Department of Health of the State of New York.

This conference is believed to have been the first of its kind in the United States under the auspices of a state medical society. It was based on the American Medical Association's six-point "Positive Health Program for Older Citizens," as developed at the A.M.A. Conference on Aging in Chicago in October, 1958, in which representatives of the State Medical Society were participants.

Represented at Utica were several county medical societies, official health agencies, and various voluntary community groups. The main presentations of this conference were published in the NEW YORK STATE JOURNAL OF MEDICINE of June 15, 1959.

In Washington, D.C., last June, representatives of the State Medical Society attended the first national conference of the Joint Council to Improve the Health Care of the Aged. The conference was sponsored by the American Dental Association, the American Hospital Association, the American Medical Association, and the American Nursing Home Association.

The purpose of this conference was (1) to encourage and assist affiliates in forming state joint councils, (2) to develop patterns of joint effort and planning, and (3) to help delineate the role of affiliates in preliminary state conferences and in the White House Conference on Aging to be held in January, 1961.

The conference program included: (1) panel discussions on "realistic attitudes" of the individual, the health professions, and the community toward the aged; (2) a survey design for assessing community health needs and resources of the aged; and (3) methods of financing health care of the aged. In addition, there were formal presentations on state and community programs effectively meeting the challenge for improving health care of the aged.

At Boston in September, State Medical Society representatives participated in a regional conference on aging, sponsored by the A.M.A. The purpose of the conference was "to explore the opportunities for positive health and meaningful living among older people through the exercise of individual, group, and community initiative."

Talent is developed in retirement: character is formed in the rush of the world.—GOETHE

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NECROLOGY

J. Robley Almer, M.D., of New York City, died on October 31, 1959, at the age of sixty-six. Dr. Almer graduated in 1917 from New York Homeopathic Medical College and Flower Hospital. He was chief physician in physical medicine at Union Health Center and clinical assistant physiatrist at Gouverneur Hospital Outpatient Department. Dr. Almer was a member of the American Congress of Physical Medicine and Rehabilitation, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Barber, M.D., of Lima, died in Genesee Hospital, Rochester, on October 26, 1959, at the age of seventy-six. Dr. Barber graduated in 1907 from Hahnemann Medical College of Philadelphia. He was an assistant in ophthalmology at Strong Memorial Hospital and a consultant in ophthalmology at Genesee Hospital. For sixteen years he served on the Eastman Kodak Company Medical Department's staff and from 1907 until his retirement in 1958 was on the staff of Genesee Hospital. Dr. Barber was a Diplomate of the American Board of Ophthalmology and a member of the American Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Channing E. Beach, M.D., of Buffalo, died on July 22, 1959, at the age of eighty. Dr. Beach graduated in 1905 from the University of Buffalo School of Medicine.

Arpad Berczeller, M.D., of Staten Island, died on November 28, 1959, at the age of fifty-five. Dr. Berczeller received his medical degree from the University of Vienna in 1929. He was a bacteriologist at Sea View Hospital. Dr. Berczeller was a member of the American Association for the Study of Neoplastic Diseases, the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gilbert Dewitt Dare, M.D., of Plattsburgh, died on October 26, 1959, at the age of eighty-two. Dr. Dare graduated in 1897 from Jefferson Medical College. He was an honorary physician at Physicians Hospital. Dr. Dare was a member of the Clinton County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Scott Dickson, M.D., of Utica, died on November 16, 1959, at the age of sixty-four. Dr. Dickson graduated in 1929 from the University of Toronto Faculty of Medicine. He was an attending in orthopedic surgery at Marcy State Hospital. Dr. Dickson was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jerome J. Greenwald, M.D., of Malverne, died in Glen Cove Community Hospital on November 18, 1959, at the age of forty-six. Dr. Greenwald graduated from the Royal College of Physicians and Surgeons, Edinburgh, Scotland, in 1949. He was an assistant physician at Maimonides, Kings County, and Jewish Chronic Disease Hospitals. Dr. Greenwald was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Carlyle P. Hussey, M.D., of Suffern, died on November 2, 1959, at the age of eighty. Dr. Hussey graduated in 1904 from University of Pennsylvania School of Medicine. He was a member of the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel J. Indebaum, M.D., of Los Angeles, California, formerly of the Bronx, died on November 7, 1959, at the age of seventy-three. Dr. Indebaum graduated in 1921 from Washington University School of Medicine, St. Louis. He was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Arthur Johnen, M.D., of New York City, died on August 11, 1959. He graduated in 1897 from Eclectic Medical Institute of New York, Rochester.

Albert Richard Lamb, M.D., of Pine Orchard, Connecticut, formerly of New York City, died on November 22, 1959, at the age of seventy-eight. Dr. Lamb graduated in 1907 from Columbia University College of Physicians and Surgeons and interned at Presbyterian Hospital. He was a consulting physician at Presbyterian and Englewood (New Jersey) Hospitals, and emeritus professor of clinical medicine at Columbia. From 1940 to 1946 he served as president of the medical board at Presbyterian Hospital and has since been an honorary member of the board of the Hospital and of the Alumnae Association of the Presbyterian School of Nursing. Dr. Lamb served on the first board of directors of Doctors Hospital which he helped establish. In 1953 at a ceremony marking the twenty-fifth anniversary of the opening of the Columbia-Presbyterian Medical Center he received a Distinguished Service Medallion. Dr. Lamb was a Fellow of the American College of Physicians and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

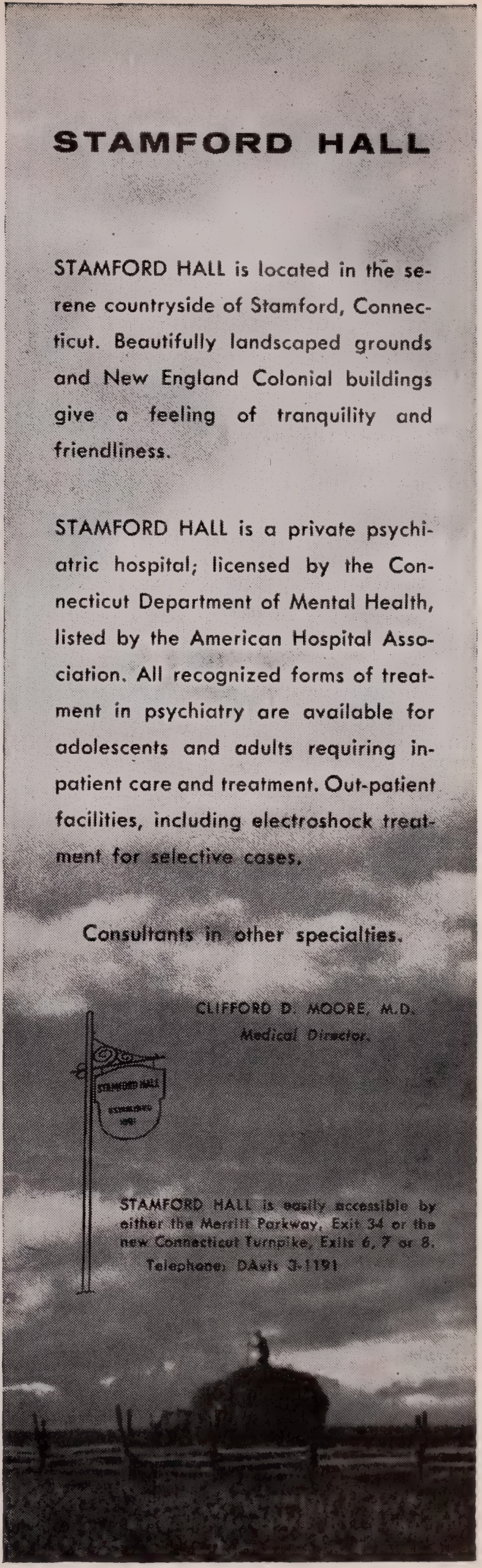
Frank M. Lester, M.D., of the Bronx, died on September 17, 1959, at the age of thirty-six. Dr. Lester graduated in 1949 from Howard University College of Medicine. He was attending physician in obstetrics and gynecology at Lincoln Hospital and a clinical assistant in obstetrics at Bronx Hospital Outpatient Department. Dr. Lester was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Murray Morris May, M.D., of Brooklyn, died on June 6, 1959, at the age of fifty-two. Dr. May received his medical degree from the University of Bern in 1936.

Isidore Miller, M.D., of the Bronx, died on August 12, 1959, at the age of seventy-six. Dr. Miller graduated in 1911 from New York University and Bellevue Hospital Medical College. He was an honorary assistant surgeon at New York Eye and Ear Infirmary and a consultant in otolaryngology at Jewish Memorial Hospital. Dr. Miller was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hugo Neuhaus, M.D., of Freeport, died on November 24, 1959, at the age of seventy-four. Dr. Neuhaus received his medical degree from the Uni-

[Continued on page 124]



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Medical Director.

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[Continued from page 123]

versity of Freiburg in 1910. He was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Albert Grant Rapp, M.D., of Amityville, died on July 30, 1959, at the age of fifty-three. Dr. Rapp graduated in 1929 from Cornell University Medical College. He was a Fellow of the American College of Surgeons.

Edward Douglas Rudderow, M.D., of New York City, retired, died on November 16, 1959, at the age of eighty-seven. Dr. Rudderow graduated in 1895 from New York Homeopathic Medical College and Flower Hospital. He had been on the staff of the Metropolitan and Flower and Fifth Avenue Hospitals and had also taught the theory of the practice of medicine and diagnosis at New York Medical College, the Woman's Medical College, and Columbia University. Dr. Rudderow was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Frederick Saphir, M.D., of Peekskill, retired, died on November 26, 1959, at the age of seventy-eight. Dr. Saphir graduated in 1902 from Columbia University College of Physicians and Surgeons. He was a consultant in proctology at Manhattan State Hospital. Dr. Saphir was a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the American Proctologic Society, the New York Proctological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sam A. Scherl, M.D., of the Bronx, died in Montefiore Hospital on October 24, 1959, at the age of sixty. Dr. Scherl graduated in 1925 from Marquette University School of Medicine. He was a clinical assistant physician at Lebanon Hospital. Dr. Scherl was a member of the Bronx County Medical Society of the State of New York, and the American Medical Association.

Harry Parker Van Wagenen, M.D., of Kingston, died on October 22, 1959, in Benedictine Hospital at the age of eighty-five. Dr. Van Wagenen graduated in 1896 from Long Island College Hospital. He was a member of the Ulster County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Vincent Williams, M.D., of College Point, died in Flushing Hospital on November 18, 1959, at the age of seventy-three. Dr. Williams graduated in 1913 from Fordham University School of Medicine. He was a consultant in otolaryngology and rhinology at Flushing and Midtown Hospitals. From 1940 to 1950 he was president of the medical board of Flushing Hospital and for many years served as a police surgeon. Dr. Williams was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Meyer Workman, M.D., of New York City, died on October 29, 1959, at the age of sixty-three. Dr. Workman graduated in 1918 from New York University and Bellevue Hospital Medical College and interned at Lebanon Hospital.

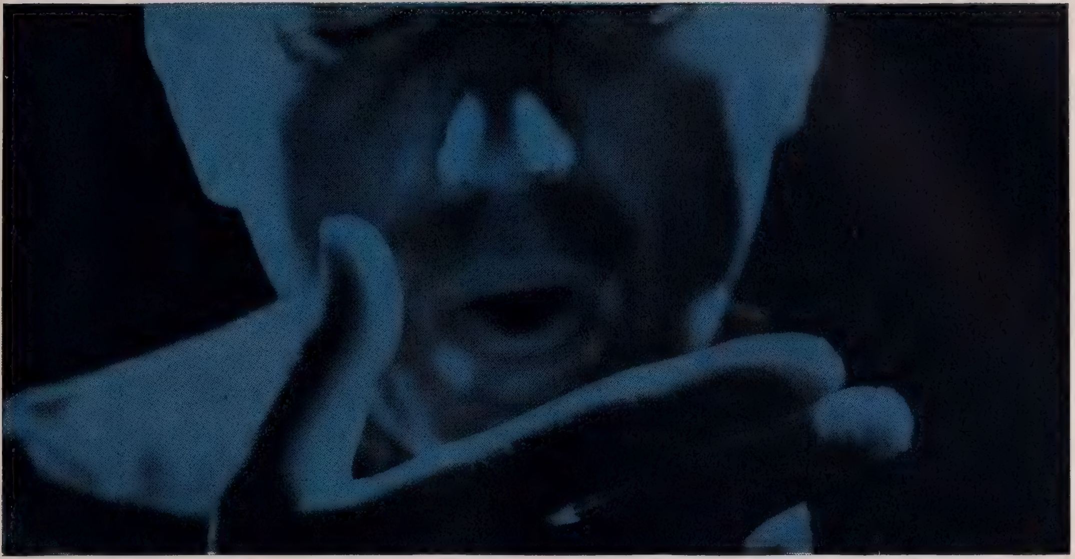
Benjamin Zimmerman, M.D., of Staten Island, died at his home on November 15, 1959, at the age of sixty-one. Dr. Zimmerman graduated in 1928 from Indiana University School of Medicine. He was an examining physician of the Veterans Administration New York Regional Office. Dr. Zimmerman was a member of the American Public Health Association, the Association of Military Surgeons of the United States, the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

More Male Than Female Drug Addicts

Drug addiction is found 4 times more often in men than in women. Of the country's estimated 46,226 addicts, 79 per cent are men. Moreover, addiction is primarily a problem of the young. More than 7 out of every 10 addicts are under the age of thirty and of these, 12 per cent are under the age of twenty-one.

How young is the person who starts taking the drugs? One study of 300 patients showed that 45 per cent were nineteen and under when they first became addicted, and an additional 44 per cent were in the twenty to twenty-nine-year-old age group at the time of the onset.—*Patterns of Disease, Parke, Davis & Company*

Robins



helps remove the cause of cough[1]

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It greatly increases the secretion of respiratory tract fluid,[2] which makes sputum less viscid and easier to raise,[2-4] makes tracheal and bronchial cilia more efficient,[3,5] and acts as a demulcent.[1-3,6]

Thus Robitussin increases the probability that a cough will achieve its natural purpose—i.e., to remove irritants such as exudates and mucus from the respiratory tract.[1,4,5]

references: 1. Blanchard, K., and Ford, R. A., J.-Lancet, 74:433, 1954. 2. Cass, L. J., and Frederik, W. S., Am. Pract. Dig. Treat., 2:844, 1951. 3. Hayes, E. W., and Jacobs, L. S., Dis. Chest, 30:441, 1956. 4. Blanchard, K., and Ford, R. A., Clin. Med., 3:961, 1956. 5. Blanchard, K., and Ford, R. A., Rocky Mt. M. J., 52:278, 1955. 6. Boyd, E. M., et al., Can. M. Assoc. J., 54:216, 1946.

Robitussin®

Glyceryl guaiacolate, 100 mg. in each 5 cc. teaspoonful

Robitussin® A-C Glyceryl guaiacolate 100 mg., prophenpyridamine maleate 7.5 mg., and codeine phosphate 10 mg. in each 5 cc. tsp. Exempt narcotic.

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MEDICAL NEWS

Dr. Bauer Retires from United Medical Service—Louis H. Bauer, M.D., retired on December 1 as chairman of the board of United Medical Service, New York's Blue Shield plan. He was succeeded by Carl R. Ackerman, M.D., president of the Bronx County Medical Society (Fig. 1).

Dr. Bauer, secretary general of the World Medical Association, has headed United Medical Service for five years.

Dr. Ackerman, a fellow of the American College of Surgeons, attending surgeon and past director of surgery at St. Francis Hospital, consulting surgeon and past director of surgery at St. Francis Hospital, and consulting surgeon at St. Joseph's and Morrisania Hospitals, is a vice-president of Blue Shield and has been a member of the board for six years.

Fig. 1. Carl R. Ackerman, M.D., newly elected chairman of the board of New York's Blue Shield (*left*), and Louis H. Bauer, M.D., retiring chairman (*right*).

New York Allergy Society Elects Officers—The following officers were recently elected by the New York Allergy Society: S. Senior Sack, M.D., Flushing, president; Joseph H. Fries, M.D., Brooklyn, president-elect; Sheppard Siegal, M.D., New York City, vice-president; Ely Perlman, M.D., New York City, secretary; Murray Dworetzky, M.D., New York City, treasurer; and Walter Kessler, M.D., New York City, assistant secretary-treasurer.

Course in Pediatric Oncology at Memorial Center—The Pediatric Department of Memorial Center for Cancer and Allied Diseases will hold its annual three-day course in pediatric oncology for pediatricians, general practitioners, and health officers, April 27 through 29, 1960.

Current developments and established methods in diagnosis, differential diagnosis and management of benign and malignant tumors, Hodgkin's disease, leukemia and reticuloendothelioses in childhood will be included.

The course will consist of ward rounds, seminars, demonstrations, examinations of children in pediatric, surgical, chemotherapy, and radiotherapy clinics.

The faculty will be composed of 20 members of the attending staffs of Memorial Hospital and Sloan-Kettering Institute for Cancer Research.

For information contact: Director, Pediatric Service, Memorial Center, 444 East 68th Street, New York 21, New York.

New York Chapter of American Medical Writers Association Gives Awards—The Metropolitan New York Chapter of the American Medical Writers Association conferred awards upon 10 individuals for distinguished service in improving medical communication at an awards ceremony meeting held on December 3.

Recipients of the awards were as follows: Chauncey D. Leake, Ph.D., professor of pharmacology and assistant dean, College of Medicine, Ohio State University; Walter C. Alvarez, M.D., emeritus consultant in medicine, Mayo Clinic, and medical columnist; Eunice Thomas Miner, executive director, New York Academy of Sciences; Robert D. Potter, editor *New York Medicine;* J. E. Schmidt, M.D., medical lexicographer; William H. Stone, M.D., editor of *CA*, bulletin of the American Cancer Society; Alvina Rich Lewis, executive editor of NEW YORK STATE JOURNAL OF MEDICINE; Martha E. Dana, medical writer and editor; and Edmund F. Lindner, creative writer.

Institute for Muscle Disease Opened—The Institute for Muscle Disease, Inc., a new medical research center which is expected to play a major role in the conquest of neuromuscular diseases, was opened on December 12.

The five-million-dollar, 11-story structure housing laboratories, workrooms, and special equipment, was made possible through public contributions to the Muscular Dystrophy Associations of America's annual fund-raising appeal. The Institute has its own organizational structure, consisting of a Board of Trustees and a director. They will be responsible for raising the estimated one-and-one-half-million dollar yearly operating budget for the Institute.

In addition to laboratories, the Institute's facilities include milli-curie and micro-curie "hot rooms" for work involving radioisotopes; two electron-microscope suites; germ-free quarters for experimental animals; a metabolism unit; and attractive living-in accommodations for muscular dystrophy patients cooperating in metabolic studies.

Ade T. Milhorat, M.D., is director of the new center. A pioneer in muscular dystrophy research Dr. Milhorat is chairman of MDAA's medical advisory board. He is also professor of clinical medicine at Cornell University Medical College, attending physician, New York Hospital, and consultant in neuromuscular diseases, Hospital for Special Surgery.

Courses to Be Given on Drug Addiction and Alcoholism—A course in six lectures on "Medical and Psychiatric Problems in Drug Addiction" will be given by Marie Nyswander, M.D., every other Wednesday at 8:30 P.M., at Eastview Hospital, 430 East 80th Street, New York City.

Another course of six lectures on "Medical and Psychiatric Aspects of Alcoholism" will be given by Ruth Fox, M.D., every other Wednesday at 8:30 P.M., at Eastview Hospital.

These courses will be open to members of the medical profession, nurses, and psychiatric social workers. There will be no charge for the courses. Each course is limited to 25 participants.

Application forms may be obtained by writing to: Sidney S. Greenberg, M.D., medical director, Eastview Hospital, 430 East 80th Street, New York 21, New York. Applicants will be notified of the exact starting date of each course.

Residency Program in Neurology—The Bronx Veterans Administration Hospital in affiliation with Columbia University announces an approved three-year residency program in neurology. In addition to work at the Veterans Administration Hospital, residents will spend six months full time at Montefiore Hospital, four months full time in the Department of Neuropathology at the Columbia-Presbyterian Medical Center, and during a period of fourteen months will attend various neurologic outpatient clinics of the New York Neurological Institute. Lectures in the basic sciences will be given at Columbia University.

The training program is under the immediate supervision of Carl B. Booth, M.D., in collaboration

[Continued on page 128]

CORNELL UNIVERSITY
MEDICAL COLLEGE
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The Fifth Annual Postgraduate Course in
THE TREATMENT OF FRACTURES
AND OTHER TRAUMA
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THE HOSPITAL FOR SPECIAL SURGERY
and NEW YORK HOSPITAL–CORNELL
June 13–18, 1960

This six-day course is given annually by members of the Cornell University Medical College faculty, serving on the staff at the Center hospitals. In addition to fractures and dislocations, the program offers a comprehensive review of the treatment of other traumatic conditions, including burns, shock, hand injuries, and trauma to abdomen, chest and nervous system.

Living accomodations will be available to postgraduate students and their wives in the Cornell Medical Student Residence, Olin Hall, at $3.00 per person per night.

TUITION: $150.00—Enrollment limited

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[Continued from page 127]

with Daniel Sciarra, M.D., Abner Wolf, M.D., and Tiffany Lawyer, Jr., M.D.

American Medical Assistants Association Holds Meeting—The American Medical Assistants Association held its third annual meeting in Philadelphia, October 16 through 18. The theme of the meeting was "Efficiency through Education."

Twenty-two medical assistants from New York State were present to witness the presentation of the New York Medical Assistants Association charter at a dinner on October 17. Mrs. Dorothy Ross, president, Nassau (assistant to Jacob J. Blinn, M.D.) acted as chairman of the delegation. Other delegates were Mrs. Bette Kindlon, Albany (assistant to Walter B. Macomber, M.D.), and Mrs. Lynn Strunk, Columbia (assistant to Heinz H. Salm, M.D.). Alternates included Mrs. Ella Gardner, Nassau (assistant to Mary G. Bruno, M.D.), Betty Phillips, Onondaga (assistant to Edward C. Hughes, M.D.), and Rita Grimm, Erie (assistant to Herbert H. Bauckus, M.D.).

Among the topics the New York delegation discussed were the State convention in May and the need for a central mailing address for the State Association.

Medical Journal to Conduct Experiment—The journal *Metabolism*, published by Grune & Stratton, Inc., will conduct an experiment which it is hoped will speed the reporting of research in metabolic disease and related fields. First, the journal will institute a strict editorial policy of accepting only papers which can be published within six months after acceptance, and second, the journal will change from bimonthly to monthly publication.

Institute on "The Back" in Cleveland—The Law-Medicine Center of Western Reserve University, Cleveland, Ohio, will offer a two-day institute on "The Back: A Law-Medicine Problem Reappraised." A special feature of the institute, being held February 12 and 13, 1960, will be two actual settlement negotiations, one involving a whiplash case and the other a disk case.

For registration or information contact: Oliver Schroeder, Jr., The Law-Medicine Center, Western Reserve University, Cleveland 6, Ohio.

Bushwick District Center—The new Bushwick district center at Central Avenue and Grove Street, Brooklyn, was dedicated on November 19. The building will serve an area with a population of more than 230,000. Its principal functions include child health, tuberculosis control, public health nursing, and general health and nutrition education.

Physicians Asked to Refer Patients—The Public Health Service of the United States Department of Health, Education, and Welfare has asked the cooperation of physicians in referring patients for the following two studies.

The primary purpose of the first study is to determine the possible effects of large doses of radioactive sulfur-35 on patients with inoperable but accessible (for biopsy) chondrosarcoma.

The second study is a search for therapeutic methods which may favorably affect the course of thyroid cancer. This study has three major components. The first two are concerned with the relationships of structure and function of tumor components to hormonal influences and to the uptake of radioactive iodine. The third component is related to the study, development, and detection of autoimmune antibodies developed to the patient's own thyroid gland and thyroid cancer as the antigen and the possible response of thyroid cancer to this antigen.

Patients appropriate to this program will be those in whom the diagnosis of cancer of the thyroid is established and who present either without prior treatment or with demonstrable, persistent, or recurrent disease after prior treatment.

Patients for both studies should not be in the terminal phase of the disease as such a circumstance allows no follow-up period for the determination of results.

Interested physicians should write or telephone: Charles G. Zubrod, M.D., clinical director, or J. Robert Andrews, M.D., chief, Radiation Branch, National Cancer Institute, Bethesda 14, Maryland. Telephone OLiver 6-4000, Ext. 4346 (Dr. Zubrod) and Ext. 3351 (Dr. Andrews).

Grant Received by Institute for Advancement of Medical Communication—The Institute for Advancement of Medical Communication, New York City, has received grant support from the United States Public Health Service for three current studies and projects aimed at improving intraprofessional communication in the medical sciences.

A program for training investigators to study the general processes by which the results of medical research are disseminated, and by which the informational needs of research workers are met, is being supported by a grant from the National Heart Institute. The Division of General Medical Sciences, National Institutes of Health, has awarded a grant to organize the Council of Medical Television. The fate of information evolving from research in the new field of psychopharmacology is being studied under a grant from the National Institute of Mental Health.

Richard H. Orr, M.D., is executive director of the Institute.

Medical Care Appraisal Plan in Hospitals—In 1956 a committee of the American College of Physicians developed a plan by which the quality of practice of internal medicine in the hospitals of this country can be appraised.

This study evaluated the quality of medical performance. It was made possible by an appropriation of $37,000 by the American College of Physicians and by additional grants from the National Institutes of Health.

It was concluded that the quality of practice of internal medicine in hospitals can be judged by having physicians who are trained as internists evaluate the records of a variety of patients. The hospital staff has to assess the quality of its own work.

After three years of field work a medical care appraisal plan was developed. This plan calls for the organization of an appraisal committee, chosen from members of the hospital staff who practice general medicine or allied specialties. This committee will evaluate medical care and act in an educational capacity only. Disciplinary action, if needed, would be left to the executive committee of the hospital staff.

The medical records of patients treated, including those who died, would be evaluated. The number of records examined will be determined by the number of medical admissions each month. They should equal 20 per cent of such admissions. Records from different disease categories should be evaluated each month. Some records of every staff member who practices internal medicine should be examined at least once a year. A written report should be made for each record, but must not be kept with the patient's record. It should be available only to the committee.

The plan is not intended to seek out instances of mismanagement, but rather to promote systematic investigations of hospital performance which will benefit every member. Suggestions of the committee would form the basis of general discussions at staff meetings and hence would encourage all members of the staff to assist in elevating standards.

For further information write to: American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania.

Personalities

Appointed

Seymour Perlin, M.D., Stanford, California, as chief of the newly established Division of Psychiatry at Montefiore Hospital, New York City.

Honored

Leo Mayer, M.D., New York City, president of

[Continued on page 130]

immortals of chinese mythology:

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[Continued from page 129]

the Federation of the Handicapped, at a testimonial dinner on November 18.

Retired

Harry Rosenberg, M.D., Franklin Square, as physician for Franklin Square Schools after thirty-one years of service.

Elected

Louis Berger, M.D., Brooklyn, re-elected as president of the Brooklyn Division of the American Cancer Society . . . David J. Kaliski, M.D., New York City, as president of the Physicians' Home.

Speakers

Lauretta Bender, M.D., Queens Village, at a meeting of the New York Division of the American Psychiatric Association on November 29 . . . James A. Brussel, M.D., Assistant Commissioner of the New York State Department of Mental Hygiene, on the topic "Mental Hygiene and Psychiatry Today" over radio station WBAI-FM, on November 27 and over station WNTA-AM on November 30 . . . Leonard Cammer, M.D., New York City, on a panel discussion on "Authority and Treatment" held by the Association for Psychiatric Treatment of Offenders on November 18 . . . Nathan S. Kline, M.D., New York City, at the New York Academy of Medicine on November 16 reporting on his tour of medical and psychiatric institutions, and research and education facilities in the Soviet Union . . . Earl A. Loomis, M.D., New York City, at the New York Welfare Conference, Syracuse, November 19 . . . Melitta Schmideberg, M.D., New York City, on a panel on "Authority and Treatment" held by the Association for Psychiatric Treatment of Offenders on November 18 . . . Margaret H. D. Smith, M.D., New York City, on the subject "Pathogenesis of Tuberculosis in Childhood" in New Orleans at a medical seminar on myobacterial and mycotic diseases presented by the Tuberculosis Association of Greater New Orleans.

MEDICAL MEETINGS

Postgraduate Assembly in San Antonio

The twenty-fourth annual session of the International Medical Assembly of Southwest Texas will be held in San Antonio, Texas, January 25 through 27, 1960, at the Hilton Hotel. Among the speakers will be Leopold G. Koss, M.D., New York City, whose subject will be pathology.

For additional information contact: A. O. Severance, M.D., president, International Medical Assembly of Southwest Texas, 202 West French Place, San Antonio 12, Texas.

Association for the Advancement of Psychoanalysis

On Wednesday, January 27, 1960, the Association for the Advancement of Psychoanalysis will sponsor its regular meeting at the New York Academy of Medicine, 2 East 103rd Street, New York City, at 8:30 P.M.

Norman Kelman, M.D., New York City, will present a paper entitled "Social and Psychoanalytic Reflections on the Father." Jack L. Rubins, M.D., Bellerose, will be the discussant.

Twelfth Annual Samuel and Minnie Goodfriend Memorial Lecture

The twelfth annual Samuel and Minnie Goodfriend Memorial Lecture will be given at Lebanon Hospital, Grand Concourse and Mt. Eden Parkway at 173rd Street, New York 57, New York, in the Murray Cohen Auditorium. It will be delivered by Jerome W. Conn, M.D., professor of medicine, University of Michigan, Ann Arbor, Michigan. Dr.

[Continued on page 132]

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**Source:* Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.: Diabetes *8*:289, 1959.

for those pediatric puzzlers..."A routine urinalysis and blood sugar should be done whenever the possibility of diagnosing diabetes is entertained."*

DIABETES MELLITUS AT AGES 1 TO 5

Order of Frequency of Presenting Symptoms in 110 Patients

Symptoms	No. of Patients	Per cent of total group
Polyuria	93	84.5
Polydipsia	89	81.0
Weight loss	47	42.7
Polyphagia	28	25.4
Anorexia	16	14.5
Lethargy	14	12.7
Enuresis	7	6.4
Vomiting	5	4.5
Irritability	3	2.7
"Craving for sweets"	3	2.7
"Sticky diaper"	3	2.7
"Strong odor to urine"	2	1.8
Glycosuria	2	1.8
Hypoglycemia	2	1.8
Personality change	1	0.9
Boils	1	0.9
Headache	1	0.9
Abdominal cramps	1	0.9

Adapted from Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.*

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[Continued from page 130]

Conn's topic will be, "Aldosteronism." The date of the lecture is February 11, 1960, the time 9:00 P.M.

Sectional Meeting of American College of Surgeons in Boston

Surgeons, nurses, and related medical personnel throughout the country are invited to attend a four-day sectional meeting of the American College of Surgeons in Boston, February 29 through March 3, 1960. Headquarters will be the Statler Hilton and Sheraton Plaza hotels. Sessions are also scheduled to be held at leading Boston hospitals.

The meeting will include sessions in general surgery and separate programs in the surgical specialties for gynecologists and obstetricians, ophthalmic surgeons, orthopedic surgeons, otolaryngologists, thoracic surgeons, urologists, and also sessions for nurses. Attention will be focused on new developments in surgery and on newer ways of handling problems encountered in daily practice.

Eighth Annual Karen Horney Lecture

The Association for the Advancement of Psychoanalysis announces the eighth annual Karen Horney Lecture. It will be given by David McK. Rioch, M.D., director, Division of Neuropsychiatry, Walter Reed Army Institute of Research. The title of the lecture is "Recent Contributions of Neuropsychiatric Research to the Theory and Practice of Psychotherapy." The meeting will be held on March 23, 1960, at 8:30 P.M., at Hosack Hall, New York Academy of Medicine, 2 East 103rd Street, New York City.

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Thyroid Gland Activity—Dr. Eugene H. Horn, assistant professor of anatomy, has been granted $7,500 by the National Institute of Arthritis and Metabolic Diseases and the pledge of an additional $12,000 over the next two years to study the thyroid gland activity in pelvic changes during pregnancy.

New York University College of Medicine

Awards—Severo B. Ochoa, M.D., the 1959 Nobel Laureate in Medicine, received the New York University Medal on November 20 and on November 19, 1959, the second honorary lifetime membership given to distinguished persons from New York University at a luncheon given in his honor. Jonas B. Salk, M.D., was the recipient of the first honorary membership in 1958.

State University of New York Downstate Medical Center

Faculty Appointments—Three new faculty appointments recently have been announced as follows: Tsung O. Cheng, M.D., director of the cardiopulmonary laboratory, Brooklyn Hospital, named assistant professor of medicine. Dr. Cheng was formerly a fellow in medicine and environmental medicine at Johns Hopkins University and Hospital and assistant physician in the outpatient department of the medical clinic there. In the Department of Pediatrics, Moe Goldstein, M.D., Forest Hills, Long Island, has been appointed lecturer and Ely Perlman, M.D., Roslyn Heights, Long Island, has been appointed clinical assistant professor. Dr. Goldstein is attending pediatrician and Dr. Perlman is attending and chief of the allergy clinic at the Long Island Jewish Hospital, New Hyde

Park, Long Island. Both the Brooklyn Hospital and the Long Island Jewish Hospital are teaching affiliates of the Downstate Medical Center.

Honors Scholarships—Two Honors Scholarships have been recently awarded to first-year medical students by the Dave Luckman Memorial Foundation and by the Alumni Association of the College of Medicine. The students who received these awards are: Ellen Strober and Michael Bromer both of Brooklyn. As holders of these Honors Scholarships, Miss Strober and Mr. Bromer will receive up to $1,000 per year for each of their four years in medical school.

Lectures—Several special lectures were held during the month of December. On December 7, the Sigma Xi Club sponsored a lecture by Sandor Lorand, M.D., Director of the Medical Center's Graduate Program in Psychoanalysis, on "Hypnotic Suggestion in Psychotherapy: Its Indications and Contraindications." On December 9, the Anatomy Department sponsored a lecture by Dr. Walther Stoeckenius, of The Rockefeller Institute, entitled "Studies on Model Systems of Biological Membranes" and the Biochemistry Department sponsored a lecture by David L. Drabkin, professor of biochemistry at the University of Pennsylvania, entitled "Metabolic Channeling in Experimental Nephrosis." The Annual Research Society Lecture was held on December 14. Dr. George E. Palade, Member and Professor of The Rockefeller Institute, spoke on "Structure and Function in Blood Capillaries."

State University of New York Upstate Medical Center at Syracuse

Elected—Francis O. Harbach, M.D., clinical professor of urology, has been elected president of the northeast section of the American Neurological Society.

Speaker—Dr. Gioacchino Failla, physicist and professor of radiology, Columbia University College of Physicians and Surgeons, spoke on "Biological Effects of Radiation" on December 7. Dr. Failla's visit was sponsored by MEND, Medical Education for National Defense, a joint federal-medical school program designed to acquaint the medical students with the principles of military and disaster medicine.

Appointed—James B. Preston, M.D., has been appointed as professor and chairman, Department of Physiology, to become effective July 1, 1960. Dr. Preston will succeed Dr. Gordon K. Moe who leaves June 1, 1960, to become laboratory director of the Masonic Foundation for Medical Research and Human Welfare, Utica.

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BOOKS REVIEWED

Biosynthesis of Terpenes and Sterols. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, M.A., and Cecilia M. O'Connor, B.Sc. Duodecimo of 311 pages, illustrated. Boston, Little Brown & Co., 1959. Cloth, $8.75.

Biosynthesis is an inclusive term referring to endogenous conversions of substances within animals and plants—including microorganisms. The importance of these studies lies in two areas: (a) production of drugs as antibiotics by microbiologic fermentation, and (b) clarification of mechanism of action so that physiologic or pathologic processes are more clearly understood. The latter is the subject of this volume.

Squalene and mevalonic acid, which receive generous consideration in this book, may appear to be abstruse entities but they are of fundamental importance in a number of physiologic—and pathologic—processes as, for example, in the endogenous synthesis of cholesterol or of steroids.

The substances dealt with in this symposium are cholesterol and cholesterol precursors, bile acids, carotenoids, D_2 vitamin, coenzymes, and similar materials. Some are used in therapeutics. Others are agents which clarify paths of metabolism and mechanisms of conversion in species other than human. Such work illuminates the areas in which clinical studies are subsequently done. For example, studies on lipotropic agents would not have been as meaningful if the investigative work, including, for example, work on the acetate hypothesis were not to have preceded them. Biochemical investigations on coenzymes, as another example, give us a method of explaining or understanding vitamins, energy exchange, or tissue dysfunctions.

The participants are distinguished in their work—American investigators are represented by Karl Folkers and Konrad Bloch. The discussions following each paper enlarge various areas by the interchanges among the discussants and participants. The book will be of interest to research workers in the biologic sciences—physicians will find therein an authentic and well-presented view of the type of biochemical research which precedes clinical investigation.—ERWIN DI CYAN

Total Surgical Management. By James D. Hardy, M.D. Octavo of 292 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $9.50.

The author of this surgical monograph is well qualified having written several previous books on various phases of surgery. The text on *Pathophysiology In Surgery* was excellent. In this present work he overcomes several of the deficiencies of that book.

The writer's purpose is to tell about treatment in surgery. First he deals with general measures about pre- and postoperative care, next specific operations and finally postoperative problems. The best chapters are those entitled "Fluid Therapy and Nutrition," "Blood Replacement and Management of Shock," "Abnormal Bleeding," and the very excellent chapter "The Adrenal Glands."

The final section is entitled "Evening Rounds: An Intern-Resident Check List." An efficient surgical service depends on an alert, intelligent house staff. There are many valuable suggestions in this section which will aid young house officers.

Throughout, specific diagnostic and therapeutic programs are detailed. Many charts and diagrams make the text more comprehensible. Surgical complications are given particular attention.

This monograph is recommended as a valuable aid to surgical residents and interns.—ALAN A. KANE

Fundamentals of Otolaryngology: Third edition. By Lawrence R. Boies, M.D. Octavo of 510 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $8.00.

The author is professor of otolaryngology and chairman, Department of Otolaryngology, University of Minnesota Medical School. This is but one title of the many important appointments which Dr. Boies has and has had in the field of otolaryngology. Not only is he a teacher at the University but he also is and has been directly concerned with the certification and postgraduate instruction of otolaryngologists throughout the world. Having had all this experience, the author presents more than the fundamentals of otolaryngology in this textbook.

This edition is brought up to date and fulfills a need not only for the student but also for the seasoned otolaryngologist. The text is amply illustrated which makes it more valuable. The author goes into not only the surgical treatments but also gives valuable formulas for prescription purposes. The format lends itself for easy reference. There-

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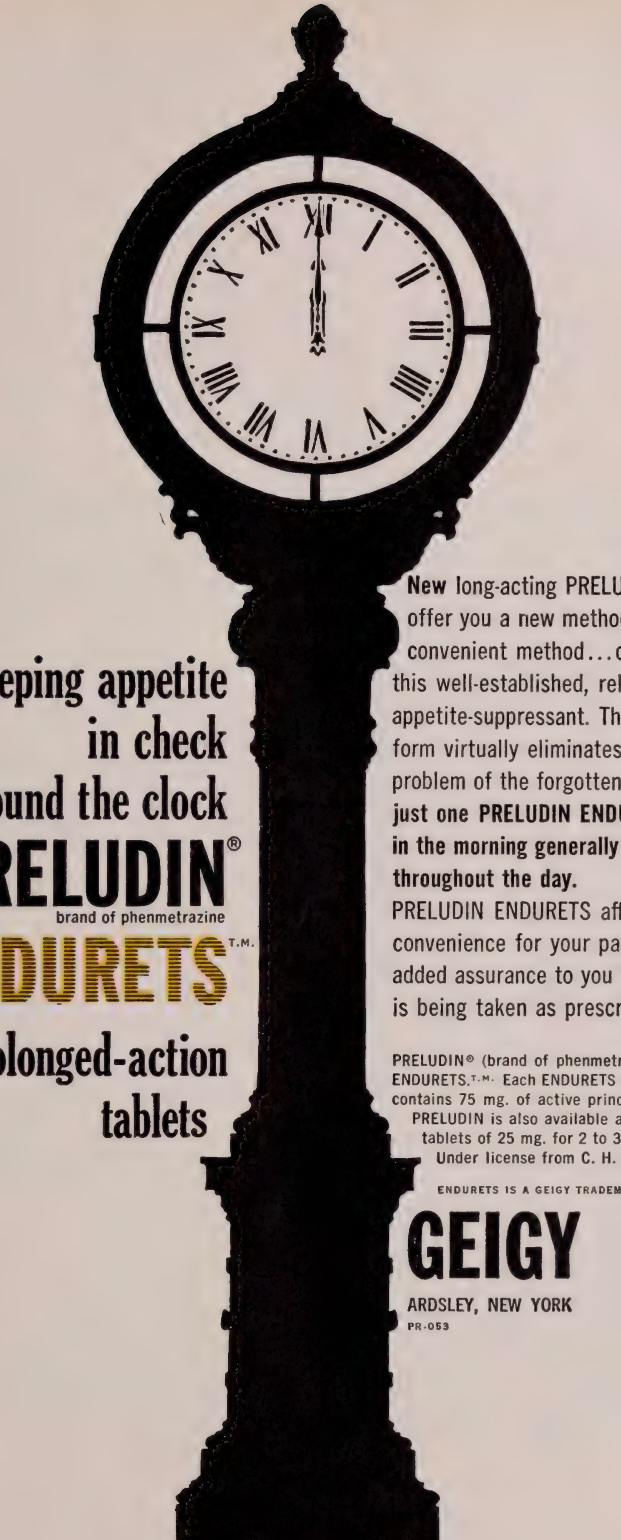

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[Continued from page 134]

fore, this is not only a text but also a book which will occupy an honored place in the medical reference library.—Samuel Zwerling

A History of Ophthalmology. By George E. Arrington, Jr., M.D. Duodecimo of 174 pages, illustrated. New York, MD Publications, 1959. Cloth, $4.00.

It has been said that to understand the present one must study the past. In this small book the author has proved the great debt present medicine, and more particularly ophthalmology, owes to the past. He also has attempted to prove that ophthalmology was a progressive and continuous growth in that as ancient civilizations crumbled medical knowledge was carried to another blossoming civilization by runaway savants or even by the conquerors themselves. In this the author may have stretched his imagination a bit.

While the book is interesting reading, it contains nothing the average ophthalmologist has not read time and again. This is particularly so today when the teaching of medicine seems to have been taken over by pharmaceutical concerns. Some of the finest and most detailed articles on the history of medicine can be found in their periodicals.

In the last paragraphs the author philosophizes on the present status of medicine. He deplores the increasing mechanistic and materialistic tendencies and the large number of papers on the minutiae and triviae in medicine which are published. He also deplores the trend away from the clinical and humanistic sides of ophthalmology. In these, the reviewer finds himself in complete agreement.—Daniel Kravitz

The Clinical Evaluation of New Drugs. Edited by S. O. Waife, M.D., and Alvin P. Shapiro, M.D. Octavo of 223 pages. New York, A. Hoeber-Harper Book, 1959. Cloth, $7.50.

Perhaps the greatest pitfall in the clinical evaluation of a drug is the fallacy of the hidden assumption. The evaluation of a drug goes beyond what may be observed as to its effect—because what is observed may not be the effect of the drug but the function of an adventitious component. Such false assumptions may be due to the natural remission of the disease, the psychogenic effect of the drug, the sincere but wishful thinking of the investigator, and other developments not relevant to the effect of the drug. Evaluation requires a considerable experience and awareness on the part of the evaluator as well as a statistically oriented interpretation.

But if the difficulties in the evaluation of a drug are emphasized but not elaborated, the average practitioner will be discouraged from using his critical faculties and will tend to delegate his thinking to those who publish their findings. That would be unfortunate. For that reason this book renders an extraordinary service to every physician. Making him aware of the problems in drug evaluation it nevertheless explains them. It will aid him to read critically, to observe, and above all, it may stimulate his interest in fair and critical drug appraisal. Uncritical acceptance and nihilism are both deplorable.

The subject is encompassed in introductory chapters which consider pharmacologic problems including the manner in which a drug works, the metabolic conversions, and the toxicologic action; the use of placebos and the interpretation of the placebo effect; application of animal data to man; and methods of setting up the experiment and its statistical interpretation. The manner in which an experiment is set up may affect the results of the investigation.

Though the basic technics of evaluation may be the same in all drugs, there are additional technics which are called into play in evaluating drugs for special purposes. For example, definitions may influence an evaluation: there must be an agreement on the definition of malnutrition, constipation, obesity, hypertension, and so forth before one can set criteria, as these conditions are not definite states but zones of normality.

The different problems presented by the evaluation of drugs used in various systems are met here. For example, cardiovascular disease, due to many variables engendered by varying stages of the disease and ages of the patients, presents problems which are not usually met in evaluating drugs in infections. Similar situations obtain in gastrointestinal diseases where the functions of the gastrointestinal tract from ingestion to excretion are modified by age. Evaluation of drugs in nutrition and metabolism, endocrinology, neuropsychiatric conditions, are also discussed in separate chapters.

This book, highly useful to clinicians, will also be of considerable interest to other medical scientists although it may not offer considerably new matter to those engaged in research—they must use the practices and technics espoused here, in their daily work.—Erwin Di Cyan

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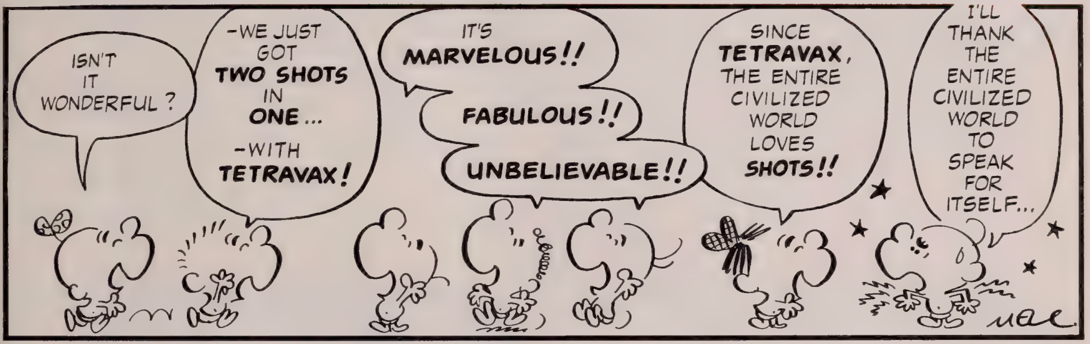
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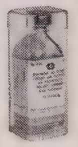

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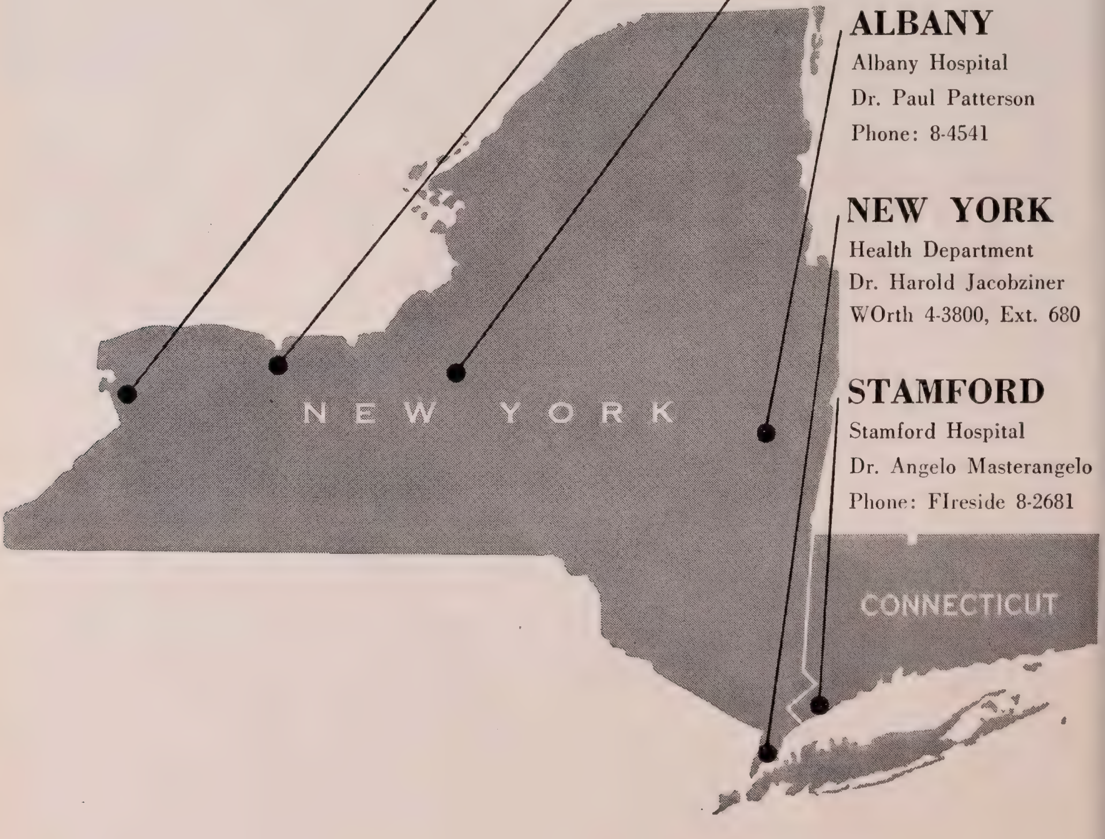

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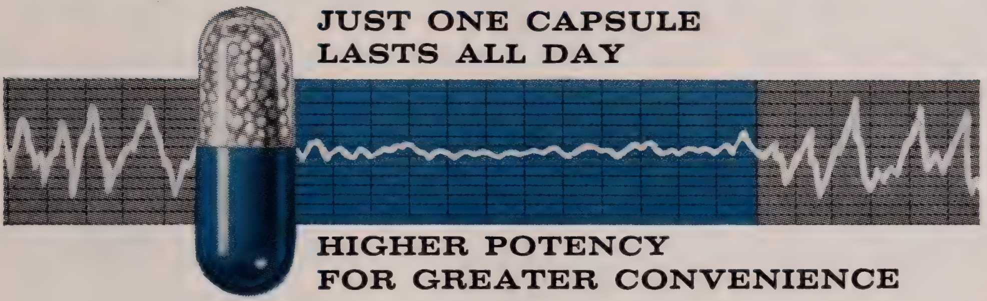

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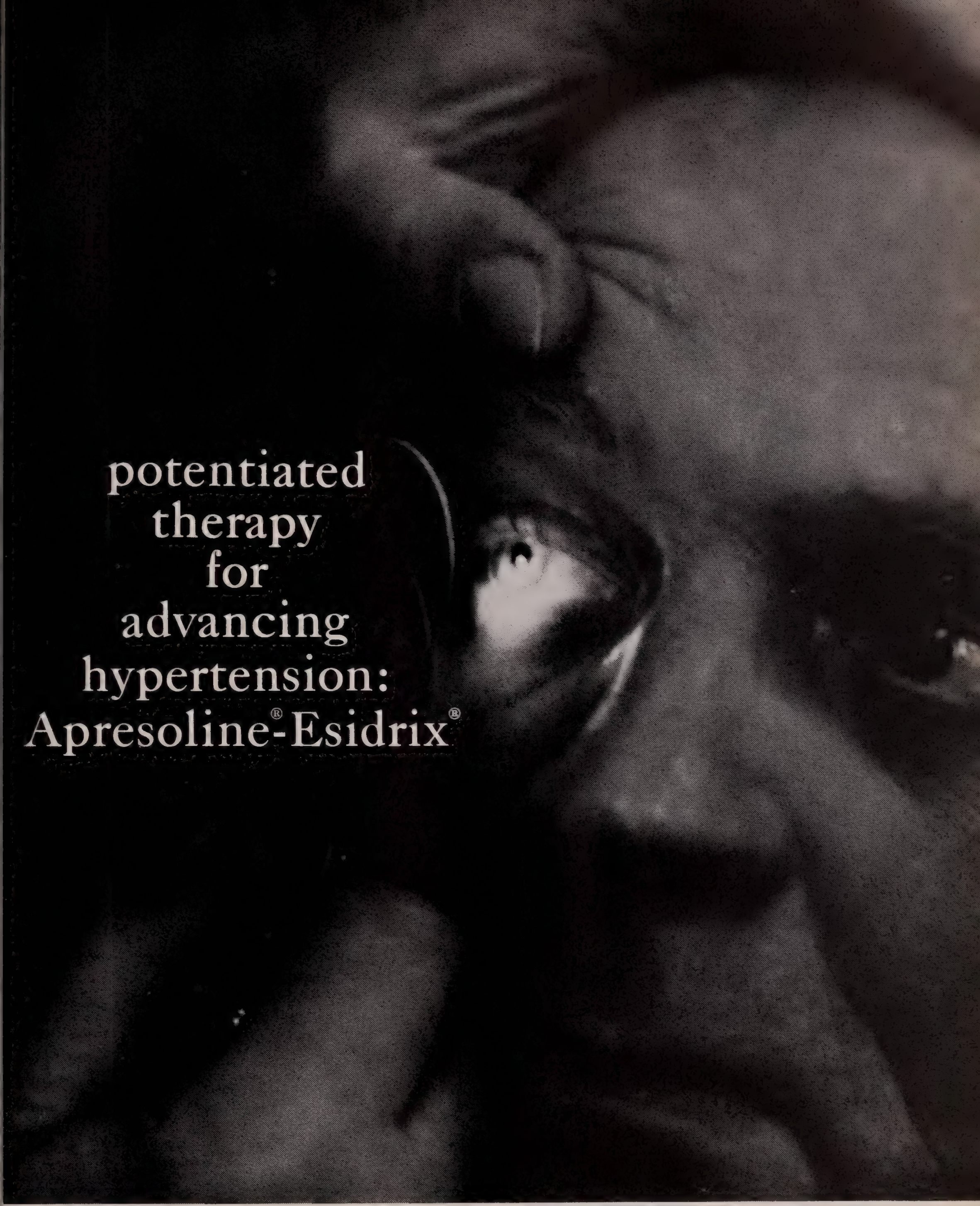
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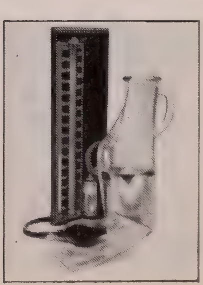

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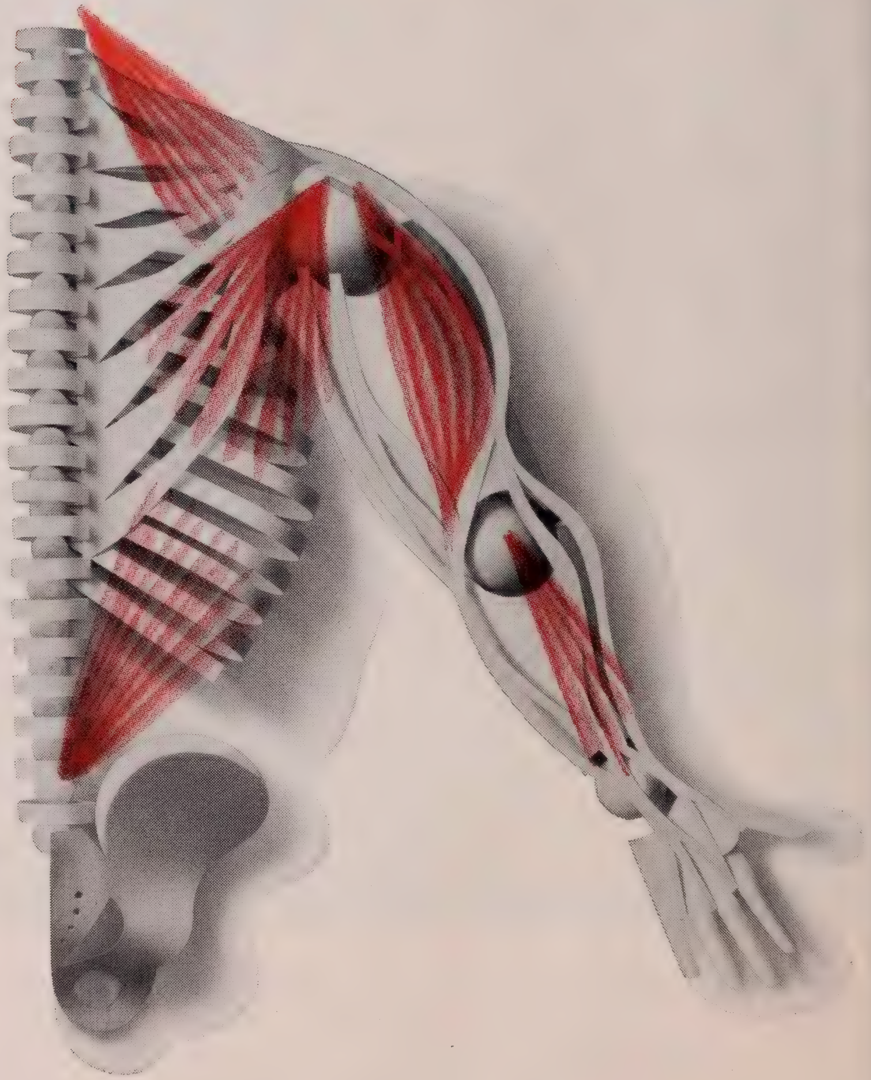

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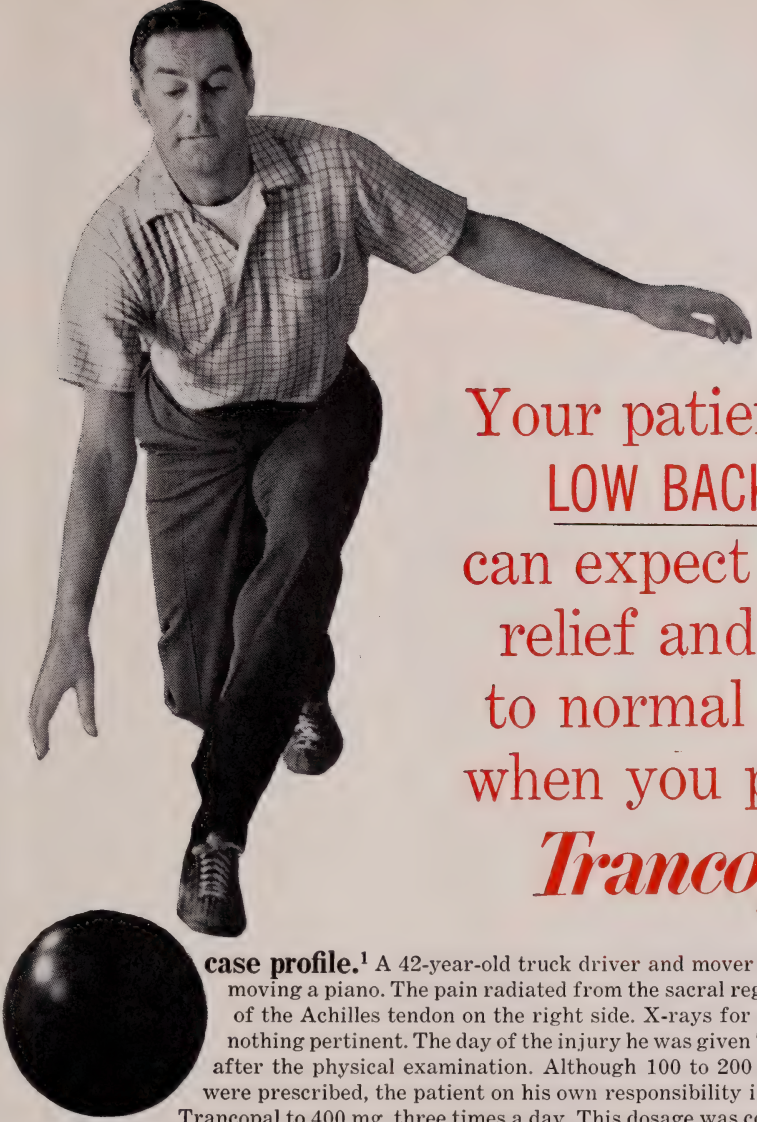

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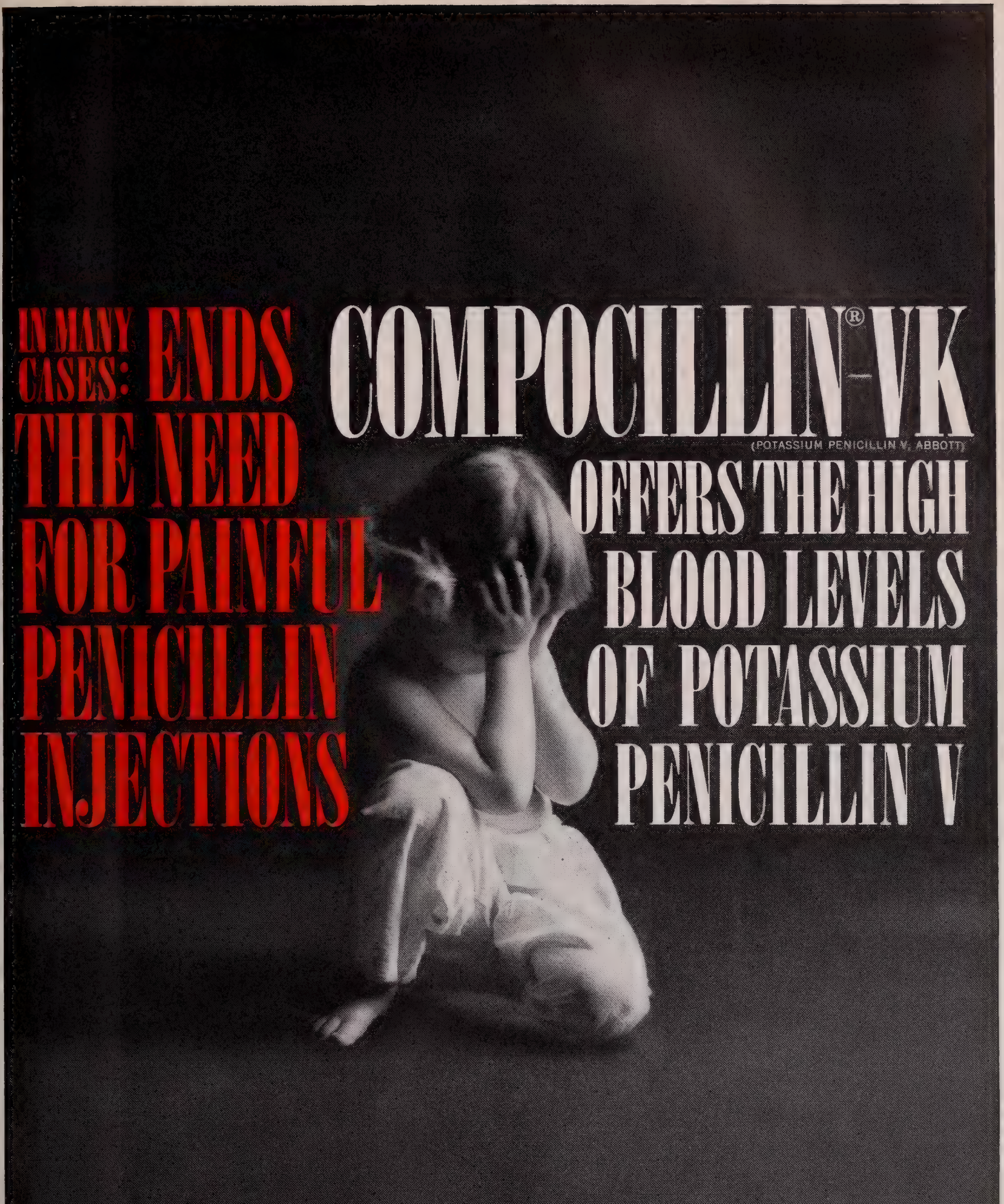

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bibliography: (1) Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, p. 136. (2) Bray, P. F.: *Pediatrics* **23**:151, 1959. (3) Davidson, D. T., Jr., in Conn, H. F.: Current Therapy 1959, Philadelphia, W. B. Saunders Company, 1959, p. 512. (4) Smith, B., & Forster, F. M.: *Neurology* **4**:137, 1954. (5) Zimmerman, F. T.: *New York J. Med.* **55**:2338, 1955. (6) Lemere, F.: *Northwest Med.* **53**:482, 1954. (7) Perlstein, M. A.: *Pediat. Clin. North America:* **4**:1079 (Nov.) 1957. (8) Livingston, S., & Pauli, L.: *Pediatrics* **19**:614, 1957. (9) Carter, C. H., & Maley, M. C.: *Neurology* **7**:483, 1957. (10) Keith, H. M., & Rushton, J. G.: *Proc. Staff Meet. Mayo Clin.* **33**:105, 1958.

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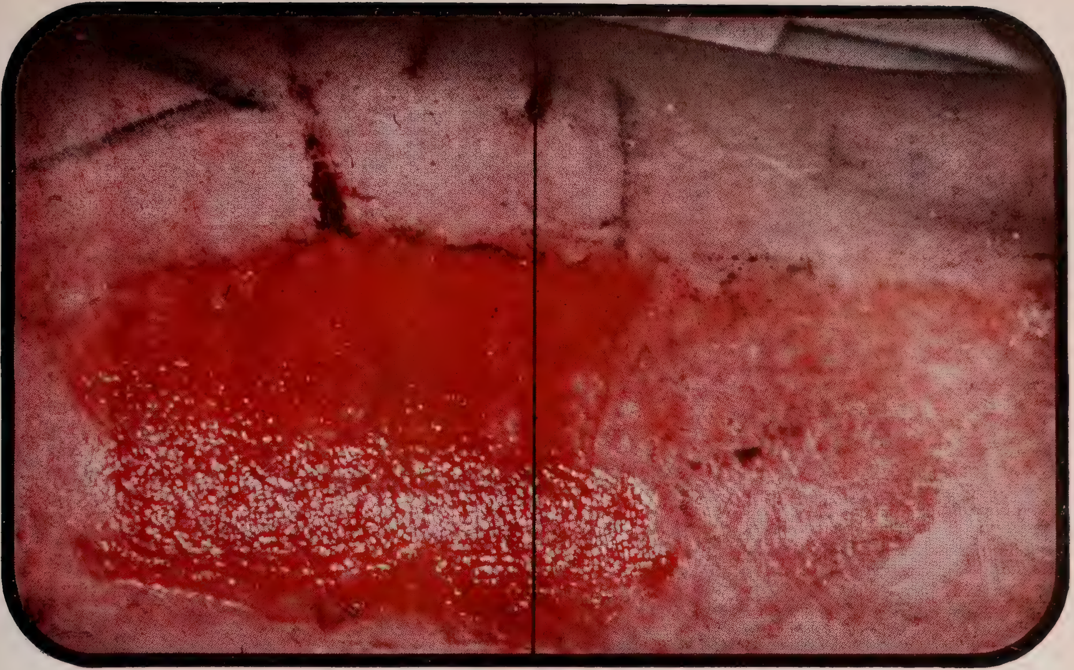

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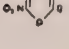

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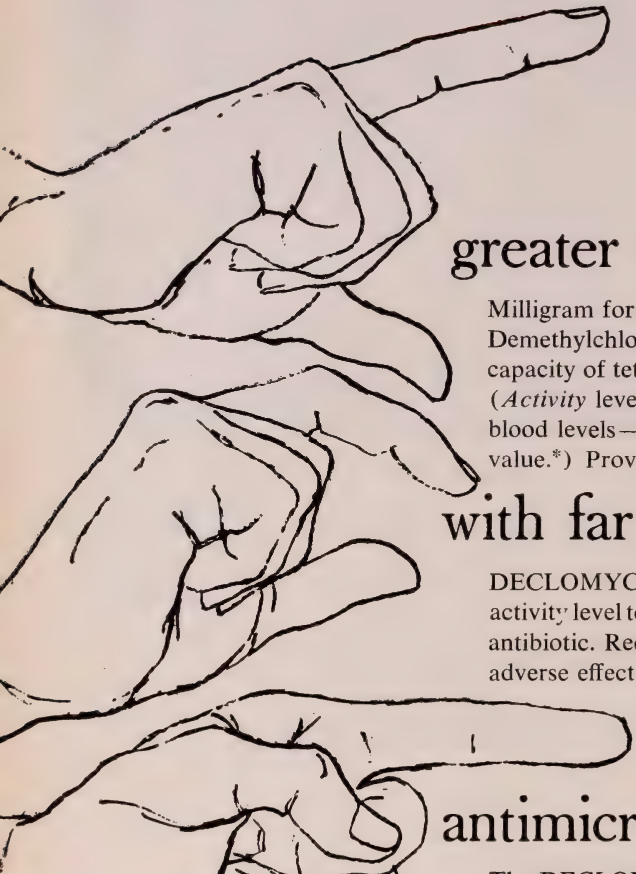

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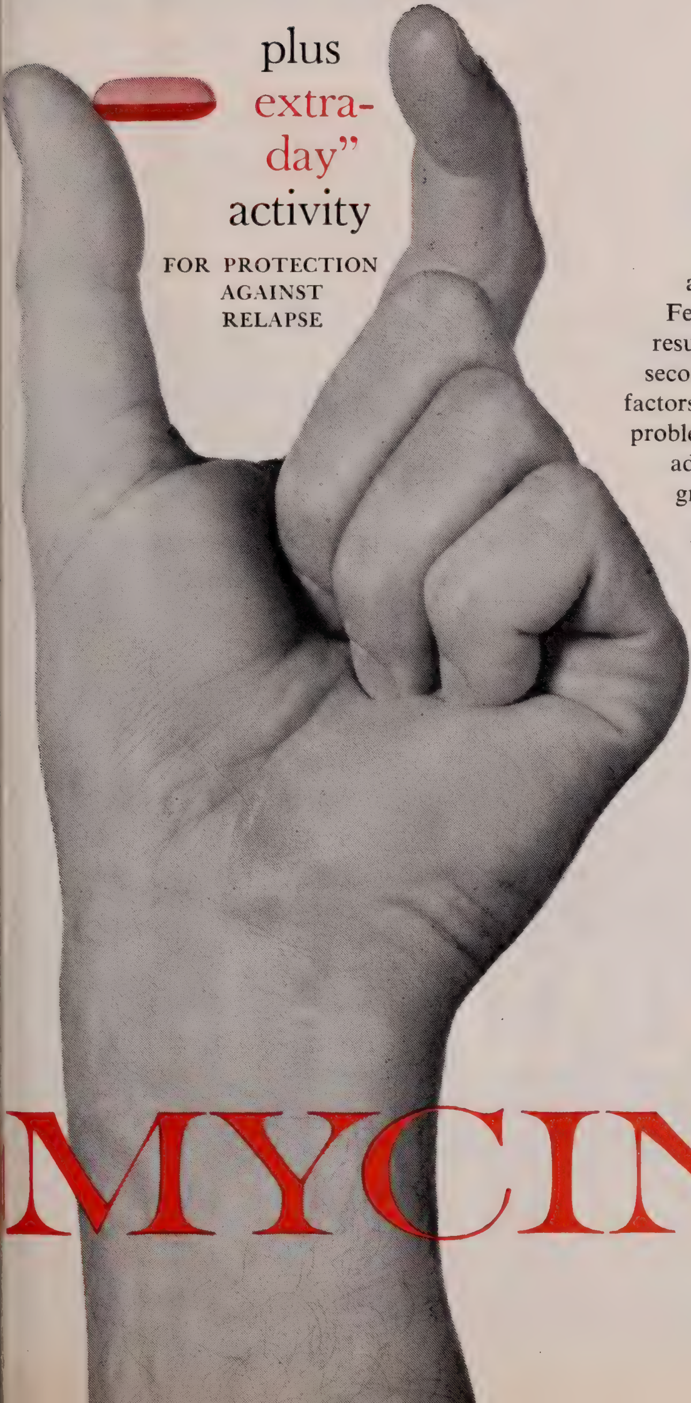

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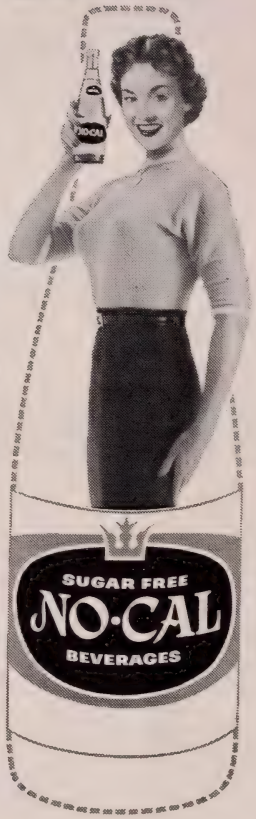

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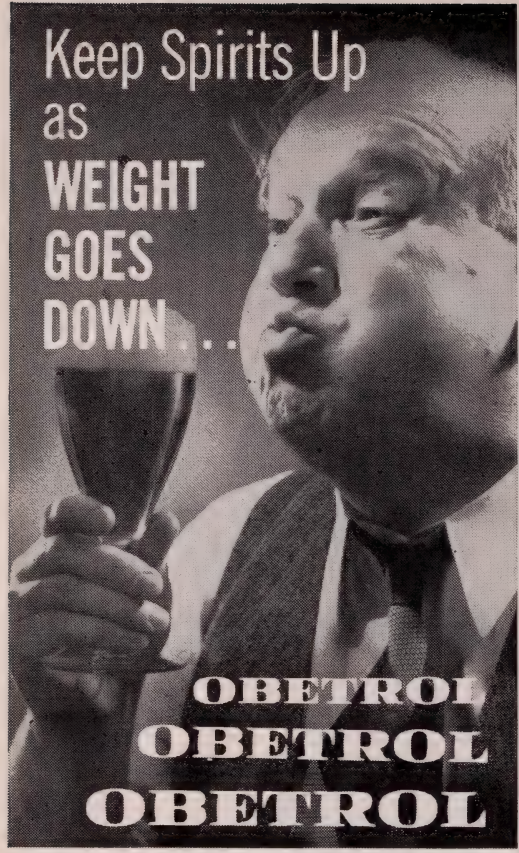

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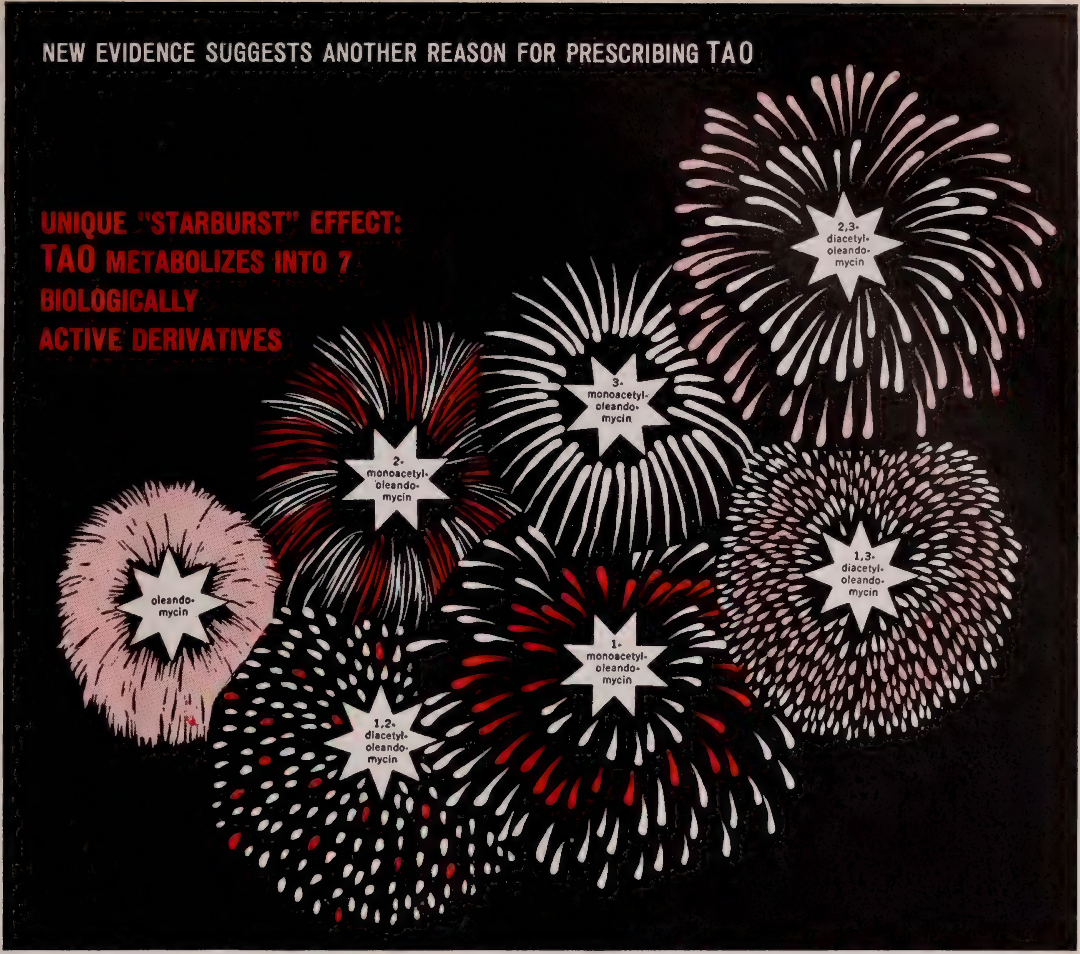
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1. English, A. R., and McBride, T. J.: Proc. Soc. Exper. Biol. & Med. 100:880 (Apr.) 1959. 2. Celmer, W. D.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 277. 3. English, A. R., and Fink, F. C.: Antibiotics & Chemother. 8:420 (Aug.) 1958.

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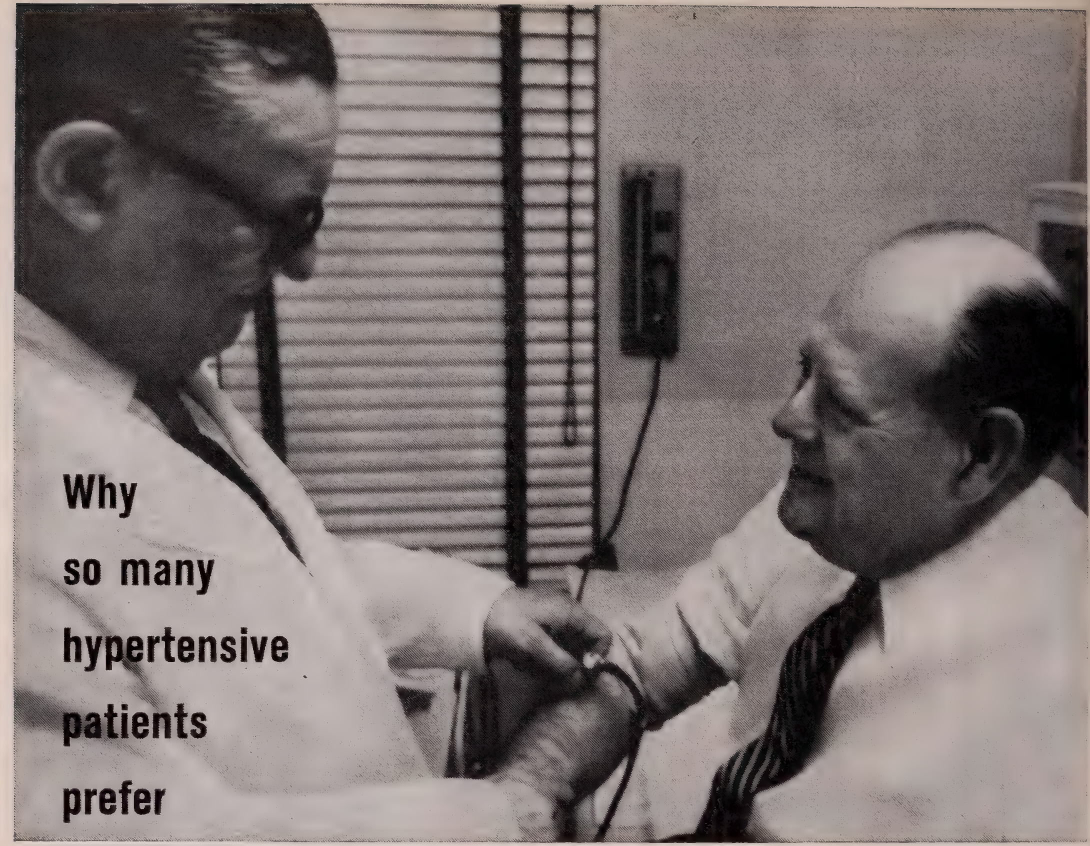

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*Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: J.A.M.A. **169**:1609 (April 4) 1959.

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Research information on wine is available on request. Write for your copy of *"Uses of Wine in Medical Practice." Wine Advisory Board, 717 Market Street, San Francisco 3, California.

---

1. Goetzl, F.R.: Permanente Found. M.Bull. 8:72 (April) 1950.
2. Ogden, E., and Southard, F.D., Jr.: Fed. Proceedings 5:77 (1946)
3. Brooks, H.: Med. J. & Rec. *127*:199 (1928)
4. Haggard, H.W., and Jellinek, E.M.: Alcohol Explored, New York, Doubleday, Doran, 1942.

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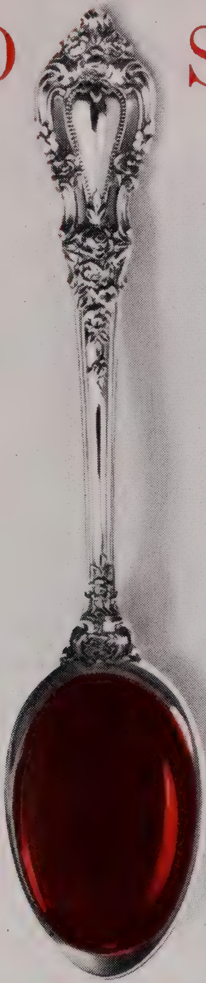

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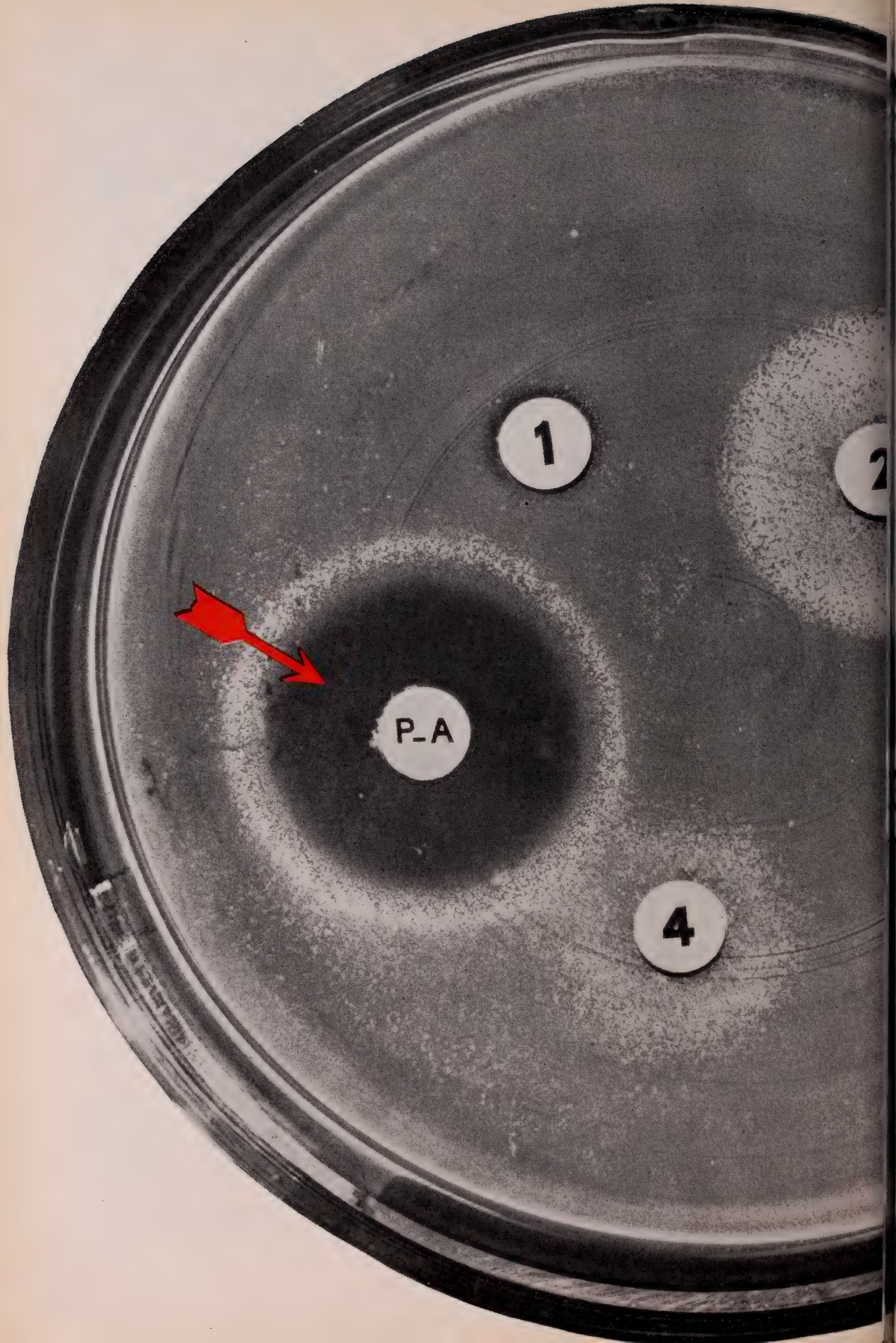
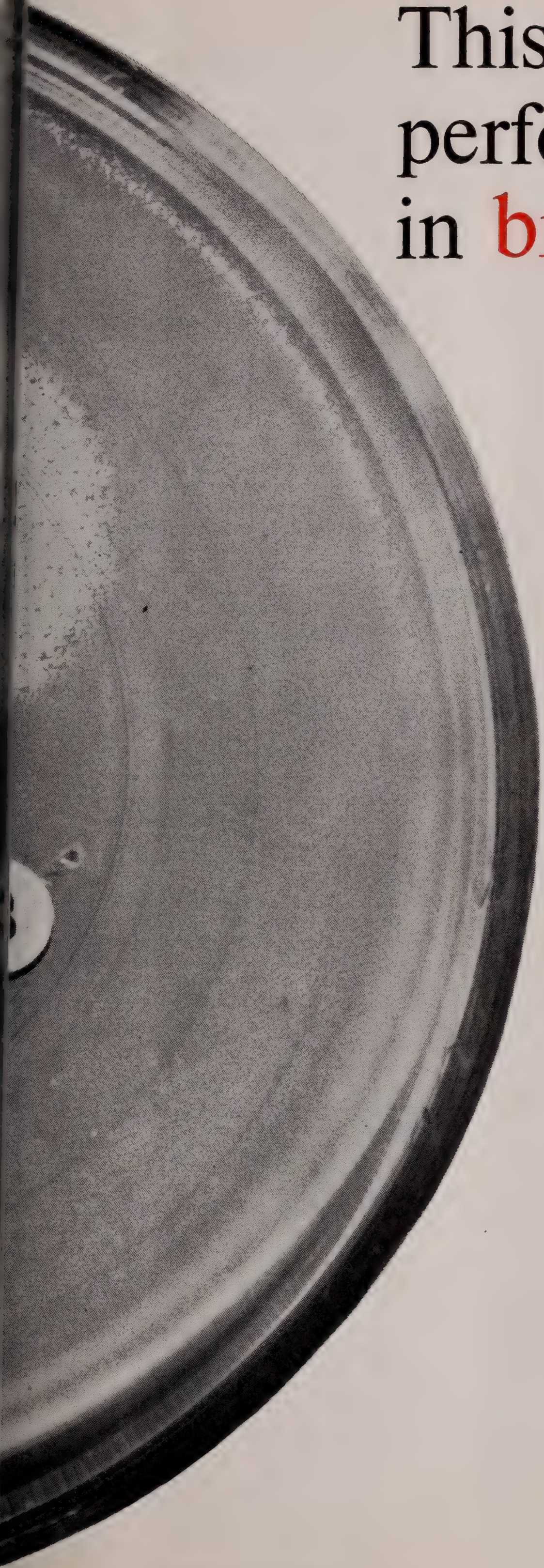

1
2
P-A
4

This is Panalba performance in bronchitis



. . . into a mixed culture of the four organisms commonly involved in bronchitis . . . *Str. hemolyticus, D. pneumoniae, H. influenzae* and *Staph. aureus* (in this case a resistant strain) . . . we introduce the five most frequently used antibiotics.

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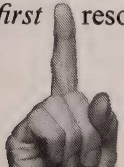

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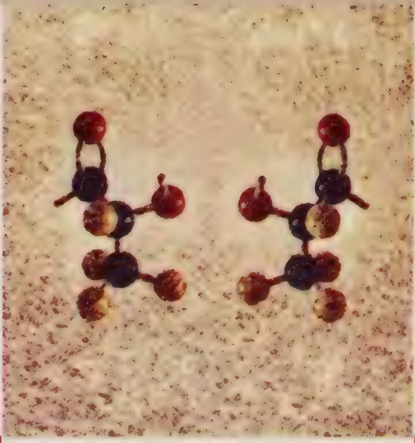
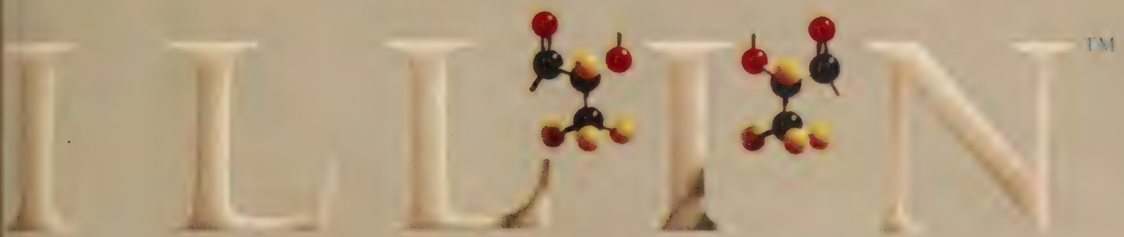


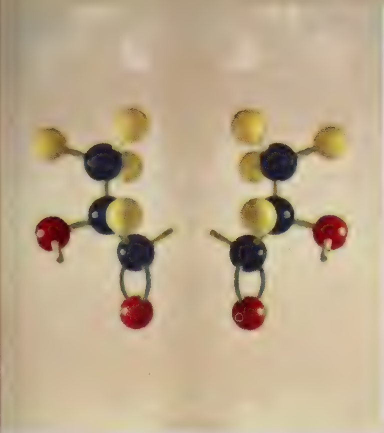
SAFER ORAL ROUTE PROVIDES HIGHER BLOOD LEVELS THAN INTRAMUSCULAR PENICILLIN G

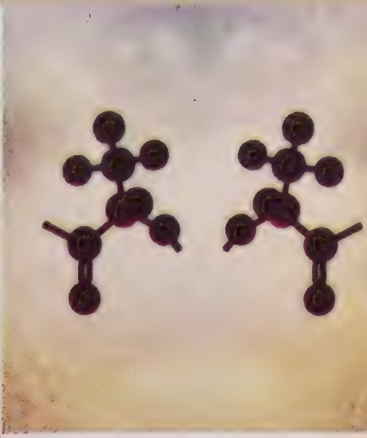
IMPROVED ANTIBIOTIC EFFECT FROM COMPLEMENTARY ACTION OF ISOMERS

ADVANTAGES ACCOMPANY MOLECULAR ASYMMETRY



POTASSIUM PENICILLIN-152





ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSE

REDUCED HAZARD OF SERIOUS ALLERGENICITY BY SAFER ORAL ROUTE

MANY STAPH STRAINS MORE SENSITIVE TO SYNCILLIN

BRISTOL

ORIGIN OF A NEW SYNTHETIC PENICILLIN

In March, 1957, Dr. John C. Sheehan of the Massachusetts Institute of Technology announced the total synthesis of penicillin from common raw materials, thus solving a problem which had baffled research workers for more than 15 years. Although total synthesis was not commercially practicable, this work, sponsored by Bristol Laboratories, made possible the subsequent synthesis of new penicillins not occurring in nature. Later scientists at Beecham Laboratories in England discovered that a key intermediate (6-aminopenicillanic acid) could be produced by a fermentation process. With these achievements, large scale production of synthetic penicillins became feasible.

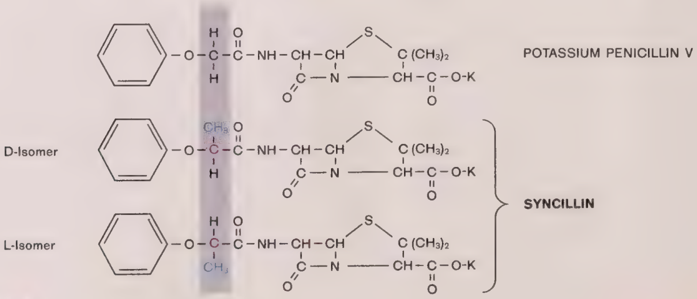
Organic chemists at Bristol then embarked upon an intensive program to develop better penicillins. Over five hundred were synthesized and underwent preliminary screening. Forty-six showed sufficient promise to warrant further investigation. Extensive microbiological, pharmacological, and clinical screening indicated that one compound, SYNCILLIN, had advantages of major importance over other penicillins.

SYNCILLIN is the N-acylation product of 6-aminopenicillanic acid and α-phenoxypropionic acid (the phenylether of lactic acid). It is freely soluble in water and remarkably resistant to decomposition by acid. The acid stability of SYNCILLIN is equivalent to that of penicillin V at pH 2 and pH 3 at 37° C.[1]

SIGNIFICANCE OF MOLECULAR ASYMMETRY AND ISOMERIC COMPLEMENTARITY

SYNCILLIN has a molecular configuration similar to penicillin V, but contains an additional CH_3 group so positioned as to render the adjacent carbon atom asymmetric. (In the formulae below, the added CH_3 group is shown in blue and the asymmetric carbon atom in red.) As a result, SYNCILLIN occurs as a mixture of two isomers.

Each isomer has been synthesized in essentially pure form and found to possess distinctive chemical and biological properties. The L-isomer is 2 to 17 times more active than the D-isomer against many of the organisms tested. As produced, SYNCILLIN is a mixture of the L-isomer and the D-isomer. As will be shown later, the antibiotic effect of the clinically available mixture, SYNCILLIN, is greater than either isomer alone against many organisms. This phenomenon is referred to here as *isomeric complementarity*.



SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

ISOMERIC COMPLEMENTARITY DEMONSTRATED IN VITRO

The *in vitro* minimum inhibitory concentration (MIC) of SYNCILLIN and of each of its two component isomers was determined for a variety of common pathogens and laboratory test organisms. As may be seen from Table 1, all three are highly effective against penicillin-susceptible staphylococci and against pneumococci, streptococci, gonococci, and corynebacteria; all are ineffective against Salmonella, *E. coli,* and other gram-negative coliform bacilli.

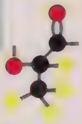
SYNCILLIN was more active against many of the test strains including some streptococci and staphylococci than either of its components. This demonstrates *in vitro* the phenomenon of isomeric complementarity.

TABLE 1

Minimum Concentrations of SYNCILLIN and Components Required to Inhibit a Wide Range of Bacteria

	Minimum Inhibitory Concentration (MIC) in Micrograms per Milliliter		
	L-Isomer	**D-Isomer**	**SYNCILLIN**
Bacillus anthracis	0.06	0.25	0.03
Bacillus cereus	12.5	100	25
Bacillus circulans ATCC 9961	6.25	6.25	6.25
Corynebacterium xerosis	0.06	0.125	0.03
*Diplococcus pneumoniae	0.06	0.06	0.06
Escherichia coli ATCC 8739	>100	>100	>100
Gaffkya tetragena	0.015	0.03	0.015
Micrococcus flavus	0.015	0.125	0.015
Salmonella paratyphi A	25	50	25
Salmonella typhosa	>100	>100	>100
Sarcina lutea ATCC 10054	0.007	0.12	0.007
Shigella sonnei	100	100	100
Staphylococcus aureus 209P	0.06	0.125	0.03
Staphylococcus aureus var. Smith	0.03	0.125	0.03
Streptococcus agalactiae ATCC 1077	0.03	0.06	0.03
Streptococcus dysgalactiae ATCC 9926	0.03	0.06	0.03
Streptococcus faecalis PCI 1305	6.25	25	6.25
*Streptococcus pyogenes 203	0.06	0.06	0.06
*Streptococcus pyogenes Digonnet	0.03	0.15	0.06
Streptococcus pyogenes 2320	0.06	0.06	0.03
Streptococcus pyogenes 23586	0.06	0.06	0.06
Vibrio comma	50	25	25

Serial dilution technique in heart infusion broth *10% serum added



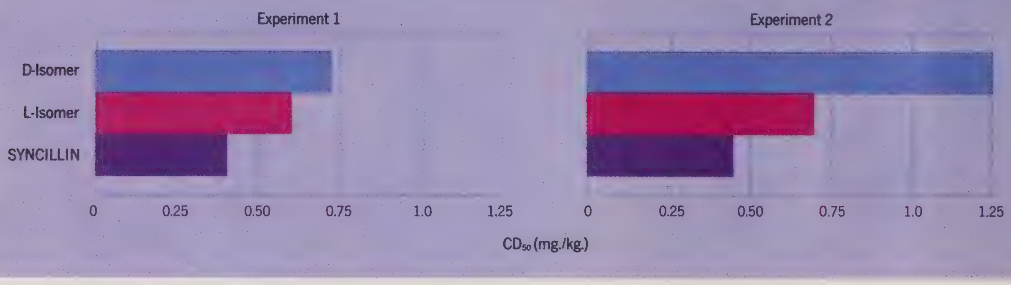
SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

ISOMERIC COMPLEMENTARITY CONFIRMED *IN VIVO*

To determine the median curative dose (CD_{50}) mice were infected with 100 times the lethal dose of *Staphylococcus aureus*. Each penicillin being tested was administered intramuscularly at the same time, and the dose required to cure half the animals determined. The greater effect of the mixture of the two isomers (SYNCILLIN) is shown in two independent experiments. (See Figure 1.) Note that isomeric complementarity is thus confirmed *in vivo*.

FIGURE 1 — Median Curative Dose (CD_{50}) for *Staphylococcus aureus* (var. Smith) Infections

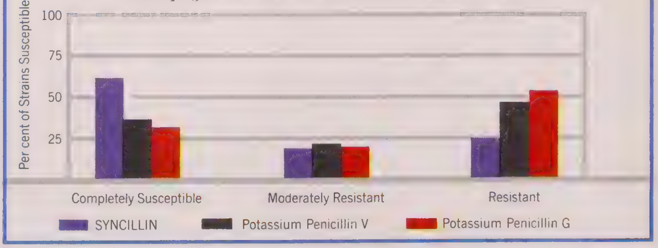


MANY STRAINS OF STAPHYLOCOCCI MORE SENSITIVE TO SYNCILLIN

SYNCILLIN has been tested against a large number of strains of *Staphylococcus aureus* isolated from clinical sources. Many organisms resistant to potassium penicillin G and potassium penicillin V proved sensitive to SYNCILLIN.

Wright[2] performed sensitivity studies on 54 strains, the majority of which were resistant or moderately resistant to penicillin V and penicillin G. Thirty-two (60%) of the strains were sensitive to SYNCILLIN, approximately twice as many as with the other penicillins. (See Figure 2.) In two-thirds of the isolates, SYNCILLIN produced inhibition at concentrations lower than those required for either of the other antibiotics. One strain was more sensitive to penicillin G.

FIGURE 2 – *In Vitro* Sensitivity of 54 Strains of Coagulase-Positive *Staphylococcus aureus* from Clinical Sources



Adapted from Wright[2]

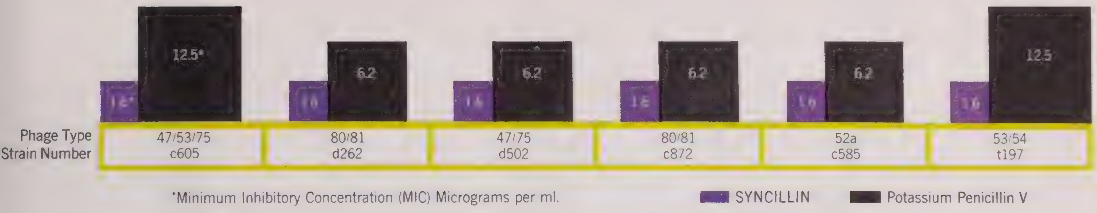
SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

Of equal interest are the findings of White.[3] Six penicillin-resistant strains of staphylococci were isolated from hospital infections. None was sensitive to potassium penicillin V. All were sensitive to SYNCILLIN. (See Figure 3.)

FIGURE 3

Minimum Concentrations of SYNCILLIN Required to Inhibit Hospital Strains of *Staphylococcus aureus* Resistant to Potassium Penicillin V



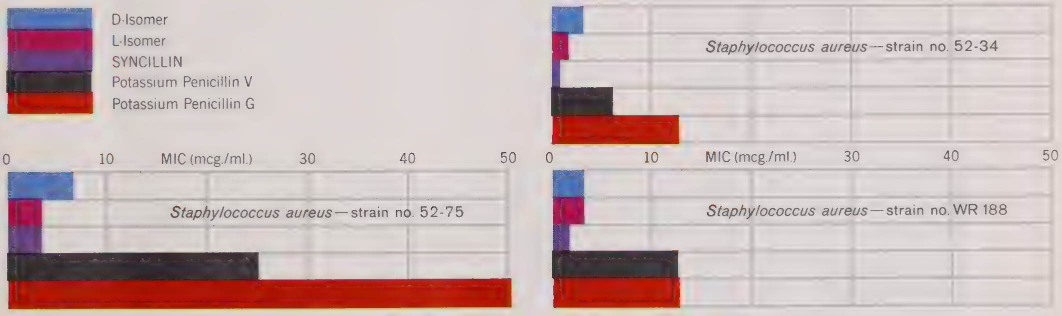
*Minimum Inhibitory Concentration (MIC) Micrograms per ml.

The efficacy of SYNCILLIN against the type 80/81 Staphylococcus (dangerous and widespread in hospitals) is worthy of special attention.

The complementary action of the component isomers is also seen with strains of staphylococci resistant to penicillin. Note that SYNCILLIN is more effective than either isomer against strains 52-34 and WR 188. (See Figure 4.) Against all three strains, SYNCILLIN is effective at concentrations below serum levels, while penicillins V and G are ineffective.

FIGURE 4

Minimum Inhibitory Concentrations (MIC) for Coagulase-Positive Penicillin-Resistant Strains of *Staphylococcus aureus*



Isomeric complementarity has thus been demonstrated for:

— *certain penicillin-susceptible streptococci, staphylococci and corynebacteria* in vitro *(Table 1)*

— *penicillin-susceptible staphylococci* in vivo *(Figure 1)*

— *penicillin-resistant staphylococci* in vitro *(Figure 4)*

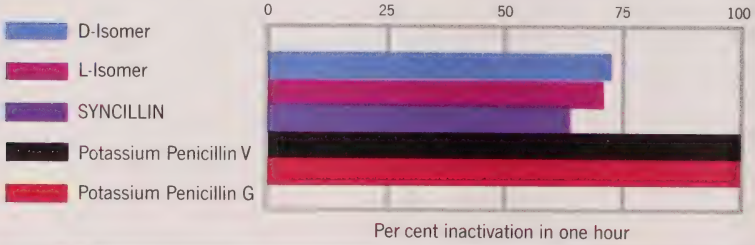
SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

ISOMERIC COMPLEMENTARITY SHOWN BY REDUCED RATE OF INACTIVATION BY PENICILLINASE

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms.[4] As shown in Figure 5, SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers—a further demonstration of isomeric complementarity. Further, SYNCILLIN is shown to be less inactivated by this enzyme than penicillin V and penicillin G. Resistance to SYNCILLIN develops in a slow, step-wise manner characteristic of other penicillins, in contrast to the usually rapid development of resistance to streptomycin.

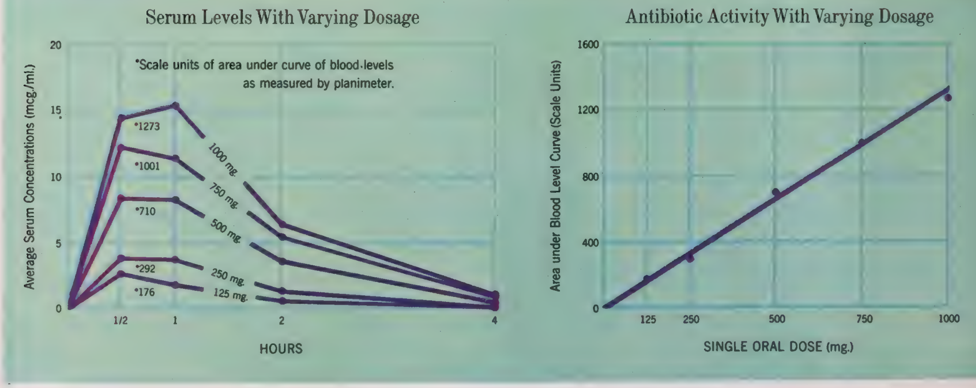
FIGURE 5—Effect of Staphylococcal Penicillinase on Different Penicillins



ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSAGE

Cronk[5] studied the blood levels after administration of varying amounts of SYNCILLIN. (See Figure 6.) Total antibiotic activity (obtained by measuring the areas under the curves with a planimeter) increases rapidly as the dose is doubled. These data show that increased dosage markedly increases serum concentration and thus may enhance the drug's effectiveness.

FIGURE 6


Serum Levels With Varying Dosage

Antibiotic Activity With Varying Dosage

SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

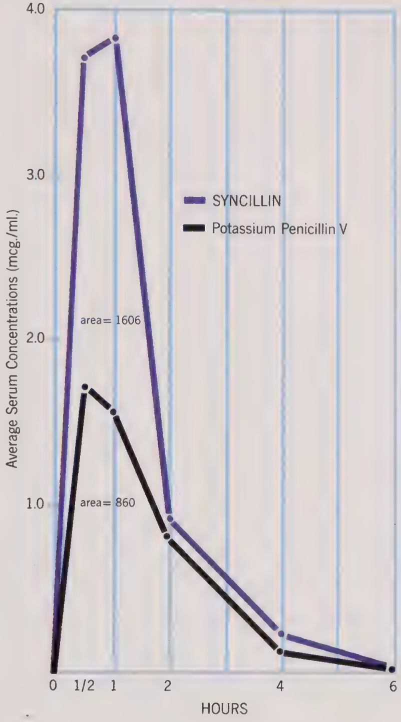
BLOOD LEVELS TWICE AS HIGH AS WITH POTASSIUM PENICILLIN V AFTER ORAL ADMINISTRATION

Wright[6] performed comparative crossover blood level studies on volunteer subjects receiving equivalent amounts of potassium penicillin V and SYNCILLIN. The peak concentrations attained during the first hour after administration were twice as high with SYNCILLIN.

The total antibiotic activity as measured by the area under the curves (see Figure 7) indicates an almost 2 to 1 superiority of SYNCILLIN (1606) over potassium penicillin V (860).

The higher blood levels may be of value with organisms of only moderate penicillin-sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition these higher levels may be necessary where there is infection in areas with a poor blood supply.[7] Under these circumstances a higher blood concentration may provide the increased diffusion pressure required to deliver adequate amounts to the tissue.

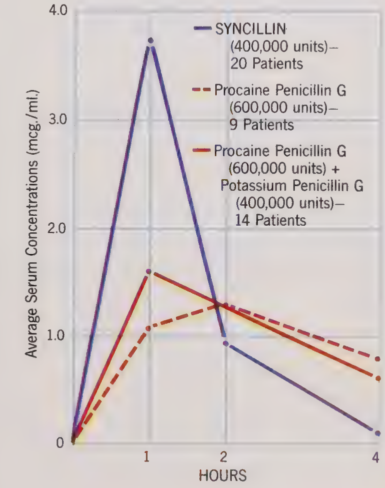
FIGURE 7
20 Subject Crossover—
250 mg. Single Dose



BLOOD LEVELS MUCH HIGHER THAN WITH INTRAMUSCULAR PENICILLIN G

In addition, blood levels attained with oral SYNCILLIN[6] are much higher than those with intramuscular penicillin G.[8a, b] (See Figure 8.) Note that the level at one hour for SYNCILLIN (3.8 mcg./ml.) is more than twice as high as with procaine penicillin G, even when reinforced with potassium penicillin G (1.6 mcg/ml.). Since penicillins are *bactericidal*, these intermittent high serum levels can be clinically significant. Thus, SYNCILLIN offers the promise of superior efficacy via the safer oral route.

FIGURE 8—Serum Levels after Oral Administration of SYNCILLIN (250 mg.) and after Intramuscular Injection of Penicillin G



SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

REDUCED HAZARD OF SERIOUS ALLERGENICITY BY SAFER ORAL ROUTE

SYNCILLIN has been administered to approximately 550 patients and volunteers. One patient developed itching during therapy, possibly an allergic side effect. Another had a purpuric rash, but no relationship to SYNCILLIN was established. No reactions were observed in 9 patients with a known history of sensitivity to penicillin.

While the above data suggests the possibility of reduced allergenic hazard, no definite conclusions may be drawn at this time. The usual precautions for oral penicillin therapy should be observed. Patients with histories of asthma, hay fever, urticaria, or previous penicillin-sensitivity should especially be watched carefully. Since SYNCILLIN is administered orally, it may be expected to be safer than parenteral penicillin.

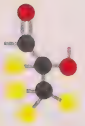
As Flippin[9] recently stated, "... it is well established that serious allergy to the drug [penicillin] is most likely to occur following parenteral administration, especially after repeated intramuscular injections; the oral route is least likely to initiate severe hypersensitivity reactions. This can be explained partly by the fact that when reactions develop following oral medication, they are usually slow enough to treat symptomatically; thus the progression of the reaction can usually be interrupted. . . . In view of the relatively high incidence of severe allergy to injectable penicillin, it would seem advisable to employ oral penicillin routinely, except in the control of infections involving the blood stream, endocardium, meninges, etc., in which cases the parenteral route remains the preferred treatment."

SYNCILLIN, like other penicillins, is essentially free of other toxicity. No hematopoietic, hepatic, or renal toxicity was observed in 210 volunteers receiving 1 gm. daily for 2 to 3 weeks.[10]

CLINICAL EFFICACY DEMONSTRATED IN PENICILLIN-SENSITIVE INFECTIONS

Clinical trials conducted by Blau and Kanof,[11] White,[12] Prigot,[13] Robinson,[14] Dube,[15] Ferguson,[16] Rutenburg,[17] Richardson,[18] Bunn,[19] Cronk,[5] Kligman,[10] and Yow[20] demonstrated the efficacy of SYNCILLIN in a variety of streptococcal, staphylococcal, pneumococcal, and gonococcal infections. Conditions treated included respiratory, skin, soft tissue, wound, and chronic urinary tract infections; acute gonorrhea; cellulitis; septicemia; otitis media; gingivitis; and Vincent's angina. In a few patients SYNCILLIN was used for rheumatic fever or gonorrheal prophylaxis.

One hundred seventy-two of one hundred ninety-six patients responded favorably to SYNCILLIN. The failures included 1 patient with pustular dermatoses, 10 elderly patients with chronic urinary tract infections, 1 patient with gonorrhea, 1 patient with a gram-negative infection, and 10 patients with staphylococcal infections. Lack of response of staphylococcal infections was attributed to the presence of resistant organisms or local suppurative foci requiring drainage.



Relatively few side effects were encountered. One patient experienced moderate itching of the skin which was controlled by an antihistamine. Another reported pruritis ani which did not interfere with therapy. Diarrhea occurred in 4 instances. There was one purpuric rash, but no relationship to SYNCILLIN could be established.

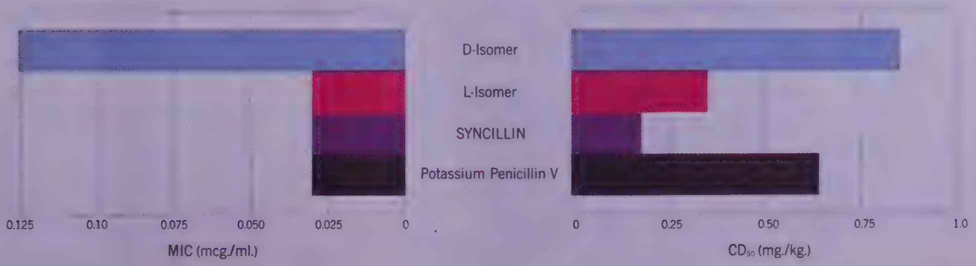
Clinical response usually begins within 24 hours in infections susceptible to SYNCILLIN. Recovery occurs in 4 to 7 days depending upon the severity of the infection. Gonorrheal infections respond very promptly to SYNCILLIN; 500 mg. b.i.d. for two days usually produce bacteriologic cures.

IMPROVED ANTIBIOTIC EFFECT FROM COMPLEMENTARY ACTION OF ISOMERS

SYNCILLIN is a mixture of isomers. The L-isomer is 2 to 17 times more active than the D-isomer against many of the organisms tested. Furthermore, the D- and L-isomers have other distinguishing chemical, pharmacological, and microbiological properties. Their *in vivo* and *in vitro* activities differ for many important pathogens. *Against many of the organisms tested, the combination of isomers* (SYNCILLIN) *is much more active than the stronger isomer alone.* This phenomenon of isomeric complementarity is not always demonstrable, for in a few instances SYNCILLIN is slightly less active.

Isomeric complementarity has previously been demonstrated *in vitro* (Figure 4) and *in vivo* (Figure 1). Figure 9 reveals a third form of superiority related to isomeric complementarity. Equal concentrations of SYNCILLIN and penicillin V were required to inhibit this growth of staphylococci *in vitro*. But, *in vivo*, a much smaller amount of SYNCILLIN *(one-third that of penicillin V)* was effective in an experimental infection with the same strain. These observations on complementary action indicated the advantage of producing the mixture of isomers as the medication to be made available for clinical therapy.

FIGURE 9—Comparison of CD_{50} and MIC Values Against *Staphylococcus aureus* (var. Smith)



Isomeric complementarity has thus been demonstrated for:
——certain penicillin-susceptible streptococci, staphylococci and corynebacteria in vitro *(Table 1)*
——penicillin-susceptible staphylococci in vivo *(Figures 1 and 9)*
——penicillin-resistant staphylococci in vitro *(Figure 4)*
——staphylococcal penicillinase antibiotic inactivation (Figure 5)

SYNCILLIN

major therapeutic advantages accompany molecular asymmetry

Indications: SYNCILLIN is recommended in the treatment of infections caused by pneumococci, streptococci, gonococci, corynebacteria, and penicillin-sensitive staphylococci. In addition, SYNCILLIN is effective against certain strains of staphylococci resistant to other penicillins.

SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. three times daily, depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals.

Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: While present data suggest the possibility of reduced allergenic hazard, no definite conclusions may be drawn at this time. *Therefore the usual precautions with oral penicillin therapy must be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care.

Diarrhea has been reported occasionally following heavy dosage. If this occurs, the interval between dosages should be lengthened.

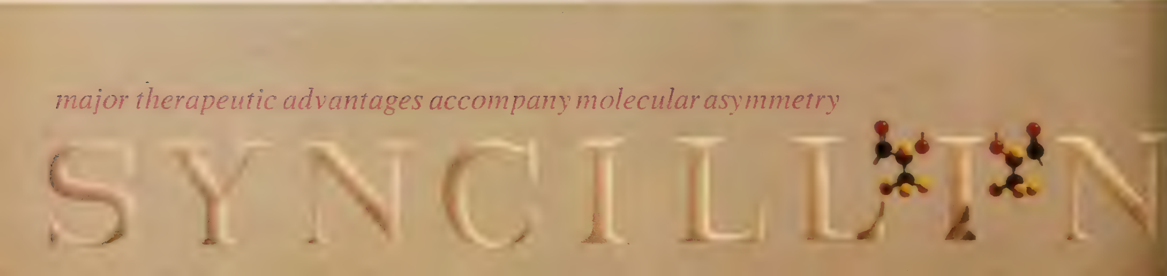
If superinfection occurs during therapy, appropriate measures should be taken.

Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

References: 1. Lein, J.: Microbiology report to Bristol Laboratories Inc. 2. Wright, W. W.: Microbiology report to Bristol Laboratories Inc. 3. White, A. C.: Microbiology report to Bristol Laboratories Inc. 4. Dubos, R. J.: Bacterial and Mycotic Infections of Man, 3rd edition, Philadelphia, J. B. Lippincott Co., p. 690. 5. Cronk, G. A.: Clinical report to Bristol Laboratories Inc. 6. Wright, W. W.: Clinical report to Bristol Laboratories Inc. 7. Kass, E. H.: Am. J. Med. *18*:764 (May) 1955. 8a. White, A. C.; Couch, R. A.; Foster, F.; Calloway, J.; Hunter, W., and Knight, V.: in Welch, H. and Marti-Ibañez, F.: Antibiotics Annual — 1955-1956, Medical Encyclopedia, Inc., New York, 1956, p. 490. b. Data on file — at Bristol Laboratories. 9. Flippin, H. F.: Pennsylvania M. J. *62*:864 (June) 1959. 10. Kligman, A.: Clinical report to Bristol Laboratories Inc. 11. Blau, S., and Kanof, N.: Clinical report to Bristol Laboratories Inc. 12. White, A. C.: Clinical report to Bristol Laboratories Inc. 13. Prigot, A.: Clinical report to Bristol Laboratories Inc. 14. Robinson, C.: Clinical report to Bristol Laboratories Inc. 15. Dube, A. H.: Clinical report to Bristol Laboratories Inc. 16. Ferguson, B.: Clinical report to Bristol Laboratories Inc. 17. Rutenburg, A. M.: Clinical report to Bristol Laboratories Inc. 18. Richardson, J. H.: Clinical report to Bristol Laboratories Inc. 19. Bunn, P. A.: Clinical report to Bristol Laboratories Inc. 20. Yow, E. M.: Clinical report to Bristol Laboratories Inc.

BRISTOL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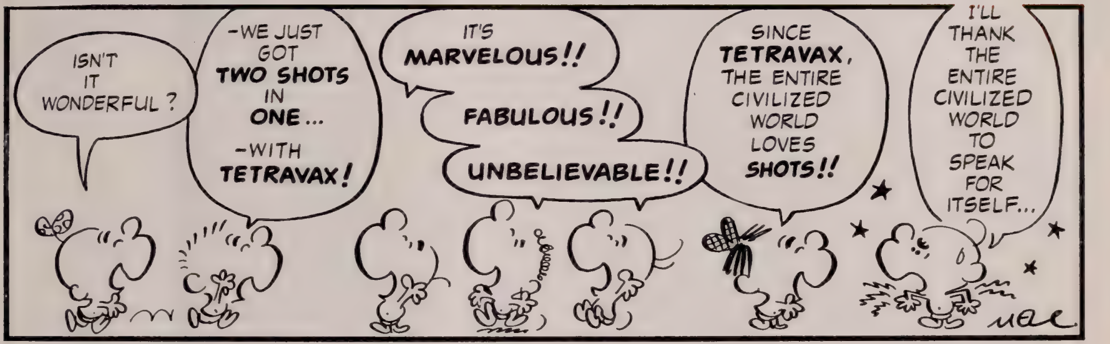
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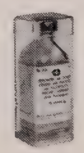

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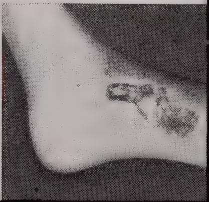

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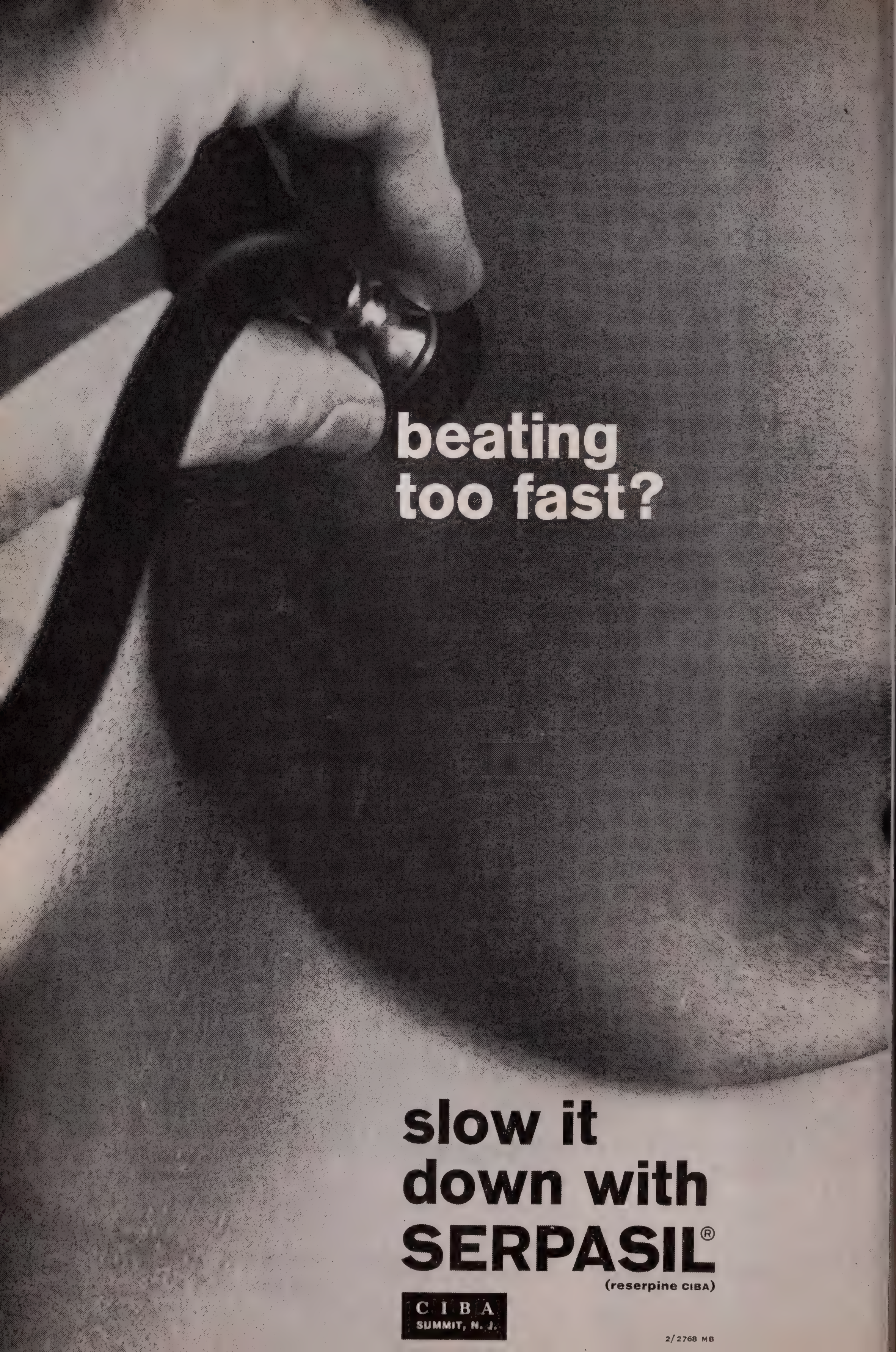
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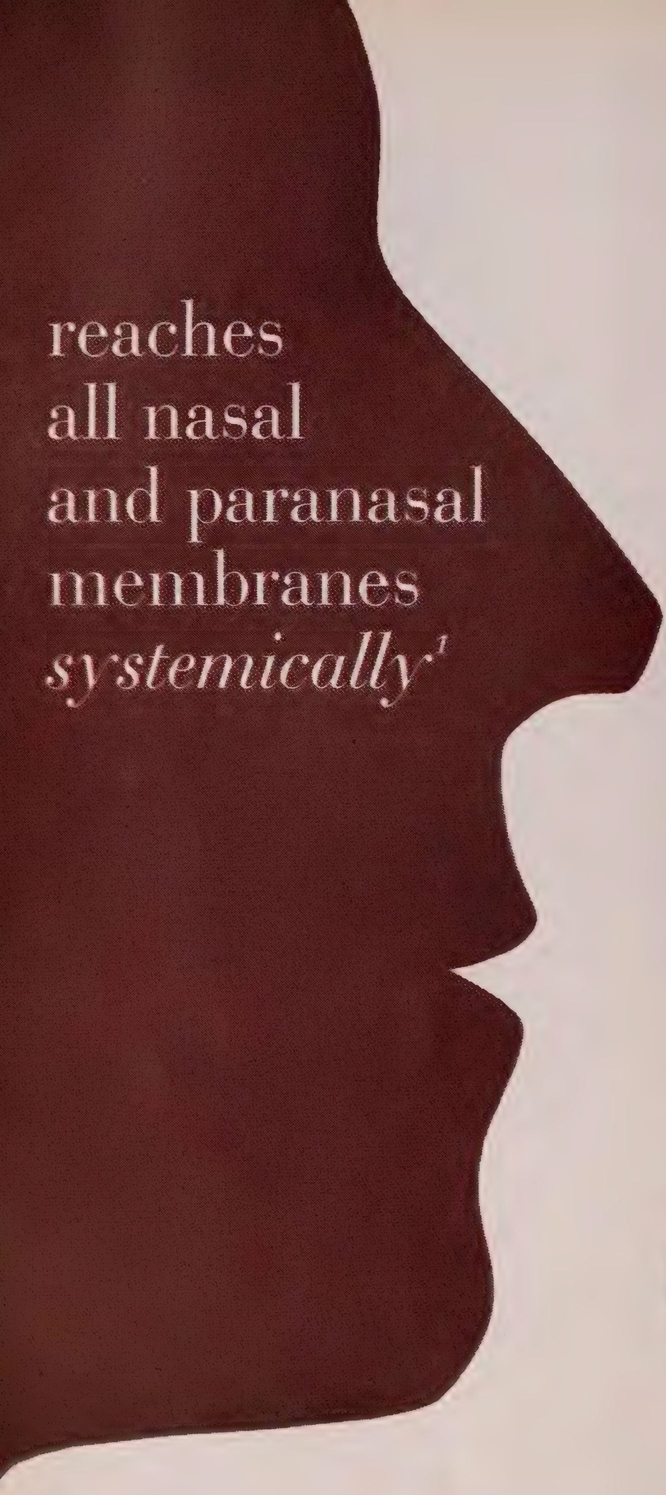

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1. Fabricant, N. D.: E.E.N.T. Monthly *37*:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J. *112*:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. *5*:1183 (Sept.) 1958.

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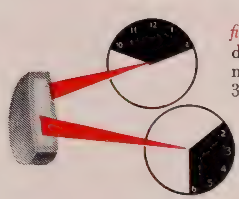

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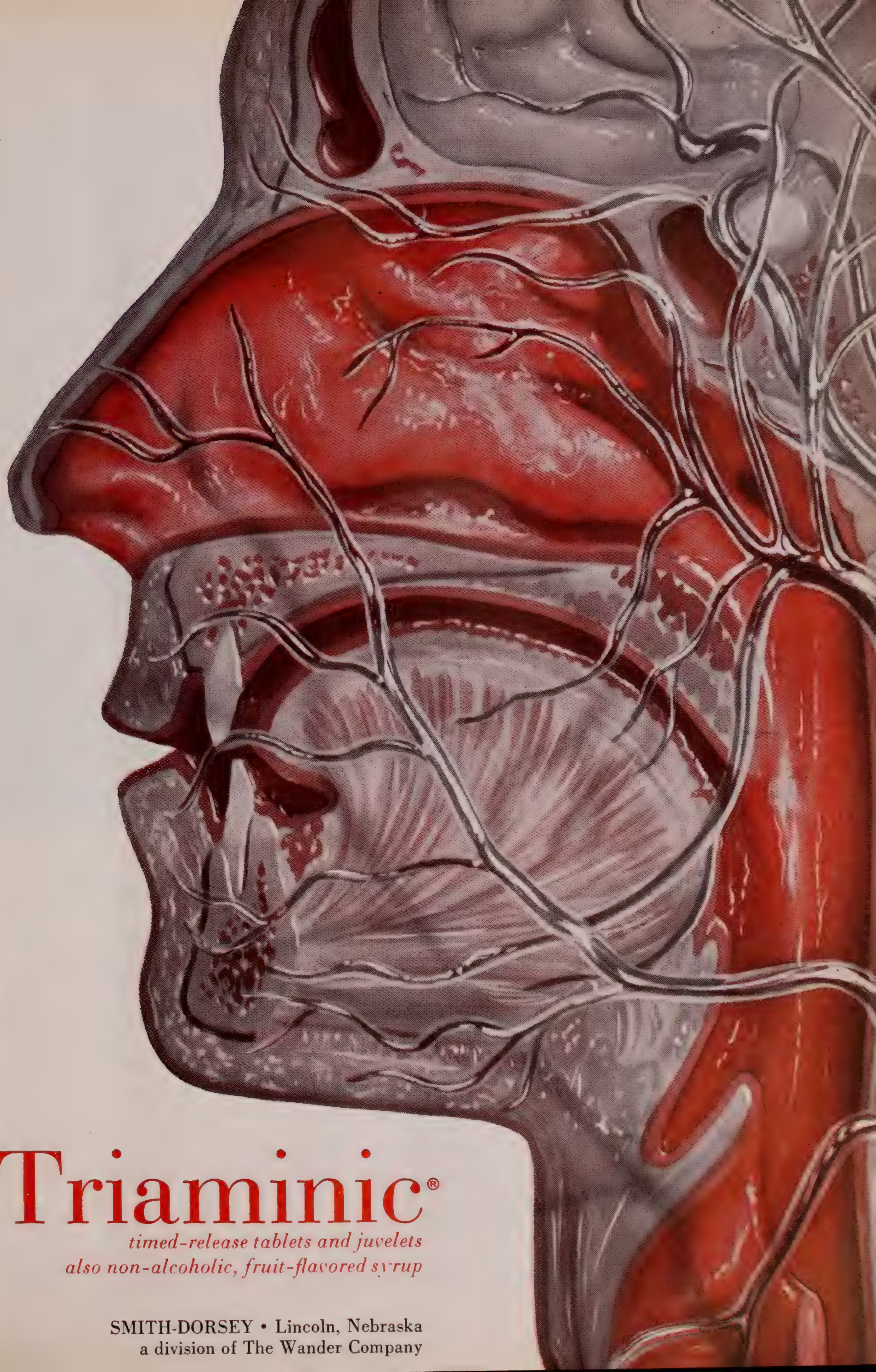

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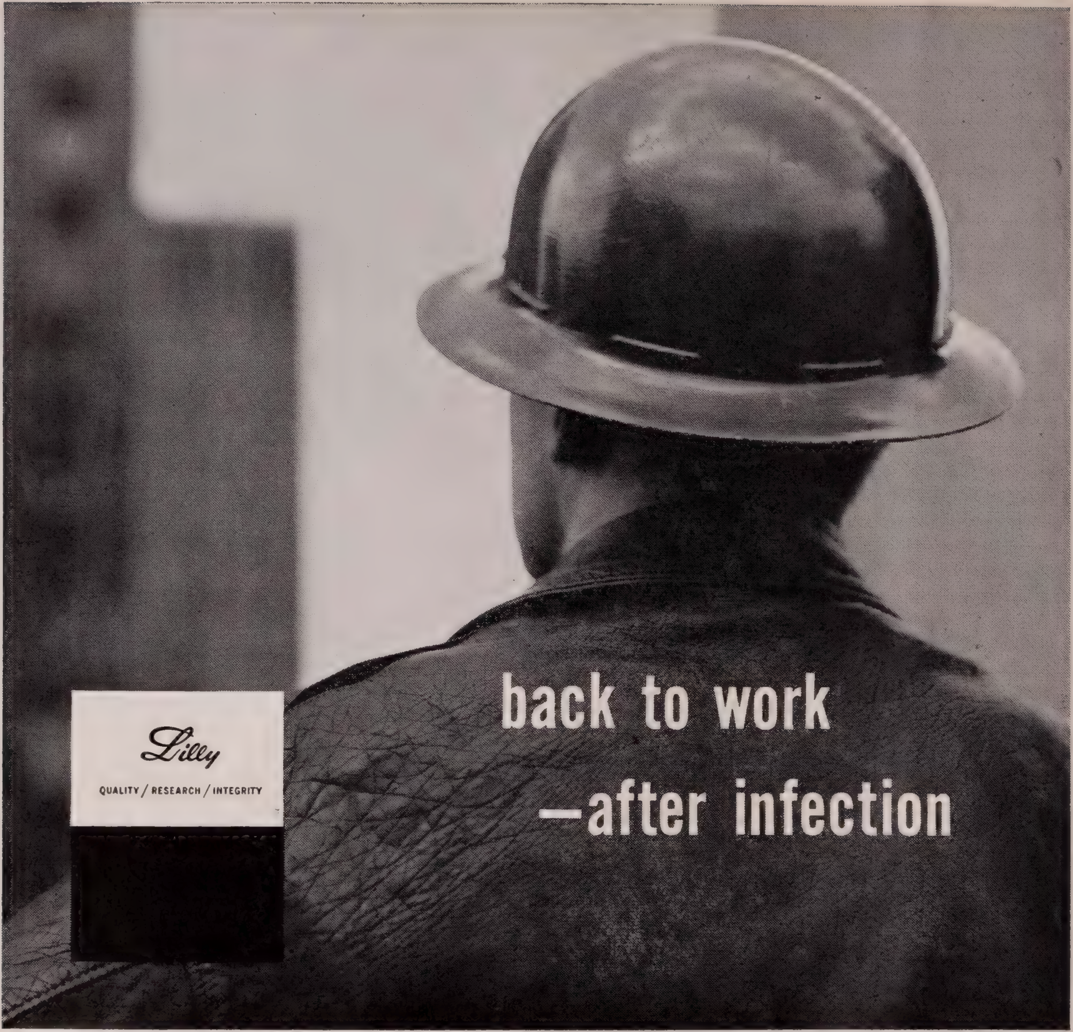

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EDITORIALS

Unemployment Insurance

Effective January 1, 1960, the new law respecting unemployment insurance coverage may impose a tax on many doctors throughout the State who have only one employe and who previously have paid no such tax. If the employing doctor pays an employe wages of $300 or more in any quarter year the physician as an employer must register and pay the premium on unemployment insurance for this person.

The JOURNAL has carried a previous announcement of this new tax (December 15, 1959, page 4614) and now again reminds every doctor in the State that the Division of Employment will send notice in January, 1960, to all liable firms or individuals who are subject to the tax and of whom it has knowledge. Any employer who had a $300 payroll *in the last quarter of 1959* is liable for the tax whether or not he received notification by January 15, 1960. An employer who had a payroll of less than $300 in the last quarter of 1959, but who goes to $300 or over in some later quarter, must write to the Division of Employment, New York State Department of Labor, 800 North Pearl Street, Albany, New York, and register.

Hearing Impairment

It does not seem to be generally appreciated that a large degree of hearing impairment exists in our population. The National Health Survey indicates that there are about 5,800,000 people in the United States with some degree of hearing impairment; of this total nearly 110,000 are reported to be totally deaf. Hearing difficulties are more common among males than among females. Forty out of every 1,000 males are reported to have impaired hearing, a rate one third higher than that for females. The higher prevalence rate among males reflects their more frequent involvement in accidents and their greater exposure to prolonged intense noise in industry. One fifth of the hearing impairments among males result from injury, whereas among females the proportion is only about one twenty-fifth.[1]

As might be anticipated, the relative frequency of hearing impairments rises rapidly with advance in age. The rate seems to be 8 per 1,000 persons under twenty-five years, rising to nearly 130 per 1,000 at ages sixty-five to seventy-four and to about twice that figure at age seventy-five and over. Impaired hearing is said to be an important health problem at the younger ages; it affects well over a half million of the people under twenty-five and nearly one million people in the group twenty-five to forty-four years.

In 1957, says the *Statistical Bulletin*, some indication of the extent of seriously impaired hearing among children is available from data regarding persons under age twenty-one who received care for this condition under the Crippled Children's Program of the Social Security Act. In that year, more than 17,000 children received physicians' services for impaired hearing and deafness in 28 states which included these conditions in their programs.

Much can be done to correct hearing impairments and to prevent deafness. Many of the hearing difficulties at the younger ages result from infection or accidents; these difficulties can be diagnosed and treated early. A nation-wide program for the detection of hearing loss among school-age children, coupled with measures for medical referral and follow-up, might accomplish much in reducing or at least ameliorating hearing impairments. The considerable research now being done on the relation of infection in the mother during the first months of pregnancy to congenital anomalies may throw light on the origin of some hearing impairments present at birth.

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[1] Statist. Bull. Metrop. Life Insur. Co., October 1959, p. 7.

Relatively few comprehensive studies are available on the effects of noise in industry. The relation of hearing loss to noise exposure has not yet been evaluated to permit the setting of a safe level of noise exposure in industry. Further research is needed in this field.

Greater efforts should be made toward motivating people with hearing impairments to seek early medical attention. Hearing should be checked as part of periodic health examinations for people at every stage of life. This would permit not only better treatment but also more effective rehabilitation with suitable hearing aids where indicated. In recent years, surgery has improved hearing for many people in middle and later life afflicted with chronic progressive deafness.

It may be anticipated that in the course of time better aids to hearing as well as further studies in physiology and newer developments in surgical technics may improve the prospects for the hard of hearing.

The Kings County Medical Library

How many doctors in New York State know they have at their disposal one of the great circulating medical libraries of this country? In these times, when new medical journals appear periodically as medical practitioners divide themselves into specialty groups, it is most difficult for the physician, whatever his special interest, to keep supplied with newer information because reports of discoveries in basic science and their clinical application are scattered so widely. Fortunately for the members of the Medical Society of the State of New York, a merger, rather than expansion of medical journals, made possible a valuable tool with which these doctors may conveniently keep up with the fast-moving medical stream of today.

Fifty-four years ago, the *Brooklyn Medical Journal* ceased publication when the Kings County Medical Society began to "help, aid, assist, and cooperate with the Medical Society of the State of New York in the successful publication and circulation of the NEW YORK STATE JOURNAL OF MEDICINE," in return for which the Medical Society of the State of New York agreed "to deliver into custody of the Medical Society of the County of Kings, each and every book, exchange publication, or other library medical pamphlet or magazine received . . . in exchange."

Again, we wonder if present-day physicians in New York State realize that, by acting as the repository for exchange publications and books, the Kings County Medical Society assumed a gigantic custodial task and further "agreed to place each and all volumes contained in its library; in the Borough of Brooklyn, as a circulating library, at the disposal of the members of the Medical Society of the State of New York, wheresoever situate in the State of New York and (to) provide for and prescribe rules and regulations for the proper and satisfactory distribution of all the volumes in said library contained, or which may be hereafter purchased or received from any source whatsoever."

Over the years, both societies have kept the faith and the letter of a contract signed May 8, 1906. May the responsibilities of both the parties continue to be discharged with such loyal spirit.

Education is something a doctor cannot neglect; new technics or the clinical application of basic discoveries in medical science once took an estimated fifteen years to percolate to the last member of the medical profession—not so today. Each physician learns early in his career the need of keeping abreast of his profession. After more than a half century in which this great circulating library service has been available, could a greater tribute be paid to the wisdom of its beginning than a report of increased use of its services by New York State doctors?

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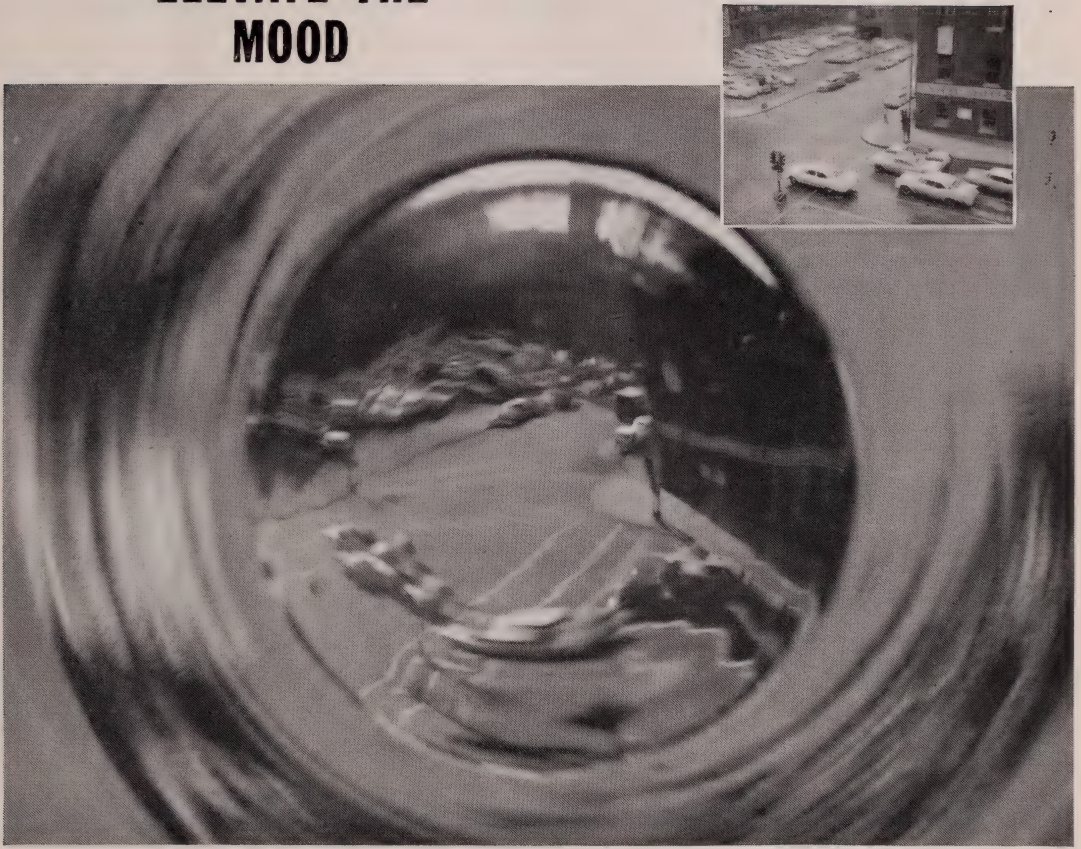

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(1) Wallerstein, R. O., and Hoag, M. S.: J.A.M.A. **164**:962 (June 29) 1957. (2) Eastman, N. J.: Current M. Dig. **25**:55 (Jan.) 1958. (3) Koszewski, B. J., and Walsh, J. R.: Am. J. M. Sc. **235**:523 (May) 1958. (4) McCurdy, P. R.; Rath, C. E., and Meerkrebs, G. E.: New England J. Med. **257**:1147 (Dec. 12) 1957.

48659

LAKESIDE

SCIENTIFIC ARTICLES

The Limping Child

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PART I

The image of a limping child, projected on the screen of the future, might well reflect the likeness of a suffering, disabled adult.

The child with a limping gait must be studied from many points of view: his history, the immediate clinical picture, the roentgen-ray findings, laboratory tests, and the question of conservative or surgical management.

Time is of the essence, for any delay enhances the prospect for secondary changes, either local or remote, which, as time goes on, become heavy burdens; and treatment, however intensive, is of little avail in the late stages.

For the sake of clarity, variations of the limp are classified as follows: (1) inequality of the legs without restriction of movement of the component articulations; (2) psoatic limp, secondary to trauma or infectious lesions of the hip; (3) gonalgic limp, secondary to contracture or ankylosis due to traumatic or infectious lesions of the knee; (4) podalgic limp, secondary to disabilities of the ankle or foot; (5) antalgic limp, or weight-bearing intolerance of the spine; and (6) paralytic limp, flaccid or spastic, with secondary dynamic deficiencies.

Inequality of the Legs Without Restriction of Motion of the Component Articulations

Among the many causes of disparity of leg lengths may be a congenital shortening due to a partial or complete absence of bone or bones; epiphyseal dysgenesis; shortening following premature epiphyseal closure secondary to surgery, trauma, or disease; or to fracture resulting in nonunion or malunion. The consistent finding of a limp on the fractured side is significant of a shortening or overgrowth or lengthening of the traumatized member.

A seventeen-year-old female had a fracture of the proximal shaft of the right femur at the age of six. Open reduction and plating of the femur were performed. The first symptoms of pain in the right hip and lower back came at the age of seventeen. Supine lumbosacral views showed normal alignment (Fig. 1 (top)), while the same view with patient erect showed a downward tilt of the left pelvis (Fig. 1 (bottom)) with abnormal curvature of the spine. Roentgenograms of the affected femur noted the presence of the plate and four screws, and a 1-inch lengthening of the member (Fig. 2).

In a limping child, when disparity of leg lengths is from $^1/_2$ to $^3/_4$ inch, equalization is brought about by the dropping of the pelvis onto the shorter limb. When it is greater, say from 1 to $1^1/_2$ inches, the child invariably attempts to make up the deficiency by a talipes equinus attitude of the

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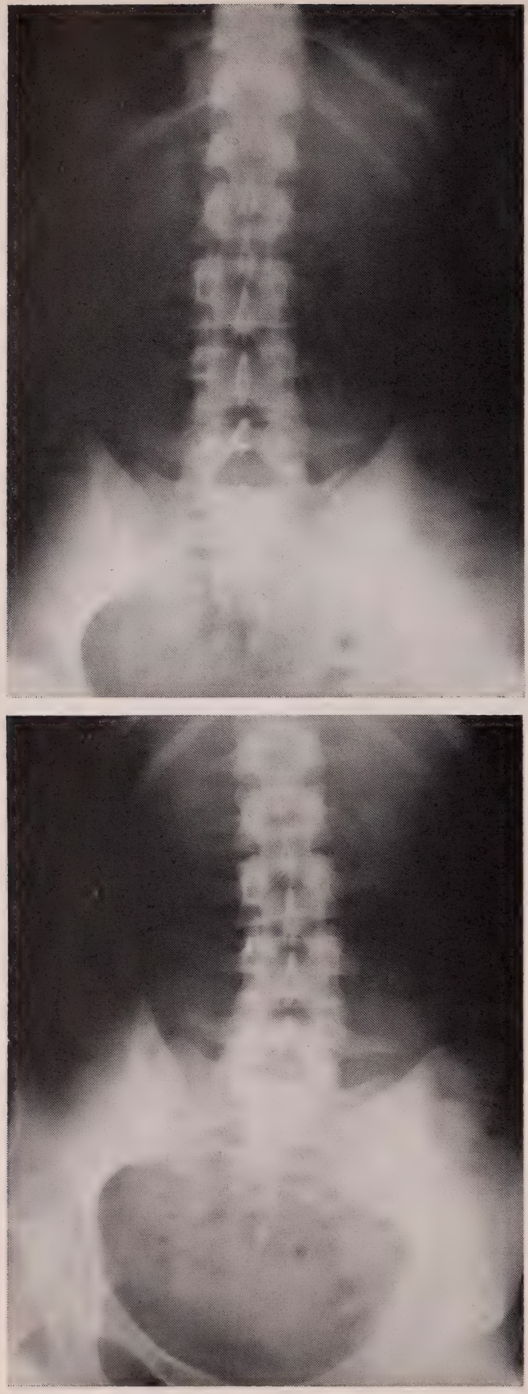


FIG. 1. Roentgenographic anteroposterior views of lumbosacral spine. (*Top*) Supine; (*Bottom*) Erect.

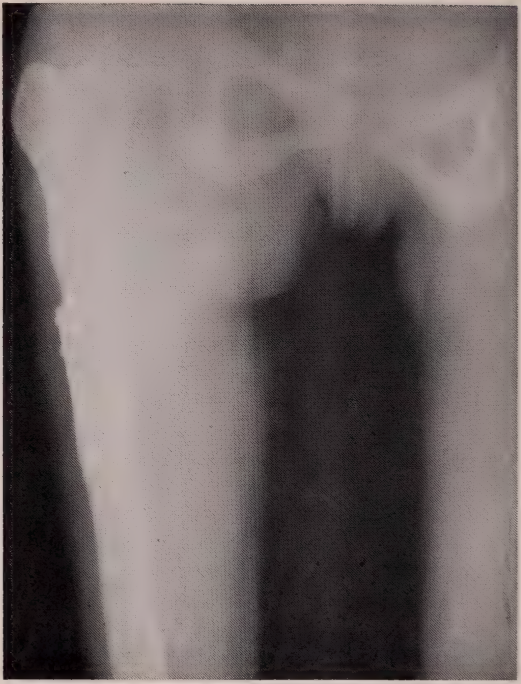


FIG. 2. Lengthening of femur following fracture; plating of femur.

ankle; and in excessive discrepancies of 2 to 3 inches or more he may adapt the longer extremity by flexing the knee. Thus the variant of the limp or the short-leg walk adopted by the child—mild, moderate, or severe—is determined by the degree of shortening or of lengthening.

The downward slope or drop of the pelvis commences at the instant the heel is placed on the floor and persists during the entire period of support. The greater the disparity of leg lengths the greater the unrestrained upward and backward thrust of the pelvis, and the greater the arc of oscillation of the pelvis in a frontal plane on the affected side. This gait is tiresome, exhausting, and the child readily assumes a compensatory attitude of the shorter limb. The shortness of the extremity induces a greater degree of backward pelvic rotation; the inward rotators and abductors curb this impulse and prevent the member from overextending in abduction and outward rotation.

Fatigue and exhaustion states are alleviated by platform elevation of the shoe for the shorter member. Operative equali-

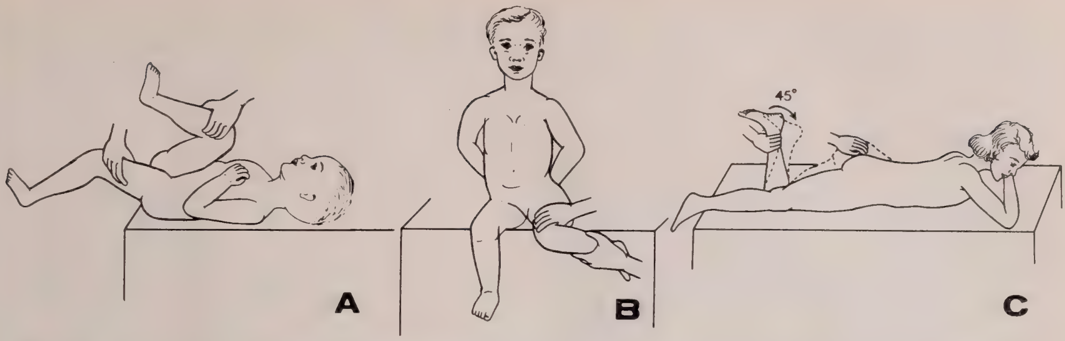


FIG. 3. Re-enforced iliopsoatic tension signs. (*A*) Patient supine: unaffected thigh pressed against chest, distal affected thigh in neutral position pressured by examiner. Attitude of flexion for positive test is arc of from 5 to 45 degrees. (*B*) Patient seated erect; unaffected leg arc from 0 to between 75 and 90 degrees. Affected leg arc to about 45 degrees, with continuation of swing to from 75 to 90 degrees, coupled with elevation of buttock of affected leg. (*C*) Patient prone; lateral swing of unaffected leg from 0 to 75 degrees. Affected leg arc possible to less than 45 degrees, with continuation of swing coupled with elevation of buttock of same side.

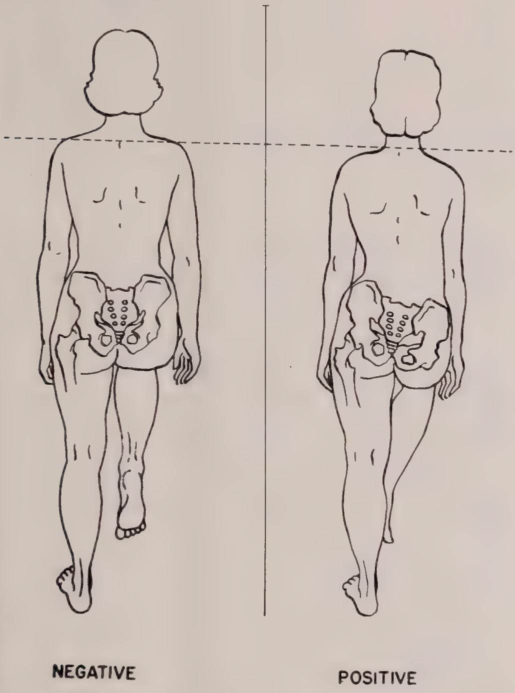


FIG. 4. Trendelenburg sign.

zation of the legs is indicated in cases of moderate or severe disparity of leg lengths that compels overexertion of the leg muscles or induces a list or scoliosis.

Psoatic Limp, Secondary to Trauma or Infectious Lesions of the Hip

Steindler[1] states that an inflamed hip joint in the earlier stages goes into a position of flexion abduction and outward rotation.

The author considers the limp a reflex defense that is assumed as tolerance to weight-bearing stress, and muscle tension is diminished by the inflammatory or traumatic condition.

The psoatic limp results from the effort of the body during ambulation to ensure minimal tension and least irritation to the sensitive, inflamed synovial membrane and capsule that induce tension, painful or otherwise, on the iliopsoas. This produces a hyperlordosis of the spine and the patient avoids complete backward extension of the hip by walking with the leg externally rotated while the hip is maintained in a slightly flexed and adducted attitude. The knee finds itself in compensatory flexion and the ankle joint is in plantar talipes equinus. The child pivots on the ball of the foot, his take-off is weak, the limb swings forward, and the pelvis makes a wide circle around the hip in order to bring the upward-rotated member into the progression plane.

Clinical evaluation of the etiologic factors that produce the psoatic limp can be determined by several of the author's re-enforced iliopsoatic signs (Fig. 3).

The limping gait in static disability of the hip joint is brought about primarily by the altered correlation of the pelvis and the lower extremities. The disturbance is due essen-

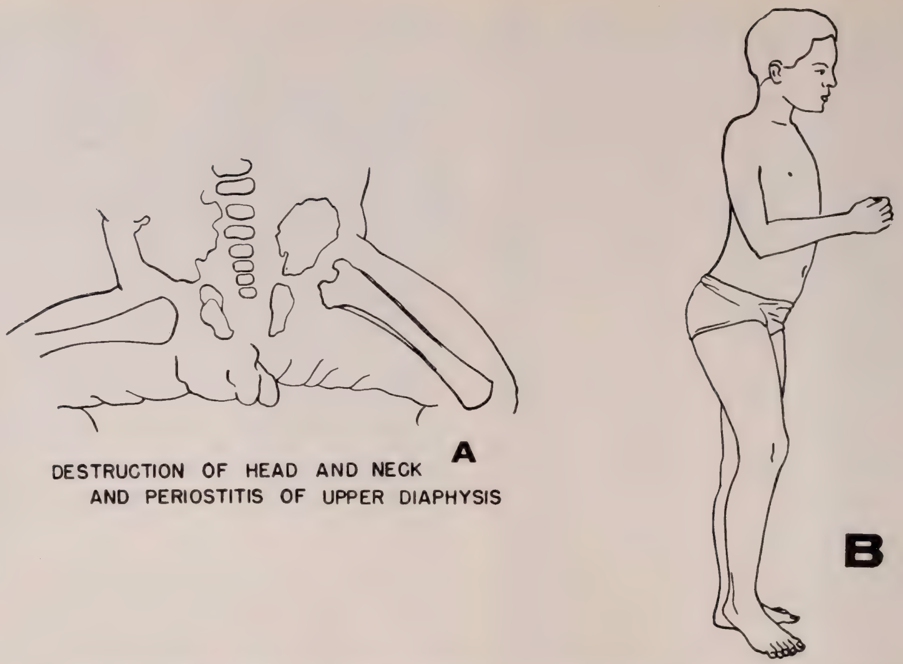

DESTRUCTION OF HEAD AND NECK
AND PERIOSTITIS OF UPPER DIAPHYSIS
A
B

Fig. 5. (*A*) Radiographic tracing, infectious arthritis. (*B*) Psoatic gait of defense; external rotation, flexion, and adduction of hip. Infectious arthritis of hip.

tially to the inability of the hip muscles to immobilize the rim of the pelvis during the standing period, so that the hip joint gives under weight pressure and the swing side-drops instead of rising (Trendelenburg sign, Fig. 4).

The mechanical factor behind the insufficiency is an upset of the relationship of the pelvic-trochanteric muscles and the shortening of the tensor fascia; secondary to this, the pelvis has an increased inclination and a lumbar lordosis. The anatomic factor is elevation of the greater trochanter above the Roser-Walton line.

Pyogenic Arthritis.—Pyogenic arthritis of the hip does occur although it is not encountered too often. Here we have a limp occurring in an acutely ill, toxic child. The infectious process can occur as a result of almost any type of bacteremia with the systemic picture of toxemia usually present. In children infected punctures or lacerations, boils, or pulmonic infections qualify as sites of primary infection.

Pyogenic arthritis distends the articular capsule rapidly, and there is a tendency toward luxation of the joint due to disturbed or irritated iliopsoatic muscle function. The vascular supply to the head and neck of the femur may be embarrassed to such a degree that irreversible changes with bone destruction and sequestrum formation may occur.

During the early phase of pyogenic arthritis, the only demonstrable alteration is a distention of the capsule. As the disease advances, however, a narrowing of the intra-articular joint space appears, followed by erosion of the subchondral bone with irregularity and fuzziness of the bony surfaces. Subsequent to areas of bone destruction a profuse osteoporosis of the juxta surfaces of the hip joint becomes evident. Areas of subchondral radiolucence may appear as the result of lack of subchondral granulation tissue response. When the infection is quiescent and the repair process well advanced, then subchondral sclerosis occurs and normal density of the osteoporotic bone is present in conjunction with adjacent soft tissue calcification (Fig. 5).

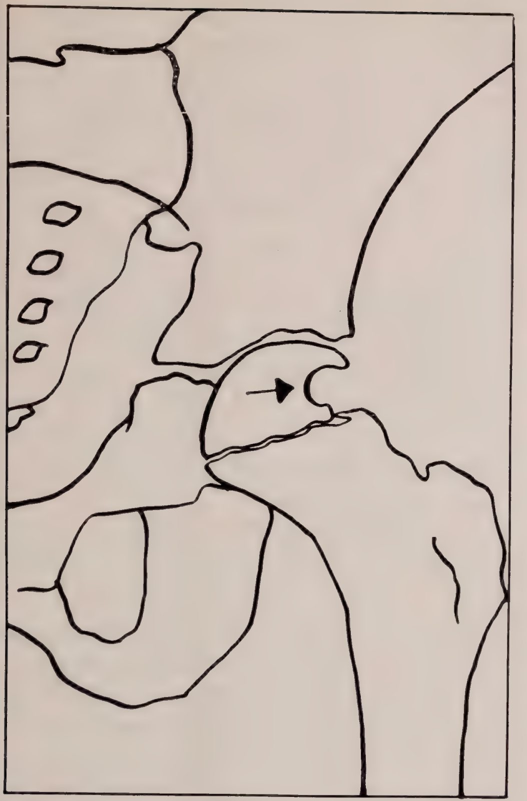


FIG. 6. Tuberculosis of hip.

Once the diagnosis of pyogenic hip is suspected, immediate decompression by aspiration or drainage should be done, followed by appropriate local and systemic antibiotic therapy and Russell-Wilson traction (not distraction) for immobilization of the member in neutral rotation, thereby preventing luxation by relaxation of the iliopsoatic stress across the head of the femur.

TUBERCULOSIS OF THE HIP.—Tuberculosis of the hip is as a rule secondary to pulmonary disease and the onset usually is insidious. There is a lurching limp, due to the child's instinctive attempt to shield the hip joint from painful pressure. Slight adduction contracture of the hip is present, and a doughy, thickened anterior capsule.

X-ray films show marked atrophy of the bones of the hip joint. Destruction of the joint appears to start at the periphery and gradually encroaches centrally (Fig. 6).

Laboratory Data.—Laboratory data should include a cutaneous tuberculin test, a gastric washing for tubercle bacilli, and a biopsy of the synovial membrane.

Treatment.—Treatment of tuberculosis of the hip should include the elimination of weight-bearing, immobilization by cast or Russell-Wilson traction (immobilization only), and streptomycin or iproniazid (Marsilid), especially if there is sinus formation.

Early care prior to significant bone destruction may result in the restoration of a normally functioning hip. Late cases with advanced bone destruction may terminate in surgical arthrodesis or in other heroic measures.

ARTHROKATADYSIS.—In arthrokatadysis the limp is due to mechanical restriction of the hip joint. There is an arc of possible painless motion, but when this is exceeded pain is produced. Arthrokatadysis may be on an infectious basis, with hyperemia and softening of the floor of the acetabulum. The deepening and destruction of the acetabulum can be ascribed to many causes; however, when no definite cause can be determined, this is called an Otto pelvis or protrusio acetabuli.

My experience in these pathologic conditions has always been at the late stages, when mechanical restriction was present; but it is most probable that the abnormal intrinsic force of the iliopsoas plays some part in the deepening and destruction of the acetabulum.

Aside from the limp, the child has difficulty in walking up and down stairs and in sitting in a comfortable attitude. There is loss of range of abduction of the leg and of ability to stoop or squat. Such motions as rotation and adduction are the first to be lost, and flexion of the hip is the last.

X-ray film findings are the most reliable diagnostic media in the disease. The walls of the acetabulum usually are thin and eburnated; the head of the femur protrudes into the pelvis to varying degrees with the acetabulum presenting a dome-shaped position overlying the head.

DISLOCATION OF THE HIP.—The following classification of dislocations of the hip may simplify consideration of them with relation to the limping child: (*a*) congenital, atypical, teratologic dislocation; (*b*) developmental, typical, acquired, anthropologic dislocation; (*c*) traumatic dislocation; (*d*) paralytic dislocation; and (*e*) spastic dislocation.

Congenital, Atypical, Teratologic.—Congenital dislocation is looked on as one manifestation of multiple epiphyseal dysplasia or arthrogryphosis.

Atypical dislocation invariably occurs in utero and there are many associated malformations of the various structures of the body. Often the life span of the child will have been completed before a limp could appear, and, so far, treatment of these conditions has to all intents and purposes proved futile.

This prenatal deformity is a primary abnormality arising from defects in the fertilized ovum and irregular development within the first month of embryonic life; it is truly congenital in all senses of the word. But those defects developing in a previously normal fetus, as a result of extra-embryonic influence exercised during the intra-uterine life, are products of the anthropologic development, and the social stigma should be removed from this group.

Developmental Dislocation.—The anthropologic dislocation, or acquired typical type, is the one most commonly productive of a limp. At first the limp is psoatic in type, then as the condition proceeds through the stages of presubluxation, subluxation, and on to complete dislocation, the limp becomes lurching, with the child sinking on the affected side as the body weight is placed on that leg.

There is no clear delineation of the three stages of typical hip dislocation. The classic case would be one commencing with the presubluxation stage, progressing into subluxation, and on to complete dislocation. Yet the cycle may be entered at any point, so that complete dislocation may be accomplished even though the hip has not gone through the first two stages. In the language of today, the dislocation goes into orbit and there it is. The subsequent findings of dysplasia of the head of the femur and of the acetabulum are secondary to the absence of the head from the acetabulum.

In the presubluxation stage there is a hindrance of the normal characteristic force of pressure tension and pivotal mobility of the mesodermal structures that comprise the coxofemoral joint: in the main, the head of the femur, the acetabulum and the articular capsule with its neurovascular supply, the periarticular ligaments, the tendons, and the muscles.

The setting for presubluxation is a fetus in utero with hyperflexion and an external rotation attitude of the hip joint. In this situation the fibers of the articular capsule and the ligamentous structures are horizontal. An incompleteness of the internal rotation that is necessary to create tension of the capsular structures by directing the fibers in an oblique and spiral direction at the time of birth will present a thoroughly relaxed capsular structure. Sudden extension, coupled with internal rotation of the hip joint while passage through the parturient canal is being effected, or by ankle suspension with the lower members in internal rotation, suffices either to thrust the hip into luxation or to assure continuance of the presubluxation stage, which is basically a state of relaxation of capsular structures due to the failure of or the incomplete axial rotation (90 degrees) of the lower member. The sudden extension-internal axial rotation engages the intrinsic destructive iliopsoatic force when that muscle has failed of elongation.

Routine x-ray films taken at the presubluxation stage will in 90 per cent of cases appear to show negative findings. In several instances findings of dysplastic characteristics will be present. These may be due to the external rotation-flexion position of the hip which produces tension

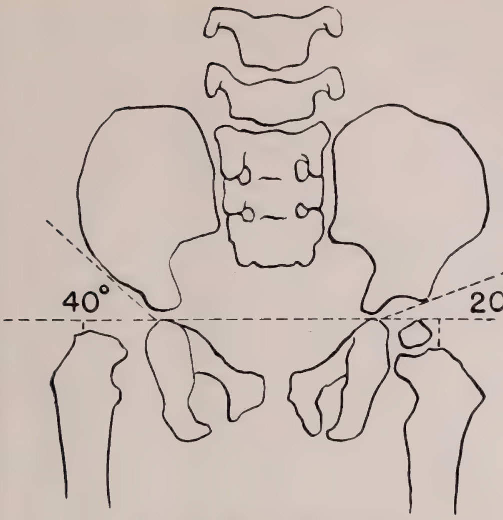


FIG. 7. Hilgenreiner line.

on the capsule, with subsequent sloping or increased inclination of the acetabulum. I do not believe that such entities as "dislocation gene" or "dysplasia gene" exist.

The clinical picture of the presubluxation stage shows the attitude of the affected member as one of psoatic release, namely, external rotation of the limb with flexion adduction of the hip. The hip joint is loose and flaccid. There is shortening, apparent rather than actual; there is appreciable atrophy in the buttocks and thighs; the gluteal folds are asymmetrical; and there is an increase in the number of folds on the thigh. By placing the extremity in an internally rotated position the asymmetry and the depth and the number of folds are increased.

A positive response to the author's reenforced iliopsoatic signs is the first conceivable manifestion of capsular relaxation, inasmuch as it signifies that the affected member has come within the scope of the destructive intrinsic force.

The "click" or "snap" of Ortolani,[2] also predicated on the presence of a relaxed capsule, may be demonstrated at this stage.

In the subluxation stage the head of the femur is in the socket and usually remains there, but definite changes have occurred. X-ray films will demonstrate the increase of inclination of the acetabulum to 30 degrees or more (Fig. 7). Shenton's line may be broken and the distance between the nucleus and socket increased (Perkins' line). The epiphyseal head rides along the posterosuperior margin of the roof and accounts for continuing pressure necrosis of its cartilaginous limbus portion (Fig. 8). At this point, if the head does not become dislocated from the acetabulum there is increased widening and shallowness with erosion of the roof and an increasing slant of the acetabular angle. There ensues what may aptly be described as a pestle-and-mortar action, and the amount of destruction of the femoral head will be proportionate to the amount of battering because of the misdirection of pressure application of the force of the engaged iliopsoas in a shallow, widened acetabulum, and relaxed capsular structures. Then dislocation is imminent.

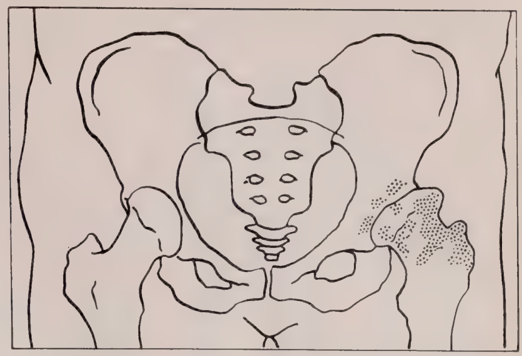


FIG. 8. Degenerative changes of subluxated hip.

During the subluxation stage clinical examination of the limping child will present variations, not on the basis of age but in accord with the status of the pathologic condition present within the hip joint. At this stage the author's iliopsoatic tension sign is markedly positive.

Examination of the child in a supine position discloses an attitude of incomplete internal-axial rotation of the member. The inguinal and gluteal folds are deepened on

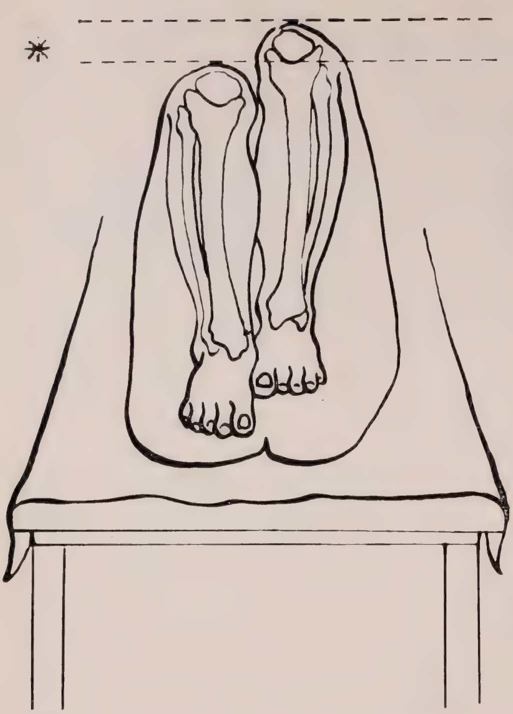


FIG. 9. Galeazzi's sign. Unilateral dislocation, thighs to right angle, shortened affected member.

the affected side and may also be increased in number. There is apparent or mild shortening of the limb. The Trendelenburg sign is at best equivocal and the "click" or "snap" is usually found.

Dislocation is expedited by standing or walking. The standing or walking stage is the time at which the continuing action of the iliopsoas can, in the presence of a relaxed capsule, cause the hip to go into dislocation. The expression of the iliopsoatic force is initially external rotation, then flexion, and finally adduction and cephalad projection of the femoral head. The head is eccentric to the acetabulum and is most frequently noted in the posterosuperior area.

The ligamentum teres invariably is thickened and elongated, the capsule is stretched. Involution of the limbus is often associated with the stretching of the capsule. Angulation of the acetabulum is noted on x-ray films as an end result when the head has dislocated directly from presubluxation, or when there has been but a brief stage of subluxation. The degree of slope of the acetabulum is in direct proportion to the extent of iliopsoatic tension, producing stress of the head against the superoposterior capsule. The shape of the head may be relatively normal and the acetabulum left intact. Secondary changes of the head and the acetabulum will occur. The head may show some flattening and the neck may show increased anteversion due to the abnormal iliopsoatic stresses brought into play during the relaxed capsular stage.

Examination of the dislocated hip joint will show variations from an essentially normal femoral head and acetabulum to a battered head and shallow acetabulum. In those instances in which the subluxation stage has been held to a minimum, prognosis with treatment is good. Conversely, where the subluxation stage has been prolonged, prognosis with treatment is poor. Also, results are in ratio to the time of discovery and initiation of treatment

During the dislocation or third stage actual shortening is obvious and this is noted especially when flexion of the thigh to a right angle is carried out (Galeazzi's sign, Fig. 9). The greater trochanter can be felt at a higher level (above Nélaton's line) than on the normal side. A secondary list of the trunk invariably follows. The folds show greater depth and number and there is an apparent weakness of the gluteus medius. The limp is more pronounced due to the advanced telescoping of the head and also to the weakness of the hip adductors (Fig. 10). The "click" sign is no longer present. Generally all of the writer's re-enforced iliopsoatic tension signs are positive in view of the failure of elongation of the iliopsoas following transposition of the head of the femur.

The child with unilateral hip dislocation presents a typical limp. In bilateral dislocation there is a waddling gait and a severe lumbar lordosis secondary to the downward pull of the iliopsoas from the new

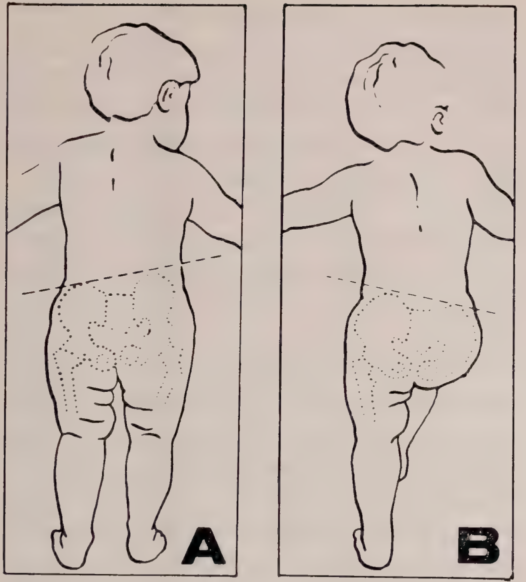


Fig. 10. Dislocated left hip. (*A*) Asymmetric folds, prominent trochanter, and pelvic tilt. (*B*) Trendelenburg positive.

location of the lesser trochanter.

Features shown by roentgen-ray study are pelvic obliquity and adduction of the affected extremity, attributable to iliopsoatic tension and shortening and to secondary contracture of the pelvic-trochanteric muscles. In conjunction with a positive Hilgenreiner's line and Perkins' line, there is a break in the Shenton's line with upward and lateral displacement of the femoral head. The "teardrop" shadow of Kohler, the delayed appearance of the center of ossification of the femoral head, bilabiation, and other findings are present (Fig. 11).

Treatment of developmental hip dislocation is geared to the status of the hip condition. In the presubluxation stage, I feel that a primary fixation attitude away from possible engagement of the intrinsic psoatic force should be achieved by placing the extremity in flexion and external rotation. Immobilization by a Frejka pillow usually suffices, because from this position the iliopsoas becomes a stabilizer of the hip. The pillow is continued for several months. Judicious stretching exercises of the iliopsoas are carried out until such time as the author's re-enforced iliopsoatic signs show negative findings. Use of a wide-bar Denis Browne splint with the members in Lange position is of value to expedite axial rotation; to maintain the head in a concentric position in the acetabulum; and, through iliopsoatic engagement, to encourage lengthening of the muscle, then permissive movement in the splint.

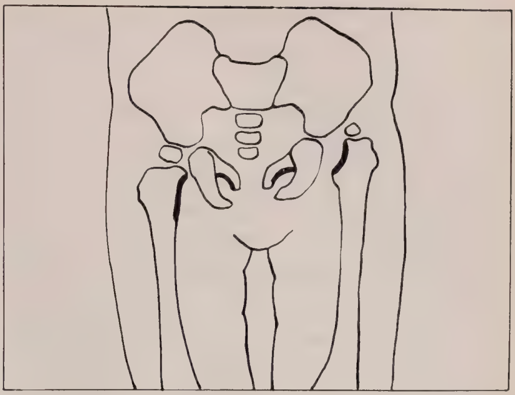


Fig. 11. Dislocated hip. Increased slope acetabulum, small-sized capital epiphysis, shortened member, and loss of Shenton's line.

During the subluxation stage it may be necessary primarily to immobilize the extremity in the frog position by casting or splinting. This accomplishes firm placement of the head of the femur within the acetabulum and subsequent release of the constant external-rotation-flexion-adduction torsion force of the head within the acetabulum. Once this has been achieved and the iliopsoas is acting as a stabilizer of the hip, the "click" sign usually disappears. At this time milder forms of therapy, such as a Frejka pillow or Putti or Ponseti splint may be substituted, and treatment can be continued as in the presubluxation stage.

In the dislocation stage, the Paci-Lorenz[3,4] method is a procedure of closed reduction in which the reduction is carried out by bringing the head over the posterior rim of the acetabulum. The technic consists of three steps. In stage one, the thigh is flexed maximally; this forces the femoral head back of the posterior margin of the acetabulum. In stage two, the leg is changed from sagittal flexion into right-angle frontal abduction by moderate abduction of the thigh. Following this, the femoral head is found to be approximated to the posterior margin of the acetabulum. In stage three, by hyperextension of the thigh coupled with counterpressure upward on the trochanter, the head is forced to fall over the posterior rim of the acetabulum. In this way the head is brought to the floor of the acetabulum and reduction is completed. The position of retention would be one of rectangular flexion and abduction. In my experience the best results have been achieved by immobilization in the Lorenz position in the primary phase, and in the Lange position in the secondary stage.

The methods of Denucé,[5] Ridlon,[6] Lange,[7] Davis,[3] and Calot[8] each has its specific indications for difficult cases. The surgical field has been well explored. However, I believe that every surgical procedure should include transference of the iliopsoas from the posteromedial position to an anterolateral attachment, to convert its destructive force into one of stabilization of the hip. The lesser trochanteric transfer is not considered a substitute for inadequate coxofemoral surgery.

Prognosis for cure depends on the stage of the malady at the time of initiation of treatment. Most clinics report a relatively favorable prognosis even in the complete dislocation cases of those under the age of three years. There have been no established criteria for classification of results, as many of the good functional results are not expressed by x-ray findings; on the other hand, there may be good anatomic structure of the joint and a poorly functioning hip. Furthermore, while the immediate prognosis may be considered favorable, the long-term results of many clinics are poor.

Fundamentally, I believe that when the re-enforced iliopsoatic signs are negative, in conjunction with good anatomic joint structure as found on x-ray films, then results may be considered excellent.

Unless definitive care in the treatment and management of developmental hip dislocation is carried out, either the initial factor that has produced the dislocation in the first place will redislocate the hip or, if the hip is retained in the socket, a pounding barrage of the head of the femur against the acetabulum, through the iliopsoatic influence, will be productive of changes of the head and acetabulum.

During any of the stages of the malady, definitive treatment is the placement of the extremity in a position or attitude where the iliopsoas cannot produce the external rotation upward-stress factor of the head of the femur, thereby substituting for destructive power one of stabilization of the hip. Clinical elongation of the iliopsoas muscle structure should be carried out as soon as possible following reduction of the dislocation. Or, if surgery is anticipated, a transfer of the abnormally functioning iliopsoas tendon from its posteromedial insertion to an anterolateral or, preferably, lateral or greater trochanteric insertion, so that the power and function of the iliopsoas are now used solely for a stabilizing effect, produces the contact compression features necessary for the development and growth of the hip joint structures. Unless antetorsion is severe (60 to 90 degrees), transfer of the insertion of the iliopsoas dispenses with the need for rotation osteotomy.

Traumatic Dislocation.—Traumatic dislocation appears rather infrequently and usually during adolescence. There is a definite history of trauma. X-ray film findings will indicate dislocation without further abnormal bony findings.

Paralytic Dislocations.—The onset of dislocations following anterior poliomyelitis or cord injury is insidious and, again, these dislocations are due to a state of contracture of the iliopsoas against a paralytic pelvic-trochanteric musculature (See Anterior Poliomyelitis, following).

Here also, treatment would be transference of the abnormal force of the iliopsoas from its posteromedial lesser trochanter position onto the anterolateral subgreater trochanteric region of the femur; this in conjunction with such other muscle transfers as seem indicated.

Cerebral Spastic Disease Dislocations.—In cerebral spastic disease the tetanic contracture of the iliopsoas will produce forceful external rotation flexion adduction and cephalad projection of the head of the femur and hasten dislocation. This occurs in infancy or in early childhood and the mechanism is the same as in developmental hip dislocation.

Again, treatment would be directed toward transference of the iliopsoas tendon. Secondary procedures, such as the loosening or tenotomizing of the associated pelvic-trochanteric musculature may be necessary.

Transient Synovitis of the Hip Joint.—Transient synovitis is one of the most common affections of the hip joint in children from four to ten years of age and predominates in males. The characteristic deformity of external rotation flexion and adduction of the hip is present. There is a limp, and pain may be an accompanying symptom.

The question of etiology usually poses the problem of which phase is primary and which is secondary. Has the presence of a synovitis of the coxofemoral joint produced a reflex contracture of the iliopsoas, with a consequent gamut of clinical findings? Or did a state of isometric contracture of the iliopsoas produce a secondary synovitis of the hip due to abnormal stress and strain within the articulations?

The author believes that the etiologic factor is primarily a shortened iliopsoas, and that the transient synovitis is an early or initial stage compounding coxofemoral destruction, from which the individual may recover or may progress to the full stage of Legg-Perthes disease or any of the associated abnormal developmental pathologic conditions of disturbed iliopsoatic phases. In approximately 25 per cent of my cases there is a history of upper respiratory involvement, which may be the cause of an inflammatory myositic involvement of the iliopsoas component with spasm and contracture of the musculature and a subsequent secondary phenomenon at the hip joint.

The temperature will vary from 98.8 to 101.5 F. Occasionally there is an increase in the leukocytic count. The sedimentation rate may vary from a normal to a mildly elevated range.

The pathognomonic index is the presence of the author's iliopsoatic tension signs. There may or may not be associated tenderness on pressure over the iliacus tendon overlying the anterior hip joint. During the performance of the writer's signs, that portion of the iliopsoas overlying the hip joint becomes sensitive to pressure; also noted is tenderness of the midbelly of the psoas within the right or left lower quadrant of the abdomen.

When the child is examined in the supine position there is rarely any interference with the internal or external rotation of the hip joint; flexion also is free.

Roentgenographic examination usually discloses capsular swelling about the hip joint, readily seen at the posterior and lateral aspect of the articulation in those cases where a reactive synovitis of the hip joint has occurred.

A review of my cases of transient synovitis of the hip joint indicated enlargement of the iliopsoas but no consistent relationship since the enlargement was often noted at the unaffected hip; and this is considered significant only as concerns the vulnerability of the child to the lesion.

Differential Diagnosis.—Tuberculosis of the hip joint invariably will present a chronic history and changes as shown on roentgenograms. An acute septic hip joint involvement will present clinical findings of acute inflammation of the articulation, with painful restriction in any direction of movement of the joint, which are not found in transient synovitis. Traumatic synovitis, of course, would have a definite history of trauma.

Treatment.—Treatment consists of the

elimination of weight bearing, usually with total bed rest for a period of from ten days to two weeks.

Traction, unless of the Russell-Wilson or Bryant overhead type, is not recommended. As a rule, full range of movement of the hip is achieved within a week and the author's tension sign has disappeared. Terramycin has always been prescribed in our cases, and since no controls are run without it, it is difficult to reflect a true evaluation. However, the findings on the basis of empiricism are that a fair percentage of cases are due to an inflammatory state of the iliopsoas and so the antibiotic is prescribed.

Recurrent transient synovitis should be thoroughly investigated to determine the state of the iliopsoas component.

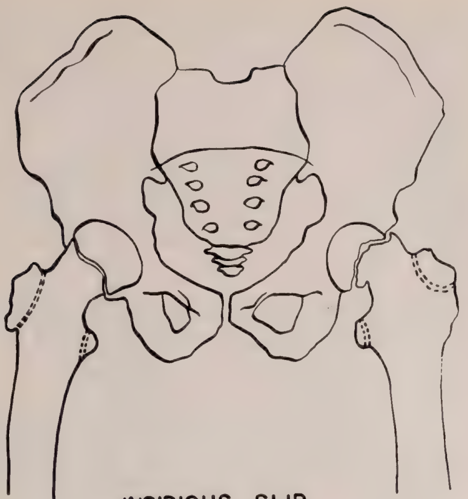
OSTEOCHONDROSIS DEFORMANS JUVENILIS (LEGG-PERTHES DISEASE).—Osteochondrosis deformans juvenilis is an aseptic degeneration of the capital femoral epiphysis. It is a fairly common cause of limp, occurs usually at ages five to ten years, often as early as four or as late as eleven to twelve years. The precipitating factors are problematic but the accepted basic pathology is obliteration of the blood supply to the capital epiphysis. Although endocrine imbalance, infection, and trauma are suspect, I believe that obliteration of the blood supply to the capital epiphysis is brought about at a time in the development of the individual when the stress factors of external rotation and upward displacement of the femur are brought to bear against a protected capital head within the acetabulum. The secondary loss of blood supply to the epiphysis is responsible for the aseptic degeneration of the capital femoral epiphysis.

In the primary stages of the malady there are a limp, pain in the hip, protective limitation of motion, and slight atrophy due to functional disuse of the pelvic-trochanteric musculature. The author's signs of iliopsoatic tension may be present long before findings are made clinically or by diagnostic x-ray films. Changes shown by roentgen ray may vary from normal findings to porotic changes of disuse and hyperemia of the juxtafemoral head structures with the capital epiphysis presenting a comparative increase in density.

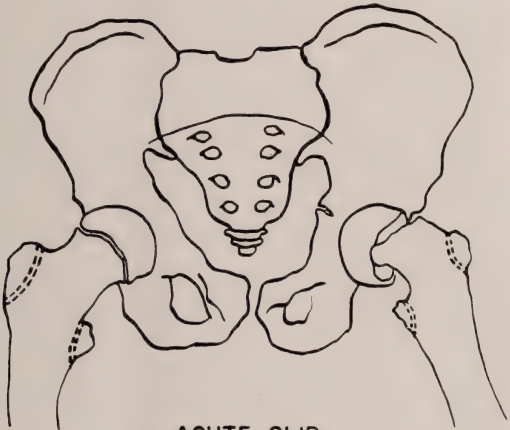
In the secondary stage there is fragmentation, the degenerative or necrotic bone of the capital epiphysis is permeated by capillaries with phagocytic removal of the necrotic bone, and a "creeping substitution" of normal new bone is commenced. Frequently the capital epiphysis seems to have disappeared completely, judging from the x-ray films. A review of the status of the capital epiphysis will disclose a mixture of necrotic bone, granulation tissue, and new cancellous bone, with the entire mass soft and pliable. Weight bearing or increased intra-articular compression will bring about a collapse or a flattening and deformity of the femoral head, and so at this stage it will prevent complete cancellous replacement of the necrotic bone.

The articular cartilage of the femoral epiphysis is nourished by the synovial fluid of the joint, but if collapse of the dome of articular cartilage occurs, then there will also be necrosis of the cartilaginous surface with marked irregularity and deformity of the epiphysis induced by weight bearing or by exaggerated intra-articular compression factors.

The third or healing stage becomes apparent when roentgenograms demonstrate new bone formation and this continues until there is normal-appearing trabeculated bone throughout the epiphysis. Irregularities or deformities of the first two stages will continue, with solidification occurring during the healing period. It is therefore of paramount importance that in the early and critical stages of the malady and throughout its entire course the normal contour and configuration of the capital epiphysis be preserved to ensure a resultant normal epiphysis. The average course of the disease is from two and one-half years to three and one-half years duration, although it may vary from two to five years. Usually one and one-half to two years elapse from the time of onset to the stage of healing or of repair.



INSIDIOUS SLIP



ACUTE SLIP

FIG. 12. Slipped capital femoral epiphysis.

Treatment.—Therapy is directed toward disengagement of the iliopsoatic force. Pillow immobilization would be the same as in the treatment of developmental hip disease. This may prove impractical in the later age group, when Russell-Wilson traction for immobilization will release the iliopsoatic force. If the force has been proved by the author's signs to be present, the entire destructive process in the early stages can be interrupted by transference of the iliopsoatic power from a position of destruction to one of stabilization of the hip.

SLIPPED CAPITAL FEMORAL EPIPHYSIS.—Slipped capital femoral epiphysis is a relatively common disorder in adolescence and is seen in children between the ages of nine and fifteen years. Many theories have been advanced concerning its etiology. Endocrine imbalance is reported to account for probably one half of the cases. It is my opinion that the basic factor is failure of elongation of the iliopsoas and engagement of the force, with external rotation torsion, flexion adduction and cephalad tension of the head of the femur against the acetabulum, and torsion stress factors across the epiphysis producing a softening and widening of the epiphysis.

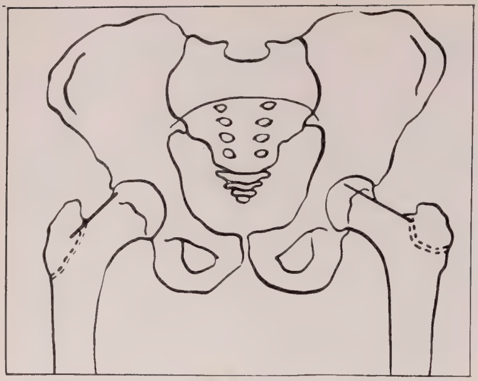
The patient with the bilateral type usually is a young, fat boy with markedly prominent thighs, a mild scissors gait due to genu valgum, and pronated feet. The large size and increased growth of the thighs predispose him to vulnerability to the force of the iliopsoas. In these children the lesion occurs first on one side and then, later on, the other hip shows the same displacement without any history of accident.

The author considers the pathologic factor to be a developmental (anthropologic) predisposition, and that the same developmental intrinsic factor that has produced the presubluxation, the aseptic necrosis of the epiphyseal head of the femur, is now transmitting its abnormal force at the capital femoral epiphysis.

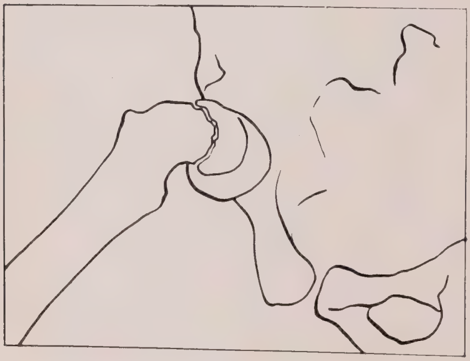
The clinical picture shows a child with a limp and the member in the psoatic release or defense position of external rotation flexion adduction of the hip. In advanced cases the limping attitude may be associated with some shortening. The findings vary with the stage, being minimal in the preslipping stage and advanced in the late or slipped stage (Fig. 12).

X-ray films show blurring and widening of the epiphyseal line, and, later, posterior or postero-inferior displacement of the epiphysis. The posterior displacement brings about the external rotation and the postero-inferior displacement augments the adduction attitude.

Treatment.—In the preslipping stage, if the slippage is less than one-third the diameter of the epiphysis, conservative manage-



A. MILD SLIPPAGE – ANTEROPOSTERIOR VIEW



B. SLIPPAGE SEEN ON LATERAL VIEW

Fig. 13. Slipping femoral capital epiphysis.

ment and, again, the use of Russell-Wilson traction for immobilization, have been found to produce excellent results; but unless early closure of the epiphysis occurs the child remains vulnerable to the same factors that produced the epiphysiolysis in the first place (Fig. 13).

Where slippage is more than one-third the diameter, reduction and Smith-Petersen nailing or surgical cuneiform osteotomy at the epiphyseal line is done. I prefer to transfer the lesser trochanter to an anteromedial position or, still better, into the area of the greater trochanter. The vascular supply from the neck to the head of the femur is carried through the reflected portion of the joint capsule along the neck, and therefore extensive procedures may be complicated by aseptic necrosis of the femoral head. In late cases and in older patients, where the deformity is marked and the epiphyseal line is closed, the external rotation and adduction deformity is compensated by a subtrochanteric osteotomy or, more recently, by resection of the redundant head. These procedures when indicated should also be carried out in conjunction with a transfer of the iliopsoas.

Gonalgic Limp Secondary to Contracture or Ankylosis of Traumatic or Infectious Lesions of the Knee

It is noted that in the position of flexion contracture of the knee the child expresses difficulty in dorsiflexing the ankle to a level sufficient to place the heel on the floor, and this interferes with the restraint. The flexion attitude diminishes the forward obliquity of the limb with subsequent lessening of upward and backward thrust from the floor. In walking, the short-leg limp becomes more marked as speed is increased, as most of the restraint compatible with the new pace now falls onto the unaffected member; furthermore, the swing period of the affected limb is greater because of the shortening. If the flexion contracture is moderate in extent, from 5 to 30 degrees, the limp is mild in nature, but beyond 30 degrees of flexion there is a short-leg gait.

The limping gait when the knee is ankylosed in full extension is attributable to the fact that the affected member is essentially too long, and since it cannot shorten itself, either it must be circumducted at the hip joint while it is swinging or the pelvis must be raised by placing the standing hip in abduction. Therefore in diseases affecting the knee joint the functional position of ankylosis is 30 degrees of flexion and neutral rotation, and this at best serves the static requirements of gait. Extension ankylosis, on the other hand, is a serious obstacle to gait.

In the gonalgic limp an inflamed or irritated knee assumes a midposition of about 25 degrees of flexion and inward rotation. The ankle is held in the talipes equinus position to lessen the jar of restraint and to give the limb proper length. The hip is free but the gait is markedly asymmetrical because of the supporting period of the affected limb, and the faster the gait is the more decided is the limp. I would be remiss if I did not state at this point that knee complaints in a child may be due to referred pain from a pathologic condition of the hip.

TUBERCULOSIS OF THE KNEE.—In tuberculosis the limp is due to the splinting action of the knee. The child walks on the ball of the foot (talipes equinus position) to avoid jarring and concussion at the knee. The x-ray film findings, laboratory data, and therapy are the same as in tuberculosis of the hip.

DISCOID CARTILAGE OF THE KNEE.—In discoid cartilage of the knee, as a rule, the lateral cartilage is involved. The child presents a limp, there is pain in the knee, and there is clicking. There may be a locked knee with a defect in extension, or the knee may give way. The lateral articular surfaces of the knee joint do not permit articular function owing to the interposed discoid cartilage. Trauma may be a precipitating factor; however, 3 of my cases were results of sitting in a squatting position for a prolonged period of time (in one instance "sitting on the heels" watching television). On attempting to rise, a painless click or snap was felt within the knee, and the child had difficulty in standing.

Treatment.—Treatment is surgery of the discoid cartilage.

OSTEOCHONDRITIS DISSECANS.—Osteochondritis dissecans is met at ages from five to eighteen years, predominantly in males. It may be bilateral and most frequently is noted at the lateral aspect of the medial femoral condyle. There is an aseptic necrosis of subchondral bone within a shallow bed. The articular cartilage overlying the osteochondritis dissecans thickens, fibrillates, and gives a ring tombstone location for the osteochondritis dissecans at the time of surgery. Loss of blood supply most probably is due to trauma. In an increasing number of cases it has been found that loose bodies within the knee joint can be shown to result from advanced stages of patellofemoral chondrosis.

Clinical Examination.—A clinical examination finds a clicking and giving way of the knee, with complaints of intermittent swelling. A limp is present.

Roentgenograms will show small dense fragments of subchondral bone, and a zone of radiolucence about the bone lesion invariably is demonstrated through a tunnel view.

Treatment.—Conservative treatment consists of the use of a splint or brace for four or five months. If satisfactory results are not obtained, then surgery is indicated.

OSGOOD-SCHLATTER DISEASE.—Osgood-Schlatter disease occurs mostly in boys from the age ten to sixteen years, and usually is bilateral. Tendinosis is found. If the stage is acute, there is a limp and the child has difficulty in climbing stairs. There is tenderness at the site of insertion of the patella tendon onto the tibial tubercle. Thickening and enlargement of the tibial tubercle are noted. Pain is present at the extremes of flexion. X-ray films demonstrate a tendon shadow at the site of the attachment of the tubercle.

Treatment.—Therapy consists of a limitation of activity of the knee and the use of a White knee cage. In severe cases a cast should be applied.

MONARTICULAR (RHEUMATOID) ARTHRITIS.—Monarticular arthritis occurs in children aged five to ten years. There is chronic synovial thickening, and joint fluid is present. Pain is not as significant a feature as limp, which usually is detected first by the child's parents. The limp is due to flexion contracture of the knee (Fig. 14).

Clinical examination discloses synovial thickening, ballottement of the patella, and positive fluid wave. There is increased heat, also periarticular tenderness, and loss of full flexion and extension. Atrophy of the quadriceps musculature is noted.

Laboratory Tests.—Tests show an increased sedimentation rate, mild leukocytosis, syno-

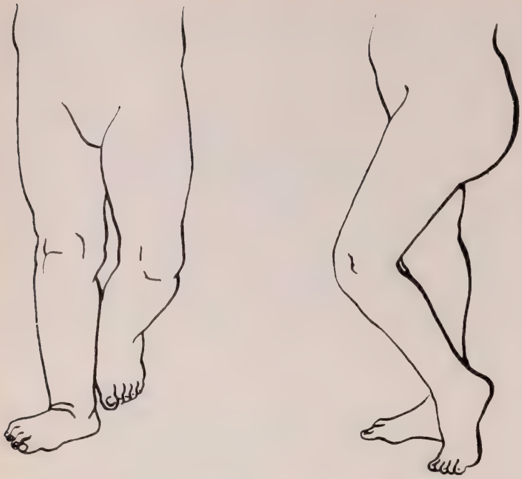


FIG. 14. Monarticular arthritis of knee.

vial fluid with 3 or 4 polymorphonuclears per centimeter, and joint sugar of more than 20 mg. per centimeter. Tuberculin tests are given to discover tuberculosis.

Treatment.—Treatment consists of traction, casting, and physiotherapy.

OSTEOID OSTEOMA.—Osteoid osteoma usually is found in the adolescent child. He has deep-seated pain in the knee and presents a limp; the pain is relieved by aspirin. The bony structures about the knee joint may be involved. There is a nonbacterial inflammatory reaction response within the knee joint. Tomographic x-ray films show a cortical area of destruction surrounded by an area of sclerosis. The cure is surgical excision.

HEMOPHILIA.—In hemophilia the knee is the joint most commonly involved, and it is swollen and painful. A limp is present. A superficial exposure of the synovium enhances the possibility of precipitation of hemarthrosis by trauma. In males there usually is a hereditary history of bleeding. Aspiration gives gross blood. Early x-ray films show distension of the joint. Later films will demonstrate cystic changes of the articular region of the joint.

Laboratory.—Testing shows a prolonged coagulation time.

Treatment.—Treatment is large doses of normal plasma or Cohn's fraction number 1. A splint or stovepipe cast to the knee for immobilization of the joint should remain in place for from three to four weeks.

OSTEOMYELITIS (See Monarticular (Rheumatoid) Arthritis).—In osteomyelitis there is severe pain and a limp, fever, and leukocytosis. There is a history of remote suppurative infection. Clinical examination reveals marked tenderness over the metaphysis of the tibia.

RHEUMATIC FEVER.—Rheumatic fever is primarily a systemic disease involving the tissues of the body. Rheumatic fever of the knee is insidious in its onset. Usually the knee is found to be an area of acute inflammatory exudative process, which rarely produces any irreversible changes of the knee. The child presents a limp, which may be unilateral but sometimes is bilateral.

The clinical picture may be one of fatigue, anemia, pallor, weight loss, and a history of growing pains. Occasionally there is a history of preceding upper respiratory infection. As a rule the knee joint is red, hot, swollen, and painful on palpation.

Laboratory Findings.—Laboratory findings are increased sedimentation rate, secondary anemia, and leukocytosis, with a shift to the left of the differential count. The antistreptolysin, antifibrinolysin, and precipital titers are increased significantly. Electromyocardiac changes frequently are noted.

Treatment.—Treatment usually consists of the use of hormonal agents such as cortisone and/or ACTH to control the acute phase. Splinting of the knee during this period is indicated.

Podalgic Limp Secondary to Disabilities of the Ankle or Foot

Asymmetry of the gait is due to a functional disability of the foot that is traceable to a corn; a callus; strain of the longitudinal or transverse arch; sprain of the ligaments of the ankle or chronic inflammation of the ankle joint, as in tuberculosis; and various congenital or developmental deformities of the foot and ankle. The position in which

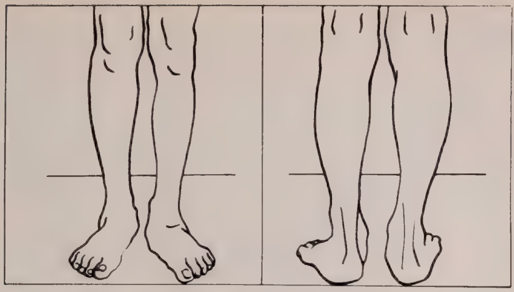


FIG. 15. Pronated os calcis showing prominence of calcaneonavicular joints.

the foot is held throws considerable light on the nature of the pathologic condition. The talipes equinus position is assumed in the presence of painful heel apophysitis, tender corn or callus, or any degree of relaxation of the anterior arch of the foot. The child walks on the outer border of the foot. The shorter the support period on the affected member the more noticeable the limp. When the ankle is held in the talipes equinus position to reduce the shock of restraint, the child hobbles on the affected member.

When the child limps because the ankle joint is fixed in the talipes equinus position by contracture or by ankylosis, the immediate effect is a loss of deploy in the standing period because the toes instead of the heel touch the ground first and the restraint received from the toes and transmitted upward is essentially weak and the rate proportionately lowered. This propulsion is compounded because the foot is already in the talipes equinus position and is set for a take-off through the large toe. A backward thrust of the leg occurs during the entire standing period, stabilizing the knee joint. The steppage gait is carried out by raising the knee, and subsequent limping is obvious. The child may be brought to the office because of pigeon-toe gait or because of pronated feet.

It is my belief that there are two important conditions to be considered in the selection or treatment of flatfoot or pigeon-toe gait: those in which the disturbed gait is a reflection of tibial torsion, and those resulting from a disrupted mechanism of the iliopsoas.

The etiologic factor in tibial torsion is a developmental intra-uterine axial rotation of the lower member occurring at the tibial level in compensation for the failure at the hip joint, which is also true of the clubfoot, where axial rotation of the member has occurred at the tibiotarsal level instead of at the hip joint.

In the case of internal tibial torsion of the leg, the deformity will include either a pigeon-toe attitude of the foot (internal rotation) or the foot may remain static and be productive of a pronated os calcis foot with prominence of the medial border at the calcaneonavicular joint (Fig. 15.) Uncorrected tibial torsion must have a compensatory mechanism of either genu valgum or genu varum.

Internal rotation of the tibia is one of the very most common causes of static deformities of the feet. When it is left uncorrected it exacts a heavy toll after skeletal maturity.

The average situation is of a young mother who presents a child whose foot is "turned in." She has by-passed her mother-in-law, her husband, and the medical adviser, who have in each instance informed her that the child will "grow out of it." My experience has shown that at an early age forceful external torsion of the distal shaft of the femur and of the epiphysis under a general anesthetic, followed by three-quarter cast immobilization with the knee in flexion at 90 degrees to prevent rotation, and the foot in the overcorrected position for a period of from five to six weeks, will correct the condition almost without exception. Denis Browne splints may be used temporarily to maintain the corrected position. Complete orthopedic examination should be carried out prior to the institution of therapy to make sure of normal axial rotation at the hip and of negative iliopsoatic tension signs.

I have not been able to wax enthusiastic about using Denis Browne splints for producing the initial correction, for the footplate

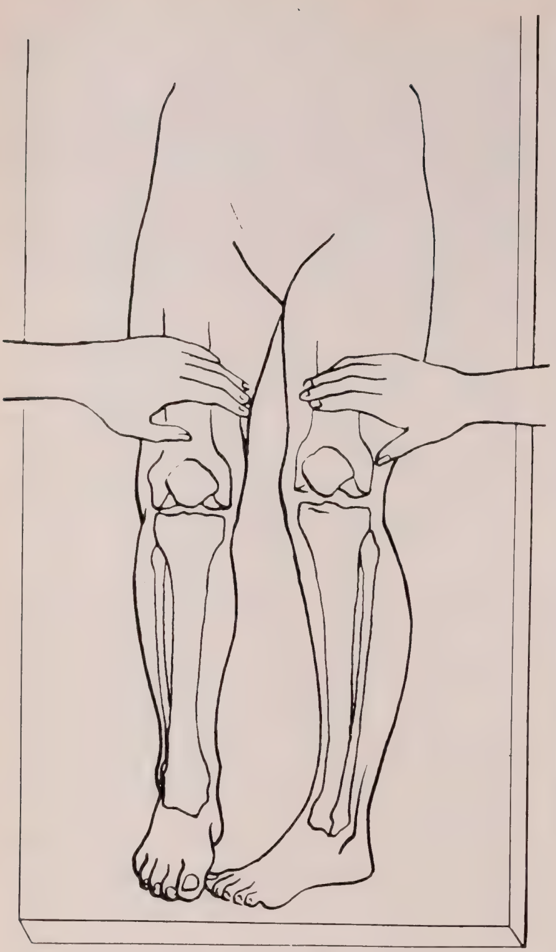


FIG. 16. Tibial torsion, knees extended.

position often produces disturbing rotation and angulation of the epiphyseal areas of bone structures of the lower extremities which are remote from the area of the distal tibial epiphysis.

When the pronated-foot gait is recognized as the individual's effort to find release from failure of elongation of his iliopsoas or from the internal tibial torsion, one finds it difficult to treat, by shoe corrections alone, a pathologic condition which results from the tibia or malfunctioning hip. The author's re-enforced iliopsoatic signs should be determined, to detect the source.

The limping gait may be due to pain in the calf following a triggerpoint tension site at the myotendinous junction of the gastrocnemius or to a strain along the pole of the longitudinal arch.

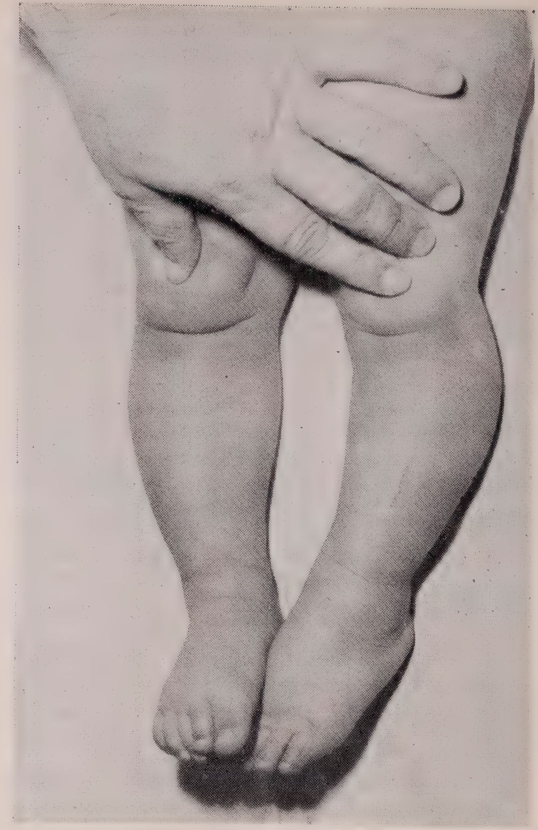


FIG. 17. Internal tibial torsion of left leg.

Tibial torsion can be determined clinically by examination of the child in a supine position on the table. Each knee is pressed against the table, with maintenance of alignment of the patella. In the unilateral case the foot will be rotated internally a distance beyond 10 degrees as compared with its opposite, which is in the neutral position (Figs. 16 and 17).

CLUBFOOT.—In congenital and developmental clubfoot the common deformity is talipes equinovarus; the foot turns in toward its opposite and the toes point down (Fig. 18). An aphorism is that if the foot components can be overcorrected the prognosis is good (developmental type). The deformity may be associated with spina bifida, and if there is a large defect in the spine the prognosis is poor.

Often it is difficult to determine early in

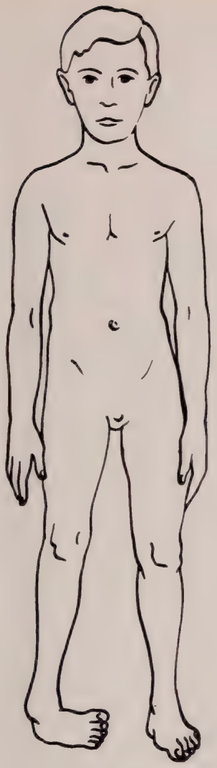


FIG. 18. Clubfoot limp.

the life of the infant the borderline of abnormal versus normal. Nevertheless, a clubfoot requiring treatment is recognizable long before ambulation, and appropriate therapy may be instituted.

Treatment.—Our present problem is the limping child with a podalgic gait following congenital or developmental talipes equinovarus. Plaster cast correction is effective, and stockinette and sheet wadding are used. The adduction is corrected first, the talipes equinus last. In most cases it is necessary to place the cast to the mid-thigh, with the knee flexed to 90 degrees, to avoid slippage of the cast by kicking and so forth. Some surgeons prefer repeated wedgings of the cast, others favor a complete change of cast every few weeks, say at three-week intervals. Several cast applications over a period of from four to five months may be required until overcorrection of the deformity is accomplished. Denis Browne abduction splints are used to maintain the correction. The splint position of the feet is usually fixed with the hips rotated, so that as the child kicks he will correct the position of the deformity. When he is ambulant he wears outflare shoes with inner heel wedges to maintain the correction.

In congenital absence of the tibia or fibula or of macrodactylia (enlarged toes), surgery usually is required and in some instances amputation of the part.

FLATFOOT.—In peroneal spastic flatfoot there is an inability to invert or to supinate the foot. Forceful inversion produces taut peroneal muscles, as does forceful supination. The etiologic factors are inflammation, tuberculosis of the midtarsal area, a rheumatoid type of subtalar arthritis, osteoid osteoma, secondary trauma, calcaneonavicular bar, and the congenital synosteosis of the tarsal bones and the accessory bone.

Treatment.—Suitable treatment for the arthritic condition is undertaken. Further treatment is in the form of manipulation, correction, and cast immobilization, followed by corrective Whitman plates and physiotherapy. If the calcaneonavicular bar is present it may be removed by surgery, or triple arthrodesis may be undertaken.

PAINFUL HEELS.—Painful heels are another common cause of limp in the child, usually from ages five to twelve years. There may be an unduly prominent posterosuperior aspect of the os calcis and secondary callus pressure formation at this level.

Treatment.—Treatment consists of elimination of the stiff counter of the shoe; and if a soft counter is substituted its height should be increased to obviate the possibility of friction.

TENDINITIS OF THE ACHILLES TENDON.—With tendinitis of the Achilles tendon the child will have tenderness over the tendon Achilles at the junction of the posterior os calcis. There will be swelling and crepitus.

Treatment.—Treatment consists of a plaster cast, doughnut elevation of the heel, and Hydrocortone locally.

APOPHYSITIS.—I consider a tension epiphysiolysis (calcaneal apophysitis syndrome) as of essentially the same nature as Osgood-Schlatter disease. It usually occurs between the ages of seven and fourteen years and is predominant in boys (6 to 1). As a rule the onset of the malady is insidious and is associated with a limp and with pain in the posterior heel. The calf muscles ache and the child is disinclined to walk or run. Rarely is there any swelling or redness of the part, but pinching or deep pressure on the heel provokes pain.

X-ray films show dense, partial, or complete fragmentation of the apophysis. The area of the apophysis nearest the insertion of the tendon Achilles is roughened, jagged, and granulous. Variations of density and of granulation are noted. When areas of rarefaction occur, a moth-eaten appearance is noted. The apophysis may be flattened and irregular. The apophysis usually unites by the age of seventeen years, and recovery is predicated on the return of bone structure to normal density, with restoration of the continuity of the bone. The condition is considered limited when the apophysis has united.

Treatment.—Therapy consists of local heat, support, a cupped doughnut for the heel approximately $^5/_8$-inch high, and a longitudinal cookie in each shoe.

Antalgic Limp or Weight-Bearing Intolerance of the Spine

If any part of the extremities or of the spinal column becomes intolerant to weight bearing because of pain, a characteristic antalgic limp develops. If the seat of the intolerance is the spinal column, or if it involves parts of the pelvis or the lower extremities, the gait remains symmetrical.

In cases of spinal tuberculosis the child avoids jarring and concussion of the spinal column. The gait is guarded, slow, and it is particularly the restraint that is suppressed. The steps are short and the gait is restrained because of posture. In lumbar tuberculosis the limp simulates that of a gluteus maximus paralysis, but the backward and forward oscillations are suppressed.

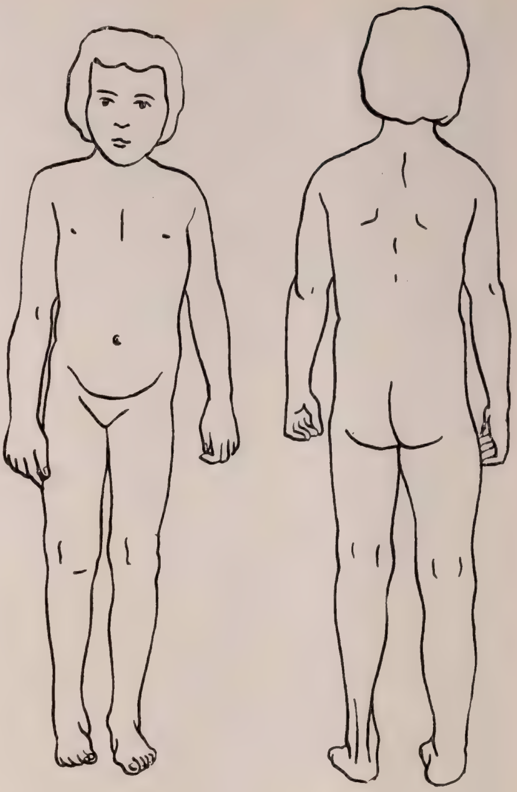


FIG. 19. Weakness of everters of foot in poliomyelitis.

The sciatic limp follows pressure on the nerve root or disturbance of the intervertebral foramen, with the trunk usually inclined to the same side and bent forward. This is due to the splinting effect of the iliopsoas.

The flip[9] and buckling[10] signs and the Lasègue[11] and other neurologic findings will clarify the diagnosis.

Treatment.—Treatment is planned on the basis of causative factors.

The Paralytic Limp

The paralytic limp is flaccid or spastic, with secondary dynamic deficiencies. The limp follows inability to control pelvic oscillations and to secure the pelvic position against gravity. There is also an inability to stabilize the knee joint during the period of support and to lengthen the extremity against gravity. The child is unable to develop restraint and propulsion.

The spastic limp or gait results from spastic adduction and internal rotation contracture of the hip joint, usually coupled with spastic talipes equinus or/and spastic calcaneal gait.

ANTERIOR POLIOMYELITIS.—Hip limps follow paralysis of the gluteus maximus, paralysis of the quadriceps or the hamstrings, producing a limp because of the instability of the knee. Limp of the ankle joint is due to paralysis of the gastrocnemius, producing insufficiency of take-off (paralytic calcaneus) or weakness of the everters of the foot (Fig. 19).

The child may complain of a limp without the usual prodromata of stiff neck, headache, fever, muscular paralysis, upper respiratory infection, and so forth. The limp may vary from a lurching gluteus medius to a talipes equinus gait. Examination may disclose a muscle paralysis which is painless, asymmetrical, and nonprogressive. Any one group of muscles, or combination of groups, may be affected. The discovery of late stages of poliomyelitis may require faradic and galvanic stimulation tests as well as electromyography and chronaxie determination. Late-stage spinal punctures and reflexes are equivocal.

Treatment.—In cases of paralytic dislocations of the hip, regardless of the cause, the etiologic factor responsible is the iliopsoatic pull of the femoral head. It is obvious that although the dislocation can be reduced readily, it cannot be controlled by the use of splints, because as soon as the splint is removed the dislocation recurs. In these cases the treatment consists, first, of the elimination of the destructive directional force of the iliopsoas by transference to the region of the greater trochanter, thereby eliminating the external component of the muscle and, in turn, using its power for adduction of the hip into the socket and flexion of the hip. Further surgery of the hip will depend on the status of the pelvic-trochanteric musculature of the hip joint.

Late-stage treatment is in the form of physiotherapy, braces, and surgery. Physiotherapy includes stretching of mild contractures, active exercises to quasiparalyzed groups, and re-education of muscles for substitute action. Possible scoliosis formation should be investigated. Braces may be of value in promoting stability of the extremity, but if the deformity is established then the brace is of little value. A brace may be used in lateral imbalance stemming from paralysis of the inverters, everters, or dorsiflexors of the foot. In calcaneal limp following gastrocnemius paralysis, the ankle-lock brace will prevent dorsiflexion and raise the heel from one-half to three-quarters of an inch. Paralysis of the quadriceps muscle alone may not require any bracing. The combination of gluteus maximus, gastrocnemius, and weak quadriceps may necessitate the use of a long-leg brace with a sleeve lock to assist the gait.

No single brace for paralytic involvement is indicated since there are so many variants, such as limp, the presence of jackknifing (weak hamstrings), the extent of the talipes equinus (peroneal or posterior and anterior tibial paralysis), and external rotation. Shortening of less than $^1/_2$ inch may not require a lift or wedge. Surgery is rarely indicated during the first year of the disease because of possible changes in muscle power.

MUSCULAR DYSTROPHY.—The child with muscular dystrophy presents a unique limp. The most common form is the pseudohypertrophic type of Duchenne. The gait is lordotic, with the lordosis increasing and decreasing with each step. The differential in the diagnosis of muscular dystrophy and of poliomyelitis is that lordosis does not occur in the latter. The child may have an associated steppage gait. He may express difficulty in arising from a seated position and he uses his hands to raise his trunk (climbs upon himself). In muscular dystrophy the facies are delicate features in a pale child. The muscles are enlarged and usually flabby, and the reflexes are diminished.

Laboratory Tests.—Laboratory tests include a twenty-four-hour urine specimen of creatine, creatinine studies, and muscle biopsy.

Treatment.—The treatment is basically empiric.

CEREBRAL PALSY.—A limp peculiar to spastic patients is present in cerebral palsy. The legs are maintained in a rigid attitude of slight flexion of the hips and knees with often, depending on the severity of the lesion, a talipes equinus or plantar flexion attitude of the feet. Constancy of the state of rigidity of the extremity is diagnostic. Rigidity to passive stretching of the joints is especially noted on attempts to stretch the Achilles tendon. The gastrocnemius contracts and remains rigidly contracted.

The spastic child has difficulty in carrying out rapid dorsi- and plantar flexion of the ankle, owing to lack of ability to raise the member.

In the etiology may be a history of breech or abnormal delivery, or a premature infant. Examination usually is neurologic, with the presence of clonus and pathologic reflexes (upper motor neuron).

Treatment.—In treatment, an upright bar with a stop at the ankle will prevent flexion while dorsiflexion is free. In a moderate deformity the brace can be used day and night. Night control-spring braces for severe adduction contractures may also be indicated.

The treatment of cerebral palsy varies with each clinic's program and each variation of the malady. Muscle education is basic in all, however. The athetosic ataxic group does not respond to any known surgical procedure. There may be some value in operative measures in certain types of deficiencies of the lower members. Prior to any operative procedure specific tests should be carried out to determine the mental status.

When the author's re-enforced iliopsoatic tension signs are positive, consideration should be given to transference of the iliopsoas.

Summary

Treatment of congenital anomalies which will eventually bring about a limp should be commenced immediately after birth.

Early and specific treatment by antibiotics such as cortisone, ACTH, and iproniazid have done much to erase the severe deformities produced by the several diseases.

Developmental anomalies should be corrected as soon as they are recognized, since the end result will be in direct ratio to time of discovery.

I[12] have recognized the part played by anthropologic progression in the development of those anomalies in man for which to date the etiology is unknown. It is my belief that when man developed a lumbar lordosis, through the iliopsoatic influence, he set up an intrinsic destructive external-rotation and upward-thrusting force of the head of the femur.

The pitfall in so-called congenital dislocations of the hip has been our failure to classify lesions as to those which are truly congenital (2 per cent) and those which are the developmental or anthropologic type of dislocation. I do not believe there is a "dislocation gene" or a "dysplasia gene," as the lesions are fundamentally the products of the failure of elongation of the iliopsoas in the growing individual. Furthermore, in those instances where there is no tendency toward eccentric displacement of the hip and the acetabulum, the external rotation force produces vascular disturbance of the epiphyseal plate with secondary pressure changes at the region of the head of the femur (Legg-Perthes disease).

If the individual survives this stage of developmental dislocation, during his period of rapid growth the iliopsoas fails to elongate in a situation where the femoral head is well secured within the socket; the torsion element of the epiphyseal plate produces a vascular disturbance of the plate; and presubluxation, subluxation, and dislocation of the neck of the femur occur (slipped capital epiphysis). The osteochondrosis which follows hip disturbance is, again, brought about by the battering of the femoral head against the acetabulum with consequent destructive changes. The battering in itself is a product of the engagement of the femur against a nonelongated iliopsoas.

Dislocations of the hip that occur in cerebral spastic patients and in paralytic patients are brought about by the same mechanisms as have been described.

The psoatic syndrome can be readily discovered by the presence of the author's reenforced iliopsoatic signs. Much can be done toward the elimination of limping in the child by a rational approach to the hitherto unsolved problems of developmental hip location, Legg-Perthes disease, and slipped femoral capital epiphysis. I believe that such an approach is possible in the light of an understanding of the anthropologic factors, including a study of the development of posture.

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PART II

IN THE first section of "The Limping Child" I discussed common conditions producing a limp. Early treatment by antibiotics, cortisone, ACTH, iproniazid, and the vaccines have done much to erase the severe deformities accuring from the specific diseases. Nevertheless, we still are confronted by a host of conditions generated by the iliopsoatic destructive force to which homo sapiens became heir when he assumed the erect position.

The iliopsoas is the prime mover in the initiation and maintenance of the unique posture of lumbar lordosis, or sigmoid curvature, in man's progression from the attitudes of the primates and of Neanderthal man. From the time of birth, and commonly during the period of rapid growth, we human beings are vulnerable to this intrinsic force when there is failure of adaptive elongation of the iliopsoas. The force is predicated on the position and attitude of insertion of this very powerful multipolar muscle onto the lesser trochanter, its attachment being posterior and medial to the shaft of the femur and also posterior to the line of gravity of the body.

Failure of elongation of the iliopsoas, in the erect position of man, brings an inexorable force to bear on the site of the muscle's attachment, thereby producing external rotation, flexion, adduction, and upward (cephalad) thrust of the head of the femur against the acetabulum. With the force acting from below, man becomes susceptible to a multitude of deformities of the spine in the anteroposterior, lateral, and rotatory planes.

Andry said of the title of his *L'orthopédie:* "As to the Title, I have formed it of two Greek Words, viz. Orthos, which signifies streight (sic), free from Deformity, and Pais, a Child. Out of these two Words I have compounded that of Orthopaedia, to express in one Term the Design I propose, which is to teach the different Methods of preventing and correcting the Deformities of Children."[1]

The author desires to introduce at this time a classification of conditions, based on his interpretation of the kinesiologic, clinical iliopsoatic signs, the psoatic gait, and derotation of the functional components that produce the iliopsoatic syndromes; and his rationale of approach to conservative and surgical management of some of the pathologic conditions.

Iliopsoatic Syndromes[2]

- Normal Influence
  - A. Posture
    - 1. Lower extremities
    - 2. Spine
  - B. Bone changes associated with growth
- Abnormal Influence
  - A. Hip joint
    - 1. Dislocation of hip
      - a. Developmental
        - Presubluxation
        - Subluxation
        - Dislocation
      - b. Associated diseases
        - Paralytic
        - Cerebrospastic
        - Traumatic
    - 2. Legg-Perthes disease
    - 3. Slipped femoral capital epiphysis
    - 4. Transient synovitis of hip
    - 5. Torsion fracture of neck of femur
    - 6. Prosthesis head replacement of femur
    - 7. Degenerative arthritis of hip
    - 8. Fracture of lesser trochanter
  - B. Spine
    - 1. Scoliosis
      - Idiopathic
      - Sciatic
    - 2. Osteochondrosis deformans juvenilis dorsi
    - 3. Spondylolysis and/or spondylolisthesis
    - 4. Fracture of transverse process of lumbar vertebra
    - 5. Degenerative arthritis of spine
  - C. Miscellaneous conditions
    - 1. Intestinal
    - 2. Urologic
    - 3. Obstetric

Several of the iliopsoatic syndromes were presented in the first part of "The Limping Child."

So-Called Idiopathic Scoliosis

Commencing in early adolescence, or at such time as the rate of growth is at its maximum, inability adequately to elongate the iliopsoas, or to find a position of release from the intrinsic force, is productive of a lateral curvature because of the line of direction of the psoas attachment to the transverse processes, lateral bodies, and intervertebral disk of the twelfth dorsal and all the lumbar vertebrae; and of rotation because of the eccentric trolleying of the iliopsoas over the anterior brim of the pelvis to its attachment on the lesser trochanter.

A single "C" curvature is present on standing (lumbar) because one of the iliopsoas muscles has failed to elongate. A double or "S" curvature may be evident when there is unequal failure of lengthening. In the supine position, when the hips are flexed to the extent where tension of the iliopsoas has been released, this spinal curvature will disappear early in its formation. In cases of the "C" curvature, anteroposterior x-ray films of the spine reveal that the curvature disappears if the affected thigh is flexed.

The unique characteristics of the spinal column rod are such that a lateral and downward abnormal tension force on the lumbar transverse processes, coupled with the rotational direction force of the same muscular attachments, can produce the list and a rotational deformity of the spine. The spinal column rod may be compared to the torsion (torque) bar of our present-day automobile. Where the spinal rod is fixed to the pelvis (sacrum), the rotation (helical torsion) is produced by the iliopsoas at a point of the spine at the level of the lumbar vertebrae where rotation is possible to a limited degree, with transmission of the rotatory power to the dorsolumbar and dorsal spinal segments. The upper thoracic region is steadfast in backward movement in the sagittal plane and side bending but permits frontal and rotatory movement in the transverse plane. The torsion force transmitted from below (lumbar area) is manifested in the dorsal spine by a reversal of the torsion force with formation of a scoliotic vertebral curvature at the dorsal level in the opposite direction, with deforming outflare tension of the attached ribs at the costotransverse articulations on the same side as the initiating (iliopsoatic) force, and with inflare on the opposite side of the thoracic cage.

By roentgenograms the author has been able to demonstrate specific scoliotic curvature, from the day of birth through the adolescent period, by bringing manual stress into play against the iliopsoas in those cases where there has been failure of adequate elongation.

Where the scoliosis has been initiated by the iliopsoas, the secondary influence of re-

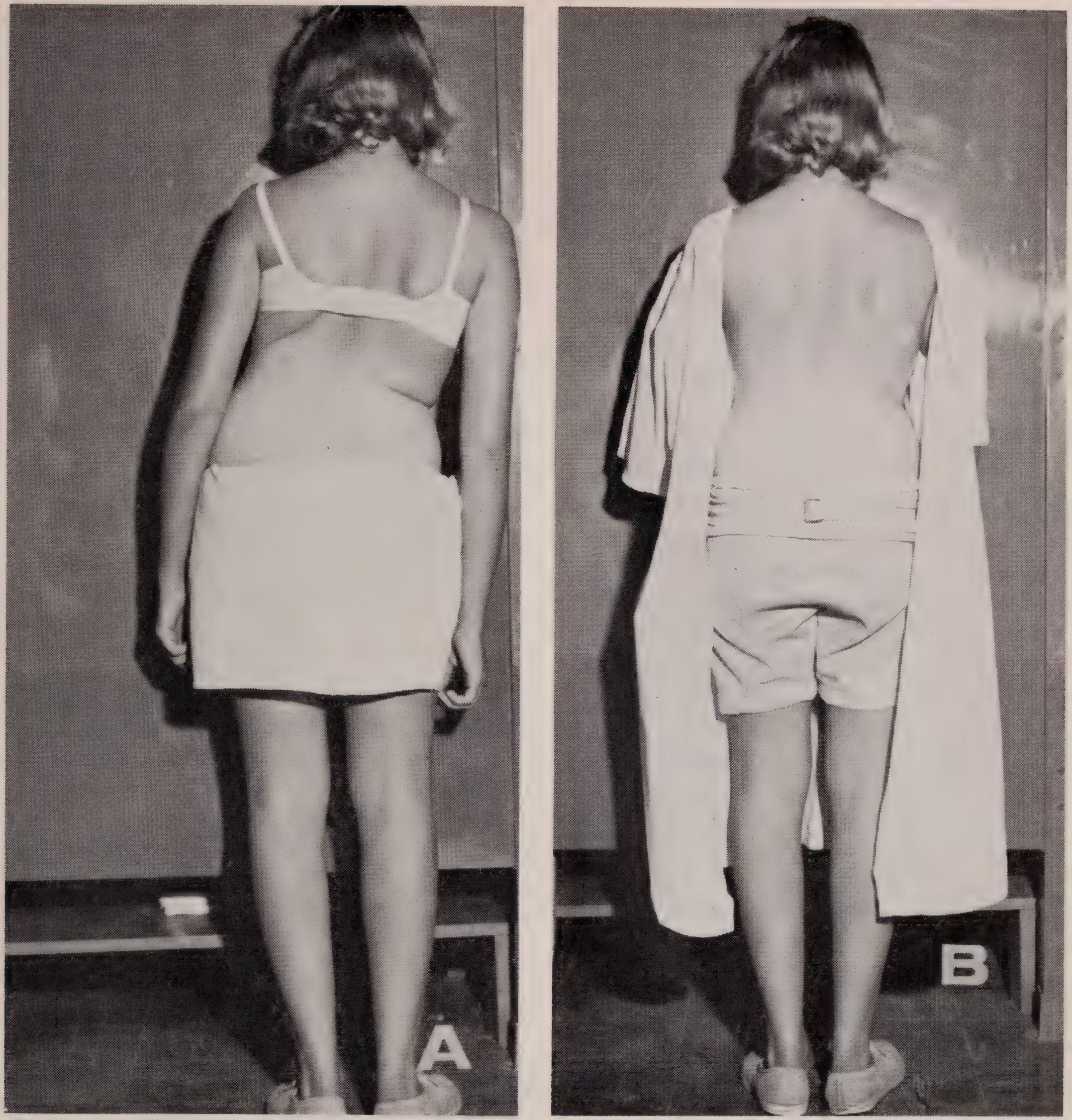

Fig. 1.(*A*) Dorsolumbar scoliosis prior to commencement of treatment. (*B*) Three weeks later, following intensive program of care and management.

arrangement of the line of pull of the secondary muscles of the spine and continuing stress factors against a growing spinal column can produce secondary or adaptive and irreversible changes.

Scoliosis, therefore, is considered a position or posture of adaptation by the individual in the presence of a shortened or contracted state of the iliopsoas, in relation to his gravitational line.

Treatment.—Treatment for so-called idiopathic scoliosis, whether it be conservative or surgical, necessitates recognition of abnormal iliopsoatic states, which can be determined by the author's iliopsoatic tension signs. This clearly calls for a complete reappraisement of all cases of this condition, operative or nonoperative, to determine the presence and extent of the intrinsic destructive force.

My own approach to the conservative management of so-called idiopathic scoliosis has been rationalized in the light of the etiologic factors. For example, a fourteen-year-old female presented the findings of a right-sided iliopsoatic force (Fig. 1A). Calculations by means of the tension signs referred to showed an angle of approximately 45 degrees. In the supine position with the right thigh flexed, most of the dorsolumbar curvature was reversible to the normal. A three-week period of intensive stretchings and a most cooperative program of diligent exercises directed toward the iliopsoatic force resulted in a practically completely normal posture (Fig. 1B).

Proper pretreatment evaluation should determine the extent of return to normal posture that may be anticipated. Where there has been little or no adaptive wedging or deformity of the vertebrae, adequate return of normal posture may be expected. When surgery is considered, a like assessment should be made, particularly in the light of loss of retention of the corrected curves and pseudoarthrosis of the grafts.

Scoliosis following sciatic (herniated intervertebral disk) and paralytic states has already been discussed.[2]

Spondylolysis and/or Spondylolisthesis

At the age of approximately three or four years, and more so during the rapid growth period of the juvenile, the hyperextended position can result in fracture, with spondylolysis produced by pseudoarthrosis of the laminal plates of L-4 and L-5 and spondylolisthesis produced by continuance of the iliopsoatic force. Once the spondylolisthesis has occurred, the child has released himself from the abnormal pull of the iliopsoas and the exaggerated lumbar curve now must adapt to the position of the flat back.

Schmorl's Nodes

The Schmorl's nodules condition is an early expression of static stress across the vertebral bodies resulting from failure of adaptation to the erect posture. Later in life when skeletal growth has been completed, particularly after the third and fourth decades, continuance of the stress force is productive of degenerative changes of the spinal column, including the intervertebral disks. The changes occur most notably at the point of reversal at the lumbosacral junction and at the dorsolumbar junction; however, they may manifest themselves at any level, depending on the site of expression of the stress factors against the spinal column.

Osteochondrosis Deformans Juvenilis Dorsi

In the adolescent, it is noted that concomitant with failure of elongation of the iliopsoas there is an acuteness of the dorsal curve. When the failure of elongation is unilateral the child is more prone to develop a scoliosis; and when it is bilateral he will probably develop osteochondrosis deformans juvenilis dorsi. Persistence of the stress factors during the rapid growth period is responsible for the osteochondrosis and wedging of the central bodies of the dorsal spine.

TREATMENT.—Under the currently accepted concept of local treatment to the dorsal spine by hyperextension casts or braces there may be relief of pain, but the curvature per se has not been influenced. Nevertheless, again under today's ideation as to the formation of round back, if treatment is instituted before permanent secondary adaptive changes of the dorsal vertebrae have occurred and is directed primarily toward correction by stretching and elongating the iliopsoas and, if necessary, transferring the lesser trochanter so that the application point of the intrinsic destructive force is removed, those adaptive findings that are irreversible may be obviated.

Torsion Fracture of the Neck of the Femur

In infants or in adults where torsion fracture has occurred against a shortened or contracted iliopsoas, the mechanism is essentially that of slipped femoral capital epiphysis. The torsion fracture eventuates when the affected weight-borne extremity is fixed on the floor and the superincumbent weight at the level of the pelvis is swung forward and, simultaneously, toward the opposite side of the affected lower limb, producing a bull-whip action against the iliopsoas with resultant fracture of the neck of the femur.

Treatment.—Treatment is essentially reduction and internal fixation. To the McElvenny technic of slight hyperabduction of the fractured elements should be added exaggerated correction or complete restoration of the anteversion of the femoral neck; otherwise states of increased anteversion offer vulnerability to the iliopsoatic force. The Leadbetter test is qualitative; a horizontal lateral x-ray film is necessary to determine the degree of reduction.

Degenerative Hip Joint Disease

A review of my cases of degenerative hip joint disease indicates that the primary pathologic factor was based on the iliopsoatic syndrome, that is to say, institution of the internal abnormal force of the iliopsoas at the lesser trochanteric region, the force that is brought into being by the erect posture in man when he has either failed to elongate the iliopsoas or to adapt himself to position release of the intrinsic force mechanism by posture and gait.

Secondary pathologic factors were dislocation of the hip, coxa vara, osteochondrosis of the femoral head, slipped upper femoral epiphysis, developmental inadequate acetabulum, osteochondritis dissecans of the hip joint, and protrusio acetabuli. It is my belief that each of these secondary features is produced by the same etiologic factor that is responsible for the primary manifestations.

The abnormal iliopsoatic force of external rotation, flexion and adduction, and upward plunging of the femoral head produces microtrauma of "wear and tear" at the coxofemoral joint. The effect of major trauma superimposed on the basic etiologic factor cannot be overstressed.

Treatment.—A consideration of conservative management and care is dependent on the stage of the pathologic condition. Too often the process of degeneration of the coxofemoral joint is in effect, but the patient is asymptomatic, and awkwardness of gait and inability to cross the leg while putting on a shoe are the presenting symptoms. The method of treatment is geared to evaluation through the writer's iliopsoatic tension signs. Once adaptive changes of the coxofemoral joint have taken place in conjunction with the curbing element of the osteophytes, and particularly in association with pain, contemplation of surgical intervention is in order.

Viewed in the light of the author's concept of the pathogenesis, surgical intervention with neurectomy does not appear to be physiologic. Cheilotomy, in the late stages of Legg-Perthes disease or in early degenerative hip joint disease, presents a more favorable prognosis when coupled with transference of the etiologic force of the iliopsoas musculature. Central dislocation of the hip by breaking through the acetabular floor and infundibulating the head of the femur into the hole; Smith-Petersen metallic interposition; metallic or plastic prosthesis; osteotomy and arthrodesis: each has its adherents. I believe that regardless of the procedure under consideration it is basic to convert the destructive qualities of the iliopsoas into a stabilizing influence of the hip joint, but at no time is simple transference of the lesser trochanter a substitute for inadequate preliminary surgery.

To remain within the scope of this paper, it is possible to make only passing mention of the necessity for a review of cases of hemi- and paraplegia, cerebral palsy, and multiple sclerosis—in fact any disturbance of infants, adolescents, adults, and the aged, regardless of the nature of the disease or trauma—and to reappraise them in terms of indications for conservative or surgical management as signified by the author's iliopsoatic reenforced tension signs and by gait.

Summary

The author has presented in brief his theory of the formation of posture and its relationship to disturbed iliopsoatic states, particularly during the rapid growth period.

To date most of the iliopsoatic syndromes have not been satisfactorily explained and treatment has developed on the basis of empiricism. The author's concept of pathogenesis, early recognition, and diagnosis offers a rationale in conservative and surgical management.

The primates, including Neanderthal man, in fact all races of mankind, in assuming the erect posture, have also assumed a vulnerability to the destructive force of the iliopsoas, a muscle ill-adapted to that posture.

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ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 7 to 13, 1960, in New York City.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1960,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Augrist, M.D., *Chairman*
Committee on Prize Essays

Marriage and Parenthood in the Diabetic Patient

EDWIN W. GATES, M.D., NIAGARA FALLS, NEW YORK

(*From the Department of Medicine, Niagara Falls Memorial Hospital*)

> Teach me to blend gentleness with skill, to be a doctor with a heart as well as mind. Help me to give encouragement without overconfidence, to tell the truth without being blunt.[1]

THE responsibility for the guidance of diabetic patients who wish to marry rests squarely on the shoulders of the family physician. The health and lives of these diabetic patients depend almost entirely on us, for we are the only ones who can have much influence on the proposed marriage.

Marriage is the most important step that any diabetic patient will ever take. It is the proposed marriage of such a person which presents a great opportunity for the physician to aid in making married life happy for two people. If he fails to develop this opportunity, the responsibility for the possible failure of the marriage rests largely on the physician. If he accepts this challenge and develops it fully, the benefits resulting will be inestimable and he will realize a satisfaction in an achievement that can come only to a physician.

The general objective of diabetic care by physicians, as stated by Sprague,[2] is the improvement of the welfare of the diabetic patient everywhere. The patient realizes that his physician understands his problem in all its aspects and knows how to counsel him in a kindly and practical way. The responsibility that physicians carry is so great that we should not undertake to give this much-needed advice unless we are thoroughly familiar with all the problems the marriage faces.

Little has been written about marriage and diabetes over the past thirty years. This was probably owing to the limited number of young diabetic patients and possibly, formerly, to the dismal outlook for their marriages. Their number is no longer small and the marriage problem is arising more frequently, especially as it is now estimated that one in every four of our population is related to a diabetic person.

We must teach the young diabetic patient who is approaching marriageable age that he or she should not marry into any family that has a history of diabetes. This indoctrination, which is often neglected, should be gradual and is always a part of the education of young diabetics. The possibility of marriage must be discussed long before they reach the age where serious thought is being given to it. The physician must explain to the parents of the young patient early in life the facts about the inheritance of the tendency to diabetes. If the parents thoroughly understand this major facet of the diabetic problem, the physician has valuable help when the time for marriage approaches.

It would be extremely unfortunate for a diabetic patient to marry without both the diabetic and the proposed partner knowing just what problems they may meet. Both must learn before marriage what diabetes is and what proper diabetic care means. They must be educated in the general care of the diabetes. This includes diet, proper use of insulin, care of the feet, general health measures, the prevention of complications, and the necessity for regular visits to the physician. There are of course many other factors to be discussed[3] but is not necessary to elaborate on them here.

The young couple should have a real understanding of what lies ahead of them. All diabetic patients fare much better who have a sympathetic, understanding, and thoroughly educated husband or wife to encourage them and to share with them whatever problems may develop.

The physician must approach the discussion of the possible marriage with great sympathy and understanding. The most important factor in the interview with the diabetic patient is the attitude of the physician toward the discussion. It is going to be a time-consuming job and will take at least 3 one-hour interviews. If we offer only a few facts and statistics, we will be of no help and we will almost certainly jeopardize the chances of success of the marriage. If we simply tell them to get married, then we have done them a terrible injustice. Cooperation is necessary and a kindly physician can obtain this if he will discuss their problems thoroughly and also if he will assure them that he will be available to guide them in the future.

Sprague[2] emphasized the need for warm-hearted compassion blended with scientific wisdom in dealing with our diabetic patients. Holcomb[4] outlined most commendably the qualities that we, as physicians, must possess if we accept the obligation I have been discussing: "Certainly, he should be a man who can face the problem in its broadest aspects and at the same time not be annoyed by details. Furthermore, he should possess infinite patience."

Should a diabetic marry? The answer is yes, with certain reservations. One of the most important considerations is the physical condition of the diabetic, particularly if the patient is the female. Both the diabetic and the proposed partner must have complete physical examinations. Recently I had to advise a young nondiabetic girl not to marry because her diabetic fiancé had major degenerative changes. Again I had to advise a young diabetic girl not to marry, for she had developed such advanced degenerative changes that her life expectancy was very limited.

Fischer[5] reported in a study of the boys and girls in his group that many of them expressed distinct apprehension about marriage, particularly in regard to the burden of diet and insulin as well as the possibility of transmitting diabetes to their offspring. I have found also that many of these young diabetic patients are fearful of marriage, but they lose this fear after the marriage problem is carefully explained to them. We must emphasize the hope and the expectation that better methods of prevention and treatment and better methods for the prevention of complications will be discovered. We must also emphasize that one of the most important reasons for young diabetic patients to keep themselves in the best possible health is in order that they will then be able to take full advantage of any new developments.

Strict control of diabetes minimizes or postpones the onset of degenerative changes.[6-15] Most of the serious degenerative changes I have seen during the past thirty-three years of caring for over 3,000 such patients have occurred in those who have not been under good control. Faith in the future must be given to these young people and the importance of control must be emphasized.

It is advisable to question carefully the nondiabetic partner regarding the possible inheritance of diabetes. He should question thoroughly his relatives, for I have found often that if this is done diabetic relatives will be discovered. If the family history is negative, a postprandial blood sugar should be done on the nondiabetic partner and if this is not diagnostic, a glucose tolerance test is indicated.

Discussion of the financial burden is necessary. If the diabetic patient is a girl, we must explain the extra care that will be needed during pregnancy. Both the financial aspects and the problems that the pregnancy adds to the diabetes must be fully developed. However, over a period of years the medical expense to the diabetic family may not be as great as it might seem at first. I firmly believe that the properly educated, well-cared-for diabetic patient may enjoy better health both before and after marriage than a great many nondiabetic patients who never visit their physicians until it is too late.

Marriage may be considered an advantage to the diabetic patient insofar as the diet is concerned. If it is the man who has diabetes, he will now have someone to prepare his meals, the meals will be more regular, the food will often be better, and the accuracy of the measured diet will improve. If it is the woman who has diabetes, the diet will be easier to follow because there is no greater help than a little encouragement from the husband. The diabetic and the nondiabetic partner must remain thin. I have found that if the nondiabetic partner restricts his or her food intake, it is much easier for the diabetic patient to do the same.

Marriage will also help the diabetic female because she will then have someone to live for other than herself. She will know that she must keep herself in the best possible health so she can have children and be able to take care of them.

A discussion of marriage with a diabetic patient sometimes presents a rare opportunity to return a wayward diabetic patient to good control. Diabetic patients may have ignored all of your advice insofar as they themselves are concerned. However, when they realize that a husband or wife and possibly children will depend on them, there may be an awakening of a moral responsibility that was not present before.

Both the diabetic and the proposed nondiabetic partner must realize that the responsibility for the success of this marriage is equally divided and if each of them is not willing to assume his full share, the marriage may develop major difficulties.

The diabetic female must be taught that failure to become pregnant may follow poor diabetic control.[16] Pregnancy is aided by good control[17,18] and if pregnancy is to end successfully, strict control is absolutely necessary. I have seen disaster result too often from uncontrolled diabetes in the female. Seven miscarriages to one patient and four to another were the direct result of the failure of any physician to educate these diabetic patients properly at the onset of their diabetes and particularly before marriage.

Joslin[19,20] has stated that if marriage is contemplated by a diabetic patient both families should know the facts and he suggests that the nondiabetic girl might well ask if the diabetic man has or is eligible for insurance. He also emphasizes the importance of the young couple knowing each other long enough to realize what the entire problem of diabetes means.

The most frequent question that is asked the physician by the diabetic patients who wish to marry is: "Will my children have diabetes?" This question must be discussed frankly. The patients are told that diabetes is not inherited but that the tendency to diabetes is inherited. Discussion of the mendelian law of heredity depends on the physician's evaluation of his patients. They are told that if a diabetic patient marries another diabetic patient, all their children will develop diabetes if they live long enough. If a diabetic patient marries a nondiabetic patient who has no familial or hereditary history of diabetes, there should not be any diabetic children but all the children will be carriers. If a carrier marries a diabetic patient, 50 per cent of their children may develop diabetes. If a carrier marries another carrier, there is a chance that 25 per cent of their children will develop diabetes.

Diabetic patients should certainly have children. However, you and I have no right to advise this unless we have carried out thoroughly the program that I have outlined. The moral responsibility is ours and ours alone and any inadequate approach to this problem is the poorest kind of medical management.

The following case history of a diabetic family illustrates and emphasizes clearly some of the problems faced by a diabetic patient or a diabetic carrier in marriage.

Case Report

A very intelligent twenty-one-year-old girl who was known to be a diabetic carrier married in

1931. At marriage her husband did not know that he was a carrier but later was proved to be one. A daughter was born in 1933 and a son was born in 1935. In 1940 the husband developed diabetes, and after four years without control he had major degenerative changes. In 1941 the eight-year-old daughter developed diabetes and after fifteen years of excellent control there followed two years of no control, and very serious degenerative changes developed. In 1949 the fourteen-year-old-son developed diabetes, and a few years of good control were followed by five or six years of no control, and major degenerative changes occurred. In 1955 the wife developed diabetes.

Comment

This unfortunate story might have been prevented if this girl, before seriously considering marriage, had been thoroughly indoctrinated in the problems that she might have to face as a diabetic carrier. This family history illustrates vividly the inherited tendency to diabetes. A postprandial blood sugar or a glucose tolerance test might have revealed that the man she planned to marry was a potential diabetic patient. It also emphasizes the need for better education of all diabetic patients and diabetic carriers before marriage.

Summary

The proposed marriage of a diabetic patient presents an opportunity to the physician to guide and prolong a marriage which, without his help, would not be successful. Diabetic patients can have healthy nondiabetic children if only one partner has diabetes and the other partner has no familial or hereditary history of diabetes. Early counseling of patients as to marriage if carried out by all physicians could diminish the hereditary factor in diabetes. The thorough education of the diabetic and the nondiabetic partner regarding the proper care of diabetes must be carried out before marriage. This task that we the physicians must assume is not easy. It is only with true dedication to this problem that we can hope to fulfill completely the faith that the diabetic patient places in us.

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If I have done the public any service, it is due to patient thought.—Sir Isaac Newton

Medicolegal Aspects of Blood Transfusion

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NEVER before have so many different patients received blood transfusions or have so many patients received multiple transfusions. The progressive increase in the amount of blood used followed the development of blood banks which have made blood more readily available and more easily administered. This increased number of transfusions is necessarily associated with a greater number of accidents and also results in a greater number of instances of isosensitization which can give rise to post-transfusion hemolytic reactions. As a result, medicolegal actions for real or imagined negligence are on the increase. Blood is indispensable in clinical medicine and blood transfusion is a relatively safe procedure. The percentage of untoward reactions is small. The best way to protect the patient, as well as to avoid medicolegal entanglement which is always unpleasant and may be costly, is to become cognizant of the dangers and to put forth every effort to avoid them. Personnel must be properly trained. The procedures followed should be adequate and conform to those commonly accepted, and blood transfusions which are not clearly indicated should not be given.[1]

I do not wish it thought that I want to discourage blood transfusion. It is truly a very valuable and essential therapeutic measure. Yet blood is dynamite![2] It can do a great deal of good or a great deal of harm. The mortality from blood transfusion equals that from ether anesthesia or appendectomy. There is said to be approximately one death in 1,000 to 3,000 or possibly 5,000 transfusions. In the London area there has been reported one death for every 13,000 bottles of blood transfused.[3]

Because of the great value of blood transfusion, it is sometimes used too freely under the mistaken impression that it is as safe as an intravenous infusion of normal saline solution or glucose. Whether or not a transfusion is clearly indicated, it always has certain inherent dangers. The desire to aid the patient tempts one to test the efficacy of blood transfusion in a large assortment of diseases. But one must always weigh the possible dangers against the possible benefits before giving blood.

Recently, I was called as a witness in an examination before trial. The legal action was instituted because the patient had developed serum hepatitis as a result of blood transfusion. In such cases the usual cause of action in the past has been the transfusion of "contaminated" blood. Instead, the attorneys shifted their attack and contended that the transfusion of 500 cc. of blood administered at the time of operation while the patient was under anesthesia was not indicated and that the patient had been unnecessarily exposed to the risks of transfusion and had developed hepatitis. It has been asserted, "It appears unjustifiable to expose any patient at risk for one pint of blood."[3]

Time will not permit a discussion of the various medical and surgical indications for blood transfusion, but since the majority of transfusions are given to surgical patients and probably most of these are given in the operating room, I will touch briefly on that segment of the problem. It is a mistake to believe that transfusion is indicated simply because a major surgical procedure is in progress. During operation is an especially dangerous time to administer

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blood because certain symptoms and signs of a hemolytic reaction are obscured by anesthesia; for example, pain in the back, pain down the legs, flushing, rigor, and so forth.

At our institution, the following criteria are used for transfusion of surgical patients: a hemoglobin concentration of 10 Gm. per cent or less and an erythrocyte count of approximately 3 million per cubic millimeter or less. If possible, the anemia is corrected preoperatively. During operation blood loss is estimated. The laparotomy pads used are counted and for each laparotomy pad it is estimated that there has been a loss of approximately 15 cc. of blood. For each sponge used it is estimated that there has been a loss of approximately 5 cc. of blood. The volume of the fluid in the suction bottle is measured. If these 3 calculations indicate that a total of more than 500 cc. of blood has been lost, a blood transfusion may be started. However, loss of 500 cc. of blood per se is not necessarily an indication for transfusion. That amount is removed routinely from blood donors without ill-effect. Therefore, the patient's general condition and the amount of trauma sustained during operation is also taken into account. The combination of poor general condition of the patient, with excessive trauma, and the loss of 500 cc. or more of blood constitute an indication for blood transfusion. Trauma, tachycardia, and hypotension should be used as guides to indicate the need for blood transfusion.

It is important that the patient's blood transfusion history be given careful consideration. One should always make certain, particularly if the patient has had previous transfusions followed by a post-transfusion reaction, that a careful serologic investigation has been made. If a reaction has occurred no further transfusions should be administered, except in emergencies, unless such studies have been made. If it is believed that transfusions will, beyond reasonable doubt, be necessary during operation, it is preferable, if possible, to postpone the operation until the problem has been resolved and, as far as human intelligence can determine, compatible blood has been selected.

The dangers associated with blood transfusion are many. The first situation that a practicing physician meets is the question of indication for transfusion. This can be summed up in the phrase, "To transfuse or not to transfuse?" Often in the operating room with the patient under anesthesia, this may prove a difficult decision although the criteria which I have just outlined may be of assistance. Each case must be individualized, but to avoid transfusions not clearly indicated is always a good rule. When one considers the vast number of patients transfused, the wonder is not that catastrophes occur but that they do not occur more often. The risk of human error is ever present and most errors are of the simplest nature. They start with the manufacture and preparation of the bottle, phlebotomy set, and administration set. The chance of clerical errors when registering a donor or when labeling the bottle of blood and pilot tubes; the chance of mistakes at the time of, as well as after, the phlebotomy of the donor; and the chance of errors associated with examinations of his blood are ever present. A good rule is to count the dangers when a transfusion is under consideration and balance them against the possible benefits.

Blood Transfusion Problems

PROBLEM 1. STORAGE OF BLOOD IN REFRIGERATOR.—At all times, the temperature of the refrigerator must be kept at 4 to 6 C. If the temperature rises, the blood should be discarded. If the temperature falls and the blood is frozen, it will become hemolyzed on thawing and such blood also must be discarded.

PROBLEM 2. STORAGE OF BLOOD AT ROOM TEMPERATURE.—Blood is often requested far in advance of the need for it and it is allowed to stand at room temperature in the operating room or at the patient's bedside. This is a dangerous procedure. Blood

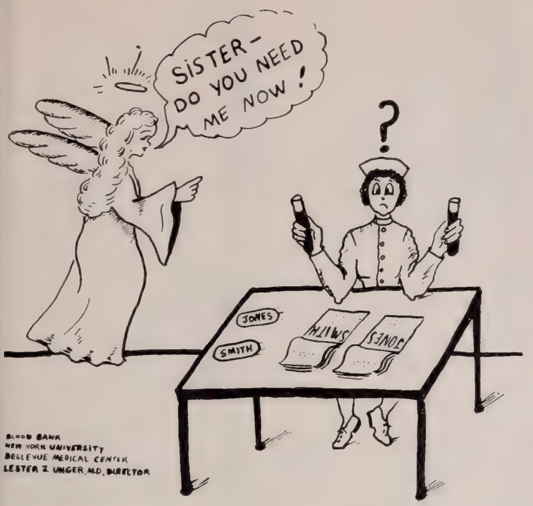

FIG. 1. Draw blood from only 1 patient at a time and place it into a prelabeled test tube.

is a good culture medium and bacteria, if present, may multiply. Therefore, it is necessary to have on the operating room floor a refrigerator for storage of blood which has been cross-matched prior to the time of operation.

PROBLEM 3. BACTERIAL CONTAMINATION.—Faulty technic at the time of phlebotomy may yield blood contaminated with bacteria.[4–9] Fortunately, most of such contaminating organisms are nonpathogenic. At times, even with a perfect technic, the phlebotomy needle may punch out a piece of the donor's skin which is then carried by his blood into the bottle. If bacteria are present in this small piece of skin and the conditions are favorable, these bacteria may multiply. Certain gram-negative bacilli can survive and multiply in blood even when properly stored at 4 to 6 C. A severe reaction, and even death, may follow the administration of blood so contaminated. In an attempt to protect the patient against this it has been suggested that prior to using the blood a stained smear of it be made and examined for bacteria. Bits of fibrin, however, may be erroneously thought to be gram-negative bacteria. When this procedure is followed, the blood must be used immediately or discarded. It has also been suggested that shortening the expiration date from twenty-one to fourteen days might prove useful in that those rare bloods which are contaminated will not have as heavy a growth of bacteria.

PROBLEM 4. UNLABELED BLOOD SPECIMENS.—When blood specimens are drawn at approximately the same time from 2 patients in the same ward or on the same floor, catastrophe may be in the offing. Always prelabel the test tube and check that the name of the patient from whom the blood is being drawn is the same as the name on the label of the test tube (Fig. 1).

PROBLEM 5. VERBAL ORDERS.—A rule that should never be violated is to give no verbal orders because these result readily in misunderstanding and error (Fig. 2).

PROBLEM 6. HOLIDAY, WEEKEND, AND NIGHT TECHNICIANS.—Cross-matching tests on holidays, weekends, and nights should be entrusted only to trained personnel. It is unwise and unfair to entrust the responsibility for these tests to untrained or insufficiently trained individuals. Some satisfactory provision should be made for work to be carried out during these off-hour periods. During those periods such work should be limited to truly emergency situations in order to minimize the risk.

PROBLEM 7. INSUFFICIENTLY TRAINED TECHNICIANS.—Unfortunately, instances have occurred where simply because the A-B-O blood group and Rh_0 blood factor of the patient were the same as the donor's, when agglutination occurred in the cross match the technician refused to believe her eyes. This is most likely to occur when the technician is insufficiently trained and does not realize her own shortcomings and limited knowledge of the intricacies of immunohematology. To such a technician, under such circumstances, the donor's blood just must be compatible. She can conceive of no other possibility. However, incompatibility could actually be present but be due to antibodies other than those of the A-B-O and Rh-Hr blood group systems—a possibility which may not even

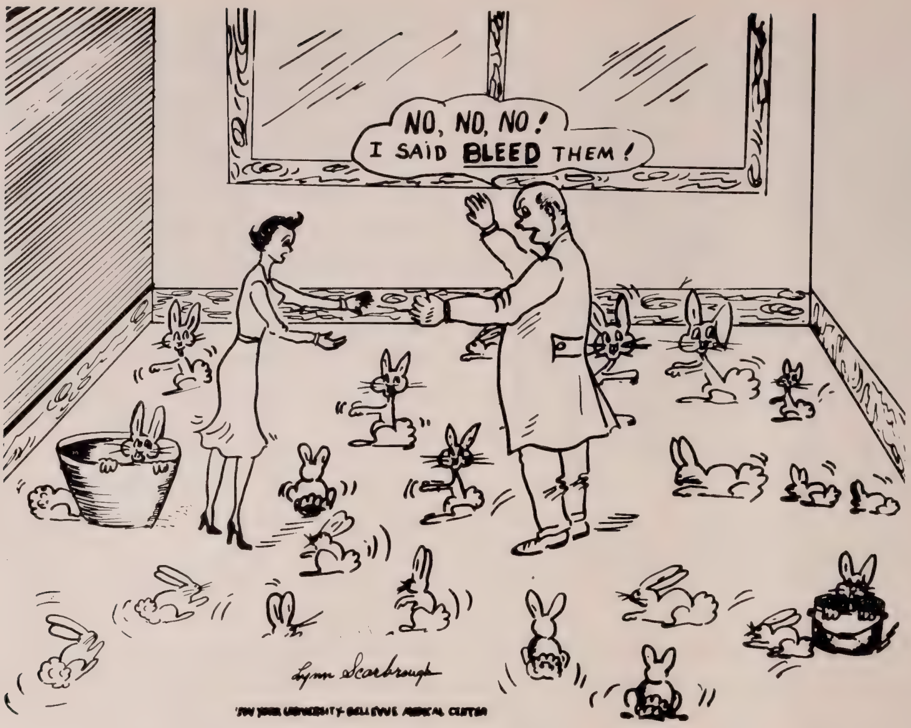
NO, NO, NO!
I SAID BLEED THEM!
Lynn Scarbrough
NEW YORK UNIVERSITY-BELLEVUE MEDICAL CENTER

Fig. 2. Verbal orders or reports are easily misunderstood.

be considered by an insufficiently trained technician.

Problem 8. Pretransfusion Tests.—The methods employed for pretransfusion tests should include as a minimum those procedures accepted generally as standard. The technician should at all times be on the alert for atypical antibodies, which will be discussed in greater detail later in this paper. Frequently, a laboratory is not in a position to identify the specificity of the offending antibody. However, the routine technic should be such that the existence of any atypical antibody will be detected, and then the blood can be sent to a central laboratory for the identification of the antibody.[10–13] The antibody responsible may not have been described previously and such cases, as well as instances of hemolytic transfusion reaction, are an important source of antiserums used in research to advance knowledge of human blood groups.

Problem 9. Administration of Blood.—Be certain that the blood issued is actually the blood that has been cross-matched and is intended for the particular patient to whom it is being administered.[14] Read the label on the blood bottle! It would be wonderful if an apparatus could be devised to be attached to the blood bottle that would automatically announce the name of the patient for whom that particular bottle of blood is intended (Fig. 3). The best laboratory work in the world, carried out by the best technicians, may go for naught if blood other than that cross-matched for the patient is administered. Even though not directly related to the problem, it seems important at this point to call attention to the problems inherent in exchange transfusions given to erythroblastotic infants. These pose their own special dangers with possibilities of negligence related not only to the blood of the infant, but also to the prenatal examinations of the mother's blood.

Problem 10. Untoward Reactions.—Every post-transfusion reaction should be thoroughly investigated and no further

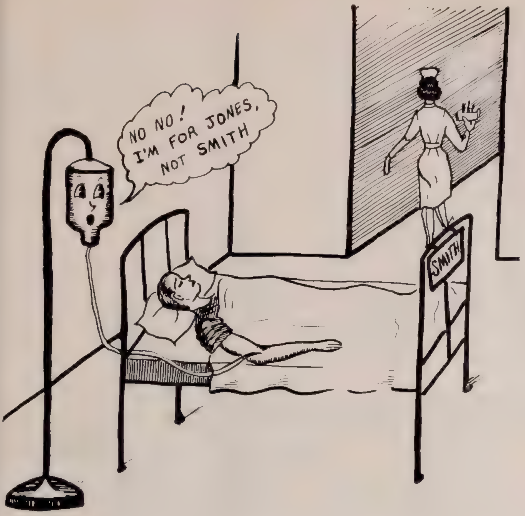
NO NO! I'M FOR JONES, NOT SMITH
SMITH

FIG. 3. Be certain that the blood issued is actually the blood intended for the particular patient.

blood should be administered until the possibility that the reaction is hemolytic has been ruled out. When a post-transfusion reaction occurs, interrupt the transfusion immediately and give no more blood until investigation discloses the nature of the reaction, even though the patient's condition may be such that delay may seem inadvisable, since a hemolytic reaction[15-20] can terminate with the death of the patient, particularly if additional incompatible blood is administered. In the interim, if necessary, other measures should be used for treating the patient.

PROBLEMS 11. CONTINUOUS TRANSFUSIONS OF MULTIPLE UNITS OF BLOOD.—When bleeding, such as gastrointestinal or duodenal bleeding, is the indication for transfusion, give 10 cc. of 10 per cent calcium gluconate after every 1,000 cc. of blood administered. Otherwise, the transfused citrated blood may upset the coagulation mechanism and the bleeding may continue irrespective of the amount of blood administered.

PROBLEM 12. HEPATITIS.—The risk of hepatitis is still with us. Pooling plasma obtained from a large number of units of blood increases the risk proportionately.[21] Irradiation of plasma has not proved effective in inactivating the responsible virus. On the other hand, storage of plasma in liquid form at room temperature for six months before releasing it for use apparently renders the plasma safe.[22] However, since whole blood intended for transfusion can be stored safely for no longer than twenty-one days, the risk of hepatitis is always present following blood transfusions. When blood transfusion is contemplated, hepatitis must be accepted as a calculated risk. The only precaution of proved value is to take a careful medical history of the donor. Has he ever been jaundiced? Has he ever had a prolonged, febrile, undiagnosed illness? Has he recently received an injection of whole blood or blood products? If the answer to any of these is "yes," reject him. The prospective donor's sclera and skin should be examined for evidence of jaundice and, of course, if any is present he must be rejected.

Unfortunately, there is no reliable test to detect blood contaminated with the hepatitis virus. Therefore, for medicolegal reasons, on each bottle of blood issued by the blood bank of New York University–Bellevue Medical Center is placed the statement, "Despite careful selection of donors, this blood may contain the virus of homologous serum hepatitis." In other words, to use a legal term, there is no warranty that the blood furnished is free from the virus of homologous serum hepatitis. As with hepatitis, there is no reliable method of avoiding the danger of transmitting malaria by blood transfusion[23] and it also must be accepted as a calculated risk.

Procedures

The problems associated with blood transfusion unless properly handled and avoided, unfortunately may lead at times to disagreeable legal entanglements as far as the hospital blood bank, blood bank director, and patient's physician and surgeon are concerned (Fig. 4).

The Committee on Medicolegal Problems of the American Medical Association has

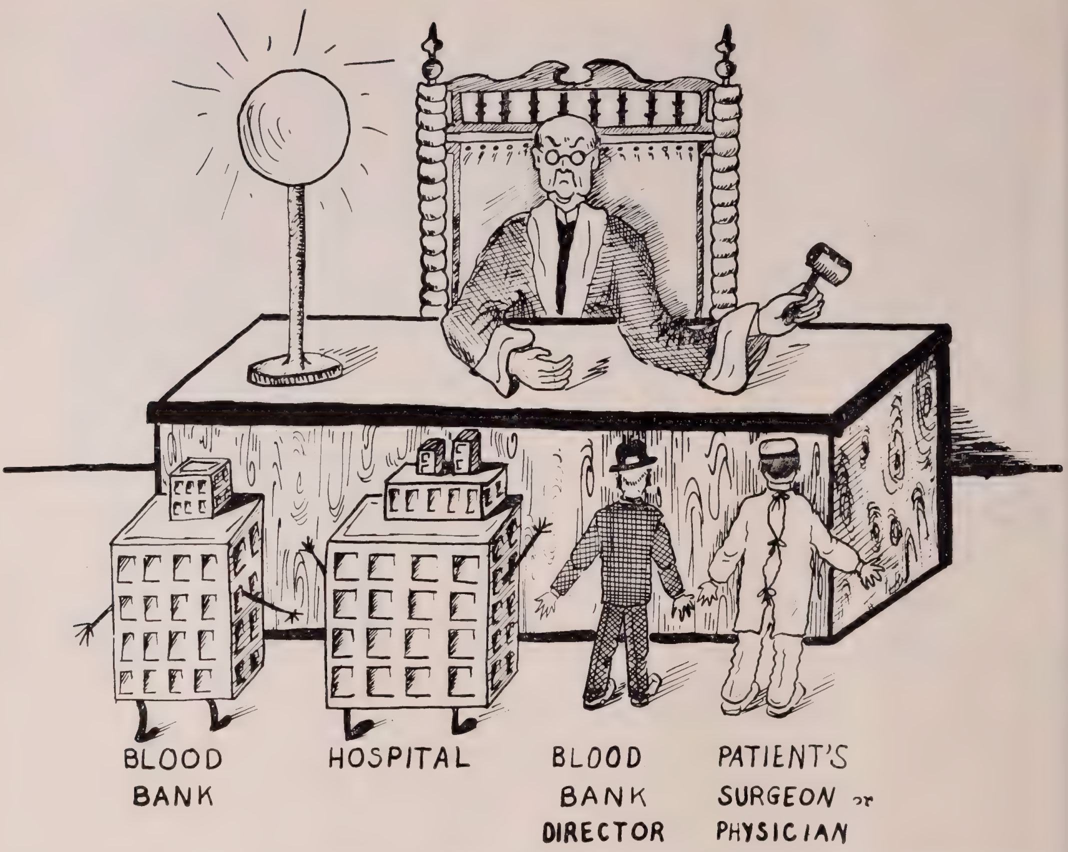

FIG. 4. Blood transfusion is a valuable therapeutic measure, yet it is beset with pitfalls that may lead down the road to the courtroom.

published a report entitled "The Medicolegal Aspects of Blood Transfusion," [24-29] and the Law Department of the American Medical Association has issued a pamphlet entitled "Medicolegal Forms with Legal Analysis." Both these pamphlets can be obtained by writing to the American Medical Association. Particularly useful are agreements and releases recommended to be signed for blood transfusion, for plasma transfusion, and for blood donation. These same problems may lead to dire results as far as the patient is concerned (Fig. 5).

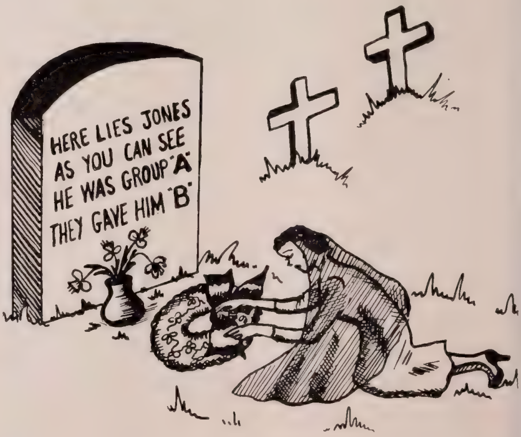

FIG. 5. Errors might cost a life: it might be yours.

Directors of blood banks have a responsibility at all times to employ competent personnel and to teach them and to have them follow, as a minimum, accepted routine procedures. Unless a thorough laboratory routine is followed, negligence exists. The minimum requirements for the collection and storage of blood or plasma have been published by the National Institutes of Health, and copies are readily obtainable. An accepted procedure for cross-matching, however, has not yet been so delineated.

One must not only apply procedures commonly recognized as standard, but also keep abreast of the advances made in this rapidly expanding field. After speaking on the subject at a meeting of the American Academy of Forensic Sciences, I was asked how complicated must the cross match be? Is it not already too complicated? My answer was that blood grouping is a complex subject and we are just now learning some of the profound secrets. A procedure must be as complicated as the subject matter. First, facts are brought to light. Then they are disseminated, mastered, and applied to our daily work. After a period of education universal application becomes mandatory, and disregarding advances in knowledge can be construed as negligence.

For the past nine years at the blood bank of New York University Hospital we have carried out routinely 3 sets of cross-matching tests, as follows: (1) saline agglutination method, (2) albumin-plasma conglutination method, and (3) antiglobulin method. Perhaps the conglutination method may now be omitted. In addition, we always test the patient's cells in the patient's own serum by the saline agglutination, albumin conglutination, and antiglobulin methods. Finally, sensitivity tests, first recommended by Unger[16] whereby the patient's serum as well as the donor's serum are tested for atypical antibodies, are to be done. For these tests we use pooled group O, Rh_zRh_0 cells and others positive for as many blood factors as possible. The sensitivity tests are carried out by the saline agglutination, antiglobulin, ficinated cell, and ficinated cell antiglobulin methods. Before each additional transfusion, moreover, a fresh specimen of blood is drawn from the patient for these pretransfusion tests. To omit any of these might be construed by the court as negligence.

Recently, still another novel situation was encountered by me. In spite of the fact that all the pretransfusion tests we have listed had been properly carried out and indicated that the donor's blood and the patient's blood were compatible, a hemolytic reaction followed the transfusion. I was then able to show that if the donor's cells had been ficinated prior to cross-matching, the incompatibility could have been demonstrated. Since that experience, whenever the sensitivity tests by the ficinated cell and ficinated cell antiglobulin methods reveal the presence of an atypical antibody, we use this additional and new method of cross-matching. In this patient's serum a new antibody was identified by Unger and Wiener[30–36] to which has been assigned the symbol anti-Rh^B.*

In another case we withheld blood found incompatible by the ficinated cell and ficinated cell antiglobulin methods and then administered, without reaction, 2 units found compatible by these technics. In addition, recently I saw a pregnant isosensitized woman whose serum also gave these unusual serologic reactions. In her serum an antibody was identified and named, by Unger and Wiener,[37,38] anti-Rh^C. Although these results are still novel, the facts must be disseminated and after a reasonable period of time they must be incorporated into our routine in order to avoid the charge of negligence.

Conclusions

The development of blood banks has made blood readily and easily available and the number of transfusions has steadily mounted. Simultaneously, the number of actions for negligence against hospitals, blood bank directors, and clinicians has also increased. Even though the incidence of complications after blood transfusion as well as litigation is low, the total number is such as to become "news," and the notoriety may stimulate others to seek redress for real or even imaginary damage. With the recognition of the pitfalls of blood transfusion, it is at times possible to take appropriate steps to avoid or minimize their occurrence and thereby protect the patient.

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*Anti-Rh^A,[30–34] anti-Rh^B,[35,36] and anti-Rh^C,[37,38] are antibodies apparently of specificity similar to anti-Rh_0 found in the serums of certain rare individuals whose cells are apparently positive for the Rh_0 blood factor or a variant of that factor.

Blood transfusions have been administered on the theory that they can never do harm and might possibly benefit the patient. This idea is wrong because there are dangers inherent in blood transfusion. The clinician must weigh these dangers against the possible benefits and, therefore, must be thoroughly aware of their existence and their legal implications.

Blood is an extremely valuable therapeutic agent and its administration is often lifesaving, but transfusion should be avoided when the benefits to be derived are highly problematical. The responsibility placed on the blood bank and laboratory personnel carrying out this work is a grave one, and every effort should be made to have fully qualified personnel available at all times. Responsibility for carrying out the required tests should not be placed on an inadequately trained substitute staff. For emergencies occurring when the regular staff is off duty, satisfactory provisions should be made. Assistance in problem cases can always be obtained from central blood banks especially qualified to solve them and to furnish compatible blood. At all times, the minimum requirements adumbrated by the National Institutes of Health must be observed.

Aside from the donor, the collaborative efforts of a large number of workers make available for transfusion each bottle of blood. It is essential that the one who administers the blood make certain that a particular bottle is actually intended for his own patient by reading all labels carefully himself.

Although cases offering difficult problems in compatibility are encountered, most untoward accidents are traceable either to failure properly to carry out elementary blood-grouping procedures or to human errors. To avoid transfusion accidents, great care must be taken in carrying out the procedures associated with the laboratory examinations, the drawing of blood, its storage, and its administration.

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ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
340 East 72nd Street
New York 21, New York

The Annual Convention will be held May 9 to 13, 1960 at the Statler Hilton Hotel, New York City.

No applications can be considered after January 15, 1960.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

Group II: Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of facts.

William L. Wheeler, Jr., M.D., *Secretary*
Medical Society of the State of New York

The Apgar Scoring System in Evaluation of the Newborn Infant

DANIEL W. COLBURN, M.D., NEWARK, NEW JERSEY, AND MORRIS SALZMAN, M.D., NEW YORK CITY

(From the Department of Obstetrics and Gynecology, New York University College of Medicine)

IN 1953 Virginia Apgar, M.D.,[1] introduced a numerical scoring system for the evaluation of the newborn infant. Under this system the following five signs are observed precisely one minute after birth: heart rate, respiratory effort, muscle tone, response to a catheter introduced into the nostril, and color. An appropriate numerical value of 0,1, or 2 is assigned to each sign, and the total of these 5 values is utilized as an index of the condition of the infant. In subsequent reports Apgar and coworkers[2-5] showed the incidence of scores in 15,428 newborn infants and presented evidence from chemical studies of cord blood, corroborating the value of the system.

During the past year 1,625 consecutive deliveries of infants weighing more than 1,000 Gm. have been studied by this method from the Obstetrical Service of Bellevue Hospital. Our primary purpose in adopting this system was to concentrate the attention of students, interns, and residents, as well as the nursing staff, on the condition of the newborn infant in relation to circumstances of the birth process. In this regard the Apgar score system has proved to be a valuable aid in teaching and deserves continued use on these grounds alone. The present study deals with an evaluation of the scoring system in regard to the obstetric factors and the clinical outcome of the infant.

Methods

The scoring system originally introduced by Apgar was utilized in this study, and an appropriate sheet was devised for recording purposes (Table I). In her 1958 report Apgar[5] recommends a slight revision in which a response to skin stimulation of the feet is substituted for a response to the introduction of a catheter in the nostril. This modification was not employed in this study.

The ratings for each newborn infant were determined one minute following birth by house officers who participated in the delivery. Serial scores at varying intervals of time were kept in a few cases, but they do not form a part of this study.

The equal and numerically arbitrary values given to each of the 5 signs were retained in this group of cases. Apgar concedes that these signs are not of equal importance, the heart rate being by far the most important from the standpoint of diagnostic and prognostic importance. Our findings (Table II) confirm this, but it was felt that any statistical method of giving different weight to various categories in the evaluation would compromise the great virtue of the system, its simplicity.

Individual variation in the scoring of infants was obvious from the beginning of the study, and it became apparent that a grouping of the numerical values would be useful

TABLE I.—NEONATAL CONDITION ONE MINUTE AFTER BIRTH (MODIFIED BY APGAR)

Sign	0	1	2
Heart rate	0	Less than 100	More than 100
Respiratory effort	0	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion of extremities	Active motion
Response to catheter in nostril (tested after oropharynx is clear)	0	Grimace	Cough or sneeze
Color	Blue, pale	Body pink, extremities blue	Completely pink

TABLE II.—HEART RATE AND RESPIRATORY EFFORT IN DEPRESSED INFANTS

Signs	Living Infants Apgar Score of 6 or below (Per Cent) (154 Cases)	Neonatal Deaths Apgar Score of 6 or below (Per Cent) (17 Cases)
Heart rate		
Less than 100	33.0	72.5
Over 100	67.0	27.5
Respiratory effort		
No respirations	20.2	11.1
Slow, irregular	75.5	83.4
Good, crying	4.3	5.5

in correlation to the clinical condition of the newborn and the outcome. Our method is as follows:

Apgar Score — Results
9 to 10—No depression
7 to 8—Slightly depressed
4 to 6—Moderately depressed
1 to 3—Severely depressed
0—Dead

Results

DISTRIBUTION.—Table III shows the distribution of scores in 1,625 consecutive deliveries. The cases showing none or slight depression (scores of 7 and above) constituted 87.6 per cent of the total, which corresponds closely to Apgar's figures. Roughly 10 per cent of the cases showed moderate to marked degrees of depression and they presented serious problems in resuscitation.

CLINICAL BACKGROUND.—The age of the mother appeared to have no relation to the scores of the liveborn infants. The series was divided into 3 groups: mother under twenty-five years of age, mother aged twenty-five to thirty-five years, and mother more than thirty-five years old. The neonatal mortality was about 2 per cent in each group, and there was no difference in the average scores of the infants. However, the stillbirth rate was 1.3 per cent among mothers under twenty-five years old, rose to 2.5 per cent in the twenty-five to thirty-five-age group, and was 4.6 per cent in those over thirty-five years.

Parity appeared to have no relation to the significance of the score with the possible exception of severely depressed infants. Infants born of primiparas showed a score of 1 to 3 in 1.6 per cent of cases, and in this group the neonatal deaths amounted to 14 per cent. However, these figures represent only 8 neonatal deaths among 46 deliveries.

TABLE III.—DISTRIBUTION OF APGAR SCORES IN 1,625 CONSECUTIVE DELIVERIES

Apgar Score	Clinical Condition	Number of Cases	Per Cent
9 to 10	Normal	1,179	72.2
7 to 8	Slightly depressed	247	15.4
5 to 6	Moderately depressed	125	7.8
1 to 3	Severely depressed	46	2.8
...	Stillbirth	28	1.8
TOTAL		1,625	100

TABLE IV.—NEONATAL DEATHS AMONG 1,597 LIVEBORN INFANTS OVER 1,000 GM. EVALUATED BY THE APGAR SCORE

Apgar Score	Number of Infants	Neonatal Deaths Number	Per Cent
1 to 3	46	8	17.4
4 to 6	125	9	7.2
7 to 8	247	5	2.0
9 to 10	1,179	8	0.7

NEONATAL MORTALITY.—The neonatal mortality for infants weighing more than 1,000 Gm. at birth was 1.9 per cent, and the distribution by the Apgar scores is shown in Table IV. A serious prognosis is indicated by a score of 6 or below, and this becomes increasingly grave as the score lowers. The question of whether antepartum complications or complications of labor carry a more unfavorable prognosis for any infant with a given score was studied by comparing the distribution of scores and neonatal mortality in complicated cases with those of the entire group. Among the complications studied in this way were: toxemia, 59 cases; antepartum bleeding, 46 cases; premature rupture of the membranes for more than ninety-six hours, 18 cases; and cord around the neck, 30 cases. Broken down in this way, the number of cases in each group of scores is too small to be of significance, but when complicated cases are considered together there is no major difference from the distribution of neonatal

TABLE V.—METHOD OF DELIVERY

	Spontaneous and Low Forceps (1,404 Cases)		Cesarean Section (84 Cases)		Mid Forceps (83 Cases)		Breech (51 Cases)	
Apgar Score	Cases Per Cent	Neonatal Mortality	Cases Per Cent	Neonatal Mortality	Cases Per Cent	Neonatal Mortality	Cases Per Cent	Neonatal Mortality
9 to 10	76.6	0.7	57	2	54	..	25.6	..
7 to 8	13.8	2	23.5	5	18.2	..	35.4	..
4 to 6	6.4	5	10	12.5	19.4	..	19.3	30
1 to 3	2.4	18	7.1	16	4.8	25	7.7	..
0	0.8	2	2.4	..	3.6	..	12	..
Total neonatal mortality	2		5		1.2		6	

TABLE VI.—APGAR SCORES IN PREMATURE AND TERM INFANTS

	1,000 to 2,500 Gm. (173 Cases)		2,500 to 4,000 Gm. (1,354 Cases)	
Apgar Score	Distribution (Per Cent)	Neonatal Mortality (Per Cent)	Distribution (Per Cent)	Neonatal Mortality (Per Cent)
9 to 10	59.5	3.9	75.4	0.3
7 to 8	6.8	10.3	14.4	1.0
4 to 6	13.9	20.8	6.7	2.1
1 to 3	5.8	10.0	2.5	20.0
0	4.0	100.0	1.0	100.0

deaths in the entire series. It would appear that in the case of these complications there need be no special qualification of the prognosis beyond that indicated by the Apgar score.

METHOD OF DELIVERY.—The distribution of scores and the neonatal mortality for each group of scores in relation to method of delivery is shown in Table V. With the exception of groups in which the numbers are so small as to be of no significance, the score appears to furnish a reliable guide to prognosis for all forms of vaginal delivery. Infants delivered by cesarean section, however, show a consistently increased neonatal mortality in each group of scores above 4. This may be taken as a warning against a false sense of security engendered by a high score in cases delivered by this route.

INFANT WEIGHT.—The neonatal death rate for 173 infants between 1,000 Gm. and 2,500 Gm. in this study was 7.5 per cent, while for term infants of moderate size (2,500 to 4,000 Gm.) neonatal mortality amounted to 1.1 per cent. The distribution of the Apgar scores in these two groups is shown in Table VI. A good prognosis is evident in term infants with scores of 4 or above, while among premature infants this applies only to those with scores of 9 or 10.

ANALGESIA.—While no concurrent study of the effect of medication given during labor on the Apgar score of the infant was carried out,* a retrospective analysis of charts furnished some information on this point. One hundred cases were selected in which infants had scores of 9 or 10 and were delivered spontaneously or by low forceps of mothers with normal labors and no antepartum complications. In this group 20 patients received meperidine hydrochloride (Demerol) 100 mg. alone as a medication, 71 cases received meperidine hydrochloride 75 mg. plus a tranquillizer (Thorazine or Phenergan, 25 to 50 mg.), and 9 cases received meperidine hydrochloride 50 mg. plus a tranquilizer.

Another 100 cases were selected with a similar normal obstetric background and delivery in which the infants had Apgar scores of 6 or below. In this group 48 cases received meperidine hydrochloride 100 mg. alone, 45 cases received meperidine hydrochloride 75 mg. plus a tranquillizer, and 7 cases received meperidine hydrochloride 50 mg. plus a tranquillizer.

When the distribution of cases in each group is plotted against the interval between the time of medication and the time of delivery, it is apparent that this interval has an important effect on the Apgar score. Medication given two to three hours before delivery appeared to have a much more pro-

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* In the 200 cases studied meperidine hydrochloride 100 mg. gave twice as many low scores regardless of timing in relation to delivery.

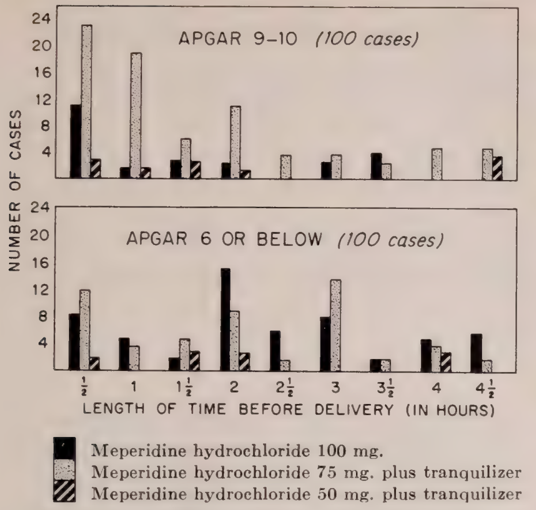

FIG. 1. Effect on Apgar score of time interval between medication and delivery.

found effect on the score than medication given during the last hour before birth (Fig. 1.).

Summary

Experience with the Apgar scoring system in 1,625 consecutive deliveries has shown it to be useful as a means of documenting the condition of the newborn infant. It also furnishes a rough guide to the estimation of prognosis which appears to be reliable in the presence of various antepartum and intrapartum complications. Two exceptions to this are: the expected difference in neonatal mortality among premature infants and the increased risk for infants delivered by cesarean section, despite high initial Apgar scores.

The Apgar scoring system is recommended for teaching obstetric services as a means of concentrating the attention of students, house officers, and nurses on the condition of the newborn infant in relation to obstetric management.

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Silicon Hair Curlers Present Occupational Disease Problem

Silicon hair curlers may produce an invisible but terribly painful skin disease among hairdressers, 2 University of Pennsylvania dermatologists have warned.

Writing in the August 8, 1959, *Journal of the American Medical Association,* Walter B. Shelley, M.D., and Donald M. Pillsbury, M.D., said the disease consists of excessively sensitive fingertips, although the skin shows no sign of disease.

The sensitivity is due to tiny particles of silica which become embedded in the top layer of the skin, irritating the sensory nerve endings. The particles rub off silica or sand-coated hair curlers, which have replaced plastic curlers in many beauty shops.

The widespread use of these curlers suggests that such an invisible skin disease may become common among beauticians unless efforts are taken to eliminate this new occupational hazard.

The doctors have seen one case, in a forty-year-old woman, who first noted a marked sensitivity of the fingertips to light touch. This began on the side of the tip of the right fourth finger. Eventually all the fingertips became involved. Pain and inflammatory changes were absent, but exquisite tenderness to touch eventually forced her to stop working.

At first it was thought the patient had a neurologic or vascular condition. Treatment with a variety of local anesthetic and steroid creams was unavailing.

Finally microscopic examination of the fingertips showed the tiny particles embedded in the skin. Then the patient remembered that the condition had begun about the time she had started using sand-coated curlers instead of plastic curlers.

Treatment consisted of removing the very top layer of skin by microsurgery.

Open-Drop Halothane Anesthesia for Ophthalmic Examination of Ambulatory Children

Report of 400 Cases

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Careful ophthalmoscopic examination of the eyes of infants and children under the age of three or four years requires the use of general anesthesia. In this paper the problems of general anesthesia for ambulatory children will be discussed and a useful and safe technic using halothane (Fluothane), 2-bromo-2-chloro-(1:1:1-trifluoroethane), will be described. In the past two years 400 ophthalmic examinations have been satisfactorily performed at the Institute of Ophthalmology of the Columbia-Presbyterian Medical Center using this method without serious sequelae.

Most of these children are being treated or have been treated for retinoblastoma. Successful results depend on frequent follow-up examinations of the patients and also on examinations of siblings under five years of age. For simplicity and convenience it has been desirable to study these children on an ambulatory basis without requiring formal hospital admission for the administration of anesthesia.[1] It was therefore necessary to develop a method suitable for use in the outpatient clinic after which the child would react and could go home in ten minutes or less. For about fifteen years prior to 1957 chloroform was used for this purpose.[2] However, halothane has provided just as satisfactory anesthetic conditions and, in addition, it has given a wider margin of safety with respect to cardiocirculatory depression.

The objectives of general anesthesia for these ophthalmic patients may be listed as follows:

1. Safe and efficient production of anesthesia.
2. Nonflammable agents and methods.
3. Quick induction and fast recovery from anesthesia, but with recovery gradual enough after administration is discontinued to allow three to ten minutes for examination of the eyes.
4. Avoidance of salivation and vomiting.
5. A minimum of psychic trauma to the child because of the need for repeated examinations.

The technic using halothane satisfies the first four objectives satisfactorily, but the fifth objective is rarely attained.

Technic

The eye examinations are performed in the morning. The only preparation required of the parents is to see to it that no solid food nor milk is ingested by the child after 2:00 A.M. of the morning of examination. Clear fluids (tea, sugar water, ginger ale) are permitted until 6:00 A.M. To be certain that these orders are understood and remembered, detailed typed instructions are given to the parents at the time the appointment is made:

> The patient must not take any solid food or milk by mouth after 2:00 A.M. on the morning of the examination. Fluids (clear tea, sugar water, ginger ale) may be given until 6:00 A.M.

Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Anesthesiology, May 12, 1959.

If the child has a cold, fever, vomiting, or has not fully recovered from a recent illness, please notify your eye doctor at the Columbia-Presbyterian Medical Center before leaving home so as to arrange for a substitute appointment if necessary.

If there is any question about the patient's condition, a letter of clearance for anesthesia is required from the family doctor or pediatrician.

____________________M.D.
Anesthesiology Service

The patients are brought to the clinic about one hour before the scheduled time of examination and the pupils are dilated with drops of 10 per cent Neo-Synephrine hydrochloride and 5 per cent homatropine hydrobromide. Atropine sulfate (0.1 mg. per 15 pounds of body weight) is given intramuscularly for premedication. Before anesthesia is begun a stethescope is secured on the child's precordium for continuous auscultation of the heart rate and rhythm by the anesthesiologist.

Oxygen is allowed to flow under an open-drop mask at a rate of 500 ml. per minute to insure an adequate oxygen content in the inspired air.[3] Halothane is dropped onto the mask at a brisk rate (60 to 120 drops per minute). The mask is held about 2 inches above the child's face at the beginning and then it is gradually lowered. After about two to three minutes of inhalation of the halothane vapor, there is a beginning of depression of the depth of respiration. This is the end point.

When this end point is reached, the mask is immediately removed and a few drops of one-half per cent tetracaine hydrochloride are instilled into each conjunctival sac for topical anesthesia, the lights are turned out, and the ophthalmoscopic examination is performed. Usually the child will remain asleep for from five to ten minutes. If the patient awakens during the examination he can be reanesthetized quickly. The use of tetracaine hydrochloride to eliminate painful stimuli of the conjunctiva when it is grasped with forceps serves to prolong the time during which useful working conditions will prevail. Within ten minutes after the examination is completed the child has reacted fully and can be taken home.

TABLE I.—Age Distribution

Age	Number of Patients
Months	
2 to 3	6
3 to 6	41
Years	
1/2 to 1	54
1 to 2	100
2 to 3	135
3 to 5	55
5 to 7	9
Total	400

TABLE II.—Time of Induction

Number of Minutes	Number of Patients	"Unsatisfactory"
>3	348	55
3 to 5	40	4
5 to 7	12	1

Analysis of Cases

The technic described has been used for 400 eye examinations in a two-year period. The ages of the patients ranged from two months to seven years. Two hundred and eighty-nine (72 per cent) of the patients were between six months and three years old (Table I). Three hundred and forty-eight patients were anesthetized in three minutes or less, 40 patients were anesthetized in from three to five minutes, and 12 patients were anesthetized in from five to seven minutes. Eighty-two patients had to be reanesthetized because they recovered before ophthalmoscopy was completed. Sixty of these patients woke up in less than three minutes and were considered "unsatisfactory" (Table II). Only one to two minutes were required for reanesthetization. In the remaining 22 patients ophthalmoscopy was prolonged usually longer than ten minutes. For the 318 patients anesthetized once, the time used for examination ranged from three to twelve minutes.

Premedication with a belladonna drug was found necessary to prevent bradycardia.

TABLE III.—PREMEDICATION

Drug	Number of Patients	Bradycardia
Atropine sulfate	351	0
Atropine sulfate and Seconal Sodium	23	0
Scopolamine hydrobromide	18	4
Scopolamine hydrobromide and Seconal Sodium	8	2

At the beginning of the study atropine sulfate and scopolamine hydrobromide were used alternately according to the same dosage schedule (0.1 mg. per 15 pounds of body weight). Six of the 26 patients receiving scopolamine hydrobromide developed a bradycardia (a 25 to 60 per cent drop in the pulse rate), and the use of this drug was stopped. In the 374 patients who received atropine sulfate no bradycardia occurred even when apnea was produced with the halothane (Table III). Blood pressures were determined in 112 patients. The lowest systolic pressure recorded was 90 mm. Hg.

Complications were minor. Twelve patients coughed and 6 developed a transitory partial laryngospasm during induction. In 28 children apnea was inadvertently or deliberately produced without a significant change in pulse rate or the arterial blood pressure. Spontaneous breathing resumed within thirty seconds after artificial respiration was instituted. Only 5 children (1.2 per cent) vomited during induction or postoperatively.

Comment

A method has been described for eye examinations in ambulatory children. In the 400 cases reported it has proved to be safe, technically simple, and practical.

Halothane is a very potent drug. Only 1 to 1.5 per cent in the inspired atmosphere is needed to produce anesthesia.[4] The most serious side-effects reported have been cardiocirculatory effects (bradycardia and hypotension) and respiratory effects (depression of depth of respiration).[5] The use of intramuscular atropine sulfate for premedication eliminated any evidence of the former in this series. The bradycardia which occurred after the use of scopolamine hydrobromide was surprising even though atropine sulfate is more vagolytic.[6] Constant monitoring of the heart beat is essential, however, so that even minor changes in heart rate or rhythm will be readily diagnosed. The depression of respiratory depth is utilized as an end point for the open drop administration of the halothane. If the abdomen and chest are watched closely, the beginning of this depression occurs abruptly. The mask is removed immediately thereafter since further administration of the drug for even thirty seconds can produce apnea. If apnea is produced, artificial respiration for about thirty seconds will produce a resumption of spontaneous respiration. This should emphasize the importance of immediately available resuscitative equipment, such as a bag and mask and a source of 100 per cent oxygen.

Chloroform was used for many years for this procedure. The distinct advantage of halothane over chloroform is its greater safety with regard to depression of the cardiocirculatory system. If an overdose with halothane occurred in these children, apnea resulted and was readily treated. With chloroform, an overdose produced not only apnea but also bradycardia, arrhythmias, and arterial hypotension of such magnitude that a peripheral pulse was not palpable.[2] Even after resuscitation the child would remain gray and ashen. This was not observed following halothane administration.

The coughing and partial laryngospasm that occurred were a result of irritation of the respiratory tract by the halothane vapor. These ceased following the removal of the mask and allowing in a few breaths of room air. Induction was then continued using a slower rate of administration of the drug.

The infants under twelve months of age were the most difficult to anesthetize adequately with this technic. Of the 60 children who awoke in less than three minutes, 48 were in this age group. Respiratory depression occurred sooner and they recovered faster than the older children. However, reanesthetizing them for two minutes or less produced adequate anesthesia for as long as six minutes more. Perhaps a slower, more gradual induction with the halothane may be the way of "saturating" these small patients. In the children over one year only 12, or 6 per cent, awoke in less than three minutes.

Avoidance of psychic trauma was rarely attainable. Since most of these patients are under three years of age, reasoning with them to obtain their cooperation is difficult. Unfortunately they must often be restrained for induction. An attempt to use secobarbital premedication in addition to the atropine sulfate did not improve this situation unless large doses were used (over 1 mg. per pound of body weight). The use of the barbiturate also markedly prolonged the time the patient had to be kept in the clinic after the eye examination. It is felt, however, that the other advantages of the technic considerably outweigh this disadvantage.

Summary

A technic for anesthetizing ambulatory children for eye examination using open-drop halothane (Fluothane) anesthesia has been presented. Four hundred cases anesthetized with this method were analyzed. The advantages and disadvantages of the technic were reviewed. No serious complication occurred.

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Discussion

Samuel L. Lieberman, M.D., *North Tonawanda, New York.*—Halothane is used at the DeGraff Memorial Hospital for general anesthesia in ambulatory children. The pleasant, rapid induction, rapid emergence, minimal derangement of circulation and respiration, minimal nausea, plus the nonexplosive factor have made it our first choice in this type of case.

Dr. Schwartz has thoughtfully utilized topical tetracaine hydrochloride to minimize the amount of general anesthesia required. I have administered halothane until a procedure is completed. This open-drop technic seems the most practical in babies and infants. However, whenever possible, halothane is administered through a metered vaporizer. It is desirable to know the concentration which is being administered; also, the anesthetic action of nitrous oxide may be utilized, with an oral-pharyngeal arrangement. The anesthesia is delivered into the oral pharynx through the nipple attachment on the oropharyngeal airway. In older children a nasopharyngeal setup is very satisfactory. In all of these cases the halothane may be reduced in concentration gradually, and the patient may be anesthetized finally on nitrous oxide-oxygen.

It has been instructive and stimulating to listen to this carefully planned, interesting solution to a specific situation. Just one question about the topical tetracaine hydrochloride: Is there a problem of the insensitive cornea being injured postoperatively?

Herman Schwartz, M.D.—There has been no problem due to the insensitivity of the cornea.

Man is but a reed, the weakest in nature, but he is a thinking reed.—Pascal

Comparative Short-Term Evaluation of Triflupromazine Hydrochloride, Chlorpromazine Hydrochloride, and Placebo in Acutely Disturbed Patients

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THE advantages offered by the psychiatric service of a general hospital in the treatment of acutely disturbed patients are prompt admission and early diagnosis and institution of therapeutic measures. Rosenbaum[1] has pointed out another advantage, namely the distinct therapeutic value of treating the patient within his home community, because contact with the family and its emotional investment in the patient are maintained and he does not feel rejected and abandoned. However, as Rosenbaum has also pointed out, treatment in a general hospital is relatively expensive and the time a patient can spend there is usually limited. Consequently, the therapeutic measures which are taken must be effective and efficient.

Physical methods of treatment, such as shock and drugs, are generally integral parts of any therapeutic program of a psychiatric service in a general hospital. To provide significant results, the drugs must be chosen carefully. Therefore, the search continues for better and less toxic drugs which will eliminate or alleviate psychotic manifestations in the acutely psychotic patient.

Triflupromazine hydrochloride (Vesprin)* is a trifluoromethyl phenothiazine derivative which has been reported to possess more intense pharmacologic and therapeutic activity in chronic psychotic patients than chlorpromazine hydrochloride with less frequent side-effects and toxic complications,[2] and to have greater beneficial effect on psychotic manifestations than chlorpromazine hydrochloride or reserpine.[2,3] In these studies triflupromazine hydrochloride was administered for relatively prolonged periods. It was felt by the authors that a short-term study comparing the effects of triflupromazine hydrochloride and chlorpromazine hydrochloride in acutely ill patients would be of interest. Accordingly, a double-blind study was undertaken in which triflupromazine hydrochloride, chlorpromazine hydrochloride, and a placebo were administered to unselected patients admitted to the psychiatric service of this hospital. The results of the study indicate that triflupromazine hydrochloride has therapeutic value in the acutely disturbed patient and is suitable for use in treating these patients in a psychiatric service. The findings of the study are briefly reported here.

Methods

The present study compares the effectiveness of triflupromazine hydrochloride, chlorpromazine hydrochloride, and the placebo in modifying psychotic symptoms in a total of 48 acutely disturbed patients. The psychotic disorders present in these patients included schizophrenic reactions in 35 patients, affective disorders in 19 patients, and in the remaining 7 patients manifesta-

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* Supplied by E. R. Squibb & Sons, New York City.

tions of personality disorders or of an acute brain syndrome. Because of the relatively short stay of the patients in the hospital, an average of from twelve to fourteen days, evaluations of drug effectiveness were based on comparisons of psychopathologic manifestations present in the patients at the time of their discharge with those in the same patients on admission. However, approximately a third of the patients in the series were available for a follow-up study after their discharge and some of them went into remission after discharge. Those patients in remission were classified as "improved" for purposes of this study. Some additional patients whose acute psychotic symptoms had cleared by the time of their discharge were also classified as "improved," but they were discharged to state hospitals for convalescence and/or further treatment because of economic or social reasons.

The clinical considerations chosen as parameters for this study were as follows:

1. The objective clinical improvement observed in the patient during treatment, based on a psychiatric evaluation of his mental status, correlated with his patterns of ward behavior.
2. The number of electroconvulsive shock treatments required to achieve the observed improvement.
3. The incidence of undesired side-effects.

The criteria used to denote "improvement" in the 3 classes of psychotic disorders present in the patients under study were as follows:

In Schizophrenic Reactions.—The disappearance of hallucinatory phenomena and delusional thinking, an increase in intellectual functioning associated with appropriate affective tone, the absence of assaultiveness where it had been present, and increased socializing in previously withdrawn patients.

In Affective Disorders.—*In Depression.*—Absence of psychomotor retardation, improved eating and sleeping patterns, and renewed interest in social activity.—*In Manic States.*—Retardation of activity to appropriate levels; absence of hypermotility, loose intellectualization, and abnormal initiative; and resumption of normal sleep patterns.

Acute Brain Syndromes and Personality Disorders.—Disappearance of admission symptom complexes, such as agitation, delirium, and hallucinoses, or "acting out" impulsive behavior and uncontrolled aggression.

Treatment Procedures

The two drugs under study and the placebo tablets were stored in the hospital pharmacy and were prescribed under code numbers. The tablets were identical in size, shape, color, appearance, and taste so that the identity of the tablet being administered was unknown to the hospital personnel participating in the study, including the authors, until after tabulation of the results. (During the course of the study it became evident to the authors that the coded tablets being given to 3 agitated patients had little apparent effect so that the medication for these 3 patients was changed from what was later identified as the placebo to one of the active drugs.) Drugs were prescribed in multiples of 4 tablets for oral administration at four regular times each day (9:00 A.M., 1:00 P.M., 5:00 P.M., and 9:00 P.M.), the actual ingestion of the tablets being supervised by the nursing staff. Triflupromazine hydrochloride was administered in the form of tablets containing 20 mg. of the drug with total daily doses ranging from 80 to 320 mg. (4 to 16 tablets). Chlorpromazine hydrochloride tablets each contained 50 mg. of the drug and total daily doses varied from 200 to 800 mg. (4 to 16 tablets).

Electroconvulsive therapy, modified by the administration of Pentothal sodium and succinylcholine chloride, as described by Holt,[4] was used as indicated, namely as an aid to break up patterns of delusional thinking, to eliminate hallucinatory manifestations, to improve patient-milieu rapport, and to modify emotional tone. In the affective disorders electroshock therapy was employed to relieve depressive symptoms and to control manic behavior. Shock therapy is not indicated and was not used in the pa-

TABLE I.—COMPARISON OF RESULTS IN 48 ACUTELY DISTURBED PATIENTS WITH TRIFLUPROMAZINE HYDROCHLORIDE, CHLORPROMAZINE HYDROCHLORIDE, OR PLACEBO

Medication	Type of Disorder	Number of Patients	Results		Remarks
			Improved	Unchanged	
Placebo	Schizophrenic reactions	8	4	4	Two schizophrenic patients and 1 patient with mania who were changed to other medication after one week's treatment with placebo showed no response.
	Affective disorders	4	1	3	
	Other*	3	1	2	
TOTALS		15	6	9	
Chlorpromazine	Schizophrenic reactions	7	5	2	
	Affective disorders	5	4	1	
	Other*	3	2	1	
TOTALS		15	11	4	
Triflupromazine	Schizophrenic reactions	12	11	1	In the patient with anxiety reaction, triflupromazine hydrochloride was discontinued because of elevated alkaline phosphatase.
	Affective disorders	5	5	0	
	Other*	1	0	1	
TOTALS		18	16	2	

* Acute brain syndrome, personality disorders, and neuroses.

TABLE II.—USE OF ELECTROCONVULSIVE THERAPY IN PATIENTS UNDER STUDY

Treatment Group	Number of Patients	Average Hospital Stay (Days)	Patients Given Electric Convulsive Therapy		Average Number of Treatments		Average Number of Treatments	
			Number	Per Cent	Per Group	Per Patient	Schizophrenic Patients	Patients with Affective Disorders
Placebo	15	14	9	60	3.5	6	6.6	5
Chlorpromazine hydrochloride	15	12	9	60	3.3	5.5	3.5	5
Triflupromazine hydrochloride	18	12	11	61	2.6	4.5	2.2	5

tients in this series suffering from brain syndroms or personality disorders including anxiety reactions.

For purposes of this study the patients were divided into three groups according to the drug administered; these three groups were subdivided into three more groups according to the type of psychotic disorder present in the patients.

Results

Results of treatment are summarized in Table I, and the number of electroshock treatments given to the patients under study are shown in Table II. Reference to these tables shows that the number of patients who improved included 6 of the 15 patients (40 per cent) on placebo, 11 of the 15 patients (73 per cent) who received chlorpromazine hydrochloride, and 16 of the 18 patients (88 per cent) treated with triflupromazine hydrochloride. The corresponding number of patients who showed no change during treatment were 9 of the 15 patients in the placebo-treated group, 4 of the 15 patients in the chlorpromazine hydrochloride-treated group, and 2 of the 18 patients in the group receiving triflupromazine hydrochloride.

From Table II it is evident that approximately the same percentage of patients from each group was given electroshock therapy. However, the number of treatments required by the schizophrenic patients treated with chlorpromazine hydrochloride was strikingly lower than the number required by the patients on the placebo, while the number of treatments required by the schizophrenic patients receiving triflupromazine hydrochloride was even lower. Also, the placebo-treated patients stayed in the hos-

TABLE III.—Incidence of Side-Effects

Treatment Group	Side-Effect (Number of Patients) Lethargy	Extrapyramidal	Dermatitis	Jaundice	Depressed White Blood Count	Elevated Alkaline Phosphatase	Total Number of Patients	Drug Withdrawn (Number of Patients)
Placebo	0	0	0	0	0	0	0	0
Chlorpromazine hydrochloride	2	0	2	1	1	0	6	1
Triflupromazine hydrochloride	0	1	0	0	0	1	2	2

pital on an average of two days longer than the patients treated with the two phenothiazine compounds. The average number of electroconvulsive therapy treatments required by patients with affective disorders was the same for each of the three treatment groups.

Side-effects developed in 6 of the 15 patients treated with chlorpromazine hydrochloride, 2 of the 18 patients treated with triflupromazine hydrochloride, and in none of those patients in the placebo-treated group. The reactions observed and their incidence of development appear in Table III. The patient receiving chlorpromazine hydrochloride developed transitory jaundice without evidence of infection or a rise in viral titer. As soon as symptoms of jaundice developed in this patient chlorpromazine hydrochloride was withdrawn. The jaundice disappeared within ten days after discontinuance of the drug. Triflupromazine hydrochloride was withdrawn from both patients who developed side-reactions while under treatment with that drug. These included 1 patient who exhibited elevated alkaline phosphatase values and another patient who developed a Parkinson-like syndrome characterized by nuchal rigidity and spasm, tremor, salivation, and ataxia. All of these reactions were reversible, the extrapyramidal symptoms clearing within forty-eight hours after the drug was withdrawn.

Comment

The results of this study indicate that triflupromazine hydrochloride has a definite value in the treatment of the acutely disturbed patient and particularly in the treatment of the acute schizophrenic patient. Triflupromazine hydrochloride apparently was considerably more effective than the placebo and somewhat more effective than chlorpromazine hydrochloride in modifying psychotic behavior in the acutely schizophrenic patient. This is shown by the fact that a higher percentage of these patients showed improvement and required fewer electroshock treatments during treatment with triflupromazine hydrochloride than they did during treatment with the other agents. Moreover, the high percentage of all the patients treated with triflupromazine hydrochloride who improved (88 per cent) within a relatively short time (twelve days) demonstrates the apparent suitability of the drug for use in a psychiatric unit of a general hospital where the time, as well as the expense, involved in the treatment of acutely disturbed patients must be considered by the therapist.

The amount of money saved on the shorter length of hospitalization required and on the number of shock treatments needed was considerable for those patients receiving treatment with triflupromazine hydrochloride. In this connection it might be well to mention one point. The authors feel that if the daily dosage of either of the two active drugs used in this study could have been increased, for some of the schizophrenic patients in particular, even less convulsive therapy would have been needed. The size and potency of the tablets, however, make larger doses impracticable. Patients just could not be expected to take more than 16 tablets a day.

The fact that 40 per cent of the patients given a placebo showed improvement once again demonstrates the therapeutic effectiveness of suggestion in some patients.

Summary

A double-blind study was carried out in the psychiatric unit of a general hospital comparing the effectiveness of triflupromazine hydrochloride, chlorpromazine hydrochloride, and a placebo in the treatment of a total of 48 unselected acutely disturbed patients. Electroconvulsive therapy was administered adjunctively to these patients as indicated.

Sixteen of the 18 patients (88 per cent) treated with triflupromazine hydrochloride improved as compared with 11 of the 15 patients (73 per cent) treated with chlorpromazine hydrochloride and 6 of the 15 patients (40 per cent) given a placebo. Schizophrenic patients treated with triflupromazine hydrochloride required approximately one-third the number of shock treatments as those given the placebo and approximately two-thirds the number of those required by the chlorpromazine hydrochloride-treated patients. Patients with affective disorders received on an average the same number of shock treatments regardless of whether they received triflupromazine hydrochloride, chlorpromazine hydrochloride, or a placebo. The period of hospitalization required before discharge by the patients under treatment with triflupromazine hydrochloride or with chlorpromazine hydrochloride was an average of twelve days, as compared with fourteen days for the placebo-treated group.

A higher incidence of side-effects developed in patients on chlorpromazine hydrochloride (6 of 15 patients) than on triflupromazine hydrochloride (2 of 18 patients). Medication was withdrawn from 1 patient on chlorpromazine hydrochloride who developed jaundice and from both patients on triflupromazine hydrochloride who developed side-effects. These effects were reversible and disappeared in every case soon after the drug was withdrawn.

From the results obtained and the observations made during the course of this study, it is the impression of the authors that triflupromazine hydrochloride has a value in the treatment of acutely disturbed patients and that it is suitable for use in the treatment of these patients in the psychiatric unit of a general hospital.

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How Do You Recognize a Drug Addict?

How do you recognize a drug addict? Not very easily. Because addicts appear normal physically and mentally, their detection is difficult. Pupillary constriction is one warning signal, but only in addicts who have not yet developed tolerance to drugs. Other signs to look for are needle marks, scars, abscesses, and tattoo marks. The latter are often used by addicts to conceal needle marks. The most definitive symptom of all, however, is the development of the characteristic withdrawal syndrome. Among the most common withdrawal symptoms are weakness, restlessness, appetite loss, leg pain, back pain, and vomiting.—*Patterns of Disease, Parke, Davis & Company*

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Clinical Value of the Indirect Methods for Determination of Residual Urine Volume

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In studying patients with urinary disease it is often necessary to determine the amount of residual urine in the bladder. The importance of this determination lies in its being the most reliable test of decompensation of bladder emptying. Residual urine volume is usually measured directly by catheterization under aseptic precautions immediately after the patient has voided. Attention recently has been called to the fact that catheterization may be responsible for the production of serious infections.[1,2] It has been demonstrated that bacteria normally present in the distal portion of the urethra can be transferred into the bladder by the passage of a catheter despite the use of an aseptic technic.[3,4] The recent indictment of the catheter as one of the etiologic factors in the pathogenesis of urinary infection has led us to review all the indirect methods of determining residual urine volume in the bladder so as to ascertain their accuracy, limitations, and practicability and so assess their clinical usefulness.

Indirect Methods

Assessing Symptoms.—Patients with significant residual urine will usually exhibit increased frequency of urination, dysuria, urgency, and possibly diminution in caliber and force of the urinary stream. It is well known, however, that symptoms are extremely variable. Many patients who have chronic obstruction with a large amount of residual urine may be completely unaware of their disease, while those with little or no residual urine may manifest many symptoms, depending on the degree of inflammation or irritability in the bladder. There is little doubt, therefore, that symptoms alone are not reliable guides for assessing the presence or amount of residual urine.

Suprapubic Percussion.—Bladder dullness caused by residual urine may be demonstrated by light-finger percussion of the lower portion of the abdomen during physical examination. This is very useful in those patients with large amounts of residual urine or acute urinary retention. A distended bladder should always be included in the differential diagnosis of any mass arising out of the pelvis.[5] There are several limitations to this method. For one, suprapubic dullness is easily confused with pelvic or other abdominal tumor masses. It is of little value when dressings, dense lower abdominal scars, or fresh operative wounds are present. Also, it is not reliable in cases of postoperative urinary distention in which the percussion note remains tympanitic because of a coexisting paralytic ileus. Our experience has shown that detectable suprapubic dullness usually appears after 150 cc. of bladder filling in the average adult male.[6]

PHENOLSULFONPHTHALEIN TEST. — Phenolsulfonphthalein (P.S.P.) was chosen by Rowntree and Geraghty[7] in the early part of the century for use in a test of renal function because of its elimination by the kidneys, nontoxicity, and ease of measurement colorimetrically. It was demonstrated by Shaw in 1925[8] that the curve of excretion was depressed according to the extent of disease in the kidneys. The normal curve of excretion depends on three factors: (1) prompt presentation of the dye to the kidneys, (2) prompt excretion by the renal tubules, and (3) prompt conduction of the urine in adequate volume past the urethral meatus.

The delayed type of P.S.P. curve was subsequently defined, as a result of clinical experience, as a delay in the appearance time and peak excretion so that the two- or three-hour total excretion is normal. This was shown to be due to a delay in the transport of the excreted dye from the bladder because of a large amount of retained urine or to renal damage and delay in excretion into the renal pelvis.[9]

It became routine in some clinics to scrutinize the fractional P.S.P. excretion curve of each patient for evidence of retained urine as well as renal failure. Ormond in 1951[10] pointed out the usefulness of the one-hour P.S.P. test in ruling out the presence of a significant residual urine when excretion is 65 per cent or more. Assuming that 60 per cent is the average one-hour excretion, the residual urine could be calculated as follows:

$$\text{Residual Urine} = \frac{60 - P}{P} \times U$$

where U equals the amount voided in one hour and P equals P.S.P. excretion in one hour.

For practical purposes the chief value of this method is that it allows determination of the presence of residual urine. It is still necessary to prove that renal function is normal even when the test result is positive. This method is inconclusive in patients who have long-standing obstructive uropathy with secondary renal impairment, a situation which often requires a residual urine determination. It is also inconclusive in patients with primary renal disease, diabetic nephropathy, and chronic pyelonephritis and in elderly cardiac patients with poor renal reserve.

In our experience the variation of the P.S.P. excretion among normal individuals is quite large, 60 to 80 per cent in two hours, so that methods by which residual P.S.P. is measured start from a variable base line. They are time-consuming and require a good deal of supervision of the patient. However, they are inexpensive and safe. They require hydration of the patient, exact collection of the specimen, and a patient who can cooperate by voiding at the proper time. A danger that should be remembered is that overhydration can throw a borderline compensated patient into urinary retention.

A similar ingenious mathematic approach to the calculation of residual urine was recently proposed by Cotran and Kass,[11] who showed that 86 to 97 per cent is excreted in three hours and only 0 to 4.5 per cent during the fourth hour. The fourth-hour excretion is considered negligible so that any dye appearing during the fourth hour is assumed to be present because of incomplete emptying of the bladder. Residual urine could then be calculated as follows:

$$UR = \frac{U_2 \times V_2}{U_1 - U_2}$$

where U equals the residual urine, U_1 the amount of P.S.P. voided in the first three hours, U_2 the amount of P.S.P. voided in the fourth hour, and V_2 the volume of urine voided in the fourth hour. These authors have found this method accurate to within 5 cc. when compared with catheterization determinations.[12]

RADIOGRAPHIC METHODS.—Heritage[13] and Beer[14] demonstrated that residual urine can be detected after intravenous urography if radiopaque media are still present in the bladder after the patient has voided. Several ingenious approaches have been devised to quantitate the volume of residual urine by measuring the size of the bladder shadow. Brailsford *et al.*[15] estimated the quantity of residual urine by comparing the radiographic silhouette of the bladder with known standards. Their results for large volumes were accurate to within 1 ounce. Bretland[16] estimated the volume of the bladder on excretory urograms by correlating the bladder size with the volume of urine voided immediately after x-ray. He found that the method became less accurate statistically when dealing with small volumes, the error becoming a larger fraction of the total volume.

Limitations of the radiographic methods are numerous. They depend on good renal function and adequate dehydration. They are expensive and necessitate radiographic exposure. The result is influenced by variables in technic, such as position of the patient, position of the x-ray tube, and degree of pelvic tilt and physical habitus of the patient. Irregularities of the bladder due to diverticula and space-occupying lesions may also interfere with accuracy.

It should be noted, however, that the degree of accuracy is adequate for most measurements of residual urine below 100 cc. Most urologists draw the line of normal at 30 to 60 cc. They rarely advise operative interference for vesical neck obstruction until the residual urine rises to 60, 90, or even 120 cc. in the absence of other compelling indications.

Radiographic Experiment

METHOD.—Because of the semiquantitative nature of existent radiographic methods, we attempted to formulate some mathematic relationship between bladder shadows and known bladder volumes. We measured retrograde cystograms made with known volumes of bladder content, discounting any irregularities of the bladder shadow. By using retrograde cystograms we eliminated possible variable factors due to dehydration and renal dysfunction which might have influenced the intensity of opacifications in excretory cystograms. We controlled the concentration of radiopaque media in all our cases by using 2.5 per cent sodium iodide in order to eliminate varying degrees of density of the bladder shadow. We maintained constant tube position and controlled pelvic tilt and physical habitus by repeating the cystogram in the same patient with varying degrees of filling.

These retrograde cystograms were performed on unselected patients on the Urology Service by filling the bladder through a number 18 French catheter with measured amounts of 2.5 per cent sodium iodide in 25-cc. increments. Our aim was to define volume of filling as a function of bladder area and to use this formula to predict residual urine volume on postvoiding excretory cystograms of the same patient. The area of the bladder shadow was calculated by using an ellipsoid as the ideal, disregarding any small irregularities of the distended bladder. The following formula was used:

$$\text{Area} = \pi AB$$

where A equals length of the longitudinal diameter, B the length of the transverse diameter, and π 3.14.

In the second part of the study bladder area in the anteroposterior projection, including all irregularities of bladder outline,

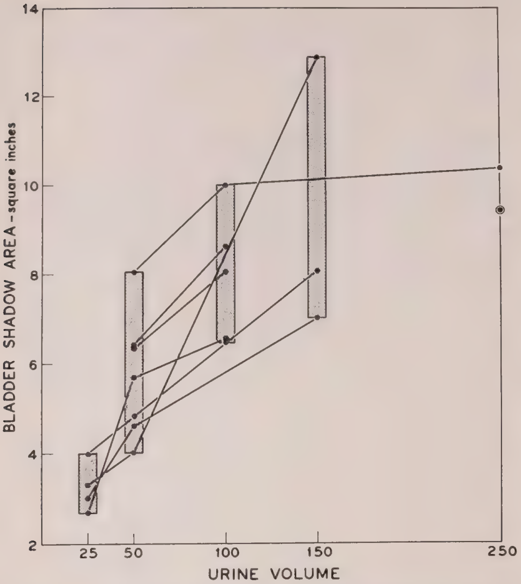

Fig. 1. Relation of area of bladder shadow in anteroposterior view to volume (cubic centimeters) of opaque medium instilled to produce cystogram. (Isolated points represent single cases. Vertical bars represent range of area of bladder shadow for each volume. Horizontal and diagonal lines connect points on graph for same patient.)

was measured directly from the x-ray film with a planimeter.

Results.—The findings in 7 patients substantiate the findings of Bretland[16] in his study of excretory cystograms, further evidence that this method is accurate within fairly wide limits and is semiquantitative (Table I, Figs. 1 and 2). Most of the changes in volume occurred in the first 100 cc. of bladder filling. It is also evident that area closely paralleled volume in each patient so that the slope for each patient remained fairly constant. However, the range of measurement for any one volume was so wide that accurate predictions of volume from any one cystogram were impossible from the accumulated data. For this reason we did not continue attempts at standardization of our technic to apply to measurements of excretory cystograms. We felt that it would not provide enough increased accuracy to justify the time and labor of the refinement of technic.

Comment

It is our belief that residual urine determinations should not be equated rigidly in the clinician's mind with any one method. We rarely use the catheter to screen patients with lower urinary tract symptoms for residual urine but usually rely on the postvoiding excretory cystogram. In those patients who show a moderate degree of retention on postvoiding cystograms or in those who may require further cystoscopy or surgery, catheterization is used to measure the volume more accurately. The fractional P.S.P. test usually is reserved for confirmation of results of the other indirect methods in younger patients in whom there is little question of impaired renal function. Suprapubic percussion is done in every patient; if dullness is discovered, percussion is repeated after the patient has been given the opportunity to void in order to see if it persists.

In the last analysis, in evaluating the clinical significance of residual urine, small residuals usually can be ignored and large residuals are detected by all methods. Here the indirect methods are as satisfactory as the direct ones and catheterization is used as much for therapy as for diagnosis. In

TABLE I.—Planimeter Bladder Area in Relation to Bladder Volume (Instilled Opaque Medium) in 7 Patients

Bladder Volume (cc.)	Bladder Area (sq. in.) in 7 Patients						
	1	2	3	4	5	6	7
25	3.33	2.99	3.98	2.69	...	...	..
50	4.01	4.6	4.81	5.69	8.05	6.35	6.4
100	...	...	6.45	6.54	10.1	8.03	8.6
150	12.89	7	8.05	...	...	...	..
250	...	...	...	...	10.36	...	..

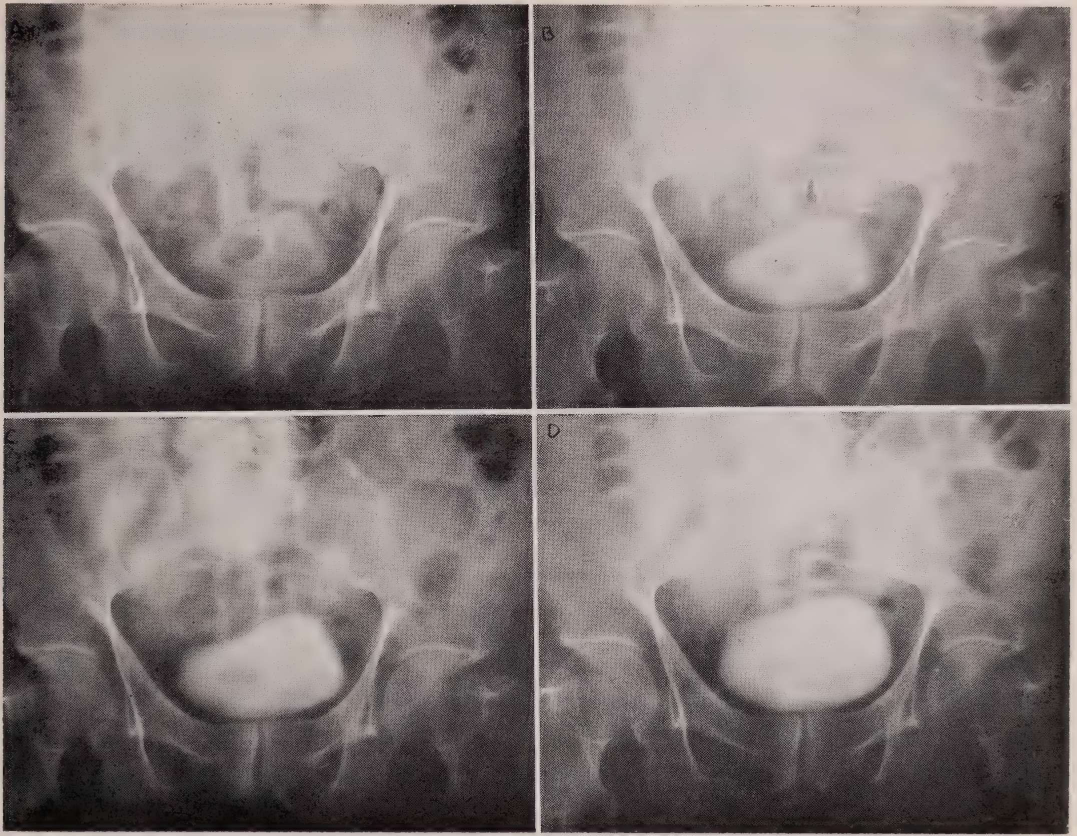

FIG. 2. Representative changes in cystogram with filling (Patient 3, Table I). ((*A*) 25 cc. (*B*) 50 cc. (*C*) 100 cc. (*D*) 150 cc.)

the first group the use of the catheter should be avoided.

The problem arises with the intermediate group, who show about 2 to 4 ounces of residual urine and in whom all indirect methods may be inconclusive. In this group, if clinical decisions rest on a determination of residual urine volume, very often a catheterization and sometimes even several catheterization determinations may be necessary. Residual urine may vary from one determination to the next in the same individual when voiding is unsatisfactory because of pain, weakness, emotion, or poor position; it even may vary in normal individuals, particularly after periods of prolonged retention.[17] It must be emphasized that precautions against infection and the calculated risk of introduction of bacteria must be considered in the decision. Catheterization must be considered a minor surgical procedure and every aseptic precaution employed.

The larger problem of when and when not to catheterize is not discussed herein. The clinician is often presented with a dilemma: A lower urinary tract infection may be aggravated or induced by catheterization, yet, if one exists, it may not respond to therapy unless the obstruction is discovered and relieved. This dilemma is resolved more readily if it is recognized and each patient individualized. If the indirect methods are used to their fullest advantage and the catheter used conservatively and with proper technic, it usually is not difficult to obtain the necessary information.

Summary

Indirect methods for determining the volume of residual urine are enumerated and

their clinical value assessed.

1. It is generally agreed that symptoms correlate poorly with the amount of residual urine.

2. Suprapubic percussion in order to discover dullness is usually of value in demonstrating residual urine of 150 cc. or more and does not rule out lesser amounts of residual urine.

3. The fractional two-hour P.S.P. test is accurate for this purpose only when renal function is normal. We have found its chief value to be in the demonstration of an absence of residual urine; even then, individual variations from optimum excretions may simulate small amounts of residual urine.

4. Radiographic methods are useful in ruling out the presence of residual urine and in estimating the amount of residual urine with fair accuracy after experience with the method. We believe that the postvoiding cystogram should be routine in all excretory urograms.

5. We confirmed the finding of previous investigators that bladder volume does not bear a constant mathematic relationship to the area of the bladder shadow.

6. The choice of any method depends on the entire clinical picture. The most accurate and reliable determination is still the direct approach by catheterization. However, if conditions allow, all patients should be screened by the indirect methods first in order to reduce the number of catheterizations and thereby the septic hazards.

7. The clinical value of the indirect methods is highest in those patients with very small or very large residual urines in whom the catheter can be avoided entirely for diagnosis.

ACKNOWLEDGMENT.—We are indebted to Charles Patt of the Graduate School of Mathematical Sciences, Yeshiva University, for help in our calculations.

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(*Number seventy-two in a series on Recent Advances in Medicine and Surgery*)

Times goes, you say? Ah no!
Alas, Time stays, we go.—AUSTIN DOBSON

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by J. W. PICKREN, M.D. MAY 17, 1958

Discussed by FRANK MARCHETTA, M.D.

Case History

A seventy-six-year-old male was admitted to Roswell Park Memorial Institute with the chief complaint of progressive hoarseness and dysphagia of four months duration. The patient was almost totally deaf—a situation existing for fifteen years—to the extent that written questions were required to obtain a history. He had lost weight in the last few months prior to admission. He had no other symptoms and said that he had not seen a doctor for fifty years.

Physical examination on admission revealed a blood pressure of 166/74, pulse 90 per minute, respirations 18 per minute, and a temperature of 37 C. He was edentulous. Indirect laryngoscopy revealed a large fleshy pedunculated tumor measuring $2^1/_2$ cm. in diameter situated in the glottic inlet on the right arytenoid fold. This lesion moved up and down with breathing and acted in a ball-valve fashion.

A biopsy of this lesion showed small hyperchromatic cells arranged in large groups that infiltrated the stroma. The surface squamous epithelium was intact in the specimen. Blood studies revealed a hemoglobin of 12.6 Gm. per 100 ml. and a white blood count of 21,000 per cu. mm. The differential showed 77 per cent polymorphonuclears, 7 per cent stab forms, 15 per cent lymphocytes, and 1 per cent monocytes. The nonprotein nitrogen was 41 mg. per cent and the alkaline phosphatase 7 King-Armstrong units. The urine examination showed nothing of note. A chest roentgenogram taken on admission showed moderate emphysema and some accentuation of the bronchovascular markings but no definite evidence of pulmonic infiltration. The upper mediastinum was somewhat extended and increased in density but the trachea was in the midline. An operation was performed on the thirteenth hospital day.

Discussion

FRANK MARCHETTA, M.D.: This elderly man complained of hoarseness and dysphagia of four months duration. Although he had noted some associated weight loss, he had no other complaints. The symptoms direct our attention to the patient's larynx and hypopharynx but otherwise are of no further value in establishing the diagnosis. It does not seem likely that the fifteen years of deafness had any association with the patient's difficulties. Abnormal physical findings were present in the larynx, mediastinum, and blood. These will be discussed individually.

Indirect laryngoscopy revealed a large fleshy pedunculated tumor $2^1/_2$ cm. in diameter situated in the glottic inlet on the right arytenoid fold. This lesion moved up and down with breathing and acted in a ball-valve fashion. The surface epithelium was intact. The gross description of the lesion suggests a pedunculated benign tumor. There are various benign tumors which occur in this area:

1. Adenoma. Adenoma of the larynx is rare. When it does occur it is usually cystic. Biopsy establishes the diagnosis.

2. Fibroma. True fibromas are very rare. The term "fibroma," however, is often applied to benign tumors of inflammatory or traumatic origin and to organizing hematomas. The diagnosis is made by biopsy.

3. Neurofibroma. This tumor arises from the neurolemmal sheath and may occur anywhere in the body. In the nose, throat, and hypopharynx it usually occurs as a solitary tumor. The surface epithelium is intact, and the tumor can be pedunculated. Although rarely occurring in the larynx, a few cases have been reported.

4. Angioma. The term "angioma" should be reserved for true neoplasms which arise from blood or lymphatic vessels. The color is sometimes helpful in establishing the diagnosis. The final diagnosis is made by biopsy.

5. Granular cell myoblastoma. This is a rare tumor which may occur in the larynx and hypopharynx. The cells are polygonal and contain granular cytoplasm. The surface epithelium covering these tumors undergoes changes which often simulate the microscopic appearance of squamous cell carcinoma.

6. Myoma. Benign muscle tumors have been reported in the larynx but occur rarely.

7. Myxoma. Myxomas are composed of loose connective tissue containing branches of stellate cells in a matrix of viscid mucoid material. These tumors are more frequently seen than some of those previously mentioned.

8. Chondroma. Chondromas of the larynx arise from the thyroid or the cricoid cartilages. The symptoms of chondroma are dysphagia, hoarseness, and dyspnea. Because of the slow growth of this tumor the symptoms are generally insidious in their development. If the tumor progresses outwardly, a firm hard tumor mass may be present in the neck; if progress is inward, the tumor can be visualized by endoscopy. X-rays and planograms are helpful in establishing the diagnosis. As might be expected, an endolaryngeal biopsy specimen is extremely difficult or impossible to obtain.

9. Lipoma. Lipomas may be pedunculated. The diagnosis is easily established by biopsy.

There are several other benign lesions which are not neoplastic but which present themselves as masses in the larynx and may produce symptoms of dysphagia and hoarseness:

1. Hematoma. A hematoma usually results from trauma or severe coughing. One sees these lesions in all stages of development and organization. It is recognized grossly as a rounded red mass which is not pedunculated. The surface epithelium is usually intact. The diagnosis is made by biopsy.

2. Polyps. Polyps may become quite large and pedunculated. The diagnosis is easily established by biopsy.

3. Mucous cysts. These cysts are formed because of obstruction of a duct and accumulation of secretion in a mucous gland. The most common site is on the anterior surface of the epiglottis and the next most common site is on the vocal cord. The surface epithelium is smooth in appearance. Biopsy is accompanied by a gush of thick mucoid material which evacuates the cyst.

4. Eversion of the ventricle. In this condition the ventricle everts and protrudes into the laryngeal lumen causing hoarseness and impairment of speech. The lesion grossly has the appearance of a cyst. The diagnosis is made by direct laryngoscopy and biopsy.

5. Laryngocele. A laryngocele is an anomalous air sac communicating with the laryngeal ventricle. These are probably

congenital lesions and may represent the remnants of the huge air sacs seen in anthropoid apes. A laryngocele usually causes bulging of the ventricle. In some instances the air sac herniates through the thyrohyoid membrane and becomes visible on the outside of the neck. Symptoms are impairment of the voice and possible dyspnea. Planograms are extremely helpful in establishing the diagnosis.

6. Granuloma. Granulomas are caused by infections. The specific granulomas include tuberculosis and syphilis. Nonspecific granulomas are similar in appearance but the etiology is usually less evident. The lesion has a granular appearance and the surface is ulcerated.

Other benign tumors are amyloid tumors, xanthomas, and aberrant thyroid tissue. Biopsy readily establishes the diagnosis.

A biopsy from the lesion of the patient under discussion showed small hyperchromatic cells arranged in large groups that infiltrated the stroma. This description of the biopsy specimen rules out the several benign lesions listed and suggests the presence of a malignant lesion. Several should be considered:

1. Squamous cell carcinoma. Squamous cell carcinoma is the most common malignant lesion of the larynx. In most instances the gross appearance of the lesion is quite characteristic. The lesion is granular and ulcerated and may be exophitic, infiltrative, or flat and sessile. The protocol states that the surface epithelium over the patient's tumor was intact. In taking a biopsy one does not always obtain the margin of transition from normal epithelium to carcinoma. The carcinoma can undermine the normal epithelium for several centimeters, thus giving the gross appearance of a submucosal tumor. Most squamous cell carcinomas of the larynx are fairly well differentiated and it is rare to see a tumor of epithelial origin with a histologic picture as described in the protocol. Furthermore, squamous cell lesions usually are not pedunculated although they may be papillary.

Lane[1] described a pedunculated lesion involving the larynx that is composed of two types of cells. One is a definite squamous cell carcinoma and the other is a bizarre mesenchymal cell lesion. He uses the term "pseudosarcoma" in association with squamous cell carcinoma in referring to the latter tumor. I would exclude both Lane's tumor and the more common squamous cell carcinoma on the basis of the gross and microscopic characteristics of the patient's biopsy specimen.

2. Extramedullary plasmacytoma. This is a rare tumor but may involve the larynx as a single isolated lesion. There is little in the laboratory findings of our patient to support this diagnosis. Additional studies, such as urine examination for Bence-Jones protein, electrophoretic serum protein patterns, bone marrow examination, and roentgenograms of the skeleton, would have been desirable. Although the protocol did not mention the term "plasma cell," the histologic description permits one to entertain this as a very likely diagnosis.

There are two additional findings in the protocol which will be discussed. The first is the elevated white blood cell count, suggesting a generalized disease process, and the second is the increased density in the upper mediastinum, suggesting a lymphoma.

3. Leukemia. Leukemia infiltrates may occur in the submucosa of the pharynx. The scant description of the microscopic section is compatible with this diagnosis. These lesions grossly, however, are nodular and frequently ulcerated. The normal hemoglobin content and the lack of abnormal granular cells militate against this diagnosis.

4. Lymphosarcoma. Lymphosarcoma rarely gives rise to a pedunculated mass. Leukocytoses and mediastinal enlargement are commonly seen in lymphosarcoma. A bone marrow examination and additional x-ray studies of the superior mediastinal mass would have been helpful. What do the roentgenograms show?

Egor Jakimow, M.D.: The preoperative

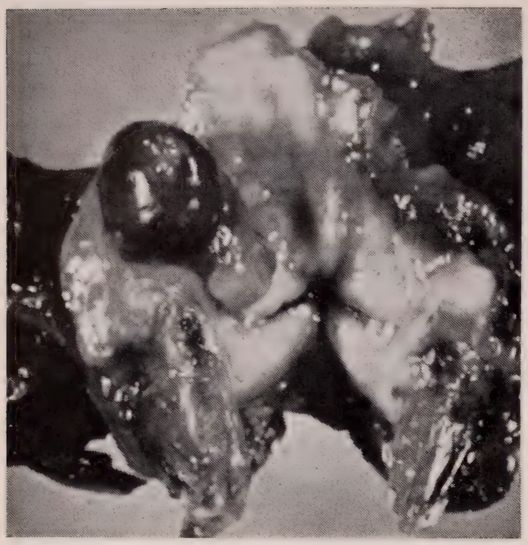

Fig. 1. Surgical specimen of larynx opened along posterior wall shows smooth pedunculated lesion arising from left aryepiglottic fold. Note lack of ulceration.

chest plate is not unusual for a man of this age. The widening of the upper half of the mediastinum most likely represents dilatation of the great vessels.

Dr. Marchetta: If the mediastinal density mentioned in the protocol is merely dilatation of the great vessels my forthcoming diagnosis is on rather shaky ground. My final diagnosis is lymphosarcoma. I base this diagnosis on the fleshy appearance of the tumor, the histologic description, the slight increase in leukocytes, and the density described in the superior mediastinum. However, the chest roentgenograms do not in my opinion appear abnormal. Therefore, I should like to give as an alternate diagnosis plasmacytoma. Extramedullary plasmacytoma can occur as a solitary lesion, is often pedunculated, and is composed of small, dark-staining cells.

Diagnoses

Clinical.—*Anaplastic squamous cell carcinoma of larynx.*

Dr. Marchetta.—*(1)Lymphosarcoma of larynx* or *(2)plasmacytoma of larynx.*

Anatomic.—*Plasmacytoma of larynx.*

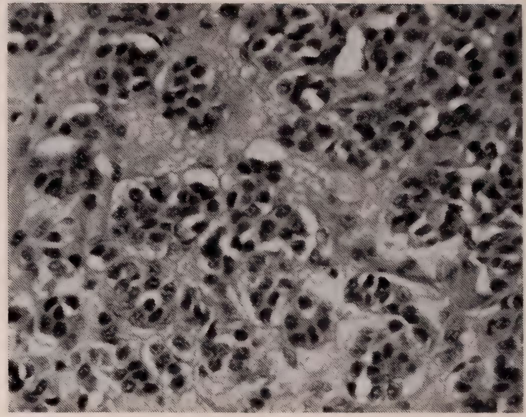

Fig. 2. Microscopic view of larynx specimen showing anaplastic plasmacytes arranged to form small clumps.

Pathologic Report

Henry Stoll, M. D.: A radical laryngectomy with bilateral lymph node dissection was carried out on this man because a diagnosis of anaplastic carcinoma was made on the biopsy material. Grossly the mass was polypoid and rather soft (Fig. 1). However, a review of the slides along with the study of the surgical specimens revealed that the cells are actually plasmacytes (Fig. 2). The eccentric nuclei contain clumps of chromatin arranged to form radiating spokes. The patient has a plasma cell lesion. Three diagnoses must be considered: (1) plasma cell granuloma, (2) multiple myeloma, and (3) extramedullary plasmacytoma.

It is well known that inflammatory reactions in the upper respiratory tract and oral cavity are often associated with masses of plasma cells. However, in these inflammatory masses one finds Russell bodies and a variety of inflammatory cells intermixed with the plasma cells.[2] The absence of these features suggest a true neoplasm and not a granuloma. No Russell bodies were encountered and the mass was composed of almost a pure culture of plasmacytes (Fig. 2).

In a patient with multiple myeloma in which there is soft tissue involvement other features of the disease, such as bone marrow involvement, Bence-Jones proteinuria, and abnormal electrophoretic patterns, usually are found. In this patient postoperative studies failed to show any of these abnormalities. In addition, the patient has been closely observed for twenty-one months without showing any stigmas of multiple myeloma.

Extramedullary plasmacytoma makes up $^1/_2$ of 1 per cent of the malignancies of the upper respiratory tract and oral cavity. Although they are more frequently found in the nasopharynx, nasal cavity, nasal sinuses, and tonsils, a number of cases involving the epiglottis and glottis have been reported.[3] This lesion most commonly occurs singly but occasionally more than one focus is present. Approximately one third of the cases have given rise to metastases, primarily to regional lymph nodes. The prognosis of patients with this disease is far better than that of multiple myeloma. This patient has an extramedullary plasmacytoma. The regional cervical lymph nodes contained metastases.

The biopsy report was anaplastic carcinoma. Review of the literature reveals instances of similar mistakes in the diagnosis on the basis of study of the biopsy material with the correct diagnosis obtained only from study of the surgical specimen. Yet, with a clinical history of a pedunculated mass, the pathologist should give great consideration to the diagnosis of plasmacytoma for the characteristic plasmacytoma in this region is pedunculated. Carcinoma of the larynx rarely presents itself as a pedunculated mass. A clinician should inform the pathologist of his findings in the patient so that the most accurate diagnosis possible can be arrived at.

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New Clue to Cause of Lupus Erythematosus Found

The outlook for lupus erythematosus, a disease long considered to be very serious and nearly always fatal, is not so bleak after all, according to two Detroit physicians.

Reporting a study of 100 cases in the October 24, 1959, *Journal of the American Medical Association,* Clarence E. Rupe, M.D., and Stewart N. Nickel, M.D., Henry Ford Hospital, said the disease is more benign than previously suspected. They also offered a clue to the possible cause of the disease.

Lupus erythematosus was once considered to be only a skin disease, because of its typical butterfly pattern of rash across the bridge of the nose. However, it is a systemic disease, affecting the joints and such organs as the liver and kidneys.

Treatment with artificial hormones, such as those used for arthritis, has a beneficial effect on the disease process by slowing it down and by carrying the patient through crises which once would have been fatal.

The benign course of the disease was illustrated by the fact that only 2 per cent of the total group "proceeded to incapacity," the doctors said. In addition, more than half of the men remained in good health and at full capacity. Fifty of the patients survived the disease at least ten years after the onset, and 45 of these are still living. Duration of the disease ranged from ten months to thirty-six years.

The clue to a possible cause of the disease lies in the fact that many of the patients had streptococcic infections just prior to the onset of lupus erythematosus. Many had typical "strep throat" infections, while others had other streptococcic infections, such as boils or ear infections. This suggests that hypersensitivity to the streptococcus bacillus may be an important factor in the disease, the doctors said. They added that this association may eventually produce a means of prevention.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
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Cardiovascular Collapse Due to Sudden Jolt

In a previous Clinical Anesthesia Conference a case was reported in which cardiovascular collapse occurred following movement of an anesthetized patient.[1] Although the cause and result seemed to be related, there were other associated complicating factors, such as prior cyanosis and prior traction reflex during surgical intervention. In the following case report, which relates a similar event, there were no such additional implicating factors. It is presented in order to re-emphasize the possible deleterious effect of merely moving and jolting the patient suddenly.

Case Report

A seventy-five-year-old man was to be operated on for a fracture of the neck of his left femur. The contemplated operation was a Smith-Petersen hip nailing.

Past history revealed that the patient had left ventricular heart disease for four years and that he had been under the care of a cardiologist. He had not undergone any previous surgical operation nor had he ever been hospitalized. Systemic review revealed that the patient was on a salt-free diet, took 2 digitalis tablets orally daily, had three-pillow orthopnea, and experienced shortness of breath on walking up any number of steps. He was malnourished and had lost 33 pounds in weight; he now weighed 115 pounds.

Physical examination revealed a thin, poorly nourished male who appeared chronically ill. His arterial blood pressure was 114 mm. Hg systolic and 80 diastolic. His pulse rate was 72 per minute and grossly irregular. His respiratory rate was 20 per minute. The apical heart beat was best

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Discussed at a conference held at the Hospital for Special Surgery, New York City, September 8, 1959. Clinical Anesthesia Conferences are usually held on the first Monday of every month.

felt and seen 1 fingerbreadth below the xiphoid process, and the entire epigastrium pulsated with each heart beat. On percussion the heart was found to be enlarged both to the right and left. There was a harsh blowing systolic murmur at the apex and a diastolic murmur at the base. The ventricular heart rate was 100 per minute. The left lower extremity lay in external rotation and there was severe pain on both internal and external rotation of the leg. Diagnoses made were basal-type fracture of the left hip, old rheumatic mitral lesion with marked dilatation of the heart, atrial fibrillation, and congestive cardiac failure.

Preanesthetic medication consisted of 25 mg. of Demerol and 0.4 mg. of atropine sulfate intramuscularly one hour prior to induction of anesthesia. The latter consisted of thiopental sodium 50 cc. of a 0.4 per cent concentration by means of an intravenous drip with oxygen administered by mask at the same time. Five minutes later nitrous oxide 5 L. per minute and oxygen 3 L. per minute were administered in a semiclosed system. The thiopental drip was slowed to 10 drops per minute and 10 mg. of 1 per cent Demerol solution were injected intravenously. The blood pressure at this time was 115/75, the pulse rate 76 per minute, and the respiratory rate 24 per minute.

It was deemed necessary to move the patient forward about 6 inches. Four persons suddenly lifted this little man; he was moved forward the desired length and then inadvertently everyone holding the patient let go at the same time so that the patient dropped on the orthopedic table with a thud. Immediately it was noted that the cardiac apical beat ceased as did the pulsations over the epigastrium, which had been clearly visible previously. Immediate examination revealed that no pulse or blood pressure could be obtained and that respirations ceased.

Thoracotomy was decided on immediately, and manual cardiac contractions were begun about one minute after the diagnosis of cardiac arrest was made. The heart was found to be markedly dilated and in ventricular fibrillation. At the same time that cardiac compressions were started an endotracheal tube was inserted and artificial respirations with oxygen were started by manual compression of the breathing bag. Cardiac resuscitation required one and a half hours and consisted of electric defibrillation, manual cardiac compressions, and ventricular injections of procaine and calcium gluconate.

The contemplated orthopedic procedure was abandoned although the patient's vital signs before he was moved to the recovery room were: blood pressure 130/90, pulse 76 per minute, and respirations 28 per minute. The patient regained consciousness and the endotracheal tube was removed. For several days the patient's cardiac status seemed to be no worse than before his anesthetization and there was no evidence of cardiac or cerebral damage due to his cardiac arrest. However, he presented serious problems of nutrition and water and electrolyte balance. After four weeks he began to develop signs of severe cardiac decompensation, and despite all efforts he expired six weeks after his bout of cardiac arrest.

Comment

It is well known that alteration in position of an anesthetized patient may result in profound changes in the cardiovascular system. Placing an anesthetized subject into Trendelenburg, Fowler, kidney, and prone positions has often led to serious changes in arterial blood pressure and pulse rate. It has also become evident during the recent past that movement alone without actual change in position may also cause serious derangements. In the present case a slightly built 115-pound man was suddenly lifted by four strong individuals, moved quickly forward, and as quickly allowed to drop back onto the orthopedic table. A normal heart may have compensated for this sudden jolt but a significantly diseased heart could not. Although the mechanism of such action is not completely understood, it is obvious that anesthetized patients must be moved slowly and carefully.

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1. Burstein, C. L., Ed.: Cardiovascular collapse following movement of an anesthetized patient, New York State J. Med. 59: 3456 (Sept. 15) 1959.

(Number eighty in a series of Clinical Anesthesia Conferences)

Tranquilizer Effective in Controlling Tetanus Spasm

Effective control of one form of tetanus spasm has been achieved with the use of a tranquilizing drug. According to Meyer A. Perlstein, M.D., Chicago, meprobamate given intramuscularly is effective in controlling tetanus spasms created by the voluntary muscles. At the same time he reported that the drug has no effect on spasms created by the involuntary muscles. His report appears in the August 15, 1959, *Journal of the American Medical Association.*

The doctor said that in spite of the widespread use of tetanus toxoid in immunizing infants and army personnel, the disease is still prevalent in certain areas of the United States. He added that the disease is extremely common in India, Africa, the West Indies, and South America.

Tetanus, or lockjaw, is an infectious disease which is usually caused by a puncture, laceration, or gunshot wound. Symptoms involve a tightening of the jaw muscles, baring the teeth, and the body may become bowed backward or sideward. Spasms follow.

According to Dr. Perlstein, "The mortality and severity of tetanus of all types is closely related to the interval between the appearance of the first symptom and the onset of spasms. The shorter this interval of onset, the worse is the prognosis." These spasms, he said, involve all of the muscles of the body and are extremely painful since the patient is always conscious. They can be triggered by bright lights, noises, pinpricks, or skin pressure.

In the past, the spasms have been treated with barbiturates and similar drugs which act on the central nervous system. The doctor said that these sedatives had many undesirable side-effects and often left the patient in a "deep sleep," unable to communicate with hospital attendants.

Following the use of meprobamate on a group of tetanus patients admitted to the Cook County Hospital in Chicago, Dr. Perlstein reported that the drug not only controlled the spasms but had no undesirable side-effects.

"Meprobamate had a tranquilizing action which allayed apprehension and made the patient generally more calm and comfortable. Nursing was greatly simplified. The patients were conscious and communicative, could respond to simple commands, and could make their needs known."

The doctor stated that the drug was usually effective within ten to fifteen minutes after administration and its effectiveness lasted from three to four hours. Meprobamate was more effective by injection than 10 times the dose given orally.

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Lead Poisoning in Young Children—Fatal and Nonfatal

The following incidents were recently reported to the New York City Poison Control Center.

Toxic Agent	*Age*	*Sex*
Lead	2 years	Female

This child was under supervision in a child health station. During the course of a routine examination a history of pica was obtained. The child was therefore referred for a blood lead determination. The blood lead was 0.08 mg. per 100 cc.—which is above normal—and the child was referred for further investigation and treatment.

She was admitted to Cumberland Hospital, Brooklyn, where on admission the following symptoms were noted: nausea, vomiting, anorexia, pallor (which had existed for several months prior to admission), and abdominal pains. The mother stated that she had observed the child eat plaster from "holes in the wall." The patient was treated with calcium Versenate and after twenty-one days of hospitalization was discharged as fully recovered.

The public health nurse who visited the apartment reports that she observed an "area about the size of a cantaloupe" behind the crib in the one-room apartment where the family lives. This area was devoid of paint and the plaster was exposed. The mother subsequently brought this to the attention of the landlard, who repainted the apartment recently. Two other siblings in the same family, although asymptomatic and not giving a history of pica, were also referred for blood lead determinations, but these were below 0.06 mg. per 100 cc. and therefore the children were not in need of therapy. The mother had been entirely unaware that the practice of ingesting paint was harmful.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Lead	3 years	Male

This child was presumably well until about two weeks ago, when he began to vomit and had marked anorexia. Because of the recurrent vomiting he was taken to a nearby hospital, where medication was prescribed in the emergency room after which the child was sent home. Since the vomiting persisted, the mother took the child back to the hospital and this time the patient was admitted to the inpatient service. On admission the presenting symptoms were: abdominal pains, spasticity of the upper extremities, and edema. A spinal tap was done and the pressure was over 600 mm. of water. A diagnosis of lead poisoning was made, and the child was treated with calcium Versenate, calcium gluconate, and magnesium sulfate. In spite of the therapy the patient expired twelve hours after admission.

On a home visit the public health nurse was able to obtain a history from the mother of pica of over six months duration. The mother related that the child "used to chew on the window ledge and eat paint and plaster he picked from cracks in the wall." She had not reported this habit since she had been unaware of the association of pica and his illness and had not realized that this practice might be harmful.

It may very well be that if this child had been admitted to the hospital when first seen and appropriate therapy instituted at that time, this death might have been prevented.

This is not an isolated incident. On reviewing the fatal cases of lead poisoning for the past two years one discovers practically a similar story. The child is taken to a hospital because of pallor, nausea, vomiting, and abdominal pains. He is seen in the emergency room and some treatment, such as vitamins or an antiemetic, is prescribed; the child is sent home only to be readmitted sometime later practically in extremis, and the ending is fatal.

It would be well if physicians and hospitals would become more "lead conscious," particularly in the summer months, and do a blood lead determination on every child who gives a history of anorexia, vomiting, and pallor of undetermined origin. A routine inquiry of the presence of pica in any child may also help to throw light on the possible existence of asymptomatic lead poisoning.

The value of a public health nurse's visit in the home is also well illustrated in this case. The nurse observed that the mother was six months pregnant and not yet under prenatal care and that two preschool children were not receiving adequate supervision. Appropriate referrals were made.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Lead	3 years	Male

The child became ill with anorexia and vomiting two days prior to admission to the hospital. During the two days the condition became progressively worse and the child became semistuporous and had convulsions. He was taken to the hospital, where a diagnosis of lead encephalopathy was made. The laboratory findings showed a hemoglobin of 8.5 Gm. per 100 ml. and marked hypochromic microcytic anemia. The history revealed that the child had been chewing varnish and plaster for nine months prior to admission. "He continually chewed the paint from the window ledge in the bedroom and living room," the mother related. The patient was treated with calcium Versenate, phenobarbital, fluids intravenously, and, for the first seventy-two hours, oxygen. After four weeks in the hospital the child was discharged but is being followed in the outpatient department. Another sibling in the family, aged four, although asymptomatic, was referred to Kings County Hospital for a blood lead determination, which was shown to be elevated. She also was treated with calcium Versenate. A fifteen-month-old sibling did not develop lead encephalopathy.

As has been stated previously, early diagnosis and appropriate calcium Versenate therapy with adequate follow-up may prevent lead encephalopathy and would certainly reduce residual neurologic and emotional damage.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Lead	1½ years	Male

This child was taken to the hospital because of recurrent vomiting, dyspnea, and convulsions and because he was semiconscious. The mother related that the patient had been eating plaster and peelings of paint for over eight months. Recently she noticed that the child did not play well, had a very poor appetite, was losing weight, and looked pale and "peaked." She did not realize, however, that this was because of pica. The blood lead content, as determined at the hospital, was 0.11 mg. per 100 cc., a very high level. The child was treated with calcium Versenate and fluids intravenously, and at the time of this report he is still in the hospital.

In addition to paint, the child also was in the habit of chewing paper, dust, and tobacco. Although the child had been under the care of a child health station, the mother never had related a history of pica to the physician because she had been unaware of the possible harmful effects of such practices.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Lead	2½ years	Male

The child was presumably well until the day of admission. At about 6:45 P.M. on the day of admission, after feeding the child the mother bathed him and put him to bed. Ten minutes later the mother went to the bedroom and found the child in stupor. He was rigid with eyes staring at the ceiling. This lasted about fifteen minutes. An ambulance was called and the child was taken to the hospital.

On admission the child vomited, had convulsions, and was in stupor. On questioning, the mother related that she had observed her children pick and ingest paint and plaster from the window sills and walls. Roentgenograms of the bones showed lead lines and there was basophilic stippling. His blood lead level was 0.08 mg. per 100 cc. The child was treated with calcium Versenate. After one month of hospitalization he was discharged with follow-ups scheduled in the outpatient department.

The public health sanitarian who visited the home found evidence of the window ledge paint having been eaten by a child. The other siblings, although asymptomatic, were also referred for blood lead determinations but their lead contents were not elevated. They will, however, be followed and referred again for blood lead determinations.

INCIDENT 6

Toxic Agent	*Age*	*Sec*
Lead	4 years	Female

The mother related that the child vomited and suffered from loss of appetite. The mother discussed this with her neighbor, who had a child with a history of lead poisoning. The neighbor advised the mother to take the child immediately to a hospital.

The child was admitted and the blood lead content was 0.11 mg. per 100 cc. and the urine lead content was 0.15 mg. per 100 cc., both very elevated. The child was treated with calcium Versenate and after five weeks of therapy was discharged. She is being followed in the outpatient department.

The public health nurse on visiting the home saw a large hole in the kitchen wall and the mother related that "the child puts everything in her mouth." The Department of Health was instrumental in getting the plaster repaired and the apartment repainted with lead-free paint.

It is of interest that the neighbor who alerted the mother of the possibility of lead poisoning had been advised by the child health station physician and public health nurse to take her child for investigation and possible treatment of lead poisoning because of a history of pica obtained by the physician.

Incident 7

Toxic Agent	*Age*	*Sex*
Lead	2$^1/_2$ years	Female

On a visit to the child health station for a routine examination the child was observed by the physician to be pale. The mother related that the child was suffering from anorexia and that she had been "eating paint from doors and walls for the past two years." Because of the history of pica the child was referred for a blood lead determination, which was 0.06 mg. per 100 cc. On admission to the hospital the child had abdominal pains, pallor, anorexia, and lethargy. At the time of this report the child is still in the hospital, being treated for chronic lead poisoning with calcium Versenate and for anemia with iron.

Incident 8

Toxic Agent	*Age*	*Sex*
Lead	2 years	Male

The family which had occupied the apartment in which these patients now live advised the parents to take their two children to a pediatric clinic for investigation of lead poisoning since their child had developed lead poisoning while they had lived in the apartment. At the clinic hospitalization was advised for both children.

On admission a history of pica of six to seven months duration was obtained for the younger sibling. The only positive finding was pallor. The patient had a hemoglobin of 6.5 Gm. per 100 cc., red blood cell count of 2.2 million, and evidence of hypochromic microcytic anemia. The blood lead content on admission was 0.22 mg. per 100 cc., one week later 0.17 mg., and a month following admission 0.063 mg.—all elevated. Treatment with calcium Versenate was started immediately following admission. Because of the marked anemia, Infron (total dose 7 cc.) was administered intramuscularly. A week following admission the hemoglobin went up to 10 Gm. per 100 cc. and the red cells count to 3 million. At the time of this report the child is still being treated and followed at the hospital.

Incident 9

Toxic Agent	*Age*	*Sex*
Lead	3$^1/_2$ years	Male

The other sibling of Incident 8 likewise had a history of pica, of five months duration. On admission he had the following symptoms: anorexia, vomiting, abdominal pains, diarrhea, and pallor. The blood lead on admission was 0.24 mg. per 100 cc.—remarkably elevated—which was reduced under calcium Versenate therapy within one week to 0.18 mg. and one month following admission to 0.089 mg.

The patient on admission also had basophilic stippling and 3 plus acetone in the urine. His red blood cell count was 2.8 million and the hemoglobin 9.5 Gm. per 100 cc. At the time of this report he is still being treated for lead poisoning.

Both children were judged by their parents and the public health nurse who visited their home as of average intelligence. Neither of the children had been under medical supervision prior to hospitalization nor had they received any immunizations against communicable diseases. Both were appropriately referred for indicated care.

Incident 10

Toxic Agent	*Age*	*Sex*
Lead	5 years	Female

During a routine visit to the child health station and while discussing health problems with the public health nurse the mother related that the child "eats paint and is wasting away; she also talks in her sleep and is regarded as stupid." Three years prior to this episode the patient was in the hospital with a diagnosis of pica but no further follow-up was recommended according to the mother. The physician in the child health station and the public health nurse referred this patient to a nearby hospital for immediate further investigation and indicated treatment.

The blood lead determination on admission was 0.15 mg. per 100 cc. and the lead content of the urine was also elevated. In addition, the following symptoms were noted: nausea, vomiting, and rectal bleeding. The child complained of anorexia, headaches, and weakness. She is still in the hospital, being treated with calcium Versenate. The last blood lead determination, done a month following admission, was reduced to 0.02 mg. per 100 cc.

Weekly visits are planned by the public health nurse when the child returns home, particularly to make sure that the apartment is repainted with lead-free paint and that the child is receiving the needed care.

Comment

Although all the cases reported herein were chosen at random, all but one are from Brooklyn and are nonwhite. All patients lived in substandard housing, where paint peelings and painted plaster are freely available.

It is also noted that in all cases there was a history of pica and that nearly all of the parents were unaware of the harmful effects which may result from the chewing of painted surfaces and objects.

It is of interest that 2 patients were referred on the advice of former patients, who presumably benefited from their experience, indicating that prevention is possible through education. Although some of the children were asymptomatic at the time of examination, the blood lead level was elevated in most instances.

It is therefore urgently recommended that an inquiry about pica be made a routine part of history taking, particularly in children, and that all children in whom a history of pica is obtained be referred for further medical investigation and indicated treatment.

(*Number forty-six in a series of Briefs on Accidental Chemical Poisonings*)

Victims of Drug Addiction Younger Than Ever Before

Drug addiction may no longer be as widespread as it once was, but its victims today are much younger than before. Drug addiction has declined from an all time high of 195,000 in 1915, to 70,000 twenty years ago, to its present low level of 46,000. But where the addict of twenty years ago was bordering on middle age, he is today probably a male in his middle twenties who has been addicted to heroin since he was about twenty. Compared to this the typical patient at U.S. Public Health Service hospitals twenty years ago was a male, thirty-eight years old, who had become addicted to morphine at age twenty-seven.—*Patterns of Disease, Parke, Davis & Company*

CASE REPORTS

Successful Use of Hypothermia Following Cardiac Arrest in Twelve-Day-Old Infant

JOHN M. LORÉ, JR., M.D., F.A.C.S., SUFFERN, NEW YORK, SUSAN G. GORDON, M.D., F.A.A.P. HAVERSTRAW, NEW YORK, AND EDMUND W. GORDON, ED.D., POMONA, NEW YORK

(*From the Department of Surgery, Good Samaritan Hospital, Suffern, New York*)

HYPOTHERMIA has been shown by Williams and Spencer[1] to be an effective, therapeutic agent in the management of cardiac arrest. It appears that the period of cardiac standstill associated with anoxia can be lengthened and that there can be survival without brain damage or with less brain damage than is ordinarily expected when hypothermia is used.

Case Report

A full term, 6-pound-12-ounce infant boy, twelve days of age, was operated on on June 27, 1958, for a bilateral harelip which was associated with a cleft alveolus and cleft palate. The operation was confined to the harelip and the technic used was a modification of Brown's technic. The anesthesia used was open ether. Both the administration of the anesthesia and the course of the operation were uneventful and were terminated at 10:50 A.M. While the child's face was being cleansed his color became cyanotic and respiratory arrest was noted at 11:00 A.M. Artificial respiration was initiated immediately. Peripheral pulse was present. Through a direct laryngoscope no supraglottic nor glottic obstruction was seen. An endotracheal tube was inserted and oxygen was administered while artificial respiration was continued. Since there was still a question of obstruction to the airway below the level of the larynx, a 3.5 mm. bronchoscope was inserted. The trachea was suctioned but no obstruction was seen. Following suction the endotracheal tube was reinserted while artificial respiration was continued.

TABLE I.—CLINICAL COURSE OF CARDIAC PATIENT DURING HYPOTHERMIA

Time	Rectal Temperature (Centigrade)	Clinical Notes
11:45 A.M.	....	Placing of child in ice
11:55 A.M.	....	Beginning of Cheyne-Stokes respirations
12:00 NOON	....	Normal spontaneous respirations
12:30 P.M.	30	Removal of ice
12:40 P.M.	28	Color fair
12:55 P.M.	27.5	Cry excellent
1:00 P.M.	27.8	Cry excellent
1:15 P.M.	28	Cry excellent
1:30 P.M.	29	Return of pupillary reflexes; voluntary movements
1:50 P.M.	30	Good lung expansion and mediastinum midline on postoperative chest x-ray film
3:15 P.M.	31	
4:15 P.M.	31	
5:30 P.M.	35	Color excellent, child apparently alert; no pathologic reflexes
5:45 P.M.	35	
6:45 P.M.	36	
7:15 P.M.	37	Ice placed in isolette chamber to maintain 37 C. temperature
10:00 P.M.	37.6	Color pale but good; crying and voiding
8:30 A.M.	36.4	Color pale; good cry, moving all extremities; removal of ice; no further refrigeration

Cardiac arrest occurred at 11:05 A.M. and the chest was opened without delay. The period of cardiac arrest was estimated to be one and a half minutes and the massage was instituted within one minute after the diagnosis of cardiac arrest had been made. Cardiac action began almost immediately after cardiac massage was started. Assisted respirations were maintained by the use of a Flagg tube which had replaced the ordinary endotracheal tube. The child's color had improved by 11:10 A.M. The chest was closed and underwater drainage was provided.

At 11:45 A.M. there were still no spontaneous respirations and it was decided to start hypothermia. Hypothermia was begun by placing the child in ice. Shortly thereafter Cheyne-Stokes respirations began and at 12:00 NOON normal spontaneous respirations were noted. The Flagg tube was removed. At 12:30 P.M. the rectal temperature was 30 C. and the ice packing was removed. When the child was returned to a room on the floor he was placed in an isolette and orders were given for refrigeration to be used only if the temperature went above 37 C. Table I shows a record of time, temperature, and clinical notes.

The remainder of the postoperative course was uneventful and there was a satisfactory recovery both from the harelip repair and from the cardiac arrest. The child was discharged on the tenth postoperative day with no evidence of any cerebral damage.

Follow-Up

The pediatric follow-up has been uneventful. The child has maintained good general health and has shown steady progress in growth and development. When the child was seen for development evaluation fifteen weeks following birth, he was found to have a development quotient of 85. Using the Gesell developmental schedule, the over-all development age was twelve and a half weeks with motor development at from twelve to fourteen weeks; language development at twelve weeks; adaptive development at from ten to twelve weeks; and personal-social development at from twelve to fourteen weeks. The child was seen for re-evaluation of development at nine months of age. The Vineland social maturity scale and the Cattell infant intelligence scale were used. The child earned a social age of seven and a half months with a social quotient of 83, and a mental age of 8.2 months with an intelligence quotient of 91. The same tests were administered at age fifteen months and resulted in an intelligence quotient of 90 and a social quotient of 93. While motor and adaptive functions were found to be in the dull-normal range, the child's over-all functioning was clearly average.

Summary

Hypothermia combined with cardiac massage was used successfully in the treatment of respiratory arrest and cardiac arrest in a twelve-day-old infant. The period of cardiac arrest was estimated to be well within the four minute critical period, yet spontaneous respirations failed to occur until after hypothermia was instituted. We feel that damage to the respiratory center and residual brain damage was adequately prevented by the use of hypothermia in this case of one of the youngest survivors of cardiac arrest.[2]

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To every thing there is a season, and a time to every purpose under the heaven: A time to be born, and a time to die; a time to plant, and a time to pluck up that which is planted.—ECCLESIASTES III, 1–8

Primary Glutethimide Addiction

HARRY COHEN, M.D., NEW YORK CITY

(From the Department of Psychiatry, Brooklyn State Hospital, Brooklyn)

GLUTETHIMIDE (Doriden*), known chemically as 2-Ethyl-2-phenylglutarimide, is generally considered a safe hypnotic and sedative, and its use has not been subject to legal or official scrutiny as has been the case in the use of narcotics and the barbiturates. However, a number of cases[1-5] of addiction have been published both in the United States and abroad since the introduction of this drug into medical practice just a few years ago. Practically all of these cases represent individuals who had previous histories of addiction with a variety of other drugs or alcohol and to whom glutethimide was prescribed as a "safe nonaddicting" substitute. The case herein reported is of particular interest because the patient gave no history of previous abuse of alcohol or of any other substance.

Case Report

A fifty-year-old single male pocketbook worker was first seen by the author in the latter part of November, 1958, because of an anxiety-depression syndrome which had developed since the sudden death of an elder brother two weeks previously. He was insomniac, restless, anxiety-ridden during the day, and anorectic. He was placed on meprobamate in increasing doses, but there was no improvement. On one occasion he took six 400 mg. tablets of meprobamate in the course of forty-five minutes before he was able to fall asleep. His past history revealed several episodes of anxiety-depression lasting a few weeks. For one episode he was treated at a private sanatorium with electroconvulsive therapy. Throughout his life he had been known to be extremely shy, tending to withdraw, and obsessed with the idea that his nose was too ugly for people to look at as well as with the general idea that he was unworthy and inferior.

After one week of ambulatory treatment with meprobamate he entered a local state mental hospital on a voluntary application. After two weeks at the hospital he was released on his own allegation that he felt much better. Actually he feared he might be subjected to electroconvulsive therapy and wished to leave in order to avoid it.

Ambulatory treatment at my office was promptly resumed. This consisted of weekly sessions of supportive psychotherapy. The patient admitted he was taking two 0.5 Gm. tablets of glutethimide each night and one tablet occasionally during the day when he "felt nervous." Because the drug appeared to have a benign reputation, the patient was allowed to take the dose at bedtime, but he was discouraged from taking the daytime dose. Instead, prochlorperazine (Compazine) was prescribed because the patient alleged it had been helpful in alleviating his anxiety during his recent hospitalization. In the course of the next eight weeks, after an initial period of relative well-being, the symptoms of anxiety and depression returned in force. When increasing doses of prochlorperazine were of no avail (up to 30 mg. three times a day), chlorpromazine hydrochloride (Thorazine) (up to 200 mg. three times a day) followed by perphenazine (Trilafon) (up to 16 mg. three times a day) were prescribed. The patient continued to take glutethimide at night and during the day and insisted that this was the only medicine that afforded him some measure of relief, usually in terms of a few hours of sleep.

It was during this period at the termination of an extended holiday weekend in February (Washington's Birthday) that the patient came to the office for his usual therapeutic session. He appeared unusually anxious and disturbed. His face had a cyanotic flush; his pulse was rather rapid and not full. There was a coarse tremor in his upper extremities and his movements in general lacked their usual grace and steadiness. The patient admitted he was not feeling well and added that this was not the effect of glutethimide. On questioning he admitted further that because of the long holiday he had been unable to procure glutethimide from his usual source and had thus been without the drug for at least two days. It was at this point that the idea of withdrawal symptoms on the basis of a glutethimide habituation or addiction occurred to me. The patient was therefore given 0.5 Gm. glutethimide orally immediately. Within twenty minutes there was a decided change in his clinical condition. The anxiety, restlessness, and tremor were notably lessened. The patient himself noted the easing of tension subjectively. On further pointed questioning he admitted that he had been resorting to taking from two to four 0.5 Gm. tablets of glutethimide at night and during the day whenever he felt anxious, "but not more than twenty tablets a week," generally with "good effect," that is, the easing up of anxiety and subsequent somnolence, "ever since my brother died last November." At that time at the funeral a kinsman had given him a glutethimide tablet so that he would be able to sleep that night. Since then he had been obtaining the drug without a prescription from a local druggist. He insisted that the glutethimide helped his anxiety more than all the tranquilizers I had prescribed. Unfortunately he had miscalculated the long Washington's Birthday weekend when his local druggist took a complete holiday. He had spent from two to three terrible days waiting until he could keep his appointment with me. He was full of guilt about the whole development which he suspected might be an addiction.

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*Glutethimide is manufactured as Doriden by Ciba Pharmaceutical Products, Inc., Summit, New Jersey.

Since hospitalization was refused, the following plan of treatment was decided on. The patient was to stay with his brother, a reliable person, who would administer all the medication. The latter consisted of promazine hydrochloride (Sparine), 200 mg. orally four times a day after meals and at bedtime. Glutethimide was permitted in 1 Gm. doses only at bedtime in order to insure sleep. This course was adhered to although not without complaint on the part of the patient about anxiety and feelings of weakness. It was possible to cut down the glutethimide allotment at night by halves week by week, so that at the end of the month the patient was no longer taking any of this drug. With this there was also a gradual diminution of complaints and a rising ascendancy of well-being, both subjective and objective. More than once the patient expressed his gratitude at the good outcome and over his escape from a troublesome habituation. The promazine hydrochloride was maintained for another two weeks in decreasing doses and then discontinued. By this time the patient was feeling and functioning at his best premorbid level.

The patient has continued to appear for psychotherapeutic sessions and, except for a brief episode of depression when promazine hydrochloride was reinstituted, he has been maintaining this level.

Comment

The features of this case presented a problem in nosology. Are we dealing with habituation or with addiction? The distinction between the two concepts has been based largely on the presence of physiologic or somatic withdrawal symptoms in addiction and none in habituation. In the latter the withdrawal symptoms are essentially psychologic, usually in the form of the anxiety state. It is well known that anxiety has somatic concomitants. Should these be severe enough, especially in the circulatory system, it would be impossible to make the distinction between habituation and addiction. This problem emerged in the present case. The somatic symptoms, although not extreme, were prominent and tended to persist until alleviated by a substantial dose of the drug in question. For this reason and because of the serious potentiality for glutethimide abuse, I have decided in favor of "addiction" as the proper term in this case.

Summary

Glutethimide (Doriden) abuse is beginning to appear frequently in the literature. Generally the cases reported are secondary to other drug or alcohol abuses. A case has been reported in which glutethimide was a primary substance in the development of an addiction. The difficulty in distinguishing habituation from addiction has been indicated briefly.

950 Park Avenue, New York 28

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MONTH IN WASHINGTON

Congress embarked on a crucial election year session with expansion of the Social Security program shaping up as one of the major issues.

It was virtually a foregone conclusion that some liberalization of the program would be voted in the Democratic-controlled Congress, but the key question was how far the changes would go. In every Presidential election year during recent years the House and Senate have approved a broadening of the program.

One of the prime reasons Social Security has been an election year "favorite" is that the program can be boosted without affecting the Federal budget. This is because it is financed through employer-employe contributions and is theoretically self-supporting.

Of special interest to physicians, of course, is the fate of the so-called Forand bill that would provide hospitalization, surgical services, and nursing home care for Social Security beneficiaries. This would be accomplished through even higher taxes on employes and employers than are now scheduled through already-voted step increases.

Supporters of the controversial legislation—vigorously opposed by the Administration, the American Medical Association, and allied organizations—launched their move to win enactment this session.

Sen. Pat McNamara (D., Mich.), whose Senate Subcommittee on Aging held a series of hearings across the country during the recess, announced at the conclusion of the hearings that they showed a need for expanding Social Security to include health care for the aged.

He indicated he thought the Forand bill did not go far enough.

A battery of speakers at a meeting here of the American Public Welfare Association also urged a sharp increase in benefits, with some advocating "cradle to grave" security for all.

Not all of the proposals for extending the program involved health care. The Administration indicated it would recommend some expansion, especially in the disability program under which the Federal government helps the states provide assistance to persons over age fifty judged to be totally and permanently disabled. An influential lawmaker, Rep. Burr Harrison (D., Va.), disclosed that he would introduce legislation to remove the age fifty limitation to allow all persons regardless of age to participate. He estimated this would not require any hiking of the taxes. Rep. Harrison is chairman of a House Ways and Means Subcommittee that held recess hearings on administration of the disability program.

Meanwhile, Chairman Wilbur Mills (D., Ark.) of the full Ways and Means Committee cleared the way for full-scale hearings this Congressional session on the entire issue of Social Security. In listing specific phases to be considered, however, the lawmaker did not mention the Forand proposal.

A spokesman for the American Medical Association told the Federal Communications Commission that the A.M.A. believes the best solution to objectionable advertising and programs on television and radio is for the industry "to clean its own house."

Dr. Eugene F. Hoffman, cochairman of the A.M.A.'s Physician's Advisory Committee on Television, Radio, and Motion Pictures, declared "the medical profession stands ready to assist the networks and individual stations in determining accuracy and good taste of broadcast material involving health or medicine, either commercial or public service."

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

See one promontory, one mountain, one sea, one river, and see all.—Socrates

MALPRACTICE INSURANCE AND DEFENSE BOARD

Medical Society of the State of New York

JOHN C. BRADY, M.D., *Chairman*

The Board invites the attention of members to recent items of interest to those who carry professional liability insurance.

1. The Baltimore office of Oakeley, Vaughan & Johnston, Inc., recently announced a 50 per cent increase in premiums as of December 1, 1959, for all surgeons, anesthetists, and gynecologists in New York State.

2. On November 13, 1959, members of a professional liability program sponsored by the American College of Physicians were informed that from October 7, 1953, to September 1, 1956, their coverage was carried by Lloyd's and/or other companies. One of the "and/or other companies," namely British Commercial Ltd., which in some instances carried a high percentage of the total coverage, has recently gone into voluntary liquidation.

3. On November 16, 1959, the *AMA News* published an article pointing out that many physicians insured individually or in national specialty groups by "Underwriters at Lloyd's and/or other companies" do not have the protection they thought they had. The article stressed the importance of knowing something about the financial stability of the company carrying your professional liability insurance.

Your Board has knowledge of cases where doctors who left the State Society program in recent years to obtain cheaper insurance are now being told that as much as 80 per cent of the insurance they thought they had would be tied up in these liquidation proceedings. We would again like to call your attention to the fact that the State Society program is covered by Employers Mutual Liability Insurance Company of Wisconsin, a company which was formed in 1911, and now writes many lines of casualty insurance (so that it is not top heavy in the malpractice field) and has an excellent financial record.

Although the malpractice statute of limitations is two years in this State, it does not begin until the injured party is twenty-one, and even if a suit is started within the two-year period, it often takes many more years before it reaches the courtroom. Because a physician must depend on the company that insured him at the time an alleged act of malpractice occurred, no matter how much later the actual suit is brought, the financial stability of his insurance carrier should be of paramount concern.

A Slip of the Foot you may soon recover
But a Slip of the Tongue you may never get over.—BENJAMIN FRANKLIN

NECROLOGY

Charles Bernstein, M.D., of Brooklyn, died on November 18, 1959, at the age of fifty-eight. Dr. Bernstein graduated in 1934 from Long Island College of Medicine and Hospital. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Henry Boese, M.D., of New York City, retired, died on December 4, 1959, at the age of eighty-one. Dr. Boese graduated in 1904 from Columbia University College of Physicians and Surgeons. He was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Patrick Francis Britt, M.D., of Syracuse, died on November 14, 1959, at the age of sixty-six. Dr. Britt graduated in 1922 from Syracuse University College of Medicine. He was an honorary attending in obstetrics at St. Mary's Hospital and former president of the staff. Dr. Britt was a member of the Onondaga County Medical Society and the Medical Society of the State of New York.

Hyman Fogelman, M.D., of the Bronx, died on October 29, 1959, at the age of fifty-seven. Dr. Fogelman graduated in 1927 from Long Island College Hospital Medical School and interned at Lincoln Hospital. He was a clinical assistant physician in allergy at Mount Sinai Hospital. Dr. Fogelman was an Associate Fellow of the American College of Allergists and a member of the New York Allergy Society, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Thomas Frederick Foreman, M.D., of Syracuse, died at his home on October 12, 1959, at the age of eighty-three. Dr. Foreman graduated in 1900 from Syracuse University College of Medicine. He was an honorary physician at Syracuse General Hospital. Dr. Foreman was a member of the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society ot the State of New York, and the American Medical Association.

Tracy James Gillette, M.D., of Owego, died on November 4, 1959, at his home at the age of forty-seven. Dr. Gillette graduated in 1942 from Albany Medical College. He was a member of the Tioga County Medical Society and the Medical Society of the State of New York.

Joseph Glassman, M.D., of New York City, died at his home on September 10, 1959, at the age of seventy-six. Dr. Glassman graduated in 1915 from New York University and Bellevue Hospital Medical College. He was executive director and chief of internal medicine at Stuyvesant Polyclinic and a consulting physician at Italian Hospital. Dr. Glassman was a Fellow of the American College of Angiology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Gerard Guage, M.D., of Brooklyn, died on July 28, 1959, at the age of forty-eight. Dr. Guage graduated in 1938 from Georgetown University School of Medicine. He was an assistant in pediatrics at Lutheran Hospital and Lutheran Hospital Outpatient Department. Dr. Guage was a member of the Kings County Medical Society and the Medical Society of the State of New York.

William Francis Hoover, M.D., of Jamestown, died at Buffalo Veterans Hospital on November 3, 1959, at the age of sixty. Dr. Hoover graduated in 1924 from the University of Michigan Medical School. He was an attending in dermatology at Buffalo General and Woman's Christian Association (Jamestown) Hospitals. Dr. Hoover was a member of the American Academy of Dermatology and Syphilology, the Buffalo-Rochester Dermatological Society, the Chautauqua County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Talmadge Kimbrough, M.D., of New York City, died on August 14, 1959, at the age of sixty-five. Dr. Kimbrough graduated in 1925 from Syracuse University College of Medicine.

George Francis Klemann, M.D., of New York City, died on November 12, 1959, at the age of

[Continued on page 286]

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[Continued from page 284]

seventy-eight. Dr. Klemann graduated in 1903 from Long Island College Hospital Medical School and interned at St. Vincent's Hospital. He was a staff physician with the New York Regional Red Cross Blood Program.

Harold Fuller Knight, M.D., of Wolcott, retired, died on October 22, 1959, in Genesee Hospital at the age of seventy-two. Dr. Knight graduated in 1915 from Syracuse University College of Medicine.

Jerald Nelson Kuhn, M.D., of Springville, died in Buffalo General Hospital on November 24, 1959, at the age of forty-two. Dr. Kuhn graduated in 1941 from the University of Buffalo School of Medicine. He was an associate member of the staff of the Buffalo General Hospital. Dr. Kuhn was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max Manasse, M.D., of Brooklyn, died on September 19, 1959, at the age of seventy-nine. Dr. Manasse received his medical degree from the University of Berlin in 1912. He was an assistant attending physician at Evangelical Deaconess Hospital. Dr. Manasse was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Madge C. L. McGuinness, M.D., of New York City, died on December 9, 1959, at the age of seventy-five, in Misericordia Hospital. Dr. McGuinness graduated in 1908 from Woman's Medical College of Philadelphia. She was a consulting physician in physical medicine at Misericordia (also former director of physical medicine there), and Lenox Hill Hospitals, had also lectured at New York University and the College of Physicians and Surgeons as well as served as chief of clinic at Vanderbilt Clinic, and had served on the smoke control and motor accident prevention groups for New York City. Dr. McGuinness was a Diplomate of the American Board of Physical Medicine and Rehabilitation and a member of the American Congress of Physical Medicine and Rehabilitation, the American Academy of Physical Medicine and Rehabilitation, a Fellow of the American Academy of Compensation Medicine, Inc., and a member of the American Medical Women's Association, the New York Cardiological Society, the New York Society of Physical Medicine and Rehabilitation, the New York Academy of Medicine, the New York County Medical Society for which she had served as chairman of the Committees on Physical Medicine and Public Relations, the Medical Society of the State of New York, and the American Medical Association.

Harry Erle Mereness, M.D., of New York City, died on June 9, 1959, at the age of eighty. Dr. Mereness graduated in 1902 from Albany Medical College.

Alfred Henry Noehren, M.D., of Buffalo, died on November 14, 1959, in Deaconess Hospital at the age of eighty. Dr. Noehren graduated in 1905 from Columbia University College of Physicians and Surgeons and interned at Lenox Hill Hospital. He was a consultant in surgery at Deaconess and Edward J. Meyer Memorial Hospitals and at Ellicott Clinic and Hospital. Dr. Noehren was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the American Goiter Association, the Buffalo Academy of Medicine and the Buffalo Surgical Society of which he had also served as president, the Erie County Medical Society, the Medical Society of the State of New York (past chairman of the Section on Surgery), and the American Medical Association.

Charles Henry Ott, M.D., of Elmira, died on October 22, 1959, at St. Joseph's Hospital at the age of sixty-five. Dr. Ott graduated in 1920 from Jefferson Medical College of Philadelphia. From 1948 to 1957 he had served as a member of the Elmira Board of Education and was school physician in both the Town of Southport and the Elmira systems. Dr. Ott was a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Hourne Robertson, M.D., of Binghamton, died on November 17, 1959, at Wilson Memorial Hospital at the age of sixty-six. Dr. Robertson graduated in 1917 from Albany Medical College. He was chief of otolaryngology at Ideal Hospital of Endicott and an attending in otolaryngology at the Charles S. Wilson Memorial Hospital. Dr. Robertson was a member of the Binghamton Academy of Medicine, the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Rudolph Schwarz, M.D., of Phoenix, Arizona, formerly of Elmira, died on November 1, 1959, at the age of sixty-four. Dr. Schwarz received his medical degree from the University of Vienna in 1921. He was a Diplomate of the American Board

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References: 1. Menger, H. C.: Clin. Med. *4*:313 (Mar.) 1957. 2. Scal, J. C.: Eye Ear Nose & Throat Month. *38*:738 (Sept.) 1959.

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[Continued from page 286]

of Psychiatry and Neurology (Psychiatry), a Member of the American Psychiatric Association, and a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Julius Robert Shapiro, M.D., of New York City, died on August 23, 1959, at the age of fifty. Dr. Shapiro graduated from the University of Dublin School of Physic, Trinity College, Dublin, in 1935, and interned at the Medical Center of Jersey City, New Jersey, and the Brooklyn Eye and Ear Hospital. He was a senior clinical assistant in ophthalmology at Brooklyn Eye and Ear Hospital. Dr. Shapiro was a member of the Queens County Medical Society and the Medical Society of the State of New York.

Leo M. Taran, M.D., of Garden City, died at his home on September 10, 1959, at the age of fifty-seven. Dr. Taran graduated in 1925 from Harvard University Medical School. He was chief of pediatric cardiology at Roosevelt Hospital Outpatient Department, a research consultant in cardiology at Brooklyn Hebrew Home and Hospital for the Aged, and a consultant in cardiology at Meadowbrook and Community Hospitals at Glen Cove. Dr. Taran was also director of the cardiology program at New York Medical College and from 1936 to 1955 had served as medical director of the St. Francis Sanitarium for Cardiac Children, Roslyn, and was former chief of the cardiac clinic at Kings County Hospital, associate chief of the children's cardiac clinic of Beth Israel Hospital in Brooklyn, and had served on committees with the National Council on Rheumatic Fever, the scientific council of the American Heart Association, the public health planning committee of the New York Heart Association. He was also an associate in pediatrics at Flower and Fifth Avenue, Metropolitan, and Roosevelt Hospitals. Dr. Taran was a Licentiate of the American Board of Pediatrics and a member of the New York Academy of Medicine, the American Academy of Pediatrics, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Else Toller, M.D., of New York City, died on August 5, 1959, at the age of sixty-seven. Dr. Toller received her medical degree from the University of Munich in 1918. She was an examining physican at the Veterans Administration Regional Office and a member of the Association for the Advancement of Psychotherapy.

William A. Weinreb, M.D., of Brooklyn, died on August 23, 1959, at the age of sixty-eight. Dr. Weinreb received his medical degree from the University of Vienna in 1923. He was a staff physician at Madison Park Hospital of Adelphi College. Dr. Weinreb was a member of the East New York Medical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans W. Wiesbader, M.D., of New York City, died in Montefiore Hospital on November 4, 1959, at the age of fifty-nine. Dr. Wiesbader received his medical degree from the University of Heidelberg in 1923. He was a clinical assistant in obstetrics and gynecology at Bellevue Hospital. Dr. Wiesbader was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

MEDICAL NEWS

New York Proctologic Society Elects Officers—The New York Proctologic Society recently elected the following officers for 1960: Saul Schapiro, M.D., Brooklyn, president; Maus W. Stearns, Jr., M.D., New York City, vice-president; and Norman L. Freund, M.D., Brooklyn, secretary-treasurer.

Postgraduate Courses in Amblyopia—Dr. Curt Cuppers of Giessen, Germany, will give a course in "The Treatment of Amblyopia, Theory, Instrument Demonstration and Practical Application" from March 7 through 18. The course is limited to 20 ophthalmologists.

In addition to the course, Dr. Cuppers will give a series of three lectures on "Introduction to the Therapy of Amblyopia, by the Help of the After-Image Method," March 21 through 23.

For registration apply to: Mrs. Tamar Weber, Registrar, Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York 3, New York.

Medico-Surgical Cinema Prize Moved Up—Because of the advancement of the Eastern University holidays, the annual prize of the Medico-Surgical Cinema will be given on March 22 at the new Faculty of Medicine instead of April 5, as had been previously announced.

Candidatures and films must be in the office of the secretary, *La Presse Medicale*, 120 Boulevard Saint-Germain, Paris VI, before February 15.

Physicians Named as Fellows of New York Academy of Sciences—The following physicians were named Fellows of the New York Academy of Sciences at the annual meeting of the Academy on December 3: *Brooklyn:* Drs. Max Bovarnick, Edwin M. Gold, and Leroy S. Lavine; *Elmsford:* Dr. Peter Honig; *New York City:* Drs. Harold G. Barker, C. Andrew L. Bassett, David V. Becker, William H. Beinfield, John C. Bugher, Jordi Casals-Ariet, John M. Cotton, William J. Eisenmenger, Paluel J. Flagg, Roger L. Grief, Saul B. Gusberg, Henry W. Kumm, James S. Murphy, Carl T. Nelson, Louis R. Orkin, Edward B. Schlesinger, C. Ronald Stephen, Ludwig von Sallman, and Harold A. Zintel.

Orangeburg: Dr. Nathan S. Kline; *Rochester:* Drs. Lee B. Lusted and Kurt Salomon; *Schenectady:* Dr. Maurice A. Donovan; and *Tuckahoe:* Dr. Donald S. Searle.

Symposium on Hospital Management and Labor Union Relations—The American Academy of Medical Administrators will sponsor a symposium on hospital management-labor union relations January 20 through 22 at the Waldorf-Astoria Hotel, New York City.

For information concerning the symposium write to: Hugh C. McEwan, president, American Academy of Medical Administrators, Suite 1134, 11 Beacon Street, Boston, Massachusetts.

Woman Doctor Heads Diabetes Association—The New York Diabetes Association has announced the election of its first woman president, Winifred C. Loughlin, M.D., New York City. Other physicians elected were: Irving Graef, M.D., New York City, first vice-president; Martin G. Goldner, M.D., Brooklyn, second vice-president; and Lawrence E. Hinkle, Jr., M.D., New York City, secretary.

American Board of Obstetrics and Gynecology to Hold Examinations—The next scheduled examinations of the American Board of Obstetrics and Gynecology, (Part II), oral and clinical, for all candidates, will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, by the Board from April 11 through 16. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I examinations will be notified of their eligibility for the Part II examinations as soon as possible.

Current bulletins of the American Board of Obstetrics and Gynecology, outlining the requirements for application, may be obtained by writing to the secretary: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

Essay Awards Offered in Field of Physical Medicine and Rehabilitation—The American Congress of Physical Medicine and Rehabilitation is offering its seventh essay award in the field of physical medicine and rehabilitation. Contributions will be accepted from interns, residents, grad-

[Continued on page 292]

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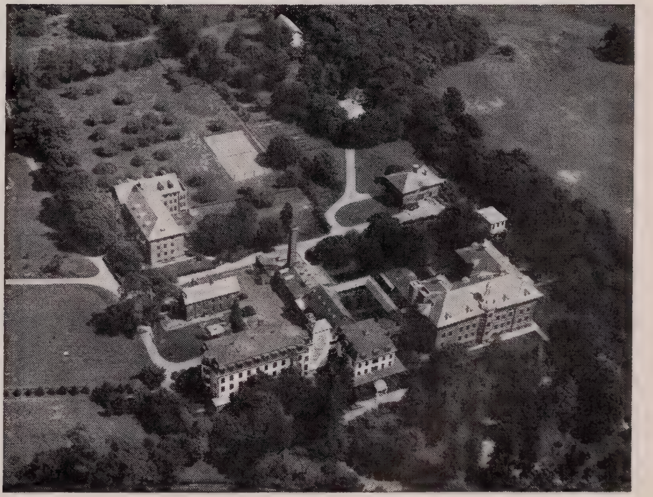

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Director-Activities Program

Sister Miriam Vincent, R.N., F.A.C.H.A.
Administrator

Reverend David Hordern
Resident Chaplain

[Continued from page 290]

uate students in the preclinical sciences, and graduate students in physical medicine and rehabilitation.

The Congress is also sponsoring the third Bernard M. Baruch Essay Award. Any subject of interest or pertaining to the field of physical medicine and rehabilitation may be submitted. Contributions will be accepted from medical students only.

Manuscripts must be in the office of the American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois, not later than March 1. For a complete list o rules and regulations concerning both essay contests write to the Congress at the above address.

Bronx Pediatric Society—Irwin M. Arias, M.D., Albert Einstein College of Medicine, Yeshiva University, spoke on the topic, "Bilirubin and Its Clinical Implications," before the regular meeting of the Bronx Pediatric Society on January 13.

The February 10 meeting of the Society will consist of a presentation of cases from the Department of Pediatrics, Albert Einstein College of Medicine, Yeshiva University, and Bronx Municipal Hospital Center.

At the March 9 meeting David Gitlin, M.D., Harvard Medical School, will lecture on "Humoral and Genetic Factors in Infection."

All meetings are scheduled to be held at 8:30 P.M. in the auditorium of Morrisania City Hospital, 168th Street and Gerard Avenue, the Bronx.

At a recent meeting the Society elected officers for 1960. They are: Arthur A. Goldfarb, M.D., president; Louis Penn, M.D., vice-president; and David L. Milliken, M.D., secretary-treasurer.

International Academy of Proctology Offers Award—The International Academy of Proctology has announced its annual cash prize and certificate of merit award contest for 1959–1960. The best unpublished contribution on proctology or allied subjects will be awarded $100 and a certificate of merit. The winning contribution will be selected by a board of impartial judges, and all decisions are final.

The formal award of the first prize and presentation of certificates will be made at the annual convention dinner dance of the Academy on April 27 at the Americana Hotel, Miami Beach, Florida.

The Academy reserves the right to publish all contributions in its official publication, *The American Journal of Proctology*. Entries are limited to 5,000 words and must be typewritten in English and submitted in five copies. Entries must be received by February 1 and should be addressed to: Alfred J. Cantor, M.D., Executive Officer, International Academy of Proctology, 147–41 Sanford Avenue, Flushing 55, New York.

NYU Post-Graduate Medical School Offers Course on Clinical Physiology—The New York University Post-Graduate Medical School will offer a course on "Clinical Physiology: Applications of Basic Physiology to Diagnostic and Therapeutic Problems," part-time, Thursdays, from 7:30 to 9:30 P.M., March 3 through April 21.

The lectures will summarize the latest concepts of the physiology of the heart, vascular circuits, the kidneys, the lungs, the liver, the endocrine glands, and the body fluids. The course will be under the direction of Norman Deane, M.D.

For additional information write to: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Highland Hospital Announces Visiting Professor Program—On July 1, with the start of the new academic year, Highland Hospital, Rochester, will institute a new program of visiting professorships designed to intensify graduate training for medical interns and residents and to provide educational "refresher" facilities for the 300 doctors who are on the attending staff.

The program calls for the teaching services of at least six outstanding medical professors for about three days during the year. The visiting professors, to be drawn from the faculties of leading medical institutions elsewhere in the United States and Canada, will be leaders in major medical specialties. They will spend several days at the hospital lecturing, making the rounds of patients with members of the house staff, and discussing informally some of the more advanced aspects of medical problems with interns and residents.

The educational exercises will be open to those doctors who regularly attend patients at Highland, and it is planned that at least one major lecture by each visitor will be arranged to which the members of the entire Rochester and surrounding medical community will be invited.

Medical Society of the County of Monroe Meets—The Medical Society of the County of Monroe held its one hundred thirty-ninth annual meeting on December 15.

As a part of the meeting a dinner was held to honor physicians who have devoted fifty years to the practice of medicine. The following Rochester physicians were so honored for 1959: Abraham Fischer, M.D., Jesse E. Guldin, M.D., Eldred W. Kennedy, M.D., Charles G. Lenhart, M.D., Eugene W. Rother, M.D., and Allen V. Walker, M.D. Harry Sewell, M.D., was honored posthumously.

[Continued on page 294]

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[Continued from page 292]

Personalities

Elected

Kermit E. Osserman, M.D., New York City, as chairman of the National Medical Advisory Board of the Myasthenia Gravis Foundation.

Retired

V. A. Van Volkenburgh, M.D., Delmar, as assistant commissioner for local health services with the State Health Department, effective January 1.

Awarded

J. Scott Butterworth, M.D., and Charles A. R. Connor, M.D., New York City, an award from the American Heart Association for distinguished service in the Association's national programs of research, education, and community service.

Honored

Dominick F. Maurillo, M.D., Brooklyn, with an honorary degree of Doctor of Medicine and Surgery from the University of Bologna, in Italy . . . Robert Turell, M.D., New York City, with an honorary membership in the Sociedade Brasileira de Proctologia . . . Samuel A. Wolfe, M.D., Brooklyn, by the Alumni Society of the Jewish Hospital of Brooklyn for his outstanding contributions to the field of gynecology.

Appointed

George Baehr, M.D., New York City, as chairman of a special committee on narcotics appointed by the New York City Board of Hospitals . . . Charles F. Blazsik, M.D., Woodhaven, as medical director of St. Anthony's Hospital, Woodhaven . . . Desmond G. Boyle, M.D., Long Beach, California, as director of the Psychiatric Division of Brunswick General Hospital, Amityville . . . Harold P. Curran, M.D., Schenectady, as director of radiology at St. Clare's Hospital, Schenectady . . . Thomas H. Mason, M.D., Schenectady, as chief of the Department of Neurosurgery at St. Clare's Hospital, Schenectady . . . Boris J. Paul, M.D., Latham, as an instructor in physical medicine and rehabilitation at Albany Medical College . . . Marvin E. Perkins, M.D., Washington, D.C., as director of New York City's Community Mental Health Services . . . Sidney B. Weinberg, M.D., New York City, as Suffolk County's first medical examiner.

Speakers

Oscar Auerbach, M.D., Staten Island, before the clinical session of the American Medical Association in Dallas, Texas, on December 5 on the subject of lung cancer and smoking . . . Rudolf L. Baer, M.D., New York City, on December 2, in Dallas, Texas, at a symposium on "Sunlight and the Skin" sponsored by the committee on cosmetics of the American Medical Association . . . Albert M. Betcher, M.D., New York City, on December 11 at a meeting of the New York State Society of Anesthesiologists, on the subject, "The Use of Hypnosis in Medicine" . . . Walter F. Bugden, M.D., Syracuse, on a panel discussion on the topic, "Chronic Crippling Pulmonary Problems" at the monthly meeting of the Jefferson County Medical Society, December 15 . . . Ludwig Eidelberg, M.D., New York City, on December 11 at the annual scientific meeting of the Association for the Advancement of Psychotherapy on the topic "The Psychoanalytic Patient, Yesterday and Today" . . . Attilio D. Renzetti, Jr., M.D., De Witt, on the subject, "Chronic Crippling Pulmonary Problems" at the monthly meeting of the Jefferson County Medical Society on December 15 . . . Joseph B. Rogoff, M.D., New York City, at a meeting of the New York State Society of Physiotherapists on December 15, on the topic, "Physiotherapy in the Management of Peripheral Nerve Injuries" . . . Robert Turell, M.D., New York City, in November, on the subject, "Adenoma and Cancer of the Colon and Rectum," before proctologic and surgical groups in Montevideo, Uruguay, Buenos Aires, Argentina, and Rio de Janeiro, Brazil.

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

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SUMMARY OF COUNCIL MINUTES

October 22, 1959

THE Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Henry I. Fineberg, M.D., president, presiding.

Executive Committee

The Council *approved* the recommendations of the Executive Committee, including the following:

1. That the Society contribute $200 to the New York State Society for Medical Research and $100 to the National Society for Medical Research;
2. That an ad hoc committee consisting of James M. Blake, M.D., Norman S. Moore, M.D., and Leo E. Gibson, M.D., with President Fineberg and Herbert T. Wagner, M.D., authorized also to attend, be appointed to confer with representatives of the Dental Society of the State of New York, to discuss problems of mutual interest;
3. That a conference be arranged between representatives of the State Society and various State and local bar, dental, and health organizations, to discuss the possibility and means of closer liaison on legislation matters.

President

Henry I. Fineberg, M.D., president, reported on meetings attended, including the annual meeting of the Medical Society of the State of Pennsylvania. The report *was approved.*

Secretary

William L. Wheeler, Jr., M.D., secretary, recommended dues remissions, as follows: nine members for 1959 because of illness, five members for 1959 because of military service, and one member for 1959 because of financial hardship, which *were approved.*

Treasurer

Maurice J. Dattelbaum, M.D., treasurer, presented the treasurer's report, with requests for additions or reductions to the 1959 budget, which *were approved.*

Executive Director

Herbert T. Wagner, M.D., executive director, reported on his activities during the preceding month, including meetings attended and conferences held. The report *was adopted.*

Reports of Committees

COMMISSION ON MEDICAL SERVICES

Gerald D. Dorman, M.D., chairman, reported on the work of the Commission and introduced committee chairmen for individual reports, as follows:

Economics.—Waring Willis, M.D., chairman, reported on the activites of Mr. George P. Farrell, director of the Bureau of Medical Care Insurance, including talks on medical care plans and Medicare at district branch meetings.

Industrial Health.—Peter J. Di Natale, M.D., chairman, reported that neither he nor Anthony A. Mira, M.D., director of the Bureau of Industrial Health and Workmen's Compensation, had been able to attend the Cornell Off Campus Conference.

Medical Care Insurance.—Carl R. Ackerman, M.D., chairman, reported on meetings attended, including that of the Public Health Association in New York City.

Rural Medical Service.—Edward C. Hughes, M.D., chairman, reported that meetings were scheduled for Fulton in Oswego County and Cortland in Cortland County to explain the program of rural medical services to local community groups. The report *was approved.*

Workmen's Compensation.—On behalf of William E. Pelow, M.D., chairman, Dr. Dorman reported on a meeting of the Advisory Committee on the Medical Fee Schedule and Allied Problems to the Chairman of the Workmen's Compensation Board, held on October 16, at which fee schedule revisions were discussed. He also reported conferences held by Anthony A. Mira, M.D., director of the Bureau of Industrial Health and Workmen's Compensation. The report *was accepted.*

The report of the Commission as a whole *was approved.*

[Continued on page 298]

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1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
2. Frank, L.: New York J. Med. 59:2892, 1959

[Continued from page 296]

Other Committees

Columbia University Study of Nonprofit Medical Insurance Plans.—John C. McClintock, M.D., chairman, reported that a meeting was to be held on October 25 with the study staff to consider the preliminary report.

Constitution and Bylaws.—Ezra A. Wolff, M.D., chairman, reported that several matters had been referred to the committee which would receive appropriate action.

Legislation.—James M. Blake, M.D., chairman, reported on a meeting of the Committee on Legislation held October 8, at which the following recommendations were made:

1. That resolution 59–13, "Fitting of Contact Lenses," be implemented by the preparation of legislation, after contact with and approval by the New York State Society of Ophthalmologists, to provide that a licensed optometrist may fit contact lenses only under personal supervision of a physician;
2. That resolution 59–20, "Amendment to the General Municipal Law," be referred to legal counsel for review and recommendations;
3. That three resolutions pertaining to the Lien Law, 59–21, 59–22, and 59–43, be implemented by the preparation of legislation carrying out the intent of the resolutions;
4. That resolution 59–48, "Improvement in Legislation Program," be implemented by an improved plan for distribution of information from New York City headquarters to county medical societies;
5. That resolution 59–27, "Administration of Physiotherapy by Written Prescription," be implemented by the preparation of legislation to carry out the intent of the resolution;
6. That a request from the State Department of Social Welfare for the support of legislation extending authority over proprietary hospitals and labor union health centers be submitted to Herman E. Hilleboe, M.D., State Commissioner of Health, for review.

The report *was adopted.*

Federal Legislation.—George J. Lawrence, Jr., M.D., chairman, reported on the American Medical Association Legislative Conference in St. Louis on October 2 and 3, where the main topics considered were the Forand Bill and medical society legislation activities.

Nursing Education.—John M. Galbraith, M.D., chairman, presented a report for information.

Office Administration and Policies.—John J. Masterson, M.D., chairman, reported on personnel matters and recommended that Mr. Thomas E. Alexander be given the title of "controller." The report *was adopted.*

Publication.—Alfred P. Ingegno, M.D., chairman, reported the following recommendations of the committee: (1) That Miss Alvina Rich Lewis be given the title of executive editor; (2) that a supply of memo booklets be ordered for promotional use; (3) that a new contract for paper for the JOURNAL be signed; (4) that Curtis Prout, M.D., and Richard H. Orr, M.D., be appointed to the associate editorial board.

The report *was approved.*

Planning Committee.—Peter J. Di Natale, M.D., chairman, gave a progress report.

Public Health and Education.—Norman S. Moore, M.D., chairman, reported on activities of the committee and its subcommittees as follows:

1. *Subcommittee on Maternal and Child Welfare*—discussed plans for perinatal and maternal mortality studies, with first step a canvass of hospitals delivering 1,000 babies or more a year;
2. *Subcommittee on Aging and Nursing Homes*—recommended formation of a Joint Council to Improve the Health Care of the Aged in New York State; that the community health checkup program held in Schenectady County be publicized to all county medical societies; that the Council reaffirm its recommendation that Blue Shield plans in New York State "make available a contract for the low income, aged group";
3. *Postgraduate Education*—A total of 18 programs had been arranged since the last report to the Council;
4. *General*—Communication from Deputy Superintendent of State Police expressing thanks for cooperation in sending letters to doctors who do not cooperate with State police in taking blood samples.

The report *was adopted.*

Public Relations.—John C. McClintock, M.D., chairman, reported on activities of the Department of Communications, including distribution of literature and news releases. The report *was approved.*

Unfinished Business

A.M.A. Meeting.—The Council *approved* President Fineberg's appointment of a Hospitality Committee, as follows: James Greenough, M.D., chairman, Norman S. Moore, M.D., and Herbert T. Wagner, M.D. A resolution submitted by Queens County Medical Society to clarify A.M.A. stand on closed panel medical care plans *was approved* for introduction by the New York delegation.

New Business

Joint Commission in New York State for Improvement in Care of the Patient.—Samuel Z. Freedman, M.D., reported on a meeting he had attended with a request for a stand on a proposed

[Continued on page 300]

she calls it "nervous indigestion"

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[Continued from page 298]

change in the labor law, which *was referred* to the Committee on Legislation.

Nursing Technics.—Norman S. Moore, M.D., presented the need for clarification on the practice of nursing, and the Council *approved* the policy of registered nurses doing intravenous work under direction of the medical profession and that the Attorney General of the State of New York be so advised.

Catastrophic Expense Coverage.—Carl R. Ackerman, M.D., reported on the first meeting of the Advisory Committee to the Special Task Force on Catastrophic Expense Health Insurance Legislation, at which study groups were organized to prepare material and collect information. The State Medical Society is requested to provide data concerning an estimate of how much doctors contribute in the way of free service. The Council *approved* a sampling of members in the State to collect this information.

The meeting adjourned at 11:50 A.M.

MEDICAL MEETINGS

Medical Society of the County of Queens

The Medical Society of the County of Queens will meet on January 26 in the Society's building at 112-25 Queens Boulevard, Forest Hills, at 9:00 P.M. The subject of the meeting will be "Viewpoints and Trends in Occupational Health."

Moderator of the meeting is Nathan Millman, M.D., chairman, committee on industrial health. Panel members are as follows: D. John Lauer, M.D., medical director, Jones and Laughlin Steel Corporation, and president, Industrial Medicine Association, who will represent a management-sponsored medical program; Morris Brand, M.D., medical director of the Sidney Hillman Health Center, who will represent a labor-sponsored medical program; and William L. Wheeler, Jr., M.D., secretary of the Medical Society of the State of New York, secretary of the Medical Society of the County of New York, and medical director of the Grace Lines, who will represent the practice of medicine.

American Orthopsychiatric Association

The American Orthopsychiatric Association will hold its thirty-seventh annual meeting at the Sherman Hotel, Chicago, on February 25 through 27.

Psychiatrists, psychologists, psychiatric social workers, educators, and interested laymen are invited to attend the scientific sessions and workshops.

For further information write to: Dr. Marion F. Langer, Executive Secretary, American Orthopsychiatric Association, 1790 Broadway, New York 19, New York.

Pan-American Academy of General Practice

For its annual convention the Pan-American Academy of General Practice will join with the medical seminar cruise sponsored by the Alumni Association of the New York Medical College. The program will be presented by members of the faculty.

The medical seminar will be held aboard the cruise ship *S. S. Hanseatic,* sailing February 25 and returning March 11. The ship will visit St. Thomas, La Guaira, Curacao, Cristobal, Kingston, and Port Au Prince.

The seminar constitutes thirty hours Category 1 postgraduate requirements for the American Academy of General Practice.

Applications for reservations may be made to: Cassius Lopez de Victoria, M.D., executive director, Pan-American Academy of General Practice, 176 East 71st Street, New York 21, New York.

Sixteenth Congress of American College of Allergists

The American College of Allergists will hold its sixteenth congress and graduate instructional course in allergy, February 28 through March 4, at the Americana Hotel, Bal Harbour, Miami Beach, Florida.

[Continued on page 302]

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Miller, R. F.: Clin. Rev. 1:10 (July) 1958

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[Continued from page 300]

For further information concerning the meeting and course write to: The American College of Allergists, 2049 Broadway, Boulder, Colorado.

American Academy of General Practice

The American Academy of General Practice will hold its twelfth annual scientific assembly, March 21 through 24, in Convention Hall, Philadelphia.

The doctors will again have a chance to participate in physical examination sessions. More than 600 physicians took physical examinations at the last Academy meeting and many learned that they needed medical attention.

For further information concerning the meeting write to: The American Academy of General Practice, Volker Boulevard at Brookside, Kansas City 12, Missouri.

American Psychosomatic Society

The American Psychosomatic Society will hold its seventeenth annual meeting at the Sheraton-Mt. Royal Hotel, Montreal, on Saturday and Sunday, March 26 and 27, 1960.

A feature of the meeting will be a panel presentation entitled "Contributions of Behavioral Scientists to Psychosomatic Medicine." Speakers will represent fields of anthropology, medicine, psychiatry, and sociology.

For information concerning the meeting write to: American Psychosomatic Society, 265 Nassau Road, Roosevelt, New York.

Alumni Association of the New York Eye and Ear Infirmary

The annual spring meeting of the Alumni Association of the New York Eye and Ear Infirmary will be held April 4 through 7 at the Infirmary, 218 Second Avenue, New York 3, New York. Pediatric ophthalmology and otolaryngology will be stressed. There will be a combined eye, ear, nose, and throat symposium on "Nystagmus as a Pediatric Problem."

Concerning the eye, symposia will be offered on: "Ocular Complications Attending Infectious Diseases of Childhood"; "Surgical Correction of Congenital Deformities of Eye and Adnexa"; "Glaucoma and Cataracts in Pediatrics"; and "Office Management of the Pediatric Eye Patient."

Concerning the ear, nose, and throat, symposia will be offered on: "Diagnosis and Rehabilitation of Hearing Problems in Children"; and "Ankylosis of the Stapes."

Courses will also be given and there will be closed circuit television demonstrations of surgical procedures on the eye, ear, nose, and throat.

For additional information write to: John R. Finlay, M.D., secretary, Alumni Association, New York Eye and Ear Infirmary, 218 Second Avenue, New York 3, New York.

Gill Memorial Eye, Ear and Throat Hospital

The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Virginia, will present its thirty-third annual spring congress in ophthalmology and otolaryngology, April 4 through 9.

Among the physicians who will speak are John F. Daly, M.D., and Edward A. Dunlap, M.D., from New York City.

For further information concerning the meeting write to: Superintendent, P.O. Box 1789, Roanoke, Virginia.

International Congress of Gastroenterology

The International Congress of Gastroenterology will be held April 20 through 24 at Leyden and Noordwijk aan Zee, the Netherlands. The two main themes of the Congress will be: pathology—pathologic physiology, clinical aspects of the small intestine; and hepatitis—cirrhosis hepatis, and their possible connection.

The Congress is open to all interested gastroenterologists, physicians, and scientists.

For further information and application forms write to: International Congress of Gastroenterology, Secretariat, 16, Lange Voorhout, The Hague, The Netherlands.

Third International Congress of Physical Medicine

The Third International Congress of Physical Medicine will be held August 21 through 26 at the Mayflower Hotel, Washington, D.C.

A copy of the preliminary program may be had by writing to: Dorothea C. Augustin, Executive Secretary, Third International Congress of Physical Medicine, 30 North Michigan Avenue, Chicago 1, Illinois.

Fourth National Cancer Conference

The fourth national cancer conference, sponsored by the American Cancer Society and the National Cancer Institute, will be held in Minneapolis, Minnesota, September 13 through 15. The theme of the conference will be "Changing Concepts Concerning Cancer."

Address all correspondence relative to the conference to: American Cancer Society, Inc., Medical Affairs Department, 521 West 57th Street, New York 19, New York.

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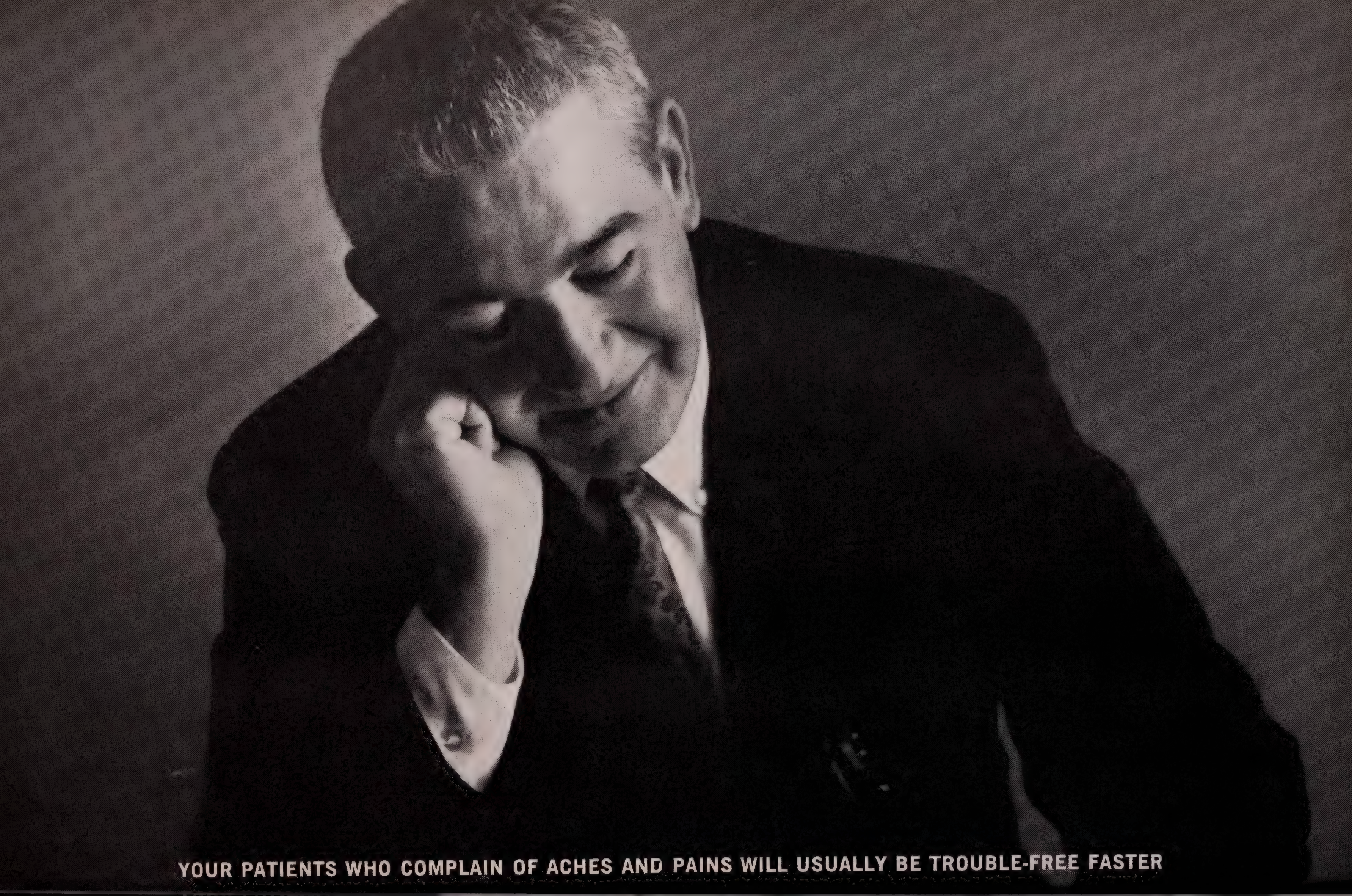
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References: 1. Muir, A.: Aspirin and Gastric Damage, Scientific Exhibit, A.M.A. Convention, Atlantic City, N. J., June 8-12, 1959. 2. Waterson, A. P.: Brit. M.J. 2:1531, 1955. 3. Editorial Comments: The effect of acetylsalicylic acid on the gastric mucosa, Canad. M.A.J. 80:47, 1959. 4. Muir, A., and Cossar, I. A.: Brit. M.J. 2:7, 1955. 5. Muir, A., and Cossar, I. A.: Lancet 1:539, 1959. 6. Schneider, E. M.: Gastroenterology 33:616, 1957. 7. Bayles, T. B., and Tenckhoff, H.: Salicylate Therapy in Rheumatic Diseases, Scientific Exhibit, Ann. Mtg. A.M.A., San Francisco, Calif., June, 1958. 8. Douthwaite, A. H., and Lintott, G. A. M.: Lancet 2:1222, 1938. 9. Batterman, R. C.: New Eng. J.M. 258:213, 1958. 10. Cronk, G. A.: New Eng. J.M. 258:219, 1958. 11. Editorial: Aspirin plain and buffered, Brit. M.J. 1:349, 1959. 12. Smith, P. K.: Plasma concentration of salicylate after the administration of acetylsalicylic acid or calcium acetylsalicylate to human subjects, Report submitted to Smith-Dorsey from the Dept. of Pharmacology, Geo. Washington Univ. School of Medicine, Washington, D. C., Sept. 5, 1958. **SMITH-DORSEY · a division of The Wander Company · Lincoln, Nebraska**

BOOKS RECEIVED

(The following books were received during the month of November, 1959)

Psychopathy. A Comparative Analysis of Clinical Pictures. By Carl Frankenstein, Ph.D. Octavo of 198 pages. New York, Grune & Stratton, 1959. Cloth, $6.75.

Soil, Grass and Cancer. By André Voisin. Translated from the French by Catherine T. M. Herriot and Dr. Henry Kennedy. Octavo of 302 pages, illustrated. New York, Philosophical Library Inc., 1959. Cloth, $15.

Progress in Neurology and Psychiatry. Volume XIV. Edited by E. A. Spiegel, M.D. Octavo of 656 pages. New York, Grune & Stratton, 1959. Cloth, $12.

Acute Pericarditis. By David H. Spodick, M.D. Octavo of 182 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $6.50.

Hearing Loss. What Can Be Done About It. By Greydon G. Boyd, M.D. Duodecimo of 190 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Paper, $1.45.

The Life Extension Foundation Guide to Better Health. By Harry J. Johnson, M.D. Octavo of 220 pages. Englewood Cliffs, Prentice-Hall, Inc., 1959. Cloth, $4.95.

The Triumph of Surgery. By Jürgen Thorwald. Translated by Richard and Clara Winston. Octavo of 454 pages, illustrated. New York, Pantheon Books Inc., 1960. Cloth, $6.50.

A Guide to Antibiotic Therapy. By Henry Welch, Ph.D. Quarto of 69 pages. New York, Medical Encyclopedia, Inc., 1959. Cloth, $3.00.

Society of Actuaries. Build and Blood Pressure Study. Volume I, 1959. Quarto of 268 pages, illustrated. Chicago, Society of Actuaries, 1959. Paper, $25.

The American Academy of Orthopaedic Surgeons. Instructional Course Lectures. Volume XVI, 1959. Edited by Fred C. Reynolds, M.D. Quarto of 334 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $16.

Laboratory Tests In Common Use. By Solomon Garb, M.D. Second edition. Duodecimo of 185 pages, illustrated. New York, Springer Publishing Company, Inc., 1959. Cloth, $2.50.

Observations on "Direct Analysis" The Therapeutic Technique of Dr. John N. Rosen. By Morris W. Brody, M.D. Octavo of 104 pages. New York, Vantage Press, 1959. Cloth, $2.95.

Doctors and Patients. Stories by Leading American Physicians. Edited by Noah D. Fabricant, M.D. Octavo of 204 pages. New York, Grune & Stratton, 1959. Cloth, $5.25.

Chronic Illness In The United States. Volume III. Chronic Illness in a Rural Area. The Hunterdon Study. Reported by Ray E. Trussel, M.D., and Jack Elinson, Ph.D. Octavo of 440 pages, illustrated. Cambridge, Massachusetts, published for The Commonwealth Fund by Harvard University Press, 1959. Cloth, $7.50.

Symposium on Glaucoma. Edited by William B. Clark, M.D. Quarto of 314 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $13.50.

Atlas of Roentgenographic Positions. Two Volumes. By Vinita Merrill. Second edition. Quarto of 663 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $32.50.

Physiology of the Eye. Clinical Applications. By Francis Heed Adler, M.D. Third Edition. Quarto of 790 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $16.

Christopher's Minor Surgery. Edited by Alton Ochsner, M.D., and Michael E. DeBakey, M.D. Eighth edition. Quarto of 539 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $10.50.

Lymphocytes and Mast Cells. By Margaret A. Kelsall, Ph.D., and Edward D. Crabb, Ph.D. Octavo of 399 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1959. Cloth, $8.00.

Pyelonephritis. By Fletcher H. Colby, M.D. Octavo of 214 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1959. Cloth, $7.50.

The Medical Clinics of North America. Nationwide Number. November, 1959. Commonly Mismanaged Urologic Problems. David M. Davis, M.D., guest editor. Octavo. Philadelphia, W. B. Saunders Company, 1959. Published bimonthly (six numbers a year). Cloth, $18 net; Paper, $15 net.

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Lysaught, J. N., and Cleaver, W.: Paper presented at the Symposium on Antibacterial Therapy, Michigan and Wayne County Academies of General Practice, Detroit, Sept. 12, 1959 (published Nov., 1959)

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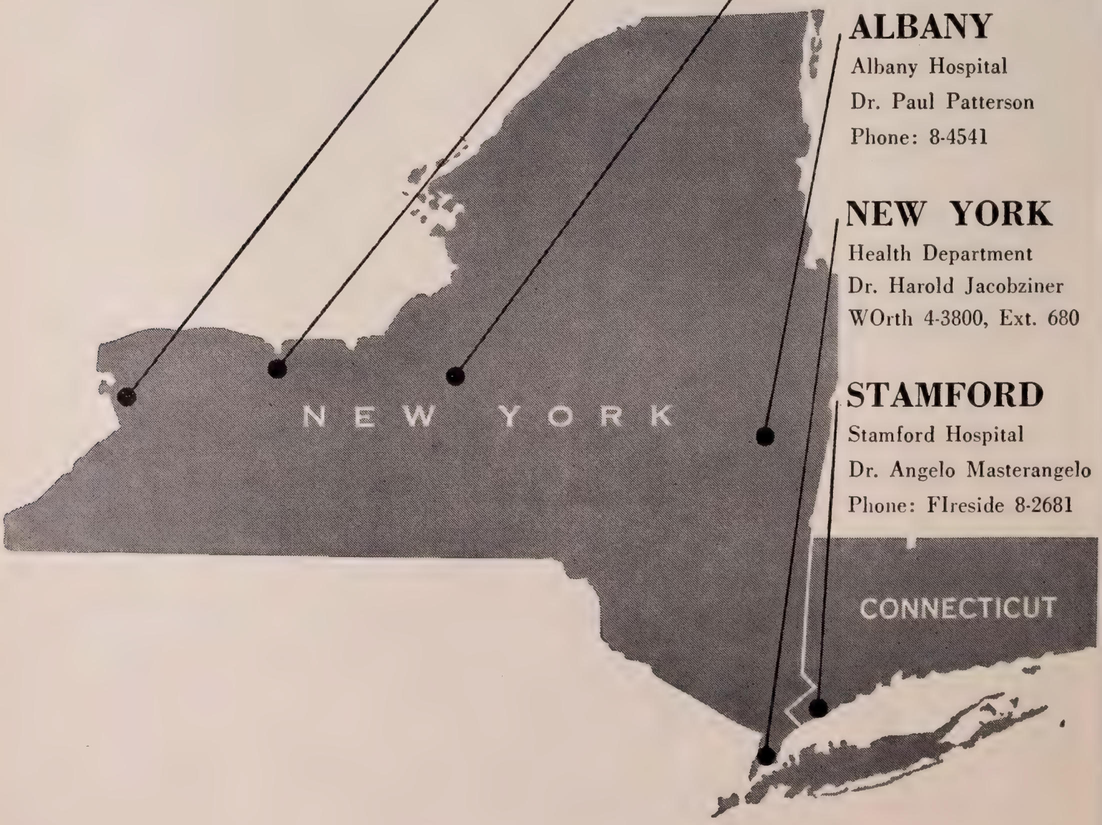

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Genesee	Sydney L. McLouth	Corfu	Sawyer A. Glidden	Batavia	Emil Kimaid	Le Roy
Greene	Robert N. Blakeslee	Windham	John A. Vosburgh	Coxsackie	Mahlon H. Atkinson	Catskill
Herkimer	Daniel C. Shaughnessy	Herkimer	Margarete E. Kotrnetz	Herkimer	Arthur H. Applegate	Mohawk
Jefferson	James C. Crossley	Watertown	Charles A. Prudhon	Watertown	Charles A. Prudhon	Watertown
Kings	Warren A. Lapp	Brooklyn	Leslie H. Tisdall	Brooklyn	James L. O'Leary	Brooklyn
Lewis	William S. Reed	Lowville	Allan S. Ellis	Port Leyden	Allan S. Ellis	Port Leyden
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Ontario	Erwin C. Merrill	Canandaigua	James A. Stringham	Canandaigua	James A. Stringham	Canandaigua
Orange	Paul M. Traub	Newburgh	Earl C. Waterbury	Newburgh	Earl C. Waterbury	Newburgh
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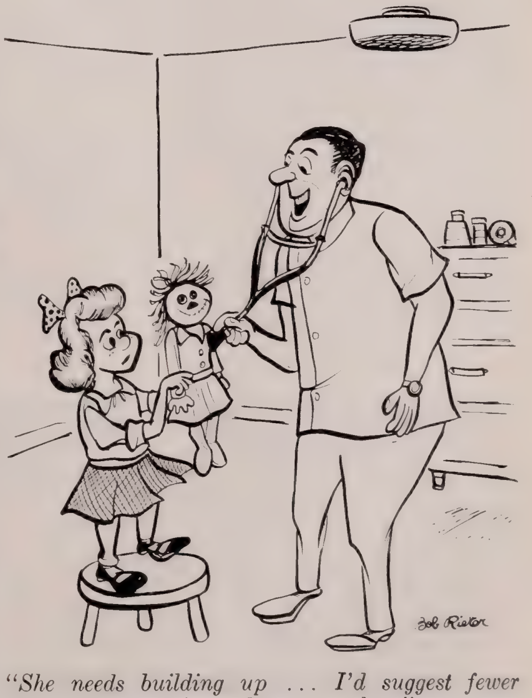

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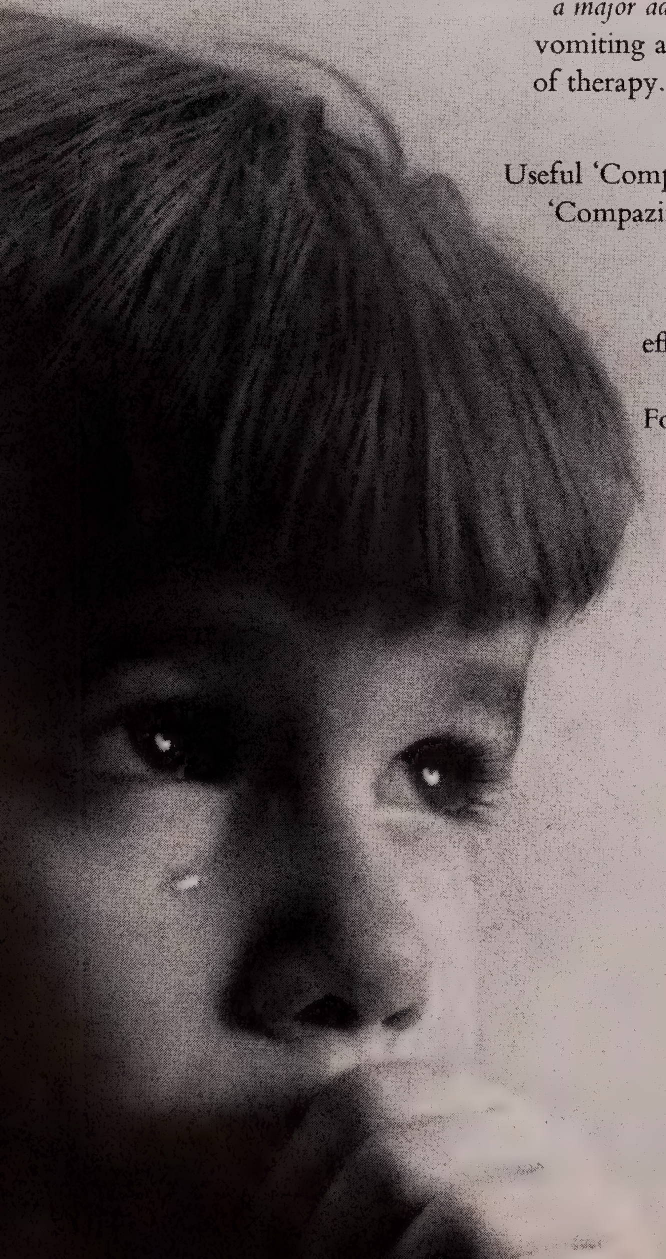

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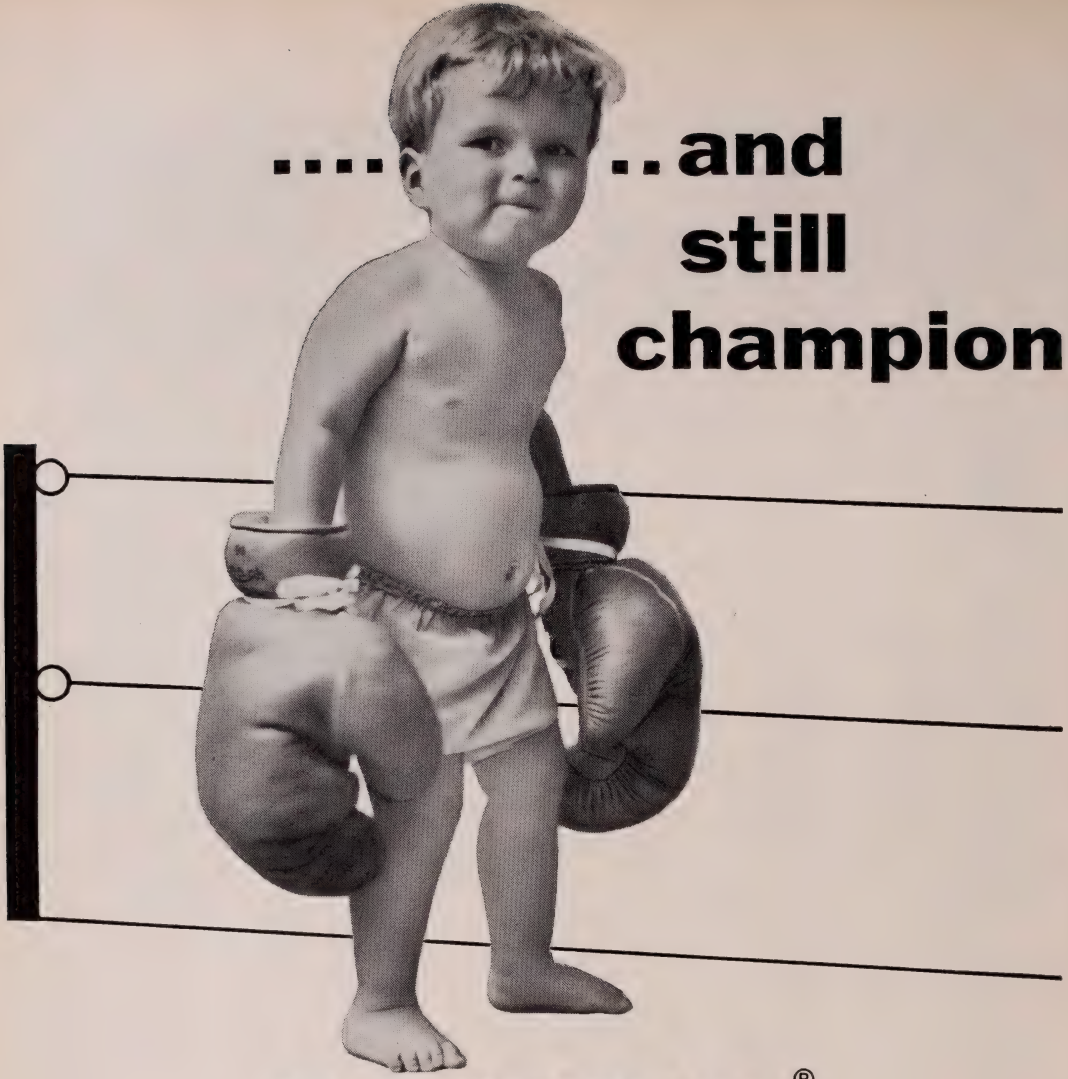

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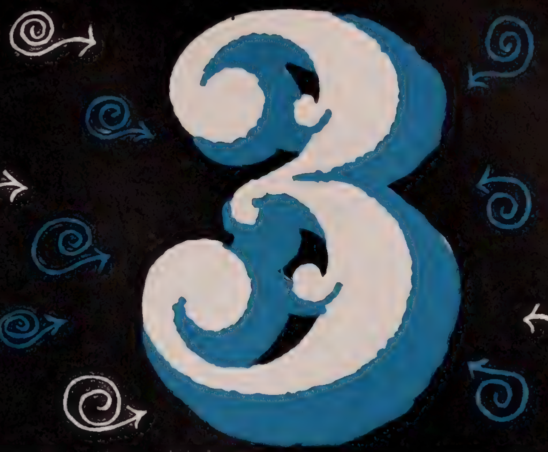

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1. Jones, E. H.: Eye, Ear, Nose & Throat Month. *38*:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists *4*:2, 1955.

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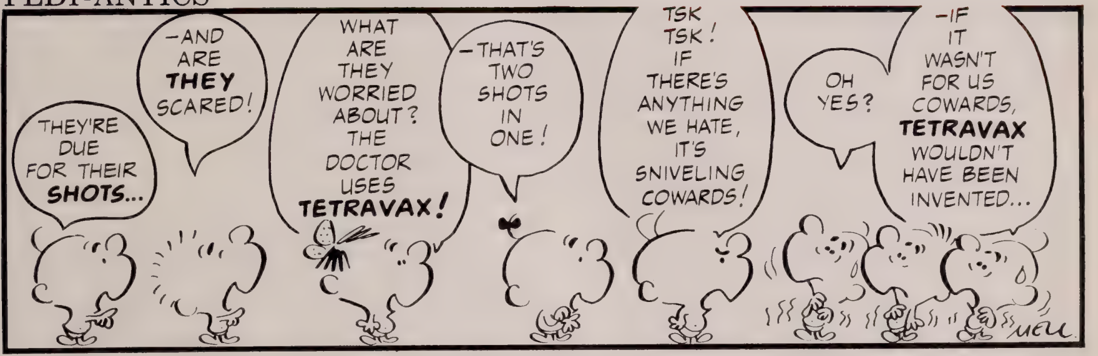
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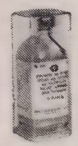

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(*Continued from page 326*)

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dministration of 10 cc. of ROBAXIN Injectable,
slocation reduced on first attempt, and
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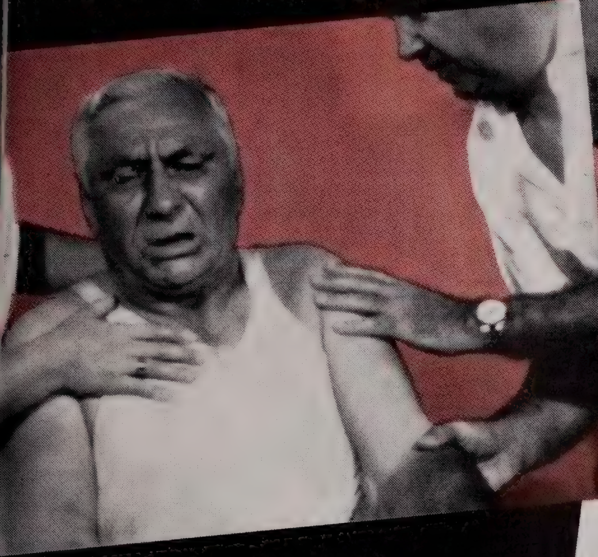

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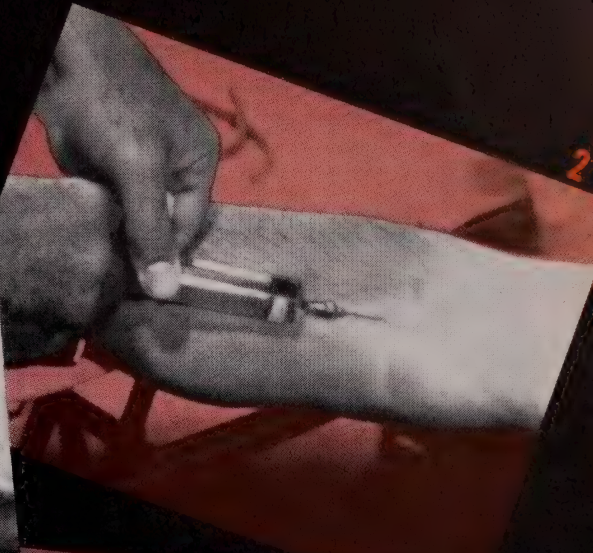

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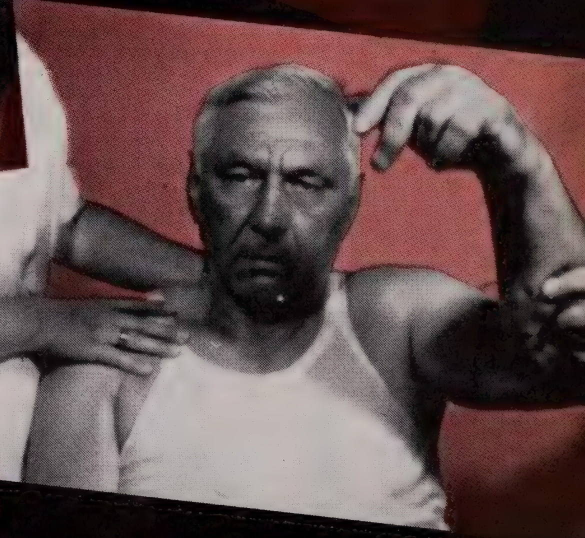

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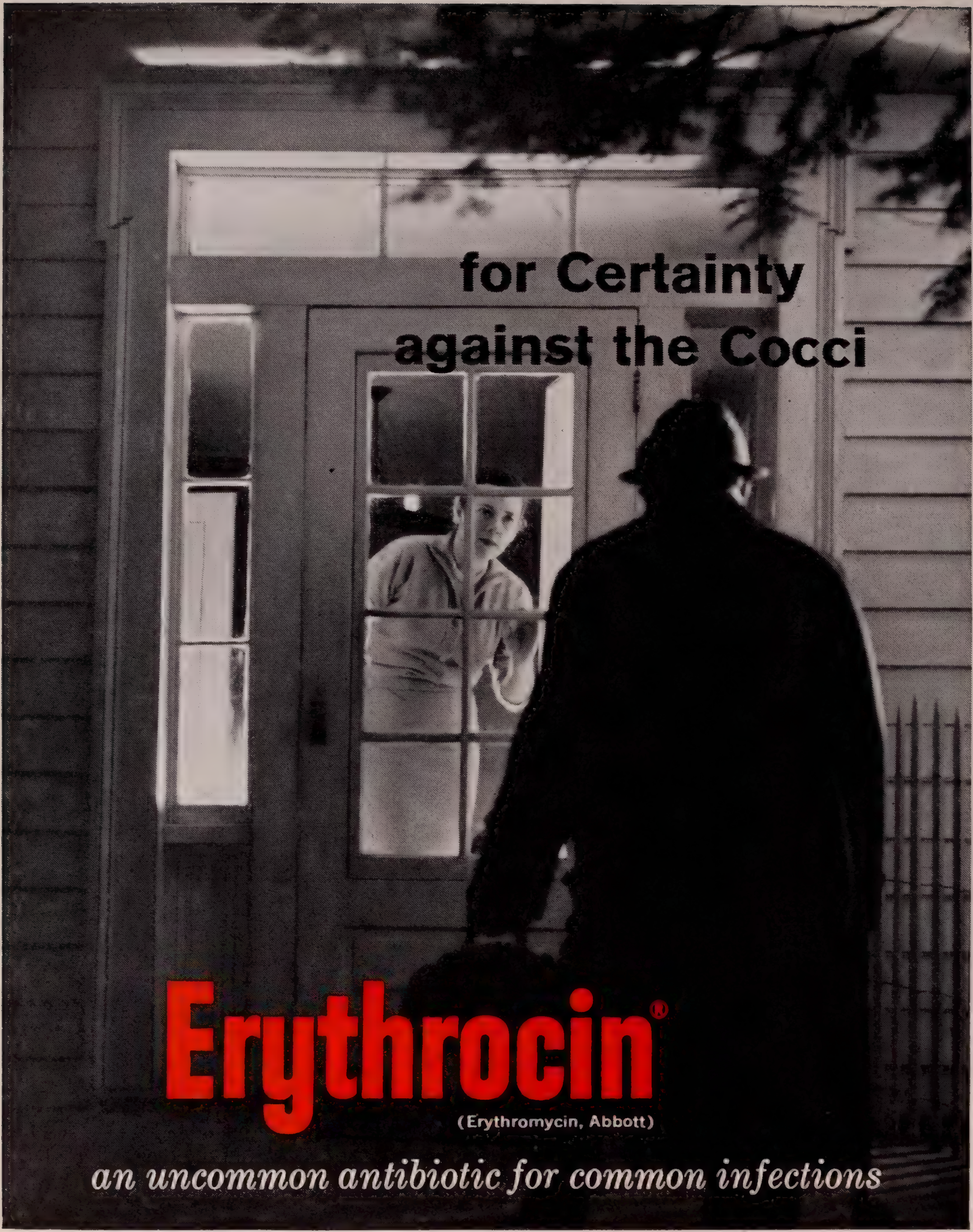
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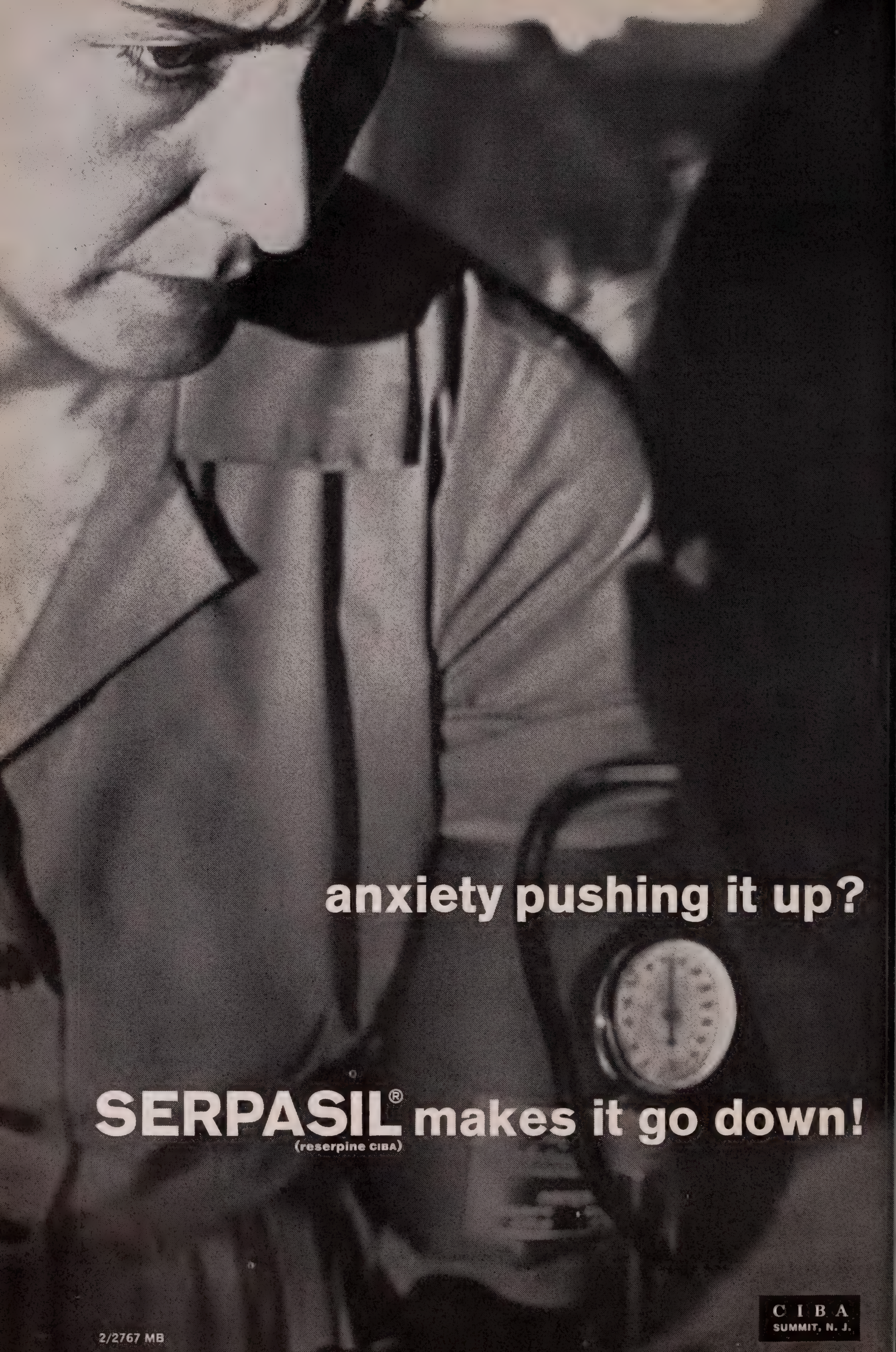

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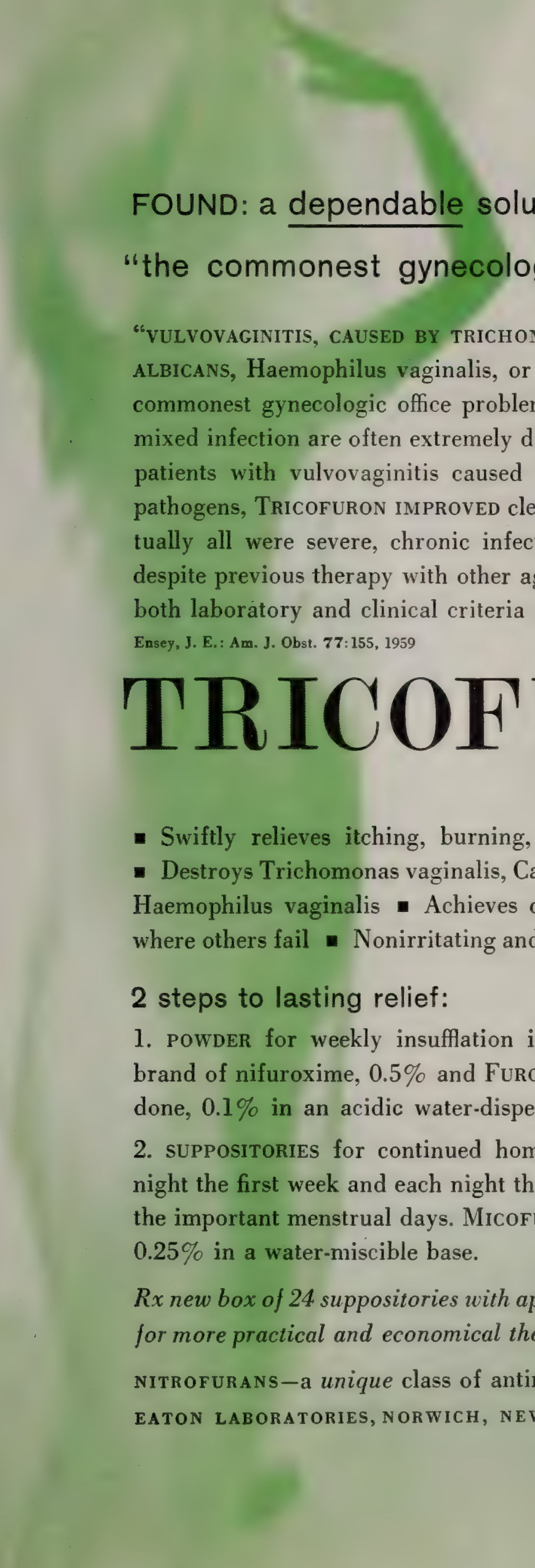

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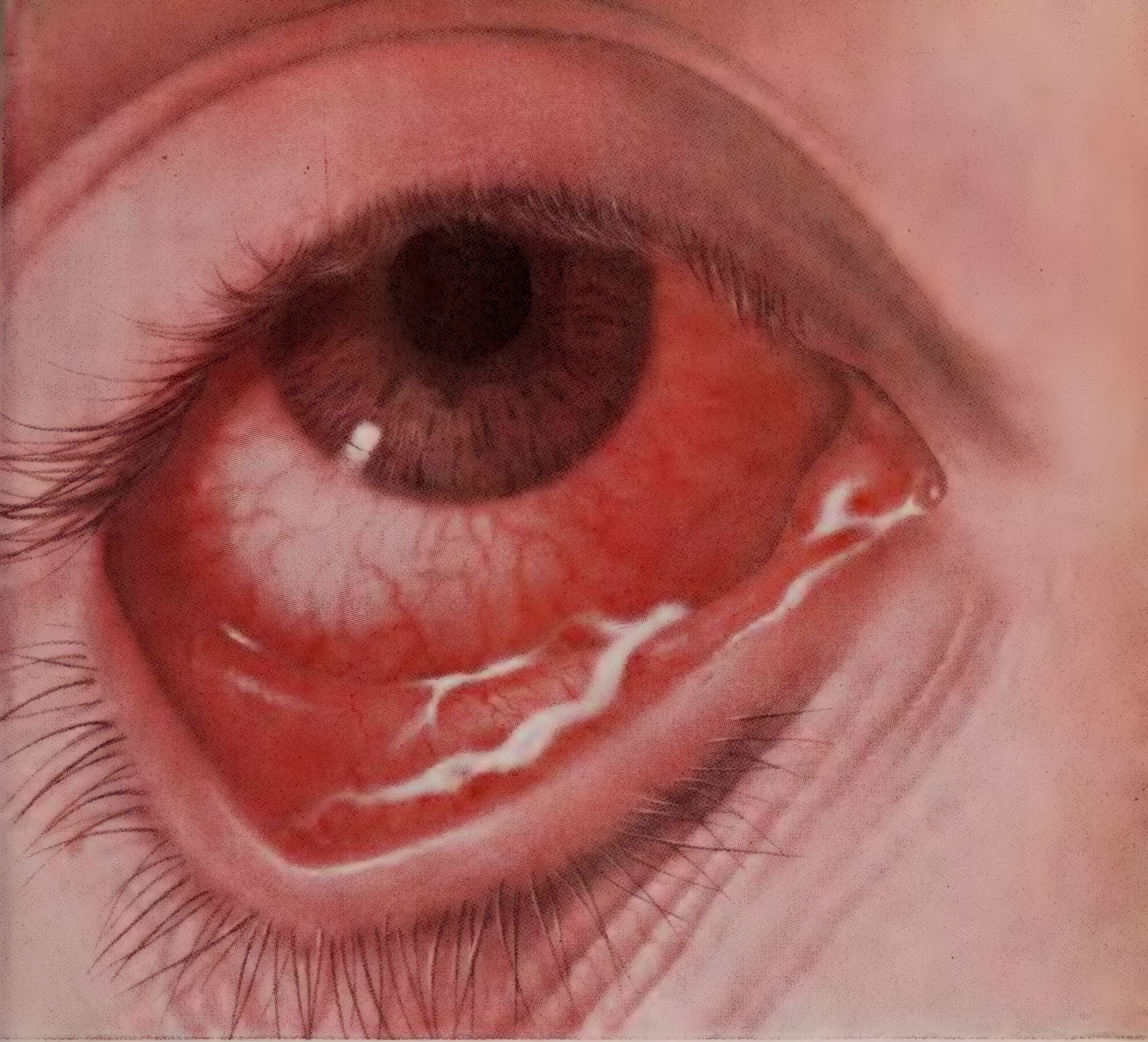

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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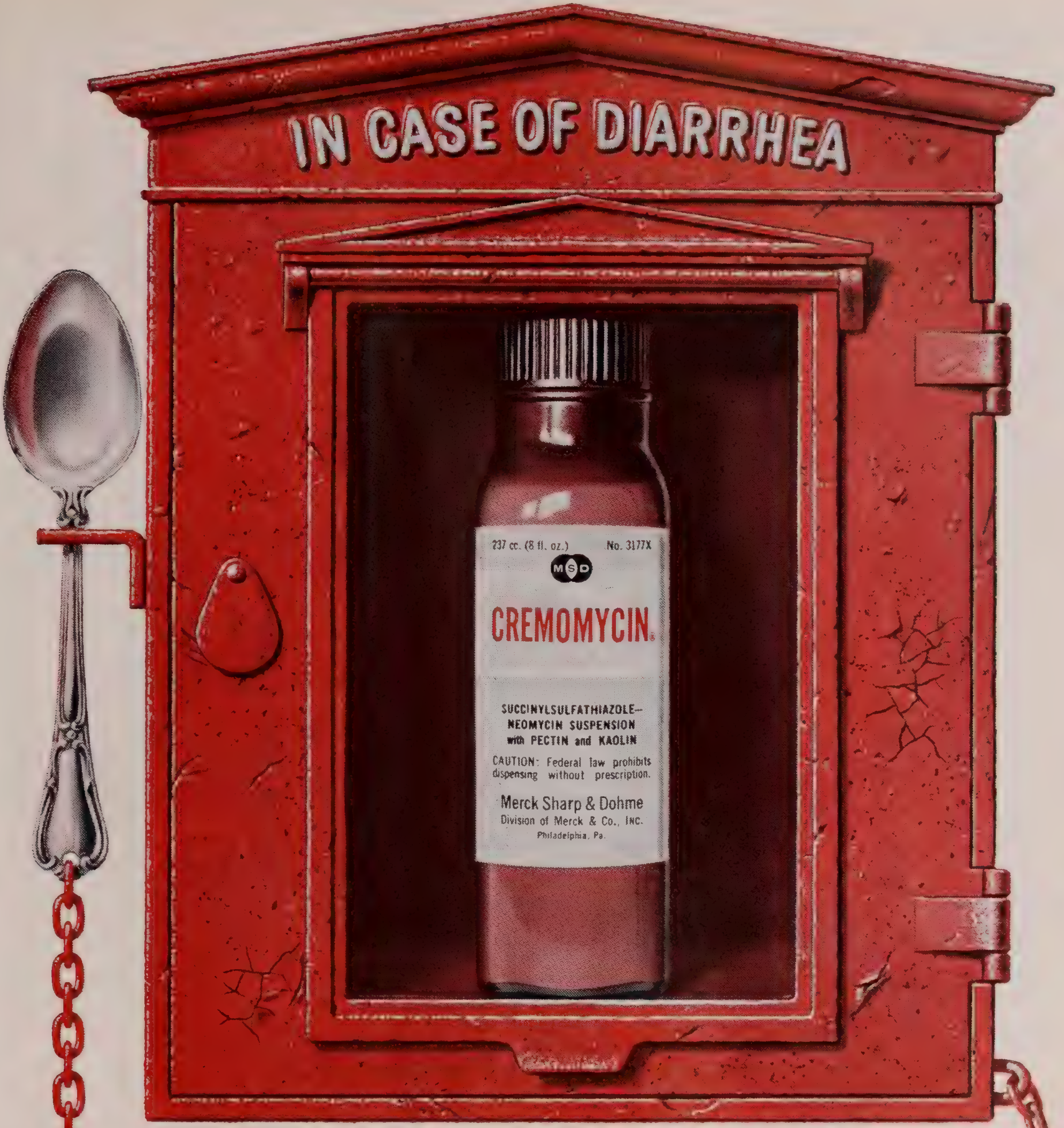
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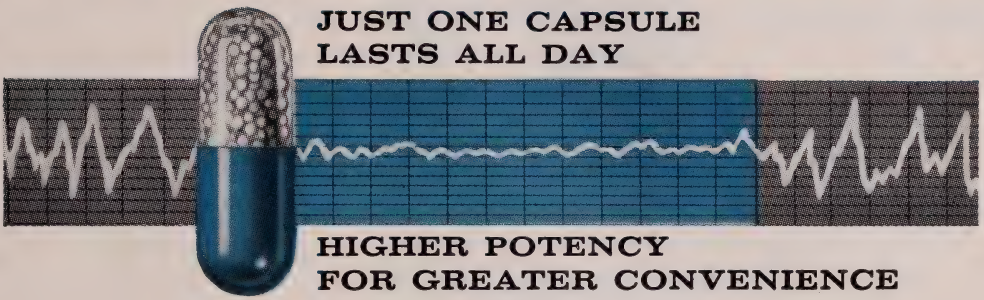

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Tetracycline Phosphate Complex (TETREX®)
U.S. PAT. NO. 2,791,609
# in the Therapy of PNEUMONIA

Preferably, antibiotic therapy should be based on pretreatment culture of the offending pathogen, but in bacterial pneumonia the problem may well be too pressing to permit the required delay of 24 to 48 hours. A differential diagnosis among bacterial pneumonias, based on such clinical grounds as speed of onset, sepsis and pain may guide the choice of antibiotic for initiation of therapy.

Should clinical judgment dictate that antibiotic therapy be started immediately, at the same time a sputum sample or a subglottic swab can be sent to the laboratory for culture and sensitivity studies. If the response to the first antimicrobial agent proves unsatisfactory, a reasonable basis for changing therapy will then be at hand.

Choosing the Antibiotic

Since therapy must be started at once for bacterial pneumonia, it is advisable to choose a broad-spectrum antibiotic that quickly produces high levels of active agent (e.g., tetracycline phosphate complex, TETREX). Such an antibiotic probably has the best chance of controlling the pathogen, whether it be gram-negative or gram-positive. And if the laboratory report shows that the invading organism is much less sensitive to tetracycline than to other agents, the patient can then be changed to an appropriate antibiotic. If the difference in sensitivity is slight, then the possibility of side effects, sensitization, and toxicity should be evaluated before changing therapy to another antibiotic.

The greatest number of bacterial pneumonias are caused by pneumococci, which respond very well to penicillin, tetracycline, and chloramphenicol. Also, these antibiotics are usually effective against the other gram-positive coccal pneumonias. But penicillin is ineffective against the viral pneumonias and the gram-negative *Hemophilus influenzae* and *Klebsiella pneumoniae*. Although *K. pneumoniae* causes only about 1 to 2 per cent of pneumonia cases on the average,[1] these are apt to be acute and fulminating (Friedländer's pneumonia), with a high mortality rate if not effectively treated. Since pneumococcal pneumonia may be difficult to distinguish clinically from Friedländer's, except by gram-stained sputum smear, it may be wiser to start treatment with an agent also effective against Klebsiella.

Penicillin, however, in addition to having a limited spectrum, also causes many minor and some serious sensitivity reactions. In a recent survey[2] it was found that penicillin produced severe skin reaction. But most important was the observation that anaphylactic shock, with a fatality rate of about 9 per cent, was the most frequent serious reaction. Such severe reactions are almost always associated with parenteral administration.

Tetracycline is also clinically effective in primary atypical pneumonia.[3]

The tetracyclines (e.g., TETREX) have the advantage of a broad range of antimicrobial activity and low toxicity. And in addition, the physician does not have to trouble himself or his patients with repeated blood studies when he prescribes TETREX. Minor reactions such as gastric upsets or mild skin rashes occur occasionally. The most serious side effects are staphylococcal and monilial overgrowth, but these are rare and can be adequately controlled.

No one would deny that appropriate antibiotic therapy has greatly reduced morbidity and saved many lives of patients with bacterial pneumonia. Nevertheless, general supportive measures in the care of patients remain important even today. Especially in the desperately ill patient, antibiotics are not considered as substitutes for the individual evaluation, clinical observation and judgment of the physician.

Some Micro-organisms Susceptible[a] *to Tetracycline* (TETREX)[b]

Streptococcus; Staphylococcus; Pneumococcus; Gonococcus; Meningococcus; *C. diphtheriae; B. anthracis; E. coli;* Proteus; *A. aerogenes; Ps. aeruginosa; K. pneumoniae;* Shigella; Brucella; *P. tularensis; H. influenzae; T. pallidum;* Rickettsiae; Viruses of psittacosis and ornithosis, lymphogranuloma inguinale, primary atypical pneumonia; *E. histolytica; D. granulomatosis.*

[a] Some strains are not susceptible.

[b] Table adapted from Goodman, L. S., and Gilman, A.: The Pharmaceutical Basis of Therapeutics. 2nd edition, New York, The Macmillan Co., 1956, pp. 1322-1323.

References: 1. Wood, W. E., Jr.: In: A Textbook of Medicine. Edited by Cecil, R. L., and Loeb, R. F., 9th edition, Philadelphia, W. B. Saunders Co., 1955, p. 145. 2. Welch, H.; Lewis, C. H.; Weinstein, H. I., and Boeckman, B. B.: Severe reactions to antibiotics. A nationwide survey. Antibiotic Med. & Clin. Ther. 4:800 (Dec.) 1957. 3. Keefer, C. S.: The choice of an anti-infective agent. In: Drugs of Choice, 1958-1959. Edited by Walter Modell, St. Louis, The C. V. Mosby Co., 1958, p. 135.

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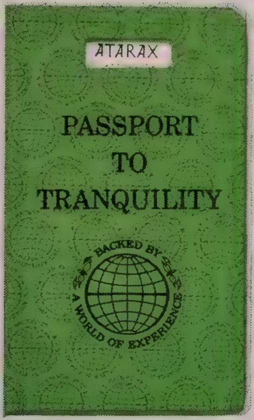

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IN CHILDREN unusually safe; tasty syrup, 10 mg. tablet	"... Atarax appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior. . . ." Freedman, A. M.: Pediat. Clin. North America **5**:573 (Aug.) 1958.	Bayart, J.: Acta paediat. belg. **10**:164, 1956. Ayd, F. J., Jr.: California Med. **87**:75 (Aug.) 1957. Nathan, L. A., and Andelman, M. B.: Illinois M. J. **112**:171 (Oct.) 1957.
IN ELDERLY PATIENTS well tolerated by debilitated patients	"... seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: J. Am. Geriatrics Soc. **7**:61 (Jan.) 1959.	Settel, E.: Am. Pract. & Digest Treat. **8**:1584 (Oct.) 1957. Negri, F.: Minerva med. **48**:607 (Feb. 21) 1957. Shalowitz, M.: Geriatrics **11**:312 (July) 1956.
IN ALLERGIC PATIENTS useful adjunctive therapy for asthma and dermatosis; particularly effective in urticaria	"All [asthmatic] patients reported greater calmness and were able to rest and sleep better ... and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medicament." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.	Eisenberg, B. C.: J.A.M.A. **169**:14 (Jan. 3) 1959. Coirault, R., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. Robinson, H. M., Jr., et al.: South. M. J. **50**:1282 (Oct.) 1957.
IN HYPEREMOTIVE ADULTS does not impair mental acuity	"... especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

SUPPLIED: Tablets, 10 mg., 25 mg., 100 mg.; bottles of 100. Syrup (10 mg. per tsp.), pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules.

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a single chemical that is both a general non-narcotic analgesic and an effective muscle relaxant[1,2]

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where pain makes tension and tension makes pain analexin effectively relieves the total pain experience

Formulae: **Analexin**—each tablet contains 200 mg. of phenyramidol.
Analexin-AF—each tablet contains 100 mg. of phenyramidol and 300 mg. of aluminum aspirin.

Action: Analexin produces (1) analgesia by raising the pain threshold and (2) produces muscle relaxation by selectively depressing subcortical and spinal polysynaptic transmission (interneuronal blockade), abolishing abnormal muscle tone without impairing normal neuromuscular function.[2] Thus Analexin abolishes both the pain and the muscle tensions that often augment the pain and relieves the total pain experience.

Advantages: Analgesic potency of 1 tablet is clinically equivalent to 1 grain of codeine, but phenyramidol is not narcotic nor habituating. Tolerance and cumulative effects have not been noted. Muscle relaxant effect is comparable to the most potent muscle relaxants available for oral use.

Indications: **Analexin**—for relief of pain and associated muscle tension or spasm in: dysmenorrhea; abdominal and epigastric distress; genitourinary conditions; tension headache; gout; low back pain; myalgia; sprains and strains; glass arm; wry neck; osteoarthritis.

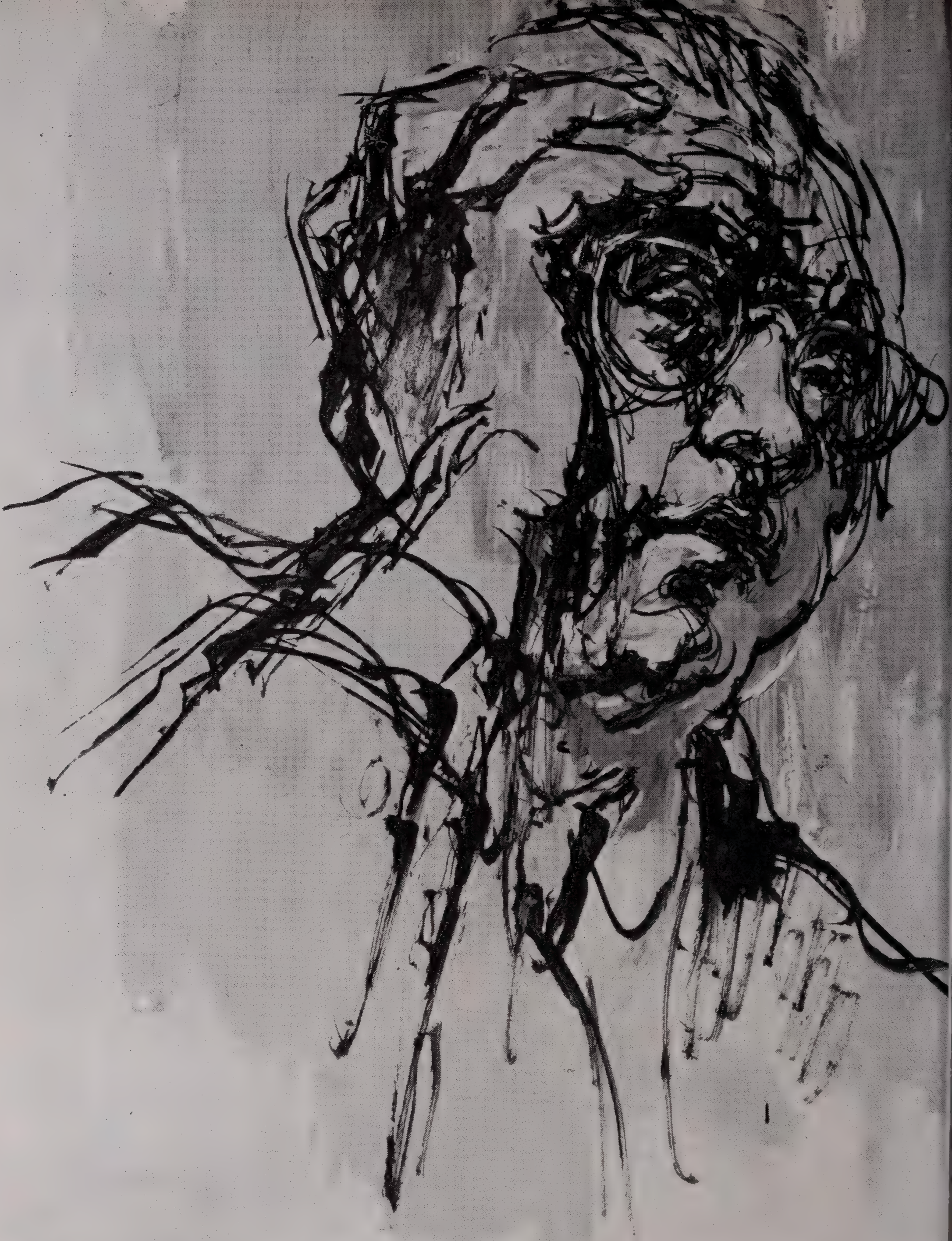
Analexin-AF—for relief of pain and musculoskeletal tension complicated by inflammation and/or fever, as in: arthritis; arthralgia; bursitis; tendinitis; myalgia of strain and tear.

Clinical Reports: Batterman, Grossman and Mouratoff[3] compared phenyramidol with aspirin, sodium salicylate and a placebo in a series of 195 patients with various painful conditions. The authors state "Not only is satisfactory relief of painful states achieved in the majority of patients regardless of etiology and duration of pain, but there is also no evidence suggestive of cumulative toxicity. Furthermore, in contrast to codeine and meperidine, the likelihood of untoward reactions occurring in ambulant patients is not high." Wainer[4] used phenyramidol in a series of 200 cases, fifty with dysmenorrhea, 50 with headache and premenstrual tension, and 100 cases with postpartum pain. In the 50 dysmenorrhea patients, he achieved good or excellent results in 45. All 50 cases with headache and premenstrual tension responded with excellent results. And a combination of phenyramidol and aluminum aspirin (Analexin-AF) successfully replaced aspirin and codeine in the 100 cases of postpartum pain.

Dosage: **Analexin**—1 or 2 tablets every 4 hours. In dysmenorrhea, 2 tablets at onset of pain; then, one tablet every 2-4 hours as needed.
Analexin-AF—Two tablets every 4 hours or as required.

Side Effects: Analexin does not produce such centrally induced side effects as sedation, euphoria, etc. The infrequent occurrence of mild gastrointestinal irritation or epigastric distress, pruritus with and without rash, has been noted. However, these effects subside promptly when dosage is reduced or discontinued.

REFERENCES: 1. Gray, A.P., and Heitmeier, D. E.: J. Am. Chem. Soc. 81:4347, 1959. 2. O'Dell, T. B., et al.: Fed. Proc. 18:1694, 1959; J. Pharmacol. & Exper. Therap., in press. 3. Batterman, R. C.; Grossman, A. J., and Mouratoff, G. J.: Am. J. Med. Sc. 238:315, 1959. 4. Wainer, A. S.: The Use of Phenyramidol in Obstetrics & Gynecology, read before the N. Y. Acad. of Sc., Dec. 5, 1959.



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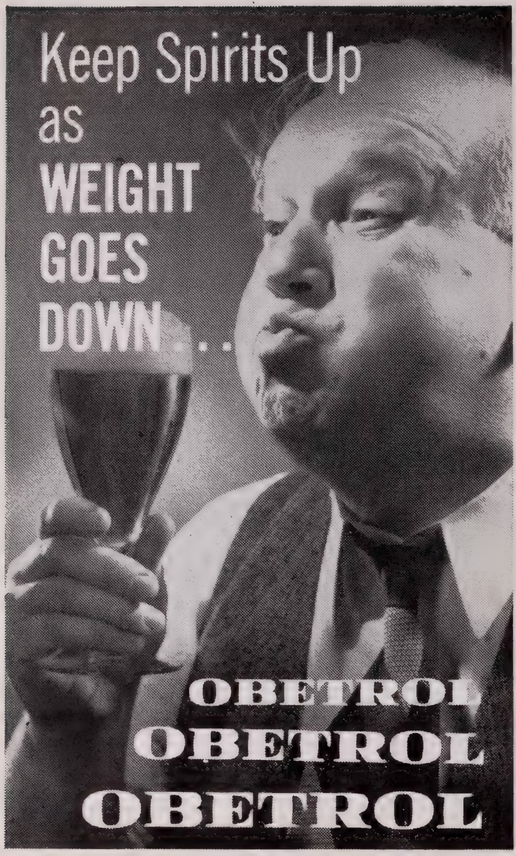

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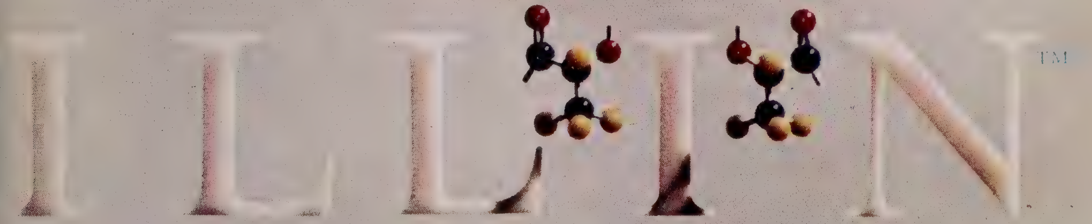

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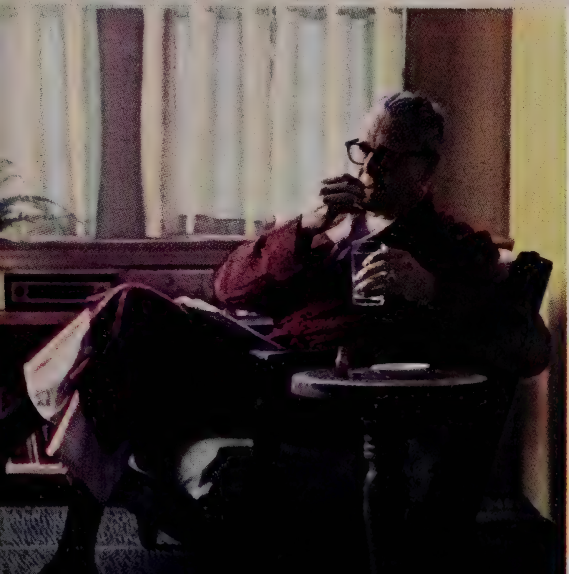

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Significance of complementary action of isomers in SYNCILLIN

The antibiotic effect of the clinically available mixture. SYNCILLIN. is greater than that of either of its two component isomers alone against many important pathogens, including some penicillin-resistant staphylococci. This phenomenon has been described as *Isomeric Complementarity.*

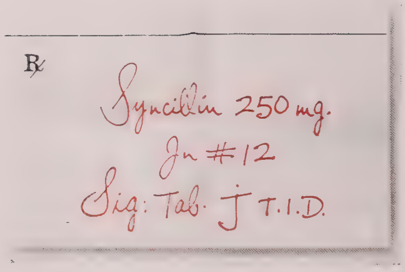
Significance of higher blood levels with SYNCILLIN

Higher blood levels may be of value with organisms of only moderate penicillin sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition, these higher levels may be necessary where there is infection in areas with a poor blood supply.[6] A higher blood concentration may then provide the increased diffusion pressure required to deliver adequate amounts to the tissue. Also, antibiotic activity of SYNCILLIN is directly proportional to oral dosage. Increasing the dosage may, therefore, enhance the drug's effectiveness in certain cases.

Efficacy of SYNCILLIN against staphylococci and other resistant organisms

Studies have shown that SYNCILLIN is effective *in vitro* against 60 to 75% of hospital "staph" strains, while penicillin G and penicillin V are now effective against only 30 to 50%.[1, 2] Therefore, if clinical judgment indicates the use of penicillin, SYNCILLIN would be expected to be the most effective. However, since some strains are still resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment.

There have recently been reports of decreased efficacy of penicillin in streptococcal[3] and gonococcal[4, 5] infections. The emergence of penicillin-resistant gonococci appears to be associated with an increase in the incidence of gonorrhea all over the world. When a less sensitive strain is encountered the higher blood levels produced by SYNCILLIN may be most helpful.



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major therapeutic advantages accompany molecular asymmetry

Relation of intermittent high blood levels of SYNCILLIN to antibacterial efficacy

SYNCILLIN, like all clinically available penicillins, is bactericidal. Periodic high blood concentrations are sufficient to permit complete eradication of sensitive pathogens. Continuous high blood levels are not required with SYNCILLIN. According to Eagle,[7] "Soon after penicillin attains effective concentrations, the bacteria cease multiplying; and the bacteriostatic effect persists for a number of hours after penicillin has fallen to concentrations that are wholly ineffective....The therapeutic significance of this postpenicillin recovery period is enhanced by the fact that the recovering bacteria, damaged but not killed by the previous exposure to penicillin, are abnormally susceptible to the host defenses. In consequence, the bactericidal process *in vivo* continues for many hours after the drug itself has fallen to ineffective concentrations."

Reduced rate of inactivation of SYNCILLIN by staph penicillinase

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms. SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers. Further, SYNCILLIN is shown to be less inactivated by this enzyme than penicillin V and penicillin G. Penicillinase from *B. cereus* likewise inactivates SYNCILLIN less rapidly than penicillins V and G. But this would not impede the therapeutic use of this penicillinase in allergic reactions. This is because the massive dosage with which this enzyme is administered would effectively destroy SYNCILLIN in the body.

Indications: Infections caused by pneumococci, streptococci, gonococci, corynebacteria, penicillin-sensitive staphylococci, as well as certain strains of staphylococci resistant to other penicillins. SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. t.i.d., depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals. Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: At the present time it is not possible to draw definite conclusions regarding the incidence of allergenicity to SYNCILLIN or its cross-allergenicity with natural penicillins. *Therefore, the usual precautions for oral penicillin therapy should always be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care. Administration of oral penicillin, in rare instances, may provoke acute anaphylaxis, particularly in penicillin-sensitive individuals.
If diarrhea occurs, lengthen the interval between dosages.
If superinfection occurs during therapy, appropriate measures should be taken.
Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

References: 1. Wright, W. W.: Microbiology Report to Bristol Laboratories Inc. 2. Kligman, A.; Morigi, E. M. E.; Wheatley, W. B., and Albright, H.: Paper presented at the Seventh Antibiotic Symposium, November 4-6, Washington, D.C. 3. Editorial: New England J. Med. **261**:305 (Aug. 6) 1959. 4. King, A.: Lancet **1**:651 (March 29) 1958. 5. Epstein, E.: J.A.M.A. **169**: 1055 (March 7) 1959. 6. Kass, E. H.: Am. J. Med. **18**:764 (May) 1955. 7. Eagle, H.: J. Bact. **58**:475, 1949.

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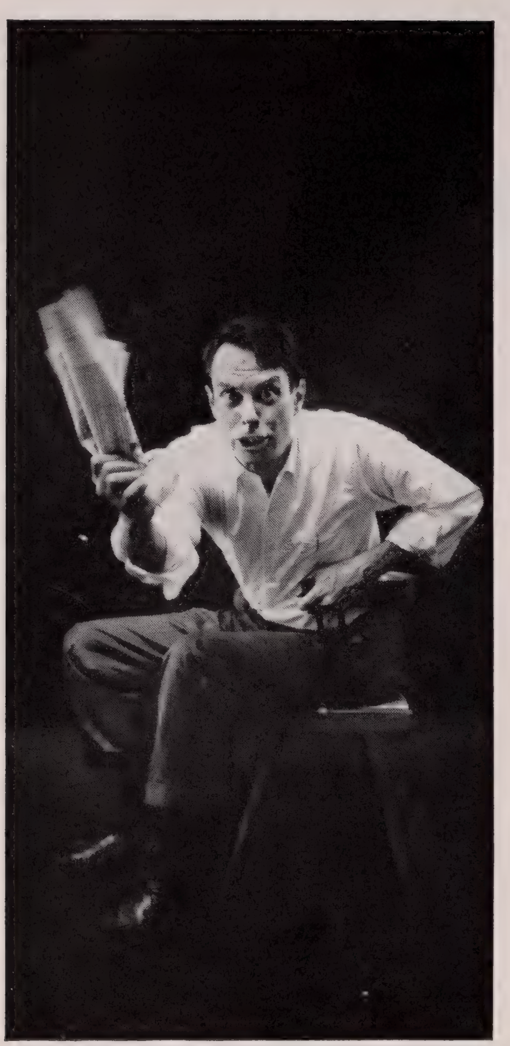

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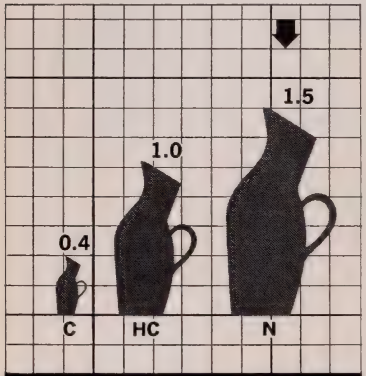
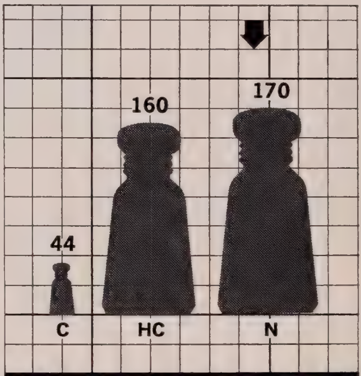
"When compared to other members of this heterocyclic group of compounds, this drug [Naturetin] shows a significantly increased natriuresis and decreased loss of potassium and bicarbonate. In this respect it more closely approaches a natural or 'ideal diuretic.' It is effective upon continuous administration and causes no significant serum biochemical changes. It is effective in a wide variety of edematous and hypertensive states and represents a significant advance in diuretic therapy." *Ford, R.V.: Pharmacological observations on a more potent benzothiadiazine diuretic; accepted for publication by the American Heart Journal*

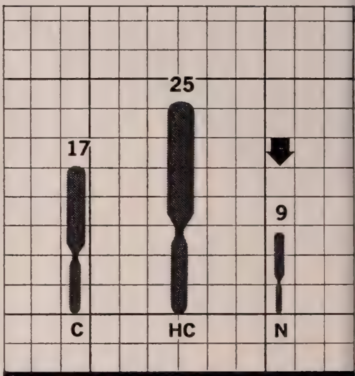
Comparison of electrolyte excretion pattern for the 24 hours following typical doses of chlorothiazide, hydrochlorothiazide, and Naturetin[1]



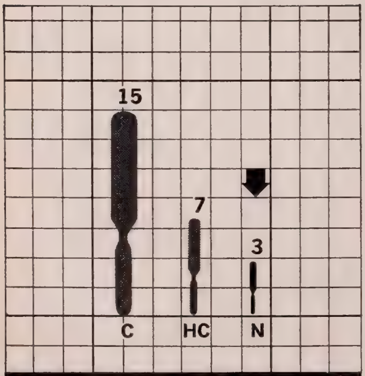
Urinary Volume (liters) significantly increased with Naturetin



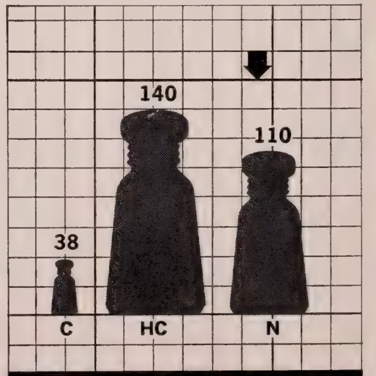
Natriuresis (mEq./24 hr.) sodium excretion significantly increased with Naturetin



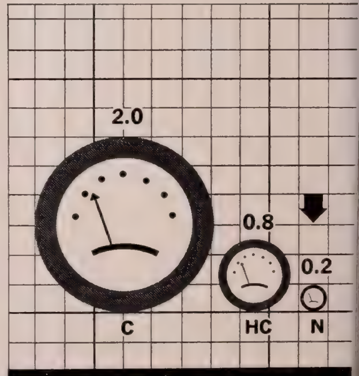
Potassium Excretion (mEq./24 hr.) least with Naturetin



Bicarbonate Excretion (mEq./24 hr.) least with Naturetin



Chloride Excretion (mEq./24 hr.) marked increases



Urinary pH least increase with Naturetin

Typical Doses: Chlorothiazide – 1,000 mg.; Hydrochlorothiazide – 50 mg.; Naturetin (Benzydroflumethiazide) – 5 mg.

1. Adapted from: Ford, R. V., Squibb Clin. Res. Notes 2:1 (Dec.) 1959

A single 5 mg. tablet once a day provides all these advantages[2]

- prolonged action – in excess of 18 hours
- convenient once-a-day dosage
- low daily dosage – more economical for the patient
- no significant alteration in normal electrolyte excretion pattern
- repetitively effective as a diuretic and antihypertensive
- greater potency mg. for mg.—more than 100 times as potent as chlorothiazide
- potency maintained with continued administration
- low toxicity – few side effects – low salt diets not necessary
- comparative studies with chlorothiazide, hydrochlorothiazide, and Naturetin disclose that smallest doses of Naturetin produce greater weight loss per day
- in hypertension, Naturetin, alone or in combination with other antihypertensives, produces significant decreases in mean blood pressure and other favorable clinical effects
- purpura and agranulocytosis not observed
- allergic reactions rarely observed

[2] Reports (1959) to the Squibb Institute for Medical Research.

Naturētin —*Indications:* in control of edema when diuresis is required, in congestive heart failure, in the premenstrual syndrome, nephrosis and nephritis, cirrhosis with ascites, edema induced by drugs (certain steroids); in the management of hypertension, used alone, combined with Raudixin (Squibb Rauwolfia Serpentina Whole Root), or with other antihypertensive drugs, such as ganglionic blocking agents.

Contraindications: none, except in complete renal shutdown.

Precautions: when Naturetin is added to an antihypertensive regimen including hydralazine, veratrum, and/or ganglionic blocking agents, immediate reduction must be made in the dosage for all preparations; the dosage for ganglionic blocking agents must be decreased by 50% to avoid a precipitous drop in blood pressure. This also applies if these hypotensive drugs are added to an established Naturetin regimen . . . in hypochloremic alkalosis with or without hypokalemia . . . in cirrhotic patients or those on digitalis therapy when reductions in serum potassium are noted . . . in diabetic patients or those predisposed to diabetes . . . when increased uric acid concentrations are noted . . . when signs—leg or abdominal cramps, pruritus, paresthesia, rash—suggestive of hypersensitivity, are noted.

Naturētin —*Dosage: in edema,* average dose, 5 mg., once daily, preferably in the morning; to initiate therapy, up to 20 mg., once daily or in divided doses; for maintenance, 2.5 to 5.0 mg., daily in a single dose. *In hypertension:* suggested initial dose, 5 to 20 mg. daily; for maintenance, 2.5 to 15 mg. daily, depending on the individual response of the patient. When Naturetin is added to an antihypertensive regimen with other agents, lower maintenance doses of each drug should be used.

Naturētin —*Supplied:* tablets of 2.5 mg. and 5 mg. (scored).

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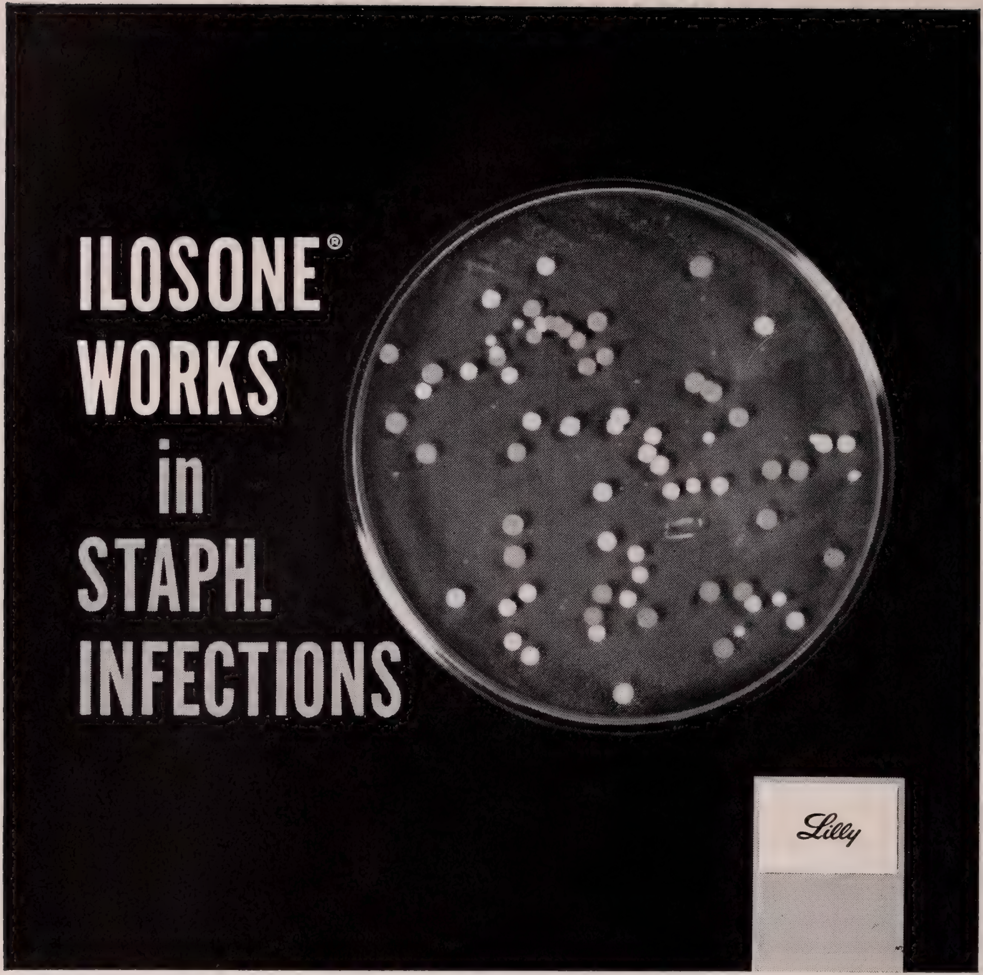

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1. Smith, I. M., and Soderstrom, W. H.: J. A. M. A., *170*:184 (May 9), 1959.

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EDITORIALS

High Cost vs. Low Morbidity and Mortality

Physicians are as much perplexed about hospital costs as anyone. They have one advantage, however, over their nonprofessional brethren in that they, having developed the advances which prove so costly, can better understand. Much has been written on the subject in the public press and for the most part well and fairly done. There are political rumblings and investigations in being. The doctors themselves need a fuller understanding of the complex problem of increasing hospital costs. The lead article in this issue, "Factors Affecting Hospital Costs," (page 369) was written especially for that purpose by Henry N. Pratt, M.D., director of the New York Hospital. Dr. Pratt makes a telling comparison between the services given almost identical cases admitted to his hospital twenty-five years apart.

The hospital is our costliest medical tool, and here we see why this is so. We cannot reverse the cost spiral; in fact, our researches and improved methods of care will accelerate it. There remains for us the necessity to use this costly tool wisely and prudently.

Warning—False Security in Saving Lives

Since pre-Biblical days man has attempted to revivify his fellow man who has become unconscious or is apparently dead. In the Second Book of Kings, chapter 4, of the *Bible*, (King James version; or Book II Douay) Eliseus "placed his mouth upon the mouth of the child . . . and his flesh grew warm." This was simple. The means to do so was and is ever available. In modern times, many other methods have been introduced, but all have come under the general term of "artificial respiration." In addition, mechanical devices also have been used. These have not been too efficient in the hands of the layman.

Revivification of the apparent dead is the professional obligation of the anesthesiologist. Every day in the hospital he is summoned in emergencies to breathe for the unconscious. However, he must always solve an equally important problem, namely the establishment of an open air passage to the trachea and lungs. To the fire fighter and other professional rescuers, the problems of the upper airway in the unconscious human being have long been recognized but not always solved.

To physicians through the ages the idea of breathing for the unconscious person by blowing air into the lungs has apparently seemed a natural and practical solution.

In 1743, an English surgeon, Dr. William Tossach, encountered a crowd gathering around a cold, gray, limp miner, just rescued from a smoke-filled mine. No pulse was detected. Tossach blocked the nostrils, applied his mouth to the miner's, and inflated the miner's lungs by blowing into them. On the fourth inflation a pulse and heartbeat could be felt. Within four minutes the miner resumed breathing.

In 1850, Ralph Metcalfe, M.D., of New York described the successful use of mouth-to-mouth breathing in a patient of his with cardiac arrest during anesthesia. Metcalfe held the patient's "mouth open with the right hand and closed his nose with the left." After 20 inflations, the patient gasped and blood began spurting from the artery.

At the turn of the century, two physicians in anesthesia, James T. Gwathmey, M.D., and, later, Arthur E. Guedel, M.D., devised and introduced special tubes now called oral airways which were used to prevent obstruction to breathing by the patient's tongue.

More recently, Ralph M. Waters, M.D., studied various methods of rescue breathing. He and others recognized the inadequacy of the manual methods. He advocated the mouth-to-nose method and suggested the interposition of a handkerchief.

Since 1950, extensive research on rescue breathing has been sponsored by the Army to aid in the treatment of nerve gas casualties. Previously unrecognized advantages of the mouth-to-mouth method were demonstrated. As part of this program, investigations by anesthesiologists in New York State led to a new recognition of the oldest and best method of artificial respiration. As a first aid technic mouth-to-mouth breathing is the easiest to learn and simplest to apply. It may be called the "every technic." It can be used by everyone, old or young; it can be used on everyone, infant or adult; and it can be used for every situation of asphyxia. It has been adopted by the Red Cross.

To increase the efficiency of this technic many devices have been introduced. The report by Collins and Saland in this issue, page 388* provides a timely warning about their use. Physicians should be aware that devices and gadgets have inherent dangers which are magnified when used by laymen, especially the casual rescuer. Use of airways should be discouraged. It is recommended that general practitioners and anesthesiologists should take the opportunity in their communities to explain the place of artificial airways in medical practice and to point out that without adequate training and experience such airways are dangerous and may delay the saving of lives.

In fact, the possession of an airway may give to the individual a false sense of security. One can easily believe that such a device will answer all the problems likely to be encountered while attention to more important details may suffer and the proper procedure be neglected. Specialized technics involving equipment should be considered only for individuals trained in the management of the air passages and artificial ventilation of the unconscious victim.

In conclusion, it should be noted that the ad hoc committee on artificial respiration of the National Academy of Sciences and the National Research Council recommended in November, 1958, in part the following:

"Adjunct equipment should be used only by the individuals skilled in its use. There should be no delay caused by searching for equipment or by lack of familiarity with available equipment."—V.J.C.

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* Collins, V. J., and Saland, G.: Dangers of artificial airways for rescue work, NEW YORK STATE J. MED. **60**: 388 (Feb. 1) 1960.

Medical Scholarship Plan

What certainly appears to be a progressive step forward to meet a critical need in the area of providing medical scholarships was taken by the A.M.A.'s House of Delegates at Dallas when it approved a special committee to prepare a scholarship program for medical students and to study other aspects of medical education.

The House recommended that the special committee be given a staff and funds so that it can make its first report at the 1960 annual meeting. The committee was asked to "present a scholarship program, its development, administration, and the role of the American Medical Association in fulfilling it."

The House declared that "A fund should be established which will aid deserving students to enter the field of medicine and that such a fund be backed by the American Medical Association as a primary sponsor."

The committee also was asked to: Ascertain the maximum to which medical schools could expand their student bodies, and what universities can support new medical schools, either on a two-year or a four-year basis; investigate securing competent medical faculties, financing of expansion and establishment of medical schools, financing medical education, relaxing rigid geographic restrictions on the admission of students to medical schools.[1]

In the latter part of the 19th Century medicine was frequently characterized as a "rich man's profession" because of the length of training necessary and the high cost thereof. Later, with the growth of industry and the establishment of many foundations, some aid became available to the deserving and qualified student, and this for a time seemed to be an answer to the problem.

However, growth of facilities to train the increasing number of students did not keep pace with the demand. But then an increased length of training due to elevation of standards required more and better instruction and supervision.

New York State with its 10 medical schools and numerous teaching hospitals should be able to assist materially in implementing the A.M.A.'s medical scholarship plan once it is under way.

---

[1] AMA News, Dec. 14, 1959, p. 1.

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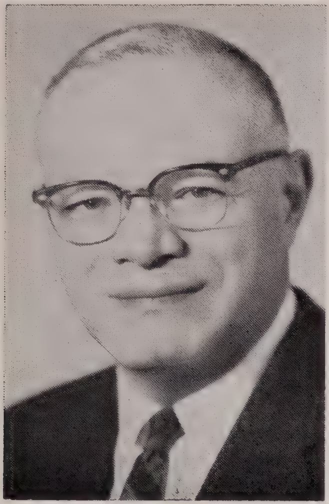
PRESIDENT'S PAGE



HENRY I. FINEBERG, M.D.

As I dictate this "President's Page" (during the latter part of December), 1959 is rapidly coming to an end. It has been a fine year for me. Since I assumed the office of president in May, I have attended meetings of district branches, county medical societies, Council committees, woman's auxiliary sessions, and American Medical Association conferences. In the areas of our State where I have spoken, I have tried to concentrate on matters which I believed would be of interest to our colleagues in all sections. My talks have been concerned primarily with the "new look" at our central headquarters in New York City—including the reorganization of the administrative staff, the implementation of certain sections of the Survey report, the streamlining of Council committee procedures;—patterns of future planning, public relations and better communications, legislation, certain portions of the Governor's medical program, interprofessional relationships, the significance of the American Medical Association in the life of medical men everywhere, the part that medicine should play in politics, the Forand bill and the care of the aging. I have stressed particularly that there must be better cooperation between the State Society and the county medical societies, if we are to realize some of the ideals that should be inherent in a calling such as ours—a profession which by its very nature is of vital importance to all the people.

Although I realize too well that we have not reached Utopia and I am far from satisfied with what has been accomplished, I believe that we have been going forward. We have not been static; there has been progress. Without a doubt, there is still much to be done. However, I am sure that in the years that lie ahead the plans that we are projecting will come to fruition for the benefit of the men in medicine and the people we serve.

My contacts all over New York State have been grand. This interlude in my medical lifetime—the presidency—has been most gratifying. I have renewed old and valued friendships, and it has been my good fortune to establish new ones. May I take this opportunity to thank all of you, who have contributed much to the welfare of my wife and me during our travels. We are eternally indebted to you for your warm hospitality, your graciousness and your many kindnesses.

* * * * *

In the early part of December the New York State delegation to the Americal Medical Association attended the thirteenth clinical meeting in Dallas, Texas. It was a high privilege to be the chairman of this well-informed and conscientious group. As usual, we were received cordially and spent a profitable four days. It is not my intention to dwell on the results of the deliberations of the American Medical Association House of Delegates. A resume of the proceedings was published in the December 14 issue of *AMA News*, to which all of you should refer.

The more I attend meetings of the American Medical Association House of Delegates and American Medical Association scientific assemblies and regional conferences, the more I realize what an important role the American Medical Association plays in the life of the doctor and what a wholesome effect it can have on the entire medical profession. As I have said on many occasions, it is my strong conviction that every physician should be a member of our national medical society. May I reiterate that I can see many advantages to being a member of the American Medical Association, and I can see no disadvantages. Personally, I have found that the American Medical Association has done remarkable work in the fields of education, scientific advancement, and other areas of import to all of us.

We know that there has been talk that the American Medical Association is too conservative and does not actually represent the thinking of the "man in the street." If some of you believe this to be true, there is all the more reason to join this great organization and participate in its activities, by appearing at the meetings of the American Medical Association reference committees and expressing your opinions and ideas. We can certify that every member of the American Medical Association has the right to be heard at these meetings and that democratic debate has always been the keynote.

Here are a few down-to-earth facts. Of the 25,000 members in the State Society only 17,000 belong to the American Medical Association, and, therefore, we have only 17 delegates. The more members we have in the American Medical Association, the greater will be our voice in medical affairs. It is only proper that the largest state medical society in the union should have this type of representation.

Also, there is one very practical point. At present, for his annual dues of twenty-five dollars each member of the American Medical Association receives the *Journal of the American Medical Association,* the *AMA News, Today's Health,* and one specialty journal. It has been estimated that the true value of these periodicals is over thirty-one dollars if purchased on the open market—all this in addition to other services to us and the honor of "belonging" to *your* own medical society.

I firmly believe that there must be greater unity among physicians everywhere—on local, state, and national levels. I am convinced that it should be mandatory for members of the State Society to be members of the American Medical Association, as it is obligatory for members of the county society to be members of the State Society. We must strive for general good will, mutual understanding, and singleness of purpose, if we are to remain in the realm of free enterprise, unhampered by bureaucratic control.

An obstacle has been removed from the path of those who would like to re-establish membership in the American Medical Association. Our executive director has reported that the American Medical Association has waived membership delinquencies through 1959 for physicians of our Society.

* * * * *

We are now in the midst of a campaign to encourage all eligible doctors of medicine who are not members of their county societies to join as soon as possible. Increased membership in the American Medical Association is also one of our aims. In accordance with instructions from the Council I have appointed an ad hoc membership committee for this purpose. I hope that all of you will work with us to make this important drive a successful one.

Best wishes for 1960—and always.

Henry I. Fineberg

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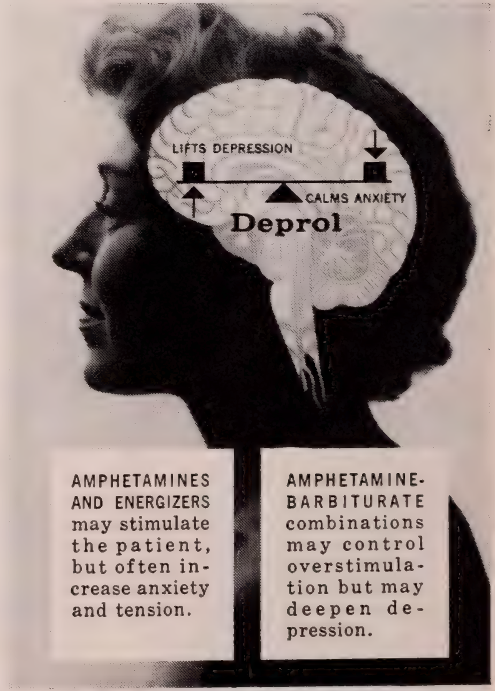

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SCIENTIFIC ARTICLES

Factors Affecting Hospital Costs

HENRY N. PRATT, M.D., NEW YORK CITY

(From The New York Hospital)

THE steady rise in hospital costs is a cause for grave concern among thoughtful physicians. An explanation of these rapidly increasing costs can assist the physician to interpret them for his patients, which is the reason for this article.

The role of hospitals in American society has undergone unprecedented changes since World War II. Dramatic improvements in health care have been accomplished. How have these changes affected hospital economics?

From 1946 through 1957 (the latter year is estimated) the patient-day cost of voluntary general and special hospitals for the entire United States increased by 161.5 per cent. This is a rate of 13.5 per cent per year, or more than 1 per cent per month for the entire twelve-year period. For the second half of this period, 1951 through 1957, the increase was 48.2 per cent or 8 per cent per year.

If the per diem semiprivate cost of the 50 general hospital members of the United Hospital Fund of New York is broken down into its three basic components—hotel type of service, professional and technical services, and nursing— where the large increases in costs have occurred becomes clear. During the twelve-year period the cost of the hotel type of service, including meals served in bed, rose by only 30 per cent. In this area hospital management has been both efficient and economical. The job has been well done, perhaps too well done.

During the same period the cost of various professional and technical services increased by 283 per cent and nursing by 295 per cent. The rapid expansion of these services is the direct result of improvements in medical care made possible through medical research, which, in turn, have made possible large improvements in the health of our community. To put it another way, that portion of the hospital dollar which is increasing so rapidly and now represents 70 per cent of hospital cost relates to those services concerned with direct patient care and is, therefore, directly and indirectly under the control of the medical staff.

Improvements in Medical Care

As an illustration of the rapid expansion in professional and technical services and the improvement in medical care, the medical records of 2 patients with identical conditions were compared. One was admitted and treated in The New York Hospital twenty-five years ago, in 1934, and the other in 1959.

Both were Italian housewives, aged thirty-seven and thirty-nine years; both complained of increasing shortness of breath, cough, sputum, and swelling of legs; both had past histories suggestive of rheumatic fever in childhood; both were dyspneic and orthopneic; both had engorged neck veins and enlarged hearts with typical murmurs of mitral stenosis; both had rales at the bases of their lungs; and both showed evidence of the accumulation of fluid; both underwent the following diagnostic procedures: urine analysis, complete blood count, sedimentation rate, serology, chest x-ray examination, repeated electrocardiograms, urea nitrogen, total serum protein, and albumin-globulin ratio; both were diagnosed as having rheumatic heart disease with mitral stenosis; and both were hospitalized for twenty-seven days. But there the similarity ends.

The first patient (1934) was treated with bed rest, limited fluids and salt, digitalis, and diuretics. She was allowed to get up on the fourteenth day and was discharged as improved on the twenty-seventh day. Her medical record contained 17 sheets, excluding nursing notes. A few months later she returned to the hospital again decompensated.

The second patient (1959) was submitted to the following diagnostic procedures in addition to those mentioned previously: 5 additional radiographic examinations of the chest; repeated venous pressure studies and circulation time; vital capacity; radioactive iodine uptake; cardiac catheterization, including oxygen consumption, arterial oxyhemoglobin saturation, arteriovenous oxygen difference, cardiac output, cardiac index, intracardiac pressure determinations, and pulmonary vascular resistance; the following chemical determinations on the blood: sugar, carbon dioxide-combining power, chlorides, sodium, potassium (electrolyte determinations were repeated as necessary), phosphates, alkaline phosphatase, bilirubin (direct and indirect), cephalin flocculation, cholesterol, and repeated prothrombin time; intravascular, plasma, and red cell volumes; hematocrit; stool examination; and throat culture.

Preoperative evaluation required the combined efforts of a team of cardiologists, radiologists, clinical physiologists, surgeons, and anesthesiologists. A mitral valvulotomy was done by a highly trained team of 4 surgeons, 2 anesthesiologists, and related nursing and technical assistance. With the help of a pacemaker, parenteral fluids, and 850 cc. of blood, the operation progressed smoothly. Pathologic examination of tissue removed at operation confirmed the rheumatic nature of the underlying disease.

Postoperative treatment consisted of the use of digitoxin, penicillin, general diet with restriction of salt, and diversional occupational therapy. The patient started walking on her fifth postoperative day and was discharged home twenty-seven days after admission. Her medical record contained 59 sheets, excluding nursing notes.

When seen a few months later, the patient was asymptomatic and living a normal life. She said she "feels wonderful."

The difference between what was done for these 2 patients and the difference between their respective prognoses is no less startling than obtains in many other conditions, such as acute renal failure, various intracranial tumors, cancer of many sites, and congenital malformations of the heart. The cost in dollars is high and will go higher but in our society can we put a price tag on human life?

Reasons for Cost Increases

The comparison of these 2 cases, twenty-five years apart in time, illustrates graphically the impact on hospital costs of the ever-quickening pace in the forward progress of medical science. There are, however, other significant factors responsible for the continuing upward surge in hospital costs. These may be summarized as follows.

1. The inflationary trend in our national economy has and will continue to push up the cost of supplies and level of wages, the latter at the approximate rate of 5 per cent per year.

2. Automation in the manufacturing industries increases the productivity of labor at an accelerating pace, which, in turn, results in a continuing rise in wage levels. Obviously service industries, of which the operation of hospitals is an outstanding example, find it necessary to increase the level of wages at the same pace if they are to compete successfully with manufacturing industries in the recruitment of qualified personnel. Coupled with the necessity of

constant upward wage adjustments is the shortening of the work week. With the forty-hour week, the hospital's one-hundred-sixty-eight-hour week requires 4.2 individuals for each position which must be manned around the clock.

3. Educational and training programs for nurses impose an increasing financial burden on approximately 1,200 of the nation's general hospitals. For the university-affiliated teaching hospitals, of which there are about 100, the burden is particularly heavy. It is in these institutions principally that future doctors, medical specialists and educators, research workers, nurse administrators and teachers, medical social workers, dietitians, medical records librarians, physical therapists, radiologic and laboratory technicians, and many other professional and paramedical personnel are educated or trained. About 700 additional hospitals are providing training opportunities for future medical specialists through approved residencies and internships. In past years, when technical procedures were less complex and the duties of the various professional and paramedical personnel were relatively simple, students and trainees paid for their education by the service they gave to patients. Today, however, these programs are costing increasingly more annually.

4. The paramedical professions that have been mentioned work through their national organizations steadily to improve their educational, economic, and social status. This has been accomplished through the establishment of higher educational requirements, through pitting one using agency against another in increasing wages and through encouraging legal licensure. These in themselves may be desirable objectives, but they have undoubtedly pushed hospital costs up.

5. The growth in ambulatory services will unquestionably increase future costs. Blue Cross plans and insurance commissioners of several states are concerned about the steady increase in use of hospital beds by insured patients. The charge of overutilization has been made. Whether or not this charge is warranted is problematic. But the charge itself will hasten the trend of the past few years for hospitals to provide the services and facilities for undertaking more complex diagnostic and therapeutic procedures on an ambulatory basis. This trend, which will undoubtedly extend, coupled with hospital-centered home care programs, especially for the convalescent patient, will make available more hospital beds for the acutely and severely ill. Although these trends will inflate hospital costs further, a net saving to the community will result through the more effective use of hospital beds.

6. In recent years the Federal government and private foundations have been pouring out increasing amounts of money for medical research. More and more of this money is going for clinical research which is carried on in hospitals. The Federal grants through the United States Public Health Service permit a 15 per cent overhead charge. Most foundations make no provision for overhead in spite of a cost to the institution, variously estimated as between 25 and 50 per cent. Obviously, if research is done in hospitals, it has the effect of inflating their costs further unless adequate overhead payments accompany all grants.

7. The rapid growth in our population aged over sixty-five years and high hospital utilization among older age groups push costs up. Older patients, like severely ill younger patients, require more technical skills and nursing attention, not only because of their age but also because of the nature of their illnesses. Our foremost cause of death, cardiovascular disease, requires for its treatment a whole battery of technical equipment, laboratory determinations, close nursing observation and care, and, with increasing frequency, the skill of the cardiac surgeon. Cancer is treated either with extensive surgery and the necessary laboratory examinations, both pre- and postoperatively,

or by a long series of radiation therapy treatments, or by both. Clearly, the older the patients in hospitals, the higher the costs will go.

8. The need for capital funds to replace, increase, and improve plant and equipment looms large in hospital costs. As concepts of hospital care change, as the insured portion of our population grows, and as medical science advances, hospital plants and technical equipment become obsolete more rapidly. The time is past when we should look to future philanthropy to provide, in full at any rate, the needed capital. Somehow we must find the means to earn from day to day an adequate provision for plant and equipment replacement and improvement. This needed capital represents an additional charge against the patient, his insurance carrier, tax funds, or philanthropy.

So much for the factors that have been pushing hospital costs upward and which will unquestionably continue to do so. Undoubtedly there are others, but these are the most important and demonstrate the continuing trend. It is significant that most of these factors are beyond the control of the hospital trustee or administrator.

Conclusions

Medical science is moving forward at an accelerated pace. There is little doubt that progress will continue indefinitely. As medical science advances, medical care becomes more effective, more complicated—and more expensive. The public demands this more effective medical care and will be satisfied with nothing less. There is little doubt that this same public is willing to pay whatever price is required for the best medical care provided the price can be justified. Doctors and hospitals have an obligation to work together to help the public understand that the best care can be made possible only insofar as the public is willing to pay for it.

Acknowledgment.—The writer is indebted to Mr. Grant Adams and associates of the United Hospital Fund of New York for the figures.

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ROLE OF THE GENERAL HOSPITAL IN THE CARE OF SPECIAL MEDICAL PROBLEMS

Moderator

WILLIAM A. KELLY, M.D., MOUNT VERNON, *Director of Mount Vernon Hospital*

Panelists

I. JAY BRIGHTMAN, M.D., ALBANY, *Executive Director, New York State Interdepartmental Health Resources Board; Associate Professor of Community Health, Albany Medical College of Union University*

MILTON ROSENBAUM, M.D., NEW YORK CITY, *Director of Psychiatric Service, Bronx Municipal Hospital Center; Professor and Chairman, Department of Psychiatry, Albert Einstein College of Medicine of Yeshiva University*

THEODORE C. KRAUSS, M.D., BUFFALO, *Assistant Attending Physician, Edward J. Meyer Memorial Hospital and Millard Fillmore Hospital; Assistant Clinical Professor of Medicine, University of Buffalo School of Medicine*

Introduction

WILLIAM A. KELLY, M.D.: The plan for this panel is to present some problems that have been with us for a great many years. They interest me because as a practitioner these problems have bothered me and there was no satisfactory way to handle them. Perhaps we in the voluntary hospitals have waited too long to face these problems and to do something about them. I think you are all aware, though, that the average hospital administrator would say, "With all the headaches I have already, why do I want to take on any new ones?" At the same time he must feel a moral obligation and realize that if these things can be handled in the community hospital, they should be so handled.

We are fortunate that we have experts who are going to tell us how these things may be accomplished. Forthwith, I introduce I. Jay Brightman, M.D., who is going to discuss the problem of the alcoholic patient in the general hospital.

The Alcoholic Patient

I. JAY BRIGHTMAN, M.D.: The patient suffering with alcoholism needs a variety of community resources, depending on the particular nature of his problem and the stage of his disease. The community general hospital ranks high in importance among these resources. Such a facility is present in most communities and is best equipped to handle patients in the stage of acute

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alcoholism or of delirium tremens, or in the interval between alcoholic episodes in instances where there may be need for complete diagnostic evaluation and observation. In formulating plans for adequate facilities for the alcoholic patient, it is important to determine the extent to which the general hospital actually serves as such a resource and the potentialities for increasing its availability for this purpose.

General hospitals have a considerable resistance toward the admission of this type of patient, particularly of those in the acutely intoxicated state. The reasons given are that these patients are disorderly, difficult to handle, disturbing to other patients, and poor financial risks.

In 1956 the American Medical Association Council on Mental Health and its committee on alcoholism prepared a resolution calling on general hospitals to admit patients with this condition.[1] This was passed by the House of Delegates at the clinical meeting that year. The author of that resolution, Dr. Marvin Block of Buffalo, the chairman of the A.M.A. Committee on Alcoholism, and I are to publish an article on this subject in *Health News*.[2] Dr. Block is handling the clinical and I am handling the public health aspects in an attempt to get this message across to both professional and lay readers. The American Hospital Association made a similar statement in 1957.[3]

Because of its importance, I should like to quote several sections of the A.M.A. resolution here.

> First, alcoholic symptomatology and complications which occur in many personality disorders come within the scope of medical practice. Second, acute alcoholic intoxication can be and often is a medical emergency. As with any other acute case, the merits of each individual case should be considered at the time of the emergency. Third, the type of alcoholic patient admitted to a general hospital should be judged on his individual merits, consideration being given to the attending physician's opinion, cooperation of the patient, and his behavior at the time of his admission. The admitting doctors should then examine the patient and determine from the history and his actions whether he should be admitted or refused. Fourth, in order to offer house officers, well-rounded training in the general hospital, there should be adequate facilities available as part of a hospital program for the care of alcoholics. (I think this is a very important item.) Since the house officer in a hospital will eventually come in contact with this type of patient in practice, his training in treating this illness should come while he is a resident officer. Hospital staffs should be urged to accept these patients for treatment and cooperate in this program.
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> Finally, with improved means of treatment available and the changed viewpoint and attitude which places the alcoholic in the category of a sick individual, most of the problems formerly encountered in the treatment of the alcoholic in the general hospital have been greatly reduced. In any event, the individual patient should be evaluated rather than have general objection on the grounds of a diagnosis of alcoholism.
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> It is recognized that no general policy can be made for all hospitals. Administrators are urged to give careful consideration to the possibility of accepting such patients in the light of the new available measures and the need for providing facilities for treating these patients. In order to render a service in the community, provisions should be made for such patients who cooperate and who wish such care.

WORCESTER PROGRAM.—Two years ago I had the privilege of doing a survey of alcoholism services in the city of Worcester, Massachusetts, and I should like to comment briefly on this experience.

The State of Massachusetts has a program operated through its Department of Health whereby it provides financial assistance to communities for the development of both inpatient and outpatient services for alcoholic patients. This program was initially rejected in Worcester by the local medical society because of an alleged taint of "state medicine." It was also rejected by the hospitals in Worcester.

Fortunately, the problem of alcoholism aroused the interest of the Bishop of the

Catholic diocese who ordered that the St. Vincent's Hospital, then under construction, make provision for such a program.

My findings indicated that the service for alcoholism at the St. Vincent's Hospital in Worcester, including both the inpatient and the outpatient program, was one of the finest in the country.

Patients requiring inpatient care are admitted to the regular psychiatric wing on the sixth floor of the hospital. Fortunately there has always been available space in this unit. The average number of alcoholic patients has been 8 or 9, but there have been as many as 17. The average stay is about four days with a range of from two to nine days. Although the psychiatric ward is under lock and key, the alcoholic patients are given a fair amount of freedom. The majority of inpatients are admitted in an intoxicated condition, although some are referred because of general tenseness which may be a prelude to a drinking bout. Most are admitted through the clinic. They are usually sent directly to the psychiatric ward where they are given Thorazine or some other medication to quiet them down and intravenous fluids if necessary.

Few patients prove to be very troublesome and practically all are tranquil within thirty minutes. If necessary, other alcoholic patients on the ward who are awaiting discharge may assist in managing a difficult new admission. In general there has been no problem as far as disturbing the hospital routine is concerned.

I am sure this experience can be found in many other hospitals that have taken an interest in this subject.

Patients are referred to the clinic after discharge except in the relatively few instances in which they are under the care of private physicians. Here again it is quite obvious that inpatient service without a follow-up clinic would be markedly limited in its potentialities.

Practice at New York State General Hospitals.—Last year, the Hospital Association of New York State and our own State Interdepartmental Health Resources Board undertook a joint study to determine the current policies of general hospitals in the State in regard to the admission of patients with a primary diagnosis of alcoholism.[4] Its objectives were as follows: (1) to determine the extent to which current polices of general hospitals now provide for the admission of patients with alcoholism, including acutely intoxicated patients, patients with delerium tremens, and sober alcoholic patients requiring observation and treatment; (2) to determine the influence of such factors as size, geographic location, or type of ownership on the likelihood of a hospital's accepting alcoholic patients; and (3) to identify the reasons why hospitals adopt policies of nonadmission of alcoholic patients and to determine what barriers must be overcome.

The detailed findings have been reported[4] previously and may be summarized as follows:

1. A total of 315 general hospitals out of 356 canvassed responded to a questionnaire survey.

2. Twenty per cent of voluntary general hospitals and 35 per cent of public general hospitals indicated that their policies provided for the admission of alcoholic patients. Only 9 per cent of proprietary general hospitals admitted such patients. We did not include here the proprietary hospitals for nervous and mental diseases which obviously do.

3. Among hospitals rejecting patients with alcoholism, in only 50 per cent were the rejections due to hospital regulation.

4. About 40 per cent of the admitting hospitals found the patients not too troublesome, and almost all found that tranquilizing drugs were particularly helpful.

5. An unpredicted large number of alcoholic patients paid for part or all of their care or had such payments made in their behalf. This applied to 92 per cent of the patients in the voluntary hospitals and 48 per cent in the public hospitals.

6. The figures present a State-wide picture only and it may be expected that there will be much variation when the situations are studied on a community basis. It is hoped that the communities will study their local problems and attempt to encourage the admission of alcoholic patients to general hospitals, if this policy has been deficient in the past.

Analysis of the data on a regional basis showed that the Rochester region consisting of 11 counties presented a much more favorable picture than any other area. We would surmise that this is attributable to a significant extent to the high level of educational activities conducted by the committee on alcoholism of the Health Association of Rochester and Monroe County and to the progressive leadership in the field of modern hospital practices exerted by the Rochester Regional Hospital Council.

However, we must recognize that the situation may not be favorable in every community in the Rochester region, and, conversely, there may be several communities elsewhere in which the local situation is more favorable than that of the region as a whole.

The public hospitals, which are generally of greater size than the voluntary or proprietary hospitals, have the highest proportion of admitting hospitals. Acceptance of alcoholic patients at a public hospital may provide for the hospitalization of a large number of alcoholic patients in the community despite exclusion of these patients by all other hospitals. However, such a situation cannot be considered entirely satisfactory since the attending physician is not permitted to place his private alcoholic patient in the hospital of which he is a staff member; thus there is interference in the free choice of hospital and physician and in the physician-patient relationship.

The findings reported in this study are subject, of course, to various interpretations, depending on whether emphasis is given to the positive or to the negative data. Our own interpretation was that, while the present situation regarding admission of alcoholic patients to general hospitals leaves a great deal to be desired, there is much in these findings on which we can base an educational program directed toward improving the situation and which gives us hope for the future.

The facts that 20 per cent of voluntary and 35 per cent of public hospitals admit patients with alcoholism, that 40 per cent of all these admitting hospitals do not find the patients particularly troublesome, that practically all have found the tranquilizing drugs useful in quieting patients, and that the financial problems have not proved to be quite so unfavorable as might have been predicted indicate that similar programs can well be carried on in many additional hospitals. Also, the large number of admitting hospitals that accept alcoholic patients who are sober but in need of treatment and observation show a growing acceptance of alcoholism as a disease rather than as a periodic bout of acute intoxication.

Conclusions.—It is hoped that this important problem will be studied by administrators of general hospitals, the medical profession, and the various community agencies, both public and voluntary, that are concerned with patients suffering from alcoholism. The actual evaluation of an existing situation must be done on a community basis. If communities throughout the State study their local problems and, by utilizing the findings reported here plus much other pertinent information in the scientific literature, attempt to encourage the admission of alcoholic patients to general hospitals in line with the recommendations of the American Medical Association and of the American Hospital Association, a repeat survey of this type in three to five years may show a much improved situation.

11 North Pearl Street

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DR. KELLY: We at Westchester like to think of our community as a progressive one, and I think we can be proud of the fact that some five years ago the county council of social agencies in Westchester established a committee with representation from many groups to study the problem of chronic illness in the county.

Three of the conclusions made by that committee after a long study were that there should be facilities in the local general hospital for the alcoholic patient, there should be facilities for nervous and mental cases, and that the hospitals should experiment with a home care program.

I am ashamed to say that my hospital is not one that has pioneered in this, but neighboring New Rochelle has done it. They had a large building program and decided that they would go ahead and build a psychiatric unit in the general hospital. I think it's some 24 beds. I talked to the administrator just the other day and he told me that he was aware of no major problems that had arisen. They admit both alcoholic and other psychiatric conditions.

Milton Rosenbaum, M.D., is going to tell us something about what the general hospital can do with its psychiatric unit.

Nervous and Mental Disorders

MILTON ROSENBAUM, M.D.: In recent years, as most of you know, there has been a trend to establish psychiatric units in general hospitals. (But nothing is new. I recently learned that in the thirteenth century psychiatric patients were admitted to the Cairo General Hospital.) This trend resulted primarily from the emergence of psychiatry as a major discipline in medicine; from the development of residency training programs in psychiatry, especially in the university hospitals; and from the experiences of World War II which drew attention to the large number of men who were disabled and rejected because of psychiatric disorders. Interestingly enough, the impetus for the development of psychiatric units in the voluntary hospitals—in many of them at least—came mainly from an intelligent, educated, and well-informed lay board, rather than from the doctors and the staff.

In medicine as a whole the stimulation for the return of psychiatry as a major discipline came primarily from two sources. One has been the introduction of psychoanalytic concepts into the field of medicine, while the other has been the introduction into psychiatry of such physical methods of treatment as electric shock, insulin, and drug therapy. These two sources reflect the extremes in attitudes of psychiatry in regard to concepts of etiology and treatment, and therefore they reflect the types of psychiatric units that are established in general hospitals. In many instances in which the psychiatric service is under the direction of psychiatrists who are psychologically or analytically oriented, the therapy of choice is psychotherapy, since psychiatric disorders are considered primarily expressions of difficulties in intrapsychic and interpersonal relationships. The physical methods of treatment are used, but they are used within a total understanding of the psychologic problems of the patient. On the other hand, in those units which are directed by organically oriented psychiatrists, the emphasis is on the physical methods of therapy and sometimes there is only lip service given to psychotherapy.

Now, what are some of the benefits to the community resulting from the establishment of a psychiatric unit in a general hospital? The unit provides a place within the community where patients suffering from a variety of psychiatric disorders can be treated. I wish to emphasize the therapeutic value of treating patients within the confines of their community since, contrary to popular opinion, there is a distinct therapeutic value in maintaining contact between the patient and his family. At times separating the patient from his family and his community by sending him to a distant hospital may aggravate his feelings of being rejected and abandoned.

It is well known that when patients are sent to state hospitals located some distance from their community, there is a tendency for the family to lose contact and to withdraw their emotional investment from the patient. Thus, if the patient is able to return home, there may be no place to which to return. Even though there is a home physically, there may be nothing there emotionally. In other words, the family has worked through a grief reaction; psychologically the patient no longer exists.

Psychologically this is similar to certain experiences that took place during World War II. As you know, a bomber crew was trained together, they slept together, ate together, and there was a feeling of closeness and warmth between the members of the crew. If the bomber was shot down and the crew parachuted to safety, they would be gathered together and reunited. But perhaps one member was missing. If several months later this missing crew member managed to get back, he was no longer part of the group because the group had worked through a grief reaction and had separated from him emotionally.

We had an interesting experience in setting up what we call an "emergency psychiatric clinic." Each of our third-year residents spends two half days in our mental hygiene clinic without any other assignment so that each one can see new patients who come into the clinic for the first time. He can see 4 or 5 new patients in one morning or afternoon. The resident then has to make a decision as to treatment and/or disposition. Some patients are sent into the hospital, some to other agencies, others are referred to the regular psychiatric clinic for long-term psychotherapy, and some are seen up to five times for brief interventional psychotherapy. The idea is to give the patient help at the time of an acute crisis, when the patient really needs it.

We have had some interesting experiences when we have offered to commit certain patients from the clinic instead of sending them into the hospital for commitment. A family brings an elderly senile relative to the hospital. We know very well that if such a patient is admitted to the inpatient service he may become worse simply by being put into a new and strange environment. Now some, of course, are taken into the hospital. With others we may say to the family, "Your grandfather is senile and sick. He has lived with you for many years and you've done a good job. We think he should be in a state hospital, but since you've kept him at home for twenty years, keep him for another two weeks and we will give you these papers to fill out. Come back two weeks from now and the ambulance from the state hospital will be here and off he will go." Some people do not bring the old man back because within the two-week period he may have cleared up a little: maybe he was reacting to some acute situation, certainly the underlying senile disorder remains, but he's settled down.

If we took the patient into the hospital right away, not only might the patient become worse, but also the family might feel they had done their duty and, in that period, work through their grief at being separated from the patient. Yet, if he is at home and the acute disorder settles down to what it has been, let's say, for the last few years, they might say, "We've kept him for twenty years, let's keep him at home for another month or two."

Another important factor is that the family, having made contact with us, know that if they need help they can get it right away. This gives the family the emotional support that allows them then to continue with a rather difficult situation.

The general hospital, either public or voluntary, is geared to take care of patients with acute illness or in the acute stages of chronic illness. Thus, the time factor of a patient's stay becomes important in the general hospital. Also, it is well known that it is very expensive to keep a patient in a general hospital, whether it be public or voluntary.

These factors plus many of the misconceptions which still exist about psychiatric patients even in advanced communities—namely that they are all violent, dangerous, incurable, hopeless, and so forth—stimulate the desire to get the patient out as soon as is possible. The psychiatrist may respond to these pressures by a quick and early introduction of physical methods of treatment, such as shock, or by snowing the patient under with drugs before the patient is worked up and before there is any attempt made to understand why the patient is sick in the first place. This is no indictment of the physical therapies. We use them but, as I said before, only after an attempt is made to understand the nature of the patient's illness.

There is another very serious problem that has to be faced in those public hospitals in which there is no control over the admission of patients to the psychiatric unit. In such instances there is likely to be overcrowding to the point in which the atmosphere of the inpatient service becomes chaotic. The 130-bed psychiatric unit in the Bronx Municipal Hospital Center is supposed to take care of the psychiatric needs of the Bronx, with a population of nearly 2 million. It is perfectly obvious that it is not possible for a psychiatric unit of such size to fulfill that task. As a department of psychiatry we are fully aware of our responsibility to the community, and we are also aware of our responsibility to maintain teaching, training, and research programs of the highest quality. Because it is our feeling that service to patients improves as teaching, training, and research develop, we were faced with the task of meeting the academic needs of the department as well as the service needs of the community. Therefore with the approval of the Department of Hospitals we established a policy concerning admissions to the effect that we would maintain our bed occupancy at 100 per cent, and that 50 per cent of our admissions would be discharged within two weeks while the other 50 per cent would be kept for longer periods of time to meet our teaching and training needs. We also made it clear that we would not put extra beds on our wards since we knew that once the barriers were lowered we would be overrun. I also wish to point out that our unit is treatment-oriented regardless of the length of patient stay. In some cases the treatment in the hospital is directed mainly to get the patient and/or his family to accept commitment to a state hospital as part of a long-term psychiatric treatment program. I believe that when the administration realizes that the psychiatric staff is determined to do the best possible job, and that they take pride in maintaining a good service, and also work hard at it, they will soon win the respect of and be given the needed support of the administration. Certainly this has been the case with us.

One final matter has to do with the physical setup of a psychiatric unit. We have six psychiatric wards within our unit, and all of our wards are open except for two. It is not easy to convert locked wards into open wards, and there are many reasons for this. There is the problem of tradition, especially in public hospitals, where psychiatric wards are locked because they always have been locked. Yet there is no rule or regulation stating that doors have to be locked in a psychiatric unit. Nevertheless doors remain locked and no one has taken the trouble to unlock them. But when the proper authorities grant permission to unlock the doors, the main task is still to be accomplished, since it takes a good deal of time, effort, and energy to get the professional staff of a psychiatric unit to accept the open-door policy. In general the nurses, orderlies, aides, psychiatrists, and residents feel more comfortable when psychiatric patients are behind closed doors. Therefore one has to get them as well as the administration to accept the change. Once the staff knows that the director of the service means business, and that he has the support of the administration, and furthermore that he is aware of their feelings about it and is willing to work with them, the change is usually accomplished to the benefit of all concerned.

On our psychiatric wards, men and women are on the same wards. We believe that since they are together in society they should be together in the hospital community too, even though some people may not like it. Again, this was not a simple thing to accomplish because of the fantasies that many people had as to what would occur if men and women psychiatric patients were together on a ward unit. Actually nothing happened which might not have happened anyway, and, again, instituting this type of social change was to the benefit of patients and staff alike.

In talking about the open-door policy, which incidentally has become very popular, I wish to emphasize that our policy is based on the medical and psychiatric needs of the patients rather than on legal needs or customary tradition. Thus we have two closed wards because we believe that certain types of psychiatric patients, at least during a certain phase of their illness, respond better in the security of a closed ward.

Will patients walk out of an open ward? Of course they will, but as you know, they cannot escape because one can only escape from a closed ward. Let me tell you about the first patient of ours who walked out after we converted our first closed ward into an open ward. For about two weeks we had a series of talks and conferences with the staff and with the patients too on this ward in anticipation of converting it into an open ward. The day after it was opened, a young woman patient walked out. As soon as the resident psychiatrist in charge of her learned of this, he telephoned her and asked her to come back, which she did that same evening. Now why did this particular patient walk out? This young woman had been on the ward for about three weeks before it was opened. She was a rather withdrawn, quiet, frightened young woman, who did not mix well with the other patients. She had the feeling that the doctors and the ward staff were not interested in her. Actually we were very much interested in her, but this was the way she felt. So when the doors were opened she left, not really to run away from the hospital but to find out if we were interested in her enough to try to get her to come back. The fact that we did want her back was the turning point in her therapy.

We believe that the psychiatrist working in the setting of a general hospital must have a good deal of self-confidence in himself as a doctor, so that he can hold his own with his medical and surgical colleagues. We find it helpful to use the medical model to illustrate certain points which we wish to get across to our colleagues in other disciplines and to the administration. Let me cite an example. When a patient from one of our open wards managed to get to the roof of the hospital and threatened to jump, there were some who thought that we should lock the doors of that particular ward. Our attitude was that there were certain calculated risks we must take with patients which were similar to those taken by our medical and surgical colleagues within the hospital. Therefore we said we would lock our wards if the surgeons were ordered to close the operating room because a patient died on the operating table, or the medical men were ordered to stop using penicillin because a patient developed a severe penicillin reaction. Thus the psychiatrist, working within the setting of a general hospital, not only has to be competent in his own field, but also has to be able to develop optimal relationships with his nonpsychiatric colleagues in order to promote that type of mutual understanding and support which is crucial to the development and maintenance of a psychiatric unit in a general hospital.

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DR. KELLY: I am glad you stressed in so many ways the inertia of our own group, the medical profession itself, in meeting these problems.

If we of the medical profession and others concerned with hospitals want to preserve the pattern that we like, we have got to "get on the ball." We have a sometimes intelligent and enlightened lay public; if we don't deal with these problems ourselves, they certainly will. Perhaps they will deal with them in ways we won't like.

Home care is something very much in the public mind today, and Theodore C. Krauss, M.D., is going to tell us a good deal about it.

The Aged and the Infirm

THEODORE C. KRAUSS, M.D.: The scarcity in general hospitals of available bed facilities for the care of the sick has been a recurring problem which the medical profession has had to deal with for some time in most localities throughout the United States.

This is an interesting phenomenon if we consider that since World War II the number of hospital facilities has come to exceed by percentage those built from 1914 to 1939. One of the explanations may be the fact that hospitalization is more readily available to large masses of people today than it was years ago. The other factor is the rapid increase of the population, the reduced infant mortality rate, and the longer life span. According to available figures the population of the United States in the last fifty years has doubled.[1] At the same time the life span has increased by over twenty years creating a situation never before known in any civilization. The number of persons between the ages of forty-five to sixty-four years has tripled, and the number of those over sixty-five years of age has quadrupled. Every year about 400,000 people become eligible for benefits, according to the Social Security Administration. We anticipate that by 1960 the population of the sixty-five years and over group will reach about 16 million people, which means that approximately 1 out of every 10 will belong to the elderly age group.

In 1953, the A.M.A. made a special one-day survey of the age and sex of all patients in hospitals throughout the United States. It was interesting to find that out of the 1.2 million people in hospitals, about 247,000 were geriatric patients. A similar survey made on a given day by Andrews and Wilson[2] found that 1.8 per cent of the aged population were hospitalized: 0.7 per cent were in geriatric services and 1.1 per cent were in general and special hospitals. Beds occupied by patients who belonged to the sixty years or over age group accounted for 41.8 per cent of the total hospital population. More recently, to see how these figures conform with local conditions, a survey was made at the E. J. Meyer Memorial Hospital in Buffalo, New York. It was found that the percentage of people from the middle and the older age groups consisted of over 42 per cent of the total number of patients admitted. Admission of people in the sixty-five years age groups and over to the various services consisted of 19.5 per cent of all the patients in that one particular month.

In considering what the role of the general hospital is in the care of the aged patient, first we have to analyze the over-all conditions existing in hospitals.

1. As a rule municipal hospitals accept patients irrespective of the age or illness in most instances, at least for a period of evaluation or for screening purposes, as in the case of the mentally ill and the patient with tuberculosis.
2. Some hospitals give first preference to acute emergencies. Diagnostic evaluation or treatment of existing chronic conditions is considered of secondary importance only as far as bed space is available.
3. The more modern hospitals are designed to have reserved bed space available for the chronically ill or the geriatric patients.

We hear time and again about classifications of what constitutes long-term illness and how one distinguishes long-term illness from chronic disease and ultimately chronic disability. When we apply these considerations to the aged we find that these same principles can be applied to this age group. We know that there are no diseases of old age but diseases in old age, affecting the aged persons more frequently and in greater numbers. At present the general thinking as it applies to the geriatric patient is not fully crystallized. Some authorities go so far as to advocate that chronically ill and aged patients should not be occupying beds in the hospitals except in cases of acute emergency or acute exacerbation of an existing chronic condition. We may ask the question, why should we subject aged patients to secondary medical facilities? Why should'nt we apply the same approach in making provisions to give the best and the most to the geriatric patient as we do for our younger generation or in cases of acute emergencies? It is rather difficult to find a satisfactory solution to this problem. Actually what it amounts to is that it should not be the question of the type of facilities alone but the type of care which we have to secure to our elderly patients.

There are about 25,000 nursing homes with 450,000 beds and about 1,500 homes for the aged with 100,000 beds throughout the country.[3] Many of these facilities are obsolete and unless these institutions live up to the improved standards which state after state is requiring, the number of beds in these institutions will eventually decrease. This situation would create an extra burden in the overcrowded general hospitals, a community responsibility which would have to be fulfilled.

It is hard to envision today what the future will bring. The homes for the aged are undergoing a definite transition period. Most voluntary homes for the aged, whether they are sponsored by the municipalities, church organizations, or private agencies, do try to reach the expected standards, yet they experience difficulties which are very hard to overcome, among which is the question of properly trained personnel. Years ago Monroe[4] of the Peter Bent Brigham Hospital advocated the idea that because of the existing shortage in personnel, nursing homes and homes for the aged would benefit greatly if they would become affiliated with general hospitals on a geographic basis. According to some authorities this plan would be welcome provided the autonomy of the homes could be maintained.

The most recent approach stresses the development of medical centers where general hospitals acting as central units would provide the needed facilities and services for patients suffering from chronic conditions or disabilities and also bed space for geriatric patients. In other words, chronic disease hospitals, convalescent homes, and homes for the aged would be part of such a center. This approach certainly would be the most ideal. The difficulty lies in the availability of finances and, to a certain extent, the lack of community approach and public awareness. The other question is, until the willingness and the cooperation of the community develops to the extent that such medical centers are wanted, what can we do to improve existing conditions?

What we need at this time is the education of the professions and the general public in the proper care of the aged patient. This care could start right in the hospital while the patient is undergoing treatment. One of the most important links would be the family physician acting as a buffer or representative of medical objectives for the involved families. It is a sad situation that in contrast with the readiness with which people run to the help of the young adult when he becomes ill, there is at times a definite reluctance on the part of families to accept their responsibilities in caring for elderly patients. This attitude has existed until recently to a degree even among some members of the medical and nursing professions. However, as a result of indoctrination in geriatrics, which is becoming more and more widely recognized in schools of medicine and in schools of nursing, the younger generation is more capable of extending care to the older patients.

This increased interest which has developed in recent years could be well utilized in the general hospital if the application of geriatric principles as a special approach in medicine could be supervised by a hospital staff member showing an expressed interest in the over-all care of the aged patient. In this way, residents, interns, and the nursing staff would develop a better understanding of the various problems of the aged person and better acceptance of the total approach which geriatrics offers in care of the elderly patient.

For example, in many instances rehabilitation of the disabled older person represents a problem as well as a challenge. However, one has to be realistic in striving for goals of rehabilitation or accomplishment which we might hope to attain as we deal with these patients, but at the same time our attitude should be enthusiastic and hopeful as it is when we are caring for our younger patients. This attitude is a question of education which has to reach the professions and the community on all levels. It can be done if we concentrate on all the available facilities within the general hospital. By the same token, as the diabetic patient's family is instructed in the dietary approach and the use of insulin or oral hypoglycemic agents in helping the ill person, there is no reason why the same teaching methods should not be applied regarding the aged person even when or if he becomes incontinent or involuntary.

There are many phases of medical or nursing care which can well be adapted within the home if one is properly indoctrinated. In most communities there has been in recent years a very definite tendency to provide afflicted families with services within the home. I am referring to the visiting nurse service which is within the reach of everyone. The homemaker's program is a possibility and an extramural home care program by hospitals has been advocated by Bluestone for many years. This idea can be stressed even further once we consider the role of the physical therapist in using restorative technics to take care of hemiplegic or paraplegic patients in their own homes. The instances in which a rehabilitation team or a hospital team could promote education and the needs of patients as well as of the families are too numerous not to be utilized.

This comprehensive approach could be initiated in the hospital while the patient is undergoing treatment, assuming that general conditions are favorable. An example of how rehabilitation can aid the elderly patient has been shown eloquently at the newly built John Kane Hospital in Pittsburgh, Pennsylvania.[5] During the first year of operation, according to hospital authorities, a high percentage of their chronically ill and aged patients were discharged and able to return to their homes.

Another role of the general hospital is to prepare patients for institutions which would provide continued permanent care in case the patient is disabled or living alone. A careful evaluation would very definitely screen and place patients in the proper facilities.[6] Along this same line the hospital would act as a reception center for patients referred to the hospital from the homes for the duration of an acute illness. Thus, we could avoid duplication of facilities which would open a two-way system. There is no question that once all the resources are utilized for the benefit of these elderly patients, a great deal more can be accomplished.

The role of the general hospital could be helpful in preparing patients with long-term illness or chronic disability to accept their infirmities with a more optimistic outlook. This could be accomplished by more activity and the use of occupational and recreational therapy. It could be induced and continued after acute emergencies are over and/or during the convalescent stage. In other words the general hospital in caring for the aged patient should be a center, stimulated by community interest, geared toward accepting for aged persons the same general rules which we advocate in the care of the sick.

More recently the Committee on Aging of the Community Welfare Council of Buffalo and Erie County conducted a survey to find out what is needed in this area for the aged and the infirm. It was interesting to note that the general consensus emphasized the need for education and for services to the aged. The general hospitals certainly could be considered focal points in this endeavor.

It is difficult to expect that this role of the general hospitals could be carried out with the sole participation of the existing personnel, handicapped as it is by a nationwide shortage of nurses. Rather, what we are aiming at is a more effective utilization of volunteer services, under the supervision of professionally trained workers. The Grey Lady service, the women's auxiliary, and so forth, in most community hospitals are eager to cooperate. They could be a very necessary link in creating more community participation in all those activities which would alleviate suffering by opening new vistas and by giving added help to the aged patient.

SUMMARY.—In discussing the role of the general hospital in the care of the aged and the infirm, we must take into consideration the fact that with longer life expectancy the rates of long-term illness, chronic disease, and disabling conditions are on the increase. As a result most of our general hospitals are overcrowded with patients of the older-age group. Long-term illness requires long periods of hospitalization and creates difficulties, as far as bed space is concerned, in taking care of patients with acute medical conditions.

Nursing homes, county homes, or voluntary homes for the aged are not always the answer to help this situation. The community-sponsored homemaker programs along with the home care offered by general hospitals certainly have a great deal to offer.

In such an approach the general hospital should take the leading role in indoctrinating the medical and paramedical professions, the families involved, and the community at large.

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Question and Answer Period

DR. KELLY: We have had three provocative papers. Our speakers kept within their allotted time so that you do have a few minutes to ask questions if there are any.

I have received two questions, one each to Dr. Brightman and to Dr. Rosenbaum.

The first is a question in reference to Dr. Brightman's remarks about public hospitals. I'm wondering whether he meant to lump in that group the mental hospitals; and if not, if he would like to make some remarks about the use of mental hospitals for alcoholic patients.

The second question is to Dr. Rosenbaum. In regard to his remarks about the emergency clinics, I'm wondering whether or not sending a patient back into his home setting does not at times deprive the family, at the culmination of an emergency situation, of a decision which they are not able to face on their own except under these circumstances.

DR. BRIGHTMAN: The survey I reported was confined to general hospitals, both public and voluntary, at the community level. In New York State, the State hospitals of the Department of Mental Hygiene will not admit a person who is alcoholic unless that person has a psychosis which may be associated with the alcoholism or be independent of it.

There are other states where that is not so. Texas and California do admit alcoholic and narcotic addict patients to the state hospitals. It has been advocated that New York State utilize the State hospitals as a resource for the care of alcoholic patients; but, of course, the big problem of the State hospitals is their present overcrowded conditions. To come up with a program whereby they would take on a large number of additional patients is not feasible at present.

Of course, the same thing might be said about the general hospitals too. They also are usually operating at capacity or over capacity; but it seems that the alcoholic patient should be treated at the community hospital rather than referred a considerable distance to a state hospital.

Now, of the general hospitals in the survey which do have psychiatric services of the type mentioned by Dr. Rosenbaum, the majority of these admitted alcoholic patients to the psychiatric ward or wings. However, they also admitted some patients to the medical wards as well; and sometimes they had special sections for alcoholic patients. Frequently they used all three services, indicating that there was discretion as to the specific needs of the patients.

The hospitals which did not have psychiatric wings generally used the medical services.

Dr. Rosenbaum: I'm sorry if I gave the impression that we don't accept the responsibility and as though we're throwing the patient back onto the family. Would you repeat the question?

Dr. Kelly: To rephrase the question, the point that was raised was: In sending the emergency patient back to the home, are you tossing back on the family and having them reaccept a situation which they really shouldn't accept? And having an emergency situation, do they finally gather enough effort together to tackle this situation and deal with it as it should be dealt with?

Dr. Rosenbaum: I'm sorry I didn't have enough time to go into any detail, and I don't have enough time now except to say this, that when a patient is psychotic or highly disturbed, that patient comes into our emergency room and that patient is treated like any other patient who comes into the emergency room at the hospital. Namely, if the patient is really sick enough to be in the hospital, we accept the patient; but if the patient isn't sick enough, we will give the patient an appointment in the clinic. If the patient should be hospitalized and we don't have the bed, we have to see to it that we obtain a bed in another hospital. But patients just walk into the emergency clinic I'm talking about.

Now, every psychiatric clinic that I know of has a waiting list with astronomical figures. We knew that when we started. This is an easy way out. I mean a social agency calls you and/or the schools call you or you get such calls from other doctors and you'll say, "Yes, we'll see Mr. So-and-So. Have him come in in six months or a year." We don't do that. We say, "Tell him to come in this afternoon or tomorrow." I'm not talking about the acutely psychotic patient. That patient is brought right into the hospital, that is into the emergency room of the hospital.

So, these patients with mild, early disorders can come into our clinic that very day and they'll be seen, which is a unique situation. We also involve the family. After all, we have a social worker attached just to that clinic, and she deals mainly with the family.

We get cases of this kind all the time. A young mother has just had a baby, and we know that not infrequently young mothers get a mild depression. We can see her right away, and in some instances in three or four interviews we can re-establish her defenses. We don't say, "Look, you want to get rid of the baby" and so forth and so on. We give her enough support and enough help to point out to her that she is a good mother and that this is not an abnormal reaction so that she can reconstitute herself and can get help when she needs it.

If that same young mother came in and we said, "We'll see you six months from now," she might get well too; but, on the other hand, she might not because she wouldn't have made any contact with anyone.

One of the things that has hamstrung us as psychiatrists for many years is that many decisions are based on legal requirements rather than on medical ones. In other words, patients should be admitted to hospitals for medical reasons, not because of legal reasons or perhaps not because of social reasons. There are patients who are not completely psychotic. They can get along on the outside, but they should be brought into the hospital because we know what the home situation is.

On the other hand, a patient may look psychotic, but if we know that the home situation is such that with a certain amount of support that patient might do better by staying in the home, we have an opportunity to carry this out. In the ordinary hospital the residents and others become interested in psychotherapy. They see a certain number of patients for one or two hours a week; and the amazing thing is that in the best training centers the psychiatric trainee doesn't get the experience that all of us have to face in reality.

For instance, I have a full-time position. I can see a few patients. So let's say I carry 1 or 2 patients in analysis in psychotherapy; but when somebody calls me, I'll see the patient. Then it's my responsibility and I'll place the patient. Maybe I'll tell the patient I can give him two hours and I'll keep two hours open on a Saturday afternoon. Or I might say to the patient, "Look, give me a ring in a couple of weeks. Let me know how things are." Or I might say, "Come back in a couple of weeks"; but our residents don't have that experience. They either put the patients into the hospital or put them on the waiting list and give them psychotherapy.

We are trying to give these doctors experiences with the realities they must face as doctors.

Dr. Kelly: Another strong plus for your program, Dr. Rosenbaum. I don't recall if you mentioned it, but I spoke with my neighbor in New Rochelle where the program has opened. Some weeks ago I spoke to a number of the medical and surgical men from that hospital and they are very much pleased with it too. What they like is that in any hospital of their size or my hospital's size, several times a year there will be postoperative, postpartum, or medical patients who get into what appear to be acute psychoses. Of course, one must get them out of the usual general hospital. In our county it's get them to Grasslands; in New York City it's get them to Bellevue. Now, in an emergency there is an active psychiatric service available. The psychiatrist comes over, and he reassures the medical man or the surgeon. In twenty-four hours the case is cleared. The traumatic experience of transferring the patient is avoided as well as a lot of ill will all around.

Another question: Dr. Brightman spoke about the program for using the general hospitals for the emergency care of alcoholic patients, but that is really the beginning of the problem. What about the follow-up care?

Dr. Brightman: A very pertinent question. The subject of this symposium was general hospital utilization of these conditions, and that's why we stressed that aspect. In my opening remarks I said that alcoholic patients do need a great many community services. The patient's need of a hospital is one of those services.

The hospital that accepts its alcoholic patients without having an outpatient service to which to refer him afterward, or in which he might be well worked up prior to his coming into the hospital, is still not doing a complete job.

Obviously, there are other services that one could run through, such as the half-way house for persons who do not have a suitable home to which they can return immediately, or no home at all, as is the case in particular alcoholic persons. A program that does not include the penitentiary type of patient is not comprehensive. The doctors themselves must take an interest in these patients so that they can refer them to hospitals and take care of them there as well as on the outside when they are ready to be discharged. Then, of course the voluntary agencies can play a very definite role from the social or medicosocial angle. I'm talking not only about the voluntary family agencies but also particularly about such agencies as Alcoholics Anonymous which, in almost every community, plays a very vital nonmedical role.

May I make one additional remark in reference to an item that you have brought up twice so far on a very important subject, financial consideration. There is a program in New York today whereby general hospitals can obtain financial assistance through the community and the State. Many people may not know about the Community Mental Health Services program.

This program depends on many things. It depends on the community establishing a community mental health board which requires that certain specifications laid down by the State Department of Mental Hygiene be met.

Once that board is established, it depends on the funds available to the board either through public appropriations or through, in this particular program, funds contributed by voluntary agencies which can be utilized to match State funds. It's the only public program we have which uses voluntary money at the local level to match State funds.

And finally, priority for this particular type of program, whether it's a general psychiatric service in a hospital or a specialized alcoholism program, depends on the preference of the community and of the board particularly. In New York City which has exceeded its ceiling of reimbursement for this program, a very major part of the over $19 million budget of the board of community mental health goes toward the reimbursement of hospitals for the care of psychiatric patients.

The same is true in the city of Buffalo in the county of Erie to a great extent. It is less true in other areas. In many areas the community mental health boards are relatively miserly in their appropriations. Often the boards were established to take care of one or two particular agencies and the support of these agencies comprises their entire program.

But at least this is a nucleus on which psychiatric services can be developed in the community. We can build on it.

Whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report: if there be any virtue, and if there be any praise, think on these things.—PHILIPPIANS IV, 8

Dangers of Artificial Airways for Rescue Work

VINCENT J. COLLINS, M.D., AND GAMLIEL SALAND, M.D., NEW YORK CITY

(*From New York University–Bellevue Medical Center and the Fire Department of the City of New York*)

MANY attempts have been made in recent years to prevent asphyxial death. After reviewing available methods of artificial respiration, a subcommittee of experts reported to the Council on Medical Physics of the A.M.A. and concluded that mouth-to-mouth resuscitation was the most effective method available and was the simplest and easiest to teach. The symposium was reported in the *Journal of the American Medical Association.*[1] After a conference at the National Academy of Sciences in November, 1958, the Red Cross officially adopted the mouth-to-mouth method for both adults and children.[2] It should be realized that this method has been utilized by anesthesiologists for many years and its present state of development is due to the efforts of anesthesiologists in the United States. Actually, credit for this forward progress in preventing asphyxial deaths must go to Virginia Apgar, M.D., of New York City, to James O. Elam, M.D., of Buffalo, New York, and to Peter J. Safar, M.D., of Baltimore, Maryland.

In an effort to improve the efficiency of the method, many devices have been introduced recently. At first glance these appear to have merit but before any can be endorsed for use by laymen they should be scrutinized carefully, submitted to tests by several different clinics, and then field trials should be held in which selected groups of lay rescue workers apply the device. This type of investigation and accumulation of case experience is a necessity before any gadget is released to the general public or before any device is endorsed by an official agency.

One device in particular has been presented prematurely to the public.[3] The public must be cautioned against its use at the present time, and the device should be returned for proper evaluation and determination of its safety in the hands of unskilled personnel. The device under consideration is the double pharyngeal airway, the "S"-shaped airway, so called because it resembles an "S" when it is viewed from the side.

Reports have been collected showing that this device has been instrumental in a number of accidents when used by laymen, and at the present time it is considered a dangerous and unsafe device in the hands of nonprofessional rescuers.

Recent advertisements in newspapers such as *The New York Times* and the *New York Herald Tribune* as well as promotional efforts by commercial companies regarding the "S"-shaped airway proposed for use in mouth-to-mouth breathing concern us seriously. For a number of reasons to be enumerated it is believed that this airway or any device inserted into the oral cavity by a layman should be condemned. In addition, it should be emphasized that pharyngeal airways of all types are medical tools: they are part of the practice of anesthesiology. Their use requires a proper knowledge of anatomy and physiology as well as some training in the technics of introduction of such airways. This is not learned casually. The following are fundamental considerations.

Dangers in Use of Airway Device

1. A number of reports have been received indicating various misuses of the airway: The tongue has been pushed back into the pharynx to create obstruction instead of correcting any existing obstructions, or the airway has been forced into the mouth when the jaws were clenched, producing unnecessary injury. To insert the airway

is actually a matter of medical judgment. Vomiting and pulmonary aspiration have occurred owing to stimulation of the gag reflex by the airway in patients not deeply comatose.

2. Even in the hands of so-called professional rescue workers, the airway has lethal complications. In two instances, for which we have been consulted, analyses of the situations indicated that improper insertion of the airway in one instance had pushed the tongue back in the mouth, and in the second instance the airway itself was occluded by the base of the tongue so that airway obstruction was present. Fatalities resulted in both instances.

3. The Advisory Committee on Resuscitation to the Fire Department of the City of New York has reviewed this matter, and it has been discussed with the Director of Medical Service.[4] It is the conviction of the medical advisors that airways in the hands of laymen are an extreme hazard even though these men may actually be professional rescue workers.

4. Experiences gained by members of the Fire Department of the City of New York show that the artificial airway device is not necessary to secure a patent airway. At present, the Fire Department has a standing procedure which does not include an artificial airway device.[5] Reliance is placed chiefly on positioning of the head and elevation of the jaw. Approximately thirty reports of direct mouth-to-mouth or mouth-to-mask application of rescue breathing have been attended with success; in each instance artificial airways were not employed, nor have the men found any artificial airway necessary.

5. To test out the practicality of the use of airways in the hands of professional men other than anesthesiologists, the following experiment has been conducted. Eleven physicians in general practice were instructed in the purpose and use of the pharyngeal-type airway. Each man received a demonstration. When it was considered that the teaching was completed and when each physician felt he knew how to apply the airway he was then given the opportunity to use it. Only 3 of the 11 physicians were able to insert the airway readily and properly. Only after varying degrees of fumbling and further supervision were the other men able to introduce the airway with any degree of success.

6. A group of 24 professional rescue workers, chiefly firemen, policemen, and lifeguards, were given a period of instruction and a demonstration in the use of the airway. Only 5 of these men were successful on their first attempt and within an acceptable time limit of thirty seconds. All the others required too much time or needed further instruction.

7. Experience in teaching physicians specializing in anesthesiology indicates that it takes at least two weeks of frequent explanations, demonstrations, and daily experience for these doctors to develop a sufficient degree of skill in the use of pharyngeal airways to make the use of them effective and safe.

Conclusion

In view of these findings the following conclusions must be drawn:

It takes a good deal of instruction to train physicians in the use of the pharyngeal artificial airway even though it is simple and they have had a proper background.

The artificial pharyngeal airway is a medical device.

If doctors themselves find difficulty in its use, common sense dictates that we must not expect laymen to make efficient or safe use of this tool.

As a final conclusion, we feel that any further spread of the use of pharyngeal airways by laymen will be fraught with extreme hazard, will decrease the success of rescue breathing, and may actually provoke death when it should not have occurred. It is believed that this may become a public health hazard. Further, it is believed that steps must be taken to correct a dangerously developing practice. Both doctors and the public must be warned against the dangers involved.

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ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 7 to 13, 1960, in New York City.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1960*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

Melanoma and Lesions Simulating Melanoma

GEORGE C. ANDREWS, M.D., AND ANTHONY N. DOMONKOS, M.D., NEW YORK CITY

THE most effective means available at present for the reduction of the high mortality rate in melanoma is early diagnosis and treatment. Today the dermatologist is greatly responsible for the ultimate realization of this goal, for he is called on to make a proper disposition of many pigmented lesions. In most instances the dermatologist sees the early lesions of melanoma and in many more instances he will see lesions simulating that of melanoma. Becker[1] and later McMullan and Hubener[2] reported the discrepancies in diagnosing melanomas clinically. Both reports emphasize the difficulties in attaining a high degree of accuracy in the diagnosis of melanoma not only clinically but also histologically.

Precursor Lesions

There is little doubt that the majority of melanomas arise from pre-existing pigmented lesions. These are known as the junction nevus and lentigo maligna or melanotic freckle. It is also known that melanomas may arise from an apparently normal skin. It is not known definitely to what extent each of the precursor lesions is responsible for the development of melanoma. Usually one must rely on the history given by the patient. In our series of melanoma cases only a few patients were able to give an unequivocably accurate account as to the duration and whether or not there was actually a lesion present prior to the development of the symptoms.

Junction Nevus

The junction nevi have been shown by Satenstein[3] and later by Traub and Keil[4] to be the precursors of melanoma. These nevi are usually nonelevated or only slightly elevated, smooth, hairless, and pigmented from light to a dark brown or even coal black. These lesions can occur anywhere on the body. The palms and soles, the waistline, the brassiere areas, and other areas where constant trauma may be present are the sites for possible malignant changes of the junction nevi to occur. The removal of the junction nevi in these areas is generally thought best for prophylactic reasons.

The junction nevi are considered to be the only nevi which may become malignant. This is explained on the basis of the "activity" of the nevus cells at the dermoepidermal junction of the skin.

Lentigo Maligna

One of the confusing aspects of melanomas is the lesion variously described as lentigo maligna, malignant freckle, melanotic freckle of Hutchinson, or mélanose circonscrite précancéreuse of Dubreuilh. Hutchinson[5] first called attention to a lesion that resembled a freckle and then became malignant. This conception was more clearly defined by Dubreuilh.[6]

Recently Becker[1] followed by Klauder and Beerman[7] and then Grinspan and Abulafia[8] have revived interest in lentigo maligna or the melanotic freckle. Because of its peculiar nature in the latent stages of malignancy, this lesion cannot be entirely disregarded.

Clinically the lesion occurs in two stages. The first stage is a lesion that may be a few millimeters to several centimeters in diameter. It is usually mottled with pigmentation varying from light brown to coal black. The lesion is not elevated and occurs most frequently on the cheeks of women, although it occurs elsewhere also. This stage is considered premalignant. It may be present

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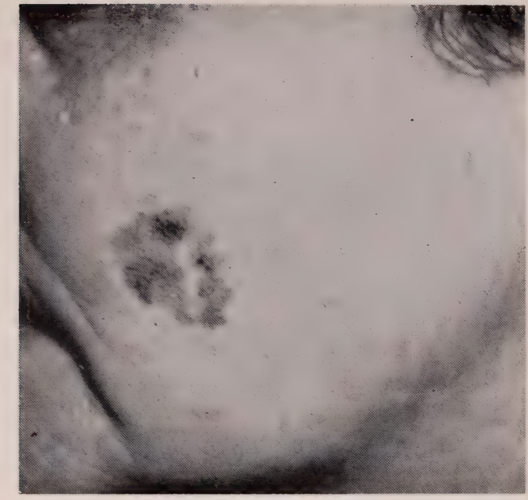

FIG. 1. Lentigo maligna—premalignant stage, eighteen years duration with no change in dimensions.

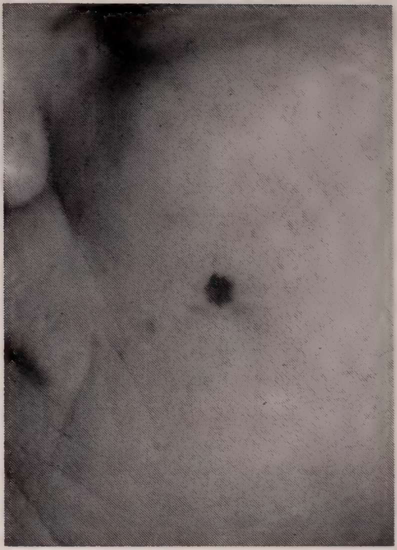

FIG. 2. Lentigo maligna—two months duration resembling melanoma arising from apparently normal skin with rapid increase in size and pigmentation.

for many years without causing any malignant condition.

Klauder and Beerman[7] regard the gradual enlargement or extension of this lesion to be a distinctive sign of impending malignancy. The borders are usually irregular and at times the pigment fades imperceptibly into the surrounding areas. Another feature is that the discoloration of the lesion is not homogeneous.

The second stage is the malignant stage with the development of tumors within the lesion. There may be a number of small tumors or areas of induration within the pigmented lesion. It is in this stage that metastasis to the lymph nodes may take place. Considerable emphasis has been placed on the long interval of time that may occur between the premalignant stage and the malignant stage.

The histopathologic changes of the early lentigo maligna may be minimal and they may consist of increased pigmentation only. Changes in the basal cell layer are the characteristic features of the precancerous stage of the individual basal cells. Gaps occur between the individual cells, and the nuclei are large and vesicular. The protoplasm is light and fluffy. There are no mitoses. Changes in the dermis are mostly inflammatory with plasma cell production. Chromatophores are abundant. There is a segregation of the basal cell clusters that wander into the cutis. Klauder and Beerman[7] cite Dubreuilh's description of the changes just described. The tumor stage in its full development presents the usual features of the melanoma.

The importance of lentigo maligna becomes apparent when one considers some of the features. Lentigo maligna may be present for many years without causing any malignant changes. Removal of the lesion at the premalignant stage may erroneously swell the "cure" rate of melanomas, whereas there is actually no malignancy present. Also, the surgeon may be led to perform a radical excision with removal of the regional lymph nodes. A histologic examination of a biopsy from the lesion in these cases becomes a necessity. On the other hand, the development of nodules in the lesion serves as an indicator that malignancy is probably present. A simple biopsy should be done to confirm the diagnosis before extensive surgery is done.

The simple premalignant stage of lentigo maligna is illustrated in Fig. 1. This lesion

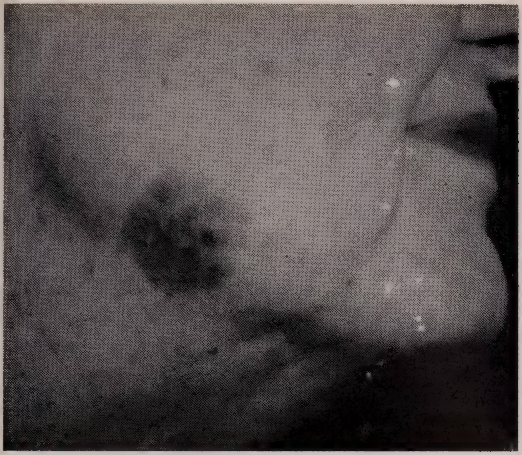

FIG. 3. Epidermal nevus with a darkly pigmented nodule simulating the malignant stage of lentigo maligna.

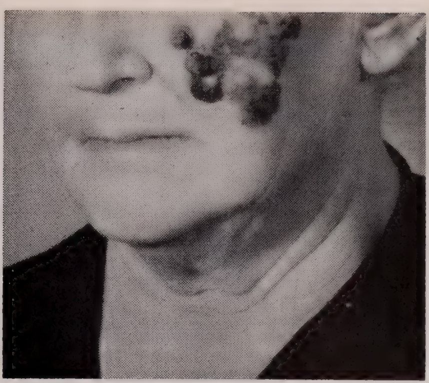

FIG. 4. Lentigo maligna—malignant form (melanoma) with large, deeply pigmented nodules, one year's duration. Pigmented lesion has been present for fifty years.

is of eighteen years duration with no apparent progression in size or elevation. Figure 2 shows a lentigo maligna clinically resembling an actual melanoma with a history of several months duration during which growth and increase in pigmentation simulated a melanoma. Figure 3 shows an epidermal nevus simulating the malignant stage of lentigo maligna with a darkly pigmented nodule in the lesion. No evidence of malignancy was found nor was there a removal of the lesion. Figure 4 shows lentigo maligna, the malignant form, in a seventy-year-old housewife. The histologic features were that of a true melanoma apparently developing in a malignant freckle of fifty years duration. There were no palpable lymph nodes. Because of the patient's state of health at seventy years of age, the lesion was removed by electrocoagulation with no lymph node dissection. She is well nine years after removal.

Lesions Resembling Melanoma

A number of pigmented lesions appearing on the skin can be diagnosed erroneously as melanoma.

PIGMENTED SEBORRHEIC KERATOSIS.—Pigmented seborrheic keratosis is a greasy warty excrescence frequently seen on the trunk and on the face. It occurs in people with a tendency for seborrhea. A simple curettage after ethyl chloride refrigeration leaves no cosmetic defects.

SENILE KERATOSIS.—Senile keratosis may be pigmented and it can simulate both epithelioma and melanoma. Its horniness is distinctive and occurs in middle-aged people with a history of long exposure to the sun and unfavorable weather conditions. It occurs most frequently on the face and on the back of the hand.

HISTIOCYTOMA.—Histiocytoma is frequently pigmented and even mottled with pigment. It is usually firmly indurated which distinguishes it from a melanoma. An occurrence is most frequent on the lower extremities.

PIGMENTED BASAL CELL EPITHELIOMA.—Pigmented basal cell epithelioma can easily be mistaken for a melanoma. The close resemblance to a melanoma clinically makes it impossible at times to make a diagnosis. It is only by noting the presence of the rolled-edge, waxy, nodular border typical of epithelioma that the true nature of the lesion is revealed.

PIGMENTED NEVUS.—Other nevi besides the junction nevus may present difficulties in diagnosis. The verrucous nevus when scratched or irritated may become inflamed and show bleeding. Occasionally one sees an infected sebaceous cyst under a nevus.

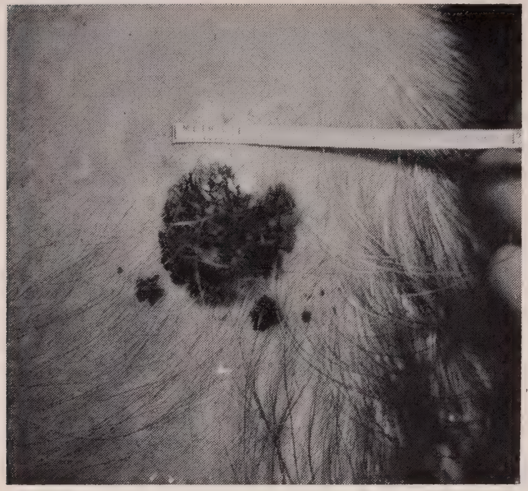

FIG. 5. Satellite pigmented macules in early melanoma of the scalp.

Edema, inflammation, and bleeding may suggest pseudomalignant changes.

SCLEROSING ANGIOMA.—Sclerosing angioma, a hard brownish subepidermal nodule, is rarely seen. Clinical diagnosis is difficult and usually such diagnosis is established only by a histologic examination. Not only may the lesion resemble a melanoma, but also it may resemble a histiocytoma, a dermatofibroma lenticulare, or a myoblastoma.

BLUE NEVUS.—The bluish color of the nevus, occurring most frequently on the lateral instep and the cheeks, may help in the diagnosis of the blue nevus. A malignant degeneration of this nevus can occur.

ORGANIZED HEMATOMA. — Trauma-induced hematomas producing deep black hematomas may easily be mistaken for a melanoma. This is true especially in subungual hematomas where resolution of the hematoma may be so slow that the patient forgets the traumatic incident.

OTHER LESIONS.—At times the ability of some lesions to mimic a melanoma is striking. Some lesions that frequently resemble a melanoma are the following: granuloma pyogenicum, granular cell myoblastoma, nevoxantho-endothelioma, Kaposi's sarcoma, lymphoblastoma (solitary nodule), and melanosis oris.

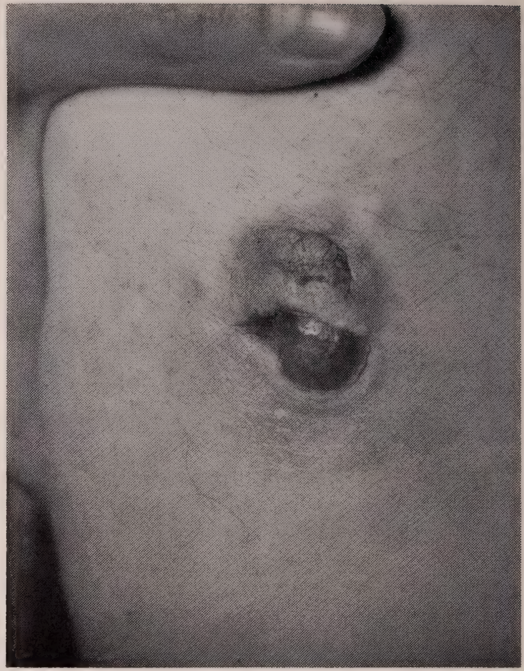

FIG. 6. Amelanotic melanoma on the calf of a seventy-two-year-old woman.

Various Forms of Melanoma

MELANOMA.—When the pigmented junction nevus shows signs of activity, morphologic changes occur as malignancy develops. The nevus may grow larger and become slightly verrucous. Crusting, bleeding, and an increase in pigmentation are usually present. An inflammation may surround the border. Satellite pigmented macules resembling ink dots may appear early, and it is probably the most valuable single criterion for the diagnosis of melanoma (Fig. 5). The clinical features of the malignant form of lentigo maligna have been discussed under that heading. Metastasis into the lymph nodes may take place early, but there is no set pattern. Lymph nodes may have malignant involvement without being palpably enlarged. The detection of melanuria is helpful, although usually it is present only when overwhelming and extensive metastases have developed.

AMELANOTIC MELANOMA.—It is difficult to diagnose a melanoma in a lesion without

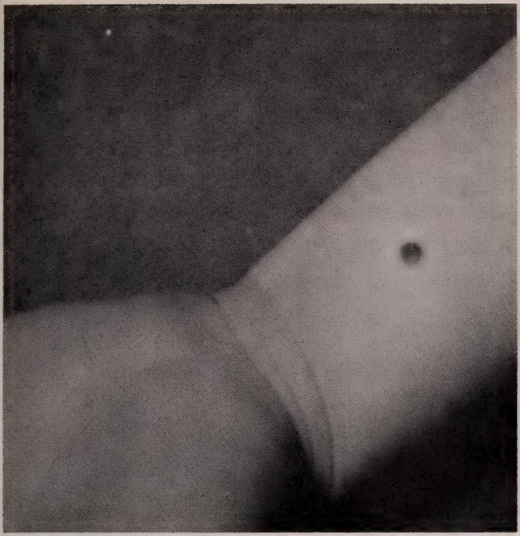

FIG. 7. Juvenile melanoma on the forearm of a four-year-old girl.

the characteristic pigmentation being present. The sudden onset of an infiltrated, rapidly growing nodule with inflammation and perhaps bleeding should suggest the diagnosis. In one of our cases the diagnosis was aided by the presence of melanuria, since a histologic diagnosis of a melanoma could not be made with certainty (Fig. 6). The progress of amelanotic melanoma may be as rapid as it is in the vulgar form of melanoma. One of our patients developed extensive metastases and died within two months after the original lesion was sufficiently noticeable for the patient to seek medical help.

JUVENILE MELANOMA.—There is a tendency for most of the nevi to be the flat-junction type in childhood. The somewhat rapid increase in size and pigmentation suggests the diagnosis. The prognosis is generally good (Fig. 7).

MELANOTIC WHITLOW.—Very often the melanotic whitlow is diagnosed as a fungus infection, doubtless because of its insidious onset. Early changes such as slight pigmentation or an elevation of the nail with little or no symptoms cause great confusion. The presence of pigment near or under the nail should be regarded as a melanoma until a biopsy diagnosis is made.

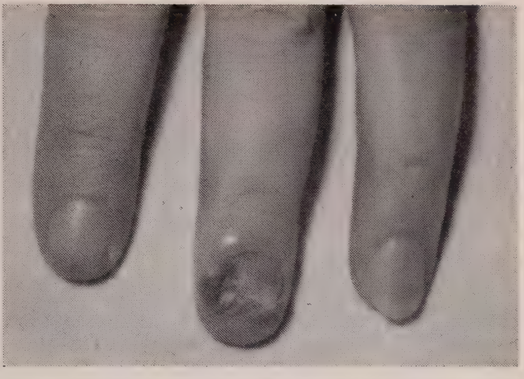

FIG. 8. Melanotic whitlow in a twenty-eight-year-old woman.

Subungual melanoma is most frequently confused with onychomycosis or subungual hematoma. The prognosis generally is better than that for other melanomas. A twenty-eight-year-old patient of ours with a melanotic whitlow refused treatment. The natural progress of the disease could be observed as the lesion grew with gradually increasing lymph nodes, especially in the axilla. Death from numerous metastases occurred about one year after the process had started (Fig. 8).

Biopsy of Melanoma

A controversial aspect of the diagnosis of melanoma is the question of biopsy. From the foregoing it is apparent that histologic diagnosis is of great importance. It has been contended that biopsy should not be done for fear that dissemination of melanoma may occur. This tenet imposes a great burden on the proper management of the lesions resembling melanoma and on the management of the melanoma itself. A biopsy would seem to be the rational procedure when a lesion is too large for a simple excision. A deliberate trauma to the junction nevi by partial electrodesiccation as shown by the experimental work of Walton, Sage, and Farber[9] does not seem to predispose to malignant degeneration. Lane, Lattes, and Malm[10] state that there is no reliable proof of metastasis being caused by biopsy of a melanomatous lesion.

Treatment

The treatment of melanoma is surgical. Early diagnosis and the wide and deep removal of the melanoma are essential. A local removal is usually adequate in juvenile melanoma, and the amputation of the involved digit is generally sufficient in subungual melanoma. For lentigo maligna and melanoma in very old people local excision is usually adequate. Whether or not to do more radical surgery depends on the individual case. Radiographs of the chest and skeleton and urinalysis for melanin, which generally signifies dissemination, should be done. When these findings are negative and the melanoma is near to draining lymph glands, en bloc removal and dissection are recommended. Lane, Lattes, and Malm[10] believe that the prognosis is more favorable in those cases where regional lymph nodes, even if not palpable, are removed as a prophylactic measure. If the melanoma is on the foot or on the hand, local removal is combined with surgical dissection of the draining lymph nodes in the groin or axilla. Each case must be evaluated carefully according to age, location, duration, and signs of dissemination.

From 1943 to 1958 we have been able to follow 31 cases of melanoma in our private practice. The cases that were seen just once and were referred to surgeons are not included here. There were 3 cases of juvenile melanoma. In each of these 3 cases a local wide excision was performed with five-year cures resulting. Of the remaining 28 cases 5 patients died of melanoma. One of these was a fifty-five-year-old male, seen in consultation. He had melanoma of the sclera and died from metastases of the brain some ten months later, although the eyeball was enucleated by a surgeon. Another patient, forty-one years old, had a melanoma on the right preauricular area. Only local treatment was performed. Two years later the lymph nodes became palpable, and despite radical neck dissection, death occurred from metastases. The third patient was a twenty-eight-year-old woman with a subungual melanoma. Treatment was repeatedly refused, and she died approximately one year after the diagnosis was established. The fourth patient was a seventy-two-year-old woman with amelanotic melanoma of the calf. A definite histologic diagnosis could not be agreed on by three prominent histopathologists. Lymph nodes in the inguinal region became palpable some four months after the original lesion. Because of the general condition of the patient surgical treatment could not be performed. Death occurred ten months after the original lesion appeared. The fifth case was that of a sixty-year-old man who had a pigmented nevus on his back with a history of an increase in pigmentation and in size. A histologic examination by the late Fred Weidman, M.D., and others before and after metastases occurred revealed no signs of malignancy in the original lesion. Three years after the lesion was excised the patient died of a disseminated melanoma. It was never established whether the original lesion was the cause of metastases or another lesion had developed.

In addition to the above there were 2 other cases in which the draining lymph nodes were palpable. In both cases the draining lymph nodes were removed. Both patients have survived at least five years.

There are 18 patients who survived and have been followed for five years or more. Of these 18 patients, 13 patients had only wide excision of the melanoma without any lymph node removal. Of the 5 patients who had lymph node dissection, none had histologic evidence of a melanoma in the nodes removed.

Summary

Early diagnosis and early treatment are the only means available today to reduce the high mortality rate of melanoma. There are many pigmented and nonpigmented lesions that simulate melanoma. With a few exceptions most of these melanoma-like lesions are benign. As a result, radical surgery may be done needlessly.

The dermatologist is the one most competent to diagnose early melanoma and to differentiate it from other pigmented skin growths. The treatment of melanoma should be appropriate to the individual case with which the physician is faced.

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Discussion

Herbert L. Traenkle, M.D., *Buffalo, New York.*—Dr. Andrews has outlined comprehensively the problems encountered in the diagnosis of malignant melanoma. I can but briefly comment on a few of the high lights.

The reports of Becker[1] and of McMullan[2] on the discrepancies between the clinical and the histologic diagnosis of malignant melanoma surprised me too. I would have expected a much higher degree of clinical accuracy.

I am glad that Dr. Andrews elaborated on the so-called lentigo maligna. Very few physicians outside of dermatology are aware of this type of melanoma which is not even mentioned in two recent texts on skin pathology. The various terms referring to it in the literature are, as is so frequent in medicine, unfortunate and confusing, but its clinical behavior justifies some sort of designation as an individual form of melanoma. The prognostic importance of its recognition by the therapist is obvious.

The eternal question as to the danger of biopsy in malignant melanoma comes up in any discussion of the subject. In some European clinics biopsy is not done in this condition because of the theoretic danger of a spread. On the other hand, the prospect of doing radical operations without previous histologic evidence of the presence of actual malignancy is equally, if not more, frightening. Obviously, very small lesions can be completely excised for biopsy, but large lesions, especially on the face, do not lend themselves easily to such an approach.

Regarding pigmented lesions not already malignant, such as junctional nevi, I do not believe that there is any convincing evidence that manipulation transforms such a benign structure into a malignant one.

In English-speaking countries radical surgery is regarded as the only acceptable mode of therapy. Objectively, however, we must concede that all the world does not share this view. In Europe radiation therapy, especially contact radiation with the Chaoul machine, is regarded in some outstanding clinics as being equally effective if not preferable to surgery. A comparative statistical analysis of these divergent views is long overdue.

In mapping out a field of therapy the question arises as to how widely the excision must be made. When making this decision, the characteristic tendency of the junctional changes to spread peripherally must be remembered. We have observed, and Lane and his coworkers[10] have reported in some detail, the observation of junctional changes without gross clinical manifestations at considerable distances from the visible lesion. More histologic studies of skin at the periphery of tissue excised with a malignant melanoma might aid in our understanding of some of the mechanisms of spread in this complex cutaneous tumor.

Nothing except a battle lost can be half so melancholy as a battle won.—DUKE OF WELLINGTON

Squamous Carcinoma of the Vulva

Results of Limited Treatment

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(*From the Gynecologic Service of the Roswell Park Memorial Institute*)

LIMITED treatment of cancer of the vulva gives disappointing results. Because patients with this condition are frequently old and in poor health there is a tendency to elect something less than radical surgery. The five-year survival rate of those treated in that manner in this series is materially less than that of a similar series given radical vulvectomy and regional lymphadenectomy.

In the eleven-year period from 1942 to 1952, 125 patients with squamous cancer of the vulva were seen at Roswell Park Memorial Institute. This represented 3.5 per cent of all malignancy of the female genitals seen in that period (Table I). Patients with cancer of the vulva are old, for in this series only 3 were under forty years of age, 89 per cent were age fifty or more, and 73 per cent were age sixty or more (Table II). Of those in whom we know the menopausal status, 8 were still menstruating and 109 were postmenopausal. Of the 109, 97 had developed the menopause by the age of fifty. By contrast, in 100 postmenopausal patients with cancer of the cervix only 79 had developed the menopause by the age of fifty.

TABLE I.—COMPARATIVE FREQUENCY OF CANCER OF FEMALE GENERATIVE ORGANS (1942–1952)

Site	Number of Patients
Cervix	2,358
Corpus	679
Ovary	330
Vulva	125 (3.5 per cent)
Vagina	53
Uterus (sarcoma)	26
Fallopian tube	4

TABLE II.—AGE DISTRIBUTION OF 125 PATIENTS WITH VULVAR CANCER

Age (Years)	Number of Patients	Per Cent
30 to 39	3	2
40 to 59	11	9
50 to 59	21	17
60 to 69	47	38
70 to 79	27	22
80 to over	16	13

About half of the patients, or 60, had pruritis; 39 noticed a lump; 22 had pain; 13 had an ulceration; 9 had bleeding; and 7 had dysuria. Only 16 (13 per cent) had leukoplakia, 11 had diabetes, and 2 had syphilis. Seven of the patients had had another cancer either before or after the vulval lesion was discovered: 3 of the breast, 2 of the cervix, 1 of the uterine corpus, and 1 of the lung.

Eighty-eight patients had had no treatment before coming to our hospital. These were divided into two groups: Stage I, in whom the tumor was clinically confined to the vulva, and Stage II, in whom there was evidence of metastasis to the groins or elsewhere. The patient was regarded as having groin metastases if the masses were nodular and 3 cm. or larger. Thirty-seven cases had been treated before coming to us and are referred to as Stage III cases.

Three patients refused treatment and died in one, eleven, and fifteen months respectively. The remaining 122 were given a variety of treatments (See Table III) including surgery, radiotherapy, and electrocoagulation. Only 3 patients had a radical vulvectomy. Local excision and simple vulvectomy were employed most frequently. Forty (33 per cent) were living and well at five years. The cure rate was 37 per cent (21 of 56) in Stage I; 10 per cent (3 of 29) in Stage II; and 43 per cent (16 of 37) in Stage III.

Results

Simple surgery alone; local excision or partial or total vulvectomy cured 31 per cent

TABLE III. PRIMARY TREATMENT AND FIVE-YEAR CURE

Primary Treatment	Five Year Cure Stage I	Stage II	Stage III	Total
Local excision	3/11	0/1	4(2)/17	7(2)/29
Plus x-ray	2/2	0/4	5/8	7/14
Partial vulvectomy (hemivulvectomy)	0/3	. . .	0/1	0/4
Plus unilateral groin dissection	. . .	0/1	. . .	0/1
Plus bilateral groin dissection plus x-ray	. . .	0/1	. . .	0/1
Plus x-ray	3(2)/5	0/1	2/3	5(2)/9
Simple vulvectomy	11(1)/26	0/2	1(1)/1	12(2)/29
Plus x-ray	1/3	0/4	0/1	1/8
Plus unilateral groin dissection	0/1	1/3	0/1	2/6
Plus bilateral groin dissection	. . .	. . .	. . .	
Plus unilateral groin dissection plus x-ray	. . .	1/1	. . .	
Radical vulvectomy				
Plus unilateral groin dissection	. . .	1(1)/1	. . .	2(1)/3
Plus bilateral groin dissection	1/1	. . .	. . .	
Plus x-ray	. . .	0/1	. . .	
X-Ray therapy	0/2	0/4	3(3)/3	3(3)/10
Radium needles plus x-ray	. . .	0/1	. . .	
Electrocoagulation	0/2	0/1	1(1)/2	1(1)/8
Plus x-ray	. . .	0/1	. . .	
Plus unilateral groin dissection plus x-ray	. . .	0/2	. . .	
TOTAL	21(3)/56	3(1)/29	16(7)/37	40(11)/122

The numerator indicates the number living and well five years after treatment.
The figure in parenthesis in the numerator indicates the number retreated, living, and well.
The denominator indicates the total number of patients treated.

TABLE IV.—FIVE-YEAR END RESULT

Stage	Number of Cases	Number Treated	No Evidence of Disease	Alive with Disease	Died of Disease	Died of Other Causes	Absolute Cure Rate (Per Cent)	Relative Cure Rate (Per Cent)
I	56	56	21	1	29	5	37	41
II	32*	29	3	0	27	2	9	10
III	37	37	16	0	25	2	43	43
TOTAL	125	122	40	1	81	9	32	33

* Three cases in this group refused treatment, and all died within five years.

Stage I includes all cases primarily treated at Roswell Park and in which the disease is still confined to the vulva, regardless of size of lesion.

Stage II includes all cases primarily treated at Roswell Park and in which there is clinical evidence of metastasis to the groins. Masses were nodular and more than 3 cm. in diameter.

Stage III includes cases with treatment elsewhere prior to admission, regardless of whether or not the disease is still confined to the vulva or metastases have developed.

(19 of 62). The addition of roentgen radiation to the simple surgery may have raised the salvage a little, for 42 per cent (14 of 33) were cured. Radiation alone did rather badly, for the 3 survivors all had vulvectomy subsequently. The results of coagulation were also poor. Only 1 of 8 survived. The over-all five-year cure rate was 32 per cent absolute and 33 per cent relative (Table IV). One patient died two and a half weeks after an anterior exenteration and 1 patient died within three weeks after radiotherpay. All the remainder lived more than a month. Three other patients died within three months of treatment.

Seventy-five of the patients were retreated when the recurrence developed (Table V). Of these, 11 (15 per cent) were living and well five years from the time of first treatment. Surgery with a salvage of 6 out of 11 gave the best results.

This series is fairly representative of cancer of the vulva in the northern United States. It comprises 3.5 per cent of all gynecologic cancer. The peak age is found in the seventh decade, and half of the patients had itching as the initial symptom. The series is also probably representative in terms of the kind of treatment given and results achieved. The treatment was lim-

TABLE V.—RESULTS OF TREATMENT FOR RECURRENCE IN 70 CASES*

Method of Secondary Treatment	Number of Patients Treated	Five-Year Survival	
		Number of Patients	Per Cent
Electrocoagulation	2	0	0
Electrocoagulation plus x-ray	5	1	20
X-Ray and/or radium	30	2	7
Surgery	11	6	54
Combination of surgery and radiation	22	2	9
TOTAL	70	11	16

* Five cases were not retreated owing to widespread disease.

ited surgery, radiation, and cautery, separately or in combination.

The reason for the failure to elect radical surgery is obvious to anyone who sees even a few of these patients. They look old and friable. By standards usually applied, for example, for radical hysterectomy and for regional lymphadenectomy for cancer of the cervix, patients with vulval cancer are poor operative risks. Indeed by any standard they are poor surgical risks. Accordingly, the physician elects a modest procedure that carries little immediate risk. The resulting 33 per cent cure rate is found in a number of similar series.

Radiotherapy is not satisfactory as treatment because the normal tissue of the vulva are excessively sensitive to radiation. Series treated in this fashion achieve a five-year cure rate of about 25 per cent according to Tod[1] and Ellis.[2] Electrocoagulation with or without groin dissection gives a salvage of 37 per cent (Berven).[3]

Surgery

Way[4] has revolutionized the treatment of this disease. He noted that modest surgical procedures gave poor results, largely because of frequent local recurrence and that the tumor spreads in a methodical fashion from one set of pelvic nodes to the next higher set. He devised a radical operation that removed the entire vulva widely, along with the regional lymph nodes, making sure that the uppermost group of nodes showed negative findings. He insisted that the operability must be vigorously pushed up to include the maximum proportion of cases. In a series of 79 cases, he was able to do the radical operation on 65 patients (83 per cent). There were 8 (12 per cent) operative deaths and 48 patients were living and well at five years. This is an absolute cure rate of 61 per cent and a relative cure rate of 74 per cent. Similar results have been achieved by McKelvey[5] and Collins.[6] An operability of 90 per cent with an operative mortality of 8 per cent and an absolute five-year cure rate of 50 per cent as reported by McKelvey is obviously superior to the 33 per cent five-year salvage of the present series.

We conclude that radical surgery is the treatment of choice in cancer of the vulva and that it can be applied in 80 to 90 per cent of all cases. As a result of this experience, radical surgery has been applied in 12 of the last 14 cases seen in this clinic.

Summary

One hundred and twenty-five patients with squamous cancer of the vulva were seen in the eleven-year period ending in 1952. They were treated with radiation, limited surgery, and/or cautery. Forty (33 per cent) were living and well at five years. Radical surgery probably would have given better results.

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Clinical Evaluation of Treponema Pallidum Immobilization Test Results

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A NEW era in syphilology occurred in 1906 when the Wassermann test was first developed on the basis of Bordet and Gengou's earlier work with complement fixation. Later this technic of using a nonspecific antigen was improved and simplified through the use of flocculation phenomena, such as Kahn and other tests. Such reactions depend on a nonspecific antigen, usually cardiolipin. The reacting antibody in such sera is called a reagin and is associated with the gamma and to a lesser extent with the beta globulin fractions. It develops within from four to eight weeks following syphilis infection.[1] Unfortunately, other infections, in addition to those of treponemal origin, contain enough of this reagin to produce positive reactions. These other conditions give rise then to so-called biologic false positive reactions. Arbitrarily we divide them into acute biologic false positive reactions which disappear six months after recovery and those that are present for a longer time interval and are known as chronic biologic false positive reactions.

Such acute reactions may occur during and/or within six months following infectious mononucleosis, infectious hepatitis, malaria, tuberculosis, acute exanthemas, atypical pneumonia, immunizations, upper respiratory infections, and, occasionally, even normal pregnancy. These acute positive reactions will eventually, within six months become negative. Chronic biologic false positive reactions which persist after that time interval may be associated with collagen diseases (many times in a latent stage) such as systemic lupus erythematosus, periarteritis nodosa, rheumatoid arthritis, rheumatic fever, and perhaps sarcoidosis. It is important to note that the biologic false positive reaction may be the presenting evidence of these serious pathologic entities and later will be discussed in more detail.

During the past decade we have all appreciated the advances in luetic therapy with antibiotics, notably penicillin. During the same time interval and perhaps not so well known has been the splendid improvement in specific serologic diagnosis. In 1949, Nelson and Mayer[2] reported the immobilization of Treponema pallidum by a specific antibody in luetic sera. Since then other technics have been developed to demonstrate this specific antibody by employing complement fixation[3] and immune adherence tests.[4]

Unfortunately, these tests have many technical difficulties and are expensive to perform. More recently, a report of the Reiter protein complement fixation test indicates its suitability for mass testing.[5] The study outlined showed it to be 100 per cent specific, since there is no reactivity with the sera of normal patients or of biologic false positive reactors. The antigen, since it is derived from test tube-cultured spirochetes (Reiter strain) is less expensive than that derived from spirochetes grown on rabbits' testes.

Indications for using these tests using a specific treponemal antigen are first, to distinguish biologic false positive reactions from true positive tests for syphilis and, second, to prove the diagnosis of syphilis in those with clinical evidence of the disease,

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TABLE I.—PATIENTS WITH TREPONEMA PALLIDUM IMMOBILIZATION TEST POSITIVE RESULTS

Case Number	Sex	Age (Years)	Routine Serology Average Titers	Spinal Fluid Examination for Lues	Final Disposition
1	F	25	3	Negative	Latent lues
2	M	45	0	Negative	Symptomatic neurosyphilis
3	M	23	5	Negative	Congenital lues treated twenty years previously
4	F	29	2	Negative	Latent lues
5	F	53	2	Negative	Latent lues
6	M	40	2	Negative	Latent lues
7	F	18	2	Negative	Congenital lues
8	M	20	2	Positive	Asymptomatic neurosyphilis
9	F	18	2	Negative	Latent lues
10	M	27	2	Positive	Neurosyphilis
11	M	42	3	Negative	Latent lues
12	M	15	4	Negative	Congenital lues
13	M	37	3	Negative	Latent lues
14	M	21	2	Negative	Congenital lues
15	M	56	2	Negative	Latent lues
16	M	30	3	Negative	Latent lues
17	M	48	2	Positive	Asymptomatic neurosyphilis
18	F	45	2	Negative	Latent lues
19	F	50	1	Positive	Symptomatic neurosyphilis
20	M	18	3	Negative	Late congenital lues
21	F	45	2	Negative	Latent lues
22	M	30	2	Negative	Latent lues
23	F	27	1	Negative	Late neurosyphilis

but who have negative routine blood and spinal fluid tests. This latter indication is based on the premise that two antibodies appear in luetic serum, the nonspecific reagin and the treponemal immobilizing reagin. As a rule, the nonspecific reagin appears earlier but disappears more promptly than the specific reagin in the course of syphilis.

The venereal disease division of the Erie County Health Department, Buffalo, had occasion to submit serologic specimens for Treponema pallidum immobilization testing on 52 individuals in 1956 and 1957.

There were 23 individuals with positive results (Table I). An inadequate history of previous infection and repeated low-titered serologic results prompted our forwarding serologic specimens in this group. Case 2 with definite clinical evidence of neurosyphilis and a positive Treponema pallidum immobilization result clinched the diagnosis even though repeated routine serologic test and spinal fluid findings were negative.

In the group with negative findings there were 29 individuals (Table II). Cases 2, 8, 9, and 19 had syphilis. All had been treated adequately in the past but were seroresistant according to routine serologic test findings. These cases, contrary to the general opinion, prove that the treponemal immobilizing reagin may disappear earlier than the nonspecific reagin. Case 6 shows the effect of pregnancy on normal routine serologic testing. After pregnancy, the routine serologic test findings reverted to negative. Case 18, after a biologic false positive reaction was proved, showed asymptomatic disseminated lupus erythematosus when further laboratory studies were accomplished. The patient still has no clinical symptoms. The large majority of individuals in this group, the chronic biologic reactors, are being followed for evidence of collagen disease as outlined by Miller.[6] He states that a sizable percentage, about 40 per cent, of the positive serologic test for syphilis reactors who are discovered each year as a result of routine serologic surveys do not have syphilis. Females develop the false positive reaction more frequently than males.

Such patients require that the physician examine them very carefully. Certain laboratory tests including electrophoretic patterns, sedimentation rates, blood counts, and urinalyses should be included. The

TABLE II.—PATIENTS WITH TREPONEMA PALLIDUM IMMBOLIZATION TEST NEGATIVE RESULTS

Case Number	Sex	Age (Years)	Routine Serology Average Titers	Spinal Fluid Examination for Lues	Final Disposition
1	M	25	5	Negative	Granuloma inguinale
2	M	39	5	Negative	Seroresistant lues, adequate treatment
3	F	24	1	Negative	Chronic biologic false positive
4	M	50	1	Negative	Acute biologic false positive, serology now negative
5	F	48	1	Negative	Chronic biologic false positive
6	F	28	1	Negative	Acute biologic false positive (pregnant), routine serology now negative
7	M	46	1	Negative	Latent lues
8	F	31	1	Negative	Latent syphilis, treated two years before
9	M	20	3	Negative	Congenital lues, adequate treatment ten years ago
10	M	25	2	Negative	Chronic biologic false positive
11	F	22	2	Negative	Acute biologic false positive
12	M	25	2	Negative	Chronic biologic false positive
13	F	18	3	Negative	Rheumatoid arthritis
14	F	20	2	Negative	Chronic biologic false positive
15	F	50	1	Negative	Chronic biologic false positive
16	F	31	1	Negative	Chronic biologic false positive
17	M	32	3	Negative	Acute biologic false positive
18	M	39	2	Negative	Lupus erythematosus cells in peripheral blood
19	M	31	3	Negative	Latent lues, adequate treatment
20	M	38	2	Negative	Chronic biologic false positive
21	F	26	1	Negative	Chronic biologic false positive
22	F	39	2	Negative	Chronic biologic false positive
23	F	35	3	Negative	Chronic biologic false positive
24	M	22	2	Negative	Chronic biologic false positive
25	M	39	2	Negative	Chronic biologic false positive
26	F	30	2	Negative	Chronic biologic false positive
27	F	30	2	Negative	Chronic biologic false positive
28	M	30	2	Negative	Chronic biologic false positive
29	F	78	2	Negative	Chronic biologic false positive

patient should be advised to seek medical consultation when unexplained low-grade fevers, malaise, or joint pains appear. Excessive exposure to sunlight should be avoided. Skill is required if these things are to be done without making the patient neurotic. Miller warns that at the present time a chronic biologic false positive reaction must be considered a warning signal, often the first, of possible trouble ahead.

Summary

As many as 40 per cent of the serologic specimens reacting with routine testing in mass survey technics are not evidence of syphilitic infection but rather are biologic false-positive reactions. Definitive laboratory tests using a specific treponemal antigen are now available to the clinician. Use of these tests provides a simple method of differential diagnosis. The chronic biologic reactors should be followed for evidence of collagen disease.

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

*Cancer of Infancy and Childhood**

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Cancer kills more infants and children than do most other diseases, including tuberculosis, heart disease, and poliomyelitis. Some of the most rapidly fatal of all cancers occur in infants, such as acute leukemia, which may kill the child within two weeks after the diagnosis has been made. Some of the most disfiguring tumors afflicting the human being occur in children, for as the child grows and is not killed by or cured of his neoplasm an extremely grotesque appearance may result. Many of the most histologically malignant neoplasms are being cured in infants and children—retinoblastoma, Wilms tumor, neuroblastoma, and others—by proper surgical and/or radiologic treatment.

The decreasing incidence of death from preventable disease and the control of infections with antibiotics have resulted in a relative increase in cancer in infants and children. There is an increase in the actual cancer toll. This has resulted from the upward trend in the mortality rate from the disease and the rapid growth in the child population. Improved surgical technics, especially in the field of pediatric surgery, realization that the infant and child tolerate irradiation as well and often better than the adult, and the recent resurgence of interest in chemotherapy to help control cancer have stimulated increased interest in the problem of tumors of infants and children.

An understanding of the natural history of the various tumors which afflict children and the points of similarity and divergence from those of adults would help in the development of therapeutic measures for their control.

Incidence

Cancer in infants and children is increasing in frequency. It is the third greatest cause of death in children from one to four years of age, exclusive of deaths due to congenital deformities, being exceeded by accidental deaths and pneumonia. It is the second foremost cause of death in children between five and fourteen years, being exceeded only by accidents. This high death rate is a rather recent development, for only twenty years ago cancer was not even listed among the ten most frequent causes of death in children.

Almost 4,000 infants and children between

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the ages of one and fourteen years died from cancer in the United States in 1956, accounting for 9 per cent of all deaths in that age group. This rate is nearly 50 per cent more than that of a decade ago.

During the three-year period 1949 to 1951, 599 cases of cancer were reported in New York State, exclusive of New York City, in children under fifteen years of age, and of these, 36 per cent were leukemia, 12 per cent brain tumors, 10 per cent kidney and adrenal tumors, and the remainder involved various organs of the body. Lawrence and Donlan reported that of 85,895 children admitted to the James Whitcomb Riley Hospital, in Indianapolis, Indiana, (the children's hospital of the University of Indiana) between 1924 and 1951 there were 1,409 cases of tumors, both benign and malignant. The Metropolitan Life Insurance Company's statistical department has calculated that the death rate from cancer is highest at the preschool ages, rising gradually from infancy to a peak between ages three and four. During the school ages the mortality decreases. During 1954 to 1956 the cancer death rate among white males rose from 9.2 per 100,000 population under age one to 12.7 of the same number at ages one to four years and then fell steadily to 7 of that number at ten to fourteen years. At each of the childhood ages the rate among boys exceeded that of girls by one-fifth.

Types and Locations of Tumors

BENIGN TUMORS.—Steiner, in an extensive review of tumors in children, found the largest groups of benign tumors to be polyps, papillomas, and polypoid adenomas arising from various epithelial surfaces. Next, in decreasing order of frequency, were hemangiomas, dermoids and epidermoids, fibromas, lymphangiomas, nevi, teratomas, neurofibromas, lipofibromas, chondromas, and osteochondromas. There was a large group of miscellaneous tumors and tumor-like conditions.

Papillary growths were found most often in the larynx, rectum, nose, and ear, and with less frequency in a wide variety of other locations. Some of these growths were undoubtedly of inflammatory origin and not true neoplasms, for example, nasal polyps. The next largest group of benign tumors, the hemangiomas, were usually cutaneous. Mixed tumors formed a large series in which the structures showed increasing complexity, varying from the simple epidermoids, which are cystic, through the dermoids and teratoids, which are solid. The connective tissue tumors formed the fourth largest group.

Of the 600 surgical specimens from infants and children in Steiner's series, 22 per cent were malignant tumors, 63 per cent benign tumors, and 15 per cent non-neoplastic. A finding from the Steiner necropsy series is that certain benign tumors discovered incidentally during necropsies in adults are not seen in children. These include: uterine polyps and fibroids; adenomas of the thyroid, adrenal cortex, and kidney; adenomatous hyperplasia of the prostate; polyps and polypoid adenomas of the colon; hemangiomas of the liver; fibroadenomas of the mammary gland; and papillomas of the urinary bladder.

Most childhood tumors are truly congenital, arising in embryologic rests. It is often difficult to differentiate between malformations and neoplasms in the strict sense of the terms. For instance, an enterogenous cyst in the abdominal cavity has the same structure as a duplication of the intestine, the essential difference depending on whether there is a communication with the intestinal lumen. A similar situation exists regarding cysts in the branchial clefts and epidermoid cysts in the supraorbital region. Hemangiomas of the skin usually are discovered at or soon after birth, whereas those of striated muscle, without known origin, are more commonly discovered in later childhood and adolescence.

MALIGNANT TUMORS.—Unlike cancer in adults, carcinoma is very rare in children. Leukemia, sarcomas, embryomas, and mixed tumors are the most frequent malignant neoplasms in the young. In comparing the incidence of the various types of tumors in the younger and older age groups of the young—from one to twelve and from thirteen to sixteen years—it was found that some types, such as intracranial neoplasms and lymphomas, persist in the older group and others, such as neuroblastoma and Wilms tumor, become less frequent. On the other hand, bone tumors—chiefly Ewing's sarcoma and osteogenic sarcoma—begin to appear in the older group as do tumors of the lung and of other parenchymatous organs. Thus, in late childhood, types of tumors sporadically appear which eventually result in the patterns seen in the adult. Steiner calls attention to the fact that of 1,841 consecutive cancers encountered at necropsies of individuals of all ages (but mostly older people) the locations of the tumors were as follows: stomach, intracranium, colon, lymphatics, lungs, mammary gland, prostate, pancreas, esophagus, and uterus. Only two of these types of tumors—intracranial neoplasms and lymphomas—are common in childhood. The other eight are uncommon or practically nonexistent. On the other hand, two of the common tumors in children, neuroblastomas of the adrenal gland and embryonal tumors of the kidney, are also found in adults. Carcinoma of the liver occurs both in children and adults; it is the only carcinoma with this double distinction. Tumors of the ovary comprise about 1 per cent of all tumors in children. By 1931 about 115 reports had been made of ovarian cysts and tumors in children under ten years of age.

Videbaek reported that in Denmark during the period 1937 to 1946, 415 children died of pulmonary tuberculosis, 429 of heart disease, 502 of measles, and probably more than 544 of malignant tumors. Of the malignant tumors in children, systemic cancer such as leukemia and Hodgkin's disease predominated, comprising 30 per cent of all tumors. Second in frequency were the sarcomas, which accounted for about 20 per cent of childhood cancers. Intracranial tumors accounted for about 20 per cent and skin carcinomas for about 4 per cent. It is surprising that Wilms tumor accounted for only 4 per cent of all tumors in this series. Tumors of the alimentary tract constituted 3 per cent and cancer of the genital organs 2 per cent.

It must be remembered that numerous factors influence the admission policies of different institutions, thus affecting incidence distribution of each institution. In Andersen's series from Babies Hospital, for instance, tumors of the central nervous system, eye, and bone are omitted because patients with these neoplasms are referred to other hospitals in New York City. In Steiner's series from Memorial Hospital (Chicago) there are few tumors of the central nervous system. The patients in Lawrence and Donlan's series came from families of poor economic background, which conceivably could be an influencing factor.

The combined series from the Children's Tumor Registry presents a more representative incidence of the types of childhood cancer. It shows that the six most common structures afflicted by cancer in infants and children, in declining order of frequency, are: the central nervous system, the osseous system, the eye and orbit, the genitourinary system, the lymphatic and hematopoietic system, and the soft somatic tissues. In the series from New York State, exclusive of New York City, leukemia was the most common form of cancer in the groups from zero to five years and from five to nine years. Almost all of the eye tumors in this series occurred in the zero- to five-year group, and Hodgkin's disease and bone tumors in the five- to nine-year group.

The Metropolitan Life Insurance statistics reveal that leukemia is the most common form of cancer in childhood, being responsible for nearly half the total death toll from cancer under age fifteen. The leukemia death rate is at a peak in the age group one to four years and decreases during the school ages. On the other hand, the sex ratio of the mortality from the disease increases with advance in the childhood ages. Under age one the death rate is somewhat greater for females than for males, but by five to nine years the rate for males is the higher by about 25 per cent and at ages ten to fourteen by 35 per cent.

Cancers of the nervous system—chiefly the brain—constitute the second most frequent category and account for about one fifth of all deaths from cancer in childhood. This figure probably is an understatement of the actual proportion, because in many cases of brain tumor the question of malignancy remains undetermined. Malignant tumors of the peripheral nerves are being reported in increasing numbers. Other fairly frequent sites of cancer are the kidney and bone. Mortality rates from the most common types of cancer tend to decrease during the childhood ages, notable exceptions being cancer of the bone and Hodgkin's disease.

Etiology and Pathogenesis

Prenatal Factors.—The presence of a malignant neoplasm in a newborn infant is an occasion for great speculation concerning etiology and pathogenesis. Certain tumors represent simple defects of organization (enterogenous cysts, branchial cysts, etc.). The cancerogen must be potent to form cancer in the developing embryo, for it has a short period to exert its influence (a maximum of nine months).

Willis maintains that the genesis of teratomas in infants must be related to the chemistry of the "organizers," or growth hormones, which determine the orderly developmental patterns. The locations of teratomas, according to this author, suggest growth disturbances from the primary axis (the notochord and contiguous structures), which is derived by invagination at Hensen's node in the early embryo and which constitutes the primary organizer. He states that blastulas deprived of their primary organizer regions can grow and differentiate into a variety of tissues but that they do so in a chaotic manner and without forming an axis or defined organs. He suggests that teratomas may be comprised of clusters of tissue which early escaped the action of the primary organizer. Andersen believes that teratomas arising in the ovaries and testes differ in origin from those found elsewhere. Extremely few of these are found in the newborn whereas many are found in extragonadal locations. She believes that this supports the concepts of the congenital origin of extragonadal teratomas and a postpubertal origin, for the most part, of teratomas of the ovaries and testes.

Localized chemical aberrations within the embryo could be responsible for the formation of certain cancers. Sometimes maternal influences will produce localized effects; for example, rubella in the human mother frequently produces cataracts in the offspring. It has been shown in animals that insulin given to the parent results in congenital deformities, possibly, according to Lawrence and Donlan, by altering the intrauterine environment.

Embryonic tissue is sensitive to cancerogenic agents. Greene in 1945 demonstrated the carcinogenic action of methylcholanthrene on homologous transplants of embryonic lungs, stomach, intestines, skin, muscle, and cartilage. It appeared significant to him that such embryonic tissue underwent carcinogenic changes within thirty-five days whereas ninety to two hundred days or more were required for similar changes in adult tissue.

Extensive investigations by Smith and Rous have shown that embryonic lung, epidermis, stomach, prostate, and thyroid are sensitive to benzopyrene and dibenzanthracene. Larsen found that when pregnant strain A mice mothers were treated with urethane, the offspring by six months of age had developed lung tumors, indicating that urethane will transmit through the placenta as a carcinogenic agent to the embryo. Shay and associates demonstrated that malignant lymphomas developed in young rats nursed by mothers fed methylcholanthrene by stomach tube. These findings demonstrate that embryonic tissues have a high degree of sensitivity to cancerogenic agents and certain cancerogenic agents can be transmitted to the embryo through the mother.

The placenta may be a barrier for certain cancerogens, a partial obstruction for others, and a passageway for others. For the so-called milk factor of Bitner, a protein molecule, the placenta is a barrier. The placenta also appears to be a barrier for the leukemia agent. Between 1888 and 1947, according to Erf, there were histories of 100 pregnant leukemic women together with observations of their offspring. None of the children were born with leukemia or became afflicted with it. Of the 100 women, 87 had myeloid leukemia and 13 lymphoid leukemia; 34 had the acute and 66 the chronic form.

PRENATAL FACTORS IN SARCOMATOUS FORMATIONS.—Certain postnatal reactions of fibrous tissue intimate prenatal influence which may be factors in sarcomatous formations. The reaction of fibroblasts to testicular extract simulates their normal developmental history with acceleration of maturation. The reaction suggests that in normal development, aging, and repair there is a progressive series of changes with a shift from the amorphous to the fibrous elements of the intercellular substance. The nature of the alterations is dependent on many factors, including species, race, family, and even individual variations. For example, if 20-methylcholanthrene is injected into guinea pigs, 20 per cent of the animals develop liposarcoma, but if the same chemical is injected into mice, none develops liposarcoma, an instance of species alteration.

The reason for the differences in type of cancer in the very young from that in older individuals is not very well understood. Certain cancers can be explained on the basis of Cohnheim's theory of misplaced cell rests. Another important factor is the difference between the anatomic and physiologic ages of the various structures within the organism during a given age of the individual. At the time of birth, for instance, certain organs may be considered aged and commence toward their involutional state, for example, the thymus. Other structures, such as the vaginal epithelium, may be mature as a result of the influence of maternal hormones, and others, such as the breast, lie dormant awaiting their selective stimuli to maturate. Due to certain inborn errors of metabolism, an acceleration of the aging process occurs either for certain structures, such as the epidermis in xeroderma pigmentosum, or for the entire organism, as in the Ehlers-Danlos syndrome. The placenta is an example of senility at birth. Its calcareous, fibrotic, atrophic, and vascular changes are characteristic of old age. Even though the placenta has the shortest life span of any human organ, it too at times is subject to the development of cancer (chorioepithelioma), a situation in keeping with its anatomic age.

The more frequent occurrence of sarcoma in infants and children than in adults is not completely understood. Chronic irritation has been demonstrated to produce certain sarcomas, such as sarcoma in a burn scar. Whether irritating factors incite neoplastic formation during prenatal life is not known. It would seem that a richer soil for sarcomatous formation exists in the adult than in the child since as the individual becomes older he progressively undergoes the normal metabolic wear and tear on an organism which is compounded by the organism's response to stimuli for fibrous propagation from infection, trauma, or other noxious agents. This, however, is not the case since sarcomas occur more frequently in children than do neoplasms of epithelial structures.

The stimulus for certain neoplasms is transmitted from parent to offspring via the genes and adheres to genetic laws, for example, retinoblastoma, hereditary cartilaginous exostosis, familial polyposis of the colon, and multiple neurofibromatosis and lipomatosis. In most sarcomas of the soft somatic tissues, however, either a limited portion of tissue has undergone sarcomatous transformation, as in rhabdomyosarcoma, or a larger segment of tissue may be doomed to sarcomatous formation (occurring at variable postnatal periods), for example, neurilemmoma invading an entire major nerve trunk from its point of emergence from the spinal tract to its fibrillar ramifications.

Knowledge of such ontogenetic influences aids in the formulation of oncologic principles of treatment for infant and child. It forces the physician to seek out the presence of certain neoplasms, such as retinoblastoma, if a parent previously suffered its presence. It prompts the surgeon to extirpate organs which are the seats of certain premalignant tumefactions, such as familial colonic polyps, and to boldly treat localized sarcomas of the soft tissues. The knowledge that sarcomas often are localized and at times represent limited tissue aberrations which do not give rise to generalized structural dysfunction often forestalls radical surgery with the surgeon nevertheless striving for complete eradication of the tumor and its bed.

TUMOR-HOST RELATIONSHIP.—The observation that cancer is not an autonomous growth independent of any host control has stimulated research into measures to increase the host's resistance to the cancer. The inducement of remission in cases of acute leukemia in the child by antimetabolites and the regression of mammary and prostatic cancer in the adult with marked palliation to the patient by alteration of the hormonal balance demonstrate that a tumor and host relationship exists.

The observation that certain human cancers implanted to healthy humans are discarded rather rapidly in contrast to the slow casting off of tumors transplanted to adult cancer patients supports the contention that a certain immunology exists for warding off or fostering the further growth of a transplanted cancer. The possible role of gamma globulins awaits study, but despite the findings certain immunologic factors must be involved.

The total care of the child therefore becomes as important as the treatment of localized tumors. Systemic agents that may favorably affect the tumor-host relationship by altering the metabolism of the host are being developed.

Prognosis

The prognosis for many forms of cancer in infants and children is quite good—much better than that of popular belief and often better than for cancer in the adult. The five-year cure rate for sarcoma of the soft somatic tissues, as reported by Pack and Ariel, is 42.5 per cent.

The five-year survival rate for osteogenic sarcoma has been found to be between 19 and 27 per cent. The survival rate for Wilms tumor has been reported between 30 and 47 per cent, for retinoblastoma 70 per cent, and for neuroblastoma from 10 to 20 per cent.

Principles of Treatment

The attitude toward the treatment of cancer in childhood has evolved through two distinct approaches. Most of the early literature reflected the belief that no differences existed in the natural history of cancer in childhood from that in the adult. As increased reports of malignant neoplasms of the young became available, certain distinguishing characteristics between cancer in the younger individual and cancer in the older individual became apparent. For example, the ratio of sarcomas to carcinomas is much greater in children than in adults and certain organs are the host for cancers in children more frequently than in adults (eye, adrenal cortex, and testis).

Some cancers in children will grow very rapidly and kill quickly. An example is acute leukemia, which may kill a child in a few weeks. Malignant neuroblastoma or an occasional extremely malignant cancer may differentiate into a mature form and become innocuous. It is also claimed that some retinoblastomas destroy themselves by necrosis. Many tumors in children exhibit a disparity between the degree of their histologic and clinical malignancy. Certain tumors, such as many of the intracranial tumors, chordomas, and teratomas, are relatively benign-appearing histologically but clinically malignant. On the other hand, there are certain tumors that are histologically malignant but may run a rather benign clinical course; examples of these are cutaneous hemangiomas, or, more properly, hemangioendotheliomas, and certain adrenal neuroblastomas. An occasional neuroblastoma has been known to revert to a benign ganglioneuroma or to regress completely, either spontaneously or after x-ray therapy. Melanomas in children tend to be singularly benign even though their pathologic appearance may be one of extreme malignancy. "Prepubertal melanoma" is a name given to some of the melanomas of childhood that run this benign, rather innocuous course. Poore, Mermann, and Yu reported a case of a carcinoma of the adrenal cortex in a five-year-old Negro child who, because of this condition, developed precocious puberty and in whom a second tumor developed; this was a malignant melanoma and behaved exactly as do malignant melanomas in the adult, metastasizing extensively. Dargeon reported an instance of a melanoma which transgressed the placental barrier of the mother and resulted in a malignant melanoma at birth that disseminated throughout the body.

Rapid growth with a tendency to early metastasis by many malignant neoplasms in children was responsible for the second attitude regarding the treatment of childhood cancer, namely, abject pessimism. This pessimistic attitude permeated the profession to the extent that some physicians refrained from giving any form of treatment to the child with cancer. The attitude infiltrated to the parents, who would not bring the child with a tumor to the physician, feeling that the situation was hopeless.

The results of treatment of cancer in children should dispel this pessimistic attitude. They should encourage every effort to treat successfully each case of childhood cancer, for cures can be obtained. We are entering a third era, that of hopeful endeavor to diagnose early and treat adequately cancer in children. Infants and children tolerate radical operative procedures remarkably well; therefore, no child with cancer should be deprived of a surgical attempt. So-called inoperability because of "frailty" of the infant usually reflects a frailty of the surgeon.

Because of the humane considerations that every surgeon must suffer in deciding on radical extirpation of cancers in infants and children, many surgeons have yielded to emotional dictates by performing a limited and conservative excision in order to avoid surgical mutilation of the child. We heartily agree to limited excision when indicated, but only by a complete understanding of the behavior patterns of each of the tumors of children can one decide when the excision can be conservative or when it must be radical. In those instances in which only the most radical type of surgical resection will offer hope of abating the cancer, fear of mutilation and thoughts of reconstruction must be secondary to the extensive excision necessary to cure the patient. Failure to perform radical resection will doom the patient or will necessitate repeated resections with the eventual result that a more radical procedure may be necessary for the treatment of recurrences than was indicated for the treatment of the primary neoplasm. The surgeon can, for the most part, be most conservative by being radical at the onset if a radical approach is indicated.

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When we are planning for posterity, we ought to remember that virtue is not hereditary.—Thomas Paine

CLINICOPATHOLOGIC CONFERENCE

KINGS COUNTY HOSPITAL AND STATE UNIVERSITY OF NEW YORK
DOWNSTATE MEDICAL CENTER

BROOKLYN, NEW YORK

Conducted by PATRICK J. FITZGERALD, M.D. OCTOBER 17, 1957

Discussed by PERRIN H. LONG, M.D.

Case History

MARTIN METZ, M.D.: A sixty-two-year-old Puerto Rican woman entered the hospital with a history of the "flu"—malaise, cough, and fever—two months prior to entry. Eight days before admission she became weak and anorexic, her cough increased, she experienced dyspnea, and she began to complain of midepigastric pain.

The patient was born in Puerto Rico but had resided in this country for a number of years. She was one of 18 children. Familial disease trends were not elicited because of the patient's language difficulty. Cervical lymph nodes were excised in childhood. For about twenty years the patient had coughed up at least half of a cup of greenish sputum daily. In 1948 she was studied at this hospital for lower right lobe pulmonary disease and no malignant lesion was found. In 1951 a lung abscess was treated in this hospital. No evidence of acid-fast organisms was obtained by smear and culture at that time.

Physical examination revealed an elderly, white, well-developed, obese female in respiratory distress who was using accessory respiratory muscles, was dyspneic, and had a productive cough. Her pupils were equal, round, and regular and reacted to light and accommodation. Fundoscopic examination results were not recorded. Extraocular movements were normal, and there was no lid lag. The ears and nose were normal. Edentia was noted, and there was slight injection of the pharynx. Multiple old healed cervical scars were present. The trachea was deviated slightly to the left, and the thyroid was not palpable. The thorax was greatly increased in the anteroposterior diameter. Percussion revealed dullness at the right sides of the apex and base. Inspiratory and expiratory rales were present throughout both lung fields although more markedly on the right side with bronchovesicular breathing at the lower right lobe and decreased vocal fremitus on the right side. The point of maximum intensity of the heart beat was at the fourth interspace in the midclavicular line. Normal sinus rhythm was present. A_2 was greater than P_2. A Grade I systolic murmur was present at the base of the heart.

The abdomen was obese. There was mild tenderness to deep palpation in the midepigastrium but no guarding or rebound tenderness. The liver edge was palpated 1 to 2 fingerbreadths below the right costal margin. No other organs were palpable. Bowel sounds were hyperactive but otherwise normal. No costovertebral angle tenderness was present. The skin was clear.

The left arm was tender at the antecubital area and in the upper arm with no signs of inflammation. There was clubbing of the fingers. All pulses were palpable. There were varicose veins in the lower extremities. There was no peripheral edema. The deep tendon reflexes were active and equal. There was slight sensory loss at the dorsum of the left foot but no abnormal reflexes were present. Rectal examination revealed good sphincter tone and no palpable masses or tenderness. The temperature was 99 F., pulse 100, respirations 28, and blood pressure 148/64 mm. Hg. The patient was treated symptomatically and placed on penicillin therapy.

X-ray examination of the chest showed cavitation at the upper right lobe with pneumonic infiltration at both apices and an interlobar effusion of the right side. The patient was transferred to the Medical Chest Service. Her physical findings were essentially as before except that cardiac dullness was thought to be increased both to the left and right. The electrocardiogram was interpreted as showing left axis deviation, sinus tachycardia, a Q wave in leads I and aVl, and a flattened T wave in lead aVl. The first purified protein derivative test result was positive, and the histoplasmin test result was negative.

Other admission laboratory examinations revealed an acid urine with a specific gravity of 1.012, 2 plus albumin, no sugar, no acetone, and 10 to 20 red blood cells, 5 to 10 white blood cells, and no casts per high power field. The hemoglobin was 8 Gm. per 100 ml., hematocrit 24, and white cell count 12,600 with a differential of polymorphonuclears 88 per cent, lymphocytes 11 per cent, and eosinophils 1 per cent. Many platelets were seen in the peripheral blood smear. The total protein was 5.2 mg. per 100 ml., albumin-globulin ratio 1.9:3.2 (Gm. per 100 ml.), and carbon dioxide combining power 20.6 millimols per liter. The alkaline phosphatase was 6.2 King-Armstrong units, and the bilirubin was 1 mg. per 100 ml. The stools were yellow and negative for occult blood.

During the first week the patient's temperature averaged about 99.5 F., pulse rate about 90 per minute, and respirations about 22 per minute. The sputum specimens taken for smear and culture were all subsequently reported as negative for acid-fast bacilli and fungi. One sputum culture revealed Staphylococcus aureus and Proteus bacteria. A needle biopsy specimen of the liver indicated essentially normal liver tissue.

On the tenth hospital day the patient began to vomit. It was noted that her lower extremities were painful even to touch and that there was marked bilateral calf tenderness. No heat, redness, or swelling of the lower extremities was observed. Inguinal and dorsalis pedis pulsations were present. Homan's sign could not be obtained. Knee jerks were elicited. The patient's daughter revealed that the patient had been having lower extremity pain for about three weeks prior to entry and that she had been unable to walk because of this.

On the seventeenth hospital day it was noted that the patient was lethargic and had little inclination to eat or drink. The blood urea nitrogen was 110 mg. per 100 ml., and the carbon dioxide combining power was 9.6 millimols per liter. The hemoglobin was 6.5 Gm. per 100 ml., and the white cell count was 9,000. The urine showed a specific gravity of 1.014, 3 plus albumin, and 2 red blood cells, 5 to 7 white blood cells, and a few granular casts per high power field. The sodium content of the blood was 146 mEq. per liter, potassium 7 mEq. per liter, and chlorides 96 mEq. per liter. The patient was given intravenous fluid therapy and Achromycin. She lapsed into coma and died on the eighteenth hospital day.

Discussion

PERRIN H. LONG, M.D.: I would like to point out that a discussion of this patient's record will bring out some of the difficulties encountered in history taking and in evaluating a history in a large New York City municipal hospital, in which for many years one of the problems of the house and attending staffs is inability to communicate properly with many patients. I come to this Conference with the feeling that if one could have communicated freely with this patient, my task would be much easier because the history is essentially minimal. But we will consider the history and total record thoroughly. The total record is more revealing in parts than the history. With such a record some things are very obvious so that one can pick up clues and then see if they concur with the data. In this way we arrive at a diagnosis.

We are considering the case of a sixty-two-year-old Puerto Rican woman who came to this hospital with a history of the "flu," with malaise, cough, and fever, two months prior to entry. That is a translation, and one must always remember that an interpreter rarely duplicates exactly what is said but rather renders what he thinks ought to have been said. This woman is said to have had the "flu" for two months but obviously this is impossible. It is rather like the ancient song of college days, "You can't make jam all night." Eight days before admission she became weak and anorexic. Her cough increased. She experienced dyspnea, which William Dock, M.D., has defined as "tired" diaphragm muscles, and began to complain of midepigastric pain. This midepigastric pain we will label Clue Number 1.

In unfolding my thesis in relation to this patient, some attention will be paid to the epigastric pain, because epigastric pain, as you know, can happen in peptic ulcer, carcinoma, gallbladder disease, and psychosomatic illness. Percy Houghton died of acute indigestion on the football field at Columbia some thirty-odd years ago. Acute indigestion is coronary disease. There are a number of other, somewhat rarer, diseases which may be characterized by abdominal or epigastric pain. What did the patient or interpreter mean by midepigastric pain? What are the limits of the epigastrium?

The patient was born in Puerto Rico and lived in that country for a number of years. She is one of 18 children, all of whom are living. Nothing was recorded about her family history because of the patient's language difficulty. She had had cervical nodes excised in Puerto Rico in childhood. I would venture that they were tuberculous. For the previous twenty years the patient had coughed up every day at least half of a cup of greenish sputum. In 1948 she was studied in this hospital for lower right lobe pulmonary disease and no malignant lesion was found. In 1951 a lung abscess was treated in a hospital—we don't know which hospital. It was said to be in the lower right lobe but it might have been in upper right lobe; perhaps the exact location will be revealed in the x-ray report. There is no evidence of acid-fast organisms in smear or culture.

We are therefore certain—on the basis of several firm history items and hospital records—that we are dealing with an individual whose right lung was involved, who was suffering from chronic suppurative pulmonary disease, and probably had been for fifteen to twenty years, if the information that she had been spitting up half of a cup of greenish sputum every day is correct.

On physical examination a rather interesting point was made. She was a fat woman. We generally think of patients who have a chronic wasting disease, such as chronic suppurative pulmonary disease, as being thin, but this is not always true. I knew a number of persons prior to the advent of the sulfonamides and antibiotics with chronic pulmonary disease, and had had it over a period of many years, who were plump.

The patient was in respiratory distress and used her accessory muscles, was short of breath, was dyspneic, and had a productive cough. The pupils were normal. Unfortunately, in view of the subsequent turn of events, no one looked at her fundi so that there is an important omission in the physical examination. There were many healed scars in her neck. I wonder about this history of having had these excised. I suspect that she had tuberculous adenitis with suppuration and that she had breakdowns with drainage or excisions with drainage. There is nothing else of importance until we consider the lungs. The pulmonary signs were all in line with the facts at hand about her pulmonary disease, so I won't go into them. She had a Grade I systolic murmur over the mitral area.

There was mild tenderness but no rebound tenderness to deep palpation in the midepigastrium, where she claimed to have experienced pain for eight days. The lever edge was 1 or 2 fingerbreadths below the right costal margin. Nothing else was palpable. The bowel sounds were considered as being hyperactive. I have still to see a hyperactive bowel sound but that is beside the point. Next comes something that does not make sense. The left arm was tender at the antecubital area and in the upper portion with no signs of inflammation. That is a rather extraordinary finding. I wish I knew why the intern or resident who did this examination noted that. It may have been noted subsequently, when someone came in to feel the arm or to put a needle into the vein. But that finding is in the record, and the location of the tenderness without inflammation does not make sense because anatomically such a situation is difficult to explain except under certain conditions. She had varicose veins but no edema.

All other findings in the physical examination were reported as essentially normal. Her temperature was only slightly elevated. The pulse was 100. The respirations were slightly rapid. The blood pressure, of which there is only one recording, was 148/64. The diastolic pressure was lower than normally found in women sixty-two years of age. The record states that the patient was treated symptomatically and placed on penicillin therapy. From what I observe around our country, penicillin therapy is generally symptomatic therapy at the present time and I assume that she was given penicillin because of the findings in her right lung.

May we now consider the x-ray films?

Walter Griesbach, M.D.: I wish I could help you more than I can with the x-ray examination. Unfortunately we have films only of the second admission, in 1951, and of these I have a selection of films taken over a period of approximately a month and a half. The first of these is dated August 15 and shows the infiltrate in the upper right lobe. I suspect that the apparent infiltrate in the lower left lung field is explained on the basis of poor technic. I think that the only pathologic condition revealed on this film is in the upper right lobe with one exception, what appears to be a bronchus. In the lower right lobe there already is on the early film a suggestion of the diagnosis which was indicated, a lung abscess. In the lateral view taken a few days later I am frankly at a loss to say exactly where this disease is. I am sure that it generally is in the posterior segment of the upper right lobe, but whether it also involves the anterior segment, which I suppose it does, I am not 100 per cent sure.

In a film taken one month later we definitely see air and fluid levels and a rather thin-walled cavity still in this area of infiltrate, which again is confined to the same segment. A film taken approximately ten days later shows the same findings with no evidence of resolution. There is persistence of the infiltrate, and by that time it has reached the apex of the lobe, suggestive of dilated bronchi or of what Dr. Long has already suggested, underlying bronchiectasis.

Dr. Long: Thank you very much. X-ray findings of the last admission are in the protocol.

Those roentgenograms show pneumonic infiltrate and intralobar cavitation, the cavitation remaining from the lung abscess.

Dr. Griesbach: It might well be the same cavitation. There is only slight infiltration into the opposite lung.

Dr. Long: We are trying to rule out tuberculosis because none of the cultures revealed acid-fast organisms. We now come to the other laboratory findings. The patient on admission had a urine which showed albumin, red cells, some white cells, but no casts, and had a specific gravity of 1.015. The patient was anemic. There was one eosinophil in the stained blood smear. That may be important. There was a reversal of the albumin-globulin ratio. The bilirubin and phosphatase levels were normal. The patient's stools were essentially normal. The carbon dioxide combining power was normal. It is too bad that renal function studies were not made. Renal function studies always should be instituted when albumin, red cells, white cells, or casts are found. For about a week the patient's temperature averaged 99.5 F.; I don't know whether they were rectal or oral determinations. If oral, they are significant; if rectal, they are not.

Patrick J. Fitzgerald, M.D.: We cannot tell from the record what they were.

Dr. Long: The pulse rate was about 90, which is elevated, and the respirations were elevated, but then this woman probably had some degree of pulmonary insufficiency. On the tenth day the patient began to vomit, and with the onset of vomiting the physical examination was repeated. It was noted that her lower extremities were painful even to touch and that there was marked bilateral calf tenderness. The question comes to mind, especially since she had varicose veins, whether there was an intravascular accident. Was she getting phlebitis? But we find that there was no heat, redness, or swelling in the lower extremities. Inguinal and dorsalis pedis pulsations were present. Homan's sign was not obtained. Knee jerks were elicited. Then the patient's daughter revealed that her mother had not been able to walk for three weeks prior to entry into the hospital because of pain in the lower portion of the legs. Since she had begun to vomit and the record does not state that she ever stopped vomiting, I have to assume that she vomited for some time.

On the seventeenth hospital day it was noted that the patient was lethargic and had little inclination to drink. If she was vomiting, she probably would not have much inclination to eat or drink. I imagine that she appeared dehydrated. At this time some more tests of kidney function were done. It was found that she had 110 mg. per 100 ml. of urea nitrogen and that the carbon dioxide combining power was very abnormal. She had become increasingly anemic during the seventeen days. She had 9,000 white cells. It does not say whether a differential count was made. The albumin was 1 plus, which does not mean anything except that she still had albumin in her urine. She is said to have had red cells, white cells, and a few granular casts in the urinary sediment at that time. The electrolyte levels were determined, a high sodium, an abnormally high potassium, and somewhat low chlorides were found. I have paid absolutely no attention to the electrocardiogram. I do not know the importance in this patient of left axis deviation or of a flattened T wave. I imagine that had the electrocardiogram been taken at the proper time it would have given evidence of potassium poisoning. She finally lapsed into coma and died the next day.

I am not going to discuss the pulmonary findings. I think that she had a lung abscess, bronchiectasis, fibrosis, and scarring. She might have had tuberculosis. I don't know. These were not important factors. I am ruling out tuberculosis of the kidneys on the basis that she did not have tuberculosis at all. I have ruled that out in my mind although I could be wrong.

The central problem is the nature of the renal lesion. I believe that the simpler entities should be considered first. Did this woman have chronic glomerulonephritis? There is evidence in her past history that she had this disease. There was no episode of acute nephritis, although the so-called glomerular type of nephritis can have an insidious onset. There are other aspects of her clinical picture which don't seem to fit in with the standard variety of chronic glomerular nephritis. She did not die the kind of death which I associate by and large with that of a patient who has chronic glomerular nephritis. She had no history of edema. I think it would be rather uncommon for a patient to progress from acute glomerular nephritis after a streptococcal infection to death without an episode of edema somewhere along the line. It also would be strange in the type which has an insidious onset. I am eliminating this entity as a possible diagnosis.

Chronic pyelonephritis, which is a common disease in women, I am eliminating because of the history. There is nothing recorded which intimates chronic pyelonephritis. You must remember I have to stick to the record.

She had a chronic suppurative, pulmonary disease which brings up the question of secondary amyloidosis. A Silverman needle biopsy of the liver was made, and it was ascertained that the liver substance was normal. She could have had secondary amyloidosis of the kidneys, but I don't believe she had amyloidosis because her liver was normal according to the biopsy. She had low serum proteins and had urinary findings which go along with amyloidosis but I am putting my two-cents worth on this pain she complained of. She had a stomach ache without tenderness, and when they felt her arm it was tender. She had tenderness without any evidence of having had an embolus, phlebitis, or anything else of this order, and she had something wrong with her kidneys. When I put these three things together and try to be a bit exotic because this is a Clinicopathologic Conference, I make the final diagnosis, with very little question in my mind, that, in addition to the pulmonary disease, the patient was suffering from periarteritis nodosa.

Dr. Fitzgerald: The student diagnoses were pulmonary carcinoma 10, pulmonary tuberculosis 6, pulmonary tuberculosis with renal involvement 6, acute glomerulonephritis 1, bronchiectasis 1, amyloidosis of the kidney 3 (one said secondary to tuberculosis, one did not specify, and the other said it was secondary to the lung abscess), schistosomiasis 1, staphylococcal infection 1, staphylococcal pneumonia 3, pyelonephritis 1, and periarteritis nodosa 1 brave soul.

William Dock, M.D.: The patient had clubbed fingers but it was not described how clubbed they were or how progressive the clubbing was. There can be a great deal of tenderness in pulmonary osteoarthropathy since the periosteum is lifted from the bone. When she could not walk, she came here complaining of arthritis. It would be very interesting to know if the patient really had the sort of discomfort that might occur with rapidly developing pulmonary osteoarthropathy. This can give the tenderness described, but that sort of tenderness can be due to periarteritis.

Dr. Fitzgerald: Could this extensive lower extremity involvement arise from pulmonary osteoarthropathy?

Dr. Dock: We have seen it in carcinoma, where the disease may progress very rapidly and the patient may be unable to walk. We performed a necropsy on a man with lung cancer who came in because he could not walk. He had the periosteum lifted off every bone, ribs, phalanges, metacarpals, and tarsals. No wonder he was in trouble. This can occur with rapid and severe pulmonary osteoarthropathy. The patient under discussion does not give this sort of story. The combination of fatal uremia with chronic lung disease in a sixty-two-year-old woman would make the odds in favor of chronic pyelonephritis with chronic lung disease, perhaps tuberculosis, in the background. But, as Dr. Long points out, you are less likely to use chronic pyelonephritis for these conferences.

Dr. Fitzgerald: I think that we had 4 cases last year.

Dr. Dock: That is good, because it is a much commoner disease, particularly as a cause of uremia in ladies of sixty. I do not know the percentage of women of sixty with fatal pyelonephritis who have had a preceding history of chills and/or dysuria. In more than 50 per cent of cases in which the disease is found at autopsy or carefully studied in life there is no preceding history at all. So I think that chronic pyelonephritis is a very good guess. I agree with Dr. Long that the problem is why the lady went into uremia with her carbon dioxide combining power still normal. She was in early uremia when she arrived here but it progressed very rapidly.

Another cause of this picture is chronic amyloidosis. The uremia progresses rapidly in severe amyloidosis of the adrenals. However, this patient had a high blood sodium, which makes this diagnosis unlikely.

Dr. Fitzgerald: Do you believe that a negative biopsy result of the liver rules out amyloidosis?

Dr. Dock: Not unless it was looked for.

Dr. Fitzgerald: It was looked for.

Dr. Dock: If metachromatic stains were done, a hematoxylin-eosin stain might not show early amyloidosis of the liver in a patient with considerable disease in the arteries and kidneys, but in this case a negative liver biopsy finding for amyloidosis is enough to rule out renal disease as well.

Dr. Fitzgerald: In regard to chronic pyelonephritis, 14 per cent of autopsies of males over fifty showed significant evidence of pyelonephritis, either chronic or healed, at the gross autopsy table.[1]

John F. Kelly, M.D.: Dr. Long's analysis indicated the presence of a widespread, diffuse disease, and I believe that he wisely focused on amyloidosis and periarteritis. There is one form of periarteritis which particularly involves the lungs and often terminates in very rapid uremia. This is Wegner's granulomatosis. There is a possibility that the patient's disease may have been a variant of that.

Dr. Fitzgerald: Do you think that it exists for twenty years?

Dr. Kelly: Yes. The case histories are quite remarkable. In the few that I read there usually is a long history of sinusitis and respiratory infection preceding the last hospital course, which is usually that of uremia.

Harold A. Lyons, M.D.: I was going to advance an argument for Wegner's granulomatosis. There is another point in the history which is important and it is that this lady was edentulous. Experience has shown that people who are edentulous and also have a lung abscess usually have the lung abscess due to a cause other than suppuration. These causes are bronchogenic carcinoma or intrinsic parenchymal disease. Lung abscesses are not infrequent in cases of polyarteritis nodosa and Wegner's granulomatosis.

The diagnosis I will make is of a generalized systemic disease of the collagen system, such as angiitis. As a secondary consideration, a neoplastic process with chronic pyelonephritis.

Dr. Fitzgerald: Would you expect extremity involvement in Wegner's granulomatosis?

Dr. Lyons: Yes.

Dr. Fitzgerald: It is quite rare.

Dr. Lyons: Not too rare. McCoombs and coworkers[2] of Boston have reported this as a feature. They have reported many cases with much extremity pain and tenderness without visible evidence of any lesion. I think that this clinical manifestation is probably due to arterial lesions. In the usual form of polyarteritis nodosa we may see physical evidence of a lesion which is tender. Sometimes one can find tender areas without clinical substantiation by biopsy of a typical lesion.

Dr. Regel: For me it is a great puzzle

to explain the lesion in the last stages of the disease. I first thought, since she had had those pains three weeks prior to entry and had been unable to walk, that the tail of the pancreas might have been involved with migratory thrombophlebitis or thrombosis of the extremities. There was not any examination for this. The urine and blood were not examined for amylase. She was vomiting ten days before she died but I still think the pancreas was also involved and that she had had an attack of pancreatitis in the last week of her disease. I cannot explain the cause of the pain in the lesion; the antecubital pain might have been the result of some vascular involvement, thrombosis or thrombophlebitis.

Jack Rabinowitz, M.D.: I would like to add the diagnosis of carcinoma of the pancreas, in view of the fact that this patient was admitted primarily with epigastric pain, had subsequent nausea and vomiting, then developed signs of phlebitis in the lower extremities, and underwent emaciation.

Diagnoses

Clinical.—*Chronic pulmonary suppurative disease with pneumonic infiltration at both apices and interlobor effusion of right side.*

Dr. Long.—(1) *Periarteritis nodosa, and* (2) *chronic pulmonary suppurative disease with lung abscess, bronchiectasis, fibrosis, scarring, and tuberculosis(?).*

Anatomic.—(1) *Periarteritis nodosa, and* (2) *chronic pulmonary suppurative disease with pleural thickening, abscess, and bronchiectasis.*

Pathologic Report

Dr. Fitzgerald: The external examination revealed an obese white female with old healed bilateral superclavicular scars in the cervical region and 1 plus edema of the extremities. In the pleural cavities there were about 25 ml. of clear straw-colored fluid and many adhesions. Almost the entire lateral surfaces were covered with thickened pleura, in some areas with obliteration of the pleural space. There were pleural adhesions and focal thickening over much of the pericardium. The heart was enlarged, weighing 435 Gm., which is considerably enlarged for a woman, particularly of her size and weight. Otherwise it was insignificant grossly except for a small amount of focal coronary atherosclerosis. The lungs, as might be expected, did show considerable change. Besides the pleural thickening, their weight was somewhat excessive, 650 Gm. on the right and 510 Gm. on the left. There were abscesses in the upper and middle right lobe and practically throughout both lobes there was dilatation of the bronchioles and bronchi with a markedly purulent exudate over the mucosa. This, of course, is characteristic of the gross findings of bronchiectasis. The kidneys were not remarkable. The right weighed 150 Gm. and the left 200 Gm., both somewhat enlarged and in the upper limits of normal. Their surfaces were finely granular with some broad scars: The rest of the organs were not remarkable.

The significant findings were primarily microscopic. (Slide) This shows the right lung. Note the markedly thickened pleura. There is almost a fibrous cast in a few areas; for example, one portion would be interpreted as an abscess grossly. (Slide) These are the dilated bronchioles. There was considerable purulent exudate, a very classic finding in bronchiectasis. (Slide) These findings go with the bronchiectasis but, in addition, they show some microcystic and macrocystic formation throughout the right lung. There are large cysts covered by a somewhat cuboidal type of epithelium. Here is additional evidence of exudate. The bronchioles are dilated. New cysts were formed as the result of the abscess formation and subsequent fibrosis. (Slide) This is a very characteristic lesion of a microcyst. In some areas there is columnar epithelium. In others the epithelium is cuboidal. Throughout the interstices there is marked fibrosis. The picture here is consistent with chronic bronchiectasis. It is also consistent with the changes in scleroderma. However, the findings are not specific enough to say unequivocally that this is a scleroderma lung; but they are the classic findings of such a case, lacking any history of bronchiectasis.

Subsequent to the writing of the protocol we found out that this lady had received 37 roentgen-ray treatments for a supposed carcinoma of the lung by a private physician in one of the local hospitals over a long period of time. At autopsy we found no evidence of carcinoma. That physician did not biopsy the lesion. There was no objective evidence in the record to prove any carcinoma. There was only a slight suggestion by x-ray, and the radiologist was somewhat equivocal in his interpretation.

(Slide) An interesting lesion found in the kidney is shown here. It is focal glomerulitis of a glomerular loop. There is considerable atrophy of the parenchyma, mostly convoluted tubules and infiltrate. This is a focal glomerulitis fibrolysis of the tuft. (Slide) Here is a lesion and here are three glomeruli. Note the crescent formation, I think that it appears a little better later. There is filling out of Bowman's space by proliferating tissue fibroblasts. Some cells occlude this space in Bowman's capsule. If the glomeruli were here they would be crescent-shaped. These are the characteristic crescents that one sees in subacute glomerulonephritis. (Slide) Here I think you can see the lesion much better. There is a relatively normal glomerulus here, and here is the crescent filling out the Bowman's capsule. (Slide) This is an old healed crescent characteristic of this process. (Slide) Here are some healed and some old scar lesions. Here is an interesting lesion. This is one of the larger vessels of the kidney, and you see complete destruction of most of the wall of this large artery. (Slide) Here is a large vessel of the renal pelvis, and hence you see the name for the lesion. There is nodule formation because of destruction of the elastica and aneurysmal formation in the arterial area. In this slide the eosinophils do not show up well. This is a classic accompaniment of the typical picture.

(Slide) Here is another vessel that is involved, of the lung. This is out in the pleura, and this vessel is not involved. But here there is almost complete destruction of a good portion of a small arteriole. (Slide) Elastic tissue stains. This happens to be of another case, shown merely as an example of fraying of the elastica. Here the dark blackish green-appearing material is the elastica. It begins to get frayed, and there is infiltrate. (Slide) The next slide shows disappearance down in this area of the elastica tissue in this small vessel in the kidney. So there isn't any question but that there has been a panarteritis here, "pan" in the sense of involving all three layers of the vessel. (Slide) These are arterioles. This is an old healed lesion found in the pleura of the lung.

(Slide) Here is a lesion in the liver. There is almost complete destruction of the arteriole and replacement by essentially acute cells, mostly eosinophils, macrophages, and fibroblasts. (Slide) Here is another lesion, in the pancreas. You see a small artery and complete involvement of the entire arterial wall. Remember that these small arteries are arterioles. (Slide) This is in the myocardium, focal areas throughout the myocardium showing marked vascular involvement.

Dr. Long very astutely put this case together, correlating the extremity, kidney, and lung findings. Possibly there is some problem of interpretation of those findings in addition to the definite uremia. The subject of vascular disease is in somewhat of a ferment; I am sorry that we don't have time to go into the history of the concept of it.

In essence, in a case of this sort I think that we have to make a diagnosis of periarteritis nodosa. The disease primarily involves the small arterioles and extremities. It usually is associated with a relatively recent history of the use of one of the sulfonamides or allergens and there usually is a history of hypertension. Attention is called to the so-called hypersensitivity angiitides, in which much smaller vessels are involved. There is a greater incidence of an allergy history in these patients. Of 10 patients, 7 had been allergic to sulfonamides. Their illness came about shortly after the use of one of the sulfonamides. Less of a percentage have hypertension of which only a small percentage have extremity involvement. Such indivudials are more likely to have visceral and lung involvement; in periarteritis nodosa most individuals do have extremity involvement. The kidney in periarteritis nodosa is of interest, at least to the morphologist. Of those with periarteritis nodosa, 80 per cent have marked kidney involvement.

The best article on kidney involvement is by Ralston,[3] from the Mayo Clinic. Of 30 cases, 24 had glomerulonephritis associated with marked kidney involvement of the periarteritis type. These patients had involvement of the arcuate interlobular arterioles in addition to some form of glomerulonephritis. This is of interest. The possibility suddenly dawned on me that with this disease a patient produces his own kidney glomerular nephritis, gets necrosis (which gives rise to kidney antigens) and produces an antibody to it. This is not an original idea but it may make some sense.

In regard to the allergy vasculitides, the Wegner's granulomatosis that Dr. Lyons mentioned and that was described many years ago by Churg and Strauss[4] from Mount Sinai, most are associated with hematologic and dermatologic disorders. Here is a slide illustrating the types of clinical syndromes associated with them. The point that I would like to leave with you is that there is a wide spectrum of lesions involving the vascular system irrespective of the collagen diseases.

There is a classic periarteritis nodosa group in which there are lesions in the extremities. If you find nodules, the condition is almost pathognomonic, if it involves the medium-sized arteries. Hypertension also is fairly common. Most of the cases have renal involvement; in fact, most die in renal failure. The lungs and spleen are very largely involved, except for a small group of cases, those with a Wegner's granulomatous lesion of the lung. The smallest vessels are involved and the vessels of the lung and spleen are not infrequently involved. These conditions are usually associated with asthma, fever, hypereosinophilia, purpura, dermatitis, dermatomyositis, and a plethora of other manifestations.

(Slide) This is a summary of 60 cases of angiitides. The periarteritis nodosa group 35, hypersensitivity angiitis 10, and some odd groups—allergy, fever, and eosinophilia—comprise the rest. Involvement of the temporal arteries does occur. Here is the rheumatic artery disease, which is relatively benign and responds well to corticoid therapy.[5] The symptoms that the patient may present are urticaria, anaphylactic purpura, erythema nodosa, dermatomyositis, vasculitis, and miscellaneous ones.

I cannot help but express my admiration for Dr. Long's analysis and conclusion. Frankly, we did not think we were very fair in giving him a case of this sort since this is a particularly difficult diagnosis to make. I think he needs to be congratulated.

Dr. Long: As a matter of fact, this is what comes from experience. From the protocol it seemed definite that this woman had chronic pulmonary suppurative disease. I did not let my mind dwell on it. The important thing is that this woman died in uremia. I don't know whether she died of it, but she had uremia by definition when she died, chemically and clinically. What was the matter with her kidneys? You could not figure out anything from the history. The three important things in the history were abdominal pain, pain in the legs without redness, and heat without signs of phlebitis or occlusion. Then you have to determine what damaged the kidneys. You go to Cecil-Loeb's textbook,[6] and in it there is a very short article by A. M. Harvey, M.D., professor of medicine at Johns Hopkins, on periarteritis nodosa. This article gives one the diagnosis right away. It was just that simple.

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New Tooth Decay Preventive Technic Suggested

A slight change in table etiquette might be one way to fight tooth decay, a California dentist has suggested.

Tooth decay is not a steady degenerative process but rather a series of short "commando raids" lasting only twenty to thirty minutes and is generated by the fermentable sugars in food being eaten, according to Walter Drozdiak, D.D.S., San Jose.

If brushing or rinsing the teeth is delayed longer than thirty minutes after eating, little or no preventive effect will occur and "one might just as well forget about it altogether, which is what most of us do."

Therefore, Dr. Drozdiak suggests that the mouth be rinsed right at the table. The idea is to wash away as much as possible of the elements that cause decay—the acids and sugars—before the process of decay can begin.

Taking a sip of water after the meal, or even at times during the meal, and swishing it around in the mouth for a few seconds before swallowing need not attract attention and can be done without inconvenience, he said.

Writing in the September *Today's Health,* an American Medical Association publication, Dr. Drozdiak noted that forming such a habit may take some effort, but it is well worth it. The teeth are the only part of the body which cannot heal or repair themselves after damage has been done.

In addition, decay never starts from within. It always begins on the outside of the teeth and arises from decay-causing conditions surrounding the teeth.

Teeth should be brushed after every meal and the brushing should do more than just remove loose debris and stains from the teeth. It should ideally remove from the teeth all adhering deposits of bacteria and tartar, and it should dislodge foreign matter trapped between the teeth and gums.

Dr. Drozdiak recommends that teeth, like pots and pans, should be checked after cleaning to see that they are really clean.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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Cardiovascular Collapse Due to Pneumothorax

DISTURBANCES in pulmonary respiratory activity during anesthesia should impel physical examination of the chest and lungs by the usual clinical means—inspection of chest movements on the right and left sides, palpation for intercostal activity, localization of the cardiac apical beat, percussion of the thoracic wall, and auscultation for pulmonary respiratory activity. Such observations may reveal alterations, such as increased depth of anesthesia, mediastinal shift due to atelectasis, pneumothorax, and bronchiolar constriction. Appropriate therapeutic measures should be instituted to overcome any such derangements discovered. When pulmonary disturbances are left untreated, serious complications may develop, as disclosed in the following case report.

Case Report

This was the third hospital admission of a sixty-six-year-old woman with the presenting complaints of vomiting blood, tarry stools, abdominal pain, and back pain. Her abdominal and back pains had been present for almost a year, and a gastrointestinal roentgenographic series done one week prior to the present admission revealed a large ulcer in the lesser curvature of the stomach. Significant past history included a cerebral vascular accident ten years prior to admission with minimal, if any, neurologic residuals. Although the patient had no cardiovascular complaints, her electrocardiogram a week before admission showed right bundle branch block. A roentgenogram

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Discussed at a conference held at the Hospital For Special Surgery, New York City, September 8, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

done a week before admission was read as revealing no increase in the anteroposterior diameter of the chest despite possible slightly emphysematous lung fields. Previous surgery included tonsillectomy, 2 gynecologic operations, and an operation for relief of intestinal obstruction, all of which were tolerated well under general anesthesia.

On this admission the patient's temperature was 37.8 C., pulse rate 96 per minute, respirations 18 per minute, and arterial blood pressure 95 mm. Hg systolic and 60 diastolic. She was anxious but alert and in no acute distress. Her chest was clear to percussion and auscultation. The heart revealed a Grade II low-pitched systolic murmur at the apex. The abdomen was very tense with much guarding. There was tenderness on both rectal and vaginal examination. The diagnosis was bleeding gastric ulcer, and a whole blood transfusion was started.

On the day after admission, after the patient had received 1,000 cc. of whole blood with continuing evidence of gastric bleeding, an emergency gastrectomy was proposed. Preanesthetic medication consisted of 0.4 mg. of atropine injected intramuscularly. One hour later, prior to induction of anesthesia, the patient's vital signs were: arterial blood pressure 124/50, pulse 100 per minute, and respirations 20 per minute. The patient was alert. Induction of anesthesia was accomplished by mask with nitrous oxide and oxygen in a 6- to 2-L. ratio in a semiclosed system. After about one minute an intravenous drip of succinylcholine was started, and when the patient was sufficiently relaxed, an orotracheal tube was passed with ease under direct vision of the larynx. There was no trauma, and no regurgitation was noted. The surgeon then performed a bilateral parasternal intercostal nerve block from the sixth to the ninth thoracic segments using 1 per cent procaine in oil. A nasogastric tube was inserted, from which fresh blood issued immediately. At this time no blood pressure could be determined by auscultation although the pulse was palpable at 110 per minute. The nitrous oxide-oxygen ratio was decreased to 2 L. of nitrous oxide and 1 L. of oxygen. Whole blood was forced intravenously, and the surgeon proceeded immediately with the laparotomy. After 500 cc. of blood had been administered, a blood pressure of 120/80 with a pulse rate of 120 per minute were obtained. Ten minutes later the arterial blood pressure was 160/100 and the pulse 110 per minute.

During the ensuing gastric resection the anesthesiologist noted progressive difficulty in inflating the lungs. As time went on, more and more pressure had to be applied to the breathing bag to be able to raise the patient's chest wall. On auscultation of the breathing tube no abnormal breath sounds were heard. A catheter passed freely through the endotracheal tube to the carina. Both hemithoraces were raised equally by positive pressure. The pulse rate diminished over a half-hour period from 120 to 90 per minute and it was thought that the decrease in pulse rate was due to whole blood replacement. After the surgeon had arrested the bleeding to the ulcer bed, the patient's arterial blood pressure fell gradually from 160/100 to 130/100.

The anesthesiologist at this time began to notice a few irregular heart beats and some difficulty in maintaining adequate oxygenation despite vigorous positive pressure on inspiration. A tentative diagnosis of bronchospasm was made. Nitrous oxide was discontinued and diethyl ether was introduced into the breathing system. Within two hours after the beginning of surgery and after only 5 cc. of ether were administered it was suddenly noted that the patient's arterial blood pressure became inaudible. There was no pulse. The pupils were widely dilated and the skin was cyanotic. The surgeon immediately made an incision in the fourth left intercostal space, and a loud swish of escaping air was heard. The surgeon felt the heart, discovered it to be in standstill, and compressed it manually intermittently, and within thirty seconds it began to beat effectively again. An arterial blood pressure of 110/70 with a spontaneous heart beat was obtained and the blood pressure rose during the next thirty minutes to 160/80. Fifteen minutes after the left side of the chest was entered, the right side was opened also because it was felt that positive pressure in excess of that usually applied was still required to raise the chest. As this was done, a hiss of escaping air was heard. Following this a good pulse of 88 per minute was obtained. No succinylcholine or nitrous oxide was administered after cardiac arrest. A total of 1,300 mg. of succinylcholine had been administered. The procedure was completed with oxygen and a total of 20 cc. of diethyl ether.

At the end of the operation the patient could open and close her eyelids on command; her pupils were constricted. Her arterial blood pressure was 160/70, her pulse rate was 120 per minute, and she had adequate respirations at 20 per minute. Chest tubes for suction were left in both pleural cavities. The patient was alert and complaining of pain within one hour of the end of surgery and a narcotic was given. She maintained her blood pressure, pulse, and respirations throughout the postoperative period. Postoperative roentgenograms of the chest and electrocardiograms showed no significant changes from preoperative ones. On the third postoperative day an irregular heart rate, diagnosed as nodal extrasystoles by electrocardiogram, was treated successfully with 100 mg. of procaine amide. The patient was discharged from the hospital on her sixteenth postoperative day. She had no detectable neurologic or cardiac sequelae and she was well after a six-month follow-up.

Comment

This case is presented to illustrate the rare but serious problem of bilateral tension pneumothorax during general anesthesia. The anesthetic technic elected involved endotracheal intubation with positive pressure on inspiration and controlled respiration. Whether the bilateral pneumothorax was caused by the series of bilateral intercostal nerve blocks due to penetration of the tip of the needle into the pleural spaces, rupture of emphysematous blebs during positive pressure respiration, or aggravation of bronchopleural fistulas caused by the intercostal nerve block maneuvers is difficult to know. In any case, had the anesthesiologist interpreted the progressive increase in difficulty of ventilation associated with the slow deterioration in cardiovascular status, he might have made the diagnosis of pneumothorax before cardiac arrest occurred. The diagnosis of cardiac arrest was made as soon as it occurred. Treatment by thoracotomy was instituted immediately, and this also cured the tension pneumothorax. It was gratifying that the patient made a complete recovery without any sequelae despite her history of a cerebrovascular accident and bundle branch block.

(*Number eighty-one in a series of Clinical Anesthesia Conferences*)

I speak truth, not so much as I would, but as much as I dare; and I dare a little more as I grow older.—MONTAIGNE

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

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Modes of Occurrence of Accidental Ingestions in Children and a Suicide Attempt

The following incidents were recently reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Anorexiant Tablets	1$^1/_2$ years	Male

This incident was reported from out-of-town. The child obtained the slow-release type of medication (composed of the same ingredients as those in Incident 2) from a low shelf in the living room and ingested 4 tablets. He vomited. He was admitted to the hospital and on admission the only findings in addition to vomiting were mild overstimulation and very slight ataxia. Lavage was done immediately. Although the child became asymptomatic after the lavage, he was kept for observation. Several hours after admission he became hyperactive, talked incessantly, and ate voraciously (apparently the child did not read the claims made by the manufacturer relating to the loss of appetite). The ataxia also became more marked. Thorazine was given with apparently no avail because the child remained overstimulated for forty-eight hours. After four days the child returned to normal and he is being followed by his private physician.

Delay in appearance of symptoms and a prolonged period of excitation have been observed frequently in incidents of methamphetamine and phenobarbital intoxication reported to this Center. We have previously warned about the dangers attached to the ingestion by children of these slow-release tablets.*

Incident 2

Toxic Agent	*Age*	*Sex*
Anorexiant Tablets	4 years	Male

This patient obtained from the bedroom 6 tablets of the slow-release type (each composed of methamphetamine 15 mg. and phenobarbital 1 grain), which were prescribed for his mother, and ingested them. He was taken to the hospital emergency room, where his stomach was lavaged. The patient was kept for observation until he became asymptomatic, which occurred in several hours. He is now being followed by his family physician.

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* Jacobziner, H., and Raybin, H. W.: Briefs on accidental chemical poisonings in New York City, New York State J. Med. **58**: 2098 (June 15) 1958.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	24 years	Male

This patient ingested 10 ethchlorvynol capsules (500 mg. each) with suicidal intent. He became stuporous and was taken to the hospital where his stomach was lavaged. The symptoms subsided on the day of admission, and the patient was discharged but referred for psychiatric care.

This case is cited because it involves a nonbarbiturate sedative not too frequently reported to the Center.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Buclizine	4 years	Female

This is an incident from out-of-town. The child obtained the medication, which was prescribed for an adult member of the family, and ingested 5 tablets (50 mg. per tablet). Although there were no symptoms, the patient was taken to a physician who observed her for a brief period.

No serious incidents have been reported with this drug.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Triamcinolone	5 years	Male

This patient ingested 30 4-mg. tablets of the drug. No symptoms were noted. He nevertheless was taken to the hospital, where his stomach was lavaged within one-half hour following ingestion, after which time he was followed by his family physician.

In the series of accidental ingestions of steroids reported to this Center no sequelae of note were observed.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Aspirin	24 months	Female

This child obtained a bottle of aspirin from a low drawer of a dresser in the bedroom and ingested 40 tablets (each $1^1/_4$ grains). Although no symptoms were noted, the child was taken to the hospital, where his stomach was lavaged with water and milk of magnesia within one hour following ingestion. Since she was asymptomatic, she was sent home after an observation period of several hours in the emergency room.

This case is cited because of the large dose ingested and the absence of symptoms. One questions whether this child should not have been admitted to the hospital inpatient service and observed for a longer period of time. A number of cases have been reported to the Center in which there were no symptoms at the time of admission but severe symptoms were manifested five to six hours later, and in 1 fatal case no symptoms were noted until seven hours after ingestion.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Quinine	$1^1/_2$ years	Female

This incident was reported from out-of-town. This child ingested 8 5-grain tablets. She became stuporous and comatose and was taken to the hospital and on admission was still stuporous and twitching. Her stomach was lavaged with water within one hour following ingestion. She was treated with fluids intravenously and given other supportive therapy. The patient made a complete recovery after two days of hospitalization.

Acute quinine poisoning resembles salicylate intoxication. The respirations at first are stimulated but later may become suppressed and shallow. Patients may suffer from a headache, becoming confused, delirious, somnolent, and even comatose and not infrequently they develop muscular twitchings and convulsions. The recommended treatment is gastric lavage, copious amounts of fluids to increase the urinary secretions, and other symptomatic and supportive therapeutic measures. The fatal dose of quinine is cited as 80 Gm. but there is very marked variation in individual tolerance. Irving Kerlan, M.D., Associate Medical Director of the Bureau of Medicine of the Food and Drug Administration, just called to my attention another complication which may result from the ingestion of quinine. He referred to an excerpt from "Panel Discussion on the Clinical Management of Blood Dyscrasias in the Older Age Group," which appeared in the *Journal of the American Geriatrics Society*, July, 1959, in which Steven O. Schwartz, M.D., Director of the Hematology Department, Hektoen Institute for Medical Research, Chicago, cautions that gin and tonic can cause thrombocytopenic purpura because of the quinine in the tonic. One wonders whether we should not be more cautious in prescribing quinine tonics.

Incident 8

Toxic Agent	*Age*	*Sex*
Analgesic and Antibiotic Drops	$2^1/_2$ years	Female

This incident was reported from out-of-town. The patient obtained the medication (n-acetyl-p-amino-phenol red 1 grain per 0.6 cc.) and ingested 30 cc. of it. The usual dose is 0.6 cc. The only symptom manifested was vomiting, which occurred immediately after ingestion.

This incident is cited because this product was not previously involved in incidents reported to the Center and because of the symptomless findings despite the large dose.

Incident 9

Toxic Agent	*Age*	*Sex*
Reserpine	2 years	Male

This patient obtained the medication, which was prescribed for an adult member of the family, and ingested 5 to 10 tablets. The patient became markedly drowsy and developed erythema. He was followed by the family physician who treated him symptomatically. All symptoms cleared within twenty-four hours following ingestion.

Incident 10

Toxic Agent	*Age*	*Sex*
Rodenticide (707X)	$2^1/_2$ years	Male

Rat meal was mixed with meat, put in a saucer, and placed on the floor. The child ingested the contents from the saucer. When the mother discovered what had happened, the child was taken to a city hospital emergency room, where his stomach was lavaged within one and one-half hours following ingestion. After four days of hospitalization the child was discharged.

One of the safety features of the anticoagulant rodenticides is that they are mixed with corn meal to form a cereal bait which is not attractive to children and household pets. The use of meat, especially with an anticoagulant bait, is very unfortunate because the safety features are then destroyed. It is recognized, of course, that the action of the rodenticide does not depend on the nature of the bait. We would like to emphasize again that one ingestion by a child of an anticoagulant rodenticide in the usual dilution is not a matter of great concern.

Incident 11

Toxic Agent	*Age*	*Sex*
J.O. Paste and Boric Acid Powder	$2^1/_2$ years $2^1/_2$ years	Male Female

While the twins were playing in the kitchen they opened the utility closet, obtained the product, and ingested some of it. When the father entered the kitchen, he noted a white powdery substance around both children's mouths. The children were taken to a hospital emergency room, where their stomachs were lavaged with water and sodium bicarbonate within thirty minutes following ingestion. After several hours of observation they were discharged as asymptomatic.

Incident 12

Toxic Agent	*Age*	*Sex*
Sodium Arsenate (Ant Button)	3 years	Male

While visiting an aunt the patient roamed behind the kitchen stove and licked a bottle cap of ant poison (sodium arsenate which had been placed there over a year previously). The aunt had forgotten entirely about the cap being there. The patient vomited. He was taken to a hospital emergency room, where his stomach was lavaged four hours following ingestion. After two days in the hospital the patient was discharged as recovered.

We have on previous occasions deplored the use of bottle caps as containers for toxic products.

Incident 13

Toxic Agent	*Age*	*Sex*
Dro Roach Killer	2 years	Male

The mother, not having a commercial household insecticide sprayer, improvised by putting the spray into a plastic squeeze container normally used for dispensing mustard or ketchup. After using it at night she left the product in the kitchen cabinet under the sink. In the morning the child obtained the container and ingested its contents while the mother was engaged in hanging clothes. This particular product is a kerosene solution of chlordane. The only symptom was burning in the mouth and throat. The child was taken to a city hospital, where his stomach was lavaged and milk was administered. After several hours of observation he was sent home as asymptomatic.

This mode of occurence violated the most elementary rules of precaution.

Incident 14

Toxic Agent	*Age*	*Sex*
Ammonia	3 years	Male

The mother mixed a portion of ammonia with a household detergent and water to clean the baby's plastic milk bottle. In order to obtain something from the closet the mother momentarily put the bottle in the kitchen sink. The child grabbed it and, thinking it was milk, swallowed some of its contents. The mother gave the child milk to drink and he vomited. The mother then rushed over to a doctor's office with the child. After waiting impatiently in the doctor's office for ten minutes while he was examining another patient, she left to take the child to a hospital emergency room. On admission the only positive finding was a red throat. The patient was given a soothing emulsion and admitted to the hospital. He was discharged after three days of observation and supportive therapy.

Milky-appearing solutions, whether they are insecticidal or other types of emulsions, frequently are sources of poisoning because of mistaken identity for milk. This is a point worth emphasizing because many commercial products are now sold in emulsion form. Although emulsions have a virtue in that water replaces a more toxic solvent such as kerosene, parents should be cautioned about this potential danger.

(*Number forty-seven in a series of Briefs on Accidental Chemical Poisonings*)

CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

Rheumatic Fever and Rheumatic Heart Disease

J. G. FRED HISS, M.D., SYRACUSE, NEW YORK

"RHEUMATIC fever can become a rare disease," provided the knowledge about this disease is extensively applied. For over two decades there has been evidence that rheumatic fever usually follows group A hemolytic streptococcal infection especially involving the throat. A common sequence is that a clinical sore throat is followed in from ten to twenty days by an attack of rheumatic fever with an intervening period of comparative well-being. It would seem, therefore, that the logical plan of attack is to prevent or to eradicate, as soon as recognized, streptococcal infection of the throat. This indeed is the essence of present-day programs for controlling this disease. However, because of the large number of variables encountered in the application of this principle, the problem is by no means a simple one.

First, streptococcal infections vary from subclinical or asymptomatic to very severe, making it impossible to recognize all such infections. Positive throat cultures tend to support such diagnoses but are by no means specific, since from 10 to 30 per cent of "well people" in a community may harbor the organisms in their throats, probably in a "carrier state."

Second, some children and to a lesser degree some adults seem to develop rheumatic fever rather readily following such an infection, while others seem to be relatively immune from this sequence. At the present time there is no test available that helps to separate the "susceptible" from the "nonsusceptible." Because of this only a person who has had a previous attack of rheumatic fever can be classed as "susceptible." This situation is further complicated by the fact that rheumatic fever can be very difficult, even impossible, to diagnose definitely in some instances.

The problem might then be resolved, theoretically, into three possible modes of attack:

1. Keeping the invader and potential host apart;
2. Changing the host so that he becomes immune;
3. Erecting a "protective barrier" between the invader and potential host.

The first mode is impractical, chiefly because of the widespread and often "silent" distribution of the invader. The second mode might be ideal, but so far methods of immunization to the many types of streptococci that can produce this disease have been unavailable. There then remains the third method of attack, namely, the erection of a "barrier." At the present time this is limited practically to the use of two groups of drugs, the sulfonamides and the antibiotics (preferably penicillin). Of these the sulfonamides are bacteriostatic (that is, they prevent organisms from growing or multiplying) whereas the antibiotics (penicillin) are bacteriocidal (that is, they destroy or eradicate the organism). In New York State penicillin prophylaxis programs are more widely used than are sulfonamide regimens. Antibiotics other than penicillin are recommended only if an antibiotic is desired and the patient is sensitive to penicillin. The cost of a penicillin regimen is generally higher than the cost of a sulfonamide regimen.

The usual dose of sulfonamide (sulfadiazine) is $^1/_2$ Gm. daily for a child weighing less than 60 pounds and 1 Gm. for a child weighing more than this, and for an adult. In using this drug it is essential to watch for sensitivities and for possible detrimental effects on the patient's blood. The most widely recommended dose of penicillin is 250,000 units twice daily. Many authorities feel that such regimens should be continued indenfinitely, but there are some who feel little good is accomplished by this program in later life because of the greatly decreased natural incidence of the disease at that time.

To prevent primary attacks of rheumatic fever every case of streptococcal sore throat should be treated so that the patient will have a therapeutic penicillin blood level or its equivalent for ten days. Apparently the disease can be prevented even if the ten-day treatment is started after the streptococcal infection has subsided or shows signs of doing so. The details of programs for preventing rheumatic fever as well as subacute bacterial endocarditis are described in a newly revised "statement" for this purpose printed in full in the January, 1960, issue of *Circulation* by the Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association. Every physician dealing with any aspect of rheumatic fever or rheumatic heart disease should consult this statement.

Physicians as individuals and in medical organizations are in a very strategic position for making rheumatic fever a rare disease. As an individual, every physician who comes in contact with rheumatic fever patients should know the details of a prevention program. He should know what services are available in his area and should see that his patients obtain the benefits of such services.

There are many things that county medical societies can do to make rheumatic fever rare. Each society can survey its county and determine whether or not it is possible and feasible for anyone in the county who needs it, regardless of financial status, to follow a prophylaxis program. The Medical Society of the State of New York within the past few years has endorsed three types of programs that make the proper drugs available to those persons who need them. First, there is the standard private patient, private physician, private pharmacist plan; second, there is the plan whereby penicillin manufacturers, local heart associations, and local pharmacists cooperate to make penicillin available for rheumatic fever prevention purposes at a greatly reduced cost as their contribution to the solution of this problem; third, there is a system whereby State and local health departments combine to distribute these drugs to those who need them by the same methods as certain vaccines, sera, antitoxins, and drugs are already being distributed for the prevention of certain diseases.

In each of these three plans the program must be initiated by the patient's physician. No prophylactic regimen should be continued automatically or indefinitely but should be approved and be renewed by the attending physician at least once a year after re-examination and re-evaluation by the patient's physician. An ideal procedure for a county society or one of its committees would be to review all recurrences and probably all primary occurrences of rheumatic fever in the county to determine "why the disease occurred." In some instances a weakness in the county program might thus be detected and corrected to prevent additional similar occurrences.

In many instances it might be desirable to have a health officer, a public health nurse, or a school nurse or a social worker with such a group.

County medical societies can also help to make rheumatic fever a rare disease by informing the public of the basic principles of a rheumatic fever prevention program, either alone or in cooperation with the local health authorities, local heart associations, and other voluntary and interested agencies. By the close cooperation of all groups concerned "rheumatic fever can indeed become a rare disease."

(*Number three in a bimonthly series of Cardiovascular Spotlights*)

Two Snakes?

The caduceus, as the symbol of the healing arts, has a twofold origin. First, of course, is its origin in mythology. Hermes, or Mercury, the messenger or ambassador (caduceator) of the gods, carried a winged wand upon which two snakes were intertwined facing each other. The second symbol is the Aesculapian staff, around which a single snake is entwined. Dr. Frederick Stenn of Northwestern University is the authority for the following:

"The caduceus was not regarded as a medical emblem until Sir William Butts, physician to Henry VIII, adopted it on his crest . . . In 1856 the U.S. Marine Hospital Service—antecedent of the U.S. Public Health Service—was convinced that the caduceus best portrayed the noncombatant character of the medical corps, the symbol being a wreath partially enclosing a caduceus. This symbol was established so firmly as a precedent in the Marine Hospital Service that it was formally adopted by the Medical Corps of the United States Army on August 21, 1902, replacing the St. John's Cross.

"The medical corps of the British, German, Swedish, Philippine, Mexican, and French armies employed the Aesculapian staff as their emblem. In 1818 the Surgeon General's Office of our army used the symbol of a cock above a shield, one half of the shield picturing the stars and stripes and the other half the Aesculapian staff, with the words 'Experientia et Progressus' underneath.

"In 1912 the American Medical Association, and in the last war, eight medical battalions, one regiment, and a general hospital adopted the Aesculapian staff as their symbol. The World Health Organization has used this symbol since it began, and the United States Air Force adopted it as part of its insignia in January of 1957."

Today the caduceus is seen both with one or two snakes. The two snakes of Mercury's wand were variously attributed to: (1) male and female, (2) the fact that Mercury once separated two reptiles with his magic wand, and (3) good and bad.—*Bulletin of the Millard Fillmore Hospital, August, 1959*

MEDICAL NEWS

Dr. Masterson Honored—John J. Masterson, M.D., Brooklyn, was named "Catholic Physician of the Year" by the National Federation of Catholic Physicians Guilds at their annual meeting in Dallas, Texas, December 5 and 6, 1959.

Dr. Masterson is a Trustee of the Medical Society of the State of New York and has been a member of the Board of Trustees of the Medical Society of the County of Kings since 1926, and chairman since 1934. He is a past president of both the County and State Medical Societies. He is also a Fellow of the American College of Radiology, a Diplomate of the American Board of Radiology, and a past president of the New York and Brooklyn Roentgen Ray Societies. He has represented New York in the House of Delegates of the American Medical Association for the past twenty-five years. Dr. Masterson is former chairman and present adviser to the publication committee of the NEW YORK STATE JOURNAL OF MEDICINE.

Postgraduate Courses in Ophthalmology—The following postgraduate courses in ophthalmology will be offered in the spring by The Institute of Ophthalmology of the Americas: Ophthalmic Plastic Surgery—April 25 through May 14, limited to 8 persons; Histopathology of the Eye—April 25 through 30, limited to 15 persons; Practical Aspects of Perimetry—April 25 through 30, limited to 15 persons; and Ocular Surgery—including lacrimal sac surgery, retinal detachment, cataracts, enucleation and evisceration, keratectomies and keratoplasties, and anomalies of extraocular muscles, including ptosis, glaucoma, and orbitotomy, May 16 through 21, limited to 20 persons.

For further information and registration apply to: Mrs. Tamar Weber, Registrar, The Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York 3, New York.

R. D. Grant Company Essay Award—The American Congress of Physical Medicine and Rehabilitation is sponsoring the R. D. Grant Company Essay Award with a first prize of $1,000. The competition is open to all persons except members of the boards of governors of the American Congress of Physical Medicine and Rehabilitation, American Academy of Physical Medicine and Rehabilitation, and the program committee of the Third International Congress of Physical Medicine.

The essays, which must be on the subject of physical medicine and rehabilitation, should be in the office of the American Congress of Physical Medicine and Rehabilitation, 30 North Michigan Avenue, Chicago 2, Illinois, not later than May 2. Write to the Congress for full details and rules.

Artificial Kidneys Given to NYU Medical Center—Two artificial kidneys, used to aid patients whose lives are endangered because of the failure of their kidneys, have been contributed to New York University's Medical Center by the Consolidated Edison Company.

The chief purpose of the mechanical kidney is to provide relief for persons whose kidneys have failed by supplying a means for cleansing the impurities of the blood until the kidneys are again able to function. In addition, it helps to prepare patients with badly damaged kidneys to withstand operations.

Pediatric Refresher Courses for General Practitioners—Refresher courses in pediatrics will be given at the University of Buffalo School of Medicine under the sponsorship of the Medical Society of the State of New York and the Bureau of Maternal and Child Health, New York State Department of Health, May 16 through 20, and June 6 through 10.

The courses will review the principles and recent developments in the diagnosis and treatment of pediatric disorders and in the care of the well child and will be taught by the faculty of the University of Buffalo School of Medicine under the supervision of Mitchell I. Rubin, M.D., chairman of the Department of Pediatrics.

Tuition for each physician enrolled is paid by the New York State Department of Health. In addition, a stipend is provided to physicians conducting child health conferences or public health clinics or employed as school physicians by Boards of Education or Departments of Health. Application must be made prior to May 1. Request to enroll may be made to the offices of county or city Departments of Health, to State District Health Officers, or directly to the Bureau of Maternal and Child Health, New York Department of Health, 84 Holland Avenue, Albany 8, New York.

Patients Sought for Clinical Investigation in Hypertension—The cooperation of physicians is requested in a continuing study of various forms of hypertension being conducted by the Section on Experimental Therapeutics, National Heart Institute, at the Clinical Center, National Institutes of Health, Bethesda, Maryland. Of particular interest are patients having moderate to severe hypertension which is either primary or renal in origin. The major interests of this study are the development of improved therapeutic agents and investigation of alterations of metabolism of various vasoactive amines such as noradrenalin and serotonin by means of administration of agents which are enzyme inhibitors. Examples of the latter include the increasing number of available monoamine oxidase inhibitors.

Patients found acceptable for admission should expect to be hospitalized for about a month. During this time a complete appropriate medical workup is performed, the patient is studied during the administration of a new and properly screened compound, and finally the patient is placed on appropriate antihypertensive medications in current use and discharged to the care of the referring physician. It is preferred that the patient should not have advanced azotemia, marked congestive heart failure, or cerebral vascular insufficiency.

Physicians interested in referring such patients for study should write or telephone to: John A. Oates, M.D., Section on Experimental Therapeutics, National Heart Institute, Bethesda, Maryland. Telephone OLiver 6–4000, Ext. 3175.

Course in Pediatric Oncology at Memorial Center—The Pediatric Department of Memorial Center for Cancer and Allied Diseases will hold its annual three-day course in pediatric oncology for pediatricians, general practitioners, and health officers, April 27 through 29.

Current developments and established methods in diagnosis, differential diagnosis and management of benign and malignant tumors, Hodgkin's disease, leukemia and reticuloendothelioses in childhood will be included.

The course will consist of ward rounds, seminars, demonstrations, and examinations of children in Pediatric, Surgical, Chemotherapy, and Radiotherapy Clinics.

The faculty will be composed of 20 members of the attending staffs of Memorial Hospital and the Sloan-Kettering Institute for Cancer Research.

For further information contact: Director, Pediatric Service, Memorial Center, for Cancer and Allied Diseases, 444 East 68th Street, New York 21, New York.

American Board of Obstetrics and Gynecology—The next scheduled examinations (Part II), oral and clinical, for all candidates for the American Board of Obstetrics and Gynecology will be conducted at the Edgewater Beach Hotel, Chicago, by the Board, April 11 through 16. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the Part I examinations will be notified of their eligibility for the Part II examinations as soon as possible.

The deadline for the receipt of new and reopened applications for the 1961 examinations is August 1, 1960.

Personalities

Speakers

Leo Alexander, M.D., director, Neurobiological Unit Division of Psychiatric Research, Boston State Hospital, before the members of the staff of the Veterans Administration Hospital, Northport, Long Island, on December 11, 1959, on the topic, "The Effect of Psychopharmaca on the Conditional Psychogalvanic Reflex in Man". . .Joseph Wilder, M.D., New York City on the topic "The Law of Initial Value in Pharmacology" in Chicago at the annual meeting of the American Association for Advancement of Science.

Awarded

I. Herbert Scheinberg, M.D., Bronx, the 1959 research award from the Association for Research in Nervous and Mental Disease, for his "pioneering work on the biochemical defects in the heredodegenerative diseases of the nervous system". . .S. Mouchly Small, M.D., Buffalo, an award of $5,000 from Wyeth Laboratories for use in research at the University of Buffalo.

Appointed

Kenneth J. Dumas, M.D., Huntington, as director of clinical research of Chas. Pfizer & Company. . . Barbara Fish, M.D., New York City, as associate professor of clinical psychiatry at New York University College of Medicine and psychiatrist-in-charge of the Children's Service of Bellevue Hospital Center.

Elected

Seymour Horowitz, M.D., Schenectady, re-elected as chairman of the medical boards, and Raymond A. Maslyn, M.D., Schenectady, re-elected as president of the medical staff of St. Claire's Hospital, Schenectady.

MEDICAL MEETINGS

New York Proctologic Society

The New York Proctologic Society will hold a scientific session on Thursday, February 11, at 8:30 P.M., at the New York Academy of Medicine, 2 East 103rd Street, New York City.

The following physicians from the New York area will present papers: Murray Davidson, M.D., New York City, director, Department of Pediatrics, Bronx Hospital, "Ulcerative Colitis in Children"; David H. Baker, M.D., Yonkers, director, Department of Pediatric X-Ray, Babies Hospital, "Barium Enema X-Ray in Children"; Thomas V. Santulli, M.D., New York City, chief, Pediatric Surgery, Babies Hospital, "Common Colon and Rectal Conditions in Children."

Third Annual Tillie S. Bergman Memorial Lecture

The third annual Tillie S. Bergman Memorial Lecture will be presented on Thursday, February 18, at 9:00 P.M., at Lebanon Hospital, Grand Concourse and Mt. Eden Parkway, 173rd Street, New York 57, New York. The lecture, entitled "Abdominal Neoplasms in Children," will be delivered by Robert Gross, M.D., surgeon-in-chief, Children's Hospital, Boston, and Ladd Professor of Children's Surgery, Harvard Medical School.

Sectional Meeting of American College of Surgeons in Boston

Surgeons, nurses, and related medical personnel are invited to attend a comprehensive, four-day sectional meeting of the American College of Surgeons in Boston, February 29 through March 3. Headquarters will be the Statler Hilton and Sheraton Plaza Hotels.

The meeting will include sessions in general surgery and separate programs in the surgical specialties for gynecologists and obstetricians, ophthalmic surgeons, orthopedic surgeons, otolaryngologists, thoracic surgeons, urologists, and also for nurses. Attention will be focused on new developments in surgery and on newer ways of handling problems encountered in daily practice.

American Society of Psychosomatic Dentistry and Medicine

The annual meeting of the American Society of Psychosomatic Dentistry and Medicine will be held at the Shoreham Hotel, Washington, D.C., from Friday evening, March 11, to Sunday afternoon, March 13. Lectures and round table discussions will be given by authorities in the fields of semantics, linguistics, psychosomatics, and hypnosis.

Dentists and physicians are invited to attend. For further information write to: Dr. Jesse Caden, Chairman, Program Committee, 5213 Connecticut Avenue, Washington 15, D.C.

Conference on Actinomycins

A conference on "The Actinomycins and Their Importance in the Treatment of Tumors in Animals and Man" will be held under the auspices of the New York Academy of Sciences at the Barbizon-Plaza Hotel, New York City, on Thursday, March 31, and Friday, April 1. Dr. Selman A. Waksman of the Insitute of Microbiology, Rutgers University, will serve as conference chairman.

An invitation to attend the conference will be issued to interested professional persons upon request. There is no registration or other fee for those attending. Request for invitation should be addressed to: Executive Director, New York Academy of Sciences, 2 East 63rd Street, New York 21, New York.

West Virginia Academy of Ophthalmology and Otolaryngology

The West Virginia Academy of Ophthalmology and Otolaryngology will hold its annual meeting at the Greenbrier Hotel, White Sulphur Springs, West Virginia, April 10 through 12.

For further information contact: Albert C. Esposito, M.D., First Huntington National Bank Building, Huntington 1, West Virginia.

International Conference of Surgeons in Israel

An international conference of surgeons will be held in Tel Aviv and Jerusalem May 21 through 23, following the twelfth biennial international congress of the International College of Surgeons which will be held in Rome May 15 through 18.

The conference will be held under the auspices of the Israel Minister of Health and will deal in particular with medical problems of young nations in Asia and Africa.

For further information write to: International Secretariat, International College of Surgeons, 1516 Lake Shore Drive, Chicago, Illinois.

Second International Meeting of Forensic Pathology

The second international meeting of forensic pathology will be held at the Commodore Hotel in New York City, September 18 through 22. The meeting will be sponsored by scientific societies both in this country and abroad which are concerned with forensic pathology and legal medicine.

All inquiries concerning the meeting should be addressed to: Milton Helpern, M.D., 55 East End Avenue, New York 28, New York.

Asia-Pacific Academy

The first congress of the Asia-Pacific Academy of Ophthalmology will be held in Manila, Philippines, October 10 through 13, under the sponsorship of the Philippine Ophthalmological Society. The main theme of the meeting will be, "Blinding Diseases of the Asia-Pacific Regions."

For registration or further information write to: Dr. Jesus V. Tamesis, Executive Chairman, 42 Quezon Boulevard, Quezon City, Philippines.

Medical Society of the State of New York

BUREAU OF INDUSTRIAL HEALTH AND WORKMEN'S COMPENSATION

ANTHONY A. MIRA, M.D., *Director*

Use of Identification Numbers in Workmen's Compensation Claims

YOUR Director is in receipt of a letter from an insurance carrier that asks the cooperation of physicians to reduce the amount of clerical work by insurance carriers with regard to reports and other data filed in workmen's compensation claims.

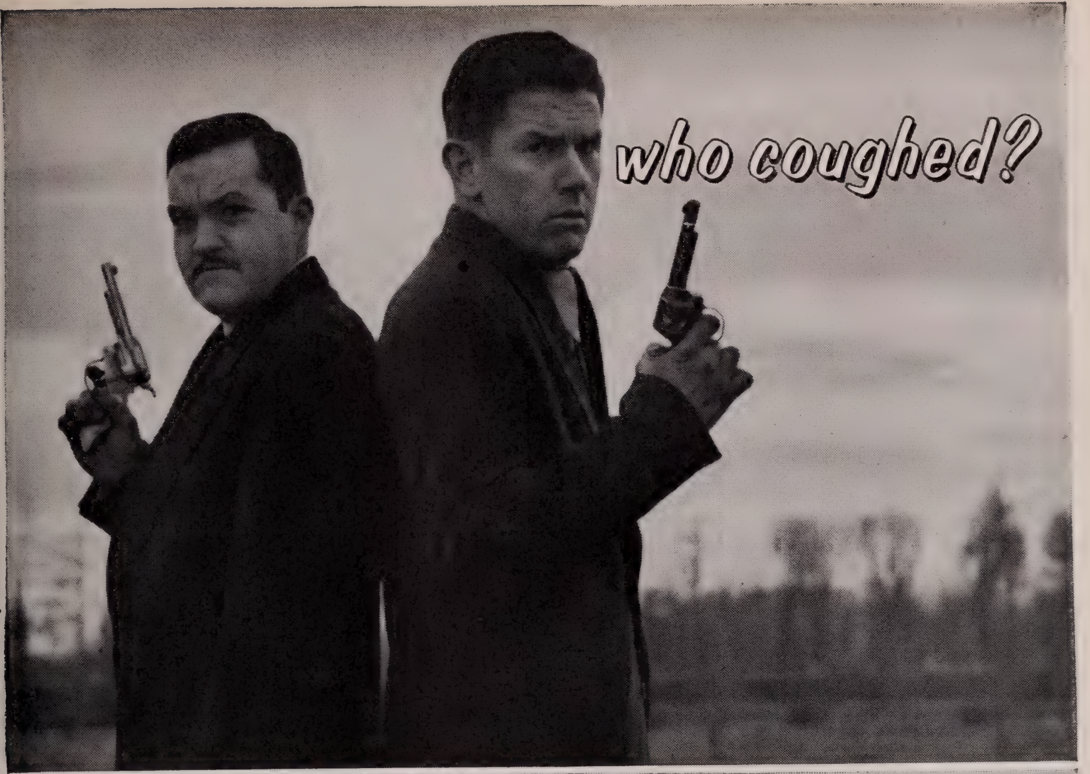
"This has been a universal problem in this industry, which can be alleviated or controlled by those affiliated with such claims, and since physicians are, to a large degree, active participants, this situation is brought to your attention for consideration and advice.

"In an effort to curtail the amount of paper work required in the searching of records to locate the corresponding claim files, we have employed various methods without any appreciable success. We recently adopted a new procedure whereby an acknowledgment card is sent to an attending physician, immediately upon receipt of the initial medical report, which incorporates all pertinent data in connection with the claim and, most important, indicates the claim number.

"In having discussed these problems with other insurance carriers, it would appear that most of them have adopted a similar system. However, we do find that, in a great many instances, claim numbers are omitted or, when filing an initial report, the accurate name of the insured employer is not clearly defined which, of course, creates an additional burden in the identification of the proper employer, as well as confirmation of policy coverage."

It is evident that the attending physician may expedite the processing of a claim by including identification numbers on the required compensation report forms.

It is earnestly urged that any identifying file numbers be included in reports and all communications to insurance carriers or self-insurers whenever possible.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Hycodan®		
Dihydrocodeinone Bitartrate (Warning: May be habit-forming)	5 mg.	6.5 mg.
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Pyrilamine Maleate		12.5 mg.
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Ammonium Chloride		60 mg.
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NECROLOGY

Harry Ackerman, M.D., of the Bronx, died on December 4, 1959, in Montefiore Hospital at the age of seventy-three. Dr. Ackerman graduated from Long Island College Hospital Medical School in 1915. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Solomon Bossak, M.D., of Fort Pierce, Florida, formerly of New York City, died at Fort Pierce Hospital on December 23, 1959, at the age of seventy-five. Dr. Bossak received his medical degree in 1908 from the University of Vienna. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Bernard Burlingham, M.D., of Middleburg, died on September 6, 1958, at the age of eighty-five. Dr. Burlingham graduated from the University of Buffalo School of Medicine in 1905.

T. Wood Clarke, M.D., of Utica, died on December 18, 1959, at the age of eighty-one. Dr. Clarke graduated from Johns Hopkins University School of Medicine in 1902. He was a consultant in pediatrics and allergy at St. Elizabeth's Hospital, a consultant in allergy at Marcy State Hospital, and a consultant in pediatrics at Children's Hospital Home. Dr. Clarke was a Licentiate of the American Board of Pediatrics and a member of the Utica Academy of Medicine, the Central New York Pediatric Club, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur F. Coca, M.D., of New York City and Oradell, New Jersey, died in Valley Hospital, Ridgewood, New Jersey, on December 12, 1959, at the age of eighty-four. Dr. Coca graduated in 1900 from the University of Pennsylvania School of Medicine. From 1910 to 1942 he was on the staff of Cornell University advancing from instructor in immunology to full professor and from 1931 to 1935 he was also clinical professor of medicine at New York Post-Graduate Medical School. From 1931 to 1949 he was medical director of Lederle Laboratories and from 1928 to 1940 he served as medical director of the Blood Transfusion Betterment Association. Dr. Coca founded the *Journal of Immunology* in 1916 and acted as its managing editor until 1948. He was an Honorary Fellow of the American College of Allergists and a member of the American Association of Immunologists for which he had served as secretary-treasurer from 1917 to 1938 and honorary president after 1940, and the New York Academy of Medicine.

Martin Joseph Downey, M.D., of Buffalo, died on November 25, 1959, at the age of eighty-three. Dr. Downey graduated from the University of Buffalo School of Medicine in 1899. He was a consulting physician at Deaconess Hospital and an honorary physician at Emergency Hospital. Dr. Downey was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max Milton Ehrenreich, M.D., of New York City, died on December 14, 1959, at the age of seventy-nine. Dr. Ehrenreich received his medical degree from the University of Wurzburg in 1904. For fifteen years he had served as a physician for the Department of Correction, retiring in April, 1959.

James Miller Evans, M.D., of New York City, died on December 11, 1959, at the age of sixty-five. Dr. Evans graduated in 1919 from Jefferson Medical College of Philadelphia. He was an emeritus associate in otolaryngology at the Hospital for Special Surgery, an attending in otolaryngology at Misericordia Hospital, an associate surgeon in otorhinolaryngology at Metropolitan Hospital, and a consultant in otolaryngology at Goldwater Memorial Hospital. From 1927 to 1929 he was in charge of the eye, ear, nose, and throat section of the Veterans Hospital, Kingsbridge Road. Dr. Evans was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry M. Feinblatt, M.D., of Brooklyn, died on December 24, 1959, at the age of sixty-eight. Dr. Feinblatt graduated in 1913 from Long Island College Hospital Medical School. He was a con-

[Continued on page 442]

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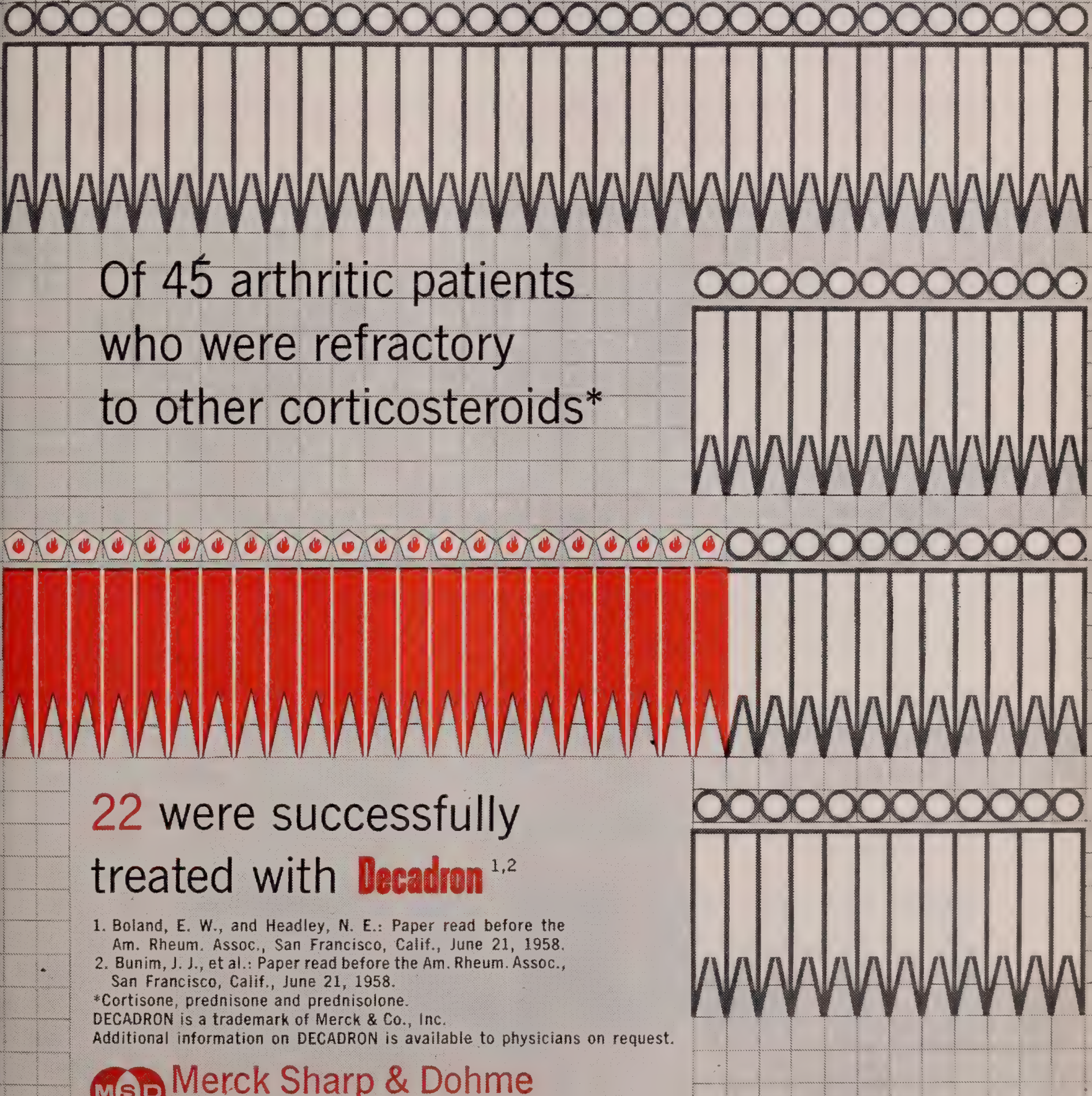
treats more patients more effectively...



Of 45 arthritic patients who were refractory to other corticosteroids*

22 were successfully treated with **Decadron**[1,2]

1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

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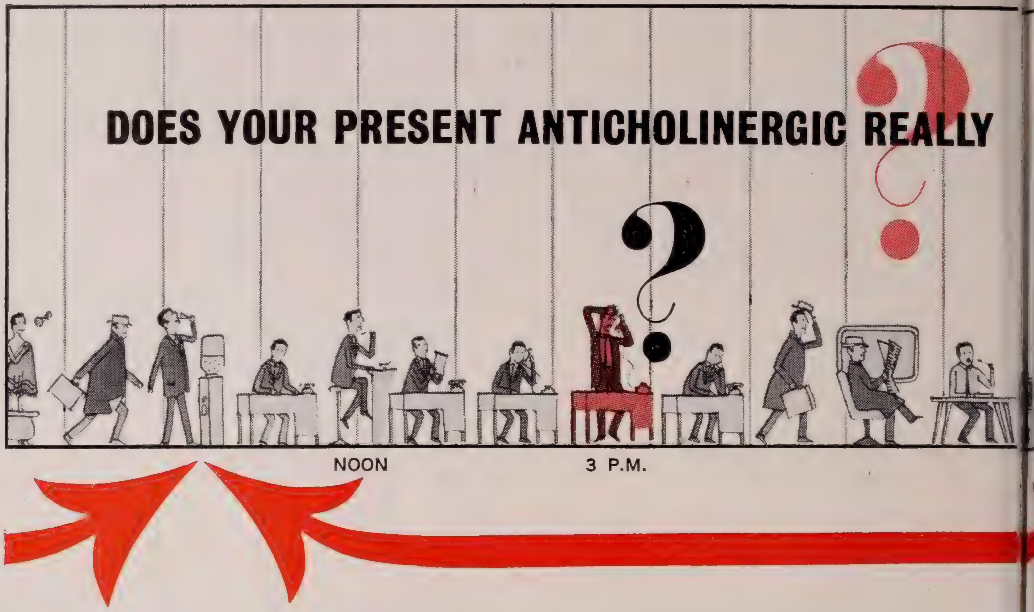

The test—you might say the acid test—of an anticholinergic is simple: will it protect your patient from hyperacidity around the clock, **even while he sleeps.** The weakness of t.i.d. or q.i.d. preparations is well recognized; but even some "b.i.d." encapsulations may be unreliable. McHardy, for instance, found a "widely variable duration of action, definitely less than that anticipated" in the "sustained," "delayed," and "gradual release" anticholinergics he studied.[1]

COMPARE THE DATA ON ENARAX . . . the new combination of an **inherently** long-acting anticholinergic (oxyphencyclimine) and Atarax, the non-secretory tranquilizer. Note the effectiveness of oxyphencyclimine:

OBSERVE THE OXYPHENCYCLIMINE REPORTS . . .

McHardy: "[Oxyphencyclimine] has proved to be an excellent sustained-action anticholinergic in our study of this agent over a period of eighteen months."[1]

Kemp: ". . . for the majority of patients, one tablet every 12 hours provided adequate control. This characteristic long action . . . may constitute an advantage of this drug as compared to coated 'long-acting' preparations of other compounds."[3]

Add Atarax to this 12-hour anticholinergic. The resulting combination—ENARAX—now gives relief from emotional stress, in addition to a reduction of spasm and acid. Atarax does not stimulate gastric secretion. No serious adverse clinical reaction has ever been documented with Atarax.

LOOK AT THE RESULTS WITH ENARAX[4,5]:

Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that **does.**

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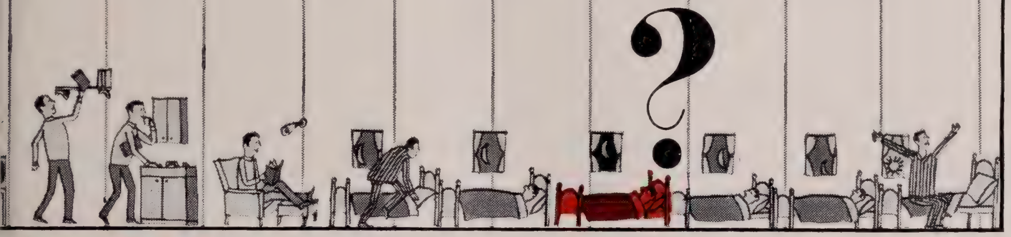
A SENTRY FOR THE G.I. TRACT

PROVIDE CONTINUOUS CONTROL OF ACID SECRETION?



"Prolonged periods of achlorhydria" after 10 mg. oxyphencyclimine q. 12 h.[3]

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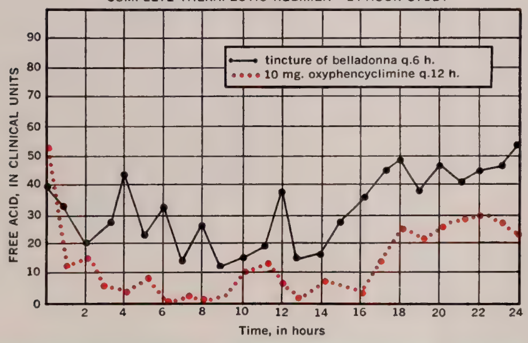

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References: 1. McHardy, G., et al.: J. Louisiana M. Soc. 111:290 (Aug.) 1959. 2. Steigmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: Antibiotic Med. & Clin. Therapy 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.

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[Continued from page 438]

sulting physician at Kings County Hospital where he had served as director of medicine from 1942 to 1952. At one time he had been director of the metabolic laboratory at Kings County Hospital and clinical professor of medicine at the Long Island College of Medicine. Dr. Feinblatt was a Diplomate of the American Board of Internal Medicine and a Fellow of the American College of Pathologists.

William George Ferguson, M.D., of Niagara Falls, died on December 9, 1959, at Memorial Hospital at the age of sixty. Dr. Ferguson graduated in 1924 from the University of Western Ontario Faculty of Medicine, London. Since 1930 he had been director of the Martha H. Beeman Foundation's Child Guidance Clinic and was also chief psychiatrist at Niagara Falls Memorial Hospital. Dr. Ferguson was a member of the American Orthopsychiatric Association, the Niagara County Medical Society, and the Medical Society of the State of New York.

Harold Lewis Gokey, M.D., of Alexandria Bay, died in the House of the Good Samaritan, Watertown, on December 17, 1959, at the age of sixty-six. Dr. Gokey graduated in 1917 from McGill University Faculty of Medicine. He was staff general practitioner at North Country Hospitals, Alexandria Bay. Dr. Gokey was a member of the Jefferson County Medical Society (a past president), the Medical Society of the State of New York, and the American Medical Association.

Aaron Himmelstein, M.D., of New York City, died at the Neurological Institute on December 19, 1959, at the age of forty-five. Dr. Himmelstein graduated in 1937 from Cornell University Medical College and interned at Bellevue Hospital. He was an attending in surgery at Bellevue Hospital, an assistant attending in surgery at Presbyterian Hospital, a consultant in Thoracic Surgery at Veterans Administration Hospital and United States Naval Hospital (St. Albans), and an associate professor of surgery at the College of Physicians and Surgeons. Dr. Himmelstein was a Diplomate of the American Board of Surgery and a Diplomate of the American Board of Thoracic Surgery (as well as a founder), a Fellow of the American College of Surgeons, and a member of the American Association for Thoracic Surgery, the Society of University Surgeons, the New York Academy of Medicine, The New York Surgical Society, the New York Society for Thoracic Surgery, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jacob Jablonsky, M.D., of Brooklyn, died on October 13, 1959, at the age of fifty-one. Dr. Jablonsky received his medical degree from the University of Bern in 1936. He was a member of the Kings County Medical Society and the Medical Society of the State of New York.

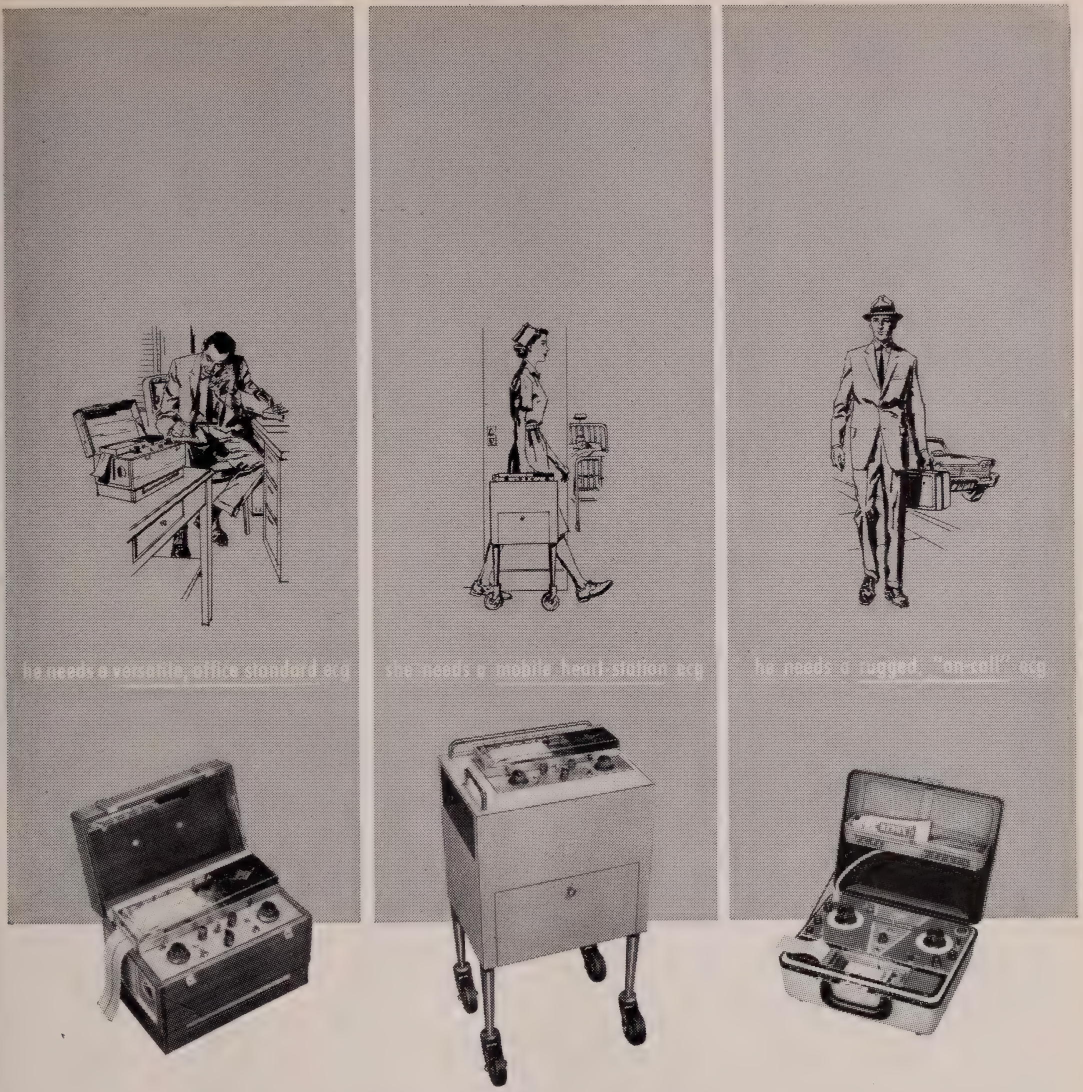
M. Marie Klepetar, M.D., of Delhi, died in Memorial Hospital, New York City, on November 8, 1959, at the age of forty-five. Dr. Klepetar received her medical degree from the Charles University of Prague in 1939. She was on the staff of Delhi Hospital. Dr. Klepetar was a member of the Delaware County Medical Society and the Medical Society of the State of New York.

John Rudolph Knapp, M.D., of New York City, died on November 4, 1959, at the age of eighty. Dr. Knapp graduated from the University of Pennsylvania School of Medicine in 1894 and interned at Infants and Randalls Island Hospitals. He was former acting director of the Manhattan State Hospital, Wards Island. Dr. Knapp was a Fellow of the American Psychiatric Association and a member of the New York Society for Clinical Psychiatry, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Richard A. Leonardo, M.D., of Rochester, died on December 5, 1959, at the age of sixty-four. Dr. Leonardo graduated in 1919 from Columbia University College of Physicians and Surgeons and interned at Rochester General Hospital. He was a consultant in surgery at Monroe County Infirmary and since 1926 had been a coroner for Monroe County. In 1938 he was awarded a Master of Surgery from the University of Debrecen, Hungary. Dr. Leonardo was a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Aloysius Moore, M.D., of Daytona Beach, Florida, formerly of Kenmore, died on October 13, 1959, in Halifax Hospital at the age of seventy-nine. Dr. Moore graduated in 1904 from the University of Buffalo School of Medicine. Retired, he was a former member of the staff of the Lafayette General Hospital (Buffalo). Dr. Moore was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

[Continued on page 444]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[Continued from page 442]

Fortunato Eugene Piantieri, M.D., of New York City, died on September 10, 1959, at the age of seventy. Dr. Piantieri received his medical degree from the University of Naples in 1936. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

Saul Ritchie, M.D., of Kingston, died on November 19, 1959, in Benedictine Hospital at the age of fifty-eight. Dr. Ritchie graduated in 1925 from Tufts College Medical School. He was an attending in orthopedics at Benedictine and Kingston Hospitals, and consultant in orthopedics at Liberty Maimonides Hospital, the Ulster County Tuberculosis Hospital, Northern Dutchess Health Service Center (Rhinebeck), Margaretville Hospital, Memorial Hospital of Greene County (Catskill), and a consultant in orthopedic surgery at the United States Military Academy, West Point. Dr. Ritchie was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, the Ulster County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Bernard S. Robbins, M.D., of New York City, died on December 16, 1959, at the age of fifty-four. Dr. Robbins graduated from the University of Cincinnati Medical College in 1928. He was a professor of clinical psychiatry at New York Medical College. Dr. Robbins was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Fellow of the American Psychiatric Association, and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herman H. Schlachet, M.D., of New York City, died on December 13, 1958, at the age of sixty-two. Dr. Schlachet received his medical degree from the University of Vienna in 1922. He was admitting physician at Metropolitan Hospital. Dr. Schlachet was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Michael Schneier, M.D., of Rye, died on December 8, 1958, at the age of seventy-three. Dr. Schneier received his medical degree from the University of Vienna in 1913. He was a Member of the American Psychiatric Association and a member of the American Association on Mental Deficiency, the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Fred S. Seligmann, M.D., of Forest Hills, died on April 2, 1959, at the age of seventy. Dr. Seligmann received his medical degree from the University of Munich in 1913. He was a Diplomate of the American Board of Dermatology, Inc., and a member of the Rudolf Virchow Medical Society, and the Long Island Dermatological Society.

Alexandre Shaw, M.D., of Jamaica, died on September 20, 1959. Dr. Shaw received his medical degree from the University of Tomsk in 1923. He was a clinical assistant in surgery at Queens General Hospital Outpatient Department. Dr. Shaw was a member of the Queens County Medical Society and the Medical Society of the State of New York.

Nathaniel S. Wolff, M.D., formerly of New York City, died in London on December 22, 1959, at the age of sixty. Dr. Wolff graduated in 1925 from New York University and Bellevue Hospital Medical College. He was a Member of the American Psychiatric Association.

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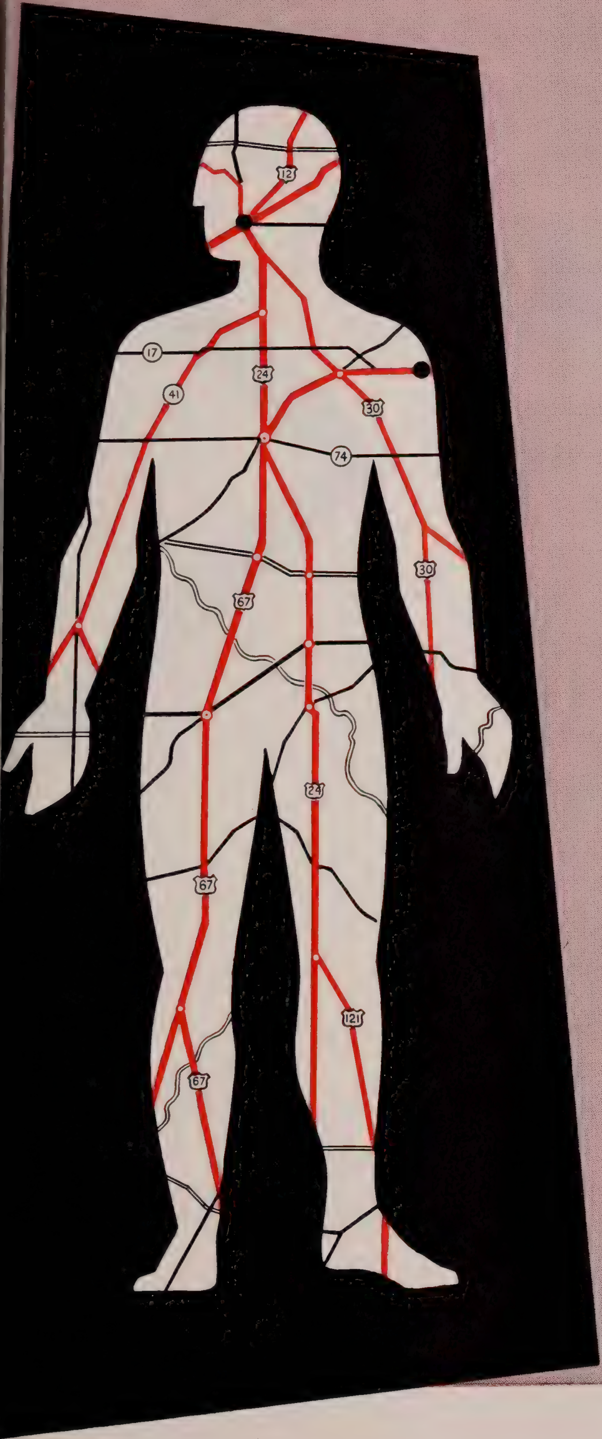

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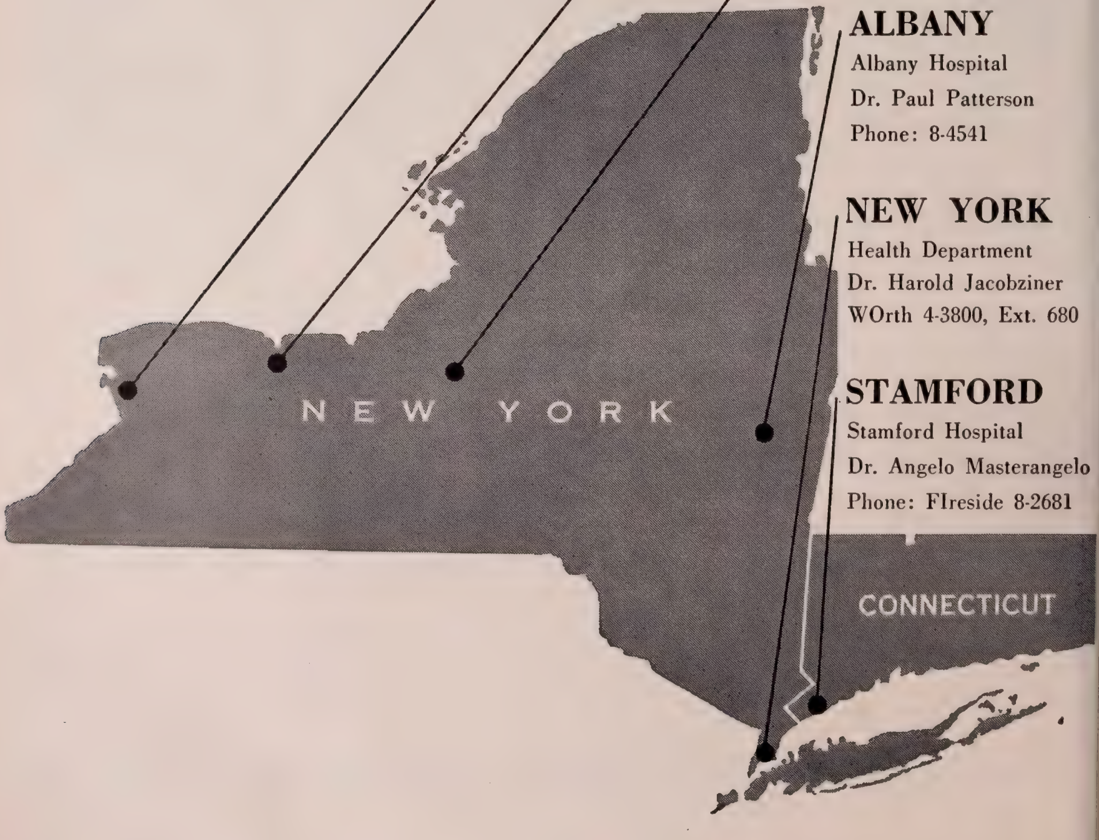

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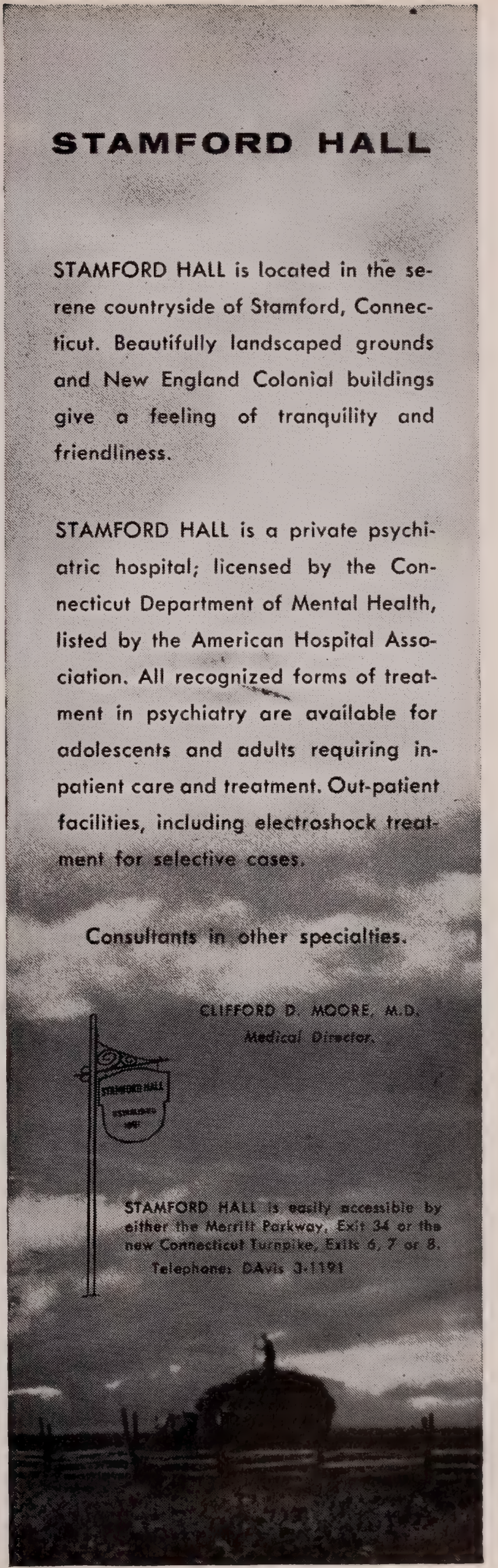

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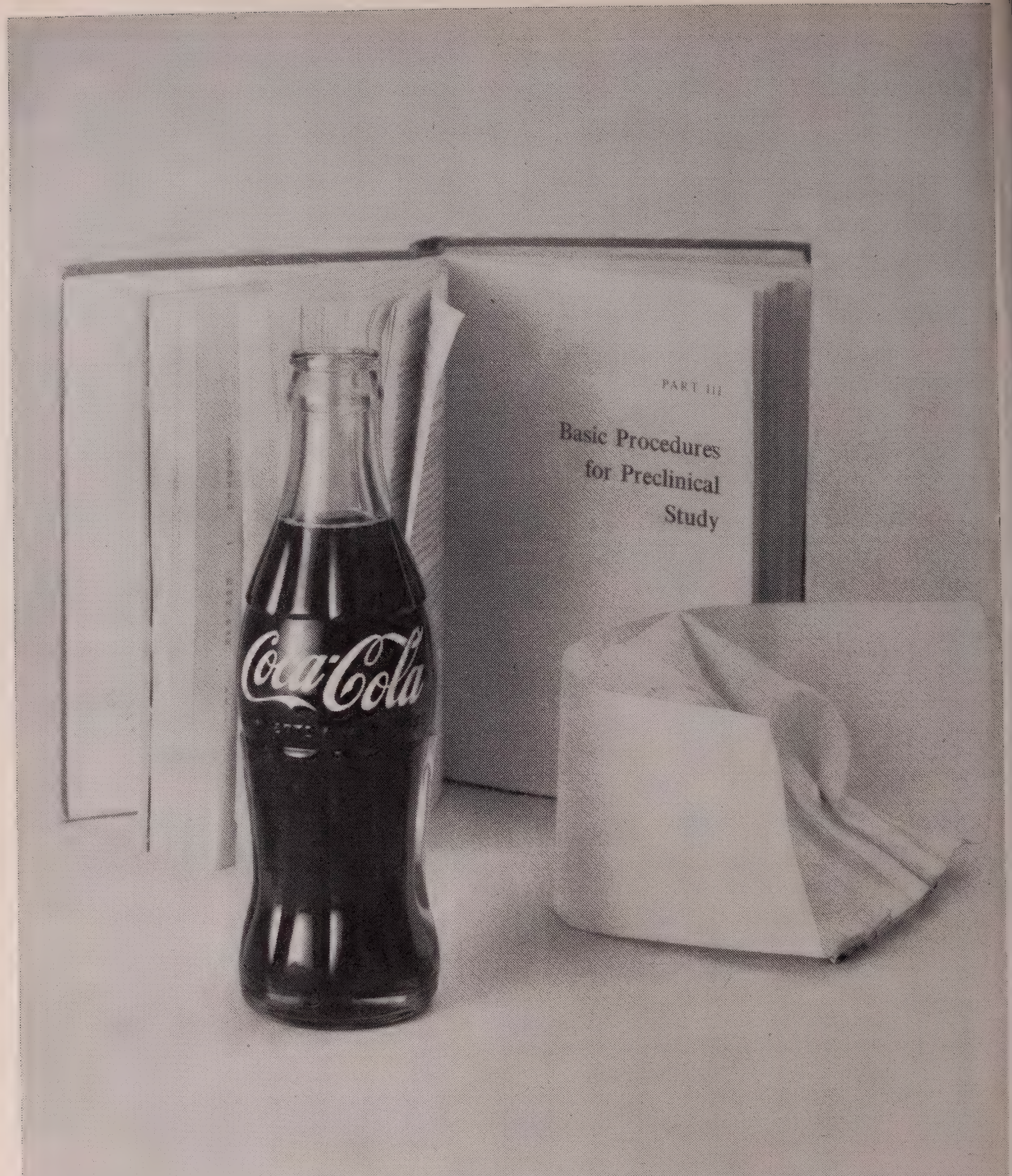
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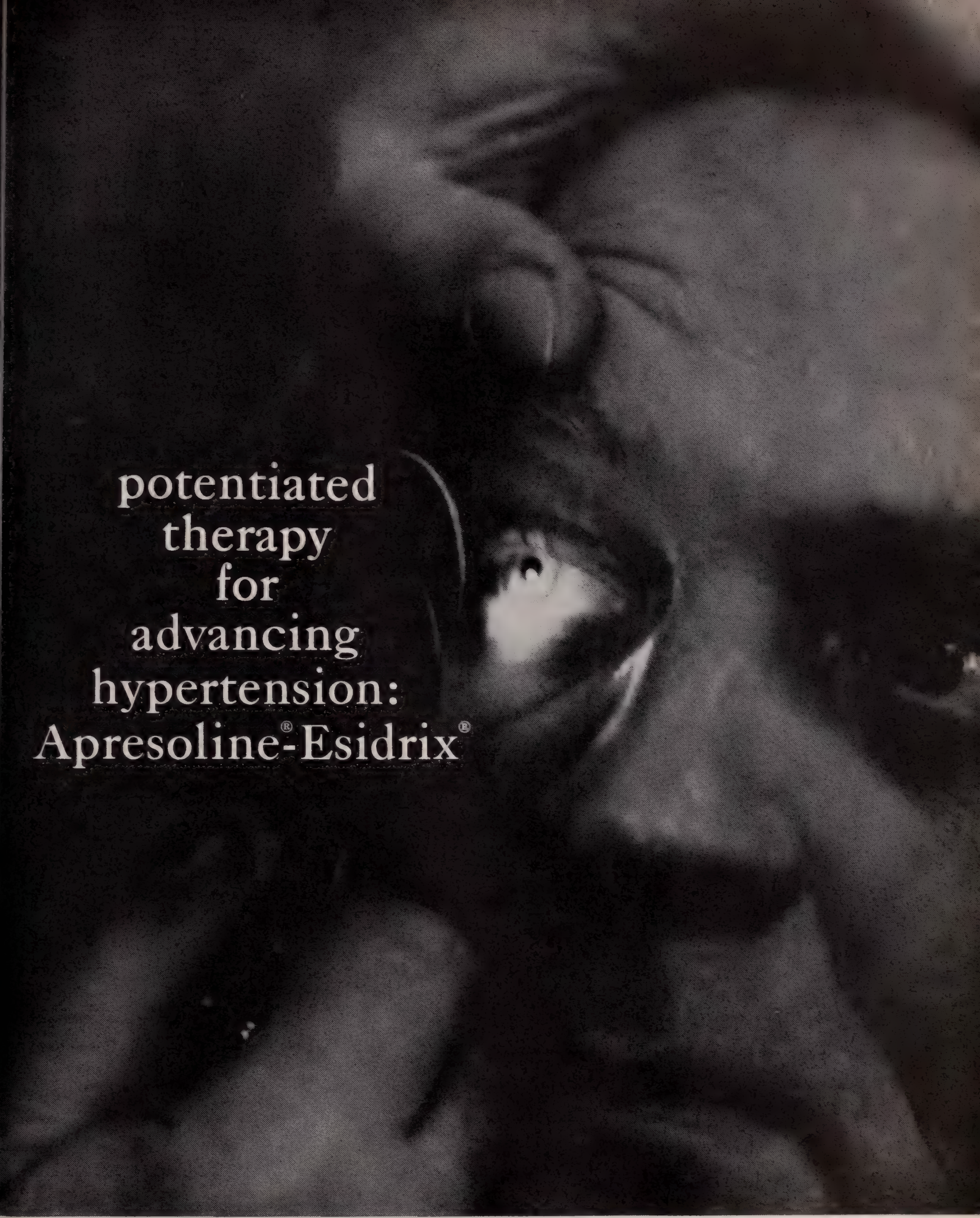
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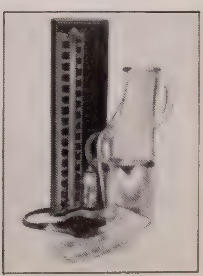

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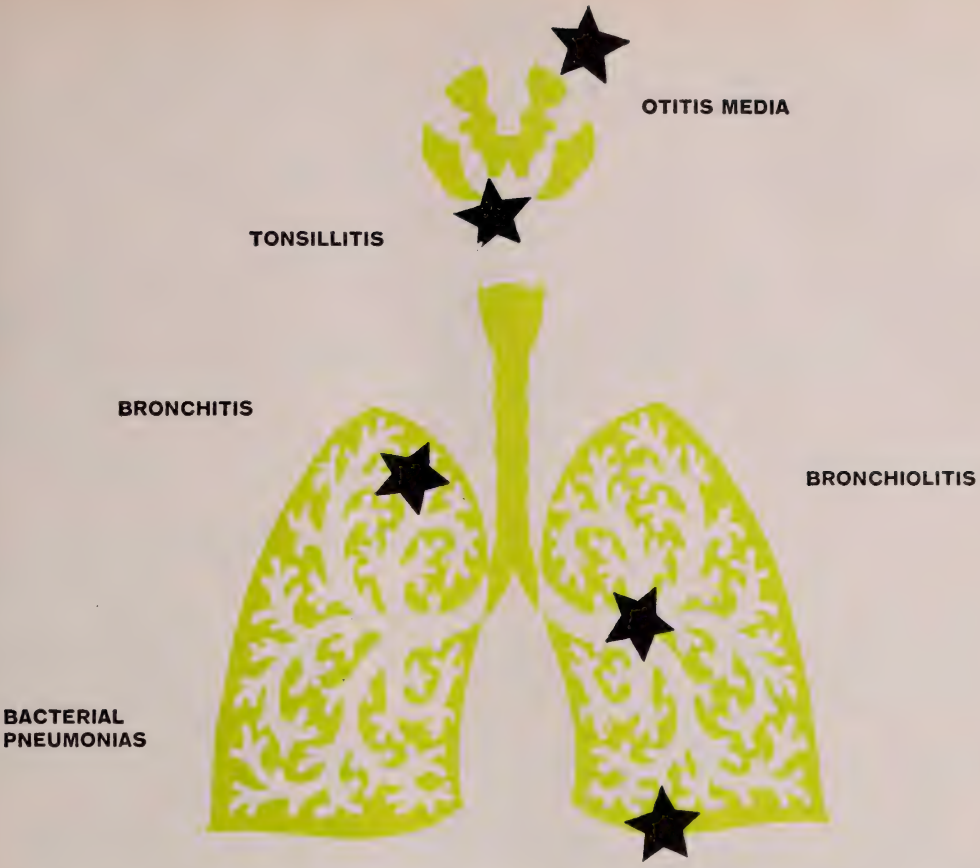
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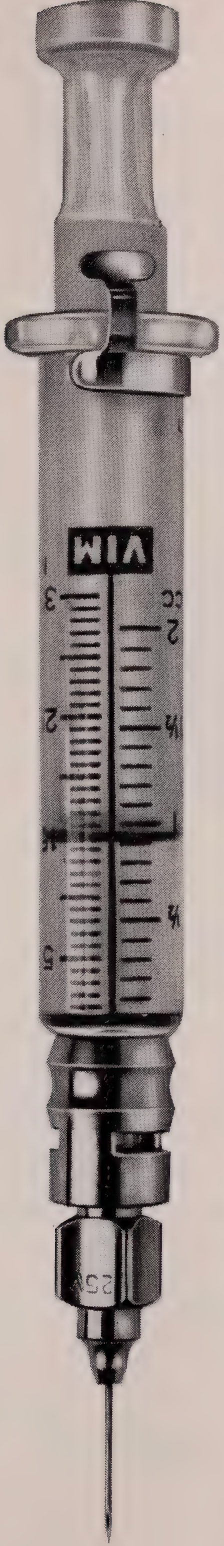

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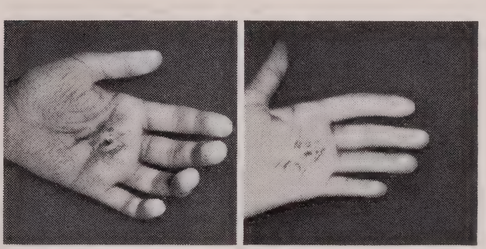

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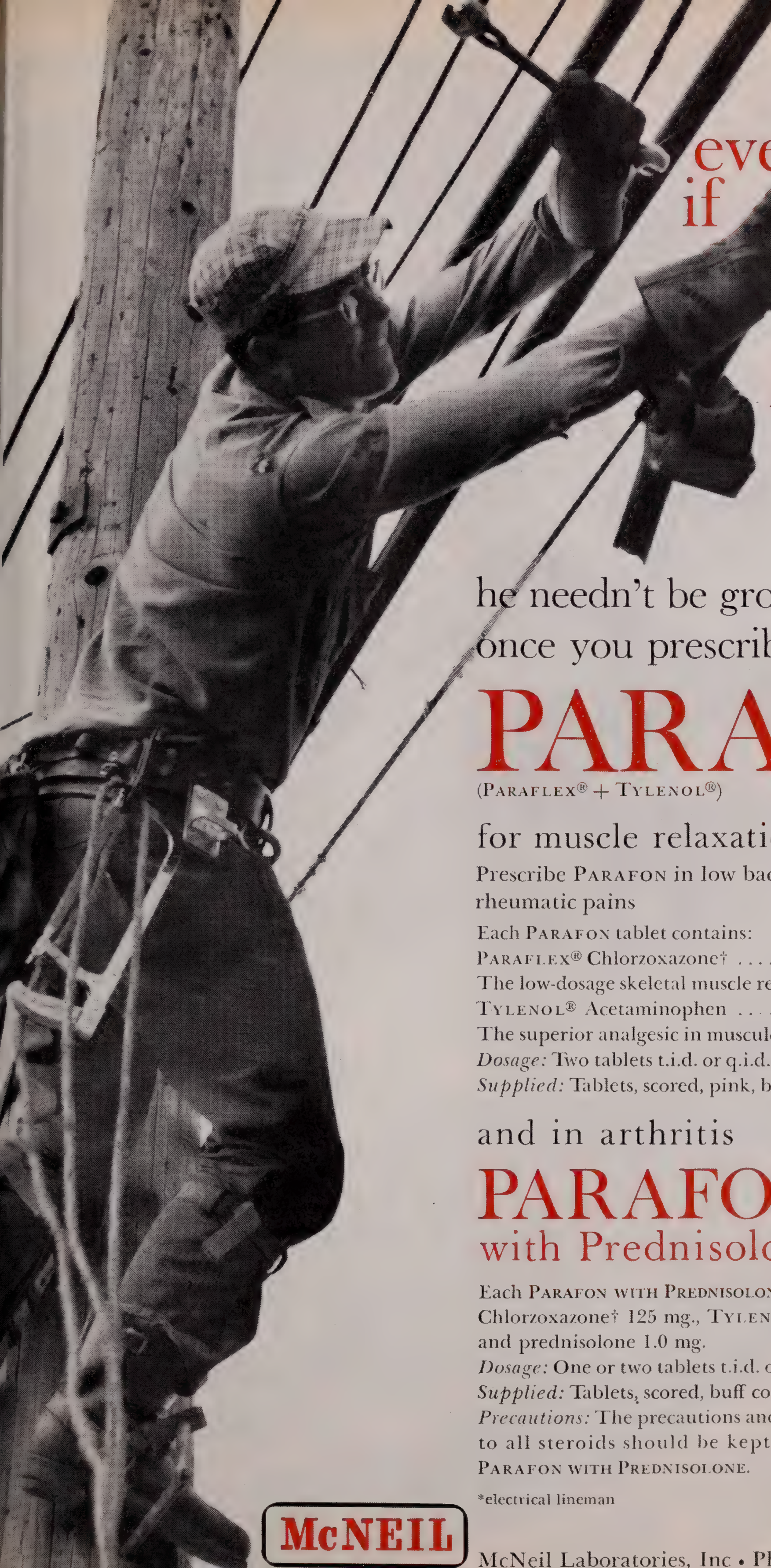

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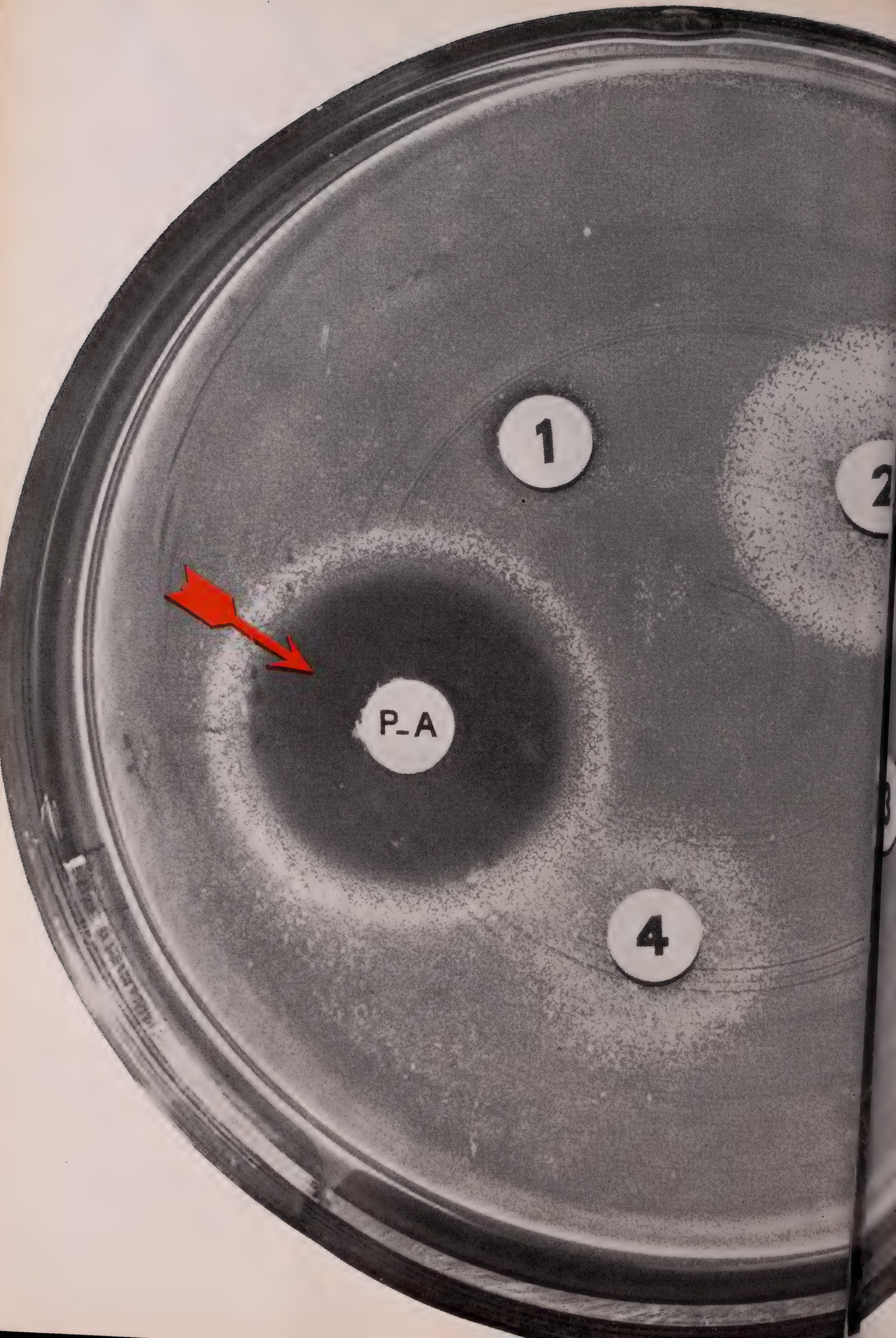
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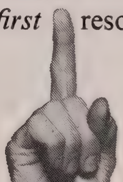

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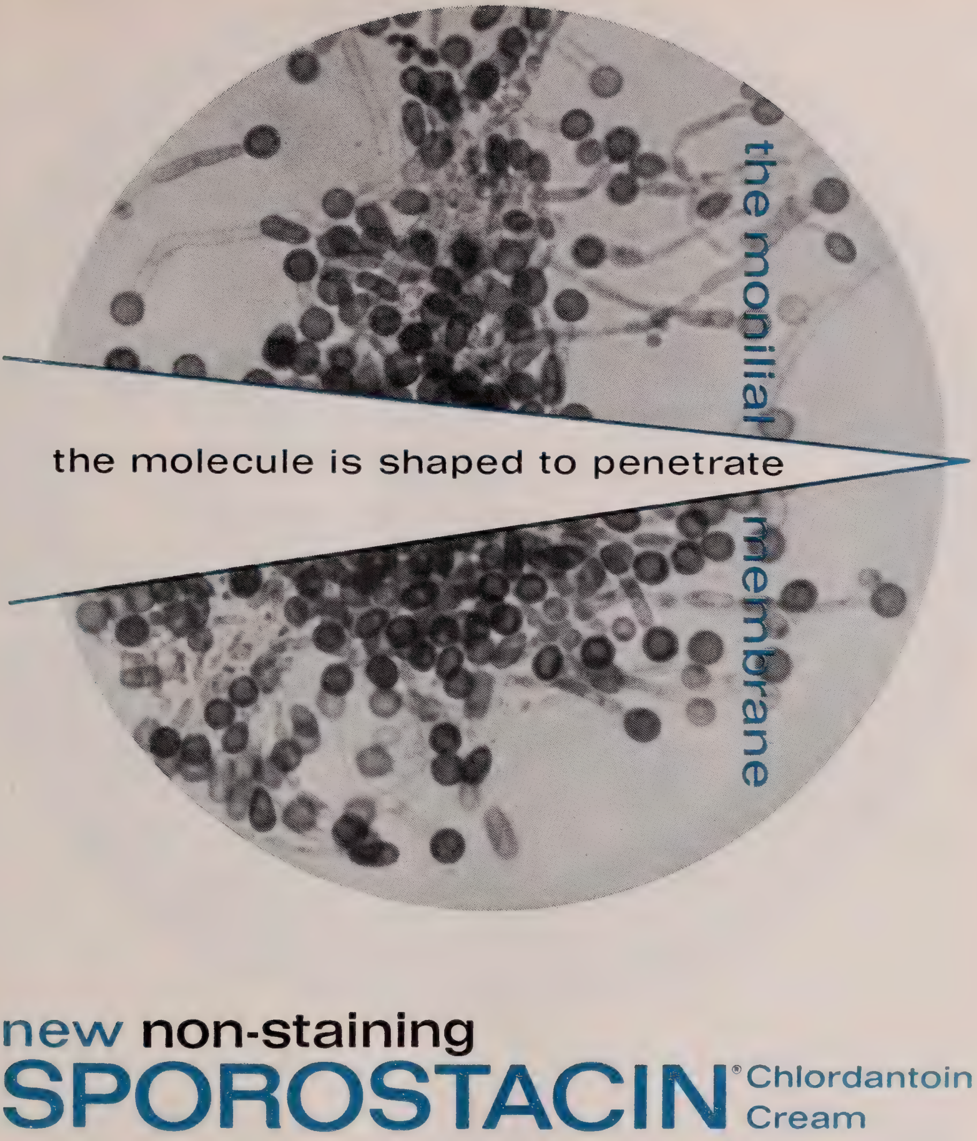

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FOR CORRECTING AND PREVENTING CONSTIPATION
FORREST COMPANY

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It is highly effective in managing constipation of atonic, dietary and psychogenic type; safely used in pregnancy, anorectal surgery and cathartic habituation.

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FORMULA: Each tablet contains: Dioctyl Sodium Sulfosuccinate 40 mg., Ox Bile Extract 60 mg.

SUPPLIED: In bottles of 30 and 100.

Bidrolar provides an efficient stool softener that keeps feces soft for easy evacuation; and ox bile, a natural stimulant of peristaltic activity without adverse effects or irritation of the intestinal mucosa. Ox Bile has long been recognized as a natural laxative that is neither irritating nor habit forming. It is similar in composition to natural bile. It contains all the bile salts—and in conjugated form—the form which is most effective. Ox bile stimulates the liver to increase free flow of natural bile thus promoting natural hydration of the stool.

BIDROLAR

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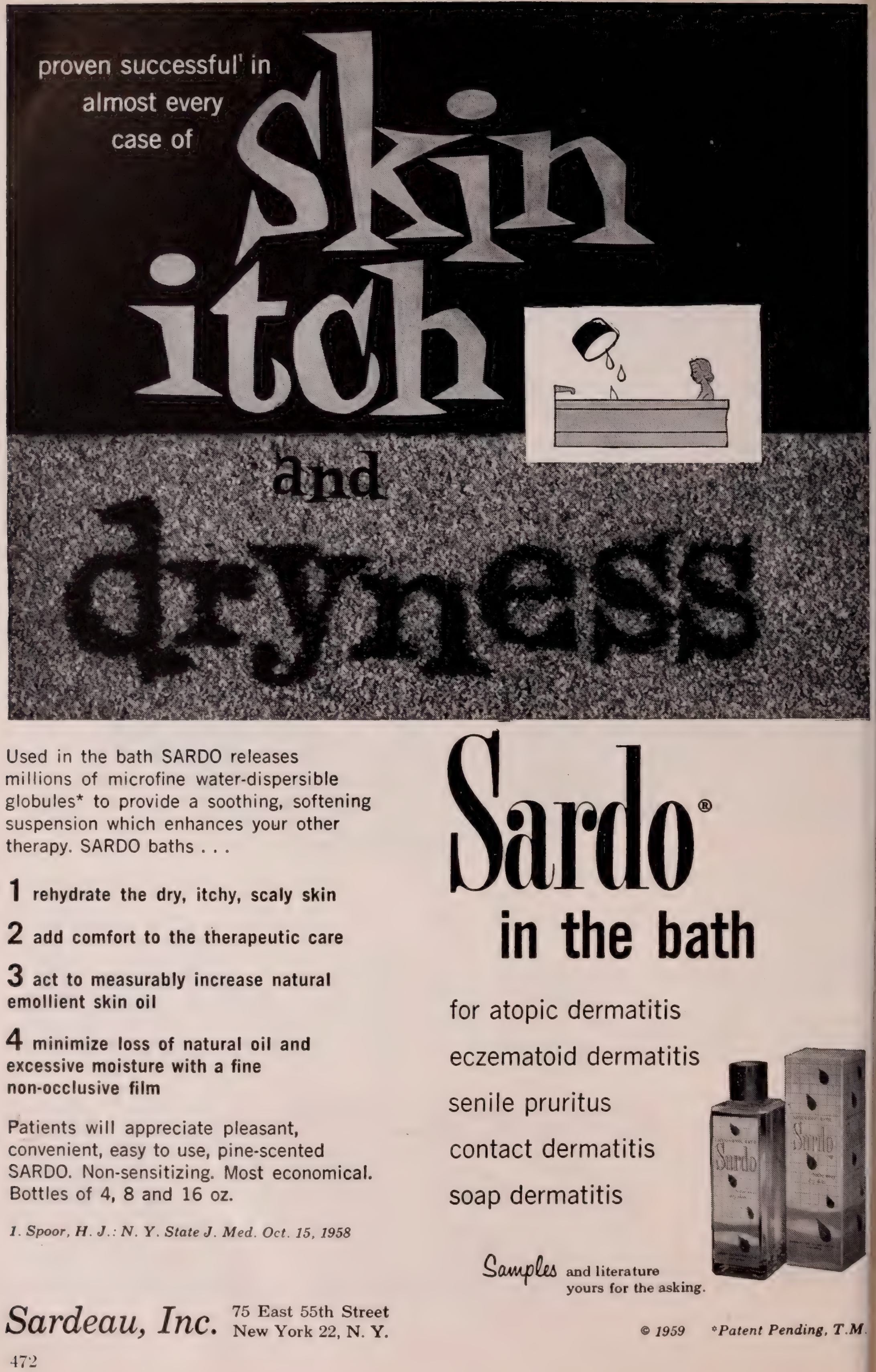

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1. Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958

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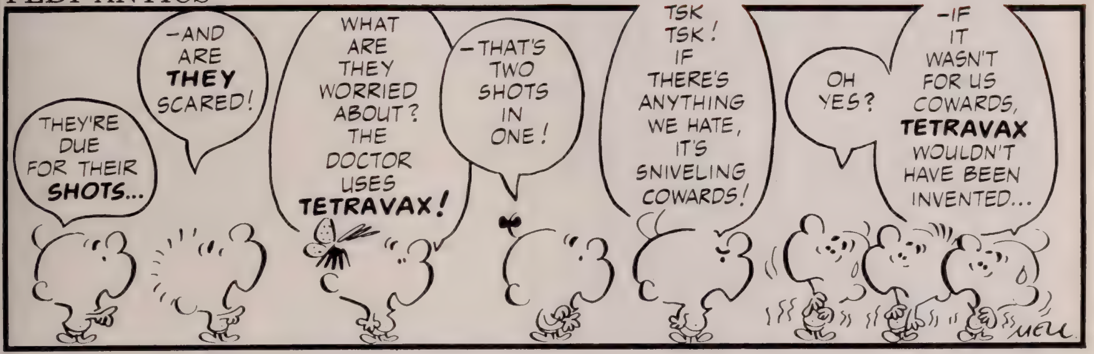
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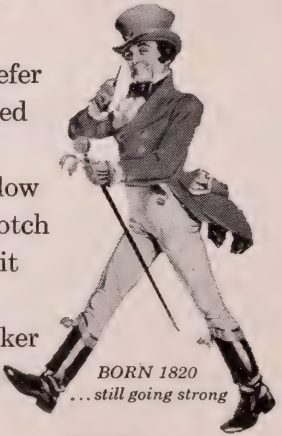
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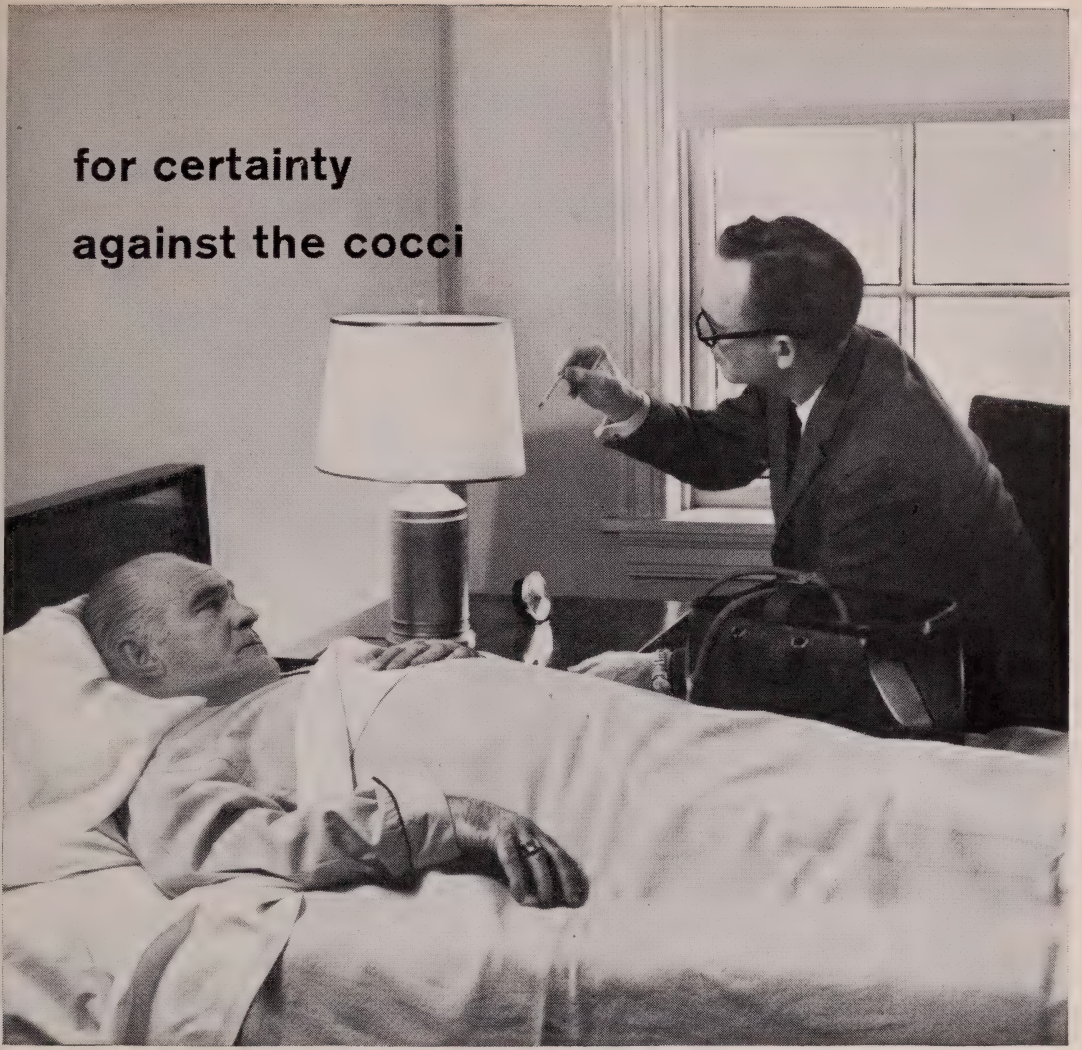

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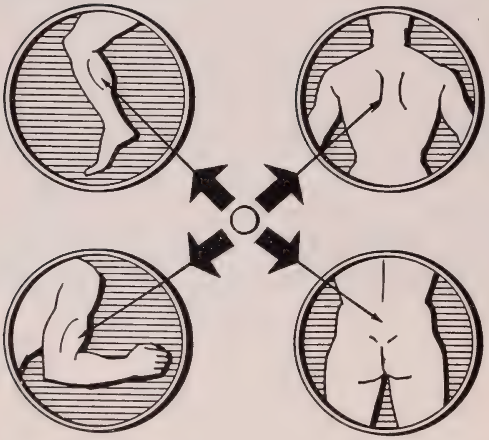

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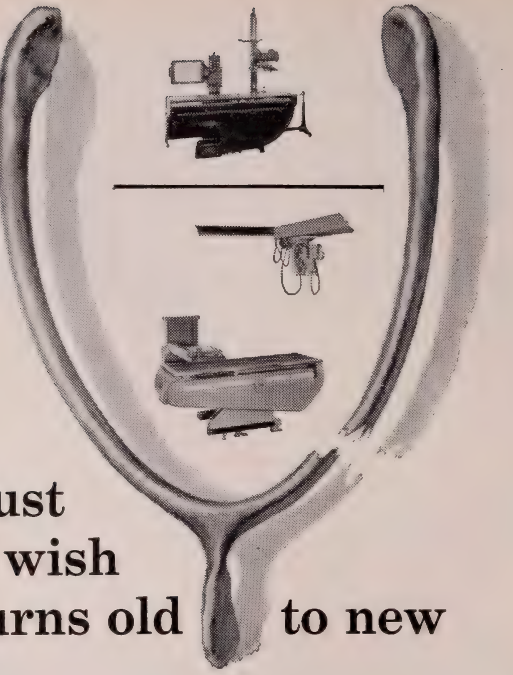

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REFERENCES:

1-11. Papers read at Seventh Symposium on Antibiotics, Washington, D. C., November 4-6, 1959.

12. Phillips, F. M.: DECLOMYCIN—Seventh Interim Report. Department of Clinical Investigation, Lederle Laboratories, Pearl River, N. Y., December 4, 1959.

CAPSULES, 150 mg., bottles of 16 and 100.
Dosage: average adult, 1 capsule four times daily.

PEDIATRIC DROPS, 60 mg./cc. in bottle of 10 cc. with calibrated dropper.

ORAL SUSPENSION, 75 mg./5 cc. tsp. in 2 oz. bottle.

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DEMETHYLCHLORTETRACYCLINE LEDERLE

a masterpiece of antibiotic design

performance

genitourinary infection. *Roberts, M. S.; Seneca, H., and Lattimer, J. K.,*[1] *New York, N. Y.*–Ninety-one per cent of the Gram-positive and 27 per cent of the Gram-negative, among 66 organisms cultured from genitourinary infection, responded to DECLOMYCIN. Serum antibiotic activity was found three times greater than with tetracycline.

toleration. *Boger, W. P., and Gavin, J. J.,*[2] *Norristown, Pennsylvania*–Side effects with DECLOMYCIN were minimal. When dosage was 0.5 to 1 Gm. daily in divided doses, only two of 82 patients exhibited nausea.

activity level sustentation. *Kunin, C. M.; Dornbush, A. C., and Finland, M.,*[3] *Boston, Massachusetts*–Of the four tetracycline analogues. DECLOMYCIN Demethylchlortetracycline showed the longest sustained activity levels in the blood.

gonococcal infection. *Marmell, M., and Prigot, A.,*[4] *New York, N. Y.*–Of 63 cases of gonorrhea, 61 promptly responded after short courses of DECLOMYCIN. Therapeutic effect was found equal to that of intramuscular penicillin.

bronchopulmonary infection. *Perry, D. M.; Hall, G. A., and Kirby, W. M. M.,*[5] *Seattle, Washington*–Of 30 cases of acute bacterial pneumonia, all were afebrile following two to 10 days of treatment with DECLOMYCIN. Results were good in 21. . . . All of six patients with acute bronchitis responded promptly.

pediatric infection. *Fujii, R.; Ichihashi, H.; Minamitani, M.; Konno, M., and Ishibashi, T.,*[6] *Tokyo, Japan*–In 309 pediatric patients with various infections, DECLOMYCIN was effective in 75 per cent.

urogenital infection. *Vineyard, J. P.; Hogan, J., and Sanford, J. P.,*[7] *Dallas, Texas*–Clinical response in pyelonephritis correlated well with results of *in vitro* sensitivity tests, which showed some strains of *A. aerogenes*, Proteus and Pseudomonas more susceptible to DECLOMYCIN Demethylchlortetracycline than to its analogues.

pneumonia. *Duke, C. J.; Katz, S., and Donohoe, R. F.,*[8] *Washington, D. C.*–Results were satisfactory in all but two of 32 cases of acute bacterial pneumonia, of which only 11 were uncomplicated. No side effects were observed.

brucellosis. *Chávez Max G.,*[9] *Mexico, D. F., Mexico*–All of nine patients with *Br. melitensis* infection were afebrile after five days on DECLOMYCIN. Blood cultures were negative in all cases on the 20th day. Side effects were limited to slight temperature increases which abated in four days.

pustular dermatosis. *Blau, S., and Kanof, N. B.,*[10] *New York, N. Y.*–Results with DECLOMYCIN were excellent in both of two cases of impetigo, one of two cases of folliculitis, six of nine cases of furunculosis, all of three cases of acne rosacea and 26 of 45 cases of acne vulgaris. Overall, results were excellent or good in 85 per cent.

antibacterial spectrum. *Finland, M.; Hirsch, H. A., and Kunin, C. M.,*[11] *Boston, Massachusetts*–DECLOMYCIN Demethylchlortetracycline was found the most effective of the tetracycline analogues against two-thirds of 680 normally sensitive strains of 15 separate species.

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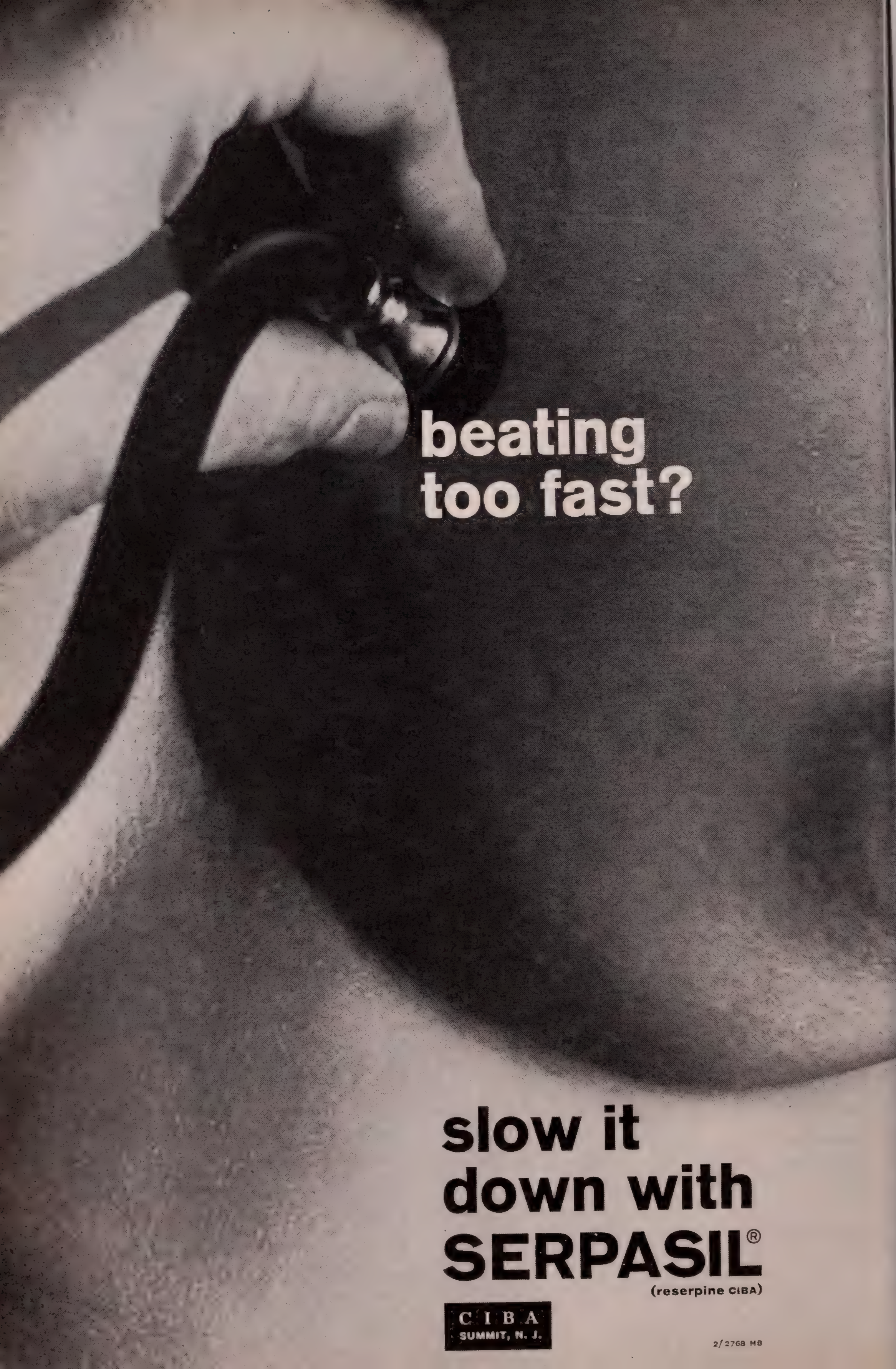
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to prevent the sequelae
of u.r.i. ... and relieve the
symptom complex

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1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

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oral liquid

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For 24 hour control: For adults 45 cc. doses before breakfast, at 3 P.M., and before retiring; after two days, 30 cc. doses. Children, 1st 6 doses 0.3 cc.—then 0.2 cc. (per lb. of body weight) as above.

1. Schluger, J. et al.: Am. J. Med. Sci. 233:296, 1957.
2. Bradwell, E. K.: Acta med. scand. 146:123, 1953.
3. Truitt, E. B. et al.: J. Pharm. Exp. Ther. 100:309, 1950.

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control the tension—treat the trauma

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meprobamate with PATHILON® tridihexethyl chloride Lederle

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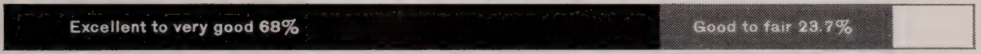

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1. Berger, F. M., Kletzkin, M., Ludwig, B. J., Margolin, S. and Powell, L. S.: J. Pharm. Exp. Ther. *127*:66, (Sept.) 1959. 2. Leake, Chauncey D.: Proceedings of the Symposium on The Pharmacology and Clinical Usefulness of Carisoprodol, Wayne State University Press. Detroit. 1959. p. 8. 3. Kestler, Otto: Ibid. p. 143. 4. Proctor, Richard C.: Ibid. p. 122. 5. Berger, Frank M.: Ibid. p. 25. 6. Goodgold, Joseph, Hohmann, Thomas and Tajima, Toshihiro: Ibid. p. 66. 7. Gammon, George D. and Tucker, Samuel: Ibid. p. 79. 8. Baird, Henry W. and Menta, Dominic A.: Ibid. p. 85. 9. Cooper, C. David and Epstein, Jerome H.: Ibid. p. 97. 10. Korst, Donald R., Gerard, R. W., Miller, James G., Small, Iver F., Graham, I. J. and Winkelman, Eugene I.: Ibid. p. 104. 11. Friedman, Arnold P.: Ibid. p. 115. 12. Trimpi, Howard D.: Ibid. p. 150. 13. Wein, Arthur B.: Ibid. p. 156. 14. Olds, James and Travis, R. P.: Ibid. p. 39. 15. Hess, Eckhard H., Polt, James M. and Goodwin, Elizabeth: Ibid. p. 51. 16. Phelps, Winthrop M.: Ibid. p. 131. 17. Spears, Catherine E.: Ibid. p. 138. 18. Hyde, L. P. and Hough, Charles E.: Ibid. p. 166. 19. Spears, Catherine E. and Phelps, Winthrop M.: Arch. Pediat., *76*:287, (July) 1959. 20. Phelps, Winthrop M.: Arch. Pediat., *76*:243, (June) 1959. 21. Friedman, Arnold P.: Paper presented at Scientific Meeting, New York State Society of Industrial Medicine, Inc., New York, Sept. 30, 1959. 22. Frankel, Kalman: Ibid. 23. Fransway, Robert L.: Ibid. 24. Kuge, T.: Unpublished reports.

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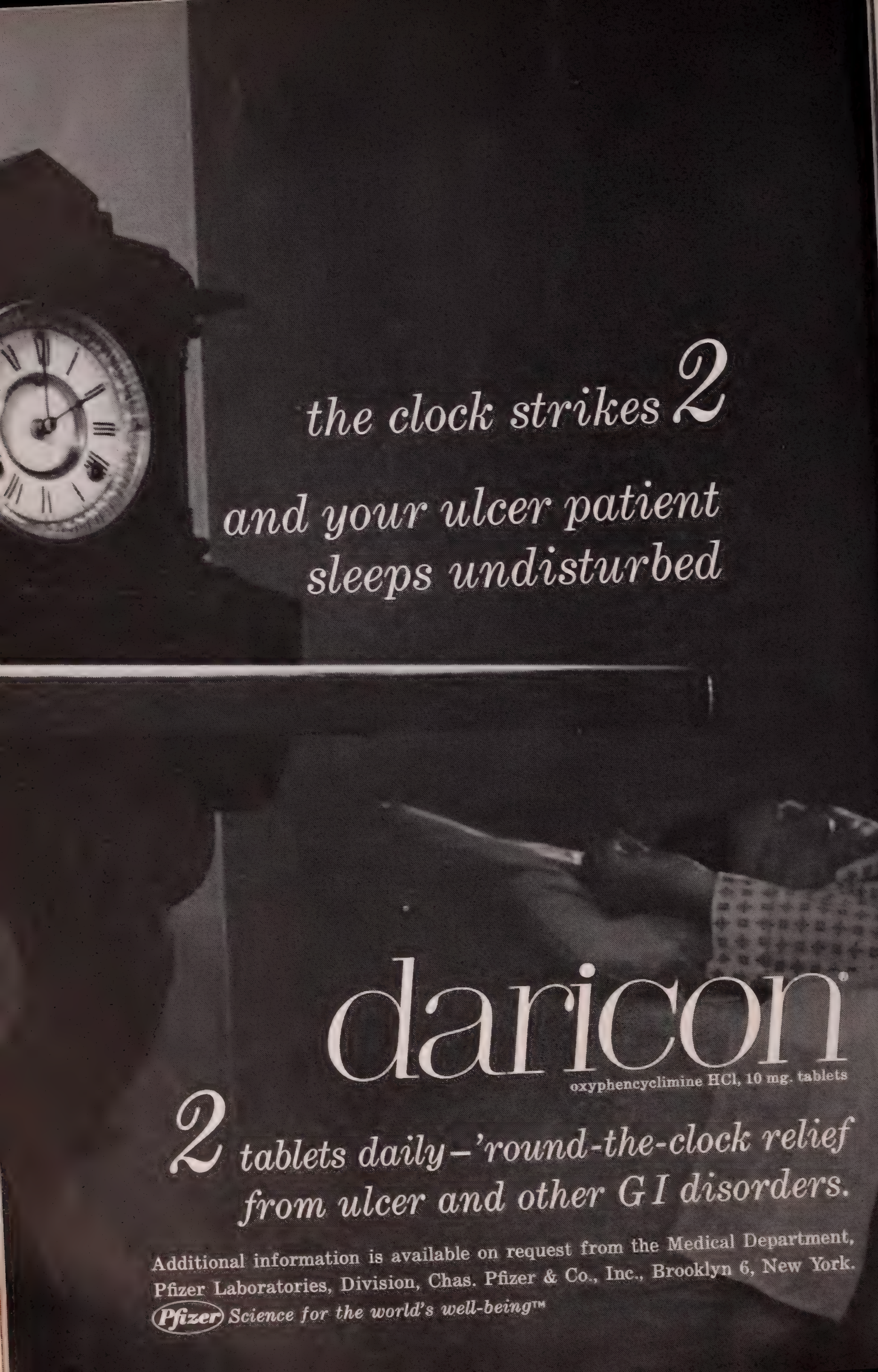

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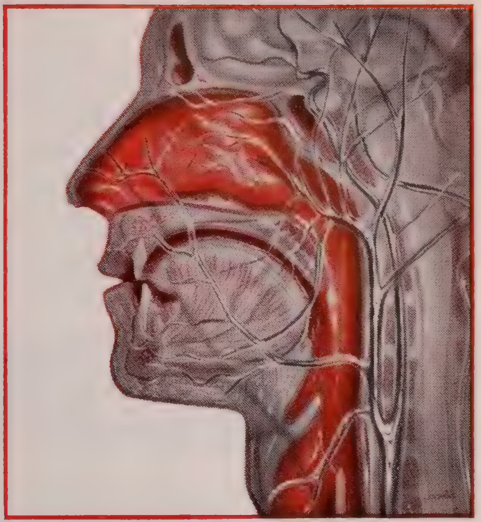

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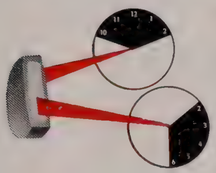

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1. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: *112*:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. *5*:1183 (Sept.) 1958.

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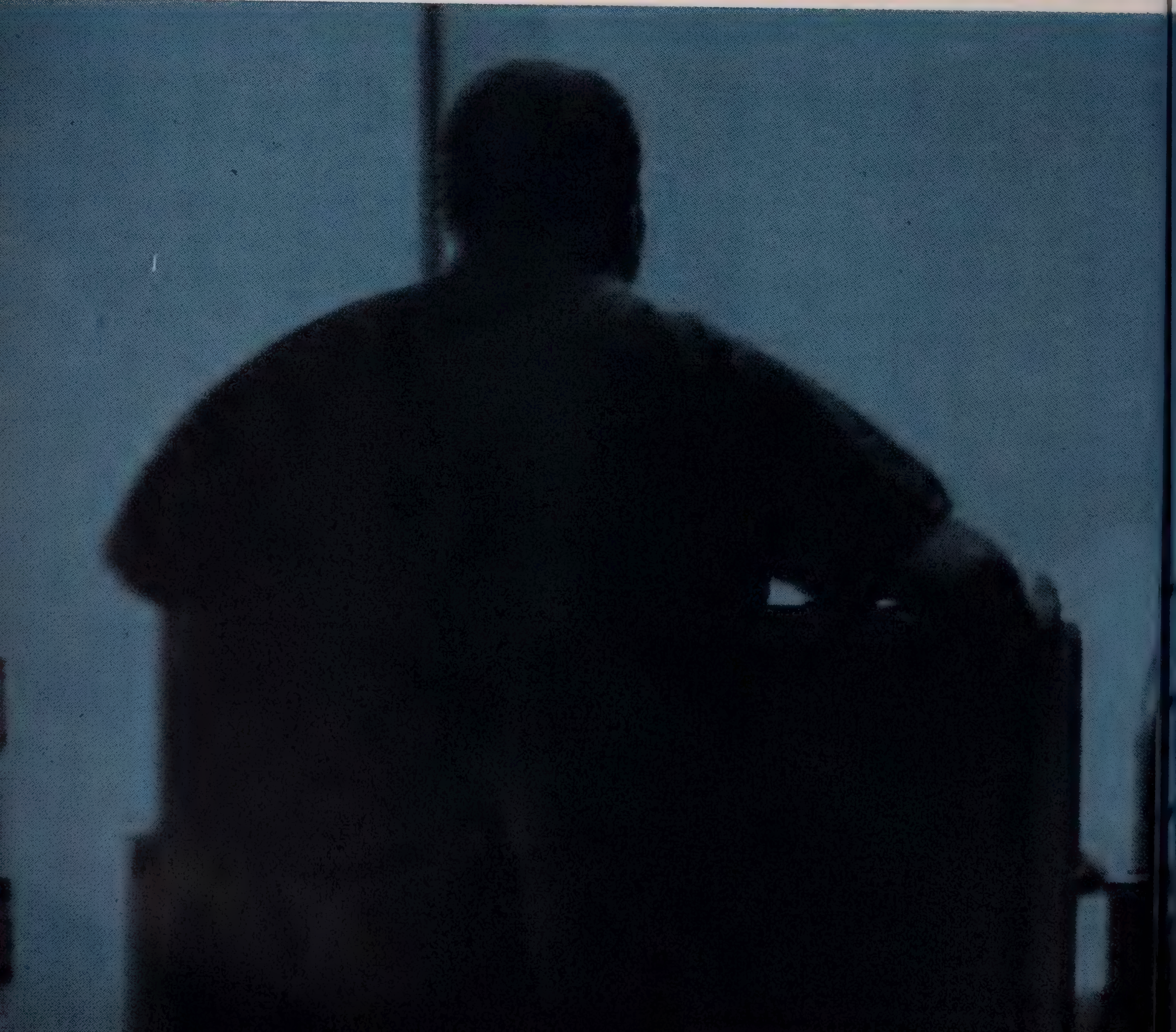

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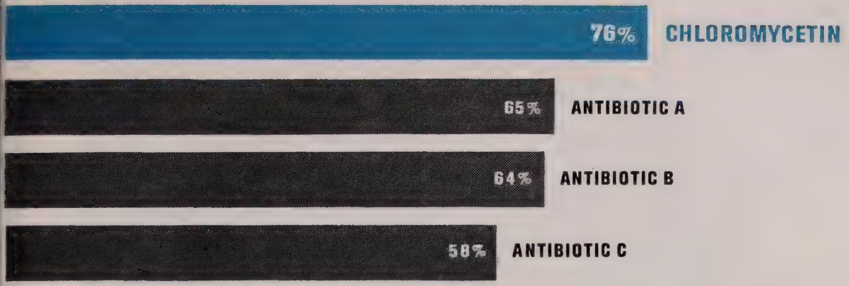

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*Adapted from Leming & Flanigan.[1]

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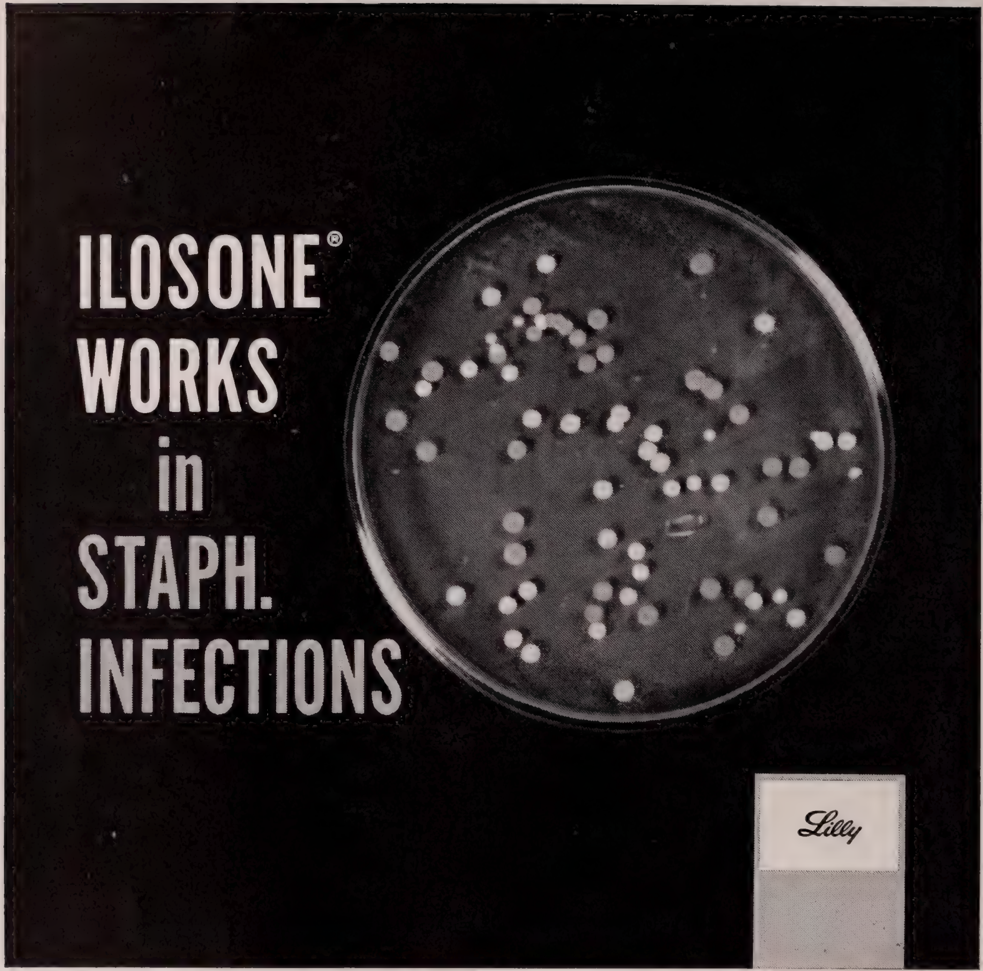

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1. Smith, I. M., and Soderstrom, W. H.: J. A. M. A., *170*:184 (May 9), 1959.

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EDITORIALS

New Penicillins

Bristol Laboratories, Inc. has recently marketed a new "synthetic" penicillin which is, they claim, superior to other oral penicillin products. Initial experiences with it were reported at the Antibiotic Symposium held in Washington, D.C., in November, 1959, and these suggest that the new preparation has many attributes which make it an acceptable therapeutic material.

"Synthetic" penicillin is not precisely a true definition of Bristol's new penicillin. The usual fermentation product is altered so that instead of penicillin G being the final product, 6 amino penicillanic acid is obtained; this chemical has no antibacterial potency. Although 6 APA can be prepared chemically in a pure state, the fermentation method is cheaper, probably more dependable and is, at this time, the preferred method of production. The side chain which makes 6 APA antimicrobially active is added synthetically—thus the name "synthetic" penicillin.

In the laboratory the new penicllin has substantially the same spectrum of activity as other penicillins, e.g. penicillin G and V. It is exceedingly potent against gram-positive and gram-negative cocci and a few other microbial species. It is not active against practically all gram-negative bacilli. In their first reports, Bristol claims that it is inhibitory to more strains of staphylococci than are other penicillins, but the number of observations made in this area are too few for fair judgment. From our own experiences with it, penicillinase derived from staphylococci neutralizes the new in the same order as it does other penicillins—thus one cannot expect "synthetic" penicillin to alter appreciably the present problems in treatment of staphylococcal disease.

A dosage schedule of any antibiotic can be arranged properly if the following data are available: The amount of drug which is required to inhibit maximally growth of the offending microorganism in vitro, and the concentration of drug attained and maintained in human plasma after a stated dose of the drug. In vitro sensitivity studies show clearly that milligram for milligram the new product is similar to both V and G. Blood level studies in humans, on the other hand, indicate that "synthetic" penicillin has certain properties which make it superior to orally administered penicillin G at least. When given, for example, in doses of 250 mg., higher blood levels obtain for a minimum of four hours than follow a similar dose of G, whether or not the stomach is empty. The differences between penicillin V and the new product are not nearly so clear cut. In general, levels of V are somewhat less but the discrepancy is not great, and thus regimens of therapy with one should not be significantly different from the other.

Similarly, when given with meals single doses of all penicillins are followed by blood levels appreciably lower than those found when the pills are given an hour before or after a meal. For most benefit then each should be administered between feedings for best utilization. The loss of absorption of penicillin V and "synthetic" penicillin with meals is significantly less than loss of G.

The suggestion that penicillin V and "synthetic" penicillin are similar in pharmacologic properties and that each is better than penicillin G is substantiated by urinary excretion studies. Following a single dose of G, approximately 15 to 18 per cent can be recovered in a twenty-four-hour collection of urine. Between 30 and 35 per cent of a dose of both V and Syncillin is recovered; thus significantly more of these is absorbed, distributed, and excreted.

General statements about proper regimens of therapy with "synthetic" penicillin are treacherous. It has been shown that, presuming reasonably normal gastrointestinal function, 250 mg. of "synthetic" penicillin three times a day supply adequate protection for the patient with beta hemolytic streptococcal infections of upper respiratory tree and for pneumococcal infection of lung. This dose is followed by levels in blood and therefore at site of infection in excess of that required for in vitro inhibition of both species of cocci for from four to five hours. The recommended eight-hour interval between single doses is safe, for maintenance of levels for the majority of hours each day is not required. Microorganisms require some time, after cessation of exposure to an antagonist, before they recover sufficiently to promote further infection.

On the other hand, a therapeutic regimen for more deep-seated infections, in which the organisms are less accessible, requires higher doses. Any effort to describe all of these would be dangerous. In general, the decision to use the oral route clinically can be made more frequently and securely with the new product than was true when G alone was available. It should, however, be used orally if gastrointestinal function is not normal.

As is so with penicillin V, the new "synthetic" penicillin is stable in acid gastric contents, but this property is essentially unimportant in the arrangement of any dose schedule.

It has been shown in many individuals hypersensitive to penicillin G that the subsequent administration of "synthetic" penicillin is *not* followed by recurrence or persistence of the allergy. While this is interesting at this time it is probable that allergic reactions to the new penicillin will inevitably develop, for no chemical is free of this kind of untoward side-reaction.

The question about relative dose schedules of intramuscularly administered penicillin G and orally given "synthetic" penicillin can be raised properly. All claims to the contrary, there is as yet insufficient evidence to state categorically that similar doses of intramuscular G and oral Syncillin result in equal protection against a specific infection, regardless of comparable blood levels. On the other hand, it has always been our considered opinion that virtually all bacterial infections caused by organisms highly susceptible to penicillin (which is true for the vast majority) can and probably should be treated by the oral route. "Synthetic" penicillin, and V too, make the opinion more secure, and they extend the usefulness of all new oral products. With this route allergic reactions probably occur less often—surely they are less severe if one does appear. There is small difference in cost; there is considerably more convenience to the patient and his physician. Finally, it must be emphasized that the long described 3 or 5 to 1 discrepancy existing between oral and intramuscularly administered penicillin no longer obtains when either "synthetic" penicillin or penicillin V is given.

The development of "synthetic" penicillin has major advantages other than clinical. Its clinical prescription is written in milligrams or grams rather than the old unitage system of penicillin G. This is sensible and scientific and is long overdue. Briefly, 250 mg. of "synthetic" penicillin is equivalent to 400,000 units of penicillin G or V and between 750 mg. and 1 Gm. will be the daily requirement for management of most infections in adults. More, of course, is required for chronic or deep-seated or more serious diseases with bacteremia.

Syncillin (Bristol) is the first of a whole series of synthetic penicillins, each of which might have attributes which benzyl or phenoxymethyl penicillin does not have. It is likely, for example, that an immediate one will bypass the neutralizing effects of penicillinase produced by staphylococci. Others can be capable of inhibiting all or most species of gram-negative bacilli. These and other effects certainly can be anticipated.

It is good to see this kind of research in the field of penicillins. The original is still the most effective and safest antibiotic of all—even better ones will make the physician's job easier.

We can herald the new partially synthesized penicillin as a significant achievement, not particularly because it is appreciably better than its predecessors (for it is not), but in the main because it represents a huge step forward in the development of even more potent and unique ones.—P.A.B.

Medical Care vs. Doctor Care

As discussion of legislation in relation to care of the sick commences in the first year of the new decade it is probable that the publicity relating to it will repeat the errors of former years.

We refer to the indiscriminate use of the terms "medical care" or "medical services" when those services rendered by doctors only are referred to. Why is this important? It is important because people are prone to forget that no one but a physician can give them "doctor care."

On the other hand, "medical care" is a broad term. It includes the services of hospitals, nurses, medicines, dentists, and paramedical technicians, to name but a few.

So when the political orators begin again to bring up the costs of "medical care," let those costs be broken down in such a way that the public knows what "doctor care" as opposed to "medical care" in general is costing them.

If this is done, it may surprise many to know that out of what is called "the medical dollar" the physician receives somewhat less than twenty-five cents. During the past ten years doctors' fees have not increased in proportion to the other items included in the cost of living index.

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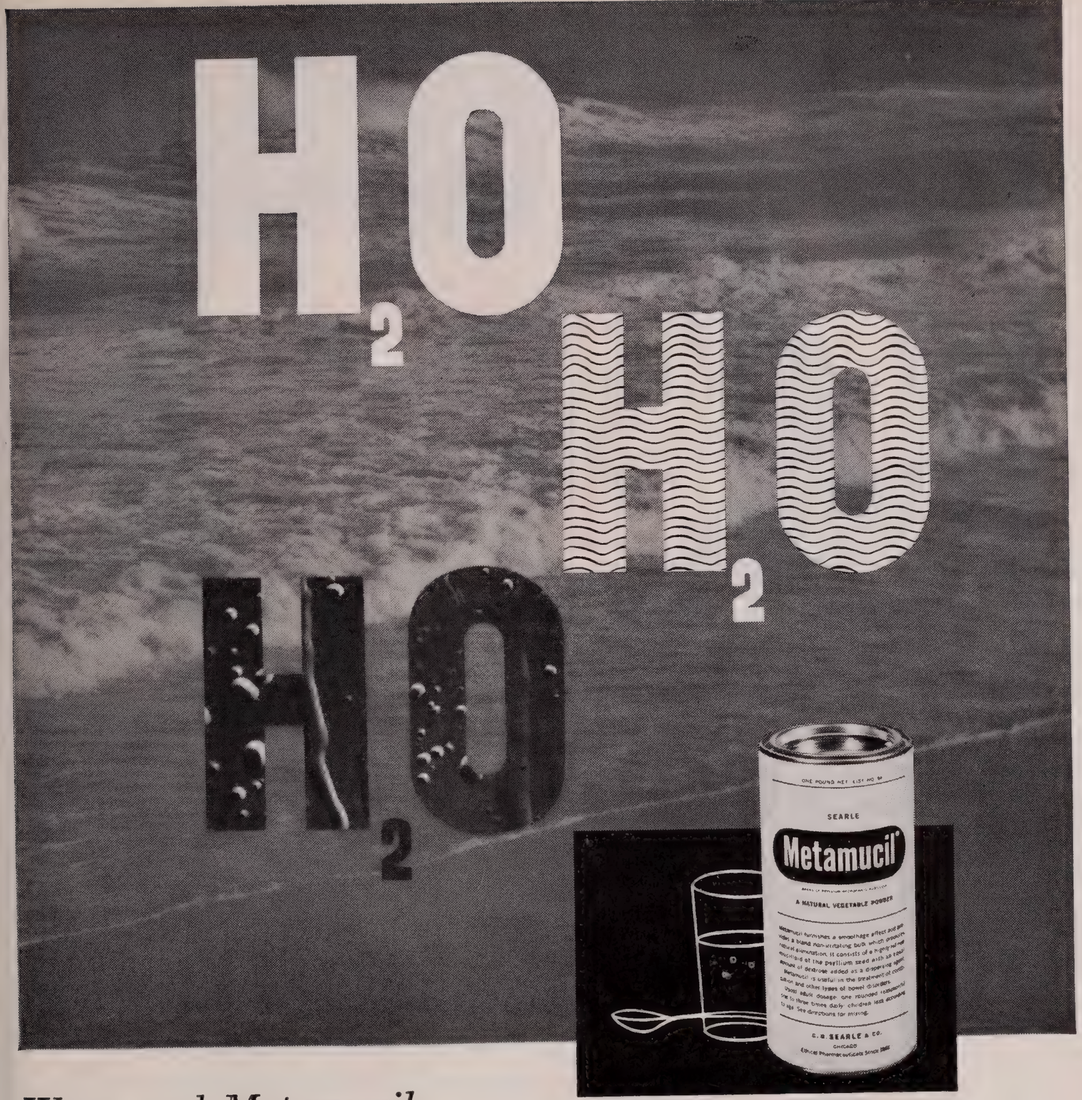
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(1) Leslie, A., and Simmons, D. H.: Am. J. M. Sc. *234*:321, 1957. (2) Settel, E.: Am. Pract. & Digest Treat. *8*:1249, 1957.

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Use of Halothane (Fluothane) in Obstetric Anesthesia

Preliminary Report

JAMES A. CUTTER, M.D., AND BENTON D. KING, M.D., BUFFALO, NEW YORK

(From the Department of Anesthesiology, Edward J. Meyer Memorial Hospital, and the Department of Anesthesiology, University of Buffalo)

SINCE the first studies on halothane (Fluothane)* were published by Raventós[1] in 1956, many reports have appeared on the clinical use of this fluorinated hydrocarbon for surgical anesthesia. Its relative safety when it is administered in accurately controlled concentrations by the anesthesiologist experienced in its use has been well established. No significant pathologic changes have been found to result from prolonged or repeated administration.

Our early clinical experiences with halothane suggested its suitability for the production of general anesthesia for obstetric delivery. Particularly desirable is the ability of this agent to produce both rapid induction of anesthesia and rapid recovery together with an apparently low incidence of retching or vomiting. The nonirritating quality of halothane vapor and the absence of respiratory tract or salivary secretions during its administration, even in the unpremedicated patient, facilitate the induction of anesthesia.

A great respect for the potency of halothane has been acquired. In common with numerous other observers, we have found that the administration of relatively high concentrations of this drug often may result in the development of hypotension and a diminished respiratory volume. Such results were found to occur when the drug was administered in a conventional anesthesia apparatus utilizing uncalibrated vaporizers or systems of anesthesia in which the inspired drug concentration could not be regulated accurately. These limitations were overcome by adhering to two principles which we have adopted for the safe administration of halothane: (1) vaporization of the agent in a carefully calibrated, flow-and-temperature-compensated vaporizer specifically designed for this drug, and (2) utilization of a nonrebreathing system of anesthesia. By these means the actual inspired concentration of the drug during each respiration is known, and the possibility of administering excessive concentrations as a result of deficiencies in equipment is minimized.

Since 1957, a total of 310 vaginal deliveries have been performed under halothane anesthesia. No maternal mortalities have occurred in this group nor has any maternal or infant morbidity developed which could be related to the anesthetic agent. Absence of such complications may be the result primarily of the utilization of very light planes of surgical anesthesia for uncomplicated vaginal deliveries. However, in several instances when the attending obstetrician elected to perform internal version

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Anesthesiology, May 12, 1959.

* Halothane (Fluothane) for this study was supplied by Ayerst Laboratories, New York City.

and breech extraction of the infant, halothane was found to be capable equally of deeper anesthesia and of satisfactory uterine relaxation without untoward secondary effects.

Albert,[2] in 1958, briefly reported his finding of uterine relaxation and excessive bleeding when halothane was administered for obstetric anesthesia. Russell[3] noted the same effect during three cesarean sections, and MacKay[4] reported without elaboration that 9 of 18 patients receiving halothane for vaginal delivery showed evidence of uterine relaxation to a troublesome degree.

Because our early clinical observations did not agree with these reports, it was decided to evaluate quantitatively the various effects of halothane on both mother and infant. A series of 223 vaginal deliveries have been studied in detail. Of these deliveries 170 were done with halothane anesthesia. For comparison, 53 deliveries were performed under chloroform. This agent was selected for two principal reasons: It is often referred to as being similar to halothane, and it still enjoys popularity as an obstetric anesthetic agent in some areas.[5]

Method of Study

Patients were unselected for either of the anesthetic agents to be administered with the following exceptions: Chloroform was not administered to any patients with severe toxemia of pregnancy, liver disease, or cardiac disease.

Halothane was administered via a nonrebreathing system of anesthesia employing a Ruben or Fink valve at the face mask. The agent was volatilized in a Fluotec vaporizer, which compensates for both temperature change and flow variations between 4 and 14 L. per minute.[6] Gases utilized for the vaporization of halothane were nitrous oxide and oxygen. The maximum concentration of nitrous oxide employed was 75 per cent. Total gas flows were constantly altered within the range of from 8 to 20 L. in order to maintain a full reservoir bag.

In an effort to achieve equivalent accuracy and safety in the administration of chloroform, a Chlorotec* vaporizer was produced by Cyprane, Ltd., Keighley, England, the manufacturers of the Fluotec vaporizer. The Chlorotec is identical in appearance to the Fluotec and has been constructed to provide similar flow and temperature compensation. The original model was calibrated from 0.5 to 3 volumes per cent in 0.1 per cent increments, but its inability to deliver concentrations greater than 3 per cent occasionally made the achievement of surgical anesthesia unduly prolonged. A second model was obtained with a range of up to 5 volumes per cent, which was adequate. With chloroform, a nonrebreathing system of anesthesia was employed which was identical in all respects to that used for halothane. Nitrous oxide and oxygen were administered with chloroform in the same concentrations and flows as with halothane.

Detailed records were kept of the prenatal, delivery, and postpartum courses. Evaluation was made of the state of hydration and nutrition, duration of fasting from food and liquids, parity, duration of labor, sedation administered during labor, and whether onset of labor was spontaneous or induced. No significant differences in any of these categories were present in the two groups. Three sets of twins are included in the series, all three occurring in the halothane group. Three stillborn births are included in the series, 2 in the halothane group and 1 in the chloroform group. All 3 occurred in mothers with complications of pregnancy or labor, were diagnosed prior to the time of delivery, and were not felt to be related in any way to the anesthesia administered.

Careful observations were made to evaluate the condition of the uterus and the possible contribution of anesthesia to maternal blood loss. No practical method of measuring total blood loss accurately in such a large series of patients is available. Prenatal and postpartum hemoglobin de-

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* The Chlorotec vaporizers were provided by Fraser Sweatman, Inc., North Tonawanda, New York.

TABLE I.—Scoring System for Evaluation of Newborn Infant (Modified After Apgar[7])*

Sign	Scoring Points 0	1	2
Heart rate	Absent	Below 100	Over 100
Respiratory effort	Absent	Slow, irregular	Good, crying
Muscle tone	Limp	Some flexion of extremities	Active motion
Response to aspirating bulb in nostril	No response	Grimace	. . .
Color	Pale, blue	Body pink, extremities blue	Completely pink

*Observations made sixty seconds after complete birth of the infant. Highest possible score: 9 points.

terminations were recorded, but such determinations are incapable of showing more than very gross blood volume alterations. Inasmuch as the questions which have been raised regarding the use of halothane in obstetric delivery have been related to uterine relaxation, two observations were made by the obstetrician immediately after removal of the placenta. The condition of the uterus was noted as being either firm or soft, and the height of the fundus was estimated in relation to the umbilicus: whether it was at the level of the umbilicus or was a specified number of centimeters above or below the umbilicus. An oxytocic drug was administered to all patients prior to the removal of the placenta, and the specific drug, dose, route, and time of administration were noted. These later variables were equalized in the two series. Observations regarding the occurrence of immediate or delayed postpartum hemorrhage were recorded.

Two methods were employed to evaluate the condition of the infant at birth. First, the time in seconds was recorded from the completion of delivery to the onset of spontaneous breathing and of crying. In addition, sixty seconds after the completion of the delivery, all infants were scored according to the system of Apgar,[7] an objective method of evaluation which assigns numerical values to respiratory function, cardiovascular function, reflex response, and muscle tone. Because a rubber suction bulb is utilized by the obstetric service of this hospital rather than an intranasal catheter, one modification was made in the Apgar scoring system: A grimace could be elicited by the suction bulb but coughing or sneezing did not occur because the depth of insertion was insufficient. Therefore, the highest score an infant in the best possible condition could receive was 9 rather than the 10 points of Apgar (Table I).

TABLE II.—Incidence of Complications of Pregnancy and Labor

Complications	Halothane Number of Patients	Halothane Per Cent	Chloroform Number of Patients	Chloroform Per Cent
Toxemia of pregnancy	17	10.0	3	5.7
Complications of labor	11	6.5	1	1.9
Pre-existing cardiac disease	9	5.3	1	1.9
Total patients	170	100	53	100

Observations on the progress and complications of anesthesia were recorded by the anesthetist as they occurred. Similar observations were continued during emergence from anesthesia and throughout the postpartum course in the hospital.

Results

As shown in Table II, halothane anesthesia was administered to the majority of patients with complications of pregnancy and labor. Anesthesia for the remainder of the series was unselected.

Estimations of the degree of uterine relaxation after removal of the placenta by both qualitative and quantitative observations confirm the fact that there is greater postpartum relaxation with chloroform than with halothane (TableIII). The finding of a soft uterus was 36 per cent more common and elevation of the fundus above the umbilicus was 60 per cent more prevalent in patients receiving chloroform than in those

TABLE III.—CONDITION OF UTERUS AND HEIGHT OF FUNDUS IMMEDIATELY AFTER REMOVAL OF PLACENTA

Conditions	Halothane Number of Patients	Halothane Per Cent	Chloroform Number of Patients	Chloroform Per Cent
Condition of uterus				
Firm	144	84.7	42	79.2
Soft	26	15.3	11	20.8
Height of fundus				
Above the umbilicus	8	4.7	4	7.5
At the umbilicus	34	20.0	11	20.8
Below the umbilicus	128	75.3	38	71.7

TABLE IV.—CONDITION OF NEWBORN INFANTS

Evaluation	Halothane	Chloroform
Breathing and crying times		
Average time to onset of breathing (seconds)	50.8	69.5
Average time to onset of crying (seconds)	66.1	77.0
Modified Apgar scoring system		
Baby score 0 to 2	10	6
Per cent of total	5.8	11.5
Baby score 3 to 6	39	13
Per cent of total	22.8	25.0
Baby score 7 to 9	122	33
Per cent of total	71.4	63.5
Total live births	171	52

TABLE V.—CONCENTRATIONS OF ANESTHETIC AGENTS REQUIRED

Concentrations	Halothane (Volume Per Cent)	Chloroform (Volume Per Cent)
Average of maximum concentrations used for induction of anesthesia	1.9	2.8
Range	0.5 to 3.0	0.5 to 5.0
Average of mean concentrations used for maintenance of anesthesia	0.7	1.0
Range	0.3 to 1.3	0.5 to 2.5

receiving halothane. There were no postpartum hemorrhages in either group. One patient in each group had moderately severe hemorrhage during delivery from lacerations of the cervix. No other unusual bleeding was recorded.

Using either the modified Apgar score or the time lapse from completion of delivery until the onset of breathing and crying, the condition of the newborn infant is found to be better with hatholane than with chloroform (Table IV). Nearly twice as many infants delivered under chloroform fell into the lowest point score group (0 to 2 points) as compared with those under halothane. Four internal versions with breech extractions were performed, and these infants were found to have uniformly low infant scores. Three of these procedures appear in the halothane group and one in the chloroform group.

From the average concentrations required for both induction and maintenance of anesthesia, as shown in Table V, it is found that halothane has approximately one and one-half times the potency of chloroform. This agrees with Raventós'[1] finding in experimental animals. For both agents, the optimum maintenance concentration was found to be slightly more than one-third the induction concentration. In spite of the lower concentrations required with halothane, it is shown in Table VI that halothane inductions required only 58 per cent as much time as chloroform to reach plane 1 of surgical anesthesia.

Experience with halothane has shown that by employing higher concentrations of the agent it is possible to accomplish induction of anesthesia in as little as forty seconds. This speed is a function not only of the potency of the drug but also of its apparently complete lack of irritation, which permits administration of the maximum induction concentration after only a few breaths. Early experiences with halothane in obstetric deliveries suggested that such rapid inductions are not desirable routinely because of the occasional occurrence of long periods of apnea. Such periods were usually found to follow immediately after the hyperventilation produced by a uterine contraction.

TABLE VI.—Observations During Induction of Anesthesia

	Halothane		Chloroform	
Observations	Number of Patients	Per Cent	Number of Patients	Per Cent
Total incidence of excitement	47	27.6	26	50.0
Minimal excitement	36	21.2	17	32.7
Moderate excitement	10	5.9	7	13.5
Marked excitement	1	0.6	2	3.8
Total incidence of secretions	20	11.8	18	34.6
Minimal secretions	20	11.8	15	28.9
Moderate secretions	0	0	2	3.8
Marked secretions	0	0	1	1.9
Total incidence of retching	3	1.8	11	21.2
Total incidence of vomiting	2	1.2	2	3.9
Average time required to reach plane 1 of surgical anesthesia (minutes)	2.9	...	4.9	...

TABLE VII.—Blood Pressure Depression During Anesthesia

Blood Pressure	Halothane	Chloroform
Patients with systolic fall	156	43
Per cent of total group	91.8	81.1
Average fall, mm. of mercury	17.7	11.7
Patients with diastolic fall	119	32
Per cent of total group	70.0	60.4
Average fall, mm. of mercury	9.9	5.6

Apnea was treated readily by manual ventilation until the resumption of spontaneous respirations, but it was found that prolonged apneas could be avoided by employing lower concentrations of halothane. The average induction times shown in Table VI, then, represent what was felt to be closer to the optimum speed of induction rather than the maximum attainable with the agent.

The incidence of induction excitement with chloroform was nearly twice that of halothane. Even when belladonna derivatives were omitted, respiratory tract secretions were unusual with halothane and when present were only minimal. Secretions were three times more prevalent with chloroform and tended to be more profuse. Retching during induction was found to occur twelve times more often with chloroform. Vomiting during induction was observed only twice in each group.

Deviations of blood pressure during obstetric anesthesia are more difficult to evaluate than during surgical anesthesia. It is doubtful if any blood pressures recorded during the first or second stages of labor represent a true base line or "resting" blood pressure, even if taken between contractions. The combined effects of physiologic alterations and emotional influences usually result in an elevated blood pressure prior to the induction of anesthesia. A moderate decline in blood pressure, especially systolic, is usually expected to follow the onset of any form of anesthesia during labor. This is illustrated by both groups in Table VII, which is a comparison of the preinduction blood pressure with the lowest pressure recorded during anesthesia. Patients receiving halothane had a higher incidence of blood pressure depression than those receiving chloroform although none were severe enough to arouse concern. The greatest lowering of blood pressure was seen in toxemias of pregnancy. As shown in Table II, most of these patients received halothane.

The rapidity of emergence from halothane is illustrated in Table VIII, where evaluation of three different levels of responsiveness showed that recovery from chloroform requires one and one-half times as long even though the average duration of anesthesia in both groups was essentially the same. Vomiting in the recovery period occurred in less than 3 per cent of the patients receiving halothane and was approximately seven times more common in the chloroform group.

By utilizing the data found in Tables V,

TABLE VIII.—DURATION OF ANESTHESIA AND OBSERVATIONS DURING RECOVERY

Duration Time	Halothane	Chloroform
Average duration of anesthesia (minutes)	25.4	24.3
Range (minutes)	5 to 50	10 to 45
Number of anesthesias lasting 30 minutes or longer	53	15
Average recovery time (minutes) from discontinuation of all agents until:		
Response to painful stimulation	2.1	3.1
Response to spoken name	3.3	4.8
Able to follow simple commands	4.0	6.0
Incidence of postanesthesia vomiting (per cent)	2.9	19.2

VI, and VIII, the quantity of halothane consumed per delivery can be calculated. At 22 C. and 760 mm. mercury atmospheric pressure and using an average gas flow of 10 L., approximately 10 cc. of halothane would be employed during the average twenty-five-minute obstetric delivery.

Comment

Chloroform has long been regarded by many physicians as an agent which produces ideal conditions for vaginal delivery. The advantages frequently attributed to chloroform for use in obstetrics include: ease of administration with simple equipment (usually open-drop mask), relative absence of effect on the infant, rapid induction with little excitement, rapid recovery, and adequate relaxation for intrauterine manipulation.

The excellent studies of Waters' group[8] in 1950 justify the conclusion that administration of chloroform in unmeasured concentrations with inadequate inspired oxygen tensions, as with the open-drop method, is hazardous. His recommendations for an accurately calibrated vaporizer which provides regulation of administered concentrations of 0.1 per cent have finally been fulfilled by the Chlorotec vaporizer utilized in this study.

It cannot be denied that all currently available general anesthetic agents have some effect on the infant, but in this study halothane was found to have less depressant effect on the newborn than chloroform. Halothane was found to be capable of permitting more rapid induction of anesthesia with less excitement, secretions, retching, and vomiting. Recovery time was shorter with this agent than with chloroform and postanesthesia vomiting was markedly less. Adequate relaxation was obtained for the performance of version and extraction. By these criteria, then, halothane would appear to provide significant improvement over chloroform for vaginal delivery.

Insufficient statistical data are available at the present stage of this investigation to present tabulated data regarding another significant difference between chloroform and halothane: the incidence of cardiac arrhythmias. These are readily discernible in the peripheral pulse during many chloroform anesthesia procedures, usually in the form of tachycardia or irregular rhythm or both. Additional work is being carried out to monitor patients continuously by cardioscope and electrocardiograph. Fifteen such electrocardiograms have been completed. Patients under chloroform have exhibited ventricular tachycardia with premature contractions, which are often of multifocal origin. This arrhythmia is often considered the immediate precursor of ventricular fibrillation. None of the patients receiving halothane have shown ventricular tachycardia. These incomplete studies are being continued together with additional comparative series of halothane with other anesthetic agents employed in obstetrics.

In this series of 170 deliveries under halothane anesthesia there has been a complete absence of bleeding which might be attributed to the effects of anesthesia. That uterine relaxation has not been a problem is verified by the fact that in 95 per cent of these patients the fundus was found to be contracted down to the level of the umbilicus or below following removal of the placenta, and 85 per cent of the uteri were found to be firm. The remainder of the patients responded to massage or to the administration of additional oxytocic drugs.

In a recent report by Albert[9] of 68 obstetric anesthesia procedures, it was reported that 29 of the 32 patients receiving halothane for a period of thirty minutes or more showed a boggy uterus with excessive bleeding. The complete absence of this complication in the 53 patients in our series in whom we used halothane anesthesia lasting more than thirty minutes can be explained logically only on a basis of difference in anesthetic concentration. The actual concentrations are not reported by Albert, but the apparatus for administration consisted of a demand-type McKesson machine with 50 per cent nitrous oxide and oxygen passing through a trichloroethylene vaporizer containing halothane. Intermittent administration was employed in a nonrebreathing system. Because of the absence of either flow or temperature compensation in this type of vaporizer, it would probably exhibit a deficiency common to three similar vaporizers evaluated by MacKay and Kalow.[6] In these devices there is a tendency to overshoot the concentration when gas is first passed through the vaporizer, followed by an eventual fall to a much lower plateau. This sequence would be continuously repeated when such a device is used in a demand system, making accurate calibration impossible. Presumably a conventional McKesson vaporizer was employed, which would mean that halothane concentrations would not be known even if the device were stable. In such a system it is conceivable that excessive concentrations of the agent could be administered.

In Russell's[3] report of three cesarean sections under halothane anesthesia, similar uterine relaxation with excessive bleeding was noted. Here again the possible inhalation of concentrations in excess of those utilized in this study must be considered. From the 8 L. gas flow reported for these anesthesias it is probable that a semiclosed system of anesthesia was employed. In such a system, even though a Fluotec vaporizer was used, the partial rebreathing could eventually permit the accumulation of higher inhaled halothane concentrations than the vaporizer setting would indicate.

Although not specifically related to obstetric anesthesia, the profound blood pressure falls occasionally reported during the use of halothane are probably related to the administration of a relative excess of the agent.

By using light anesthesia and carefully controlled concentrations in the present series no such complication was encountered.

It is often difficult for the anesthetist who administers halothane for the first time to appreciate the marked difference which can be produced by a few tenths of a per cent alteration in concentration. This potency has affirmed our belief in the previously mentioned principles for the safe administration of the agent: (1)vaporization in an accurately calibrated flow-and-temperature-compensated vaporizer, (2) utilization of a nonrebreathing system, and (3) administration by an anesthetist experienced in its properties.

Summary

The use of halothane (Fluothane) anesthesia in 310 vaginal deliveries is reported. A series of 223 anesthesia procedures consisting of 170 by halothane and 53 by chloroform are presented with detailed observations of the effects of the agents on mother and infant.

In comparison with chloroform, halothane was found to produce less uterine relaxation, a superior condition of the infant, and a more rapid induction of and recovery from anesthesia with fewer undesirable side-effects. Halothane was found to be one and one-half times more potent than chloroform.

Uterine relaxation, excessive bleeding, and profound blood pressure depression were not noted in this series. The possible cause of these complications as reported by others is discussed.

The criteria for the safe administration of halothane are suggested.

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Discussion

Gertie F. Marx, M.D., *New York City.*—Exactly ten years ago, at the 1949 meeting of the Medical Society of the State of New York, Jahraus[a] presented a paper on "Inhalation Anesthesia in Obstetrics," in which he discussed the practice of obstetric anesthesia at Deaconess Hospital in Buffalo during the year 1948. He stated that "chloroform was used in 13.1 per cent of the obstetric anesthetics and was found to be safe and dependable. It was used particularly in those deliveries requiring extreme relaxation of the uterus such as podalic version and extraction or where birth was imminent and anesthesia started in bed or on the cart." In spite of favorable reports of this nature, and in spite of the re-evaluation of chloroform by Waters[8] and his coworkers, the agent has not regained popularity in most of the United States, either for surgical or for obstetric anesthesia.

Halothane, on the other hand, is finding wide acceptance and favor in the short time since its availability for clinical use. A multitude of papers have been published concerning the merits of halothane in surgical anesthesia, but the reports of its use in obstetrics have been scant. This is most probably related to economic and technical considerations rather than to the anesthetic properties of the agent.

The present investigation is the most extensive of its kind, being a detailed study of 170 vaginal deliveries performed under halothane anesthesia. It is to be emphasized that the concentration of halothane was kept at low levels; the mean during maintenance was 0.7 volume per cent with a range of from 0.3 to 1.3 volume per cent. Uterine relaxation and excessive bleeding were not observed.

Embrey, Garrett, and Pryer[b] of the Departments of Obstetrics and Anaesthetics at the University of Oxford recently reported a study of the effects of halothane anesthesia on uterine contractility by means of external tocography. This measurement consists of placing a receptor unit on the abdomen over the uterus, the contractions of which are transmitted to a recording apparatus. The device was first described by Embrey[c] in 1955. The tocographic records of 12 parturient women delivered under halothane anesthesia demonstrated that "in each case uterine contractility was clearly inhibited, with obliteration of both spontaneous and oxytocin-induced contractions. The inhibitory effect was rapidly produced at a relatively light plane of anesthesia and quickly disappeared when consciousness was recovered." In this British series, halothane was not administered with a nitrous oxide-oxygen mixture such as was used by Dr. Cutter and Dr. King, but was given with air enriched with oxygen by means of a modified Epstein-Macintosh-Oxford vaporizer and the Oxford inflating bellows. Concentrations of more than 3 per cent halothane were never required, and most patients were maintained on 2 per cent.

Both of these studies utilized nonrebreathing technics so that the concentration of inhaled halothane was always known with accuracy. Comparing the results of the two investigations, one may surmise that only concentrations of over about 1 volume per cent of inhaled halothane cause inhibition of uterine contractility. It is obvious that less of the agent is needed to obtain a certain level of anesthesia when another anesthetic agent such as nitrous oxide is added to the mixture. Therefore, in the usual obstetric anesthesia, halothane is best given in a nitrous oxide-oxygen mixture. In the occasional patient in whom relaxation of the uterus is essential, the agent may be administered in oxygen alone, keeping in mind the danger of cardiovascular depression inherent with higher concentrations.

Administered by experienced anesthesiologists with the proper apparatus and technic, halothane may well prove to be a valuable addition to our armamentarium of inhalation agents for obstetric anesthesia.

It is potent, rapid in onset and recovery, nonirritating to the respiratory passages, nonexplosive, and apparently quite versatile in its effect on the human uterus.

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Clinical Electromyography

Usefulness in Differentiating Myopathies from Neuropathies

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Although Matteucci had described the presence of action potentials in contracting muscles in 1838,[1] practical clinical application had to await the invention of the cathode ray oscilloscope and the introduction of the coaxial needle electrode by Adrian and Bronk in 1929.[2] The present extensive clinical utilization of electromyography as an important diagnostic tool really dates, however, from the well-documented article published by Weddell, Feinstein, and Pattle in 1944 in *Brain.*[3] The early apparatus were usually locally constructed assemblages of the necessary electronic components. Very rapidly, however, electromyographs which were simple to use and entirely adequate for clinical and investigative purposes were placed on the market in various countries.

Essentially, an electromyograph is an apparatus for amplifying and displaying the action potentials produced in the muscle under normal and pathologic conditions. Connection to the muscle is established by means of a needle electrode plunged into the muscle itself. Although it is possible to detect action potentials by means of skin surface electrodes, the wave forms seen in this case are the summation of a great many muscle units with distorted wave shapes. Surface electrodes cannot be used to determine a potential description. The surface electrodes are useful, however, for kinesiologic studies in connection with an ink-writing oscillograph.

The needle electrodes first used, as already mentioned, were the coaxial electrodes of Adrian and Bronk.[2] These consist of a hypodermic needle with an insulated wire fixed in the lumen. Two connections are thus established, one to the shaft of the needle and the other to the internal insulated wire. Monopolar needles also are used by many electromyographers. These consist of a sewing needle, insulated except for the tip, thus forming only a single connection, and with the other connection obtained by a surface or an "indifferent" electrode. Because of its greater convenience, I prefer the use of the coaxial needle. The results obtained are very similar.

In either case electrodes are connected to the input of an amplifier to increase the potentials to values which are adequate for the functioning of the various display and recording devices to be mentioned later.

One of the great problems in designing the amplifier and in the use of the electromyograph is the elimination of interfering electrical fields. These consist principally of the electrostatic and electromagnetic fields which develop in the vicinity of ubiquitous light and power lines. The actual strength of these fields is frequently greater than the muscle potentials to be measured. To reduce their effect to a point where they are no longer of importance, it is necessary to connect the patient to a ground, and to employ a special type of amplifier known as a "differential" amplifier.[4,5] In unfavorable locations it may be necessary to place the patient within a grounded screen-caged room.

The display and recording devices utilized consist of (1) a cathode ray oscilloscope, whose inertialess beam permits the recording of the relatively rapid muscle potentials;

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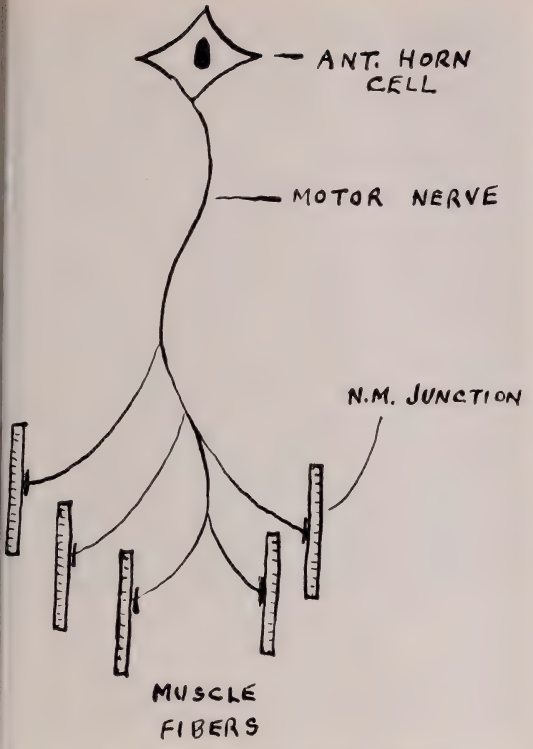

FIG. 1. Lower motor neuron pattern.

(2) the loud-speaker, permitting the ear to recognize the characteristic sounds of various potentials; (3) the tape recorder, with which the potentials can be recorded and played back both visually and aurally; and (4) various types of still or motor-driven cameras, to record the actual wave forms. Routine clinical examination can be performed adequately on a very simple apparatus, employing only the loudspeaker and oscilloscope as display devices.

How Electromyography Shows Pathologic Changes

To explain the pathologic changes found on electromyographic examination, a brief recall of muscle nerve physiology will be useful (Fig. 1). The muscle is innervated from the anterior horn cells of the spinal cord. Each anterior horn cell provides a single axon (the motor nerve fiber) which eventually branches to innervate a certain number of muscle cells. This combination of nerve fiber and muscle cells is known as a "motor unit." The number of muscle fibers per motor unit varies with various muscles; the external ocular muscles contain as few as five or less, while large muscles of the lower extremities, such as the gastrocnemius, may have as many as 1,500 muscle fibers per motor unit.[6] The smallest voluntary contraction possible is that of the muscle fibers in one motor unit. When the anterior horn cell fires a nerve potential in response to a stimulus from the upper motor neuron of the pyramidal tract, this nerve potential (wave of negativity) travels down the motor nerve at an average speed of 50 meters per second.[7] On reaching the motor end plate, acetylcholine is liberated. This acetylcholine then acts on the muscle portion of the motor end plate to initiate another action potential, which then travels out from the motor end plate through the muscle fiber at the relatively slow speed of about 3 M. per second[8] and initiates the muscle contraction at the same time. It is this last-named potential variation within the muscle cell that is measured in the electromyographic examination. Although the actual variation of potential within the muscle cell is about 100 millivolts, such large potential changes are not registered on the electromyograph unless intracellular electrodes are used. These are used only in the experimental animal and not in clinical electromyography.

In clinical electromyography, the placing of the relatively large needle electrode in the vicinity of the contracting muscle fibers results in an electric connection to these fibers through the volume conductor of the saline medium bathing the muscle. The potentials measured are 100 times smaller more or less than the true potentials: The average voltage of the normal motor unit seen in clinical electromyography is about 300 or 400 microvolts.

When injury or disease to the lower motor neuron results in wallerian degeneration, the motor nerve degenerates distal to the lesion within a period of from about ten days to two weeks. The muscle fibers which are

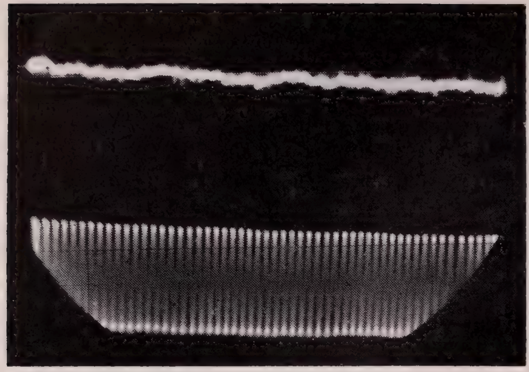

Fig. 2. Electric silence at rest. The calibration signal is 1,000 cycles and 100 microvolts. The same calibration is used for all other electromyographic patterns displayed.

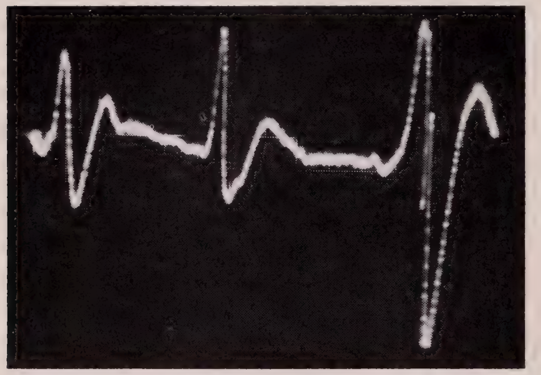

Fig. 3. Normal bi- or triphasic potentials observed on minimal muscular activity in normally innervated muscles.

then no longer innervated now contract in a disorganized and ineffectual manner. This is called fibrillation and is not visible through the various tissues overlying the muscle. It is to be distinguished from fasciculation which is a visible contraction resulting from a nonvoluntary contraction of at least one motor unit, caused by an irritative lesion of the anterior horn cell or motor nerve. Thus, in denervation there is a loss of functioning motor units; the greater the nerve damage, the more units are lost.

In degenerative myopathies, the muscle fiber itself is the seat of the primary disease, and the anatomic pattern of muscle degeneration is not related to the pattern of innervation. Thus there is a diminution in the number of fibers per motor unit, as opposed to what occurs in lower motor neuron involvement where an actual loss of entire motor units takes place.

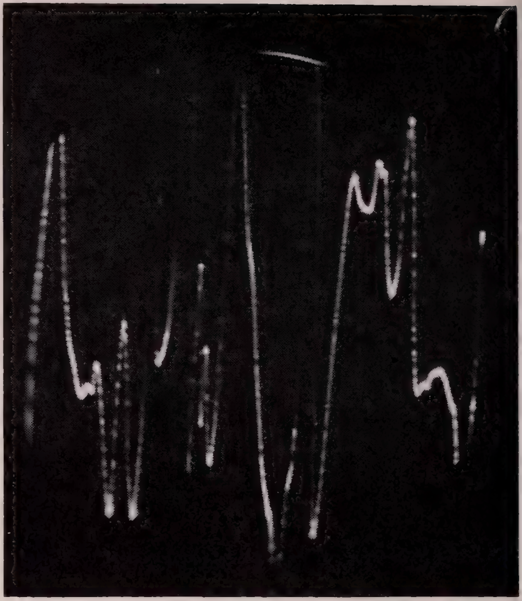

Fig. 4. Interference pattern, normal muscle contracting maximally.

Electromyographic examination of normal muscle reveals a consistent pattern. At rest, no electric activity is found (Fig. 2); on the least possible voluntary effort, simple bi- or triphasic potentials (Fig. 3) having an average voltage of about 400 or 500 microvolts, and an average duration of about six milliseconds, are noted; these conditions result in a characteristic sound in the loud-speaker. When the muscle contracts strongly, a great many of these simple wave forms are produced in an asynchronous manner, resulting in a confused wave form known as an "interference pattern" (Fig. 4) which also has a characteristic sound. In upper motor neuron disease not resulting in adventitious movements the same findings prevail.

When lower motor neuron degeneration is present, fibrillation potentials at rest are found. These potentials resemble the normal motor unit potential in form but not in size (Fig. 5). Their voltage is usually less than 100 microvolts and their duration is usually one millisecond or less. Thus, these potentials are very much smaller than nor-

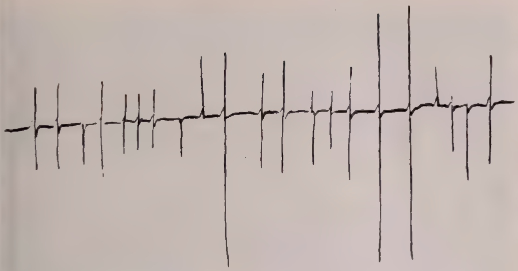

FIG. 5. Fibrillation potentials: lower motor neuron involvement, no voluntary activity.

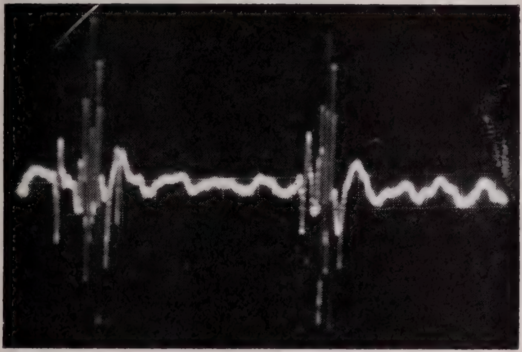

FIG. 6. Complex potentials seen on voluntary contraction in partially denervated lesions.

mal motor units and emit a characteristic sound from the loud-speaker. Attempts at voluntary contraction have no effect on these potentials. When there is complete lower motor neuron paralysis, potentials other than these are not found on attempted voluntary contraction. When only part of the motor nerve is damaged, however, some functioning motor units will be present, their number inversely proportional to the degree of denervation. Since there is a diminution in the number of functioning motor units, a full interference pattern may not be achieved even though the patient contracts as strongly as is possible. In addition, in partial lower motor neuron paralysis, (especially in progressive conditions or in anterior horn cell involvement) very polyphasic, complex, potentials are observed frequently on contraction. These potentials are characterized by a large number of phases (more than five) and repeat themselves in an exactly similar pattern (Fig. 6).

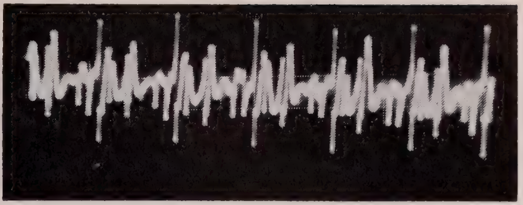

FIG. 7. Myopathic potentials, partial interference pattern.

Thus, this combination—fibrillations at rest, the presence of isolated potentials at maximum contraction, and frequently the presence of complex potentials—characterizes the involvement as due to lower motor neuron involvement.

Electromyographic Effects of Myopathies

Three different types of myopathic involvement will be discussed: dystrophic, myotonic, and polymyositic.

THE DYSTROPHIES.—As mentioned previously, in dystrophic involvement of muscle eventual loss of muscle fibers occurs, without regard to the motor unit pattern (Fig. 7). This results in a diminution in the number of fibers per motor unit, without necessarily affecting the number of motor units themselves. Of course, when the process has advanced sufficiently, motor units also will be lost. The electromyographic pattern resulting from this diminution in the size of the motor unit has the following electromyographic consequences: (1) The duration of the motor unit is decreased, (2) the voltage of the motor unit is decreased, and (3) the interference pattern shows no diminution in the number of units.

Although the pattern that has been enumerated is most usually present, it is not invariable. On minimal activity, narrow, low-voltage, fairly normal-appearing motor units with good interference patterns (but of lower voltage than usual) occur in perhaps three fourths of the cases examined. Buchtal[6] has stated that in his opinion the hereditary types of myopathies have a greater tendency to show normal patterns than do the acquired ones. Our experience

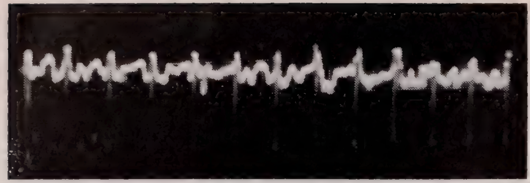

FIG. 8. Myotonia pattern.

has not confirmed this. It is true, however, that in a not insignificant percentage of cases the electromyographic findings do not differ significantly from the normal.

Many investigators, such as Buchtal,[8] Lambert,[9] and Moldaver,[10] have reported fibrillation potentials at rest in the myopathies in at least a small percentage of cases. The explanation for the presence of these fibrillations (usually considered pathognomonic for lower motor neuron involvement) is not an easy one. It is considered that the terminal nerve fibrils may be constricted by fibrous tissue, or (as Denny-Brown[11] has stated) the muscle fiber may fibrillate when it is not in continuity with its motor end plate.

We have not observed such "fibrillation" potentials in the dystrophies.

MYOTONIA.—All of the myotonias display an extremely characteristic finding (Fig. 8). This consists of a rapid high-frequency train of narrow potentials which wax and wane in both voltage and in repetition frequency. The sound produced in the loud-speaker resembles that of a dive bomber, and the potentials are so described in the literature ("dive bomber potentials"). This phenomenon is most easily obtained after needle movement and is also noted after voluntary contraction, on attempted relaxation, and when the muscle is percussed in the region of the exploring needle. The potentials are usually found in any muscle group in the myotonic patient even though the muscle may not display any evidence of clinical myotonia. In Steinert's disease (myotonia dystrophica) the electromyographic findings described for the dystrophies are also present.

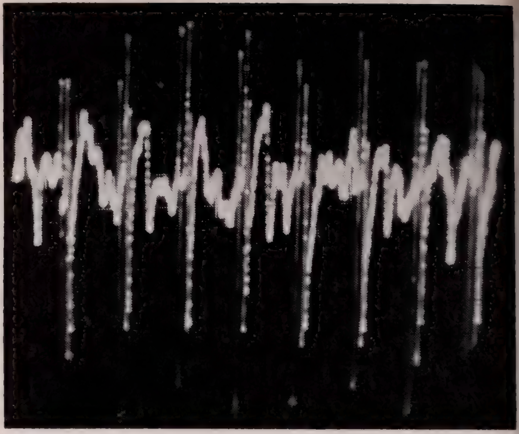

FIG. 9. Bizarre high-frequency potentials.

Rapid trains of high-frequency potentials, somewhat similar to the myotonic potentials already described, may be found in conditions other than the myotonias and must be distinguished from the myotonic discharge.[12] These usually differ because the discharge is at a fairly constant rapid frequency which does not wax and wane in either voltage or frequency. These are generally referred to as "bizarre high-frequency potentials" (Fig. 9). They are not as easily discovered as the myotonic discharge, and although they are most frequently seen in neuropathic involvement, they have also been observed in myopathic involvements not related to the myotonias.

POLYMYOSITIS AND DERMATOMYOSITIS.—The electromyographic pattern in polymyositis and dermatomyositis is quite characteristic, and apparently is found more consistently than pathologic changes in the muscle.[13] The findings are as follows:

1. Extreme irritability on needle insertion, with trains of fine potentials persisting for longer periods than in other conditions.
2. A fibrous feeling to the passage of the needle into the muscle.
3. The presence of fibrillation potentials at rest.
4. The presence of extremely narrow potentials, usually with a duration of no more than that of a fibrillation but of rather higher voltage (several hundred microvolts).

NERVE CONDUCTION.—Another technic, of fairly recent clinical utilization in the

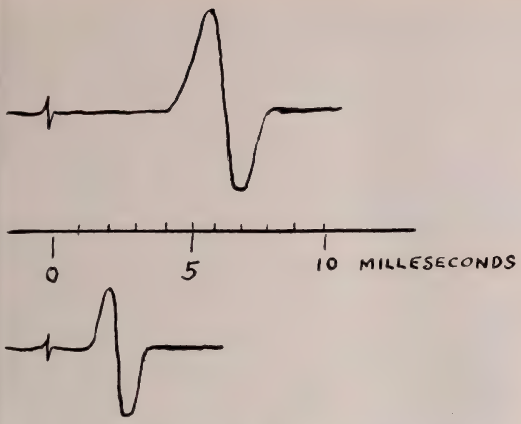

Fig. 10. Conduction velocity measurement of normal ulnar nerve. Upper tracing, stimulation at elbow; lower tracing, stimulation at wrist.

distinction between neuropathic and myopathic involvement, is the measurement of nerve-conduction velocity.[7] This method is suitable only for those nerves which are located superficially, such as the ulnar (Fig. 10) and median nerves in the upper and the peroneal nerve in the lower extremities. An electromyograph apparatus is used in conjunction with a stimulator. Surface electrodes are placed over an appropriate distal muscle that is innervated by the nerve being tested. The available electromyograph apparatus must include special cathode ray "sweep" circuits which can be triggered in a delayed fashion by the stimulus artifact, thus permitting its observation on the cathode ray tube. The sweep duration must be accurately known. A special ground-free stimulator providing pulses of about one millisecond's duration is necessary. The duration of the passage of the nerve potential can be measured with little difficulty. The normal nerve conduction speed is about 50 M. per second. This speed does not change in myopathic involvement but in partial lower motor neuron involvements may show considerable slowing.

Comment

It appears that the electromyographic examination can be of considerable aid in the establishment of a correct diagnosis in diseases of the lower motor neuron and of the muscle. The electromyograph alone, however, is not a machine for making diagnoses. As with any other laboratory method, it is only in combination with careful clinical examination that a correct diagnosis can be made.

It is only after this careful clinical examination that the physician should undertake the electromyographic examination. It must be carried out by himself, with full knowledge of the clinical details observed. The physician must note the location of the needle, the position and cooperation of the patient, and other pertinent facts. The examination cannot be carried out by a technician whose medical knowledge and acquaintance with the patient is necessarily inadequate.

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Clinical Pediatric Experience with Ataractic Agent in Less Severe Emotional States

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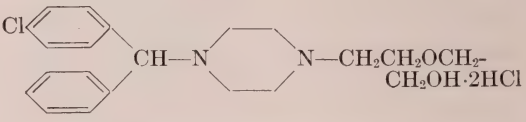
The plethora of valuable literature on the use of ataractic agents is well known. Nonetheless, we believe additional studies are needed on the use of these compounds in the behavioral disturbances and neurotic reactions of childhood. This therapy is frequently the logical choice in pediatric patients because of the relatively mild nature of the symptoms, the temporary quality of the environmental disturbance, or the unavailability of psychiatric facilities for definitive referral. It is my belief, however, that these drugs should be used only in cases in which it is possible to gain the active cooperation of parents and of others in reducing the causative environmental stress. The objective is to avoid prescription of the medication for an indefinite period. Use should be made of the drug-induced symptom-free period to reduce the environmental stress confronting the patient. With remission of symptoms, both children and adults can review their psychic and environmental problems more dispassionately, thereby creating an environment for more normal childhood emotional growth.

In neurotic, mildly to moderately disturbed pediatric patients, therefore, during a two-year period, I evaluated clinically hydroxyzine hydrochloride (Atarax syrup*). This drug was selected because of the generally impressive reports of its safety and effectiveness in children [1–5] and in adults[6–11] with similar behavioral disturbances. Although hydroxyzine hydrochloride has been shown to be free of untoward side-reactions, a recent report [12] on tranquilizers of a different chemical derivation, those in the phenothiazine group, shows that these drugs should be used with utmost caution, especially in childhood.

Chemistry of Hydroxyzine Hydrochloride

Hydroxyzine hydrochloride is 1-(*p*-chlorobenzhydryl)-4-[2-(2-hydroxyethoxy)ethyl] diethylenediamine hydrochloride. It is a bitter, white, crystalline solid with a melting point of 191 to 194 C. Broadly speaking, it is soluble in any nonionic or acidic liquid that dissolves in or mixes with water. For example, it is readily soluble in water or in ethanol, but is insoluble in diethyl ether, and is precipitated as the base in alkaline solutions. The structural formula is as follows:



General Pharmacology of Hydroxyzine Hydrochloride[13–16]

Hydroxyzine hydrochloride suppresses some of the hypothalamic nuclei and extends its effects peripherally in the sympathetic portion of the autonomic nervous system where it depolarizes nervous and muscle fibers. Except in extremely high doses, it has no apparent effect on the cerebral, thalamic, or spinal cord areas. There is evidence that part of its activity is caused by a depressant action on the reticular formation. Hydroxyzine hydrochloride has nonspecific spasmolytic action against the effects of histamine, acetylcholine, serotonin, reserpine, and posterior pituitary extract. It has a great and prolonged antihistaminic action as measured against lethal doses of histamine administered intravenously. Finally, it inhibits the somatic effects of excitatory drugs such as epinephrine, dextro-amphetamine, mescaline, and lysergic acid.

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* Available through J. B. Roerig & Company (Division, Chas. Pfizer & Co., Inc.), New York City.

Clinically, hydroxyzine hydrochloride reduces muscle tension without interfering with equilibrium or cerebral activity, and it has gastrointestinal antisecretory, spasmolytic, and antiemetic effects. Normal and abnormal electroencephalographic tracings are altered very little. Although the somatic effects of dextro-amphetamine are inhibited, cerebral stimulation is still evident. Volunteer subjects given lysergic acid showed no electroencephalographic changes when hydroxyzine hydrochloride was administered, nor was the skin flushing altered; however, the behavioral aspects were diminished and the subjects appeared less confused.

It has been reported[17] that hydroxyzine hydrochloride lowers the convulsive threshold in electroshock therapy; that is, less voltage is required to produce convulsions. This is not suprising in view of the fact that its actions are largely subcortical rather than cortical. This lowering of the electroshock convulsive threshold, however, does not signify that the drug in itself causes convulsions at therapeutic levels nor that it is epileptogenic. On the contrary, hydroxyzine hydrochloride has proved effective as an adjunct to anticonvulsive drugs,[18] especially where a midbrain or subcortical focus appears to underly the seizures.

Methods and Materials

Forty-one screened neurotic patients, 19 males and 22 females, ranging in age from two to fourteen years, were treated with hydroxyzine hydrochloride in syrup form. Thirty-seven of these patients were treated for periods of from two weeks to seven months, with an average duration of therapy of 3.9 months. Daily dosage ranged from 10 to 30 mg. in divided doses. Data from these case histories and results of the treatment are presented in Table I.

In the remaining 4 patients not shown in Table I the drug was used only in the thirty-six-hour period preceding second attempts at diagnostic procedures where prior attempts had failed owing to the anxiety and noncooperation of the patients.

Typical of the neurotic symptoms requiring control in the total of 41 patients were quarrelsomeness, insomnia, hyperactivity, school phobia, facial tics, and anxiety.

Results

EFFECTIVENESS.—Thirty-eight of these patients (93 per cent) obtained relief from their presenting symptoms. This symptomatic alleviation was of substantial value in hastening the return to more normal emotional growth patterns in these children.

ABSENCE OF SERIOUS SIDE-EFFECTS.—No serious side-effects including allergic reactions were encountered. Marked drowsiness occurred in one child (case 7) and headache and nausea in a second (case 2). When neither of these side-effects was relieved by reducing the dosage, the drug was discontinued. Abdominal discomfort, a half hour after receiving the medication, necessitated discontinuation of the drug in a third patient (case 4). It is interesting to note that these are the only cases in which effectiveness was not demonstrable.

Moderate drowsiness occurred in 3 other patients (cases 3, 28, and 36). In 2 of these cases (3 and 36), good results were maintained and drowsiness was relieved after the dosage was reduced; in the third child (case 28), drowsiness abated after one month of therapy without change in dosage. In 5 additional patients slight drowsiness was produced. In 4 of these cases (14, 25, 26, and 27) the drowsiness abated within from two to four weeks without reduction of dosage, but in one child it persisted for two months. However, because substantial improvement in the presenting symptoms oc-

TABLE I.—Results of Therapy with Hydroxyzine Hydrochloride in 37 Pediatric Patients with Symptoms of Less Severe Emotional States

Case Numbers	Ages (Years)	Daily Dosage—Divided Doses (Figure in Dosage Column Indicates Time in Months on Dosage) 30 mg.	20 mg.	10 mg.	Symptoms	Result
1	14	7	. . .	. . .	Anxiety, insomnia	**
2	14	1/2	. . .	1	Anxiety, hyperactivity	††
3	14	3/4	. . .	3	School phobia	**
4*	14	1 1/2	. . .	. . .	Quarrelsomeness	††
5*	13	3	. . .	2	Anxiety	**
6	12	1	. . .	5	Hyperactivity	**
7	12	1/2	. . .	1/2	Irritability	††
8	12	6	. . .	. . .	Quarrelsomeness	**
9†	11	2	. . .	4	Insomnia, anxiety	**
10	10	1 1/2	. . .	. . .	Hyperactivity	**
11	10	1/2	. . .	. . .	School phobia	**
12†	7 1/2	4	. . .	. . .	Quarrelsomeness	**
13†	7	6 1/2	. . .	. . .	Anxiety	**
14*	7	1 1/2	2 1/2	. . .	Facial tic, anxiety, quarrelsomeness	**
15*	6 1/2	2 1/2 (interruption)	1/2	1	Anxiety	**
16†	5 1/2	2	. . .	1	Quarrelsomeness	**
17*	5 1/2	1 1/2	. . .	. . .	Hyperactivity, insomnia	**
18*	5 1/2	. . .	1 1/2	. . .	Quarrelsomeness	**
19*	5	. . .	2	1 1/2	Anxiety	**
20	4 3/4	. . .	1 1/2	2 1/2	Hyperactivity, insomnia	**
21	4 1/2	. . .	2	2	Quarrelsomeness	**
22*	4 1/2	. . .	2	5	Quarrelsomeness	**
23	4	. . .	4	1 1/2	Anxiety, quarrelsomeness	**
24	4	. . .	2 1/2		Hyperactivity, quarrelsomeness	**
25*	4	. . .	3	. . .	Quarrelsomeness	**
26*	4	. . .	1 1/2	. . .	Anxiety	**
27*	3 3/4	. . .	1 1/2	4	Anxiety	**
28*	3 3/4	. . .	5	2	Quarrelsomeness	**
29	3 1/4	. . .	. . .	2 1/2	Hyperactivity, insomnia	**
30*	3	. . .	2	4	Quarrelsomeness	**
31*	3	. . .	1 1/2	2	Hyperactivity, insomnia	**
32*	2 3/4	. . .	1 1/2	. . .	Anxiety, insomnia	**
33	2	. . .	2	4	Anxiety, insomnia	**
34	2	. . .	1/2	1 1/2	Anxiety, quarrelsomeness	**
35	2	. . .	1 1/2	3 1/2	Hyperactivity	**
36*	2	. . .	1 1/2	2 1/2	Anxiety	**
37*	1 1/2	. . .	4	2	Hyperactivity, insomnia	**

* Presenting symptoms recurred after one and one-half months following hydroxyzine hydrochloride therapy; once therapy was resumed, remission of symptoms again occurred.

† Presenting symptoms recurred after one month following discontinuance of medication.

** Substantial improvement (38 patients or 93 per cent of total).

†† Slight or no improvement (3 patients or 7 per cent of cases).

curred, this child was maintained on a reduced dosage which tended to relieve the side-effect.

Blood Cell Studies.—Sixteen patients had blood counts before hydroxyzine hydrochloride was begun and two weeks to seven months after it was started. These counts were considered to be within normal limits. Hemoglobin determinations before and from two weeks to seven months after hydroxyzine hydrochloride was begun were done on 19 children. There was no shift to an abnormal range. Table II outlines the blood cell studies.

Recurrence of Symptoms on Discontinuance of Medication.—In 3 patients (cases 3, 12, and 15) symptoms recurred when the medication was discontinued. However, remission of symptoms was again obtained with resumption of dosage. One

TABLE II.—Results of Blood Cell Studies During Period of Therapy With Hydroxyzine Hydrochloride

Case Numbers	Date	Hemoglobin	White Blood Count	Date	Hemoglobin	White Blood Count
1	May 16	11.6	7.2	December 5	13.2	5.7
2	June 6	12.6	5.3	December 5	13.9	5.7
3	May 30	13.2	4.9	October 29	15.0	7.1
6	June 13	12.0	7.0	December 19	11.6	7.7
8	June 13	15.0	7.4	December 12	13.7	6.2
9	May 16	12.0	5.5	November 21	12.0	6.8
11	November 28	11.3	8.3	December 12	11.6	7.9
12	June 6	10.6	5.1	December 5	11.2	5.3
13	May 23	11.7	6.4	December 5	13.8	6.4
14	...	10.2	...	...	12.0	8.1
15	February 6	11.5	...	May 1	11.3	...
16	September 5	12.2	11.2	December 5	12.5	12.0
19	September 5	11.6	...	December 19	13.5	12.0
20	August 8	12.6	6.3	December 19	11.6	9.2
22	May 16	10.6	7.1	December 12	10.9	7.3
26	May 23	11.6	9.2	December 29	12.8	...
28	May 23	12.3	9.2	October 31	13.3	8.3
29	September 5	12.6	...	November 28	13.0	...

of these cases (15) provided a valuable control.

Case Report

Case 15.—A six-and-one-half-year-old girl was brought for evaluation by a representative of an excellent boarding school home and nursery school. Most of the children who attend this school are typical nursery school day students, but a few are boarded there because of troubled homes. The boarded children thus are permitted to live with a remarkably competent, well-adjusted couple as part of a family unit.

The child in question had been placed in the school at the age of three and a half by her father. The mother had disappeared when the child was a few weeks old and the infant had been moved from one foster-care home to another. On her first arrival at her present boarding school home, she was withdrawn, uncommunicative, silent, and anxious, but nonetheless obedient. Her first spontaneous play did not begin for over a month. Several months following admission, however, she developed temper tantrums which persisted for some six to nine months. Thereafter, she settled down to being a docile, alert child who enjoyed some play but who was still manifestly anxious. She was hostile to her father who visited her regularly several times a month, and she was unable to talk about her problems even in the favorable environment in which she lived. The foster mother brought the child because she felt the girl had reached a plateau over the last year and had showed no further gains in adjustment.

During her initial visit to the office the patient was silent and apprehensive and sat wringing moist palms in her lap. Her blood pressure on this visit was 130/102 mm. and her pulse 90; other findings were within normal limits. On the second visit a week later her blood pressure was 112/84 in the arm and 118/86 in the leg.

Hydroxyzine hydrochloride, 10 mg. twice a day, was started. The third week after medication was begun, she had two temper tantrums, the first in about three years. The pediatrician and the foster mother concurred that these probably represented a forward step toward release of the child's pent-up anxieties. The child thereafter, over a three-and-one-half-month period, made rapid progress in behavioral adjustment as a result of understanding home care and of medication.

Contrary to plans, however, it became necessary to discontinue the schedule of medication abruptly when the foster mother's mother suddenly became critically ill. All four of the boarded children showed disturbance in response to this situation, but this particular child became markedly withdrawn, anxious, and regressive. After the one week during which it had not been feasible to maintain the schedule with hydroxyzine hydrochloride, the foster mother was able again to resume careful home care and regular medication. The child resumed progress toward improved behavioral patterns so effectively on resumption of this program that it became possible to reduce the dosage by one-half after three weeks, and then to withdraw and discontinue medication gradually after another six weeks.

Following discontinuation of hydroxyzine hydrochloride therapy the child continued to be friendly, although somewhat shy. However, she had the courage to question her foster mother as to why her real mother had left her father, and for the first time to demonstrate friendliness toward her father.

Commentary on 4 Additional Cases

In the 4 cases not shown in Table I three doses of hydroxyzine hydrochloride were given in the thirty-six hours before a second attempt was made to carry out diagnostic procedures; earlier procedural attempts had failed because of active noncooperation. Following administration of hydroxyzine hydrochloride all 4 patients permitted the second attempt at the respective procedures with relative equanimity.

Three of the patients were girls who required urinary bladder catherization, and 1 was a boy requiring intravenous injection for pyelography. Since she was five months old one of the girls, a four-year-old, had fought every examination that required that she be touched, although she was cheerfully cooperative about such routine procedures as weighing and posture evaluation. According to the mother of the second girl, a seven-year-old, the child's noncooperation dated back to the age of five years when she had been examined by cystoscopy without anesthesia. The specificity of her fear of perineal manipulation was confirmed by the fact she had been cooperative with this examiner in every procedure other than catheterization.

Part of the acquired cooperative calm in these patients may be attributed to their familiarity with the procedures, though this might as well have produced opposite effects. There is, however, sufficient reason to think the short course of hydroxyzine hydrochloride medication helped relax these patients markedly to make possible the carrying out of diagnostic procedures they had formerly resisted.

Comment

It cannot be overemphasized that ataractic agents are chiefly palliative. They serve best when there is a realistic hope that the emotional stress producing the symptoms is of a temporary nature, or that chronic stress can be ameliorated during a limited period of administration. But these medications can be of considerable help in attaining such amelioration, for parental cooperation is far more easily obtained if the child becomes more stable emotionally.

Himwich[19] observes that the toleration of neurotic patients to the side-effects of psychopharmacologic drugs does not appear to be as great as the toleration of psychotic patients to such side-effects. Those who are neurotic will complain of fatigue, prostration, dizziness, and nausea following therapy with ataractic agents in comparatively low dosage. Such effects in the mildly neurotic patient are difficult to distinguish from extensions of the primary complaints and will tend to negate the value of the drug in relieving them. In psychotic patients, though, such side-effects will be overshadowed by the relief obtained from the more disabling symptoms. The necessity for a drug with minimal side-effects, therefore, is greater in prescribing for neurotic patients. The relative rarity of side-reactions with hydroxyzine hydrochloride has permitted me to prescribe it for a much wider variety of conditions than has been possible with other tranquilizers.

I believe that in these less severe emotional states in neurotic patients drowsiness as a side-effect to medication must be evaluated individually. In many instances, drowsiness represents relief from anxiety. This permits the true exhaustion of the patient to become manifest. Unless it is severe or prolonged, drowsiness should not, therefore, be used as an indication for reducing the dosage.

Summary

Forty-one children ranging from two to fourteen years of age were treated with hydroxyzine hydrochloride (Atarax syrup) for neurotic symptoms of from mild to moderate severity. Thirty-seven of these patients were treated for periods ranging from two weeks to seven months, while the remaining 4 were treated only during the brief thirty-six-hour period preceding diagnostic procedures in the examiner's office. Dosage ranged from 10 to 30 mg., two to three times daily. The drug was used only in cases in which it was possible to reduce concomitantly undue emotional stress by improving the child's environment. An attempt was thus made to avoid prescription of the drug indefinitely and to use the period of improvement to induce the child's parents and others to undertake to create a healthier emotional environment for the patient.

No serious side-effects including allergic reactions were encountered. In only 3 children (7 per cent of the cases) did the drug have to be discontinued because of (1) persistent drowsiness, (2) headache and nausea, or (3) abdominal discomfort. There were no failures, however, in any of the cases in which it was possible to complete the course of hydroxyzine hydrochloride therapy. By relieving adequately the presenting symptoms in 38 patients, or 93 per cent of the cases studied, administration of hydroxyzine hydrochloride enhanced dramatically the children's opportunity to achieve normal emotional growth.

60 PLAZA STREET

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Repair of the Incompetent Internal Os of the Cervix

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The incompetent cervix as a cause of second trimester abortion and premature labor has only recently been proposed as a clinical entity. In the classic case true incompetence of the cervix is manifested by painless, progressive effacement and dilatation during the middle trimester of pregnancy or during the early part of the third trimester. Symptomatology is vague—excessive vaginal discharge, lower abdominal discomfort, the sensation of a "lump" in the vagina—and may be absent entirely. Ultimately, premature rupture of the membranes, already herniated into the vagina, ensues, followed shortly by passage of the conceptus. It is in the management and prevention of this type of late abortion or immature delivery that exciting progress has occurred in the past decade.

Background

Many years of experience with cervical amputation have shown that successful gestation is dependent on the function of the cervix.[1] Fisher[2] reported on a series of 7 patients in whom the marked influence of this surgical procedure was demonstrated. These women had a total of 23 pregnancies prior to and 14 after cervical amputation. Following this procedure successful full-term deliveries dropped from 91.2 to 21.4 per cent, premature delivery with neonatal death rose from 4.4 to 28.6 per cent, and the abortion rate jumped from 4.4 to 50 per cent. No attempt was made to correlate the poor obstetric results with the height at which cervical amputation was performed. Results such as this gave rise to understandable reluctance to perform the operation of cervical amputation on women in the child-bearing age.[3]

Extension of this way of thinking to the anatomically intact cervix was apparently accomplished simultaneously by several groups. Internal cervical os incompetence was first mentioned by Schultze in 1939,[4] who described the condition and presented several hysterographic illustrations. Palmer and Lacomme[5] in a case of a three-and-a-half-month spontaneous abortion following cervical laceration during a first pregnancy demonstrated a patent internal os by hysterography; after surgical repair of the cervix (Emmett procedure), pregnancy one year later was carried successfully to term. On investigation of 44 cases of habitual abortion by hysterography, Palmer[6] found that the cervical isthmus was abnormally wide in 5 out of 6 cases (83.3 per cent) of secondary habitual abortion but in only 5 out of 36 cases (13.9 per cent) of primary habitual abortion. Palmer[7] classified the possible causes of this isthmic dilatation, to which he attributed an etiologic relationship for some cases of habitual abortion, into three categories: traumatic, congenital (muscular hypoplasia), and functional (neurovascular, or autonomic innervation). Of these, he felt that trauma was by far the most common.

Diagnostic and Therapeutic Procedures

At about the same time, Lash and Lash[8] presented a series of 7 cases by which they purported to demonstrate the premise that incompetence of the internal os of the cervix is a cause of habitual abortion. In their opinion the characteristics of an abortion due to this cause are sudden rupture of the bag of waters followed by rapid and relatively painless extrusion of the products of conception. The diagnosis is made on the basis of a history of repeated abortions of this type and the finding of a patent internal os. The suggested causes of cervical incompetence listed by these authors are all traumatic: overdilatation of the os, overzealous curettage, previous abortions followed by dilatation and curettage, vaginal hysterotomy or cesarean section, abdominal lower segment cesarean section, precipitate labor pains, traumatic forceps delivery, and extraction of fetal shoulders through an unrecognized constriction ring. Their recommendation in regard to therapy is surgical repair of the defect by excision of a wedge of cervix, preferably immediately after abortion, when softening and dilatation of the tissues permit good apposition and repair. The 7 cases presented were so repaired.

These new methods were received with understandable skepticism by the obstetric fraternity. Danforth[9] pointed out that, first, in cases with successful gestations the treatment had included bed rest, sedation, and hormone administration in addition to the surgical procedure so that the results of the latter could not be conclusively evaluated and, second, the diagnosis of the incompetent internal os by palpation at the time of an abortion was at best uncertain.

Investigation was then directed toward finding a method that would facilitate the interval diagnosis of an incompetent internal os. Previous extensive radiographic study of the cervix had not been thus directed.[10] Asplund[11] critically analyzed 1,000 hysterograms with special reference to the roentgenographic appearance of the uterine cervix and isthmus and the possible correlation between the roentgen findings and the clinical history. He found that the internal os varied in width during the menstrual cycle, being wider in the proliferative than in the secretory phase. The lumen seemed to narrow at the time ovulation was said to occur. Changes in the width of the lumen could be produced experimentally by the administration of hormones. Similar studies in pregnancy showed that up to the fifth month the roentgenographic appearance of the cervix and isthmus of the pregnant uterus was much the same as in the nonpregnant uterus. Most significantly, in 11 cases of habitual abortion Asplund found the mean width of the internal os of the cervix to be 6.09 ± 0.98 ml. and in 20 normal controls to be 2.63 ± 0.27 ml., a statistically significant difference.

Further advances in radiographic diagnostic technics were reported by Rubovits and coworkers.[12] They found that ordinary hysterography with Lipiodol is not completely satisfactory for this purpose and proposed the use of an intrauterine balloon to permit retention of the radiopaque material within the incompetent cervix. They also pointed out that clinically that cervix is incompetent which can be readily sounded by a Hegar dilator wider than 8 ml. These authors proposed a set of criteria for interval surgical repair of the cervix.

1. The patient will usually have had two or more second trimester abortions.
2. In the majority of cases the history will reveal some traumatic factor to the uterine cervix.
3. Examination will reveal no significant general physical abnormality.
4. Radiographic studies will reveal characteristic changes in the area of the internal os; unless these changes are demonstrated, surgical attack is not indicated.

In many hands the radiographic diagnosis of the incompetence of the internal os is not satisfactory and remains a vexing problem.[13] More recently, Mann,[14] in an attempt to delineate more clearly the isthmic area of the uterus, designed an intrauterine balloon which expands in two stages when filled with radiopaque material. To be successful the size of the balloon must be closely correlated with the size of the uterus. Hunter and Henry[15] devised a new instrument for use in hysterography when information about the cervix is desired, pointing out that the ordinary Jarcho cannula usually completely bypasses the cervix. They suggest a straight cannula with a silver cup at the tip in which is cradled a number 12 Foley catheter bulb for obstructing the cervical os by pressure. They also recommend prior irrigation of the uterus with a papain solution to clean out the tenacious cervical mucus and expose the endocervical walls. Hunter, Henry, and Civin[16] then found that with irrigation of the uterus with enzymes such as bromelin and papain in solution, the internal os of the cervix shows a physiologic relaxation in patients who have had multiple second trimester abortions and in whom structural incompetence could not be demonstrated. Attempted repair in 3 of these cases by the Lash procedure[8] did not correct the tendency for poor obstetric results. The authors feel that the change produced by the enzymes mimics the dilatation of pregnancy. Finally, Calandra and coworkers[17] dispensed with cannulas entirely and performed cervicohysterography using number 16 Foley catheters with a 5-cc. balloon inflated just inside the external os.

On the clinical side, d'Ernst[18] emphasized the importance of a test with the 8-ml. Hegar dilator. Bergman and Svennerund[19] developed a traction test in which a spring balance and a number 16 Foley catheter is used; 1 cc. of sterile saline is passed into the bag after it is inserted into the uterine cavity. Traction is then applied to the Foley catheter under Pentothal-nitrous oxide-oxygen anesthesia. Failure of the internal cervical os to resist a force of less than 600 Gm. was determined empirically to be suggestive of incompetence. These writers base their decision for surgery on the history and results of both radiography and the traction test (which in their experience are at times contradictory).

There have been many other reports on interval repair of the cervix. Swaab[20] reported good results with the Lash procedure. Mey[21] reported on 5 cases of internal cervical os failure, 4 of which were repaired with a Sturmdorf trachelorrhaphy, and 1 with a modified Lash procedure in which the endocervical mucosa was left intact to prevent possible fibrosis of the canal. Page[22,23] has resorted to the use of Oxycel gauze dipped in benzoin and saturated with sterile U.S.P. talc in an attempt to produce a constricting band of scar tissue about the cervix; his results have been good. Bergman and Genell,[24] using the technic developed by Palmer,[6] carried 13 patients with this diagnosis to term. Davids[25] has had excellent results in a small series by excising a triangular wedge of cervical tissue with the apex at the internal os from both the anterior and posterior lips of the cervix and constricting the cervical canal by bringing these edges together with chromic catgut sutures. Averill[26] has even obtained favorable results from stenosis of the internal os by producing scar tissue by means of deep cauterization—

six to eight linear streaks high in the cervical canal. He reported 18 successful pregnancies following this operation on 22 patients who had had repeated midtrimester abortions. Steinberg[27,28] also has had moderate success with electroconization of the internal os.

Shirodkar[29] approached the problem from the point of view of management in pregnancy. He reviewed 30 cases of repeated abortions in the second trimester, all of which had presented to him with passive dilatation of the cervix without noticeable labor pains and with protrusion of the membranes. In his opinion 95 per cent were due to weak cervical sphincters and 5 per cent to underdeveloped or malformed uteri. His treatment consists of passing a purse-string suture of homologous fascia lata threaded on an aneurysm needle about the cervix at the level of the internal os after having advanced the bladder, thus closing the cervix for the duration of the pregnancy.

The procedure described by Shirodkar was intriguing enough to be adopted by many. Hall[30] reported a single case of repeated abortion in which the cervical os was occluded with a nylon filament mattress suture as soon as pregnancy was established. The patient carried to thirty-four weeks, when membranes ruptured spontaneously; after the suture was excised, spontaneous delivery of a premature infant occurred. Green-Armytage and Browne[31] recorded 12 cases in which a modified Shirodkar procedure was performed; nylon filaments to purse-string the cervix were used and an attempt was then made to reach the level of the internal os by mobilizing and advancing the bladder. Their results were good. In another case which terminated successfully, a modified Lash procedure was performed at twenty-five weeks gestation without disturbing the pregnancy; the repair was then repeated at the time of vaginal delivery.[32]

The largest series of such cases to date has been reported by McDonald,[33] to whose attention 70 such patients came in over seven years. His method was simple purse-string suturing of the pregnant cervix with a number 4 silk suture without advancing the bladder on the cervix. Of these 70 patients, 33 delivered viable infants and in 16 the pregnancy was extended over four weeks but the infants delivered were nonviable. Failure of the procedure occurred most frequently in the first postoperative week. Since his criteria for selection of cases became more rigidly defined, his success rate improved; 13 of the first 35 cases (37 per cent) and 20 of the second 35 (57 per cent) were successful. McDonald emphasizes the importance of symptoms of profuse vaginal discharge, lower abdominal discomfort or pressure, and the sensation of a "lump in the vagina," and recommends multiple speculum examinations throughout pregnancy of all patients with a history of repeated miscarriage in the second trimester. He believes that the contraindications for the procedure include active labor, ruptured membranes, uterine bleeding, toxemia, hydramnios, and x-ray evidence of fetal anomalies.

Barter and coworkers[34,35] have also reported a large series. In 22 appropriately selected patients a purse-string suture of homologous fascia was passed around the cervix using special aneurysm needles after advancement of the bladder. Of these patients, 14 had successful pregnancies. In this group cesarean section at thirty-eight weeks gestation was elected as the method and time of delivery, the cervical suture thus being left in situ to function for future pregnancies. Because of the probability of repeated operative deliveries, these authors recommend that only the strictest criteria, as previously elaborated, be employed to select the patients on whom to perform this procedure. In the search for a more permanent material to use as a suture, Barter[36] suggests fine Dacron mesh tubing (Mersilene, Ethicon) developed for blood vessel prosthesis. With use of this material, his latest figures show a success

TABLE I.—REPORTED MODIFICATIONS OF THE SHIRODKAR PROCEDURE

Authors	Suture Material	Bladder Advanced	Route of Delivery
Shirodkar, 1955[29]	Homologous fascia lata	Yes	Vaginal
Hall, 1956[30]	Nylon filament	No	Vaginal
Green-Armytage and Browne, 1957[31]	Nylon filament	Yes	Vaginal
McDonald, 1957[33]	Number 4 surgical silk	No	Vaginal
Barter *et al.*, 1957, 1958[34,35]	Homologous fascia lata	Yes	Cesarean section
Barter, 1958[36]	Dacron mesh	Yes	Cesarean section
Trythall, 1958[37]	Polyethylene tubing	No	Vaginal
Lewis and Reed, 1958[38]	Polyethylene tubing and nylon	Yes	Vaginal
Easterday and Reid, 1959[39]	Polyethylene tubing and wire	Yes	Vaginal
Rovinsky and Sher, 1959[40]	Polyethylene tubing and silk	No	Vaginal
Johnstone, 1958[41]	Tantalum wire loop	No	Cesarean section
Bergman, 1958[42]	Surgical silk	No	Vaginal
Durfee, 1958[43]	Synthetic protein suture (Permafil)	Yes	Cesarean section
Picot *et al.*, 1958[44]	Homologous fascia lata	No	Cesarean section

rate of 80 per cent.

Many other smaller series have been reported, each with an individualized technic. Trythall[37] treated 1 patient successfully by using polyethylene $^1/_{16}$-inch tubing as a purse-string suture to close the cervix. Lewis and Reed[38] used polyethylene tubing threaded with a number 1 nylon suture to secure the cervix; two sutures were used, one placed above the other, the upper near the level of the internal os after bladder mobilization. Easterday and Reid[39] also employed polyethylene tubing, 0.067 inches in diameter, and passed a woven steel number 0 wire through the center. In their procedure the bladder was advanced and an attempt was made to reach the internal os. We found that polyethylene tubing of 0.065 inches diameter (Becton, Dickinson and Co., #444T) through which a wick of number 5 braided surgical silk was threaded to give a nonelastic core gave good results.[40] In our series the bladder was not advanced and the purse-string ligature was passed submucosally at the level of the junction of the rugose vagina with the smooth cervix. All authors in this group stress the use of removable sutures and subsequent pelvic delivery if feasible.

A summary of the reported modifications of the intragestational cervical repair is given in Table I.

Comment

INCIDENCE AND DIAGNOSIS.—It does appear that a new clinical entity, second trimester abortion because of either functional or anatomic incompetence of the internal os of the cervix, has been delineated. This remains a rare syndrome. Picot and coworkers[44] estimate the rate of occurrence at 3 per 1,000 deliveries. At the Mount Sinai Hospital in New York City only 4 patients in over 5,000 deliveries presented the syndrome as rigidly defined, an incidence of 1:1,250.[40] Barter and coworkers[35] discovered 19 cases in 35,000 deliveries, or 1:1,850. Based on his experience Eastman[13] feels that this entity plays a relatively minor role. It has also been pointed out that although the incompetent cervix may be a significant cause of late abortion and premature labor, a reliable diagnosis of it as the operative factor in any individual case is almost impossible.[45] All reported cases, suggested surgical procedures, and statistic results must therefore be evaluated in terms of this infrequency of occurrence and possible inaccuracy of diagnosis.

The classic clinical picture remains the best criterion for making the diagnosis of incompetent cervical internal os. The multiplicity of radiographic procedures and clinical tests which have been proposed to make this diagnosis in the interval between pregnancies suggests that any single one is not completely satisfactory. The results of the several tests in an individual case may even be contradictory.[19] Radiographically a marked anatomic defect should be more readily demonstrated than a functional deficiency, but even here the variations in isthmic width in different phases of the menstrual cycle, as reported by Asplund,[11] make interpretation of x-ray measurements difficult. Since all tests have been evaluated purely on a retrospective basis, their use to predict a poor obstetric result remains problematic.

The most important avenue of diagnosis therefore is the patient's reproductive performance. A poor obstetric history, although suspicious, is not sufficient. Many other factors, such as defective germ plasm, placental abnormality, or poor uterine environment, may be responsible for recurrent premature labors and must be ruled out. Even repeated premature rupture of membranes is not diagnostic. The required history is that of cervical dilatation in the second trimester without noticeable contractions (determined by examination before rupture of membranes or onset of labor) followed by the rapid and relatively painless delivery of a normal fetus. To be able to obtain this history in every precise detail is fortuitous. With a suspicious but not conclusive history, the diagnosis may be substantiated during a current pregnancy by recourse to frequently repeated vaginal examinations for any sign of effacement and dilatation of the cervix. This is not the optimal course if preservation of the incumbent pregnancy is desired, for the cervical changes may occur without warning within forty-eight hours following normal findings on examination.[40] Once the stage of cervical effacement and partial dilatation with herniation of the amniotic sac into the vagina—which is concurrent with the appearance of the symptoms of profuse vaginal discharge, pelvic pressure, and a sensation of a "lump in the vagina"—has been reached, correction of the defect becomes exceedingly difficult and the outcome is almost inevitably abortion.

Pathophysiology.—The pathophysiology of this syndrome is poorly understood. Danforth[46] provided an anatomic explanation of the role of the cervix in retaining the products of conception. He demonstrated that the fundamental structure of the cervix uteri is fibrous connective tissue. As the growing conceptus requires more space, the isthmic segment unfolds to form part of the wall of the ovum chamber. This unfolding stops inferiorly at the level at which the proportion of fibrous tissue in the uterine wall becomes sufficiently great to make such an adaptive relaxation of the muscularis impossible. If the fibrous portion of the cervix has been amputated or its integrity impaired by high laceration, the barrier is removed and abortion follows. Since the cervix does not assume this function until the second trimester, we can account for the timing of abortions arising from this cause. In cases in which a purse-string suture had been placed around an incompetent cervix at some level below the internal os and the patient subsequently delivered at term by elective cesarean section, we have observed this unfolding to extend beyond the internal os into the cervix and to end abruptly at the level of the suture, which apparently presented the only firm resistance to this process.

The dilatability of this cervical barrier is markedly changed during pregnancy, probably because the collagenous tissue ratio is decreased by either hypertrophy of smooth muscle fibers or proliferation of vascular tissue.[47] Furthermore, some proportion of the softening or "ripening" of the cervix must be due to myometrial contractions, known to be present from the ninth week of pregnancy.[48,49] Caldeyro-Barcia[50] together with Poseiro[51] measured this uterine activity by means of intraovular catheters, expressing the results in Montevideo units (the product of intensity times frequency of contractions per ten minutes, or millimeters of mercury pressure

TABLE II.—Cervical Changes in Normal Pregnancy[53]

Length of Pregnancy (Weeks)	Cervical Changes (cm.)*					
	Primipara			Multipara		
32	0	0	4	0	0	4
34	0	0	3	1	0.5	3
37	1.5	0.5	2	2	1	2
40	2	2	0.5	2	2	2

* Changes in width of external os, width of internal os, and length of cervical canal respectively.

per ten minutes). During the first thirty weeks of pregnancy Caldeyro-Barcia found uterine activity to be less than 20 Montevideo units. Characteristic at this stage are very small contractions with only an occasional larger one (Braxton Hicks contraction). From the thirtieth week the intensity, frequency, and coordination of the Braxton Hicks contractions increase while the measure of uterine activity rises from 20 to 100 Montevideo units. At this point prelabor blends into true labor without a clear-cut division.

These factors are responsible for the morphologic changes in the cervix noted by the few authors who have recorded multiple vaginal examinations during pregnancy. Von Mikulicz-Radecki[52] found that by the beginning of the ninth month the cervix was at least 2 cm. dilated in 60 per cent of primiparas and 70 per cent of multiparas and that in most instances this dilatation had begun at the beginning of the third trimester. Stephens[53] discovered that premature delivery is always preceded by an extended period of preparation on the part of the cervix similar to the changes which take place in normal, full-term deliveries. He could predict premature delivery and estimate the onset of labor from these changes. Using a notation of three figures to describe respectively in centimeters the width of the external os, width of the internal os, and length of the cervical canal he reported cervical changes in normal cases (Table II). He feels that these cervical changes before true labor and the painless uterine contractions that produce them can be retarded or eliminated by anticholinergic drugs, such as Dactil or the more powerful Dibuline.[54] This supposition is partially corroborated by the tokodynamometric studies of Sher,[55] who produced contractions identical manometrically and in their effect on the cervix in patients near term by the intravenous infusion of solutions of Prostigmin. We have found Dibuline of value in controlling excessive uterine irritability which frequently follows surgical manipulation by the Shirodkar procedure.

The state of the cervix at any point in pregnancy must be the resultant of the static forces of fibrous tissue resistance and the dynamic forces producing cervical "ripening." Therefore, there can be no precision in our present understanding of the mechanism of action of the incompetent internal os of the cervix. A simple decrease in cervical resistance, with resultant dilatation because of the increasing weight of the growing conceptus,[41] does not explain all of the clinical findings in these cases. The patulous state of the cervix, frequently of long duration, in many multiparas and in cases of multiple gestation is well known, yet only occasionally in such cases does the amniotic sac herniate into the vagina prior to the onset of labor. Is there then some inherent contributory weakness in the membranes per se? Danforth and coworkers[56,57] and Embrey[58,59] could find no correlation in cases of premature rupture of the membranes between their tensile strength and the time and circumstance of rupture. It is an old truism that partial to complete bed rest, by removing the stimulus of gravity, will frequently permit women with partially effaced and dilated cervices to carry their pregnancies to term.[60] It is likely that many cases of repeated second trimester abortion have been so treated with success. One such case has recently been reported in which the cervix was 4 cm. dilated at sixteen weeks gestation and a term delivery was achieved with bed rest.[61] And to further confuse our understanding of the function of the cervix in maintaining pregnancy, Hunt and McGee[62] in analyzing 592 cases of Dührssen's incisions found that although 29.5 per cent of the cervices remained unhealed or with deep residual scars, these patients had no reduction in fertility and no greater tendency in subsequent pregnancies to abortion or premature labor.

THERAPY.—Although the exact mechanism remains variable and uncertain,[63] it is clear that all the reparative procedures are directed toward increasing cervical resistance. Whether increased uterine irritability precedes the cervical changes or whether passive cervical dilatation, by permitting ascending deciduitis or a change in uterine volume relationships secondary to herniation of the amniotic sac into the vagina, stimulates uterine contractions which progress rapidly into true labor, cannot be answered. In almost every instance the therapeutic approach has been toward the supposedly weakened cervix.

Lash and Shirodkar Procedures.—There has been much discussion concerning the selection of the proper surgical procedure—either the Lash operation[8] or one of its modifications to be carried out in the interval between pregnancies or one of the variations of the Shirodkar procedure[29] during pregnancy. Because of the large experience with postoperative cervical stenosis, dysmenorrhea, and infertility, the technic of scarring the area of the internal os with electrocautery has found little support. The application of the Lash procedure to the cervix during pregnancy, although successful in 1 case, entails too great a risk to the products of conception to arouse much enthusiasm.

The interval procedure, either with the Lash technic or in the modification employed by Davids,[25] when successful seems to give satisfactory results in selected cases. The use of absorbable suture material in this repair permits vaginal delivery. Moreover, if repeated vaginal examinations during pregnancy reveal beginning cervical effacement and dilatation, some modification of the Shirodkar procedure may still be carried out. There are three drawbacks to this approach: (1) The repair is not applicable to any patient who first presents with this condition during pregnancy, (2) the problem of interim diagnosis has not yet been satisfactorily solved,[13,23,24,64] and (3) by far the most important drawback is the fact that a definite percentage of patients on whom this procedure is performed develop a postoperative sterility problem.[23] From the statistics presented by Lash, [65] whose series is the largest in this country, one can calculate that from one fourth to one third of the patients, depending on the length of time one chooses to accept as sufficient to demonstrate infertility, have not succeeded in becoming pregnant. These women had all been of proved high fecundity before surgery. Because of this difficulty, Mey[21] suggests that in performing the Lash procedure the endocervical mucosa be preserved intact to preclude fibrosis of the canal.

A different approach to the interim procedure has been proposed by Page,[22,23] who produced a ring of cicatrization around the internal os of the cervix by stimulating a foreign-body reaction. He reported no impairment of fertility, and he permitted vaginal delivery and was able to carry 70 per cent of his patients to term. The first two objections to the interim repair, listed previously, also pertain to this technic.

Closing the cervical canal with a purse-string suture during pregnancy has averted some of these problems. There is no question of reduced fertility, since the pregnancy is already in situ. The procedure has been applied successfully to cases in which the amniotic sac was deeply herniated into the vagina through a widely dilated cervix. Therefore, although prediagnosis and prophylactic therapy is optimal, it is not mandatory for preservation of the pregnancy. The surgical procedure itself is simple and safe and can be performed under heavy sedation or minimal anesthesia. There has been no reported mortality or morbidity from this operative procedure per se. There are, however, many factors connected with this operation that require clarification.

Suture Level.—There is no general agreement as to the exact location of the purse-string suture on the cervix. Opinion seems equally divided as to the necessity of mobilizing the bladder anteriorly and attempting to place the suture at the cervicouterine junction (Table I). Although Barter *et al.*[35] insist that the level of the internal os be reached, McDonald,[33] Picot and coworkers,[44] and we personally [40] have not found this to be essential. The cervical internal os lies at the level of the vesicouterine peritoneal fold anteriorly; at the same level the uterine arteries course, and just lateral to the uterine walls the ureters pass in their course beneath the vessels to enter the parametrial tunnels.[66] It is unlikely that many procedures could be carried out in this area, especially in view of the increased vascularity and bleeding that must obtain during pregnancy, without unwarranted jeopardy to the aforementioned vital structures. Indeed, in the absence of reports of such complications, one can only suppose that the true level of the internal os has seldom been sutured. In our experience the important factor has been to leave at least 2 cm. of cervix below the constricting suture. This can usually be achieved by passing the suture at the junction of the rugose vagina with the smooth mucosa of the portio vaginalis, but on occasion we have had to advance the bladder slightly to accomplish our purpose. Danforth[64] recommends that the level of the suture be approximately 1 inch above the external os; in his opinion this leaves sufficient fibrous tissue distal to the suture so that the normal cervical changes during pregnancy will not hamper the operative result.

Suture Material.—Many different suture materials have been employed for this procedure (Table I). Homologous fascia lata works well but requires secondary surgery in a pregnant patient. Heterologous and preserved fascia have not been successful because of disintegration shortly after operation. Mersilene has been suggested by Barter[36] as a permanent suture because of its use as a vascular graft, where fibroblasts proliferate through the interstices of the material and it becomes an integral part of the tissues. This has not been so in the cervix; in 4 cases in which Mersilene was used we found it to be either extruded from the tissues during labor or readily removable once cut at the onset of labor. It seems that any nonabsorbable and nonreactive suture material, be it polyethylene tubing, tantalum wire, surgical silk, nylon filament, or even cotton umbilical cord tape,[67] may be employed to advantage. On theoretic grounds one might suggest that as broad a band of suture material be used as can conveniently be passed; when the suture is tied as tightly as possible, this should minimize the slight risk of cervic ischemia and transection of tissue by a narrow band of suture.

Suture Placement.—We consider it extremely important that the suture be passed only submucosally and not be fixed to the substance of the cervix per se in any way. There was initial concern about the behavior of the sutured cervix following onset of labor, with fear that either severe cervical lacerations or rupture of the uterus might ensue. As it developed, we learned from our cases that proper submucosal placement of the purse-string suture did not prevent cervical effacement and dilatation. The fibrous portion of the cervix behaved normally since it was not transfixed. The cervix effaced and was drawn up inside the suture; dilatation then proceeded in normal fashion, with only the paracervical mucosa being stretched tightly over the purse-string suture. It was evident that this taut mucosa would tear long before the uterus might rupture because of obstructed labor. Once the suture was severed and tension relieved, cervical dilatation jumped at once to 7 to 8 cm. Postpartum inspection of the cervix revealed only minor lacerations of the cervical mucosa, which almost never required sutures for repair. No instance of unusual cervical bleeding was encountered. With this safety factor in mind, patients with uterine contractions could be observed for many hours to determine if they were in true labor; only when definite cervical changes were observed was the suture cut and removed. Easterday and Reid[39] warn about severe cervical lacerations should the suture not be removed as soon as labor starts. Since in their series the bladder was mobilized routinely, these lacerations may have resulted from the fact that the suture was passed through the parametrial tissues and hence did not have sufficient mobility. There have been at least 2 cases of ruptured uterus following the Shirodkar procedure. Durfee,[43] who employed a fascial strip suture, advanced the bladder, and fixed the fascia to the underlying cervical tissue with nonabsorbable sutures, reported a patient who went into labor thirty-two days after the operation and delivered a premature infant spontaneously through a split in the anterior lower uterine segment. A similar accident occurred in Chicago wherein a Mersilene band was anchored to the cervix with wire; after forty-eight hours of uterine contractions, which required sedation but were assumed to be only prodromal labor since the cervix did not change, the patient delivered an immature fetus through the anterior cul-de-sac following rupture of the lower uterine segment.[68] In our opinion fixation of the suture to the underlying cervix does little to improve the prognosis and exposes the patient to needless risk.

Route of Delivery.—There can be no argument about the most desirable route of delivery. All authors agree that once the purse-string suture is removed, cervical dilatation is relatively painless and vaginal delivery rapid. To subject these patients to cesarean section is unwarranted. Every attempt should be made to employ removable sutures and to permit vaginal delivery. Even patients in whom the repair is accomplished by scarring can deliver vaginally if permitted to do so.[23,29,44] The problem of resuturing the cervix with successive pregnancies is more than offset by the trauma and hazard of repeated cesarean section.

Contraindications to Shirodkar Procedure.—Definite contraindications to the Shirodkar procedure have been substantiated. These include active labor, fetal anomaly, uterine bleeding, hydramnios, and ruptured membranes. The latter situation can be the most serious. Our experience has shown that if membranes rupture prior to suture of the cervix, the cause is hopeless. If rupture occurs subsequent to operation, the suture must be immediately severed and the uterus permitted to empty itself in due course. Failure to do this in 2 of our patients produced severe amnionitis and endometritis, which fortunately responded to antibiotic therapy. A similar instance, at the Presbyterian Hospital in New York City, resulted in the only maternal death to our knowledge from this procedure: A patient whose membranes ruptured three days following a Shirodkar procedure and in whom the cervical suture was left in situ for five more days developed in rapid succession a severe intrauterine infection and overwhelming septicemia, to which she succumbed despite heroic measures.[69] Although in some instances successful, it is obvious that these risks attend an attempt to pass beyond the recognized safe limits of the procedure.[70]

Results.—It is of interest that all of the procedures in whatever modification have yielded successful results in 70 to 80 per cent of cases.[23,24,36,43] Javert[71] and Mann,[14] who have emphasized the psychologic component in repeated abortion, have also reported a success rate in the same percentage range in cases indicating this procedure. Since the surgery is simple and innocuous, the Shirodkar procedure may sometimes be performed in cases of repeated second trimester abortion in the absence of a classic history or a definitive diagnosis of incompetent internal os. From the mother's point of view, it matters little whether a true anatomic or physiologic defect is corrected or whether the surgical procedure serves as a strong support to a weak psyche, perhaps the basis for increased uterine irritability and previous abortion. A successful result, however, should induce no delusion in the physician as to the indication for operation.

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(*Number seventy-four in a series on Recent Advances in Medicine and Surgery*)

Civilization is a progress from an indefinite, incoherent homogeneity toward a definite, coherent heterogeneity.—HERBERT SPENCER

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

MAY 27, 1959

Discussed by MAXWELL L. GELFAND, M.D.

Case History

HENRY H. MURPHY, M.D.: A forty-one-year-old white woman was admitted to Knickerbocker Hospital for the first time because of nausea, vomiting, and diarrhea of five days duration.

Her past history was unremarkable until some three years previously, when she had had an attack of chills and fever accompanied by dysuria and polyuria. Bacteriologic studies were inconclusive. She was noted to have a blood pressure of 160/110 at that time. During the following three years additional episodes of a similar nature occurred but seemed to respond well to antibiotic therapy. The patient's hypertension persisted, and, although she never developed azotemia, an intravenous pyelogram a year before admission revealed slight calyceal changes somewhat suggestive of tuberculous disease. She was empirically given a course of antituberculous therapy, which she tolerated without difficulty. Nine months prior to this admission she had had the first of a series of grand mal convulsions. Extensive study at another hospital, including skull x-ray, spinal tap, electro- and pneumoencephalography, failed to demonstrate the cause of these convulsive seizures, but the half dozen or so which were observed were always noted to occur in association with vomiting or other stress. The only other pertinent history was the fact that the patient had been a moderate alcoholic for a number of years.

Five days before admission she developed nausea, was unable to retain food and fluids, and had watery nonbloody diarrhea. As these symptoms grew progressively worse, she became weak and lethargic and had an epileptiform seizure; she was admitted for appropriate therapy.

Physical examination revealed a somewhat obtunded, acutely ill white woman with a fetid odor to her breath. The temperature, pulse, and respiratory rate were normal. The blood pressure was 140/110. The head was normocephalic, and the neck was supple. The ocular fundi were normal, and there was no scleral icterus. The lips and tongue were pale and quite dry. The pharynx was clear without exudate. The lungs were clear to percussion and auscultation. The heart sounds were of fair quality, and no murmurs were heard. The abdomen appeared a trifle tense and distended, and palpation revealed diffuse tenderness although no real rigidity or rebound could be demonstrated. There was no lymphadenopathy. Pelvic and rectal examination findings were within normal limits. The extremities were free of cyanosis, clubbing, or edema, and all pulses were of good quality. There were no significant findings on neurologic examination other than a semisomnolent mental status and coarse tremors of both hands. The patient was thought to be azotemic and dehydrated, and intravenous fluids and an antiemetic were administered.

The urine had a specific gravity of 1.009, 3 plus albumin, and 1 plus sugar, and the sediment contained many bacteria, 6 to 20 white blood cells, and occasional red blood cells per high power field. The hemoglobin was 7.1 Gm. per 100 ml., and the red blood cell count was 2,650,000. The white blood cell count was 13,000 with a slight shift to the left. The sedimentation rate was 84 mm. per hour. The nonprotein nitrogen was 87.5 mg. per 100 ml., and the serum bilirubin was 1 mg. per 100 ml.

During the following few days diarrhea and abdominal tenderness persisted. The patient ran a low-grade fever, but as her vomiting ceased and as she was transfused with whole blood, she appeared to improve somewhat. On the fourth hospital day her temperature rose to 102 F., vomiting recurred, and the abdomen became even more distended, tense, and tender. The nonprotein nitrogen was 72 mg., the calcium was 4.4 mg., and the phosphorus was 1.5 mg. per 100 ml. Per liter the serum sodium was 125 mEq., the potassium was 2.6 mEq., the chlorides were 82 mEq., and the carbon dioxide was 10.5 mEq. The total protein was 4.9 Gm. per 100 ml. with 3.2 Gm. albumin and 1.7 Gm. globulin. The serum amylase was 287 units. Bacillus proteus was isolated from the urine. An electrocardiogram showed slight S-T segment depression in all left ventricular leads. A flat film of the abdomen gave no evidence of intestinal obstruction or free intraperitoneal air. No abnormal calcification was apparent.

Supportive measures and antibiotic therapy over the ensuing few days led to neither clinical nor laboratory improvement. She continued febrile, stupor deepened, and tachypnea developed. Urinary output decreased to oliguric levels; albuminuria, pyuria, and bacilluria persisted. There was no carpopedal spasm or Chvostek sign although the calcium remained at 4.2 mg. per 100 ml. Urea frost did not appear. The creatinine was 6.6 mg. per 100 ml., and the phosphorus was 3.1 mg. per 100 ml. The serum amylase was 264 units, and the alkaline phosphatase was 8 units. An abdominal tap yielded no fluid. There was no sacral or peripheral edema. Preterminally the sodium was 129 mEq., the potassium was 1.9 mEq., and the carbon dioxide was 9.5 mEq. per liter.

On the seventh hospital day acute pulmonary edema supervened and could not be controlled, and the patient expired.

Discussion

MAXWELL L. GELFAND, M.D.: To recapitulate the protocol, the problem concerns a forty-one-year-old white woman who was admitted with a five-day history of nausea, vomiting, and nonbloody diarrhea. She was known to have been hypertensive for three years, and she had had some complaints suggesting an infectious process in her kidneys for which she had been given antibiotics. In addition, she had had many grand mal convulsions for the past nine months, and she was a moderate alcoholic. Physical examination revealed that the patient was acutely ill and somnolent and had a fetid odor to her breath. The diastolic blood pressure was elevated but the ocular fundi were normal. She was dehydrated, and her abdomen was distended and tender but without rigidity. At first she ran a low-grade fever, but this became higher.

Laboratory data indicates (1) anemia, (2) leukocytosis with a shift to the left, (3) an elevated sedimentation rate, (4) azotemia, (5) hypoproteinemia, (6) an unusual electrolyte disturbance with hypochloremia, hyponatremia, hypophosphatemia, hypocalcemia, and acidosis, and (7) an elevated serum amylase and a slightly elevated alkaline phosphatase. Despite intensive therapy, these alterations in the homeostatic mechanisms of the milieu interne were irreversible, and the patient died on the twelfth day of her terminal episode in intractable pulmonary edema.

The symptoms and laboratory data add up to uremia: renal insufficiency with ultimate oliguria, azotemia, electrolyte imbalance, gastrointestinal symptoms, and cerebral manifestations. Fishberg[1] defines uremia as a symptom complex resulting from renal insufficiency and retention of urinary constituents. However, we must remember that the symptoms associated with the uremic state are not due exclusively to simple retention; the impairment of fluid balance is more important, for when fluid balance is disturbed, electrolyte imbalance and acidosis may ensue and this may become incompatible with life. There are three main categories of uremia:

1. Prerenal uremia, in which the deficient renal function is due to decreased renal blood flow, the kidneys showing few histologic abnormalities on biopsy or at necropsy.

2. Renal uremia, in which there is parenchymatous disease of the kidneys in excess of the ability of the remaining nondiseased renal tissue mass to compensate.

3. Postrenal uremia, in which the primary lesion is an obstruction of the urinary tract.

A history of recurrent episodes of chills and fever with urinary complaints, bacilluria and pyuria on admission, and the ultimate isolation of Bacillus proteus from the urine all point to an acute exacerbation of chronic pyelonephritis as the cause of this patient's uremia. There is nothing in the history to suggest prerenal or postrenal uremia. Fishberg,[1] Bell,[2] and others believe that chronic pyelonephritis is a more common cause of uremia in women than is chronic glomerulonephritis. Bacillus proteus is one of the organisms commonly implicated in this infection, whether it be of the obstructive or hematogenous type. However, chronic pyelonephritis is often a mixed infection, and the bacterial flora may change from time to time. Renal function may be normal for a long period of time in the presence of pyuria and bacilluria, but sooner or later it becomes impaired and can be documented by hyposthenuria, decreased urea clearance or phenolsulfonphthalein excretion, and ultimately azotemia. Often the disease is not detected until uremia develops. Longcope[3] and Weiss and Parker[4] were among the first to demonstrate the association of chronic pyelonephritis with hypertension; indeed, the changes in the renal arterial tree are striking in most cases. The intravenous pyelogram may or may not be altered in this disease. The changes, when present, consist of various dilatations, constrictions, or distortions of the calyceopelvic outline, and on occasion there may be a diminution in the size of the renal shadows.

However, there is more to the case under discussion than chronic pyelonephritis and uremia. The marked abdominal tenderness associated with distention and diarrhea and the elevated serum amylase are unexpected observations. Likewise, in relatively silent chronic pyelonephritis, leukocytosis and an elevated sedimentation rate are uncommon, but these could be accounted for by the acute exacerbation which we have postulated. The terminal episode in this case may well have been an intra-abdominal catastrophe, such as acute pancreatitis, perforated duodenal ulcer, ruptured gallbladder, ruptured pancreatic cyst, or mesenteric thrombosis. In such conditions a flat film of the abdomen may not at first be very revealing. The diagnosis must often be inferred from the history of an underlying disease supported by appropriate physical findings and laboratory evidence.

I can find little corroborative evidence in this history for a perforated ulcer or a ruptured gallbladder. A pancreatic cyst that had ruptured could account for the low serum calcium, but against this diagnosis is the fact that the paracentesis yielded no fluid. Occlusion of the mesenteric vessels cannot be easily excluded in view of the degree of arterial disease implicit in a diagnosis of chronic pyelonephritis with hypertension, but one would expect roentgenographic evidence of ileus by the time the flat film of the abdomen was taken. The most plausible intra-abdominal catastrophe which might complicate this case of chronic pyelonephritis is acute pancreatitis. The history of alcoholism and the elevated serum amylase are consistent with the diagnosis, but abdominal pain, usually a most striking feature, is lacking. However, Bartholemew and Comfort[5] called attention to the fact that at times pancreatitis may be painless. Possibly the fact that the patient's sensorium was obtunded by uremic acidosis may have inhibited her perception of pain. It is always difficult to assess from the protocol the exact extent to which a patient may have lost her faculties. The 1 plus glycosuria supports the diagnosis of acute pancreatitis, as do the distention, tenderness, and diarrhea. The absence of steatorrhea and the failure to demonstrate radiopaque calculi in the pancreatic ductal system are not important in this case; they would be more likely in chronic pancreatitis. If any lesion is present in this patient's pancreas, it is acute.

No cataloguing of possible intra-abdominal catastrophes would be complete without inclusion of acute appendicitis with perforation. In patients who are toxic from some other cause and in patients whose sensorium is disordered, pain may be absent, as in acute pancreatitis. The absence of any localizing sign, the negative rectal examination findings, and the absence of purulent fluid on paracentesis several days after the hypothetical rupture would have occurred all militate against this possibility. Needless to say, a perforated appendix would not explain the elevated serum amylase.

Another possible catastrophe should be mentioned—rupture of the esophagogastric junction secondary to vomiting, the so-called Mallory-Weiss syndrome. Against this possibility is its rarity, the fact that the vomiting is not described as forceful, the absence of subcutaneous emphysema and the V sign described by Naclerio,[6] and the absence of signs and symptoms of irritation of the left pleura due to escape of fluid through the perforation into the left side of the chest.

An unusual feature of this case is the uniform depression of all serum electrolytes: sodium, chlorides, potassium, calcium, and phosphorus. Traditionally in uremia, regardless of etiology, there is retention of sodium, an increase in phosphorus with reduction of calcium, and ultimately hyperkalemia. In recent years, however, it has been shown that in an occasional case of chronic renal disease, low serum electrolytes can occur, and certain clinical features characterizing such states have been recognized. A syndrome known as "salt-losing" nephritis has been described in which renal tubular damage is selective and sodium chloride is not normally conserved. This syndrome is characterized by weakness, collapse, hypotension, confusion and delirium, and pain in the extemities. At autopsy no specific lesion may be found in the kidneys, although in the majority of reported instances pyelonephritis was the underlying renal lesion. The presence of this syndrome should be considered in all patients with renal insufficiency whose salt intake has been restricted. Thorn and coworkers[7] state that salt-losing nephritis may resemble Addison's disease but can be easily differentiated from it by failure of the tubular epithelium to respond to DOCA, cortisone, or ACTH.

The pronounced reduction in serum potassium levels might suggest the possibility of a "potassium-losing" nephritis, now known as primary aldosteronism. This syndrome is characterized by profound periodic muscular weakness, intermittent tetany and paresthesia, polyuria and polydipsia, and hypertension. There is no peripheral edema, and the chemical abnormalities consist of hypernatremia and alkalosis in addition to the hypokalemia. Since our patient presented none of these associated phenomena, we must explain her low potassium on the basis of prolonged diarrhea and vomiting.

The persistent low calcium and phosphorus levels in this patient's serum disturb me greatly. Although the calcium was reported at 4.4 mg. per 100 ml. and then at 4.2 mg., it must be remembered that in the presence of hypoproteinemia and acidosis this figure may not be accurate. The concentration of bound calcium varies directly with the protein concentration, and it is the ionized calcium which has diagnostic significance. Since this patient had a total protein almost half of normal, a normal serum calcium level for her should be expected to be only about 7.5 mg. per 100 ml. rather than 10 mg., which is customarily considered a mean value. Even so, our patient had hypocalcemia. The conditions in which one may find a low calcium level are: (1) hypoparathyroidism, either idiopathic or following ablation, (2) tetany due to alkalosis, (3) juvenile rickets or adult osteomalacia, (4) steatorrhea, and (5) renal failure. I cannot substantiate a diagnosis of hypoparathyroidism in the absence of tetany; Chvostek's, Trousseau's, or Erb's signs; premature cataracts; x-ray film demonstration of calcification in the basal ganglia; or multiple ectodermal lesions: such as dry, coarse, scaly skin; absent pubic and axillary hair, absent eyelashes with scanty eyebrows; and atrophy of the toenails and fingernails. The only item in the protocol consistent with parathyroid deficiency is the history of convulsions.

The particularly low serum phosphorus level in spite of renal insufficiency raises the possibility of hyperparathyroidism, either primary or secondary (compensatory). There are four well-recognized conditions in which one encounters hyperplasia of the parathyroid glands: (1) rickets or osteomalacia, (2) pregnancy, (3) calcium deprivation, and (4) renal failure. A low serum calcium level is the denominator common to all four conditions, and it seems probable that the normal stimulus for parathyroid hormone production is a serum calcium level below normal. The parathyroid hormone appears to have two separate actions: it raises the serum calcium level and it inhibits renal tubular reabsorption of the phosphate ion, thereby producing phosphate diuresis. Thus, in our patient the prolonged presence of a low serum calcium level may have produced parathyroid hyperplasia (secondary hyperparathyroidism) which in turn acted on the renal tubules, already compromised by the pyelonephritis, to produce a phosphate diuresis, reflected by a low serum phosphorus level. Acute pancreatitis may be associated with primary hyperparathyroidism. I can see no reason why acute pancreatitis cannot develop in the context of secondary hyperparathyroidism as well. Cope *et al.*[8] have called attention to a practical point from their observation that pancreatitis and hyperparathyroidism can coexist. As is well known, the concentration of serum calcium is decreased during active pancreatitis, and such lowering at that time, they say, may mask temporarily the hypercalcemia of hyperparathyroidism. This set of circumstances may well apply to our patient, in whom the diarrhea and vomiting associated with acute pancreatitis probably continually depressed the serum calcium.

To explain the diminution of all the electrolytes and the development of secondary hyperparathyroidism, one must assume that the renal acidosis resulted from a lesion of the kidney with marked tubular insufficiency and relatively little glomerular damage. The two important functions of the kidney tubules, to make ammonia and to excrete an acid urine, have to do with the conservation of base. Therefore, in the presence of damaged tubules one might expect a scarcity of base with which to excrete acid. In this eventuality, calcium, being a base, will be in demand and will appear in the urine, causing the serum calcium to fall. This low calcium serves as a stimulus for parathyroid hyperplasia, which will produce a low serum phosphorus level. Calcium will not be deposited in osteoid, and osteomalacia will result. The noncalcified osteoid is surrounded by active osteoblasts, and an elevation of the serum phosphorus level may be detected. Potassium, being a base, will also be lost. The etiology of the kidney pathology producing renal acidosis is variable, but pyelonephritis has been implicated.

In conclusion, I seem to be just as confused now as I was before I started, and I am sure that most of you feel the same way. However, in an effort to condense my thoughts, I would recapitulate as follows: I think that this patient had an acute exacerbation of chronic pyelonephritis. This would account for the picture of renal failure and uremic acidosis with destruction of tubules and loss of base-conserving mechanisms. This alone would not suffice to explain the reduction in serum calcium and phosphorus. It is necessary to incriminate some intra-abdominal catastrophe, and the available evidence strongly suggests acute pancreatitis. The vomiting and diarrhea associated with this would account for the generalized reduction in all electrolytes. Secondary hyperparathyroidism could be a result of the chronic renal insufficiency. The terminal oliguria may have been accelerated by a necrotizing papillitis in the context of long-standing pyelonephritis even though there was no diabetes mellitus. The terminal pulmonary edema is a common cause of death in uremia.

Normally, I would rest my case here. However, the recent literature has pointed out the relation between pancreatitis and hyperparathyroidism. Cope *et al.*,[8] in reporting 2 such cases, suggest that pancreatitis may be a clue to the diagnosis of hyperparathyroidism. Several such reports exist,[9,10] and the relationship between the two diseases seems more than coincidental. In this case the serum phosphorus was very low, suggesting phosphate diuresis as a result of inhibition of tubular reabsorption of the phosphate ion, one of the basic abnormalities of hyperparathyroidism. Renal insufficiency alone should produce elevation of serum phosphate. The absence of skeletal involvement or demonstrable renal calculi does not exclude the possibility of hyperparathyroidism, for these are often late complications. Many cases masquerade as renal insufficiency with uremia. Thus, being a gambling man at heart, I would like to suggest the following diagnoses: (1) acute pancreatitis (painless) with hyperparathyroidism, (2) acute and chronic pyelonephritis with uremia, and (3) pulmonary edema, terminal.

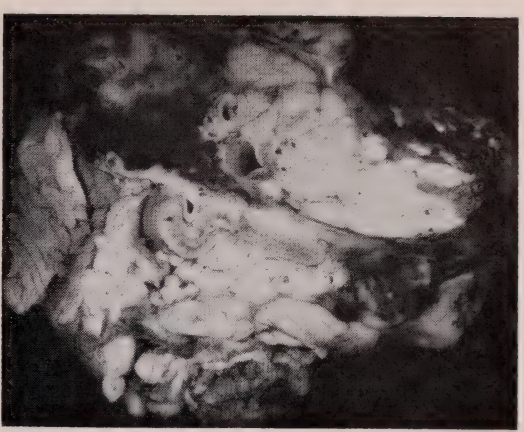

FIG. 1. Cross section through midportion of pancreas showing relative preservation of the acrhitecture of the gland with hemorrhagic suffusion of peripancreatic and periadrenal fat and a few chalky flecks of fat necrosis.

Diagnoses

Clinical.—*Chronic pyelonephritis with uremia.*

Dr. Gelfand.—(*1*) *Acute pancreatitis (painless) with hyperparathyroidism,* (*2*) *acute and chronic pyelonephritis with uremia, and* (*3*) *pulmonary edema, terminal.*

Anatomic.—(*1*) *Acute pancreatitis with extensive fat necrosis,* (*2*) *chronic pyelonephritis,* (*3*) *fatty metamorphosis, liver, severe,* (*4*) *pulmonary edema,* (*5*) (*uremia*).

Pathologic Report

WILLIAM B. OBER, M.D.: Postmortem examination disclosed extensive fat necrosis of the omentum, mesentery, peritoneal surfaces, and retroperitoneal fat. There was diffuse hemorrhagic necrosis circumscribing the pancreas. However, the pancreas itself was essentially well preserved in

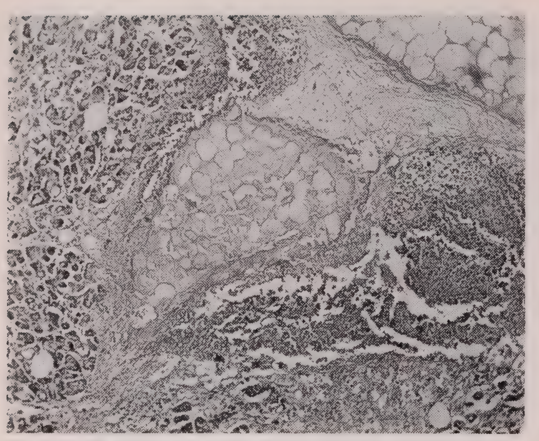

FIG. 2. Pancreas showing fat necrosis and inflammatory exudate.

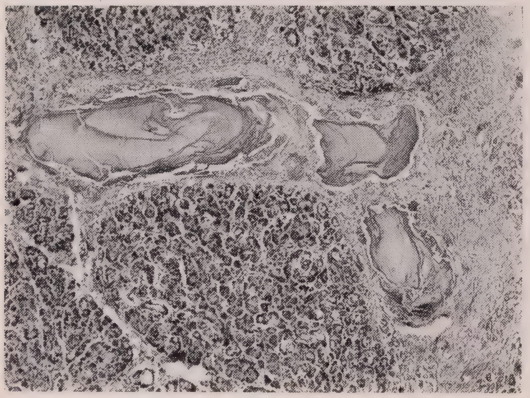

FIG. 3. Relatively well-preserved pancreas showing masses of inspissated secretion plugging medium-sized ducts. The ductal epithelium is partly denuded, but the duct wall is preserved and there is little surrounding inflammation or necrosis.

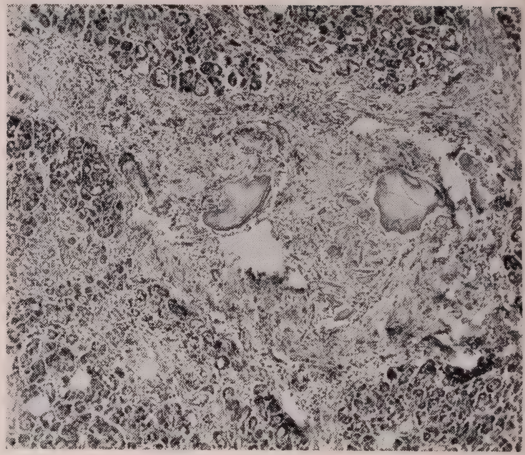

FIG. 4. Ruptured duct in which there is residual inspissated secretion; there is necrosis around the duct and an acute inflammatory reaction.

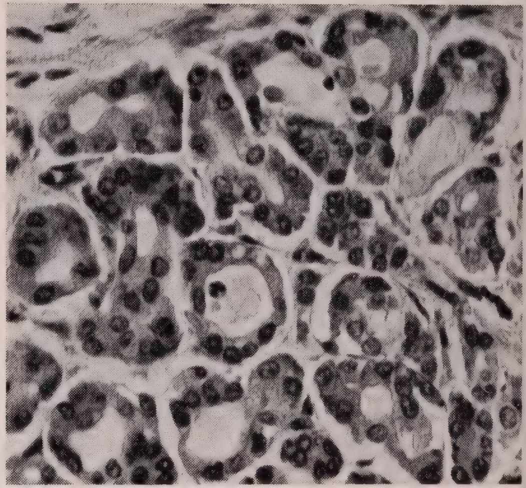

FIG. 5. A well-preserved area of pancreatic parenchyma showing the acini to be dilated, lined by flattened epithelium, and containing small amounts of inspissated secretion.

outline and configuration, albeit somewhat edematous and firm. A section through the midportion of the pancreas (Fig. 1) showed the well-defined lobular structure of the gland, the hemorrhagic suffusion of the retropancreatic fat as well as the periadrenal fat, and a few chalky flecks of necrotic fat. Microscopic examination revealed cellulitis of the glandular parenchyma fat necrosis, and liquefaction necrosis (Fig. 2). Many of the medium-sized and small ducts were filled with chunks of amorphous, eosinophilic secretions (Fig. 3). The epithelium lining the ducts with inspissated secretions was often denuded, and in a few places the ducts had ruptured (Fig. 4). There was a diffuse leukocytic infiltration of the interstitial connective tissue. Many of the lobules were almost entirely composed of acini which were dilated, showing epithelial flattening and accumulation of somewhat less dense eosinophilic secretory material within their lumens (Fig. 5).

Both kidneys showed extensive coarse scarring, and there was a moderate degree of hydroureter and hydronephrosis on the right side. Both kidneys showed extensive pyelonephritis with much interstitial fibrosis and many areas of glomerular destruction, tubular atrophy, and tubules filled with "colloid." The major intrarenal arteries showed only moderate intimal thickening. The liver weighed 1,660 Gm. but was extremely soft, flabby, and yellow. Microscopic examination showed diffuse and extensive fatty metamorphosis but no necrosis or cirrhosis. There was no cholecystitis and no gallstones. The parathyroid glands were normal.

Bagenstoss[11] studied the pancreas in uremia in 270 patients, 85 with chronic glomerulonephritis, 85 with hypertensive nephrosclerosis, and 100 with pyelonephritis, hydronephrosis, or uremia due to extrarenal factors. He found a "remarkable" degree of dilatation of the acini, flattening of the lining cells, and inspissation of secretion in about 45 per cent of the patients dying in uremia, as contrasted with minor degrees of similar changes in a control series of 200 patients dying of a variety of causes without uremia. The pancreatic lesion he described is essentially the one we have illustrated here, the present case being a severe example. Bagenstoss suggests that "dehydration plus an interference with the release and normal action of secretion brought about by excessive vomiting are responsible for the lesion." Vomiting was certainly a prominent feature in this patient's terminal illness.

However, lest we become overzealous in our attempt to attribute the pathogenesis of this patient's pancreatitis to inspissation of secretions, rupture of terminal ducts and acini followed by extravasation of digestive enzymes, we must not overlook the evidence of nutritional failure in a moderate alcoholic, as evidenced by the severe degree of fatty metamorphosis of the liver. While in many cases of pancreatitis we can only guess at the possible pathogenesis, in this case we have demonstrated the two mechanisms most frequently thought of as etiologic backgrounds for the disease. Presumably, the metabolic defect (nutritional deficit and fatty liver) was present before vomiting led to inspissation of secretions in the pancreatic ducts, and the latter reinforced the former. I would emphasize that this is not the usual sequence of events. Most patients with uremia do not develop acute pancreatic necrosis even though the Bagenstoss effect is present to a considerable degree. Something must be added to tip the balance.

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A classic is something that everybody wants to have read and nobody wants to read.—MARK TWAIN

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
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Cardiovascular Collapse During Closure of Bronchopleurocutaneous Fistula

Surgical and anesthetic managements of patients with bronchopleurocutaneous fistulas present serious problems in supply and control of adequate ventilation, prevention of spread of secretions, and prevention of hemorrhage into normal lung areas from affected lesions. The following case report depicts such difficulties.

Case Report

A twenty-seven-year-old woman had a history of severe whooping cough when she was eight years of age. This was followed by bronchiectasis, for which it was deemed necessary to perform a lower left lobectomy when she was fifteen years of age. After the lobectomy she developed empyema. Since then she had frequent pulmonary complications, such as pneumonia, pleurisy, and a pulmonary abscess cavity. The present preoperative diagnosis was a bronchopleurocutaneous fistula presenting itself as a 2.5-cm. fistulous tract in the left posterior portion of the chest which presumably had persisted since the lobectomy complicated by the postoperative empyema. The proposed operation was closure of this bronchopleurocutaneous fistula.

The preoperative laboratory findings were unremarkable. The hemoglobin content of the blood was 10.8 Gm. per 100 cc. The white blood cell count was 5,700 per cu. mm. The urinalysis findings were negative for sugar and albumin and microscopically. The patient refused bronchospirometric studies for evaluation of the functional capacity of the remaining upper left lobe.

For preanesthetic medication this woman was given 75 mg. of Demerol combined with 0.4 mg.

Discussed at a conference held at Bellevue Hospital, New York City, May 4, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

of scopolamine by intramuscular injection with satisfactory effect. An hour later anesthesia was induced by the intravenous injection of 325 mg. of thiopental sodium in a 2.5 per cent concentration. This was followed by the intravenous injection of 12 mg. of *d*-tubocurarine, after which the patient's trachea was intubated under direct vision with a number 36 cuffed tube. Anesthesia was then maintained with diethyl ether and oxygen, the latter at a rate of 1 L. per minute. After the fistula was exposed the oxygen flow was increased to 5 L. per minute. Manual assistance of respiration by way of the breathing bag was continued, but it became difficult to prevent collapse of the breathing bag because of great leakage from the fistula. Tracheal aspirations through the endotracheal tube were carried out every fifteen minutes.

During the first half hour no mucus was noticed; in the second half hour a fair amount of bloody mucus was obtained; then considerable bloody mucus and later copious amounts of pure blood were suctioned off. An hour later, during evaluation of the fistula and deliberation over whether to swing a muscle flap over it, it was noticed that the patient's arterial blood pressure had diminished from 120/80 to 90/50. Anesthesia was discontinued and oxygen only was administered, but after ten minutes the blood pressure was 70/40 with a pulse rate of 96 per minute. Five minutes later a questionable blood pressure of 65/30 was obtained, and at the next reading the pulse was not palpable.

Operative manipulation was stopped, and an effort was made to elevate the blood pressure by the administration of Neo-Synephrine intravenously, of an increased amount of oxygen (10 L. per minute) with assistance, and of an additional 1,000 cc. of blood under pressure (a similar amount of blood had been administered previously). Finally, after ten to fifteen minutes of attempting to evaluate the blood pressure without success, the patient was turned from the lateral position to the supine one, and artificial manual cardiac contractions were started. Epinephrine, Cedilanid, and calcium chloride were injected into the heart. The heart, which had had a feeble beat and which had been dilated when the chest was opened, responded with moderate contraction. After cardiac massage had been continued for forty-five minutes, the heart began to beat spontaneously and effectively. The patient began to breathe spontaneously in a shallow and jerking manner. The radial pulse could be felt but no brachial arterial blood pressure could be detected. Norepinephrine was administered by intravenous drip, but the patient died after four hours.

*Comment on Surgical Management**

In evaluating this case for determination of the best surgical approach, there should have been several considerations:

1. Bronchoscopy might have revealed the location and condition of the bronchus at the site of the fistula with significant influence on surgical therapy. Since it must be assumed that this fistula had persisted for at least twelve years, it is unlikely that the endoscopic approach would have been effective in closing it.

2. With the fistula closed either by sutures or packing, a rough estimate might have been made of total residual function. If the results of such studies showed that the patient had a good pulmonary reserve, it could be assumed, with all the deformities of the left side of the chest which this patient presented as the result of the previous operations, that most of the functions were still being performed by the right lung. If this were the case, completion pneumonectomy might have been considered as an operative approach.

3. Since leakage from a fistulous tract poses a difficult problem for the anesthetist, two other modes of operation might have been investigated. This could have been done at the time of operation or prior to operation as a trial procedure if the patient would consent. Endobronchial anesthesia with cannulation of the right main bronchus could have been tried. This is a difficult procedure but with expert anesthetic management it certainly is satisfactory. With the use of suitably placed balloons one might have maintained adequate ventilation of the right lung. A second approach might have been to close the fistula surgically at the skin surface and then to attempt endotracheal

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* By Laurence Miscall, M.D., Department of Surgery, Bellevue Hospital.

anesthesia with the operative side in the prone position.

These surgical procedures merit evaluation. The operative visualization and closure by suture of a twelve-year-old fistula has little chance of success. A localized thoracoplasty, probably of a Schede type, might have been considered because of the age of the empyema. This would have required control by either suture or packing of the cutaneous fistula during the operation to prevent collapse. It should be borne in mind, though, that this procedure in such a long-standing situation has little chance of success. However, if it does decrease the area of infection, it might provide a better situation for future operations. Musculocutaneous grafts and similar methods have also yielded a high precentage of poor results.

A completion pneumonectomy through an anterior approach might have been considered, or a posterior approach in a face-down position might have been preferred if endobronchial anesthesia with blocking of the left bronchus had not proved a feasible method of anesthetic control. Since the ultimate success of such a procedure is directly related to the amount of infection in the residual postoperative pleural space, a thoracoplastic closure of it must be considered as either a preliminary or a secondary procedure.

If this case had been presented to me for surgery, I would have followed this routine: I would have made certain that the empyema was adequately drained. Since I believe that endobronchial anesthesia would have been successful, I would have employed that technic. I would have followed this by a completion pneumonectomy. If the patient withstood the operation well, it might have been possible to complete both the pneumonectomy and the thoracoplasty at one time. However, if the patient did not withstand the procedure well, I would have completed the pneumonectomy and closed the chest with tube drainage in order to maintain the mechanics of respiration with a drainage setup which would permit equalization of the postoperative intrapleural pressures. In this way the mediastinum would have been kept at a point which permitted adequate use of the right lung. I would then, because of the long-standing empyema, have completed a thoracoplasty downward to complete as much as possible a collapse of the left chest and protect the newly resected bronchus.

Comment on Anesthetic Management

From the anesthetic point of view, it would seem important to protect the right lung by inserting an airway into the right main bronchus and by sealing off the space between the outer surface of the tip of such a tube and the mucosal layer of the right main bronchus. Such a technic was recommended as early as 1932 by Gale and Waters[1] and in 1936 by Rovenstine.[2] One difficulty in such a procedure is that the right main bronchus is relatively short and that the opening of the secondary bronchus leading to the right upper lobe—the eparterial bronchus—is a short distance from the lateral distal end of the tracheal bifurcation so that this opening may be occluded easily. To overcome this difficulty Bonica and Hall[3] have devised a special tube for the right bronchus which has a long-lipped bevel facing the right so that the opening does not occlude the eparterial bronchus and so that the opposite side of the beveled tip has sufficient anchorage on the medial aspect of the bronchus. Another recommended tube is that devised by Carlens.[4,5] It consists of a flexible double-lumen catheter ending in a properly divided hook which is placed at the carina. The left portion of the hook is a continuation of the tube in order to fit the left main bronchus; at the right of the hook is an opening for the right main bronchus. Two inflatable cuffs are in the vicinity: one proximal to the hook in the distal trachea area and one about at the left bronchial end so that the right and left bronchi are completely separated for both ventilation and aspiration purposes.

Such a tube might have prevented the disastrous outcome of the case under discussion.

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(*Number eighty-two in a series of Clinical Anesthesia Conferences*)

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 7 to 13, 1960, in New York City.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 15, 1960,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Augrist, M.D., *Chairman*
Committee on Prize Essays

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Miscellaneous Incidents Including Benzine Poisonings

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
HTH	13 years	Female

A thirteen-year-old female camper, a resident of Florida attending a summer camp in the Catskills, while on an overnight trip was overcome from chlorine in a tent latrine. The fumes were produced from the use of the HTH (70 per cent calcium hypochlorite) used as a sanitary disinfectant. The camp physician states that on examination she was found to be in a very excited state with lacrimation and spells of coughing. Slight irritation of the pharynx was noted. Chest examination revealed wheezing in the lower left lobe and in scattered areas of the right lung. She was not cyanotic at this stage, and no air hunger was noted. Milk and egg white by mouth and ammonia by inhalation were given for dilution and for possible counter action of the chlorine; epinephrine 0.2 cc. by subcutaneous injection was administered in order to alleviate bronchial spasms. Two injections each of procaine penicillin 600,000 units intramuscularly were given as a preventive measure during her stay in the infirmary. She was kept in the infirmary for observation, where she slept quietly and rested.

Her appetite was normal. Urinalysis findings were normal.

At midnight, July 15, she had severe coughing spells, air hunger, and cyanosis and showed general excitability. Signs of lung congestion were observed on examination. Because of limited facilities in the camp infirmary and on the advice of its New York consultant the patient was transferred for further observation and treatment to New York Hospital, where she remained for several days. The outcome ultimately was uneventful.

The rationale of the use of ammonia in the treatment of chlorine poisoning is not quite clear.

As a matter of fact, the mixture of ammonia and chlorine can produce the stronger irritant, chloramine. The widespread use of high-potency chlorine-containing disinfectants in camps presents hazards that should be recognized by camp directors and others concerned with camp operations. The presence of large numbers of children in camps imposes a special obligation and responsibility on the part of camp personnel. Precautionary measures with regard to handling as well as storage of potentially hazardous chemicals should be diligently adhered to; all safety measures which need to be employed in the home are even more necessary in such situations. Campers should never be allowed to administer insecticides composed of chemicals and hazardous solvents.

Incident 2

Toxic Agent	*Age*	*Sex*
Meprobamate	1 year	Female (Spayed Siamese Cat)

A physician had advised a policeman friend to give one-half tablet of the tranquilizer to the Siamese cat to protect it against vomiting on an automobile trip. The following day the cat was unable to stand on its feet. When the owner contacted the Poison Control Center, he was informed that the prognosis for a reasonable overdose in humans and animals was good.

This incident is recorded as an additional reminder to doctors when prescribing for their own as well as patients' pets that weight and dosage must be kept in mind, for both animals and humans.

Incident 3

Toxic Agent	*Age*	*Sex*
Plastic Toy	2 years	Male

The advice of the Center was requested when a two-year-old child ingested a plastic toy. The Center was questioned on the possible toxicity, and the information obtained from the manufacturer brings up some pertinent facts on plastics. The dangers associated with the misuse of thin plastic has recently received deserved attention. However, the ingestion of plastics is not normally considered a hazard because to a large degree they are inert and have low toxicity. These observations refer to plastics per se, for example, polyethylene and the vinyl types. Sometimes as much as 60 per cent of a plastic product may be composed of adjuvants, such as plasticizers, pigments, and antioxidants.

In the present case the product involved contained barium and cadmium stearates. Both barium and cadmium are objectionable components of anything that might be ingested by a child. Manufacturers of products used by children are not yet completely aware of the necessity for detailed information when formulating their products. The saving grace in many of these situations is that the product may not be soluble when ingested and hence not readily absorbed. Reliance on this probability, however, is too risky. Alternative and safer constituents should be used.

Incident 4

Toxic Agent	*Age*	*Sex*
Carbon-Dioxide Snow	8 years	Female

The child bought a "Good Humor" and was given a piece of dry ice by the dealer. She chewed on the ice and experienced a burning sensation in the mouth. She was taken to a nearby hospital emergency room for treatment.

The only presenting symptom was difficulty in swallowing. After four days of hospitalization the patient made a complete recovery. The attempt to obtain medical information on the sequelae and treatment of dry ice ingestion from both texts and manufacturers was very frustrating. In this case the possibility of esophageal stricture was of great concern but specific information on this matter was unavailable. Burns are one of the consequences of the misuse of carbon dioxide in solid form.

TABLE I.—Summary of Recent Benzine Poisonings Reported to the Poison Control Center

Age	Sex	Mode of Occurrence	Presenting Signs and Symptoms	Treatment	Outcome*
15 months	Male	Ingested from can of paint left on bathroom floor by painter	Nausea, vomiting, dyspnea	Lavage in emergency room	...
1½ years	Female	Taken from bottom of cabinet	Burning in throat, vomiting	Emergency room treatment and lavage	...
13 months	Female	In soda-pop bottle on hall floor	Nausea, burning in mouth and throat	Lavage in emergency room	...
14 months	Male	Licked from kitchen floor spillage	Vomiting, stupor	Lavage, 3 days in hospital	Full recovery
3 years	Male	From glass on kitchen floor	Burning in mouth and throat, abdominal pains, vomiting	12 days in hospital	Full recovery
2 years	Male	Painters left canvas-covered cans on children's bedroom floor	Lethargy, gagging	Lavage, 10 days in hospital	...
15 months	Female	Lighter fluid in kitchen	Convulsions, vomiting	2 hours in emergency room, induced vomiting	...
4 years	Male	While pumping bicycle tires at gas station drank contents of soda-pop bottle near dispenser believing it was soda-pop	Burning in mouth and throat, nausea, vomiting	Induced vomiting, hospitalized 5 days	Developed pneumonia
14 years	Male	Ingested some while siphoning gasoline from father's car	Vomiting, nausea, abdominal pain, diarrhea	In hospital 3 days, supportive therapy	...
14 months	Male	From bottle on window ledge in basement	Dyspnea	Lavage in emergency room	...
2 years	Female	From soda-pop bottle containing benzine left on floor by father after painting	Convulsions, stupor	Hospitalized	Developed pneumonitis after 1 week
1½ years	Male	Jar in bottom of kitchen stove left by painter	Burning in mouth and throat	Lavage, emergency room only	...
1½ years	Female	Drank benzine which was stored in a drinking glass in the bathroom	Nausea, vomiting	Lavage, 2 days in hospital	...
2 years	Male	In beer can in bathroom on wash basin	Dyspnea	Lavage, 2 days in hospital	...
15 months	Male	Container of benzine left on kitchen floor after painting job by father	Stupor, burning in mouth and throat	Lavage, 2 days in hospital	
2½ years	Male	In tin can left in hallway by painters	Burning in mouth and throat, vomiting	Lavage, one week in hospital	...
1½ years	Male	In soda-pop bottle behind dresser; left by mother after she removed paint stains from floor	Dyspnea	Lavage, emergency room only	...

* Unless otherwise stated, the outcome was favorable.

Practicing physicians are invited to inform the Poison Control Center about any injuries resulting from ingestion of carbon-dioxide snow so that we may gain from their combined experience. Most of the available information relating to the toxicity and treatment of carbon dioxide poisoning refers to the inhalation and not ingestion of carbon dioxide. We note with regret the frequent gaps in modern textbooks between theory and practice.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Lye	20 years	Male

This patient intended to take a glass of milk but mistakenly picked up a glass containing a lye and water mixture resembling milk which was to be used by his roommate for cleaning the sink. The patient drank about 1 cupful of the milky liquid and immediately experienced burning and retching. He was taken to the hospital. At the hospital emergency room about a half-hour following ingestion milk was administered. Since the patient refused admission, he went home against the physician's advice. Several hours later increasing pain forced the patient to return to the hospital, where he was admitted to the inpatient service. During his hospital stay of six days, the patient had an esophagoscopy and was given fluids intravenously and other supportive therapeutic measures.

The milky appearance of solutions is outstanding among the situations encountered in severe poisonings. The need for caution is obvious.

Benzine Poisonings

Table I is a summary of recent benzine poisonings. The information in it confirms our previous findings that these poisonings occur most frequently in children two years of age and under, that the kitchen and bathroom are the most dangerous places in the house to leave such materials, that paint and plaster are often implicated, and that the transfer to a household utensil adds to the risk of ingestion. Apparently the taste is no deterrent. It is interesting that the children involved in these cases were judged by the public health nurse and their parents as of average intelligence, indicating that the accidents did not occur because the children were deficient mentally or "accident prone." The environment made the accidents almost inevitable.

(*Number forty-eight in a series of Briefs on Accidental Chemical Poisonings*)

Medical Society of the State of New York

154th Annual Convention

"HORIZONS OF CLINICAL MEDICINE"

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CASE REPORTS

Ileitis–Underlying Aggressive Conflicts

Preliminary Report

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RAGE, aggression, or hostility—synonymous terms for the aggressive drives—have been found linked with somatic disorders. To cite them generally as associated with ileitis will add little to our understanding. The findings reported herein, however, show specific types of rage that can be manipulated to change the symptomatology and the character of the patient. The emotional pattern is not unrelated to the fact that Crohn's disease[1] came "into a state of medical recognition" in 1932, during the period of our present-day high-geared living.

The tension of our times has helped create a relatively new illness. This presentation is based on the examination of 3 patients, 1 of whom received intensive psychoanalytic treatment. The study of the latter patient is far more revealing than a superficial survey of many patients. All of these individuals appeared to be friendly but subdued. They "turned their anger" against themselves. These inward resentments increased the abdominal pain and diarrhea. In the course of the treatment the rage was externalized. It was found to be a powerful competitive agression. In a differential diagnosis to be presented later the various forms of rage associated with other gastrointestinal disorders will be outlined. The disclosure of these observations is undertaken because it is felt that they are of sufficient importance to warrant a preliminary report. It is hoped that the revelations will open a helpful avenue of therapy and stimulate further research. An exposé of the inner patterns in the makeup of an ileitis patient will afford a glimpse of the disease process.

Case Report

Because of the despondency accompanying a recurrence of symptoms, a twenty-three-year-old patient was referred to us for psychoanalytic treatment. Four months before he had had a resection of his terminal ileum and of a portion of the ascending colon. The presenting complaints were abdominal pain and diarrhea. For four years, as a student in pharmacy school, he had suffered gastrointestinal distress characteristic of the illness. On graduation he immediately went to work but his difficulties increased. It is evident that the symptomatology of the illness increases with the degree of responsibility. Studying for his career posed his first obligation, and undertaking the pressures of a job incurred a greater one. When subjected to criticism he experienced severe abdominal pain. His engagement and subsequent marriage further augmented his obligations to which his gastrointestinal tract responded with pronounced distress. The demands on the psychic economy stir up the disease. The pressures of present-day living are far more taxing than they were fifty years ago. The rapidity of communications, automation, atom bomb threats, complicated financial structures, and deadline disciplines are a few of the new stresses of living. This competitive challenge is readily dealt with by the healthy person. Individuals who succumb under today's tensions have difficulty meeting the increased competitive demands. The latter account for the greater incidence of this "new affliction" of mankind.

The patient's makeup showed a compulsive oversevere conscientiousness, accompanied by excessive pride and a suppression of his emotional drives. He was inclined to be overpolite and to be quite deferential to his parents, to his intended in-laws, to his employers, or to those in authority. The latter response was particularly evident in his relationship with me. He admitted to being a hypochondriac, but he tried to diminish his complaints because he felt that they were annoying to everyone. There was a marked attachment to his family, particularly to his mother. The severity with himself as shown in his work, subdued behavior, and cautious responses are some features of his character structure.

An extremely striking experience of childhood at the age of eight was a hari-kari suicide drive in which he planned to throw his body on a perpendicular blade fixed onto the center of a bed. He recalls that this period in his life was full of despondency and fears. He would panic when he saw a swinging ball suspended from a hall light, and he was particularly afraid of the dark. He recalls awaking at night, frightened by the constant quarrelling of his parents. His father displayed a violent temper, gambled constantly, was unfaithful to his wife, and beat her and the patient frequently. The patient feared his father; he does not recall experiencing much affection from him. As a youngster he was shouted at frequently for not eating. On one such occasion, while his mother was chasing him with food and he, to distract himself, was playing at sounding glasses filled at different levels of water, his father threw him and the glasses down violently, producing severe cuts about the hands of the patient. During these early years he suffered a number of gastrointestinal symptoms such as vomiting, nausea, belching, and abdominal distention. He was a finicky eater and his mother overprotectingly hovered about him with a spoon at all times. It would appear readily that the patient, early in life, utilized these gastrointestinal symptoms as an outlet of revolt against parental oppression by dawdling with food, using a diminished appetite to obtain attention, and by further oppressing those about him with constant intestinal distress.

The unusual suicidal plan in a child, a procedure that is part of the background of the Japanese, coupled with the pronounced suppression of his emotions graphically show a powerful agressive threat against his bowels. The idolatry to the Buddha whose paunch betokens an essential of his strength is not without significance in understanding the stoicism of the oriental as well as the problem of the ileitic patient. The Japanese in defeat is abashed at the failure of his heroism, the source of which is traditionally attributed to the intestines. To die in honor he eviscerates "the disgraceful parts." A similar conflict influences the ileitic patient. Advantage is taken of this unique finding in a patient. There was no similar expression of this conflict in the 2 other patients, although the aggressive threat against the entrails was nevertheless present. It helps elucidate a basic challenge not only of afflicted individuals but also of a good portion of humanity. In effect this conflict, colloquially expressed, states: "I have the guts to meet danger though it be the death of me." There is plentiful evidence of the underlying panic in the patient's childhood. To offset the oppressive atmosphere about him, he spontaneously utilized the organ system that was stressed by his parents, using it as a symbol to defy them. A set of gastrointestinal symptoms helped to disturb his parents and keep them at bay. In this way he established an ego build-up—a clearly abnormal status-seeking device that early in life enlisted the gastrointestinal tract in misguided ventures. By joining a group his further indulgences in ego defence through consistent defiance of authority (originally the parents) gave the illusion of status some "realistic" coloring. The boldness that is hidden in a "revolt against society" has a jacked-up false courage which stems from the feeling of "having plenty of guts."

As a youngster he managed to "get by" in school. He could not apply himself. He indulged in truancy. At puberty he joined youngsters who similarly defied authority. By running around with these boys he found "strength in union," which made him feel "big" and diminished his inferiority feeling of being physically undersized.

A determination to give up his wayward associates came to the fore at entrance into pharmacy school. He had aspired to become a doctor but he felt that he lacked the capacity to study. To his surprise he began to do exceptionally well. He found that he could exercise unending self-discipline in his work and stay up all hours of the night. He would work to the point of exhaustion; he seemed to find no "safety measure" of gauging time limits to compulsive work. Through intensive application he was able to obtain exceptional grades. A vital component of the enteritic pattern is the compulsive self-driving to compete. One constantly hears the sympathetic expression: "He is driving himself to death." It is this internalized, behind-the-scenes, aggressive self-discipline that gears up the intestines to create overactive, abnormal energizing for competition. Throughout these professional school years he suffered increasing gastrointestinal symptoms. Immediately after graduation from pharmacy school he had planned a career abroad requiring increased incentive and work. The latter, plus the fact that he was on his own and no longer a student, excited the competitive aggressive currents to produce an acute attack.

It is remarkable that he accepted the recommendation of the surgeon to remove a portion of his ileum as a "sort of relief." He was able to obtain a removal of the offending gastrointestinal tract very much in the same way as he had wanted to carry out the suicidal drive at the age of eight when he, in that very attempt, aimed to strike at his own intestines. After the operation he was advised by his surgeon not to go abroad. He then decided to return to take his state board examinations in California where he had a relapse a few months later. The recurrence of his difficulties brought him back to New York for psychoanalytic treatment. With some subsidence of his abdominal distress he was soon able to function as a full-time pharmacist.

During the course of his treatment direct evidence of the powerful effect of the suppressed rage on the bowel activity appeared. Among the numerous instances of this phenomenon the following example is reported. Because of his submissiveness the boss would impose on him regularly to stay longer than the other clerks. He was aware of this unfairness but he did not have sufficient courage to express his resentment openly—the invariable result was a bout of severe abdominal pain with all the concomitant symptoms.

It was possible to treat this patient in a liaison arrangement with an internist who watched for signs of lesions in his gastrointestinal tract and helped diminish the abdominal pain through the use of high dosages of steroids. The latter proved most essential for the progress of his condition, inasmuch as the therapeutic objective was to loosen the walled-off rage and bring it to the surface. This newly provoked activity regularly encountered resistances with a splurge of bowel symptoms. The vicious cycle of unbearable pain, which served as a realistic focus for his abject feeling, was broken by the medication; analytic procedure could thus go on without the withdrawal induced by an overpowering despair. In other words, the avenue of abdominal distress was interfered with, permitting a further externalization of his feelings.

To attack the entangled emotions use was made of the transference reactions. He showed obsequiousness to me, a need for clinging, and a suppressed resentment. By openly inviting him to a fuller expression in his relationship to me his difficulties were brought out into the open. It was revealed that his feelings of hopelessness with regard to his ileitis was injected into this area but had their origin in early life. The response of futility originated in the inability of the patient in his childhood years to obtain any degree of adequate response from his parents. Their incessant quarreling, anxiety-ridden states, and general embitterment filled him with anguish; its invariability produced a conviction of hopelessness.

The determinants of the choice of avenue for the expression of powerful emotion is to be considered. The patient recognized the powerful provocation he exercised on his parents by his refusals to eat; later this method was employed all the more for internalized vengeful feelings to add to the ileitis picture. These same patterns—dependency on the mother, feelings of destitution, rage—play a role in all the gastrointestinal disturbances. What then is the more or less specific pathology for ileitis as compared with that of gastric ulcer and colitis?

Experience with patients in all three categories shows a degree of greater emphasis on one set of drives that relate more immediately to different areas of the gastrointestinal tract. The gastric ulcer patient is characteristically described as "orally dependent on the mother."[2] The trend in his makeup centers around the receptive aggressive urge and the simultaneous struggle against it. It is associated with the receptive organ of the tract, the stomach, since the patient is involved primarily with a conflict of receiving affection via its commonly associated representative, food. In other words, the ulcer complex deals with a hunger for love. Aggressive forces for reaching out and a supply source must implement the craving. An overpowering suppression, however, of the receptive aggressive drive prevents the consummation of the desires. In colitis the eliminative part of the gastrointestinal tract is affected, and similarly that component of the emotional aggressive drives that has to do with elimination of annoying objects is involved also. The conflict here centers on the urge to remove the noxious agent and the suppression of this drive.

The "guts" are, for the most part, represented by the small intestine. The assimilative part of the region, the ileum, it would appear is responsible for the initial actual physiologic energizing of the body. It is, therefore, not without adequate reason that the term "to have guts" reflects the prime aggressive drive that energizes all of the systems of human endeavor. The conflict in ileitis, for the most part, centers in this physical area and its concomitant components in the emotional anatomy. The nucleus of the psychopathologic pattern lies in the violent urge to "use his guts" or to use his competitive aggressive drives. Fear of annihilation prevents the natural functioning in this direction.

One specific competitive portion of the aggressive force, which can be designated competitive aggression number one, thus becomes encysted in its physical anatomic correlate. Clinical evidence shows that the degree of suppression of the competitive aggression number one drive will monitor a proportionate appearance of symptomatology. Another modality of the competitive drive is the one previously described as the constant self-discipline toward work which can become competitive aggression number two. Under pressure, which may be frustration, competitive aggression number two is augmented and also intensifies the small bowel activity. The latter was shown in the clinical course and development of the illness. Multiple specific aggressive drives are therefore centered on the region of the bowel. By their individual and multiple forces the gut is viciously overactivated to hypertrophied changes in the various anatomic structures. The aborted hari-kari action of destructive entrail aggression number one influenced his response of self-degradation and suicidal feelings. During early childhood the gastrointestinal tract was used by the patient to provoke his parents, acting mainly for ego support. This type of aggression can be labeled ego entrail number two aggression. The following represent the dynamics of ileitis:

1. Competitive aggression number one ($C.A._1$)
2. Competitive aggression number two ($C.A._2$)
3. Entrail agression number one ($E.A._1$)
4. Ego entrail aggression number two ($E.A._2$)

Formulated for brevity they are:

$$C.A._1 + C.A._2 + E.A._1 + E.A._2 = \text{Ileitis Syndrome.}$$

The competitive aggression forces are the major components. The entrail and ego entrail aggressions overdetermine the intestinal route as a focal point for the encysted competitive urges. Theoretic discussions of the origin of the various forms of rage would be of little value. There is sufficient evidence of the activity of these emotional forces to warrant specific designation to them. Confirmation of their etiologic role is found in the resolution of the disease on the alteration in the form and area of activity of the rage process.

Evidence of the operation of competitive aggression number one appeared concretely in the expression of the patient's feelings. He was encouraged to compete openly as part of his rights. Powerful drives to conduct his own business, interests along specialized lines of activity, and creative ideas of managing his affairs came constantly to the fore. Strong incentives appeared to compete with the therapist. The patient began to vie with his colleagues for efficiency of performance and attempted to surpass them in the volume of sales. The rapid rise in his ambitions resulted in a long-term venture in Amsterdam where he now resides. Here he is successfully undertaking greater responsibilities that require intensive application. As a result of his increased self-confidence the activity of the competitive aggression number two force is no longer centered on the self-disciplinary drives for increased work. This second competitive aggressive drive is supplementing the competitive aggression number one forces in direct open competition.

The entrail aggression number one showed up quite threateningly at several periods of the patient's life. During his adolescence he subjected himself to potentially dangerous situations in defying community codes with a group of similarly disposed youths. Throughout his life this aggression "attacked" the activity of his intestine in powerfully suppressing or counteracting any open display of the competitive aggression forces. Entrail aggression number one thus forcibly maintained an encystment of the competitive drives. The alteration in his character structure removed the various rigidities. His ego "build-up" through the entrail aggression number two force was supplanted by a palpable status of accomplishment. The release of his aggressive drive furthered realistic ego activity.

Much time was spent working on his reserved manner. His approach to others was businesslike. He was not given to intimate expressions of his feelings. He had great difficulty forming lasting bonds of friendship. All these responses were quite in line with the suppression of his aggressive drives and with the artificially bolstered pride.

Other powerful emotions play a most important role also in this disease. They are not elaborated on, however, because of their lack of specificity to the disease. In the therapeutic procedure a working objective of releasing the provocative aggressive drives is a necessary aim. To accomplish this the interrelationship of these very forces to the character structure and associated emotional drives must be appropriately guided.

When the patient discontinued treatment to go abroad he had made a fairly good adjustment and realignment of his aggressive drives. He was advised, however, to take medication if he suffered any recurrence of abdominal pain. As anticipated, he found, on the assumption of new taxing demands, some bowel symptomatology. He sought the aid of W. H. Birkinhager, M.D., an internist at the Borst Clinic of the Binnen Gasthuis in Amsterdam who, in a personal communication, said he has successfully controlled the physical symptoms and avoided a common complication of steroid medication, the Cushing syndrome (moonface, acne, and obesity) by lowering the dosage of steroids to 14 mg. or less with the substitution of the following drugs which he administers to all his ileitis patients (he is treating 7 of them):

1. Mephobarbital (Mebaral—sedative)
2. Papaverine hydrochloride—antispasmodic
3. Calcium carbonate—antacid
4. Antipyrine, aminopyrine, or phenylbutazone (Butazolidin) (one of the three, depending on the response of the patient)—anti-inflammatory (the most important)
5. Codeine (when necessary)—to control diarrhea.

In a recent communication the patient. evaluating his responses, reports these observations on himself:

"I can enumerate the ways in which my year of analysis has improved my physical and emotional condition:

1. I find terrific self-discipline in my work less necessary.
2. I associate with friends who are more mature emotionally.
3. I am less hesitant to ask people for things; I am thus more aggressive.
4. I do not put people on pedestals as I did previously; thus my inferiority complex is diminishing.
5. I no longer experience sharp, emotional "ups and downs" but I have become more stabilized.
6. In general, my relations with my fellows have improved and I am able to some extent to absorb the warmth of those around me."

Comment

While emphasis has been laid on the difficulties of the ileitis patient, it is needless to say that there were correlated restrictions in his personal and social life as well. With the resolution of the intestinal emotional problems there was simultaneous progress in his libidinal object relationship. It is therefore pertinent to stress the whole character structure as the essential background in which the conflicting aggressive forces are embedded.

The patient is the second of three siblings. An older brother and a younger sister have evidence of character neuroses. Although not manifestly afflicted with gastrointestinal disturbances, they nevertheless show impairment of their competitive aggressive drives. They seem to have assuaged their conflicts through a curtailment of their work activities.

The literature gives little information on the role of the emotions in this disease. Harrison[3] recently attempted to describe many surface traits, such as irritability, emotional storms, inability to tolerate strife, and immaturity. These findings fit in with the competitive pattern herein outlined. Most of the workers on ileitis take the position that there are no pychogenic features. Lear[4] clearly states that "psychiatric problems are apart from the complaints of the patient."

Recent psychoanalytic disclosures point to the aggressive drives as a relatively unexplored field but of major importance in the understanding of many nervous disorders. Hartmann, Kris, and Loewenstein,[5] have made a major contribution in outlining a prospectus for further investigations. These findings in ileitis and the other gastrointestinal tract disturbances indicate the presence of a number of distinct variations of this basic emotional force that are related clearly to the somatic disease process.

Summary

1. Psychoanalytic treatment of ileitis shows

that the assumption of responsibilities incites the clinical picture.

2. The prime difficulty centers on fortitude for competition.

3. There is an inadequate parental background and a childhood neurosis.

4. Specific designations for the conflicting aggressive drives in the order of their influence on the disease are:

(*a*) Competitive aggression number one—the competitive aggressive drive directed to objects.

(*b*) Competitive aggression number two—the competitive drive directed on oneself in the form of self-discipline for work.

(*c*) Entrail aggression number one—a suppressive force on "the guts," the somatic source of competitive aggression.

(*d*) Ego entrail aggression number two—the use of the "gut" for defense.

5. Psychoanalytic treatment is effective in altering both the disease process and the character of the patient.

6. Collaborative treatment with an internist who will gauge the needed relief agents for the abdominal pain is essential.

7. Proof of the causative role of these specific aggressive drives is obtained in immediate reactions to self-discipline, symptom formation on provocation, and the obvious suppressions of behavior. Further evidence of the functioning of these forces is seen on their emergence during therapy.

8. In the 3 patients examined by the author competitive aggression number one, competitive aggression number two, entrail aggression number one, and ego aggression number two currents were found in each case to be related etiologically to the disease.

9. Further research requires substantiation of these findings in a large series of afflicted individuals. Pending such confirmation this presentation is to be regarded as a preliminary report.

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ANNOUNCEMENT

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Renal Insufficiency Following Administration of a Mercurial Diuretic

Report of an Autopsied Case

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ALTHOUGH organic mercurial diuretics are used daily, only sporadic instances have been reported in which fatal sequelae have ensued. These can be classified into two groups: (1) fatalities which were sudden and acute, usually ascribed to hypersensitivity to the drug, and (2) fatalities in which the patient received the drug for a long period of time, developed renal failure, and died as a result of uremia. Following the comprehensive review by DeGraff and Nadler[1] in 1942, which summarized 26 deaths over a sixteen-year period, a few well-documented cases[2-8] in the second category were reported.

Typical of these is the case reported by Bruno[3] in which a forty-nine-year-old woman was treated with large doses of mercurophylline and meralluride sodium (Mercuhydrin sodium) for several months, receiving 2 cc. of meralluride sodium every twelve hours for the five days preceding death. Necrosis and calcification of renal tubules were found at autopsy. Quantitative determination of mercury revealed 0.3 to 0.5 mg. per 10 Gm. of renal tissue. Siegel and Friedman[4] also report a case in which a thirty-two-year-old man with the Kimmelstiel-Wilson syndrome received 138.8 cc. of mercurophylline during a five-month period. Typical renal lesions were found at autopsy and chemical determinations showed 3.2 mg. of mercury per 10 Gm. of renal tissue, 3.0 mg. of mercury per 10 Gm. of liver tissue, 4.6 mg. of mercury per 10 Gm. of stomach wall, and 5.3 mg. of mercury per 10 Gm. of colon wall. Conversely, Leff and Nussbaum[9] report the absence of renal lesions in 3 autopsied patients who had each received a total dosage of more than 20,000 mg. of meralluride sodium and chlormerodrin (Neohydrin) over a period of years. Quantitative determination of mercury revealed amounts ranging from 0.96 to 1.56 mg. per 10 Gm. of desiccated renal tissue.

Case Report

A fifty-five-year-old white man was admitted to Knickerbocker Hospital for the fourth time complaining of dyspnea at rest and on effort. He had been known to have high blood pressure for at least seven years, and there was one documented episode of myocardial infarction three years before his final admission. The salient features on physical examination were a blood pressure of 180/125, an enlarged heart with many extra systoles, rales at both lung bases, and pretibial edema. Urinalysis revealed a specific gravity of 1.010, acetone, no sugar, 2 plus albumin, and 4 to 6 hyaline casts and 1 to 2 granular casts in the sediment. The blood nonprotein nitrogen was 47.5 mg. per 100 ml. A diagnosis of hypertensive and arteriosclerotic heart disease with severe coronary insufficiency was made. Bed rest and oxygen were prescribed, but the patient continued to complain of dyspnea and chest pain in the absence of objective signs of cardiac decompensation. A daily intramuscular injection of 2 cc. of meralluride sodium was administered and narcotics were given frequently. Despite this regimen, the symptoms continued. The meralluride sodium dosage was then increased to 2 cc. twice daily, but there was no diuresis. During an eleven-week period the patient received a total of 176 cc. of meralluride sodium containing 6.86 Gm. of inorganic mercury. During this period the specific gravity of the urine remained fixed at 1.010, 4 plus albuminuria developed, the number of casts increased sharply, and varying numbers of red blood cells and white blood cells appeared. However, oliguria did not develop. The blood nonprotein nitrogen rose progressively to 125 mg. per 100 cc. terminally. Study of the electrolytes revealed a slight acidosis. Although meralluride sodium was discontinued at the suggestion of Dr. Simon, the patient died two

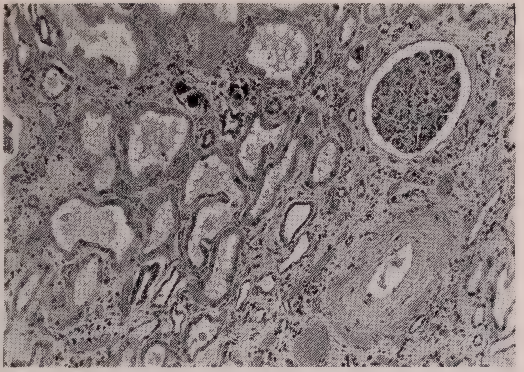

Fig. 1. Low-power microscopic view of kidney showing an intact glomerulus, fibrous thickening of the intima of an interlobar artery, and dilated tubules, some lined with normal-appearing epithelium, others by flat "regenerative" epithelium (× 150).

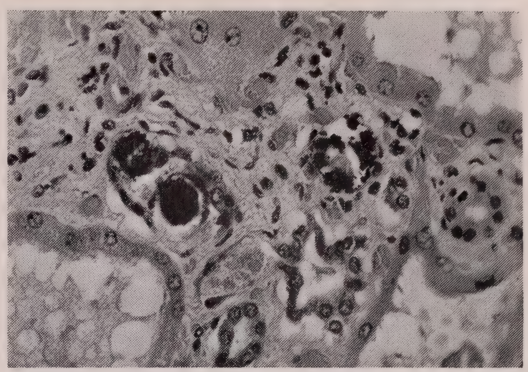

Fig. 2. Detail of Figure 1 showing deposits of lime salts in destroyed tubules. A nearby tubule contains amorphous debris (× 500).

weeks later as a result of uremia, pulmonary edema, and terminal sepsis.

Postmortem examination disclosed cardiac hypertrophy of 580 Gm. with an 18 mm. concentric thickening of the left ventricle. A small healed infarct was present at the apex. There was pronounced aortic arteriosclerosis. The lungs weighed 1,000 Gm. and exhibited pulmonary edema. A small abscess cavity 1 cm. in diameter was present in the left lower lobe, communicating with the pleural space which contained 1,500 cc. of seropurulent fluid, a terminal empyema thoracic. The liver weighed 1,780 Gm. and showed central congestion and trivial fatty metamorphosis. The right kidney weighed 140 Gm. and the left kidney weighed 130 Gm. The capsular surfaces were finely granular and the kidneys showed increased resistance to cutting. The cortices were thinned and irregular in contour. In the upper pole of the left kidney there was a cyst 1 cm. in diameter containing clear fluid, located well below the cortex, and displacing the medulla in that area. Between the cyst and the overlying cortex was an ill-defined zone of soft, yellowish tissue traversed by reddish streaks and blotches about 1.5 cm. in diameter.

Microscopic examination of this lesion revealed a renal cell carcinoma. Elsewhere, the renal cortex was reddish brown and was clearly demarcated from the renal pyramids which were purplish red. The columns of Bertin were pale tan. The renal pelves, ureters, and bladder were not remarkable. No significant gross or microscopic changes were seen in the other organs.

Microscopic examination of the kidneys revealed a few scattered marginal and intracortical scars characteristic of benign nephrosclerosis. The intrarenal arterial tree showed diffuse, severe intimal fibrosis and medial hypertrophy. However, for the most part the glomeruli were intact. The most significant lesion was in the renal tubular system (Fig. 1). Most of the tubules were somewhat dilated and lined by a relatively flat epithelium. Syncytia of the tubular epithelium were seen regularly. In a minority of tubules active necrosis and desquamation of the epithelium were present. The majority of tubules contained eosinophilic amorphous and granular material; in many tubules ghosts of desquamated, necrotic tubular epithelial cells were seen. Scattered intraluminal deposits of calcified material were regularly present (Fig. 2). These observations were interpreted as indicating a continuing process of necrosis and regeneration of the tubular epithelium. Chemical analysis for mercury demonstrated 2.9 mg. per 10 Gm. of desiccated renal parenchyma.*

Discussion

Ford[10] postulates that mercurial diuretics act on the proximal and distal convoluted tubules and increase the excretion of sodium, chloride, and bicarbonate. Water is lost obligatorily with the solutes. Sodium reabsorption in the proximal convoluted segment is decreased.

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* The chemical determination of mercury was performed by Walter Matusiak, Ph.D., Office of the Chief Medical Examiner of the City of New York.

Mercurials may also inhibit succinic dehydrogenase. Wachstein and Meisel[11] studied the enzymatic reactions of the rat kidney. They produced necrobiosis with meralluride sodium, DL-serine, and by ischemia. Diminution of the activity of the oxidative enzymes occurred earlier in the kidneys damaged by nephrotoxic agents than in the kidneys damaged by ischemia. Whether mercury acts as a metallic ion or as an organic radical is controversial. Mudge and Weiner[12] believe that the organic mercurials have a greater affinity for kidney tissue, but that the actual diuretic action is by the mercuric ion since the best organic mercurial diuretics are those that are heat labile. The mercuric ion may block sulfhydryl group transfer. The toxicity may be related to the amount of free mercuric ion liberated in the kidney or to a direct allergenic reaction to the compound, since the amount of mercury found in the kidneys seems to bear little relationship to the pathologic changes found. However, this lack of correlation between pathologic changes and mercury concentration may be due to the interval of time between the administration of the last dose of mercury and death. Gross[13] believes that an irreversible enzymatic inhibition is brought about by mercurial diuretics. Review of the literature does not bear this out. Some patients received mercurials for years with no demonstrable changes in renal function or pathologic changes at autopsy, while others showed clinical and pathologic evidence of mercurial nephrosis after short intervals of mercurial administration.

The patient in the case reported received a total amount of less than 6,860 mg. of inorganic mercury over the period of eleven weeks. The amount of mercury seems unimpressive when a review of literature is undertaken. Leff and Nussbaum[9] report on a series of 48 patients who received amounts of between 6,240 and 78,560 mg. of mercury with no renal damage. However, these doses were distributed over a period of four years! Gordon, Feder, and Greenblatt[14] as well as Griffith, Butt, and Walker[15] state that mercurials can be given in large quantities without damage if administered over a period of years. We feel that not only the total amount of mercurial given, but also the dose-time relationships are important in determining the degree of renal damage.

In our case we believe it was not the 6,860 mg. of mercury which did the damage but the short period of eleven weeks in which this quantity was given.

Conclusion

The clinical use of mercurial diuretics is frequent in patients with advanced arteriosclerotic disease. The degree of nephrosclerosis in any given instance is capricious, and the clinician has no ready method for assessing it. However, a fairly large proportion of patients with cardiac failure secondary to arteriosclerotic disease have advanced nephrosclerosis. In these patients, renal blood flow and oxygenation may well be borderline, and the administration of small doses of mercury over a period of time may be enough to tip the balance in favor of tubular necrosis. A reasonable guide to the possibility of renal parenchymal damage would be the repeated analysis of the urine for albumin and examination of the sediment for red cells, white cells, sloughed renal tubular cells, and the development of casts. These are probably earlier and more sensitive indicators than the reduction in urinary output and the progressive increase in nitrogen retention. It is evident that on occasion mercurial diuretics can be dangerous, and such routine precautions may avert further renal damage in selected cases.

Summary

The administration of 6,860 mg. of a mercurial diuretic over an eleven-week period to a fifty-five-year-old man with severe arteriosclerotic cardiorenal disease failed to produce diuresis and led to tubular damage with nitrogen retention and death from uremia.

The mechanism of action of mercurial diuretics is inhibition of ionic reabsorption mediated by enzyme systems within tubular epithelial cells. The relationship of total dosage and spacing of doses over long periods of time as well as the degree to which renal blood flow is compromised by pre-exisiting vascular disease are considered as the important determinants for the development of mercurial nephrosis.

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ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

DINNER DANCE

- Monday evening, May 9
- New Hotel Pierre Ballroom
- Cocktails preceding dinner
- Gourmet menu
- Famous name band

Set aside the date
Bring your family and friends

LETTERS TO THE EDITOR

General Practitioners Can Fight Infant Mortality

To the Editor:

This is for publication over my name, and I think it is so very important that I am taking the chance that it will be accepted by an editor. Where I will send it, I am not sure—maybe the NEW YORK STATE JOURNAL OF MEDICINE, which reaches the general man and is read more often and by more doctors in New York State than any other journal.

It is about these babies who die in their cribs or in their carriages or in their mothers' beds, and of the search for years trying to find out why. I know that pathologists, as well as others, have worked on this problem, but I think the general practitioner should be consulted once in a while. I have been in practice for thirty-seven years and have seen a lot of babies—I don't know how many. I have seen them right after they have died, when the milk was in the trachea or in the bronchi, but that wasn't the cause of death.

Young babies don't know how to breathe except through the nose, and if their mouth is shut and the nose is clogged, they will smother while their mother is struggling to get a croup kettle or some other fancy apparatus going, while all that is needed to help this condition is a little saline—normal saline—and a rubber syringe. If you don't have that in your bag, take a hypodermic syringe—a 5 cc. one without the needle—and use it as a water gun. Squirt saline into the nose, suck it out, and you'll get the nose open. Then use nose drops if you wish; usually they are not necessary. This is heresy, I know, but so were a lot of other things that were preached—Jenner with his vaccinations, and so on.

Digitalis was discovered by a general practitioner, and I think a great many of the greats in medicine just stumbled onto the fact of something different—Banting, Best, Marie Curie and her famous husband, Pasteur with rabies and things that made wine ferment, Koch with tuberculosis bacillus, Leeuwenhoek, and, oh, so many others. So here I am, a general practitioner, but I would rather be called a family doctor trying to preach the gospel of keeping the baby's nose open, or holding its mouth open if it can't breathe through the nose, and that's all that is necessary.

I have done this numerous times. I had a little problem the other night—a baby with colic and breathing difficulties. It was so easy—I washed out his nose to show his mother and grandmother how it could be done, and then gave him some milk, water, and a little bit of phenobarbital. He expelled some gas and spent a good night, and my reward is there.

DAVID L. MACDONELL, SR., M.D.

15 Greeley Avenue
Sayville, New York

EDITOR'S NOTE: At a recent meeting of pathologists from all over the country called to discuss the problem of unexplained deaths in infants no agreement could be reached as to definitive causes. Careful search for evidence of infection with culture of tissues and secretions for bacteria and viruses has often been fruitless. The role of agammaglobulinemia is still inconclusive. The finding of an enlarged thymus is no longer considered to have any bearing.

Information Requested on Polythelia

To the Editor:

The occurrence of supernumerary nipples (polythelia) is not infrequent. The undersigned will appreciate any information of occurrence noted by any practitioner. Instances both of male and female are requested. Please note race, age, and sex.

THOMAS HORACE EVANS, M.D.

350 South Main Street
Freeport, New York

MONTH IN WASHINGTON

Overshadowing all other developments from the standpoint of the medical profession was the flat prediction from a high Administration official and key lawmakers that Congress this year would vote some sort of liberalization of the Social Security program.

There was general agreement that Congress would broaden the Social Security plan for permanently and totally disabled persons by removing the requirement that a person has to be at least fifty years of age before receiving such benefits.

However, there were forecasts of even further liberalization. House Speaker Sam Rayburn (D., Texas) said monthly cash benefits also may be boosted. On the other hand, the House leader said he believed a majority of the House Ways and Means Committee were opposed to the disputed Forand bill that would finance partial health care for the elderly through higher Social Security taxes at an estimated extra cost of $2 billion annually. As a result, he said he did not think "there was a great deal of chance for it." But the AFL-CIO and some Congressional backers of the highly controversial bill were urging Congress to approve it this year.

Arthur S. Flemming, Secretary of Health, Education, and Welfare, asserted that the Administration is planning to offer a program aimed at assisting needy aged to meet health bills, but gave no details. The official noted that the Administration has firmly opposed the Forand-type approach on grounds it would destroy the rapid progress in meeting the problem through private means. But Flemming, in a speech before the American Association of University Teachers of Insurance, said the Administration has an obligation "to stay with it" until it arrives at a plan.

Congress has extended the Social Security program every presidential election year since 1948, and 1960 appeared to be no exception. Whether or not the issue of medical care for the aged will be included was one of the big question marks early in the session.

Shortly before Congress convened, the Boards of Trustees of the A.M.A. and the American Hospital Association, in a joint resolution, pledged to "mobilize their full resources to accelerate the development of adequately financed health care programs for needy persons—especially the aged needy—" at state and local levels.

The Boards said Forand-type legislation is "not designed to assist the needy, since they apply to all Social Security beneficiaries and exclude the majority of needy persons, who are not eligible for Social Security benefits."

Following the action, Louis M. Orr, M.D., A.M.A. president, and three other A.M.A. officials—E. Vincent Askey, M.D., A.M.A. president-elect, F. J. L. Blasingame, M.D., executive vice-president, and Ernest B. Howard, M.D., assistant executive vice-president—visited Vice-President Richard M. Nixon at his Washington office. They told the Vice-President that by the end of this year an estimated 60 per cent of the nation's aged persons who want and need voluntary health insurance will have it.

Mr. Nixon, according to the officials, was delighted to receive the information and "very much interested" in the program of voluntary health insurance for the aged.

Physicians who are officers of qualified clinics would be entitled to deduct as business expenses money set aside for their retirement under a proposed regulation of the Internal Revenue Service. The decision climaxed a five-year effort of a group of Montana physicians to secure such tax treatment, and marked an important tax development for physicians who operate clinics. Self-employed physicians continue to be barred from similar tax treatment, although there is legislation before the Senate Finance Committee that would afford them tax deferrals on funds set aside for retirement.

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

Fields and trees teach me nothing, but the people in a city do.—Socrates

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

State Health Poster Contest

THE State-wide Health Poster Contest sponsored by the Woman's Auxiliary to the Medical Society of the State of New York is now in its eighth year. The program, which had its origin in a visit by the then State Auxiliary President, Mrs. Harold Johnson of Buffalo, to Pennsylvania, is designed to focus the children's health attention on the need to protect and foster their own health resources. The contest has also had a decided influence on the health habits of parents, teachers, relatives, and children who have participated. Through yearly repetition it has become an established health-building instrument in the schools, homes, and communities of all the counties which have sponsored it.

Much of the success of the contest is due to the ingenuity and planning of the first State chairman, Mrs. Isadore Zadek of Westchester. Before the contest was announced Mrs. Zadek visited and interviewed State and county medical society officers and State, county, and city educators as well as prominent artists and writers in every part of the State. One of the most encouraging results from this planning was the receipt of a letter from W. W. Knox, assistant commissioner for instructional services of the State Department of Education, in which he said: "We know that your objectives are several and we are anxious to assist and cooperate with you in every possible way. There is no doubt but that properly conducted the Health Poster Contest you contemplate will stimulate desirable interest on the part of individual pupils with respect to their responsibility for their own health and for the health of their communities. I am confident that you will find local school authorities cooperative in any program that promises to accomplish the objectives that you have in mind."

The letter has proved both prophetic and useful. It has stimulated the cooperation of school authorities, particularly health and art department heads in every school district. It has provided an entree for the many willing county auxiliary chairmen whose efforts built the foundation on which the success of the State contest now rests.

Although it is difficult to say exactly how many pupils have prepared posters or even estimate how many people have viewed the posters which have been exhibited, it is known that more than 10,000 young people have participated each year since the contest began. This adds up to more than 80,000 posters. The savings bonds which are awarded by the State Medical Society as prizes have amounted in expenditure to $4,000. County societies, of which 14 to 28 have participated each year, have awarded prizes of from $50 to $200. Although these figures are of necessity general, it is safe to say that the lesson the school children have learned while preparing their entries is specific. This is that each child is the best guardian of his or her own health and this was the lesson the contest was designed to impress on each young mind. All those who have been associated with the contest feel the purpose of the Health Poster Contest has proved most effective.

The Auxiliary is grateful to the county societies and the individual workers for their support. The chairman of the Health Poster Contest hopes that those who are invited to act as judges for the county and State contest will give precedence to health messages and that the contest helps to focus the public attention on the physician's interest and desire to help children learn good health habits early.

Auxiliary members who are mothers as well as wives believe the contest has proved to be a real contribution to the field of health education and hope to have the energetic support of all members of the medical profession and its Auxiliary.

MRS. SOL AXELRAD, *Chairman*
State Health Poster Contest

86-14 85th Street
Woodhaven 21, New York

What is beautiful is good and who is good will soon also be beautiful.—SAPPHO

NECROLOGY

Eleanor Anderson Campbell, M.D., of New York City and Scarsdale, died at her home on December 30, 1959, at the age of eighty-two. Dr. Campbell graduated in 1916 from Boston University School of Medicine. She was the chief founder and former general director of the Judson Health Center, New York City. From 1921 until 1954 she was general director and for the next two years served as its president, retiring in 1958 as honorary general director. In 1957 she received the Star of Italian Solidarity, Second Class, for her work with the area's large population of Italian origin. Dr. Campbell was a member of the American Public Health Association.

Nicholas Frank Como, M.D., of Brooklyn, died on December 25, 1959, at the age of twenty-nine. Dr. Como graduated in 1954 from Yale University School of Medicine and interned at New York Hospital. He was a member of the staff of Victory Memorial Hospital.

Ettore Francesco Fieramosca, M.D., of Staten Island, died on December 31, 1959, at the age of fifty-four. Dr. Fieramosca graduated in 1932 from the Stritch School of Medicine of Loyola University, Chicago. He was an attending physician at Staten Island Hospital. Dr. Fieramosca was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Lichtenstein, M.D., of New York City, died on December 20, 1959, at the age of eighty. Dr. Lichtenstein graduated in 1907 from Columbia University College of Physicians and Surgeons.

Harold Linsky, M.D., of Kew Gardens, died on December 28, 1959, at the age of sixty. Dr. Linsky graduated in 1922 from Columbia University College of Physicians and Surgeons. He was a founder and director of surgery at the Terrace Heights Hospital in Hollis. Dr. Linsky was a Fellow of the American College of Surgeons and a member of the Brooklyn Surgical Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Elizabeth Miller MacNauger, M.D., of New York City, died on January 1 in Harlem Valley State Hospital, Wingdale, at the age of sixty-five. Dr. MacNauger graduated in 1929 from Cornell University Medical College. She was a Diplomate of the American Board of Ophthalmology and at one time was an assistant surgeon in ophthalmology at the New York Eye and Ear Infirmary and an attending in ophthalmology at the New York Infirmary.

Frederick M. Mai, M.D., of Jamaica, died on December 28, 1959, at the age of sixty-seven. Dr. Mai received his medical degree from the University of Wurzburg in 1917. He was a member of the Queens County Medical Society and the Medical Society of the State of New York.

Abraham M. Modance, M.D., of the Bronx, died in the Bronx Hospital on November 25, 1959, at the age of sixty-eight. Dr. Modance graduated in 1922 from New York Homeopathic Medical College and Flower Hospital. He was a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

E. Winifred Pitkin, M.D., retired, of Congers, died in Nyack Hospital on January 4 at the age of eighty-three. Dr. Pitkin graduated in 1906 from Tufts College Medical School. For thirty years she had headed the Well Baby Clinic of Rockland County, for eighteen years she had been medical examiner at public health clinics, and at one time had been on the staff of the Nyack Hospital. She was a member of the Rockland County Medical Society and the Medical Society of the State of New York.

Frederick Schwartz, M.D., of Brooklyn, died on December 28, 1959, at the age of fifty-three. Dr. Schwartz graduated in 1930 from New York University and Bellevue Hospital Medical College. He was an assistant attending in surgery at Maimonides Hospital, an attending in surgery at Jewish Chronic Disease Hospital, and an associate in surgery at Morrisania Hospital. Dr. Schwartz was a Diplomate of the American Board of Surgeons and a member of the Brooklyn Surgical Society, the

Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold Seidenstein, M.D., of the Bronx, died on December 31, 1959, at his home at the age of forty-five. Dr. Seidenstein graduated in 1937 from New York University Medical College. He was an associate in orthopedics at the Hospital for Joint Diseases and at Lebanon Hospital. Dr. Seidenstein was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Weinberg, M.D., of Jackson Heights, retired, died on December 28, 1959, at the age of seventy-nine. Dr. Weinberg graduated in 1900 from Cornell University Medical College and interned at Gouverneur Hospital. He was former chief medical examiner for the Department of Sanitation and before joining the Department of Sanitation had been with the Departments of Correction and Health, and with the old Brooklyn Rapid Transit. Before 1927 he had been an assistant in neurology at Post-Graduate Hospital. Dr. Weinberg was a member of the Brooklyn Neurological Society.

NEWS FROM THE MEDICAL SCHOOLS

Albert Einstein College of Medicine of Yeshiva University

Grants—During the month of October and November, 1959, grants were received by the following departments:

Department of Anatomy from the National Institutes of Health; Department of Biochemistry, three grants from the National Science Foundation and four grants from the National Institutes of Health; Department of Medicine received three grants from the National Institutes of Health; the Department of Microbiology and Immunology received two grants from the National Institutes of Health; the Department of Obstetrics and Gynecology received one grant from the National Institutes of Health which also awarded four grants to the Department of Pathology, one to the Department of Pediatrics, one to the Department of Pharmacology, one to the Department of Physiology, one to the Department of Psychiatry, and three to the Department of Surgery. The Tobacco Industry Research Committee awarded a grant to the Department of Surgery and Mead Johnson Company one to the Department of Pediatrics.

Visiting Speakers—William Huckabee, M.D., Boston University School of Medicine; Dr. John M. Walshe, University of Cambridge, England; Dr. Murray Strassman, Institute for Cancer Research, Philadelphia, Pennsylvania; Dr. David P. Rockefeller Institute, New York City; Dr. Karl Frank, National Institutes of Health; Dr. Harry D. Grundfest, Columbia University College of Physicians and Surgeons; Melvin Grumbach, M.D., Columbia University College of Physicians and Surgeons; Dr. Warren Nelson, Rockefeller Institute, New York City; Dr. Carlton C. Hunt, University of Utah; Vernon Mountcastle, M.D., Johns Hopkins University School of Medicine; Professor Ephraim Katchalski, Weizmann Institute, Rehovoth, Israel; Donald Holub, M.D., Columbia University College of Physicians and Surgeons; Jerome Gross, M.D., Massachusetts General Hospital; John Cobb, M.D., Columbia-Presbyterian Hospital; Robert W. Berliner, M.D., National Heart Institute; Roy Vagelos, M.D., National Institutes of Health; Dr. R. A. Alberty, University of Wisconsin; Dr. E. E. Rocky, New York City; L. Strauss, M.D., Mount Sinai Hospital, New York City; Dr. Ephraim Racker, Public Health Research Institute of the City of New York Inc.; Saul Farber, M.D., Brooklyn; Professor Joshua Whatmough, Harvard University; Dr. Gregory Bateson, Veterans Administration Hospital, Palo Alto; Dr. George Miller, Harvard University; Professor Warren McCullogh, Massachusetts Institute of Technology; Dr. Norman Chomsky, Massachusetts Institute of Technology; Dr. John Lilly, Communication Research Institute, St. Thomas, U.S. Virgin Islands; Lewis Rowland, M.D., Columbia University College of Physicians and Surgeons; Martin Goldner, M.D., Brooklyn, Henry Dolger, M.D., New York City; and Dr. Sam Solomon, Columbia University.

Albany Medical College

Appointed—Alena M. Polesny, M.D., has been appointed as an instructor in anesthesiology and assistant attending in anesthesiology at Albany Hospital. Dr. Polesny graduated in 1937 from the Medical School of Charles University, Prague. William J. Jameson, M.D., Kurt H. Meyerhoff, M.D., and Louis P. Tischler, M.D., have been appointed as part-time teachers of obstetrics and gynecology.

Two-Way Radio Broadcasts—In December the first successful use of two-way radio broadcast facilities was made to enable doctors at many hospitals to take part in a single clinical pathologic conference. Copies of the protocol were mailed to the hospitals prior to the broadcast. The hour-long broadcast was broken down into three almost equal parts—discussion of the case by a practicing physician who did not know the pathologic findings or final diagnosis; questions to him from the audience; then the pathologist's presentation with further questions. Faculty from six eastern medical schools participate in postgraduate teaching conferences over WAMC. Besides Albany and Vermont, these are Yale, Harvard, Tufts, and Boston University.

American Cancer Society Grant—Departments of Medicine and Oncology have received a grant of $19,050 from the American Cancer Society for a large scale investigation of a new test for diagnosing lung cancer, to see if the aerosol-induced cough will produce more and better lung material, and to find if heavy smoking is related to cellular changes in the specimens from whom a comprehensive smoking history will be taken. The large-scale study will help to determine if the aerosol technic can be applied to a mass screening program for the detection of lung cancer.

Cornell University Medical College

Class of 1963—The 1963 class consists of 79 men and 4 women who were drawn from 39 American colleges and universities. One student, however, prepared at the Medical School of Szeged in Hungary. The members of the class were selected from among 1,205 applicants for admission.

University of Rochester School of Medicine and Dentistry

Retires—W. J. Merle Scott, M.D., a member of the faculty at the College and of the senior surgical staff of Strong Memorial Hospital will retire on June 30 as professor of surgery and chairman of the department, and surgeon-in-chief of the Strong Memorial and Rochester Municipal Hospitals.

MEDICAL NEWS

American-Hungarian Medical Association Elects Officers—The American-Hungarian Medical Association has elected the following New York City physicians as officers for 1960: John G. Codik, M.D., president; Edward E. Rockey, M.D., first vice-president; Andrew K. Bernath, M.D., second vice-president; Jerome Gerendasy, M.D., corresponding secretary; Paul A. Radnay, M.D., recording secretary; William T. Brown, M.D., archivist-historian; Eugene Rasko, M.D., treasurer; and Ernest Feldmar, M.D., assistant treasurer.

Postgraduate Course on Fractures and Other Trauma—The fourth postgraduate course on fractures and other trauma, sponsored by the Chicago Committee on Trauma of the American College of Surgeons, will be held April 27 through April 30, at the John B. Murphy Memorial Auditorium, 50 East Erie Street, Chicago.

Among the speakers at the course will be David M. Bosworth, M.D., and Preston A. Wade, M.D., of New York City.

For further information on the course write to: John J. Fahey, M.D., chairman, 1791 West Howard Street, Chicago 26, Illinois.

Bronx Chapter, New York State Society of Internal Medicine Elects Officers—The following officers were elected by the Bronx Chapter of the New York State Society of Internal Medicine for the year 1960: Maxwell Spring, M.D., president; Abraham Jezar, M.D., vice-president; Joseph Feibush, M.D., secretary-treasurer; and Charles Klein, M.D., and E. C. Murphy, M.D., directors.

Columbia University Receives Five Million Dollar Gift—Columbia University recently received a gift of five million dollars from an alumnus. The largest single gift ever contributed by a living person to the two-hundred-and-five-year-old institution was given by William Black, president and founder of the Chock Full O' Nuts corporation. He is also president and founder of the Parkinson's Disease Foundation. His gift will go toward the construction of an 18-story medical research building at 168th Street and Fort Washington Avenue, on the Grounds of Columbia University's College of Physicians and Surgeons. One of the floors will be devoted to research projects of the Parkinson's Disease Foundation.

Doctor's Orchestral Society Presents Concert—The Doctors' Orchestral Society of New York presented a memorial concert under the direction of Mr. Norman Masonson, on December 13. Featured artists were Miss Marilyn Dubow, violinist, and Mr. Robert Ward, guest conductor. The program included Mendelssohn's Violin Concerto in E Minor, Beethoven's Seventh Symphony, and Gabrielli's Sonata Pian' E Forte for Brass.

Physicians, dentists, nurses, and members of allied professions are invited to become members of the organization. Rehearsals are held on Thursday evenings at 8:30 P.M., in the auditorium of the Stuyvesant High School, 15th Street and First Avenue, New York City. For further details contact: Benjamin A. Rosenberg, M.D., 909 President Street, Brooklyn 15, New York. Telephone NEvins 8–2370.

Albany Medical College to Hold Shipboard Postgraduate Medical Seminar—The Albany Medical College of Union University will present its second annual shipboard postgraduate medical seminar aboard the *S. S. Hanseatic*, departing from New York City for Caribbean ports on March 29. Information concerning the seminar is available from: Director of Postgraduate Education, The Albany Medical College of Union University, Albany 8, New York.

Patients Sought for Clinical Study of Childhood Solid Tumors—The cooperation of physicians is requested in a therapeutic study of childhood solid tumors at the Clinical Center, National Institutes of Health, Bethesda, Maryland. This study is being conducted by the National Cancer Institute and has as its primary purpose a search for therapeutic agents that favorably affect the course of the disease. The tumor types of particular interest include Wilms tumors, neuroblastomas, rhabdomyosarcomas, sarcoma botryoides, and the lymphomas.

It is preferred that patients be referred either before or after they have received the initial therapy (surgery and/or radiation) before the advanced bedridden stage. Physicians interested in the possibility of referring such patients should write or telephone: Clyde O. Brindley, M.D., Senior Investigator, or Emil Frei, III, M.D., Head, Chemotherapy Service, National Cancer Institute, Bethesda 14, Maryland. Telephone OLiver 6–4000 (ext. 4252, Dr. Brindley; ext. 2500, Dr. Frei).

Personalities

Resigned

P. Jerome Laviano, M.D., Patchogue, as deputy medical examiner for Suffolk County.

Awarded

Blaise A. Pasquarelli, M.D., New York City, a Fordham University Alumni Association Award on January 26 . . . Mallory Stephens, M.D., Bronx, the New York Tuberculosis and Health Association Fellowship . . . Bella S. Strauss, M.D., New York City, the James Alexander Miller Fellowship of the New York Tuberculosis and Health Association.

Elected

Theodore G. Klumpp, M.D., Sands Point, to the board of directors of Sterling Drug, Inc. . . . Richard Townley Paton, M.D., New York City, and Barbara B. Stimson, M.D., Poughkeepsie, as members of the American Society of the Most Venerable Order of the Hospital of St. John of Jerusalem.

Appointed

Michael C. Armao, M.D., New York City, as medical director of the medical center now under construction, jointly managed by the New York Shipping Association-International Longshoremen's Association . . . Gilbert Dalldorf, M.D., New York City, as a member of the Sloan-Kettering Institute for Cancer Research . . . William F. Mitty, Jr., M.D., New York City, as director of surgery at St. Vincent's Hospital of the Borough of Richmond . . . Marvin E. Perkins, M.D., Washington, D.C., as director of community mental health services of the Mental Health Board of New York City . . . Joseph M. Pisani, M.D., New York City, as medical director of the Union Family Medical Fund of the Hotel Industry . . . Harold A. Press, M.D., New York City, as medical director of Cortez F. Enloe, Inc. . . Harry Lane Robinson, M.D., New York City, as professor and chairman of the Department of Pathology at New York University College of Medicine.

Speakers

Walter S. Atkinson, M.D., Watertown, the sixteenth annual Sanford R. Gifford Memorial Lecture on February 12 at the annual clinical conference of the Chicago Ophthalmological Society . . . Gilbert Baum, M.D., Port Chester, at the annual clinical conference of the Chicago Ophthalmological Society in February . . . Kenneth Donaldson, M.D., New York City, on January 21, at the New York Academy of Medicine as a panel member on the topic "The Functions of the Hospital Emergency Room" . . . Emerick Friedman, M.D., Albany, on the subject "Experience with a New Intravenous Convulsant Anesthetic" before the twenty-second scientific meeting of the Eastern Psychiatric Research Association, on February 4 . . . Thurman B. Givan, M.D., Brooklyn, on radio station WEVD on December 24, 1959, on the subject "The Newborn Child" . . . Chas. Murray Gratz, M.D., New York City, in Mexico City in April at the Sixth National Orthopaedic and Traumatology Congress sponsored by the Mexican Orthopedic Society on the subjects "Arthur Steindler—An Appreciation" and "Practical Biomechanics in Fascial and Capsular Surgery". . . Herman E. Hilleboe, M.D., New York State Commissioner of Health, on January 14, at the annual meeting of the National Advisory Committee on Local Health Departments . . . Warren A. Lapp, M.D., Brooklyn, on the subject "The Newborn Child" over radio station WEVD on December 24, 1959.

John LaTendresse, M.D., Albany, on February 4, before the twenty-second scientific meeting of the Eastern Psychiatric Research Association, on the topic "The Use of Free Discussion Groups Among Therapists and Observers of Multiple Groups in the Teaching of Group Therapy" . . . Max Levin, M.D., New York City, on the subject "Sleep and Fatigue—Normal and Abnormal Manifestation of Pavlovian Inhibition" on January 22 at a meeting of the Association for the Advancement of Psychotherapy . . . Robert A. Moore, M.D., Brooklyn, the William Henry Welch Lecture at Mount Sinai Hospital on January 13, on the topic "Medical Education" . . . Philip Ollstein, M.D., Brooklyn, on December 24, 1959, over radio station WEVD on the subject "The Newborn Child" . . . Philip Reichert, M.D., New York City, on the topic "The Pharmaceutical Industry, the Medical Profession, and the Public Interest" on January 18 at New York University Washington Square Center . . . Herbert E. Shaftel, M.D., Brooklyn, at the Bermuda Conference on Current Research in Angiology in December . . . Paul A. Skudder, M.D., New York City, on January 21, at the New York Academy of Medicine as a panel member on the topic "The Functions of the Hospital Emergency Room". . . Herbert A. Smith, M.D., professor of surgery emeritus, University of Buffalo, delivering the Roswell Park Lecture on February 9, on the subject "Lest We Forget" . . . Preston A. Wade, M.D., New York City, on January 21, at the New York Academy of Medicine on "The Functions of the Hospital Emergency Room" . . . Joseph Wilder, M.D., New York City, as a discussant on "Sleep and Fatigue—Normal and Abnormal Manifestation of Pavlovian Inhibition" at a meeting of the Association for the Advancement of Psychotherapy on January 22.

MEDICAL MEETINGS

Howard Fox Memorial Lecture

The Department of Dermatology and Syphilology of New York University Post-Graduate Medical School has annnounced that the third annual Howard Fox Memorial Lecture will be delivered by Robert A. Nelson, Jr., M.D., on Tuesday, February 16, at 8:00 P.M. in classroom B of Alumni Hall, 550 First Avenue, New York City.

The title of Dr. Nelson's talk will be "Immunologic Mechanisms of Resistance to Microbial Infection and to Transplantation of Homologous Tissues."

Twenty-fifth Annual Fracture Day

The New York and Brooklyn Regional Committee on Trauma of the American College of Surgeons will holds its twenty-fifth annual "Fracture Day" on Saturday, February 20, at 9:00 A.M., in the Einhorn Auditorium of Lenox Hill Hospital, 111 East 76th Street, New York City.

The program will be as follows: *Morning Speakers*—Introduction, Sawnie R. Gaston, M.D., New York City; "Fractures of the Humerus with Radial Nerve Injury," Alexander Garcia, Jr., M.D., and Benjamin H. Maeck, M.D., New York City, with comment by Jesse W. Mahoney, M.D., New York City; "Indications for Open Reduction in Treatment of Children's Fractures," Frederick M. Smith, M.D., Falmouth, Massachusetts, with comments by Preston A. Wade, M.D., New York City; "Symposium on Further Experience in the Use of Ostamer Plastics in Treatment of Fractures," moderator, Otto Aufranc, M.D., Boston, Massachusetts, and panel, Ben Drompp, M.D., Detroit, Michigan, Lt. Col. W. H. Moncreif, Jr., Washington, D.C., Kenneth Francis, M.D., New York City, Z. B. Friedenberg, M.D., Philadelphia, Pennsylvania, and Bernard Jacobs, M.D., New York City.

Luncheon Speakers—"Report on the National Committee on Trauma," Harrison L. McLaughlin, M.D., New York City; "Early Laminectomy in Treatment of Fracture Dislocations of the Spine Which Include Damage to Neural Elements," Thomas I. Hoen, M.D., New York City, with comment by Edward B. Schlesinger, M.D., New York City.

Afternoon Speakers—"Malunion and Nonunion in Fractures of the Clavicle," Charles S. Neer, II, M.D., New York City; "Early and Late Treatment of Acromioclavicular Dislocations," Bernard Jacobs, M.D., New York City, with comment by Harrison L. McLaughlin, M.D., and Robert L. Patterson, Jr., M.D., New York City.

Application to attend the meeting is not required. Address any inquiries to: Lester Blum, M.D., secretary, 101 East 93rd Street, New York 28, New York.

Association for the Advancement of Psychoanalysis

The Association for the Advancement of Psychoanalysis will sponsor its regular meeting at the New York Academy of Medicine at 8:30 P.M., on Wednesday, February 24, at the New York Academy of Medicine, 2 East 103rd Street, New York City.

Marianne Horney Eckardt, M.D., Bethesda, Maryland, will present a paper entitled "The Detached Person: In Defense of Present-Day Man." Discussants will be Alexander R. Martin, M.D., and Frederick A. Weiss, M.D., of New York City.

Alumni Association of the New York Eye and Ear Infirmary

The annual spring meeting of the Alumni Association of the New York Eye and Ear Infirmary will be held April 4 through 7, at the Infirmary, 218 Second Avenue, New York 3, New York. Pediatric ophthalmology and otolaryngology will be stressed.

For additional information write to: John R. Finlay, M.D., secretary, Alumni Association, 218 Second Avenue, New York 3, New York.

American Society of Facial Plastic Surgery

Future meetings of the American Society of Facial Plastic Surgery will be held on April 6 and July 22, at the Hotel Elysee, 60 East 54th Street, New York City, and on October 13, in Chicago, Illinois.

For further information contact: Samuel M. Bloom, M.D., secretary, American Society of Facial Plastic Surgery, 123 East 83rd Street, New York 28, New York.

Second International Symposium of Deborah Hospital

Congenital heart disease will be the subject of Deborah Hospital's second international symposium on current concepts in medicine. It will be held

April 28 through 30, in the Bellevue Stratford Hotel, Philadelphia.

Specialists in every branch of cardiology will present papers on the most recent developments in the diagnosis, treatment, and surgical correction of heart ailments present from birth. The symposium is open to all interested physicians.

Pan-American Medical Women's Alliance

The Pan-American Medical Women's Alliance will hold its seventh congress in San Juan, Puerto Rico, June 3 through 8. Headquarters for the congress will be the Condado Hotel.

World Medical Association

The fourteenth general assembly of The World Medical Association will be held in West Berlin, Germany, September 15 through 22. The German Medical Association will be host to the assembly and has scheduled its own annual meeting concurrently with the assembly. The two associations will meet jointly in their opening and closing plenary sessions.

Additional information concerning the meeting will be available, after March 1, from: The World Medical Association, 10 Columbus Circle, New York 19, New York.

The Differential Diagnosis and Treatment of Hirsutism in Women

For the purposes of this paper, the authors arbitrarily place the problems of hirsutism in women in three categories: (1) hirsutism with virilizing endocrinopathy; (2) hirsutism with a nonvirilizing endocrine disorder; and (3) hirsutism with no recognizable endocrine disorder. Under these headings diagnosis, differentiation, and treatment of hirsutism are discussed in considerable detail. Hirsutism with endocrine disorder is suggested by change in menstrual pattern, change in growth rate of hair and its texture and distribution, voice and skin changes, decrease in breast size, enlarged clitoris, acne, pelvic or suprarenal masses, and an enlarged or prominent larynx. A strong family history of hirsutism suggests that no endocrine basis will be found. Hirsutism with virilizing syndromes include the adrenogenital syndrome and ovarian masculinizing tumors. Hirsutism with nonvirilizing endocrinopathies include the Stein-Leventhal syndrome, adiposogenital dystrophy (Froelich's syndrome), Cushing's syndrome, and hirsutism associated with diabetes mellitus. Hirsutism with no recognizable endocrine disorder includes "idiopathic" hirsutism and hirsutism medicamentosa. Basic diagnostic measures are thorough history and physical and pelvic examinations with particular attention to items listed above. Others are skull roentgenograms, endometrial curettage, glucose tolerance tests, vaginal smears, x-rays of spinal column and long bones, intravenous pyelography, gynecography, perirenal air studies, culdoscopy, and pelvic examination under anesthesia. The 17-ketosteroid excretion studies correlate fairly well with the androgen content of adrenals and ovaries but may be misleading to the inexperienced. Normal or slightly elevated 17-ketosteroids are usually associated with ovarian lesions; moderately elevated 17-ketosteroids are usually associated with adrenal hyperplasia; and greatly elevated 17-ketosteroids with malignant adrenal neoplasms. If virilization is out of proportion to 17-ketosteroid excretion, ovarian masculinizing tumor is most likely to be found. The authors warn that treatment of an endocrine disease as a cause of hirsutism may not banish the hirsutism. Residual or essential and primary hirsutism are best treated by shaving. The authors take a dim view of estrogenic "creams" and assert that they should be condemned. Electrolysis, they add, is expensive and time consuming. While depilatory creams offer promise they have not been studied objectively in sufficient numbers.—*Russell R. de Alvarez, M.D., and Richard A. Heitman, M.D., Quarterly Review of Surgery, Obstetrics, and Gynecology, September, 1958*

BOOKS RECEIVED

(The following books were received during the month of December, 1959)

Metabolic Aspects of Renal Function. By William D. Lotspeich, M.D. Octavo of 214 pages, illustrated. Springfield, Charles C Thomas, 1959. Cloth, $7.50.

Smoking and Health. By Alton Ochsner, M.D. Octavo of 108 pages, illustrated. New York, Julian Messner, Inc., 1959. Cloth, $3.00.

Culture and Mental Health. Edited by Marvin K. Opler. Octavo of 533 pages, illustrated. New York, The Macmillan Company, 1959. Cloth, $8.75.

The Physiological Basis of Diuretic Therapy. By Robert F. Pitts, M.D. Octavo of 332 pages, illustrated. Springfield, Charles C Thomas, 1959. Cloth, $9.75.

Schifferes' Family Medical Encyclopedia. By Justus J. Schiffers, Ph.D. Sextodecimo of 619 pages, illustrated. New York, Permabooks, 1959. Paper, $.50.

Behavioral Change in the Clinic—A Systematic Approach. By Gerald R. Pascal, Ph.D. Octavo of 128 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $4.75.

Antibiotic Therapy for Staphylococcal Diseases. Edited by Henry Welch, Ph.D., and Maxwell Finland, M.D. Octavo of 208 pages, illustrated. New York, Medical Encyclopedia, Inc., 1959. Cloth, $4.50. (Antibiotics Monographs No. 12)

Manual of Skin Diseases. By Gordon C. Sauer, M.D. Quarto of 269 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $9.75.

Antithrombotic Therapy. By Paul W. Boyles, M.D. Octavo of 131 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $5.00. (Modern Medical Monographs, 20)

Roentgenological Diagnosis in Ophthalmology. By Edward Hartmann, M.D., and Evelyn Gilles, M.D. Translated by George Z. Carter, M.D. Octavo of 375 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $15.

Babies by Choice or by Chance. By Alan F. Guttmacher, M.D. Octavo of 289 pages. Garden City, Doubleday & Company, Inc., 1959. Cloth, $3.95.

Transactions of the Second Conference on the Central Nervous System and Behavior, February 22, 23, 24, and 25, 1959, Princeton, N.J. Edited by Mary A. B. Brazier, Ph.D. Octavo of 337 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $4.75.

The Clonal Selection Theory of Acquired Immunity. By Sir Macfarlane Burnet. Octavo of 209 pages, illustrated. Nashville, Vanderbilt University Press, 1959. (Published in Great Britain by Cambridge University Press.) Cloth, $5.00. (The Abraham Flexner Lectures)

Tabulating Equipment and Army Medical Statistics. By Brig. Gen. Albert G. Love, USA (Ret.), Col. Eugene L. Hamilton, MSC, USAR, and Ida Levin Hellman, M.Sc. Octavo of 202 pages, illustrated. Washington, D.C., Office of the Surgeon General Department of the Army, 1958. Cloth, $2.00.

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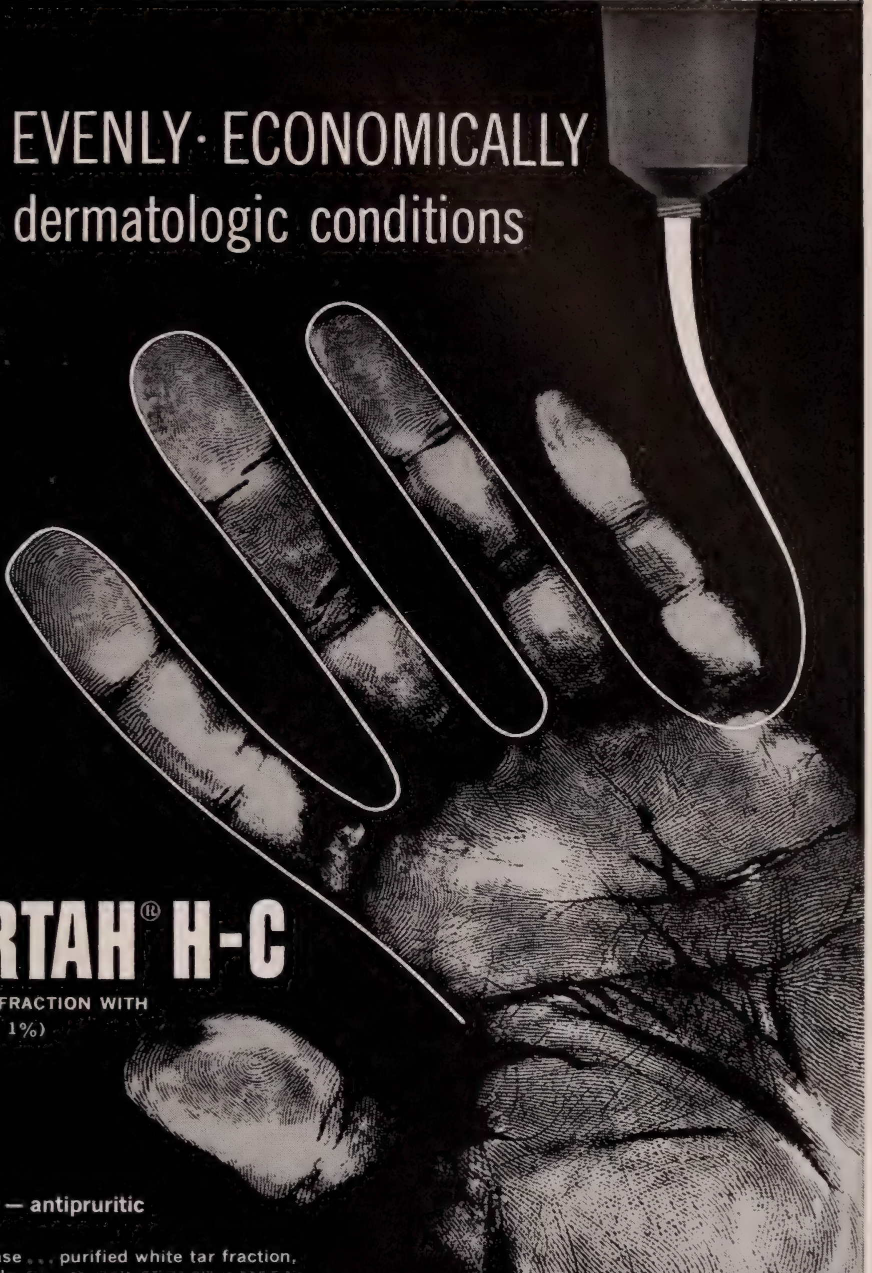

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BOOKS REVIEWED

Progress In Hematology. Volume II. Edited by Leandro M. Tocantins, M.D., with 19 contributors. Quarto of 290 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $9.75.

This volume is a review of the recent advances in hematology which have occupied the workers in this field.

There are 13 chapters ranging from cytology to recovery from radiation injury following the use of bone-marrow transplantations. There are observations on the sickling phenomenon, humoral factors in erythropoiesis, and kernicterus. There are also reviews on hemolytic disease of the newborn, the problem of blood preservation and transmission of leukemia. There are valuable articles on hematologic aspects of serotonin as well as chemotherapy of chronic myeloid leukemia, use of platelet transfusions; also articles on lipid anticoagulants and correction of hemorrhagic complications of esophageal varices.

This volume is highly recommended to students of the subject.—Maurice Morrison

The Anatomy of the Nervous System. By Stephen W. Ranson, M.D. Tenth edition. Octavo of 622 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $9.50.

This 622-page text represents the tenth edition of the widely used and accepted treatise on neuroanatomy originally authored by Ranson. The latest of these editions has been extensively revised by Sam Clark, M.D., but still adheres to the organization and format initiated by Ranson. The textbook commences with a limited discussion of nervous system embryology and is then followed by a far more elaborate review of the various topographic structures comprising the adult nervous system. Other than initial descriptions of the developing nervous system in lower species, there is no comparative neuroanatomy of any great measure described in the book.

As in previous editions, the terminal chapters are devoted to brief and simple clinical illustrations reviewing the clinical consequences of focal nervous system destructive lesions. In addition, there are brief sections relating to technics of neuroanatomic dissection as well as a terminal atlas (both myelin and nuclear) of the nervous system.

This text remains as one of the finer volumes of neuroanatomy, simple in its organization, clear in its explanations, and of particular value to students in medical school as well as physicians desiring to review the fundamentals of the central nervous system.—S. M. Aronson

Long-Term Illness. Management of the Chronically Ill Patient. Edited by Michael G. Wohl, M.D. Octavo of 748 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $17.

This book is one of the best on the subject of the management of the chronically ill patient. The list of contributors is a rather impressive one. There are some 5,500,000 chronically ill patients in the United States, and their number is growing; 2,200,000 of these have chronic illnesses requiring long-term care. Four times as many suffer from minor or temporary chronic or crippling diseases, according to the authors. This involves one-eighth of the total population.

The conclusion drawn by the commission on chronic illness that the care of the chronically ill is inseparable from general medical care, may be considered as axiomatic.

The chapter on adopted and specialized equipment in the care of these patients is very complete and with many illustrations. The chapter on home care is well done and the chapter on rehabilitation is rather detailed with many tables to illustrate the author's points, including a table of 5 major long-term illnesses and their diagnostic and rehabilitation problems. The chapter on psychogenic problems of the chronically ill should be read by all who treat these patients. The chapter on multiphasic screening is excellent and has a table listing tests which are available.

The chapter on nursing care is well done and discusses the challenge of the illness to the nurse.

Part II discusses the therapy of specific diseases, including rheumatoid arthritis, gout, diseases of heart and circulation, peripheral vascular diseases, urogenital diseases, prostatism, allergy, pulmonary diseases, including pulmonary emphysema, diseases of the digestive tract, malignancies, cerebrovascular accidents, and Parkinsonian disease.

Drug therapy is detailed and illustrated with many tables. There is a chapter on emotional illnesses requiring continued treatment as well as a chapter on chronic disease in children at the end of

[Continued on page 576]

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the book, which makes the book more complete and thorough.

The appendix has a list of rehabilitation centers in the United States and Canada and has a detailed list by state of each.—VINCENT ANNUNZIATA

Psychoendocrinology. Edited by Max Reiss, M.D. Octavo of 208 pages, illustrated. New York, Grune & Stratton, Inc., 1958. Cloth, $7.00.

This 200-page volume is the report of a symposium which was held by the International Congress for Psychiatry to correlate the progress made in the study of endocrine function in psychopathology.

The authors of the various papers strive to measure endocrine function by the newest biochemical and physiologic technics. They do present data assaying the thyroid, adrenal, and gonadal functions in various psychotic and neurotic states such as schizophrenia, premenstrual tension, and menopausal psychoses.

The attempt to correlate psychopathology with measurable chemical or physiologic endocrine abnormalities has been adequately begun by these investigators. The combined psychiatric and endocrine work-up seems highly desirable in the neurotic complications of the premenstrual and menopausal states.

This book is recommended to the mature internist, endocrinologist, or psychiatrist as a guide to an area in which much research is needed.—MARTIN PERLMUTTER

Emergency Surgery. By Hamilton Bailey, M.D. Seventh edition. Octavo of 1,197 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth, $32.50.

This seventh edition of a well-known book has been written after a period of almost ten years since the sixth edition. As so many strides have been made in surgery during this time, nearly all of the chapters have been rewritten and many new ones added. There is a tremendous amount of sound information to be gathered in this book, and practically all of the emergencies in the field of surgery are considered. The book is almost entirely devoted to clinical surgery, well written and very well illustrated. It is a book which any practicing surgeon would find of great value.—EDWARD P. DUNN

Tumors and Tumorous Conditions of the Bones and Joints. By Henry L. Jaffe, M.D. Octavo of 629 pages, illustrated. Philadelphia, Lea & Febiger, 1958. Cloth, $18.50.

This new book is opportune and notable and will be a work of reference on the subject of primary tumors and other tumorous conditions affecting the bones and joints. The author has imparted in this one volume his own individual knowledge and extensive experience obtained through his long professional career as a pathologist.

In addition to the individual primary tumors, the text considers tumors metastatic to the skeleton and tumors invading bone from overlying soft parts.

It is a most inclusive volume and lavishly illustrated. It considers clinical features, roentgenographic aspects, and their pathologic manifestations both gross and microscopic. Differential diagnosis and outlines of treatment are presented.

The chapters include giant-cell tumor, bone cyst, aneurysmal bone cyst, benign chondroblastoma, chondromyxoid fibroma, benign and malignant tumors of cartilage, fibrosarcoma, osteogenic sarcoma, and such other conditions as osteoid-osteoma, fibrous dysplasia, pigmented villonodular synovitis, synovioma, chordoma, and also certain cysts and tumors peculiar to the jawbones. Subjects believed to be included for the first time in a book of this type are juxtacortical chondroma, juxtacortical osteogenic sarcoma, fibrous cortical defect, desmoplastic fibroma, and benign osteoblastoma.

Although there are numerous publications on the subject of tumors and tumorous conditions, this newer authoritative work will be consulted more frequently by those seeking diagnostic help whether pathologic radiologist, general, or orthopedic surgeon.

Altogether this volume is most informative, interesting, and complete. It is a tribute to the author and should be on the shelf of every medical library.—HENRY P. LANGE

That the Patient May Know. An Atlas for Use by the Physician in Explaining to the Patient. By Harry F. Dowling, M.D., and Tom Jones, B.F.A. Quarto of 139 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $7.50.

Time and again the physician has taken pencil in hand and made sketches and diagrams to clarify his thoughts to the patient. Invariably he has wished to have a source of illustrations which could answer his purpose better.

This volume is the answer to every doctor's wish and the author is a well-qualified professor of medicine and his illustrator has been world famous for several decades.

All of the body systems are thoroughly illustrated. In addition, metabolism, nutrition, and growth as well as infections, the mechanisms of immunity and allergy, and a host of miscellaneous topics are covered.

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[Continued on page 578]

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[Continued from page 576]

a more complete set of illustrations for the physician in explaining to the patient?—Samuel G. Slo-Bodkin

Neurological Basis of Behaviour. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. Duodecimo of 400 pages illustrated. Boston, Little, Brown & Co., 1958. Cloth, $9.00.

The physical happenings during psychic processes are tackled by some of the leading experts of our times in this volume. J. C. Eccles contributes a chapter on "The Behavior of Nerve Cells" which is a must for all those interested in basic neurophysiology. Wilder Penfield contributes a chapter on "The Role of the Temporal Cortex in Recall of Past Experiences and Interpretation of the Present," which is a summary and interpretation of his stimulation experiments with humans. H. Gastaut has a chapter on "Some Aspects of the Neurophysiological Basis of Conditioned Reflexes and Behavior," which is a masterly integration of the electrophysiologic events in the conditioning process showing, among other things, that conditioning is not exclusively a cortical process.

There are 19 chapters in all, presentations by authors covering new work with enzymes, ablation experiments, effects of stress, drugs, etc. All this data is amplified and clarified by the discussions of other workers in the field at the end of each essay.

This is a book which should be studied by all neurologists and psychiatrists who are interested in the basic mechanism which lead to human behavior. —Arthur J. Lapovsky

Atlas of Technics in Surgery. By John L. Madden, M.D. Quarto of 648 pages, illustrated. New York, Appleton-Century-Crofts, 1958. Cloth, $30.

The new atlas contains 648 pages, with 293 full-page 9″ × 12″ plates detailing 1,843 illustrations. The method of presenting the subject was carefully planned and brilliantly executed.

The author realizes that one cannot become a surgeon by studying plates nor by reading textbooks. One must go through the long and arduous postgraduate period of training in an approved program under the supervision of qualified surgeons. Upon completion of this training, he must then spend the remainder of his professional days working, wondering, and studying, adding each day to the preliminary training by personal experience, bitter and discouraging though some of it may be.

However, during and following the period of surgical training, a book such as this will be of inestimable value. It is unique. One hundred operations covering the entire field of general surgery, including cardiopulmonary surgery, were witnessed by an expert medical artist who with "anatomic realism and creative interpretation" depicted the essential stages in each surgical procedure. They are done on tinted paper and give a third dimensional effect. On the page opposite the illustrations, the author very concisely, but completely, describes the various steps of the operation. Beneath this a contributing author, of whom there are 62, chosen because of his experience and ability in his particular field, discusses the illustrated operation and often adds to the author's description, procedure, or maneuver, suggestions, which he has found useful in his own hands. Often the contributing author differs with the text and describes his method of doing the same operation which has produced better results for him. This gives an excellently balanced opinion. Beneath the discussion complete references are listed.

There are chapters on pre- and postoperative care, including fluid and electrolyte balance and on anesthesia.

This atlas will be a ready source for the technics of thoracic, abdominal, and cardiovascular surgery It will be of value to the intern, to the surgical resident, to the fellow in surgery, and to the practicing surgeon. It is highly recommended and will be a welcome addition to every surgical library.—Merrill N. Foote

Buildings for Research. An Architectural Record Book. Quarto of 224 pages, illustrated. New York, F. W. Dodge Corp., 1958. Cloth, $9.50.

There are special areas of this handsomely and elaborately illustrated book which will be of interest to those who are concerned with the efficient use of space. It may be of interest to the physician to leaf through this as a picture book.

The section on the planning of a scientific laboratory stresses the case for flexibility in laboratory design, which is especially important in view of the ever-increasing demands not only for research laboratory space but also for science laboratory space in hospital practice.

Anyone concerned with the design of laboratories for the use of radioactive materials can read with profit the section on "Nuclear Laboratories." The basic tenet of this book, to which all can subscribe is that a thing may at once be functional and pleasing to the eye.—Warren Glaser

An Introduction to Child Psychiatry. By Stella Chess, M.D. Octavo of 254 pages. New York, Grune & Stratton, 1959. Cloth, $5.25.

In the preface to her book, the author states several objectives. These include a general survey of the field of child psychiatry for students of psychiatry and practitioners concerned with children; a desire to fill the need for a simple reference work: to offer a practical approach to child psychiatry, and

[Continued on page 580]

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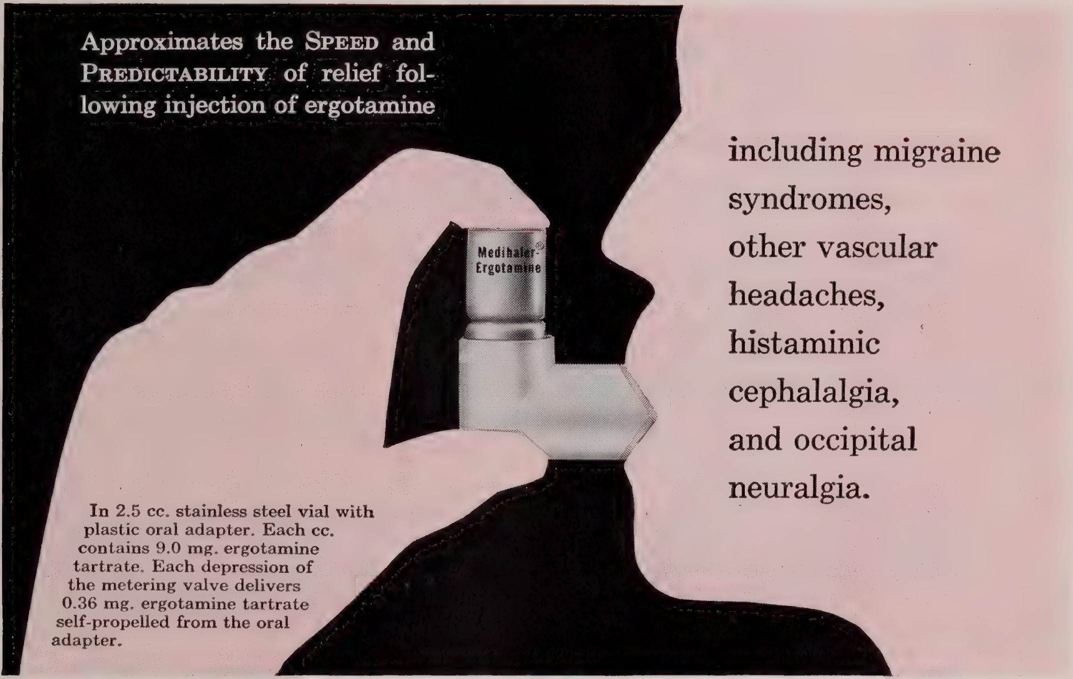

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[Continued from page 578]

means of obtaining a knowledge of its more specialized literature. The book is divided into 5 parts.

Part I, The Practitioner and Patient, is concerned with the development of the field of child psychiatry, its relation to other specialties, the range of the problems, and the source of referral.

Part II, The Child and His Parents, deals with the child as a developing organism and the effect upon him of social and cultural influences.

Part III, The Diagnostic Process, contains a good discussion of the method of taking of a history, the diagnostic interview, and psychologic procedures.

Part IV, Diagnosis, consists of a discussion of organic brain disturbance, reactive behavior disorders, character disorders and childhood psychosis, psychopathic personality and mental retardation, problems arising from special stress situations, adolescent behavior problems, and psychiatric aspects of delinquency.

Part V, Treatment.

The language used in the book is simple and clear. There is a moderate bibliography at the end of each subject discussed and a workable index. The reviewer feels the author has succeeded in fulfilling her objectives and recommends the book for physicians dealing with children.—STANLEY S. LAMM

An Atlas of Normal Radiographic Anatomy. By Isadore Meschan, M.D. Second edition. Quarto of 759 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $16.

There is often a startling difference between the static anatomy of the dissecting room and living functional anatomy as demonstrated radiologically. It is no wonder that among the most common radiologic films presented to the specialist for clarification are films of normal anatomic structures. This text of normal radiologic anatomy might be defined as a text of normal living anatomy.

It was written by Isadore Meschan, professor of radiology at the Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, North Carolina, with the assistance of R. M. F. Farrer-Meschan, Research Associate at the same institution. The first edition received wide acceptance, both among clinicians who must have a knowledge of the normal radiologic anatomy and among anatomists for teaching. This second edition, published eight years after the first, has revisions or additions in the chapters on radiation protection, bone growth, the brain, the spine, the heart and major blood vessels, and the gastrointestinal and biliary passages. It is profusely illustrated.

Its contents are recommended as a required foundation for anyone seriously utilizing radiology as a diagnostic tool. It also could be used very effectively as an adjunct text in the teaching of anatomy.—MORTIMER R. CAMIEL

The Practice of Sanitation. By Edward Scott Hopkins and Wilmer Henry Schulze. Third edition. Octavo of 487 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1958. Cloth $8.00.

This latest edition of a standard text, by authors well qualified through extensive clinical as well as academic experience, is designed more for the guidance and general enlightenment of physicians, nurses, and others in the health professions than as a technical resource for sanitary engineers. As a comprehensive, rather than specifically detailed volume, it ably fulfills its mission of meeting the needs of those requiring a broad understanding of the application of sanitary practices to public health programs. Brief historical accounts provide appropriate background and interest, and an easy style permits pleasant indoctrination with basic information. The organization is good, the index fair, and the bibliography excellent and up to date. Overly numerous, prep-schoolish illustrations might be reduced in favor of more extensive diagrams. Minor errors are at an irreducible minimum, with one possible point of important debate represented by the indication that water distilled by ships' evaporators is necessarily sterilized hence invariably safe. This is a good book, recommended especially to medical students and physicians in military or community health service.—ROBERT W. HILLMAN

Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume I. Edited by R. Glen Spurling, M.D., and Barnes Woodhall, M.D. Octavo of 466 pages, illustrated. Washington, D.C., Office of the Surgeon General, Department of the Army, 1958. Cloth, $5.00.

History in any medical field is always of interest and this, the first volume of the history of neurosurgery in World War II, is no exception. The best indication of its fascination are in words of the foreword, "The story . . . includes a frank statement of errors and failures as well as a record of brilliant success achieved in this specialty."

After a description of the administrative problems encountered in attempting to train and equip large numbers of neophyte neurosurgeons to deal with the emergency, the remainder of the book is a collection of articles by 12 different authors qualified by their experiences in the war to write of what they had learned in dealing with large numbers of penetrating wounds of the brain. Unfortunately, delay in publication (most of the articles had been completed in 1947) has removed the feeling of immediacy and much of the material has been published previously or is now somewhat outdated by newer developments. Because the chapters were written independently, there is considerable repetition which would not be encountered in a text on the same subject.

[Continued on page 584]

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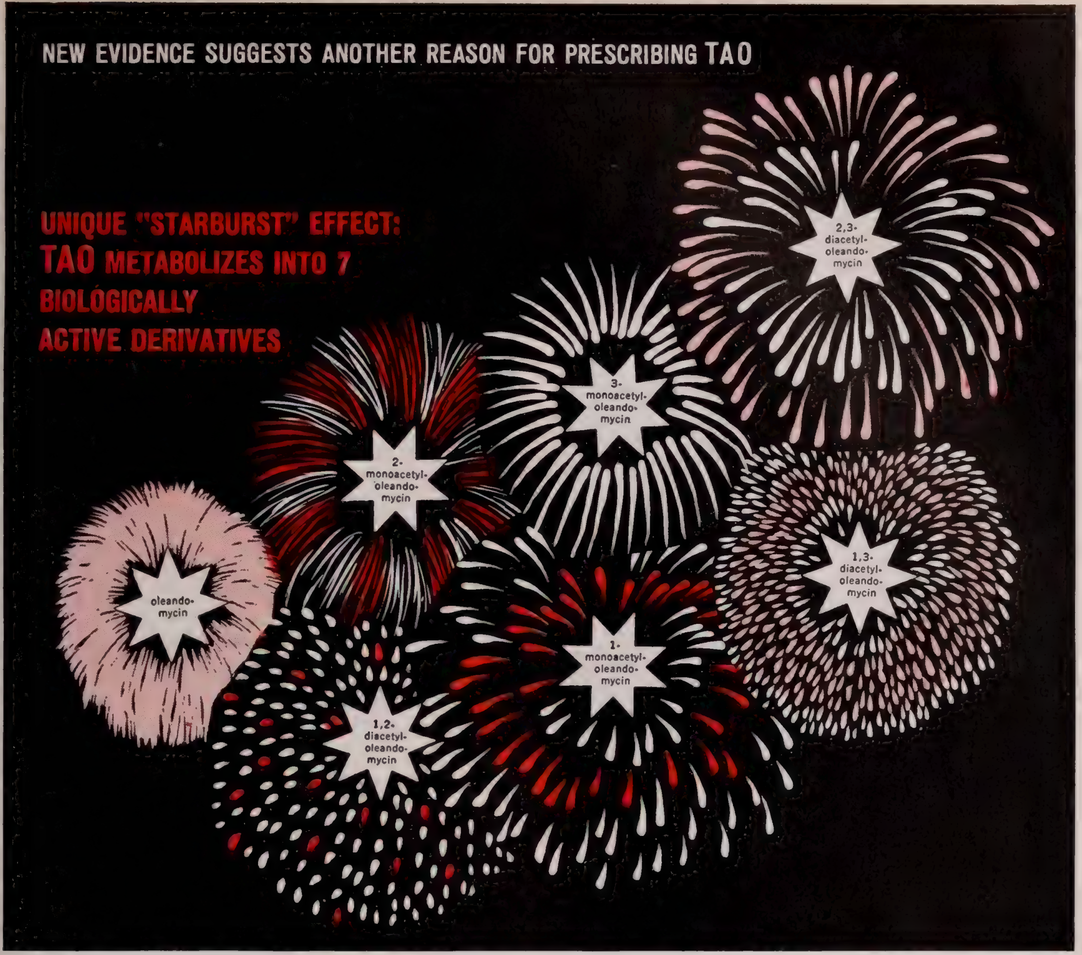
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1. English, A. R., and McBride, T. J.: Proc. Soc. Exper. Biol. & Med. **100**:880 (Apr.) 1959. 2. Celmer, W. D.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 277. 3. English, A. R., and Fink, F. C.: Antibiotics & Chemother. 8:420 (Aug.) 1958.

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[Continued from page 580]

For those who took part in making of the history, some sense of the over-all picture can be obtained, and for the younger neurosurgeon a perusal of this volume can explain the background of some technics now taken as a matter of course.—Howard Freedman

Year Book of Neurology, Psychiatry and Neurosurgery. 1958–1959 Series. Edited by Roland P. Mackay, M.D., S. Bernard Wortis, M.D., and Oscar Sugar, M.D. Duodecimo of 623 pages, illustrated. Chicago, The Year Book Publishers, 1959. Cloth, $8.50.

This latest issue reviews the literature of interest in the field of neurology, psychiatry, and neurosurgery covering the period from about June, 1957, to October, 1958. The editors (R. P. Mackay for neurology, S. B. Wortis for psychiatry, and O. Sugar for neurosurgery) maintain a uniformly high level in the selection and the quality of abstracts from the world literature. Only very few items fall below the level of intelligibility.

For the reader with interest in special topics the abstracts are no substitute for reading the original articles. For those, however, who wish to acquaint themselves with the newest trends in the broad field of neurology, psychiatry, and neurosurgery (which in many respects overlap) this volume will be a very useful guide.—L. P. Hinterbuchner

The Cerebrospinal Fluid. Production, Circulation and Absorption. Ciba Foundation Symposium. Edited by G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor B. Sc. Duodecimo of 335 pages, illustrated. Boston, Little, Brown & Co., 1958. Cloth, $9.00.

This volume consists of 15 original papers on the clear cerebrospinal fluid with discussions of these by 25 international authorities. One sees soon that much is unclear about the formation, absorption, and transportation of the fluid. Yet the correlation of the modern data from isotope technics, refined biochemical and histologic analyses, along with clinical findings, makes exciting reading.

The force of the blood vessel pulsation acting as a pump shooting jets of fluid through a narrow neck into a pouch of arachnoidal membrane causes a larger and larger pouch, distorting the rest of the brain and causing hydrocephalus of a remediable variety.

In other forms of hydrocephalus it is still not definite whether the difficulty is overproduction or underabsorption of the fluid, but following the various schemes to clarify the problem, following ions in and out of the fluid is not only interesting but thought provoking.

Some new studies of the structure of the choroid plexus show an elaborate system of nerves and ramifications.

The comments by the discussants are unusually concise, pointing up the fallacies or supporting the ideas of the original presentations.

Anyone having to do with spinal fluid will find this book easy to read, and informative.—Arthur J. Lapovsky

The Management of Fractures and Dislocations. An Atlas. Volume I and II. By Anthony F. De Palma, M.D. Volume I, quarto of 483 pages, illustrated. Volume II, quarto of 973 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $35 set of two volumes.

This comprehensive atlas provides a most welcome addition to the library of works dealing with trauma. There is an opening section devoted to a consideration of general principles. Then follows, in orderly fashion, complete discussion of the various injuries that the skeleton may sustain.

The work is unique in that pen and ink drawings are used to completely illustrate the appearance of the roentgenograms as well as the procedures employed in treatment. Measures employed are those which the author has found most satisfactory to him.

The volumes are very readable. The pages are of good size, the quality of the paper is good. The printing is very legible and the lines are well spaced.

This atlas is recommended to all who are interested in the subject.—Mayer E. Ross

Orthopaedics. Principles and Their Application. By Samuel L. Turek, M.D. Octavo of 906 pages, illustrated. Philadelphia, J. B. Lippincott Co., 1959. Cloth, $22.50.

For many years there has been a distinct need for a comprehensive text in orthopedic surgery bringing together under one cover many of the newer ideas and developments in this field. This the author has done in a manner which satisfies both academic and practical considerations. There are four major sections.

In part one the author covers the basic science aspects of bone muscle and connective tissue physiology and pathology with adequate detail and fine attention to the newer biochemical aspects.

In part two is discussed broadly general orthopedic conditions. In this section we were impressed particularly by the chapters on orthopedic neurology, tumors of bone, and diseases of muscles as well as excellent coverage of peripheral vascular problems. The third section of the book covers regional orthopedic problems and there is a very commendable introductory anatomic review of each part being studied. Not since Jones and Lovett's orthopedic text has this been properly done. Considerable use has been made of illustrations done by Netter for the Ciba clinical symposia and the use of these illustrations helps illuminate a very readable text. In the final section some attention is given to the employment of radioactive isotopes as well as a chapter on amputations.

Discussion of trauma and fractures is omitted, we think wisely, since these problems deserve a separate text. It is felt that more attention might have been paid to bibliography with more extensive references, and a greater selectivity in the matter of authorities in special fields.

In conclusion this newest addition to the orthopedic library would seem to have filled a long-desired need for a comprehensive orthopedic text which can serve as a reference book for the student, general practitioner, and orthopedist as well, covering as it does basic sciences and operative technics. The book should have a wide popularity.—Max S. Rabinowitz

Dynamic Psychopathology in Childhood. Edited by Lucie Jessner, M.D., and Eleanor Pavenstedt, M.D. Octavo of 315 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $8.75.

This book consists of a collection of papers describing technics and some of the results of the psychiatric study and treatment of children. The authors have been previously recognized for their contributions in this field.

This book is not for the dilettante. The papers on research illustrate the difficulty and care which attend studies to further our knowledge of dynamic psychiatry. These papers describe intricate work which has been carried out for a period of years.

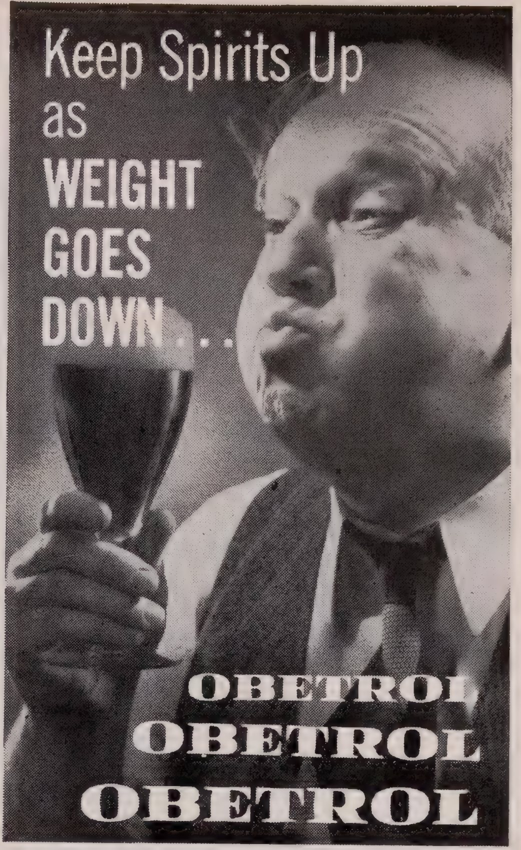
Those who believe television and comic books are the major factors in juvenile delinquency may learn more from the paper on the families of antisocial young children.

As a book to illustrate the depth and weight of child psychiatry this one is very good. It is recommended to administrators who are in contact with child guidance clinics. It is highly recommended to those interested in children and the childhood influence on adult behavior.—Edward L. Pinney, Jr.

Notes of a Soviet Doctor. By G. S. Pondoev' M.D. Octavo of 238 pages. New York, Consultants Bureau, Inc., 1959. Cloth, $4.95.

The author practiced and taught medicine for a half century under two antagonistic forms of society—czarist autocracy and communism. Thus he is in an excellent position to present an intriguing discussion of medical conduct and ethics for the Soviet medical student and young doctor. It is a work of many dimensions but basically considers the educated Russian counterpart of the general practitioner found roaming the "wild West."

[Continued on page 586]



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[Continued from page 585]

He crows as he traces the superiority of the doctor in the Soviet system over his professional colleagues in the capitalistic countries. Yet there are many nostalgic references to prerevolutionary medicine. After tracing the general origins of medicine, he briefly describes many of the old professors such as Pavlov, Mechnikov, and Filatov. Because of a chauvinistic approach, it will come as a surprise to learn that two of Botkin's students successfully employed the green mold penicillium for the treatment of skin infections as early as 1871. Odd Botkins and Gadzooks!

Did you know that Piragov and not Florence Nightingale originated the female nursing corps? Other famous non-Russian medicos are mentioned begrudgingly, corruptly, or not at all.

The strong influence of Marx and Lenin on the training and practice of medical science is apparent throughout. Prerevolutionary medicine as well as Western medicine is described as "obsolete bourgeois medicine."

Despite the frequently slanted aspects of his presentation, the author is obviously a wise and kindly counsellor. Such chapters as "The Doctor and the Patient," "The Doctor and the Law," "The Doctor's Mistakes," and "At The Patient's Bedside," amply prove this point. The translation by Iago Galdston, M.D., is fluid and clear. This book is recommended reading for the American physician who would better understand the philosophy of the politically indoctrinated physician.—Nathaniel E. Reich

Psychodrama. Second Volume. Foundations of Psychotherapy. By J. L. Moreno, M.D. Octavo of 238 pages, illustrated. Beacon, N.Y., Beacon House, 1959. Cloth, $7.75.

This is the second volume published by the author on the same aspect of psychotherapy. The first volume appeared in 1946.

The author has devoted a lifetime of effort in developing this particular method of treatment of emotional disturbances. During the war, when many soldiers had to be treated at one time, it enjoyed some degree of popularity and vogue. However, since then it has lapsed into almost obscurity as an active force in our armamentarium of therapy for emotionally disturbed persons.

The plan of the book is unusual and unorthodox. The author developed a series of six lectures which he gave in Europe in 1954. The material was sent out to various discussants for comments. These are included in the volume together with a summary and reply by the author.

Some of the subjects covered by this method are the nature of transference, interpersonal therapy (group therapy), the place of acting out in psychotherapy, and a chapter on "Psychodrama of Adolph Hitler."

Very little is actually devoted to psychodrama. In the summary the author states: "At the core of this volume is the controversy between psychodrama and psychoanalysis." One does not gain this impression from the reading of this volume. It will hardly gain a wide audience.—Joseph L. Abramson

Atlas of Roentgenographic Measurement. By Lee B. Lusted, M.D., and Theodore E. Keats, M.D. Quarto of 176 pages, illustrated. Chicago, The Year Book Publishers, Inc., 1959. Cloth, $9.00.

The authors of this volume, each an authority among radiologists, accepted the task of producing a manual of technics and tables to be used in x-ray mensuration. This valuable volume is the result of their labor. It is idle to dispute minor differences in accuracy which always arise in concluding dimensions which are measured on shadows. We all have lived with that problem. Yet it is necessary that there be standardized procedures in this field and that through standardization of procedure results of all workers will be comparable. This volume supplies such rules and standards.

The manual is well illustrated with diagrams and tables. It is a useful book and should be added to the radiologist's shelf.—Asa B. Friedmann

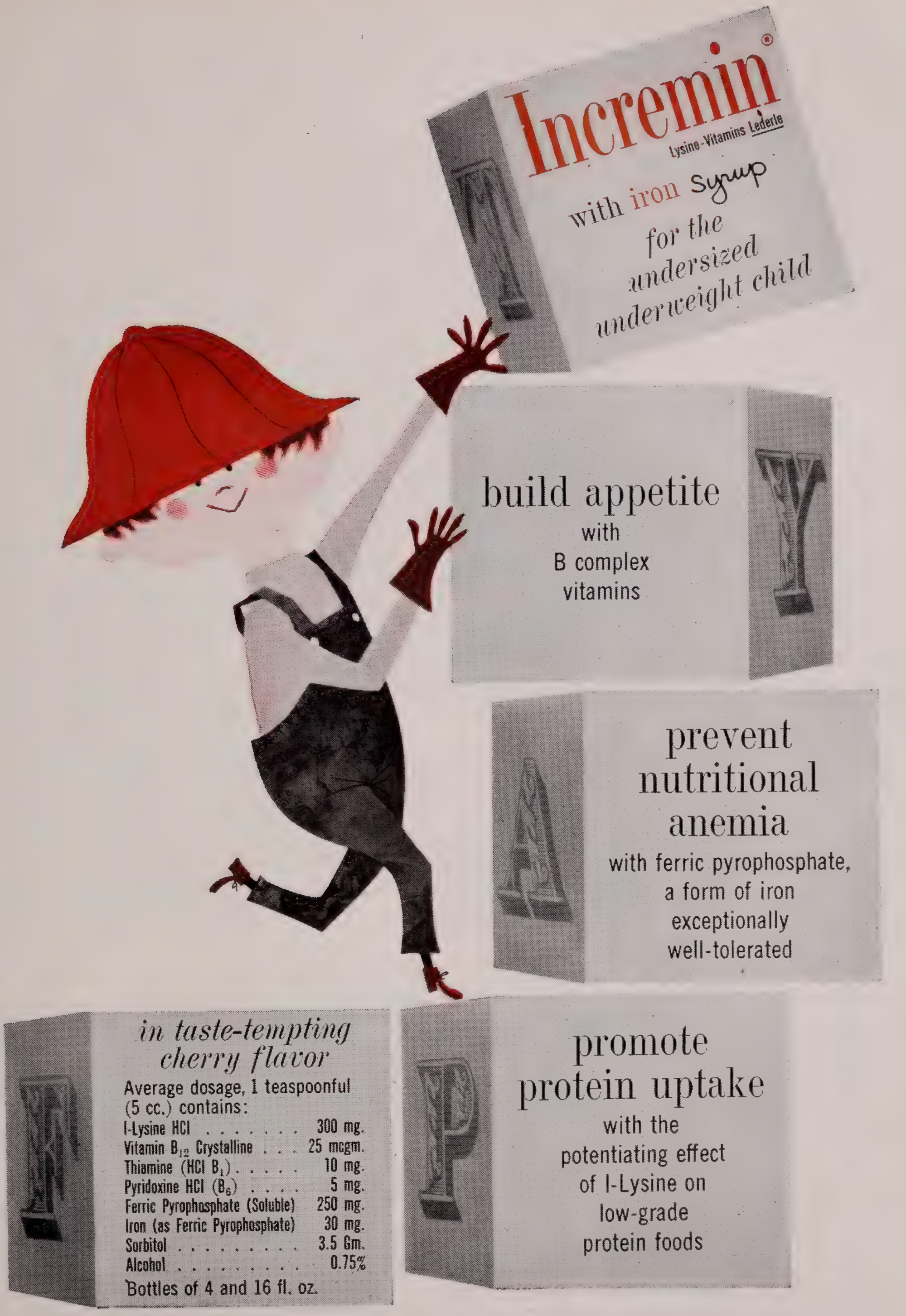
Practical Dermatology. Second Edition. By George M. Lewis, M.D. Octavo of 363 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $8.00.

The author, who is a clinical professor of dermatology at one of the leading medical schools, is well qualified to write a book on skin diseases. As stated in the preface, the "book was written to meet the often expressed desire of my students to have a concise and well-illustrated text which would still serve their needs after they entered practice." It fills those criteria admirably.

The subject matter is divided into groups such as pruritus, so-called collagen diseases, fungous infections, metabolic disorders, tumors, etc., and is described succinctly and in detail. The differential diagnoses are short, brief, and definitive. The illustrations are numerous, clear, concise, and explain the condition vividly. The treatment, although "difficult and challenging" to quote the author, is modern, up to date, specific, and definite. The place that the antibiotics and steroids have in therapy is well delineated. The bibliography is a unit at the end of the book, making a smooth and uninterrupted reading of the text. The references are up-to-date and reflect the present-day thinking in the field of cutaneous medicine.

Although this book is written primarily for the recent graduate, for whom it would serve as an excellent guide, it could also be used by the general

[Continued on page 590]



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[Continued from page 586]

practitioner, by the doctor who has a leaning toward dermatology, and by the specialist.—George F. Price

Ciba Foundation Symposium on Carcinogenesis Mechanisms of Action. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Maeve O'Connor, B.A. Octavo of 336 pages, illustrated. Boston, Little, Brown & Company, 1959. Cloth $9.50.

This volume records the deliberations and presentations of a symposium conducted under the egis of the Ciba Foundation just prior to the Seventh International Cancer Congress, London, 1958. Scientists from 10 countries were represented at the conference.

The wide range of subjects presented ranged from theoretic meditation to pharmacology, immunology, virology, biochemistry, hormonal influences, and the role of ionizing radiations in carcinogenesis.

The caliber of the paper remains uniformly high. The conclusions, however, leave the intelligent reader, who is not himself an active worker in the field, somewhat at sea in the fog of a field which is still indefinite if not ambiguous.

The initiated workers in the field will value this volume as a good reference book.—Asa B. Friedmann

Textbook of Physiology and Biochemistry. By George H. Bell, M.D., J. Norman Davidson, M.D., and Harold Scarborough, Ph.D. Fourth edition. Octavo of 1,065 pages, illustrated. Baltimore, The Williams & Wilkins Co., 1959. Cloth, $12.50.

The great strides which have been made in physiology and biochemistry have been incorporated in this comprehensive volume. Because much of each of these basic sciences are inextricably interwoven, the judgment of the authors to incorporate both fields in one volume is a good one. This is so, particularly since the book is intended as an introduction to physiology and biochemistry for the medical student.

The first part of the book is devoted essentially to biochemistry and deals with carbohydrate, protein, lipids, enzymes, electrolytes, vitamins, and some physicochemical considerations as they relate to metabolic function.

The second part deals with the physiology of all the body systems, the gastrointestinal, respiratory, cardiac, circulatory, and renal. It also deals with the physiology of the nervous system, endocrine, reproduction, growth, and senility.

The book is extremely well written and is highly recommended not only to the student but to the physician who seeks an up-to-date book on recent advances in these fields.—William S. Collens

Progress in Psychotherapy. Volume IV. Social Psychotherapy. Edited by Jules H. Masserman, M.D., and J. L. Moreno, M.D. Octavo of 361 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $8.75.

The editors have followed the same format as in the previous three volumes they edited.

The present volume encompasses a wider scope of psychotherapy—the social aspects. This is usually neglected in many discussions of psychotherapy. After an excellent introduction by Dr. Moreno on "Current Climate of Social Psychotherapy," there follows sections on "Fundamentals of Psychotherapy," "Methods of Social Psychotherapy," and "Special Techniques."

The same wide vista of therapy is covered admirably, purposely avoiding the narrow confines of freudian psychoanalysis. The material is well selected and authored by men well known in the field they represent.

Following a worth-while chapter on psychotherapic developments abroad, there is included a review and integration by Dr. Masserman on "Science, Psychiatry and Religion."

This reviewer, who finds it difficult to attend all psychiatric meetings, finds these volumes informative, refreshing and stimulating.—Joseph L. Abramson

The Functions of Endocrine Glands. By Peter F. Hall, M.D. Octavo of 290 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $5.75.

In 280 pages the author has been eminently successful in presenting a clear concise physiologic and chemical background to the understanding of clinical endocrinology. This book does not present clinical descriptions of various endocrinopathies nor does it present any details of therapy. However, it does lucidly describe the chemistry of hormones so that any undergraduate as well as elderly clinicians can understand the similarities and differences between related hormones.

In outline form the embryology, histology, and physiology of the various endocrine glands are described. This book is excellent as an introduction to the understanding of the abnormal metabolism of endocrine disturbances.—Martin Perlmutter

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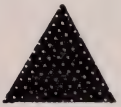

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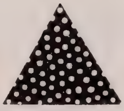

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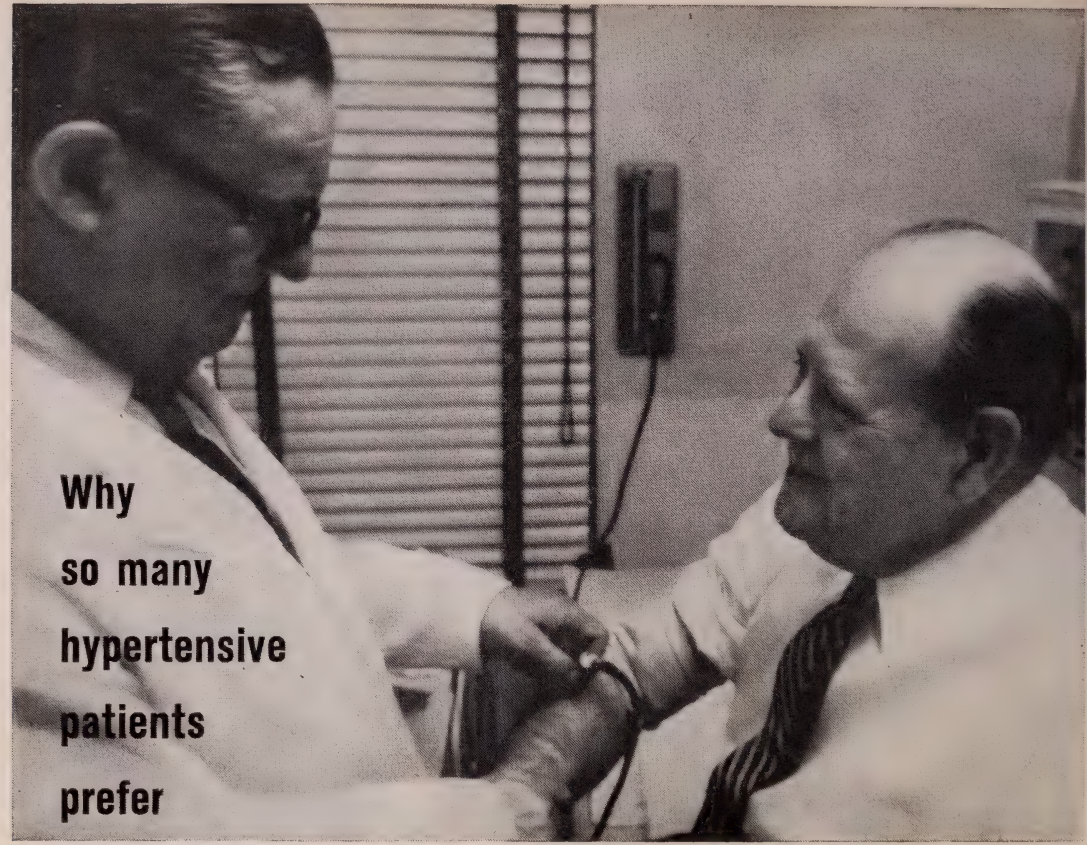

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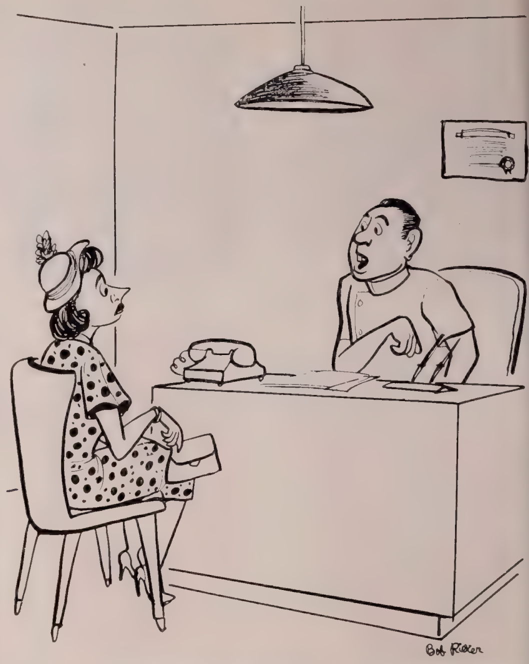

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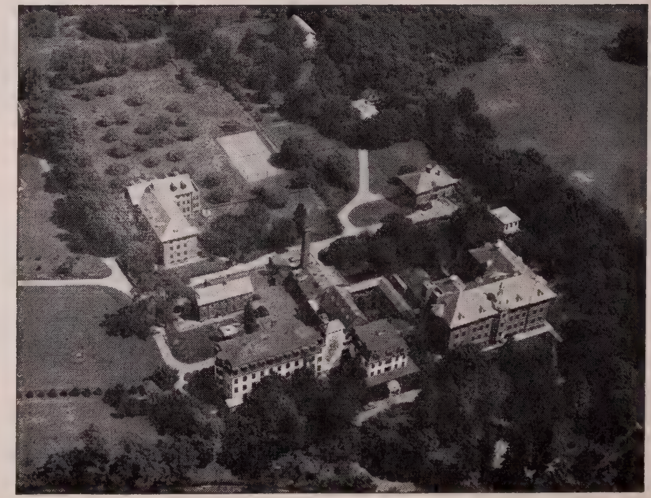

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1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
2. Frank, L.: New York J. Med. 59:2892, 1959

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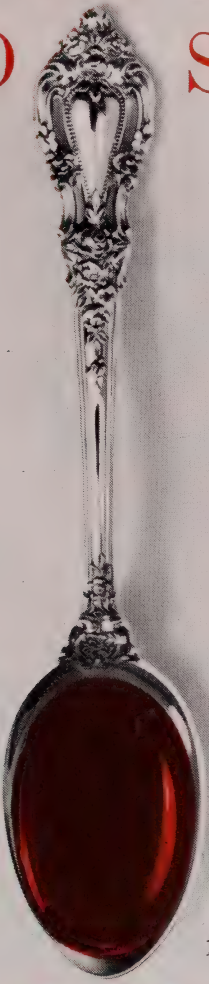

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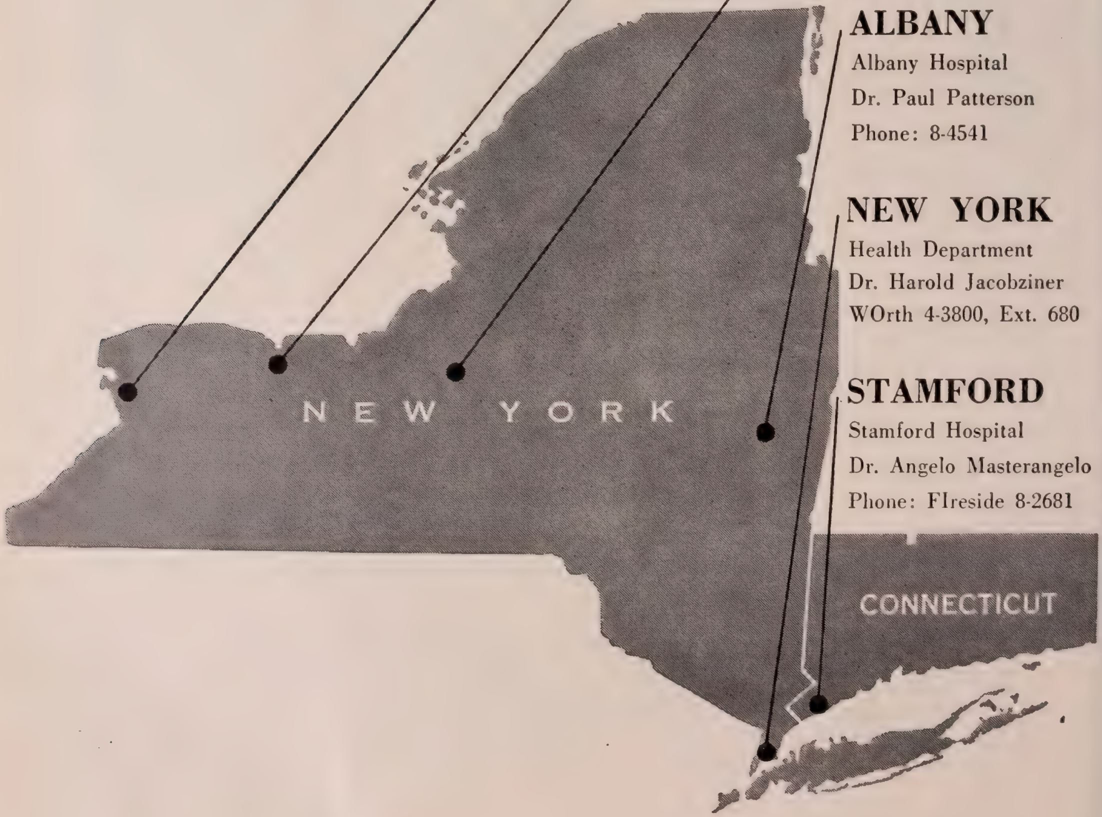

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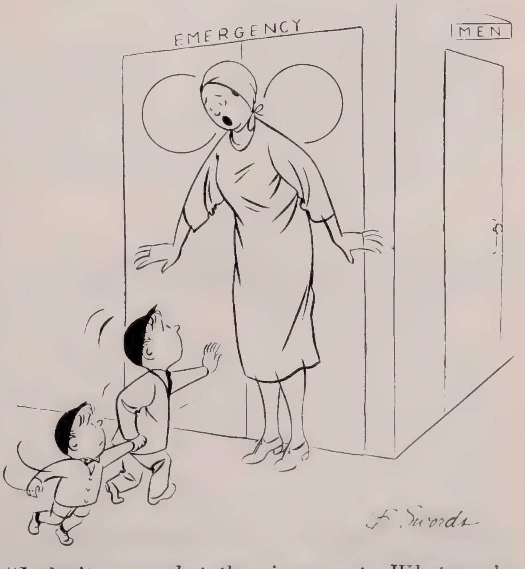

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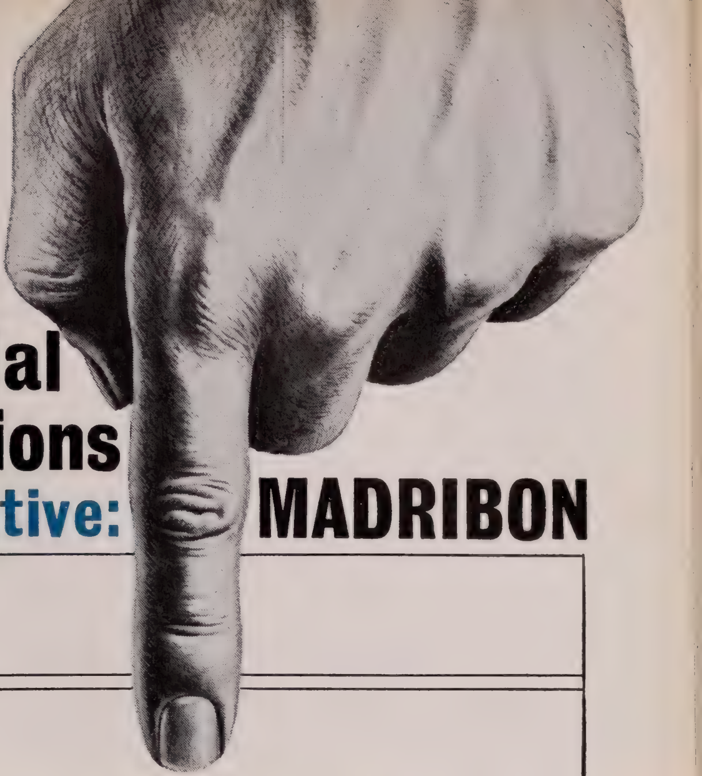

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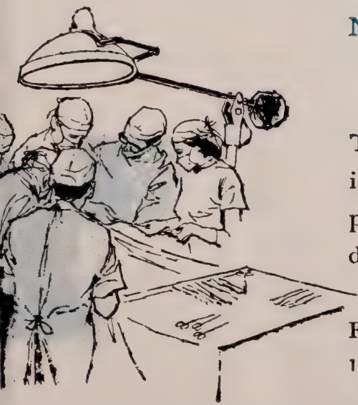

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2. Javid, M.: Urea—New Use of an Old Agent, Reduction of Intracranial and Intraocular Pressure, The Surgical Clinics of North America, Philadelphia, W. B. Saunders Company, Aug. 1958, p. 907.

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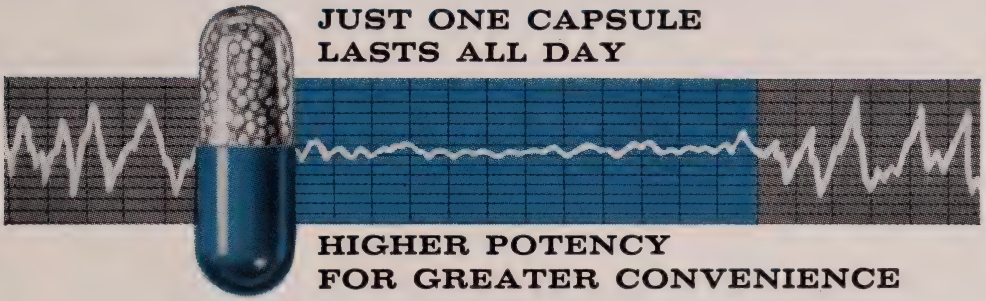

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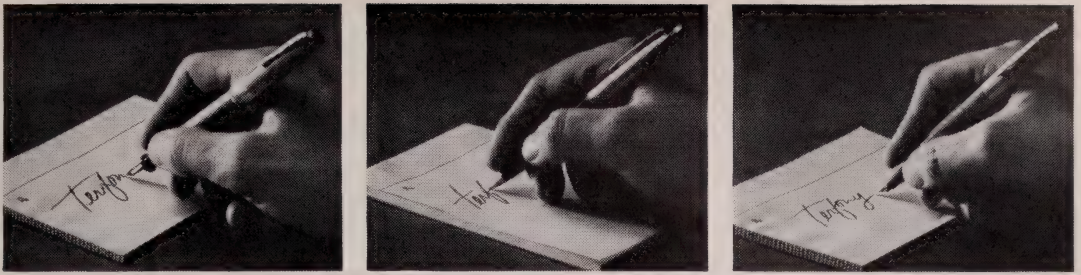

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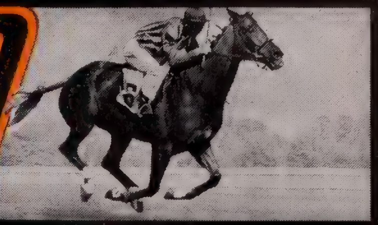

DURATION

IN *ORAL* CONTROL OF PAIN

ACTS FASTER—usually within 5-15 minutes. **LASTS LONGER**—usually 6 hours or more. **MORE THOROUGH RELIEF**—permits uninterrupted sleep through the night. **RARELY CONSTIPATES**—excellent for chronic or bedridden patients.

AVERAGE ADULT DOSE: 1 tablet every 6 hours. May be habit-forming. Federal law permits oral prescription.

Each PERCODAN* Tablet contains 4.50 mg. dihydrohydroxycodeinone hydrochloride, 0.38 mg. dihydrohydroxycodeinone terephthalate, 0.38 mg. homatropine terephthalate, 224 mg. acetylsalicylic acid, 160 mg. phenacetin, and 32 mg. caffeine.

Also available— for greater flexibility in dosage — PERCODAN®-DEMI: The PERCODAN formula with one-half the amount of salts of dihydrohydroxycodeinone and homatropine.

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Percodan® *Tablets*

Salts of Dihydrohydroxycodeinone and Homatropine, plus APC

FOR PAIN

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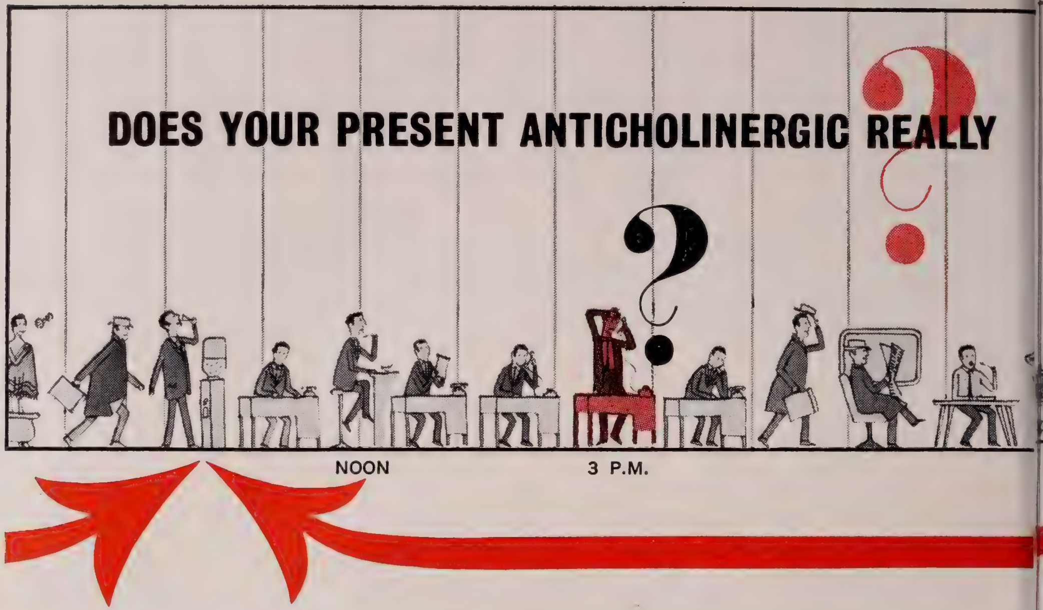
DOES YOUR PRESENT ANTICHOLINERGIC REALLY



The test—you might say the acid test—of an anticholinergic is simple: will it protect your patient from hyperacidity around the clock, **even while he sleeps.** The weakness of t.i.d. or q.i.d. preparations is well recognized; but even some "b.i.d." encapsulations may be unreliable. McHardy, for instance, found a "widely variable duration of action, definitely less than that anticipated" in the "sustained," "delayed," and "gradual release" anticholinergics he studied.[1]

COMPARE THE DATA ON ENARAX . . . the new combination of an **inherently** long-acting anticholinergic (oxyphencyclimine) and Atarax, the non-secretory tranquilizer. Note the effectiveness of oxyphencyclimine:

OBSERVE THE OXYPHENCYCLIMINE REPORTS . . .

McHardy: "[Oxyphencyclimine] has proved to be an excellent sustained-action anticholinergic in our study of this agent over a period of eighteen months."[1]

Kemp: ". . . for the majority of patients, one tablet every 12 hours provided adequate control. This characteristic long action . . . may constitute an advantage of this drug as compared to coated 'long-acting' preparations of other compounds."[3]

Add Atarax to this 12-hour anticholinergic. The resulting combination—ENARAX—now gives relief from emotional stress, in addition to a reduction of spasm and acid. Atarax does not stimulate gastric secretion. No serious adverse clinical reaction has ever been documented with Atarax.

LOOK AT THE RESULTS WITH ENARAX[4,5]:

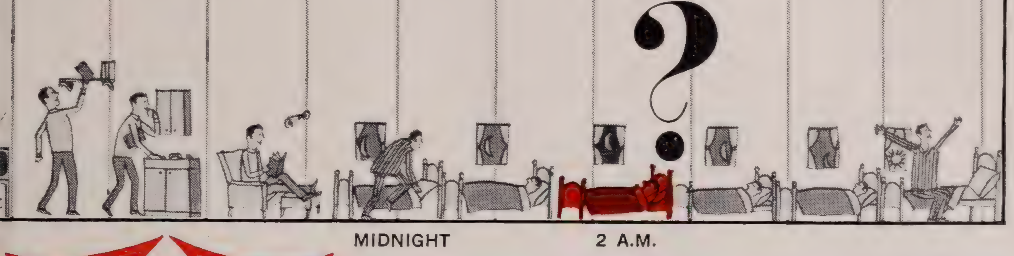
Does the medication you now prescribe assure you of all these benefits? If not, why not put your next patient with peptic ulcer or G.I. dysfunction on therapy that **does.**

ENARAX®

(oxyphencyclimine plus ATARAX®)

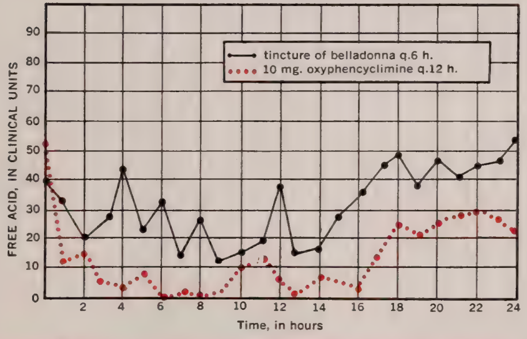
A SENTRY FOR THE G.I. TRACT

PROVIDE CONTINUOUS CONTROL OF ACID SECRETION?



"Prolonged periods of achlorhydria" after 10 mg. oxyphencyclimine q. 12 h.[2]

MEAN GRAPH OF GASTRIC ACIDITY IN 4 PATIENTS RECEIVING
COMPLETE THERAPEUTIC REGIMEN • 24-HOUR STUDY



Clinical Diagnosis: Peptic Ulcer – Gastritis – Gastroenteritis – Colitis – Functional Bowel Syndrome – Duodenitis – Hiatus Hernia (symptomatic) – Irritable Bowel Syndrome – Pylorospasm – Cardiospasm – Biliary Tract Dysfunctions – and Dysmenorrhea.

Clinical Results: Effective in over 92% of cases.

As for Safety: "Side reactions were uncommon, usually no more than dryness of the mouth. . . ."[4]

Each ENARAX tablet contains:

Oxyphencyclimine HCl	10 mg.
Hydroxyzine (ATARAX®)	25 mg.

Dosage: One-half to one tablet twice daily – preferably in the morning and before retiring. The maintenance dose should be adjusted according to therapeutic response. Use with caution in patients with prostatic hypertrophy and with ophthalmological supervision only in glaucoma.

Supplied: In bottles of 60 black-and-white scored tablets.

References: 1. McHardy, G., et al.: J. Louisiana M. Soc. 111:290 (Aug.) 1959. 2. Steigmann, F.: Study conducted at Cook County Hospital, Chicago, Illinois, in press. 3. Kemp, J. A.: Antibiotic Med. & Clin. Therapy 6:534 (Sept.) 1959. 4. Leming, B. H., Jr.: Clin. Med. 6:423 (Mar.) 1959. 5. Data in Roerig Medical Department files.

ROERIG

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Science for the World's Well-Being™

Tetracycline Phosphate Complex (TETREX®)

U.S. PAT. NO. 2,791,609

in the Therapy of

ACUTE PHARYNGITIS, ESPECIALLY WITH LYMPHADENITIS

Ideally, selection of the proper antibiotic for treatment of acute pharyngitis should await the laboratory reports on the susceptibility of the infecting bacteria. But the busy practitioner who sees many patients a day during the upper respiratory infection season may sometimes find it difficult to avoid the empirical choice of an antibiotic. Unfortunately, this practice may sometimes result in therapeutic failure.

No matter what the pressure of the immediate situation, it is worthwhile to consider taking a bacterial specimen from the infected pharynx for culture and sensitivity studies before starting treatment. Thus, a rational basis will be provided for changing the antibiotic should the first choice prove ineffective.

Which Antibiotic?

All other things being equal, the drug of choice is the one to which the pathogen is most susceptible. But if the exigencies of the situation force the physician to a prompt use of antibiotic, a broad-spectrum preparation that produces immediate high blood levels (e.g., tetracycline phosphate complex, TETREX) probably has the best chance of controlling the pathogen.

Later, the laboratory report frequently may indicate that any one of several antibiotic agents would be equally effective against the particular microorganism in question. In such a case other factors such as frequency and severity of side effects, sensitizing potential and toxicity should be considered.

If the acute pharyngitis in question should be due to gram-negative Klebsiella[1], penicillin will be of no value, nor will erythromycin be effective. However, this organism is susceptible to tetracycline. If the pathogen should turn out to be gram-positive Streptococcus or Staphylococcus, then penicillin, erythromycin, and tetracycline may all be effective against it.

Penicillin, however, in addition to having a limited spectrum, also causes many minor and some serious sensitivity reactions. In a recent survey[2] it was found that penicillin produced severe skin reactions. But most important was the observation that anaphylactic shock, with a fatality rate of about 9 per cent, was the most frequent serious reaction. Such severe reactions are almost always associated with parenteral administration.

The tetracyclines (e.g., TETREX) have the advantages of a broad range of antimicrobial activity and low toxicity. And in addition, the physician does not have to trouble himself or his patients with repeated blood studies when he prescribes TETREX. Minor reactions such as gastric upsets or mild skin rashes occur occasionally. The most serious side effects are staphylococcal and monilial overgrowth, but these are rare and can be adequately controlled.

Some Microorganisms Susceptible[a] *to Tetracycline* (TETREX)[b]

Streptococcus; Staphylococcus; Pneumococcus; Gonococcus; Meningococcus; *C. diphtheriae; B. anthracis; E. coli;* Proteus; *A. aerogenes; K. pneumoniae;* Shigella; Brucella; *P. tularensis; H. influenzae; T. pallidum;* Rickettsiae; Viruses of psittacosis and ornithosis, lymphogranuloma inguinale, primary atypical pneumonia; *E. histolytica; D. granulomatosis.*

[a] Some strains are not susceptible.

[b] Table adapted from Goodman, L. S., and Gilman, A.: The Pharmaceutical Basis of Therapeutics, 2nd edition, New York, The Macmillan Co., 1956, pp. 1322-1323.

High blood, body fluid, and tissue levels of active drug are quickly attained when the new phosphate preparation of tetracycline (TETREX) is used.

The semisynthetic tetracyclines have been in constant use since they were introduced in 1952. They have been proved clinically and have established themselves as safe, effective, and valuable antibiotic agents. But the final decision, the choice of agent, and the control of therapy must remain where it has always been, in the hands of the individual physician.

References: 1. Zinsser, H.: A Textbook of Bacteriology. 11th edition, New York, Appleton-Century-Crofts, 1957, p. 409. 2. Welch, H.: Lewis, C. H.; Weinstein, H. I., and Boeckman, B. B.: Severe reactions to antibiotics. A nationwide survey. Antibiotic Med. & Clin. Ther. 4:800 (December) 1957.

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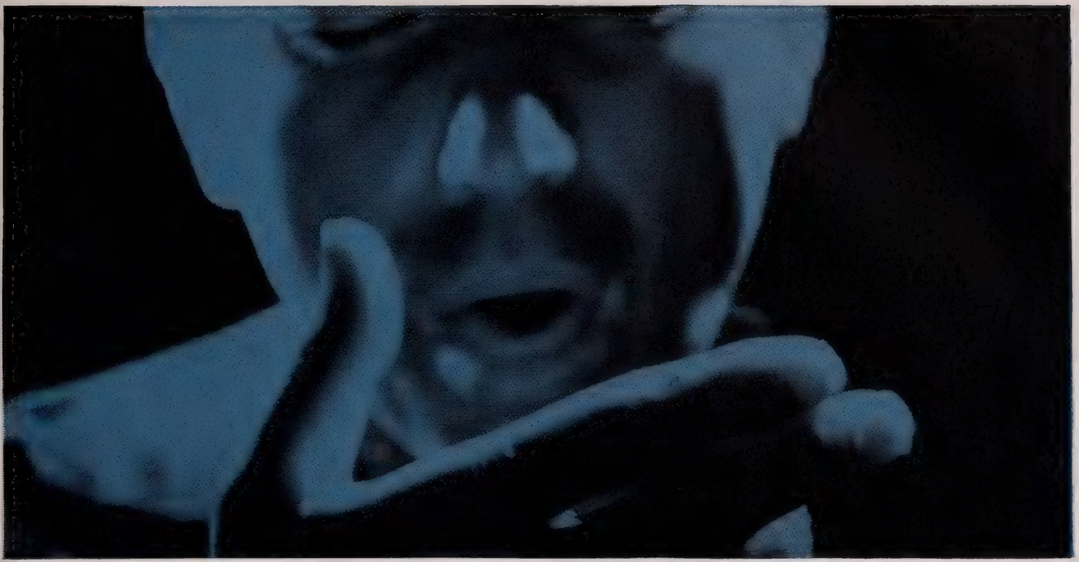


helps remove the cause of cough[1]

Glyceryl guaiacolate (Robitussin) exerts "the most intense and prolonged"[2] expectorant action "of practically all drugs presently used clinically as expectorants."[2]

It greatly increases the secretion of respiratory tract fluid,[2] which makes sputum less viscid and easier to raise,[2-4] makes tracheal and bronchial cilia more efficient,[3,5] and acts as a demulcent.[1-3,6]

Thus Robitussin increases the probability that a cough will achieve its natural purpose—i.e., to remove irritants such as exudates and mucus from the respiratory tract.[1,4,5]

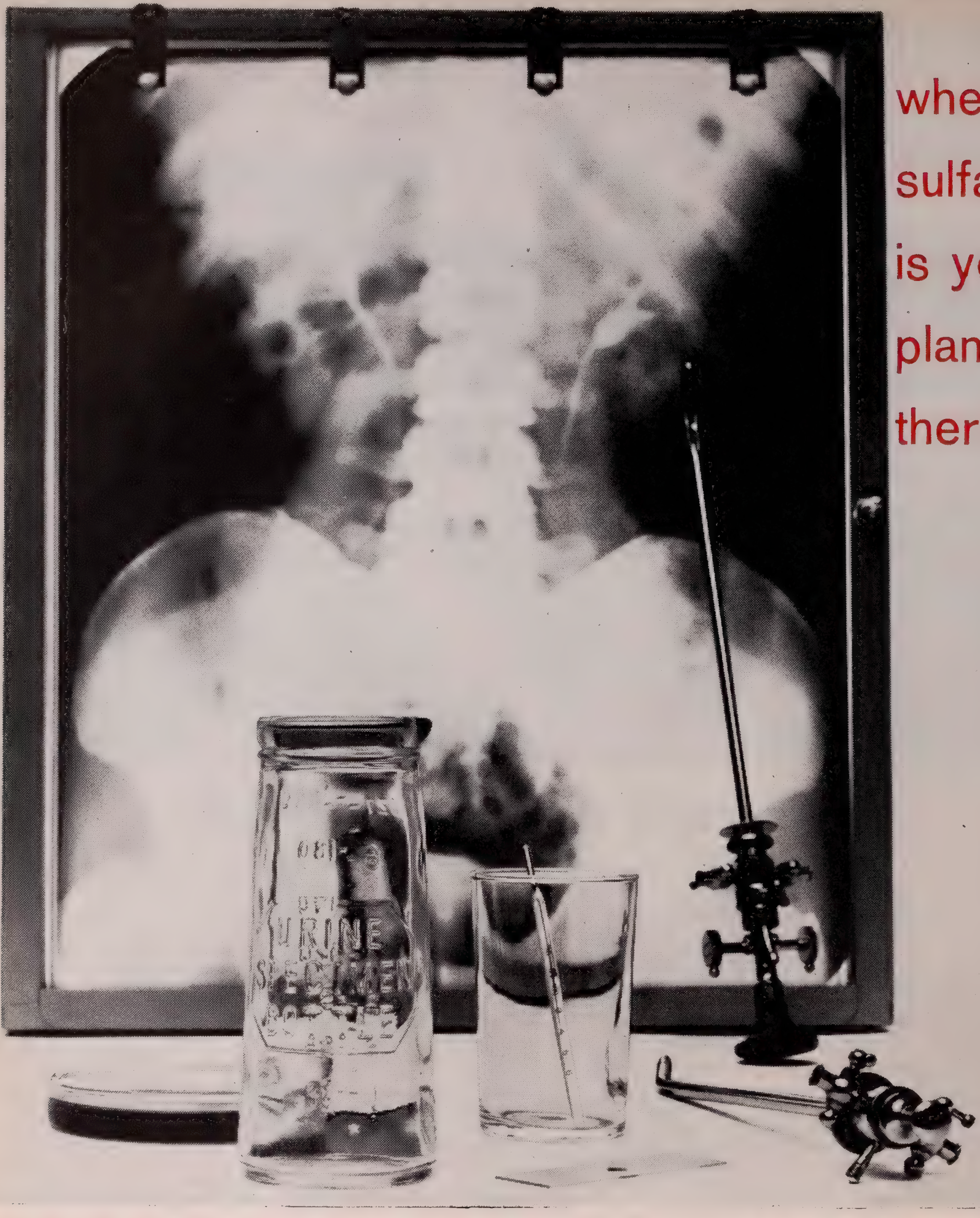
references: 1. Blanchard, K., and Ford, R. A., J.-Lancet, 74:433, 1954. 2. Cass, L. J., and Frederik, W. S., Am. Pract. Dig. Treat., 2:844, 1951. 3. Hayes, E. W., and Jacobs, L. S., Dis. Chest, 30:441, 1956. 4. Blanchard, K., and Ford, R. A., Clin. Med., 3:961, 1956. 5. Blanchard, K., and Ford, R. A., Rocky Mt. M. J., 52:278, 1955. 6. Boyd, E. M., et al., Can. M. Assoc. J., 54:216, 1946.

Robitussin®

Glyceryl guaiacolate, 100 mg. in each 5 cc. teaspoonful

Robitussin® A-C Glyceryl guaiacolate 100 mg., prophenpyridamine maleate 7.5 mg., and codeine phosphate 10 mg. in each 5 cc. tsp. Exempt narcotic.

A. H. ROBINS COMPANY, INC., RICHMOND 20, VA.



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therapy..

pharmacologically and clinically the outstandin

Rapid peak attainment—for early control— KYNEX® Sulfamethoxypyridazine reaches peak plasma levels in 1 to 2 hours[1,2]...or approximately one-half the time of other once-a-day sulfas.[2] Uninterrupted control is then sustained over 24 hours with the single daily dose...through slow excretion without renal alteration.

High free levels—for dependable control— More efficient absorption delivers a higher percentage of sulfamethoxypyridazine—averaging 20 per cent greater at respective peaks than glucuronide-conversion sulfas.[2] Of the total circulating levels, 95 per cent remains in the fully active, unconjugated form even after 24 hours.[3]

Extremely low toxicity[4]...only 2.7 per cent in dence in recommended dosage— Typical KYNEX relative safety, toxicity studies[5] in patients showed **TOTAL** side effects (both subject and objective) in only six cases, all temporary a rapidly reversed. Another evaluation[4] in 110 tients confirmed the near-absence of reactions wh given at the recommended dosage. High solubility both free and conjugated product[6] obviates re complications. No crystalluria has been report

Successful against these organisms: streptococ staphylococci, **E. coli, A. aerogenes,** paracol bacillus, Gram-negative rods, pneumococci, di theroids, Gram-positive cocci and others.

1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: Antibiotic Med. & Clin. Ther. 3:378, (Nov.) 1956. 2. Boger, W. P.: Antibiot Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 48. 3. Sheth, U. K.; Kulkarni, B. S., and Kamath, P. Antibiotic Med. & Clin. Ther. 5:604 (Oct.) 1958. 4. Vinnicombe, J.: Ibid. 5:474 (July) 1958. 5. Anderson, P. C., and Wissing H. A.: U. S. Armed Forces M. J. 10:1051 (Sept.) 1959. 6. Roepke, R. R.; Maren, T. H., and Mayer, E.: Ann. New York Acad.

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E: Investigators note a tendency of some patients
isinterpret dosage instructions and take KYNEX on
familiar q.i.d. schedule. Since one KYNEX tablet is
valent to eight to twelve tablets of other sulfas,
moderate dosage may produce side effects. Thus,
single dose schedule must be stressed to the
nt.

EX Tablets, 0.5 Gm., bottles of 24 and 100. Dosage:
ts, 0.5 Gm. (1 tablet) daily, following an initial
day dose of 1 Gm. (2 tablets).

EX Acetyl Pediatric Suspension, cherry-flavored,
mg. sulfamethoxypyridazine activity per teaspoon-
5 cc.). Bottles of 4 and 16 fl. oz. Recommended
ge: Children under 80 lbs.: 1 teaspoonful (250 mg.)
each 20 lb. body weight, the first day, and ½ tea-
nful per 20 lb. per day thereafter. For children 80
and over: 4 teaspoonfuls (1.0 Gm.) initially and
aspoonfuls daily thereafter. Give immediately after
eal.

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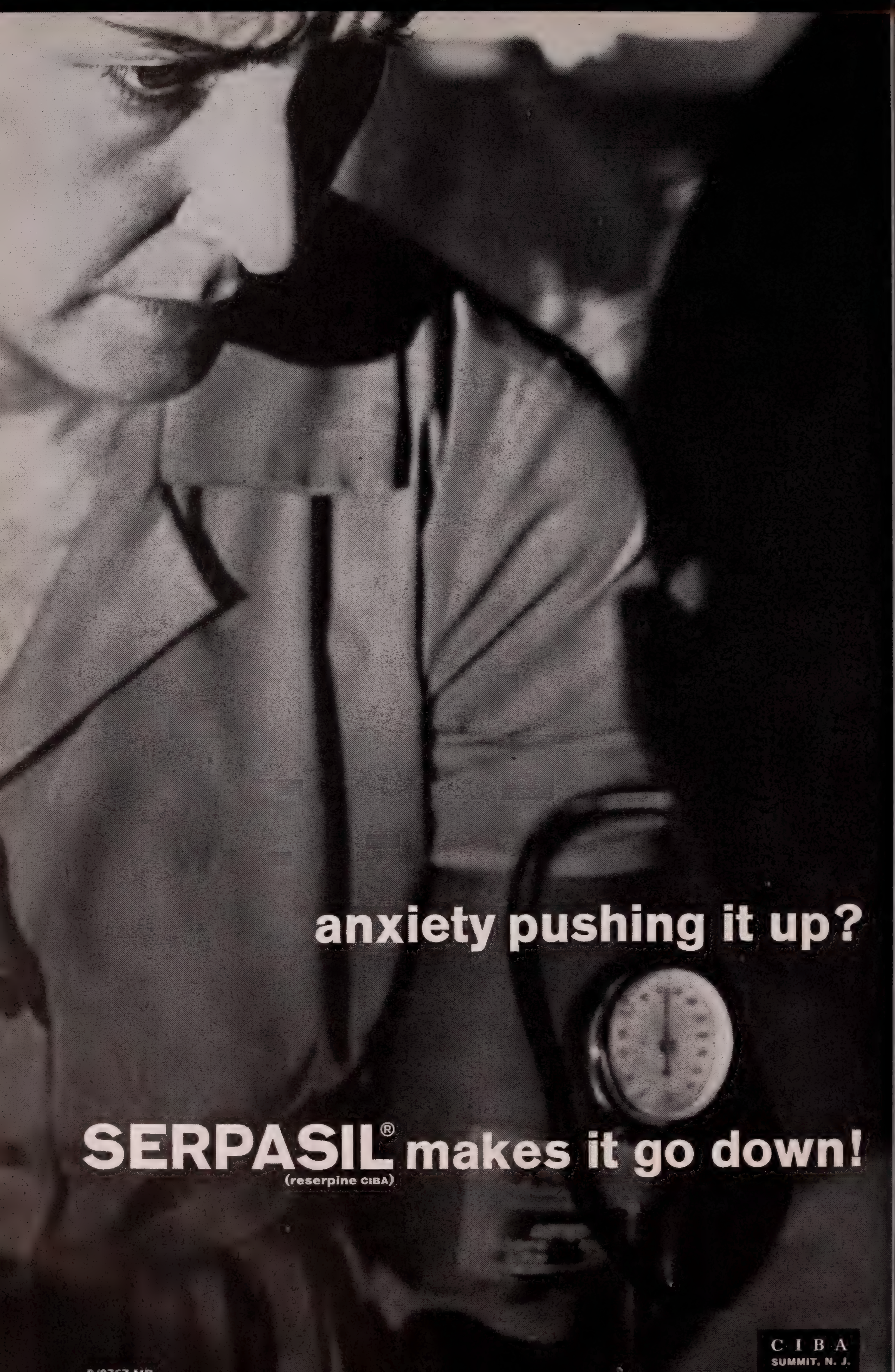
Sulfamethoxypyridazine Lederle

NEW—for acute G.U. infection AZO-KYNEX® Phenylazodiaminopyridine HCl—Sulfamethoxypyridazine Tablets, contains 125 mg. KYNEX in the shell with 150 mg. phenylazodiaminopyridine HCl in the core. Dosage: 2 tablets q.i.d. the first day; 1 tablet q.i.d. thereafter.

ERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York Lederle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	Total protein available for consumption
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Dairy products, excluding butter	25.3%
Flour and cereal products	19.6%
Poultry and fish	5.9%
All other foods	21.6%

These figures mean that Americans may well depend on meat as their major source of protein for day-to-day nutrition. In addition to the significant amounts of top quality protein, all meats—including beef, veal, pork, and lamb—provide the gamut of B vitamins and necessary minerals such as iron, potassium, and phosphorus.

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---

*Agriculture Handbook No. 62, U. S. Department of Agriculture, 1957 (Sept.) p. 33.

The nutritional statements made in this advertisement have been reviewed by the Council on Foods and Nutrition of the American Medical Association and found consistent with current authoritative medical opinion.

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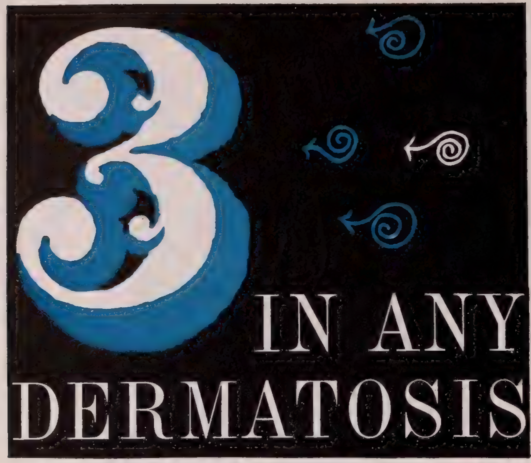

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1

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---

[1] Jones, E. H.: Eye, Ear, Nose & Throat Month. **38**:460, 1959.
[2] Lockwood, J. H.: Bull. A. Mil. Dermatologists **4**:2, 1955.

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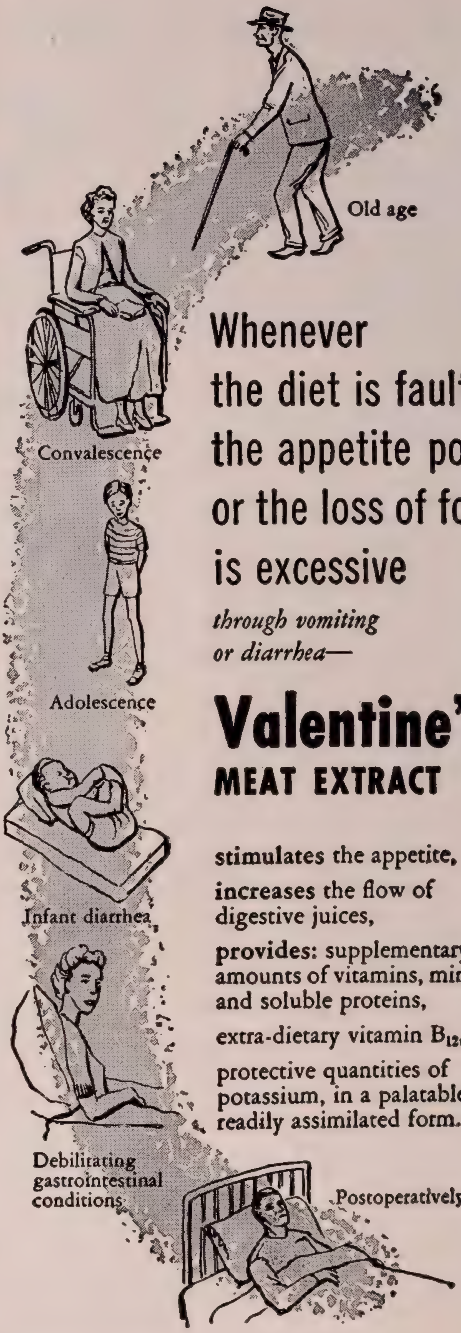

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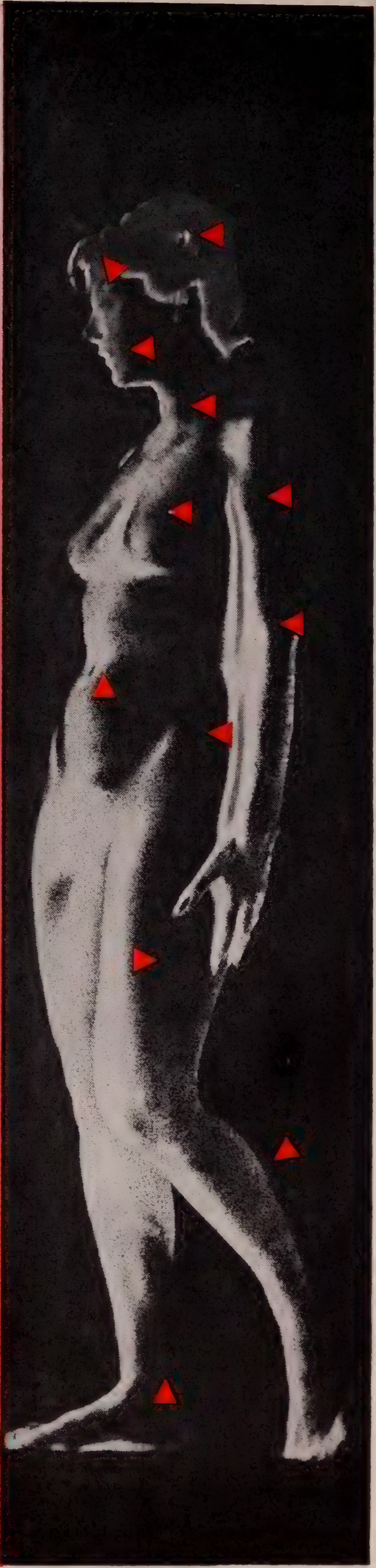

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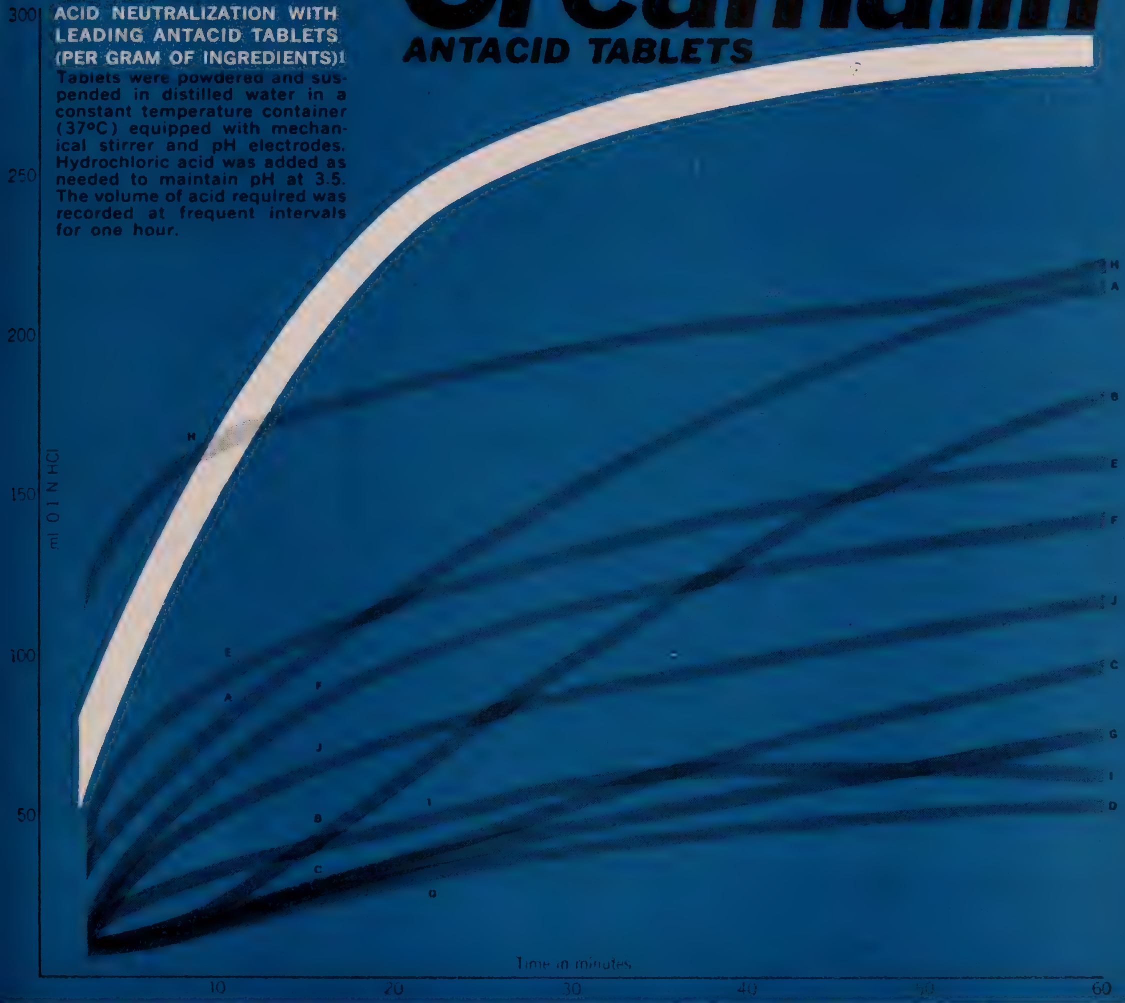

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Indications: Analexin—for relief of pain and associated muscle tension or spasm in: dysmenorrhea; abdominal and epigastric distress; genitourinary conditions; tension headache; gout; low back pain; myalgia; sprains and strains; glass arm; wry neck; osteoarthritis.

Analexin-AF—for relief of pain and musculoskeletal tension complicated by inflammation and/or fever, as in: arthritis; arthralgia; bursitis; tendinitis; myalgia of strain and tear.

Clinical Reports: Batterman, Grossman and Mouratoff[3] compared phenyramidol with aspirin, sodium salicylate and a placebo in a series of 195 patients with various painful conditions. The authors state "Not only is satisfactory relief of painful states achieved in the majority of patients regardless of etiology and duration of pain, but there is also no evidence suggestive of cumulative toxicity. Furthermore, in contrast to codeine and meperidine, the likelihood of untoward reactions occurring in ambulant patients is not high." Wainer[4] used phenyramidol in a series of 200 cases, fifty with dysmenorrhea, 50 with headache and premenstrual tension, and 100 cases with postpartum pain. In the 50 dysmenorrhea patients, he achieved good or excellent results in 45. All 50 cases with headache and premenstrual tension responded with excellent results. And a combination of phenyramidol and aluminum aspirin (Analexin-AF) successfully replaced aspirin and codeine in the 100 cases of postpartum pain.

Dosage: **Analexin**—1 or 2 tablets every 4 hours. In dysmenorrhea, 2 tablets at onset of pain; then, one tablet every 2-4 hours as needed.
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Side Effects: Analexin does not produce such centrally induced side effects as sedation, euphoria, etc. The infrequent occurrence of mild gastrointestinal irritation or epigastric distress, pruritus with and without rash, has been noted. However, these effects subside promptly when dosage is reduced or discontinued.

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1. Goddard, E.S.: in *Trifluoperazine, Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959.

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REFERENCES:
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REES, R. B.; BENNETT, J. H.; GREENLEE, M. R.: Newer Drug Treatment in Dermatology, Cal. Med.; 91:1, July 1959.
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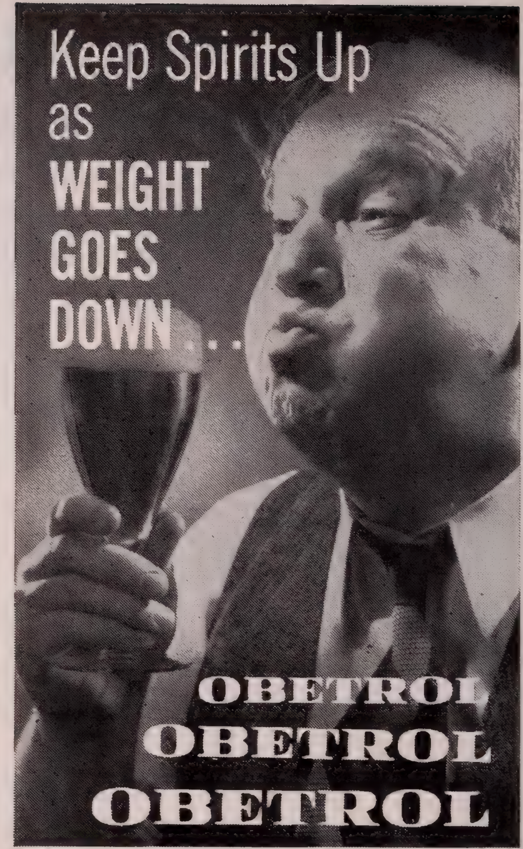

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References:
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1. Innerfield, I.: Clinical report cited with permission
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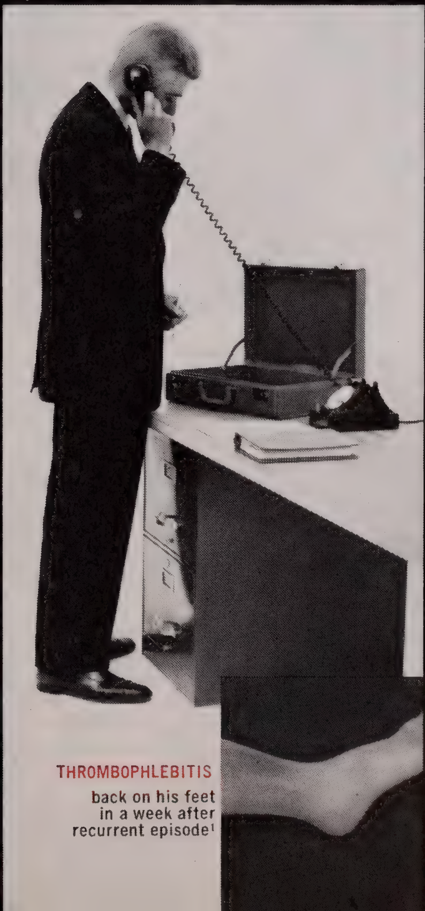

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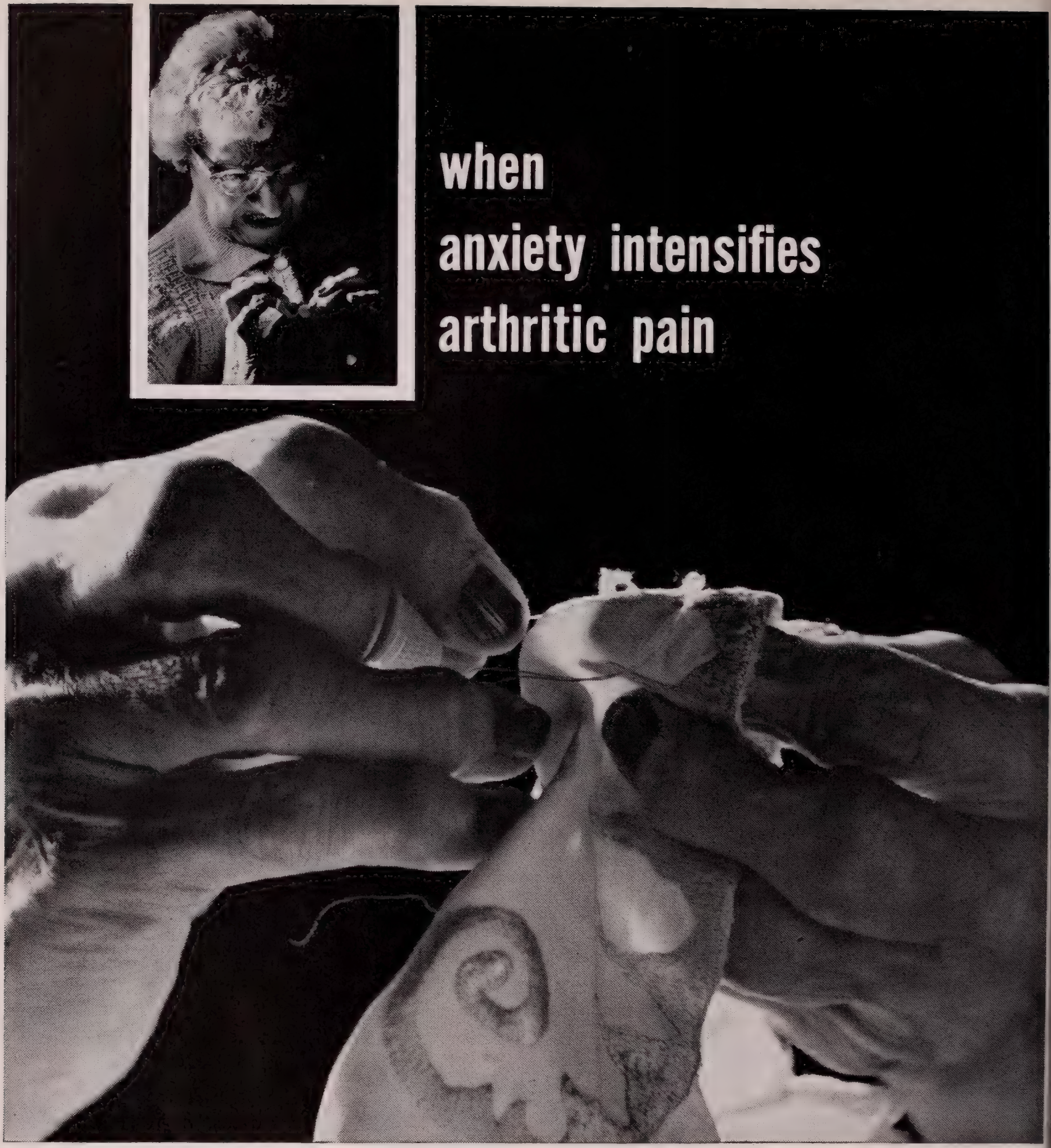

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EDITORIALS

Employ the Cardiac

In every endeavor the human factor must be considered. We are not dealing with inanimate objects, whose very function, repair, and replacement depend on that human factor, but rather with a living being with likes and dislikes, certain skills, fixed responsibilities to his family and his community, and for whom his community has considered a responsibility, kindly and realistically applied. Society seeks freedom for every one of its citizens in their normal endeavors and encourages self-help, dignity, motivation, attainment and its just reward, and proper care for disabilities acquired in employment. There is now complete agreement in the latter area, and industry, recognizing its part, fulfills its share without pressure or question.

In availing ourselves of the opportunity presented by this advantage, where there is agreement, several problems become apparent; namely, how best to administer a law which will provide reasonable benefits, adequate controls, and just costs so that industry will not be priced out of existence. One of the areas involved is the employment or re-employment of known cardiacs, with all the ramifications that such employment might bring into Workmen's Compensation.

A system of selective placement has been evolved in which the disabled cardiac is safely placed in a job that will neither jeopardize the patient, within the present state of our medical knowledge, nor burden his employer with an unfair risk. The proper application of selective placement, with a detailed study of the job's requirements and the cardiac's abilities and disabilities, results in a gratifying arrangement whereby the employe moves from a status of dependency to that of a tax-paying wage earner. The only additional feature at this level is the proper follow-up on the job so that the employe so placed remains under the supervision of a knowledgeable foreman and in an atmosphere of tolerance and understanding for the handicapped but useful worker. The personnel department and the plant physician play an important and continuing role in this program.

Much has been made of costs, absenteeism, employe relationship, and seniority. Each of these has been properly exposed and found wanting as an excuse for refusing to employ the disabled when he is properly placed. There remains only the adequate distribution of this experience in order to dissipate the misinformation which is so rampant on this subject. An educational program can do much to inform employers and employes and make them better able to arrive at decisions.[1]

A rehabilitation program, guided by the broad principles of rehabilitation but not necessarily by the methods used in orthopedic and neurologic cases, can be applied to cardiacs. One of the great impediments to the thinking in this area has been the result of the initial application of rehabilitation to orthopedic cases, causing some misunderstanding and thereby delay. The use of the many modalities, such as the sheltered workshop, work classification units, vocational guidance, selective placement, social and psychologic approaches, has served in some way to change the direction. A considerable experience has been gleaned in the last twenty years in the use of work classification units in particular. This has heightened the useful interest in the rehabilitation of the cardiac, since it permits measurement of the cardiac's abilities within the team approach, permitting a commendable solution and revealing a relatively simple path for those interested to follow. Statistics and end results have undoubtedly proved the great value of the usefulness of these units.

No doubt further study is indicated and should be encouraged.

The sheltered workshop is recognized as one of the acceptable methods for training and for exposure of the cardiac to an industrial environment. The question of the need for temporary or permanent facilities for certain cardiac cases in a sheltered workshop program is still open and requires thoughtful application by those with the greatest experience. It would seem that in a few cases the sheltered workshop would be the only working solution. The home care and home work programs for the severely disabled are a special consideration and in fact do not involve most of the cases.

The employment of the cardiac with some disability should be sought. Whether or not the community or all of the industry or some combination of both should offer financial contributions to make this possible requires a good deal of searching evaluation. Hitherto, experience has been collected in many geographic areas of the United States pointing up not only the need for proper second injury laws but an excellent opportunity for studying various methods that can be used to make the so-called second injury laws applicable for the best results.

Since the purpose of these laws is to enhance the hiring of the handicapped, the employer must have knowledge of this handicap. A considerable discussion has been held on this point alone, and if any other interpretation is used it will serve only to dissipate the very base of a particular solution to prevent rising costs. In some jurisdictions costs have been assessed against industry in such a manner that the premiums in Workmen's Compensation have not increased on this account. The insurance principle of spreading the contributions amongst the largest number of insureds has worked well in this instance. The other features of a second injury law have been summarized elsewhere.[2,3] Interestingly enough, the national associations of insurance carriers have suggested unequivocally that the disabled should be hired since the cost of insurance has not been increased thereby.

It may be concluded that the employment of the largest number of people and the employment of many of the disabled by an informed employer, availing himself of every facility, will in the end cost him and his community less money.—I.K.

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[1] Federation Employment and Guidance Service: Survey of employer's practices and policies in the hiring of physically impaired workers, New York, May, 1959.

[2] American Heart Association, Council on Community Service and Education: Statement #2—Second injury laws, 1959.

[3] Klein, I.: Employment problems affecting the cardiac, New York State J. Med. **56**: 2273 (July 15) 1956.

The Tetracyclines

The discovery of chlortetracycline (Aureomycin) in 1948 initiated a new and important phase in the development and clinical use of antibiotics. Oxytetracycline (Terramycin) was introduced in 1950 followed by tetracycline two years later. More recently there has been a veritable deluge of drug company and clinical investigation literature concerning new and supposedly better tetracycline preparations.

Considerable evidence has been adduced in support of each new preparation. The following is a brief personal opinion of the present status of these preparations.

There is general agreement that the presence of calcium or magnesium ions diminishes the uptake of tetracycline from the gastrointestinal tract.[1–4] Thus the use of dicalcium phosphate as a filler in tetracycline preparations was clearly associated with smaller antibiotic concentrations in the blood. Much of the apparent enhancement of blood levels produced by new preparations has resulted from the deletion of calcium rather than the addition of any substance augmenting absorption.

The data collected thus far are contradictory and unclear as to the relative merits of 5 noncalcium-containing tetracycline products commonly in use: tetracycline hydrochloride, tetracycline phosphate complex, tetracycline hexametaphosphate, tetracycline combined with citric acid, and tetracycline combined with glucosamine.

The claims of superiority for one form or another are based on moderate increases in the inhibitory power of serum on test microorganisms following ingestion of a known amount of that form when compared to one or more of the other tetracycline preparations. There is no clear evidence to suggest that the modest differences observable in the test tube have any significance at a clinical level. Each of the preparations may be anticipated to be of equal effectiveness in infections due to susceptible microorganisms. None offers any promise of unusual activity against the broadly antimicrobial-resistant, gram-negative or staphylococcal microorganisms responsible for the majority of infections arising within the hospital environment.

More recently demethylchlortetracycline (Decolmycin) has been introduced. This tetracycline derivative is absorbed as well or slightly better than the other tetracycline preparations listed above but is removed from the blood less rapidly and has a slightly greater antibacterial activity.[5,6] Most studies demonstrate that blood levels are perhaps two to threefold higher than those observed with other tetracycline derivatives. Furthermore, inhibitory concentrations can be detected for a somewhat longer duration than has been observed with other tetracyclines. There is no evidence to suggest that demethylchlortetracycline has a different antimicrobial spectrum or that it possesses greater bactericidal powers. It, like the other tetracyclines, is predominantly a bacteriostatic agent.

Inasmuch as smaller dosage (600 mg. per day) produces effective blood levels of the antibiotic, it appears quite likely that demethylchlortetracycline will be associated with a somewhat smaller incidence of undesirable gastrointestinal side-reactions. Photosensitization has been observed at this dosage and may prove to be an equally disturbing side-effect. Whether large doses (for example, 2.0 Gm. per day) will be effective in infections now insusceptible to other tetracyclines is not known. Such doses if given orally will almost certainly produce considerable gastrointestinal toxicity. It should be emphatically stated that there is thus far no evidence to suggest that demethylchlortetracycline will modify hospital-acquired infections due to gram-negative bacillary or gram-positive coccal microorganisms currently insusceptible in vitro and in vivo to the other tetracycline derivatives. Such data will not be available until extensive, impartial, preferably double blind, clinical studies are performed comparing demethylchlortetracycline with the other 5 tetracycline products discussed above.

In summary it is the writer's opinion that 600 mg. to 1.2 Gm. per day of demethylchlortetracycline or 1 to 2 Gm. daily of tetracycline hydrochloride, tetracycline phosphate complex, tetracycline hexametaphosphate, tetracycline with citric acid, or tetracycline with glucosamine are of equal benefit to the patient.—D.B.L.

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[1] **Boger, W. P., and Gavin, J. J.:** An evaluation of tetracycline preparations, New England J. Med. **261:** 827 (Oct. 22) 1959.

[2] Dearborn, E. H., Litchfield, J. T., Jr., Eisner, H. J. Corbett, J. J., and Dunnett, C. W.: The effects of various substances on the absorption of tetracycline in rats, Antibiotic Med. & Clin. Therap. **4**:627 (Oct.) 1957.

[3] Sweeny, W. M., Hardy, S. M., Dornbush, A. C., and Ruegsegger, J. M.: Absorption of tetracycline in human beings as affected by certain excipients, *ibid.* **4**: 642 (Oct.) 1957.

[4] Harcourt, R. M., and Hamberger, M.: The antagonistic action of magnesium against tetracycline in vitro and in vivo, J. Lab. & Clin. Med. **48**: 815 (Nov.) 1956.

[5] Hirsch, H. A., and Finland, M.: Antibacterial activity of serum of normal subjects after oral doses of demethylchlortetracycline, chlortetracycline, and oxytetracycline, New England J. Med. **260**: 1099 (May 28) 1959.

[6] Kunin, C. M., and Finland, M.: Demethylchlortetracycline: new tetracycline antibiotic that yields greater and more sustained antibacterial activity, *ibid.* **259**: 999 (Nov. 20) 1958.

Financial Aid to Medical Students

Information derived from the Association of American Medical Colleges[1] provides a much needed background on medical student finances. What are the facts relating to student indebtedness? There were 6,799 students in the 1959 graduating class. Of these, 2,257 have loan liabilities directly related to their medical education and total liabilities greater than their total assets, and these need financial assistance. The total liabilities of this group of students is said to be $12,450,786. But the same group has total assets of $2,841,716. The net liability of the group is therefore $9,609,070. The average net liability of this group per student is therefore $4,258.

Another factor bearing on the medical student's financial standing is his ability to pay for a medical education. This ability, says the report, derives largely from the level of his father's income and the degree of financial responsibility he currently bears for his family's welfare.

The question of what method shall be used to give financial aid to medical students is complex. This issue must be studied in terms of the degree of responsibility which should be shouldered by the individual for his own education and the degree of responsibility which should be assumed by society which benefits from medical practice. The 1957 Report of the President's Committee on Education Beyond High School cites the following:

> Some hold that, because the individual gains from education, and because education beyond high school is voluntary, it is the responsibility of the individual to pay for the services he gets. Others hold that society should provide free educational opportunities as long as they are using them advantageously, because society cannot survive and prosper without an educated citizenry. Neither point of view has persuaded the majority of our citizens.[1]

If society aided the medical student from the first point of view, it would do so by granting loans which would be repaid to the grantor. Aid to medical students from the second point of view would be derived from nonrefundable grants or scholarships. A proper balance should probably be found between these two methods. Data derived from the 1959 graduating class of medical students points to the fact that the students favor an equal division between loans and scholarships as a basis for financial aid.

While it appears that the approximate total amount of scholarship aid received by the 1959 graduating students is $2,880,000, the estimated total amount of additional scholarships per year for all four classes now in medical school is about $4,800,000. These estimates will convey some idea of the magnitude of the financial aid necessary to assist in the education of the country's doctors.

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[1] Association of American Medical Colleges: Datagrams 1 : 1 (Mar.) 1960.

154th Annual Convention

Medical Society of the State of New York

May 7 to 13, 1960

Statler Hilton Hotel ***New York City***

PRESIDENT'S PAGE

HENRY I. FINEBERG, M.D.

Many members of our Society will remember that, at the May, 1958, meeting of the House of Delegates held in New York City, a resolution was introduced by Carlton E. Wertz, M.D., of Erie County, which read as follows:

> Whereas, government, business, labor, the insurance industry, Blue Cross, Blue Shield, and hospitals are campaigning vigorously to establish various methods of delivering medical care; and
>
> Whereas, medical care can be delivered only through the personal services of members of the medical profession, and no plan of medical care can be made effective without the cooperation of the medical profession; and
>
> Whereas, the Medical Society of the State of New York is the recognized representative of the medical profession of New York State and is thus best fitted to determine the quality of medical care offered by any plan; and
>
> Whereas, the medical profession has a 2,500-year tradition of caring for the sick with regard only to rendering the best medical care possible; and
>
> Whereas, the medical profession should offer its own program for providing the people of New York with the best medical care obtainable; and
>
> Whereas, such a program can be developed best under the auspices of the Medical Society of the State of New York; now therefore be it hereby
>
> *Resolved*, by this House of Delegates, that the Medical Society of the State of New York again pledges its continued support to the cause of the best medical care for all the people of the State of New York and expresses its determination to take care of all sick people; and be it further
>
> *Resolved*, that the Council of the Medical Society of the State of New York be and hereby is instructed to study the medical needs of all the people of New York and in so doing seek cooperation and advice from the constituent county medical societies; and be it further
>
> *Resolved*, that the Council be directed to submit to the House of Delegates its recommendations, based on this study, as to how the best medical care can be offered to all the people of the State of New York with due regard to the factors of adequacy of coverage, economics, freedom of the patient, freedom of medicine, and the individual's responsibility for the welfare of himself and his family.

This fine proposal was considered and approved by the Reference Committee on Report of the Council, Part VII, and by the House of Delegates. At the June, 1958, meeting of the Council, it was voted that the president designate a special group to make the study. This committee on what has come to be known as Resolution 58–49—Medical Care, the Job of the Medical Profession—was appointed and George J. Lawrence, Jr., M.D., of Queens County was selected to be its chairman.

It can readily be seen that the task presented to the committee was stupendous, capable of taxing to the utmost the ingenuity and energies of those assigned to it. Since its organization the committee has been exploring many phases of the enigmas of medical care. At regular intervals the chairman has been submitting progress reports to the Council.

On several occasions the question of publicizing to the doctors the problems facing the profession was discussed. Last September it was recommended to the Council that this could best be accomplished by personal contacts through regional meetings—set up according to districts—similar to those which have been held from time to time by the American Medical Association. Dr. Wertz, the original sponsor of Resolution 58–49, pointed out that, "unless the medical profession in New York State assumed the leadership with a positive program to assure the people in the State of the best medical care, through other sources the profession may be handed a program we shall have to accept."

The idea of conducting regional conferences throughout the State appeared to be a sound one—something new as far as Society matters are concerned. It was finally decided to hold the first meeting in Buffalo, with representatives from the 15 county medical societies of the Seventh and Eighth District Branches. Your president was afforded the honor of opening this initial conference on January 15. It lasted for a day and a half. The proceedings were planned skillfully. Steuben and Chautauqua Counties were represented especially well. The following subjects were discussed: a review of committee activities; purpose of Resolution 58–49 and problems facing the profession; the Trussell report (Columbia University study of nonprofit medical care insurance plans in New York State); the Forand bill; the Blue Shield Association: What it proposes to do regarding medical coverage for the people of New York State; medical economics applied to the practice of medicine; labor's attitude toward health insurance; proposed legislation under consideration by the Advisory Committee to the Governor's Special Task Force on catastrophic expense health insurance; and the role of commercial health insurance plans.

The panel consisted of experts in all these fields. It is important to note that sufficient time was allotted for discussion from the dais and from the floor. Not only were our members informed of what is going on at central headquarters of the State Society, but an opportunity was given for them to talk about their local difficulties and to express their reactions to the program.

It appeared to be the unanimous feeling that this pilot project was a huge success and definitely represents a great step in the right direction. We are of the opinion that the expense incurred was worth-while, and we believe that this type of conference should be held in other areas of the State so that all sections may have the benefit of the grand deliberations that were effected in Buffalo.

We hope that the leaders of medicine in the various district branches and county medical societies will take advantage of this State Society contribution to the membership and that they will attend similar regional meetings to be scheduled elsewhere in the State.

* * * * *

As this report is being submitted to the editor of the JOURNAL the Legislature of New York State is in session. Its opening meeting was held on January 6. By the time this article appears, there will be "much water over the dam" and we will have some indication of those bills which may be successful. We are adhering to our previous philosophy that we will concentrate on those proposals that have a chance of passing and that we will not deluge the Senate and Assembly with too many requests—most of which will fall by the wayside—and thus dilute our efforts. We still contend that no legislation program can be successful without the wholehearted cooperation of our colleagues in the grass-roots areas of the State who must play an active role in our deliberations and in our contacts with legislators.

What takes place in the Legislature, as far as bills of medical interest are concerned and the results of the work of our Legislation Committee, will be reported in full sometime during the early spring. The committee and our legislative analyst and counsels are on the alert at all times. We must keep in mind always that there are two parts to our legislation program—the "positive phase" and the "negative phase." In other words, there are bills that we should support and there are those against which we should battle vigorously. In the latter group there is the usual chiropractic bill. Of course it has been reintroduced. The threat of chiropractic licensure is a perennial one. The proponents of this quackery are pursuing the same methods of yesteryear; they are on the "warpath."

We must continue our antichiropractic campaign. We reiterate our stand that chiropractic is cultism and that we cannot be a party to any program that will license chiropractors and give them the stature to which they are not, by the widest stretch of the imagination, entitled. We refuse to recognize that chiropractic is anything but quackery. There can be no compromise with this type of practice.

We know that by this time you have received the January edition of the *Newsletter*, in which are contained ten basic reasons why chiropractors should not be licensed. Citizens in all walks of life—as well as doctors of medicine—must be told how unscientific and worthless chiropractic is. Our opposition must be relayed to all the members of the Legislature.

Henry I. Fineberg

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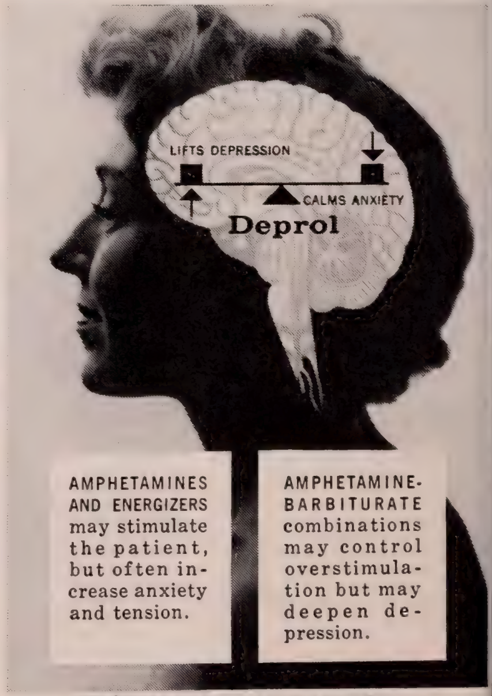

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SCIENTIFIC ARTICLES

Sarcoidosis

RANES CHAKRAVORTY, F.R.C.S., CALCUTTA, INDIA,* AND RAYMOND K. J. LUOMANEN, M.D., F.A.C.S., BROOKLYN, NEW YORK

(From the Thoracic Service, The Memorial Center for Cancer and Allied Diseases)

Many aspects of sarcoidosis, a disease entity first described almost sixty years ago, still remain enigmatic. There has been a reawakening of interest in this condition in recent years as evidenced by the published literature. The final opinion regarding the causation is still distressingly vague. Allergy, viral infection, and atypical tuberculosis have all been suggested as the etiologic agent. Even possible relationship to neoplasia has been discussed. The very diversity of the views held speaks for the tenuity of the proofs adduced.

The diagnosis of the condition is not difficult on histologic examination of suitable material which can be obtained from a wide variety of tissues of the diseased organism. The histologic pattern is not always distinctive, and histodiagnosis is based on clinical and laboratory exclusion of a number of other disease processes which produce similar changes in the affected tissues.

To the thoracic surgeon sarcoidosis can constitute a serious diagnostic challenge. A portion of the protean manifestations of the disease are in the pulmonary parenchyma and the pulmonary hilar and mediastinal lymph nodes. It is therefore not unusual for patients with sarcoidosis to be referred to thoracic surgical units for evaluation and treatment. Indeed, in a recent paper on the subject James[1] puts the thoracic surgeon at the top of a list of specialists who might be involved in any one particular facet of sarcoidosis as a clinical diagnostic problem. The disease itself is a relatively benign process with a good prognostic outlook. Many of the other conditions with which sarcoidosis might be confused (such as mediastinal neoplasms, lung cancer, tuberculosis, and others) are rapidly progressive and need prompt active treatment for even a hope of control. It is thus essential to establish a definitive tissue diagnosis as rapidly as possible when faced with a patient with persistent radiopacity findings on chest roentgenograms. If the usual methods of diagnosis fail, an exploratory thoracotomy is in order.

During the past eight years 5 patients underwent exploratory thoracotomy at the Memorial Hospital, in New York City, before the diagnosis of sarcoidosis finally could be established. A review of the records of the cases of histologically proved sarcoidosis was therefore carried out in order to determine if a definite clinical pattern could be identified or if the auxiliary methods could be found which could yield precise diagnosis without necessitating thoracic exploration. Any case that did not have an unequivocal histologic diagnosis was rejected as were the cases in which there was a possibility of the sarcoid changes arising from other coexistent pathologic

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TABLE I.—INITIAL SYMPTOMS IN 39 CASES OF SARCOIDOSIS SEEN AT THE MEMORIAL HOSPITAL

Symptom	Number of Cases
None	9
Neck swelling	8
Upper respiratory infection	6
Cough	5
Chest pain	4
Malaise	2
Fever	1
Dyspnea	1
Hemoptysis	1
Cutaneous nodule	1
Eye trouble	1
	—
TOTAL	39

TABLE II.—INCIDENCE OF SYMPTOMS DURING THE ENTIRE NATURAL HISTORY OF GENERALIZED SARCOIDOSIS IN 39 PATIENTS

Symptom	Number of Patients	Per Cent
Cough	19	48
Adenopathy (anywhere)	15	38
Dyspnea	11	28
Malaise	11	28
Chest pain	10	25
Weight loss	10	25
Hemoptysis	6	15
Frequent upper respiratory infection	6	15
Skin nodules	2	5
Eye symptoms	3	8
Joint pains	1	3

conditions. We have intentionally kept our study limited to the clinical features and the commoner diagnostic tests only and refrained from attempting prognostic evaluation or assay of the natural history of the disease. Because this hospital is primarily concerned with the investigation and treatment of cancer and the allied diseases, our series is small and a long-term follow-up is incomplete on patients who returned to the source of their referral.

Thirty-nine cases have been found suitable for the present analysis. The age range varied between twelve and sixty-seven years, the peak incidence being in the third and fourth decades. There was no significant sex difference, 18 patients being male and 21 being female. The disease is said to be more frequent in the Scandinavian countries, Germany, and England. In reviewing the epidemiology of sarcoidosis Michael[2] has found a higher incidence in Negroes and especially in the Atlantic Gulf Coast and the New England areas in the United States. Twelve of our 39 patients were Negroes.

The onset of the disease was usually quite unremarkable. Indeed, 11 patients were referred to this hospital either because of an abnormal chest roentgenogram or because a routine physical examination by the referring physician had disclosed some significant physical finding. Careful questioning at the initial clinical examination at this hospital often showed that there had been minor symptoms (presumably related to the disease) for a fair interval prior to the first hospital visit. These symptoms were quite nonspecific, resembling those of the common cold, and they were neglected as such. Medical advice was sought only when the "cold" became unduly persistent or when more dramatic symptoms, such as lymphadenopathy or chest pain, supervened.

The most common first symptom was cervical lymphadenopathy. Interestingly enough, no patient complained primarily of an enlarged lymph node anywhere else in the body although such enlargements were found not uncommonly at the initial examination. (This interest in the neck at the expense of the rest of the body may reflect either on the bathing habits or the narcissistic tendencies of the patient population!) The initial symptoms in this group of cases is presented in order of decreasing frequency in Table I.

During the entire natural history of the disease, while the patient was being followed at this hospital, the incidence of the various symptoms was as shown on Table II.

Comparing the two preceding tables it appears that the pulmonary involvement is at first relatively asymptomatic. However, with time there is a loss of the functional pulmonic tissue with corresponding symptoms. Stone *et al.*,[3] investigated the pulmonary changes in 22 patients with varying

TABLE III.—SIGNIFICANT PHYSICAL FINDINGS AT INITIAL EXAMINATION OF 39 PATIENTS WITH GENERALIZED SARCOIDOSIS

Physical Finding		Number of Patients
Peripheral lymphadenopathy		32
Right cervical	10	
Left cervical	6	
Bilateral cervical	9	
One axilla	8	
Both axillae	6	
Inguinal	10	
Epitrochlear	5	
Hepatomegaly		8
Splenomegaly		5
Hepatosplenomegaly		4
Abnormal clinical findings in the lung fields		7
Skin nodules		2
Eye involvement		3
Papular rash		1
Erythema multiforme		1

TABLE IV.—PROVISIONAL DIAGNOSIS AFTER INITIAL PHYSICAL EXAMINATION IN 39 PATIENTS WITH GENERALIZED SARCOIDOSIS

Provisional Diagnosis	Number of Patients
No diagnosis attempted	8
Lymphoma	8
Hodgkin's disease	6
Lung cancer (primary or metastatic)	6
Boeck's sarcoid	3*
Mediastinal tumor	3
Paratracheal cyst	1
Parotid tumor	1
Tuberculosis (pulmonary and glandular)	1
Lymphosarcoma	1
Lymphadenopathy	1

* In 3 other cases Boeck's sarcoid was put down as an alternate diagnosis.

durations of sarcoidosis. They found significant evidence of functional loss and concluded that the recent cases showed nonspecific effects of inflammation on the pulmonary stretch receptors manifested mainly by hyperventilation on exercise. In the more advanced cases with generalized pulmonary sarcoidosis the functional losses were more marked and were due to organization of the lung with a resulting decrease in the diffusing capacity and/or emphysema.

Significant clinical findings at admission seem to have been equally nonspecific. The most common single finding on physical examination was lymphadenopathy, usually of one or more of the cervical lymphnodal groups. The distribution of the positive findings on initial examination is summarized in Table III.

The lymphadenopathy was in no way characteristic. When present, the enlarged nodes were described as being soft, firm or hard, solitary, multiple or generalized, and discrete or matted with almost equal frequency. In one of the cases the left preauricular node was primarily involved and the initial diagnosis was a possible parotid tumor.

The sarcoid process has been observed in many of the connective tissues of the body. Myers *et al.*,[4] discussed joint manifestations of sarcoidosis and reported 4 cases with migratory febrile polyarthritis of a clinically distinctive type, asymptomatic granulomatous lesions of striated muscle, and erythema nodosum.

From the preceding it will be evident that the symptoms and signs of sarcoidosis are not only varied but are often so nonspecific that a positive diagnosis based on clinical evidence alone is more likely to be made by accident than by design. Table IV summarizes the initial impression of the examiner after the first clinic visit.

In 3 of the cases Boeck's sarcoid was listed as an alternate diagnosis. It is worth repeating here that at this hospital the great majority of patients seen have cancer or some allied disease.

A full battery of laboratory investigations was not done in most patients. Most of the tests described in the literature are supportive only as far as the diagnosis of sarcoidosis is concerned. The results of the various laboratory investigations on this group of patients are summarized in Table V.

In 9 patients a bronchoscopic examination was done. In 5 instances the tracheobronchial tree was grossly normal and the cultures of the bronchial washings were negative for tubercle bacilli. The cytologic studies of the bronchial washings were essentially normal in all 9 cases. In 4 cases extrinsic pressure, corresponding to

TABLE V.—Summary of Laboratory Investigations in 39 Patients with Generalized Sarcoidosis

Laboratory Investigation	Number of Patients Examined	Normal or Negative	Abnormal or Positive	Remarks
Hemoglobin	39	29	10	High 8 Low 2
White blood cell count	39	19	20	High 8 Low 11 High and low in 1
Serology for syphilis	15	15	0	
Sputum for tuberculosis				
Smear	21	21	0	
Culture	20	20	0	
Gastric washings for tuberculosis	7	7	0	
Tuberculin test	26	23	3	One each positive as below 4 plus at 1:1,000 3 plus at 1:10,000 3 plus at 1:100,000
Total serum proteins	18	7	11	Differential values not available in all cases
Liver profile	7			
Bromsulphalein retention	7	4	3	Elevated
Cephalin flocculation	7	4	3	Elevated
Alkaline phosphatase	7	3	4	Elevated

the enlarged hilar nodes, was noted to cause deformity of the bronchial lumen. In 1 case the bronchial mucosa was reported as being "irregular." Biopsied material from the apparently abnormal mucosa was reported as showing only normal epithelium in both instances. These findings are of interest in view of the recent reports on endobronchial involvement in sarcoidosis. Kalbian[5] obtained positive sarcoid material by bronchoscopic biopsy in 3 out of 11 consecutive cases. According to him three types of endobronchial changes might be observed in sarcoidosis: (1) external pressure; (2) granular bronchial mucosa with blebs, 2 to 3 mm. in diameter; and (3) thickening and edema of the mucosa with bronchostenosis. A recent review by Scadding[6] brings up the total number of reported cases of stenotic endobronchial sarcoid lesions to over 15.

The most dramatic feature in sarcoidosis is often the chest roentgenogram. Often the films show marked sarcoid involvement of the pulmonary and hilar tissues while the patient has a remarkable paucity of symptoms and signs. The radiographic changes have been discussed in great detail and exactitude in many communications. They are particularly well analyzed in Turiaf's[7] monograph on the disease. We will therefore limit this discussion to the more significant aspects of chest roentgenograms, especially for a differential diagnosis.

In the thoracic cavity the sarcoid process may affect the pulmonary parenchyma, the hilar nodes, and the mediastinal nodes in any combination or sequence. Such involvement occurs at some phase of generalized sarcoidosis in almost all cases. Only 1 out of the 39 cases in our series never had any significant anomaly noted in the chest roentgenogram. Hilar lymphadenopathy may constitute the only finding in an occasional case. It is more usual to see a combination of hilar and parenchymal lesions. In most cases the hilar lesion appeared first and the parenchymal infiltrate followed. After a varying interval there was spontaneous resolution of the lesions as visualized on the roentgenogram. The parenchymal lesions usually, though not invariably, disappear first.

The thoracic lymphadenopathy was most commonly observed in the right hilum. Even when the hilar shadow was quite large in size secondary changes in the pulmonary parenchyma (due to pressure obstruction by the nodal mass) were never observed in this group. This suggests

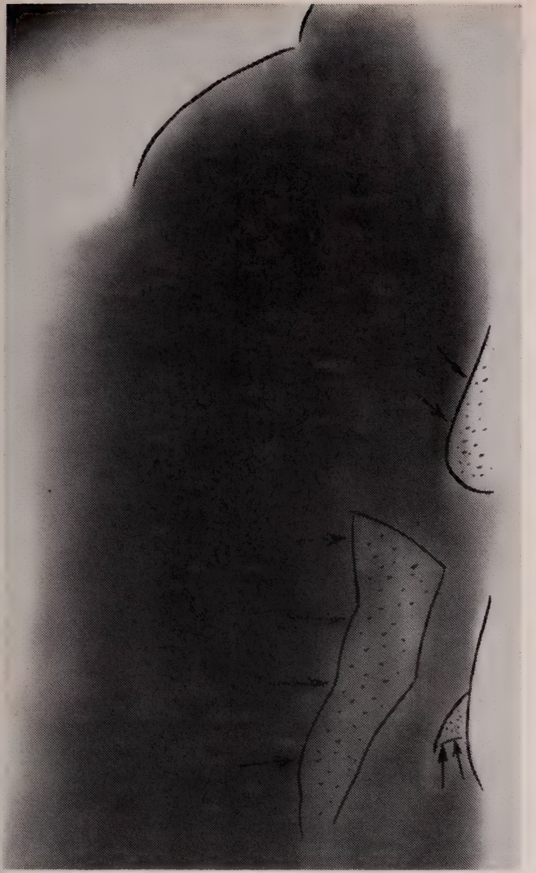


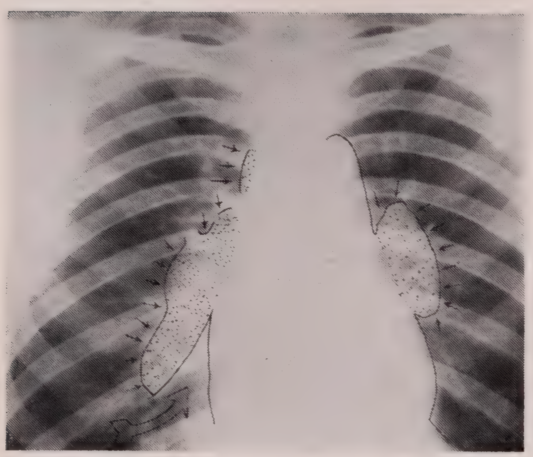
FIG. 1. A tomogram of the right hemithorax. The nodes involved by sarcoidosis are situated at the bifurcation of the bronchi and have caused little, if any, pressure deformity.

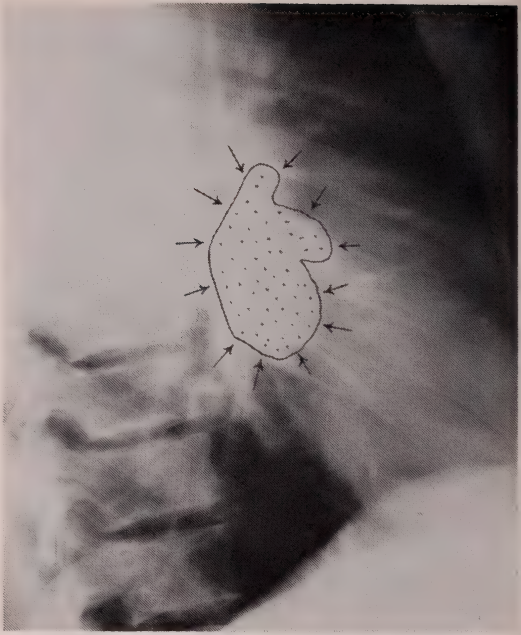
that the enlarged nodes are possibly soft in consistency, an impression borne out by the operative findings in all 5 cases. The nodes most commonly involved were the peribronchial intrapulmonic group. Both this anatomic site and the lack of pressure effects on the main stem bronchus are well demonstrated in Figure 1. Because of the situation of these nodes a clear radiolucent re-entrant zone of well-aerated pulmonary tissue is often visible between the lymphnodal shadow and the cardiac silhouette in the posteroanterior projection. This rather characteristic sign was present in 25 of the 31 patients with hilar lymphadenopathy. The sign has been observed only on the right side; on the left side the aortic knuckle and the pulmonary conus become confluent with the hilar shadow (Figs. 2 and 3).

The right paratracheal lymph nodes also were involved quite frequently. This possibly represents the route of efferent lymphatic drainage from the lungs. Figure 4 summarizes diagrammatically the present view about the lymphatic pathways in the thorax and from the lungs. Nohl's[8] work on the lymphatic spread of bronchial carcinoma supports this view. This anatomic peculiarity of lymphatic drainage also explains the preponderance of supraclavicular lymphadenopathy on the right side mentioned before. On the rare instances where the hilar nodes are relatively normal and there are no significant changes (radiographically) in the pulmonary parenchyma, such paratracheal lymph node enlargement on a chest roentgenogram may simulate closely a superior mediastinal neoplasm or a pulmonary apicoposterior segmental lesion. One case in our group was originally diagnosed as having a paratracheal cyst (Fig. 5).

In reported cases pulmonary parenchymal lesions have been recorded in from 60 to 70 per cent of patients. Many descriptive patterns have been tabulated, mainly in the French literature. During the evolution of a single case the pulmonary parenchymal lesions may show more than one type of appearance and hence such extreme efforts at taxonomy appear unnecessary. The parenchymal infiltrate may appear to be miliary, nodular, or a hazy accentuation of the normal lung markings into a reticular pattern (Fig. 6). Confluence of the miliary markings may proceed to give a ground-glass appearance to the whole lung field. Notable features are the absence of pleural reaction and the remarkable paucity of expected symptoms.

Detailed examination of serial chest roentgenograms was possible in 34 of the 38 cases in this group who had evidences of intrathoracic sarcoidosis. One case had never had any demonstrable anomaly on the chest roentgenograms. The observations on these films are set forth in Table VI.





FIGS. 2 and 3. An involvement of both hilar groups and to a much lesser extent of the right paratracheal group. The re-entrant angle described in the text can be seen in the posterior-anterior film.

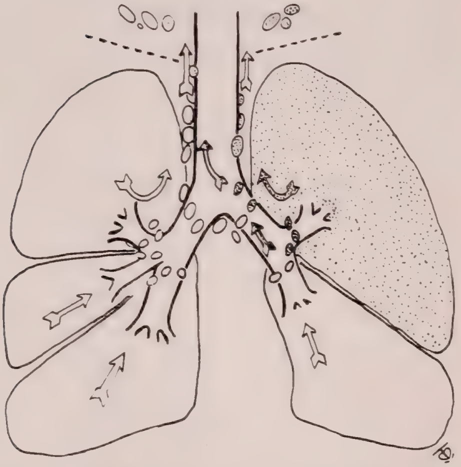


FIG. 4. A diagrammatic representation of the lymphatic drainage of the pulmonary parenchyma. The arrows indicate the direction of the flow. There is some crossover of the drainage from the left upper lobe (stippled) onto the right side, including the supraclavicular nodes.

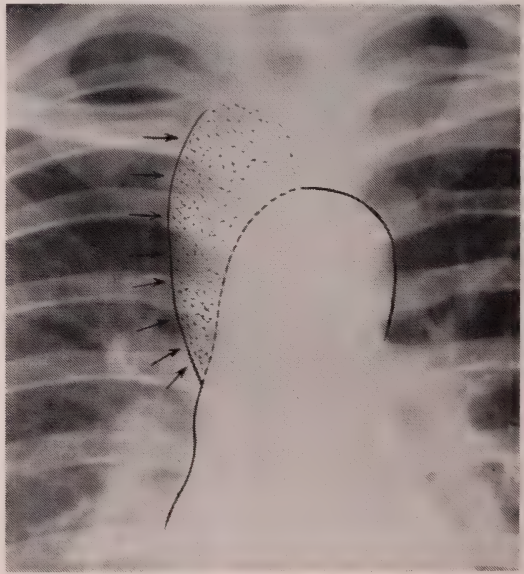


FIG. 5. The right paratracheal nodes are mainly involved.

The x-ray film findings appeared to be reversible in most instances. Unfortunately all cases were not followed through for a long enough period to determine end results radiologically. In most cases followed for more than three years there was some retrogression of the lesions as seen on roentgenograms, often to a near normal state. Permanent fibrosis has been reported to follow the sarcoid infiltrate. This was seldom seen in our patients. King,[9] in long-term serial roentgen studies of patients

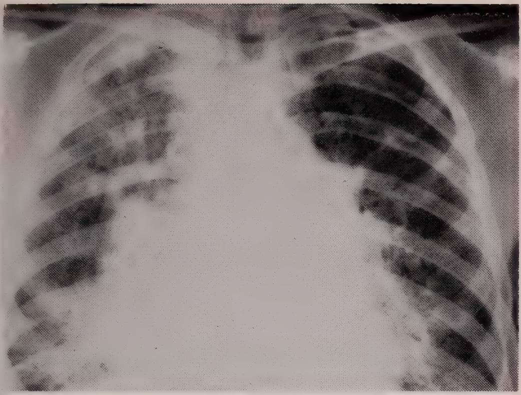


FIG. 6. A massive involvement of the hilar and the mediastinal nodes on both sides; a parenchymal infiltrate on both sides, especially the right side.

TABLE VI.—SUMMARY OF RADIOGRAPHIC FINDINGS IN CHESTS OF 34 PATIENTS WITH GENERALIZED SARCOIDOSIS*

Radiographic Findings		Number of Patients
Site of lesion		
Mainly hilar and mediastinal		14
Mainly pulmonary parenchymal		3
Both parenchymal and nodal		17
Minimal parenchymal changes	5	
Moderate parenchymal changes	8	
Marked parenchymal changes	4	
Site of lymphadenopathy (31 cases)		
Right hilar and right paratracheal nodes only		3
Left hilar nodes only (minimal paratracheal)		2
Right hilar, right paratracheal, and left hilar		26
In 3 of these cases the right-sided lesions predominated. In most instances, even though both sides were involved, the lesion was more marked on the right side.		

* Of the 39 patients in this series, 1 patient never had any significant findings on radiographs of the chest. In 4 other patients, radiographs were either not available or unsatisfactory for reviewing.

In classifying the lesions, the entire series of radiographs in each individual patient was taken into account and the positive data recorded irrespective of the temporal sequence of the appearance of the lesions.

with pulmonary sarcoidosis found that regression occurred in most cases within a period of from three months to five years from the initial examination, the average period in his group being twenty-two months. In 25 cases in this series (in which almost total clearing up of intrathoracic lesions was observed on serial chest roentgenograms) the time for retrogression varied between seven months and eight and a half years (Figs. 7, 8, and 9).

Cystic changes in the hand and foot skeleton have been reported to occur in from 10 to 20 per cent of cases. In the 18 patients in this group whose hands and feet were examined radiologically, no suggestive changes were encountered.

The final diagnosis of sarcoidosis is dependant on histologic study of suitable material. The histologic picture alone is not enough as will be evident from later discussion; it has to be interpreted in the light of other available clinical and laboratory data. The method of final diagnosis in our series is summarized in Table VII.

A scalene node biopsy has recently become a well-accepted diagnostic procedure in many intrathoracic lesions, especially if neoplasia is suspected. In 34 cases of sarcoidosis reported by Rochlin and Enterline,[10] prescalene lymph node biopsy resulted in a definite diagnosis in 79.4 per cent of cases. They found that the probability of obtaining a diagnostic specimen was highest (88.6 per cent) if there was radiographic evidence of both hilar and parenchymal pulmonary involvement. The probability was somewhat less if the lesions were purely hilar and it was lowest if the lesions were purely parenchymal.

The scalene node biopsies in intrathoracic lesions have been in use at this hospital from 1953. In 10 of our cases in which a scalene node biopsy was done, diagnostic specimens were obtained in 9 cases. The one negative result was in case 2 in which a left scalene node biopsy was reported as showing a normal lymph node and fat, and the final diagnosis was obtained on thoracic exploration.

The technic of scalene node biopsy has been adequately described in recent literature and is simple enough to be used as an outpatient procedure. The proximity of important structures necessitates experi-

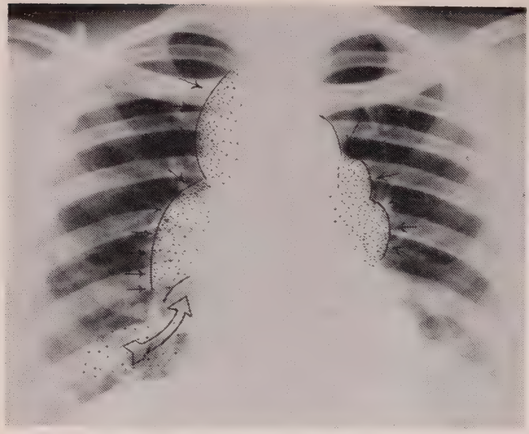


Fig. 7. A posteroanterior teleroentgenogram showing the right paratracheal, the right and left hilar lymphadenopathy, and some questionable parenchymal infiltrate of the right lower lobe.

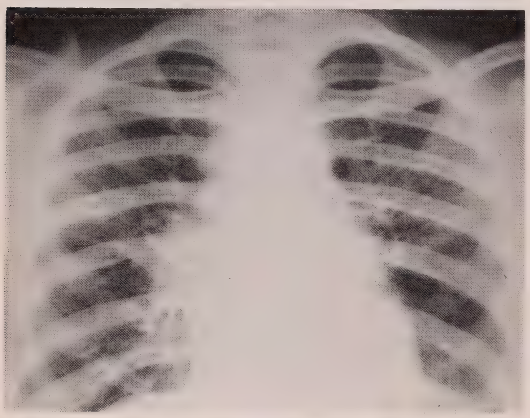


Fig. 8. The same patient as in Figure 7; the film was taken five months later. There is a bilateral involvement of the pulmonary parenchymas as well.

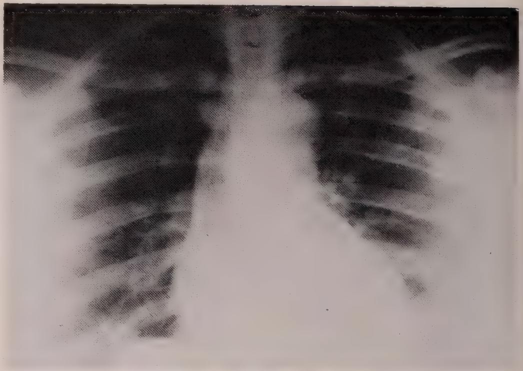


Fig. 9. The same patient as in Figures 7 and 8; the film was taken fifty-eight months later after that in Figure 7. A complete spontaneous resolution of both hilar and parenchymal lesions.

TABLE VII.—Site of Tissue for Positive Biopsy in 39 Patients with Generalized Sarcoidosis

Type of Biopsy		Number of Patients
Thoracotomy and node biopsy		5
Scalene node biopsy		9
Left side	2	
Right side	7	
Enlarged cervical node biopsy		18
Supraclavicular	11	
Posterior triangle	7	
Aspiration biopsy of "accessory node" in posterior triangle		1
Epitrochlear node biopsy		2
Axillary node biopsy		1
Inguinal node biopsy		1
Splenectomy		1
Submitted slide (cervical node biopsied elsewhere)		1
Total		39

ence and caution if the patient is not hospitalized. In this hospital local infiltration anesthesia is usually used and a comparatively small transverse incision is made between the clavicular and sternal heads of the sternomastoid muscle. Vertical separation of the fascial sheath connecting the two heads will then lead one almost directly on to the prescalene fat pad and the lymphatic tissue. Probably both sides should be biopsied at the same time. If one side only is to be examined, the right side should be chosen for the anatomic reasons previously given. Our experience supports this view (Table VI).

Various other biopsy sites have been recommended, such as the gastrocnemius muscle and others. However, scalene node biopsy can be combined easily with a biopsy of the exposed sternomastoid muscle if desired. We have had no experience with such tests. The Kveim test has been used in some clinics. We have had no occasion to use it. Israel and Sones[11] have reviewed the results obtained with the test and concluded that a clinical use of the test is unjustifiable at the present stage.

It is of interest to examine further the patients who underwent thoracotomy for the final diagnosis. The cases are briefly abstracted here.

Case Reports

Case 1.—A twenty-eight-year-old white housewife was first seen on March 28, 1951, for an evaluation and treatment of a radiopacity seen on a routine annual chest skiagram. She denied any symptoms and initial physical examination was unremarkable except for small, discrete, soft bilateral axillary nodes.

The laboratory investigations showed an initial hemoglobin level of 14.7 with a 5.9 total white blood count. The smear and culture of the sputum and gastric washings indicated negative results both cytologically and bacteriologically. The tuberculin tests showed negative results. A bronchoscopy revealed a widened carina and the bronchial washings disclosed negative results bacteriologically and cytologically.

The patient was thought to have an intrathoracic malignant lymphoma. An anterior thoracotomy through the right fourth intercostal space was done to establish the diagnosis. The right hilar and mediastinal nodes were found to be enlarged up to 3 cm. in diameter. The nodes were firm, rubbery, and discrete and extended into the interlobar fissure. Two nodes removed and examined histologically showed typical sarcoid lesions.

The patient had an uneventful recovery and on a follow-up examination exactly six years later was found to have no evidence of the disease. The chest skiagram at the last examination showed entirely normal results.

Case 2.—A thirty-year-old Negro housewife was first seen on April 23, 1957. A routine chest skiagram taken while she was undergoing investigations as to the cause of occasional constipation and rectal bleeding had disclosed a left hilar radiopacity.

On initial examination at this clinic no other complaints were elicited and the only significant physical finding was that of intero-external hemorrhoids.

Laboratory investigations showed a hemoglobin of 14.5, the total white blood count of 5.4, total serum proteins of 7.8, and the serum albumin of 5.4. Bacteriologic and cytologic examinations of sputum, gastric washings, and bronchial washings showed negative results. The histoplasmin and tuberculin tests also showed negative results at the usual strengths, and the bronchoscopic examination revealed an essentially normal tracheobronchial tree. A mediastinal tumor was diagnosed provisionally.

To establish a diagnosis and decide on therapy an anterior thoracotomy was carried out through the left fourth interspace. Multiple enlarged, discrete, firm hilar and mediastinal nodes were encountered. Two subaortic nodes, each about 4 by 4 by 5 cm., were removed for examination, since the rest of the exploration was noncontributory. At the end of the procedure a scalene node biopsy was also done mainly for the purpose of an evaluation of the latter procedure. All tissues submitted showed typical sarcoid lesion. The postoperative course was completely unremarkable. Exactly two years later she was completely free of any physical findings although the chest skiagram was almost unchanged. A preliminary scalene node biopsy would possibly have saved this patient a thoracotomy.

Case 3.—A thirty-one-year-old white Hebrew housewife was first seen on January 12, 1955, because of a suspicious shadow on a routine chest skiagram taken during an annual physical examination. On initial examination she had vague complaints of an occasional and long-standing cough productive of small quantities of yellowish sputum and she had some dyspnea on exertion. The only significant physical finding was a 0.5 cm. diameter firm left supraclavicular node.

Laboratory investigations showed a hemoglobin of 15.7, a total white blood count of 6.6, and serum proteins of 7.2. The smears and a culture of the sputum showed negative results bacteriologically and cytologically. A bronchoscopy was within normal limits. The bronchial washings and smears indicated negative results bacteriologically and culturally except for occasional atypical cells. She was thought to have a paratracheal cyst and was observed during the next three months. At the end of this period she was admitted to the hospital because of pain in the left chest and shoulder. Further investigations at this time gave almost identical results. A left posterolateral thoracotomy was done. The only abnormal findings were a group of enlarged, firm, discrete paratracheal and upper hilar lymph nodes. A frozen section on one of these nodes was reported as being consistent with sarcoidosis or tuberculous lymphadenitis. Permanent sections stained for acid-fast bacilli failed to reveal any and a smear and culture of the lymph nodes also showed negative results for tubercle bacilli. Her postoperative course was uneventful without any further specific therapy. She was last seen on February 11, 1957, almost two years after the operation. At this time she had no physical findings and a chest skiagram was interpreted as being within normal limits.

Case 4.—A fifty-two-year-old white female dress operator was first seen on February 25, 1956, because of a solitary lesion in the right lung field seen on a chest roentgenogram. She had no symptoms, and an initial physical examination showed entirely negative results except for some rhonchi at the right posterior pulmonary base.

Laboratory investigations revealed a hemoglobin of 14.2 and a total white blood count of 6.8. The smear and the cultures of the sputum showed negative results. A bronchoscopy showed some deformity of the intermediate stem bronchus on the right side caused by extrinsic pressure. The bronchial mucosa was normal and no biopsies were taken. The bronchial washings were examined cytologically and bacteriologically and did not show any abnormality. On a tentative diagnosis of carcinoma of the right lung she had a right posterolateral exploratory thoracotomy. The lung was found to be entirely normal. There were enlarged nodes occupying the interlobar fissure between the middle and the lower lobes. Some of these were removed for histologic examination and showed lesions typical of sarcoidosis.

Her postoperative course has been uneventful and at a follow-up examination three years later there was no more evidence of a chest mass.

Case 5.—A thirty-two-year-old Negro housewife was first seen on November 3, 1950, because of a "lump" in her right axilla. She complained of malaise of six months duration and four months ago had noted the "lump," which had remained stationary. Her physician had a chest skiagram taken and referred her to us because of a coin lesion in the right upper lung field. On initial examination she was found to have two lymph nodes, 2 by 1.5 cm. and 1.5 by 1 cm., hard, discrete and mobile, in the apical group of the right axillary lymph nodes.

Her hemoglobin was 15.8, the total white blood count was 8.7, the total serum proteins were 7.87, the serum albumin was 5.6, and the Mazzini test showed negative results. The culture and smear examinations of sputum for bacteria and abnormal cells also showed negative results. The tuberculin test showed positive results at 1:10,000 dilution. On November 22, 1950, one of the axillary nodes was removed, and on microscopic examination typical sarcoid lesions were seen. The smears and the culture from the lymph node, tested particularly for acid-fast bacilli, showed negative results.

She was observed carefully as an outpatient for five months during which period the coin lesion persisted unchanged and there were no significant changes in her general physical status or in the laboratory findings. The lesion in the peripheral lung field could not be adequately explained in the light of sarcoidosis and therefore it was thought that she had either a tuberculoma or a coexisting pulmonary neoplasm. At this time she started having a daily rise in temperature up to 100 F.; the liver edge was palpable for about 2 cm. below the right costal margin; and a solitary but firm lymph node, 1.5 by 2 cm., was palpable in the left groin. She was hospitalized and on May 24, 1951, she underwent a right posterolateral thoracotomy. A wedge resection of the lesion in the right upper lobe was carried out. A slight to moderate enlargement of the upper hilar and paratracheal lymph nodes on the right side was found at exploration. The histodiagnosis on the mass from the right upper lobe was calcifying tuberculoma. Her postoperative course was relatively smooth. At a follow-up examination four months after her thoracotomy bilateral enlarged axillary nodes were found. These disappeared spontaneously in the course of the next six months. On examination five years after her operation she was symptom-free, had no abnormal physical findings, and the chest skiagram was unremarkable.

The histodiagnosis of sarcoidosis from an excised lymph node or tissue specimen should not preclude further careful examination to rule out any coexistent pathologic conditions. The sarcoid lesion is nonspecific. Local sarcoid lesions can arise from cutaneous chronic granulomas as with beryllium or quartz or shrapnel wounds. Systemic infections such as histoplasmosis, toxoplasmosis, syphilis, tuberculosis, leprosy, viral hepatitis, brucellosis, and others can be associated with a sarcoid reaction in the lymph nodes. One case seen in our group was a patient with an enlarged axillary node, enlarged cervical nodes bilaterally, and a solitary radiopaque shadow in the periphery of the right upper lung field. An excision biopsy of the axillary node was reported as showing a sarcoid reaction.

The radiopacity persisted unchanged and after an observation period of eight months the patient was operated on, for the shadow could not be reconciled with a sarcoid pulmonary infiltrate. Wedge resection of a right upper lobe mass revealed a tuberculoma.

It has been recently pointed out that a sarcoid reaction might arise in the lymph nodes draining a neoplasm, especially if the neoplasm has been irradiated. Gorton and Linell[12] found localized sarcoid reaction in 38 patients seen at the Karolinska Sjukhuset. Twenty-four of these patients had irradiated squamous carcinoma of the cervix and 1 patient had a bronchial carcinoma. In reviewing the cases of lung cancer seen at this clinic we have found 3 instances where a sarcoid reaction was associated with a bronchial neoplasm. All of the patients had had previous radiation. It is to be noted, however, that such a sarcoid reaction appears to remain localized to the immediate afferent nodes. This observation is particularly important, especially for the thoracic surgeon. A malignant neoplasm may masquerade as a Boeck's sarcoid, although the association apparently is quite rare, unless tissue diagnosis is attempted of all suspicious pulmonary shadows. Two cases are of some interest in this context and they are briefly reviewed here.

Case 6.—A twenty-nine-year-old Hebrew male actor was sent to this hospital on July 7, 1951, for investigation and treatment of an enlarged pulmonary hilum found on a routine chest skiagram. He had no complaints except some vague chest pain and occasional nonproductive cough for six months. Initial physical examination revealed a small lymph node of questionable significance in the left axilla, some bilateral clubbing of fingers, and changed breath sounds over the right upper and middle lung fields posteriorly.

Laboratory investigations of the hemoglobin, the total white blood count, the sedimentation rate of the erythrocytes, the serum proteins, and the serum albumin all gave results within the normal limits for this laboratory. The smear and the culture of the sputum and the gastric washings were bacteriologically and cytologically unremarkable. A bronchoscopy showed some stenosis of the right main stem bronchus from extrinsic pressure. The mucosa appeared normal and was not biopsied. The bronchial washings showed negative results both bacteriologically and cytologically. The left axillary node was therefore biopsied and was said to show typical sarcoid changes. Also his superficial tissues were removed from the right scalene region. On review it appears that the deep contents, including the scalene fat pad, had not been excised. The histologic examination of this tissue showed no significant lesions. He was thought to have the sarcoid syndrome and was therefore followed as an outpatient.

During the next six months his radiologic findings gradually increased. In view of the progressive size of the hilar shadow a repeat and more adequate scalene node biopsy was therefore done, and the tissue diagnosis on this material was found to be Hodgkin's granuloma.

Case 7.—A sixty-three-year-old white housewife was sent to this hospital for treatment of an epidermoid carcinoma of the right lower lobe of the lung. The diagnosis had been established elsewhere by sputum cytology and by microscopic examination of a tissue that had been obtained by a bronchoscopic biopsy. These preparations were reviewed and confirmed. The chest x-ray film showed a right lower lobe lesion as well as some enlargement of the hilar lymph nodes.

The initial physical examination was essentially unremarkable except for diminished breath sounds over the right middle and posterior lung fields and some enlarged and discrete right supraclavicular lymph nodes. A bronchoscopic examination was done, and the presence of a right lower lobe neoplasm was confirmed. At the same time a right scalene node biopsy was carried out. The histodiagnosis on the bronchial tissue was epidermoid carcinoma, while the scalene nodes showed only the changes consistent with sarcoidosis. Further investigations disclosed that the patient had had an undetermined dosage of x-ray therapy to the right lower lung field prior to being referred here.

She underwent an exploratory right posterolateral thoracotomy with a view to possible resection of the neoplasm. There were enlarged hilar, interlobar, and paratracheal nodes. The neoplasm itself was technically nonresectable. A histologic examination of the excised lymph nodes showed changes consistent with sarcoidosis.

Comment

A sarcoidosis of the lymph nodes may coexist with a neoplasm in the drainage area. A histodiagnosis of sarcoidosis on the basis of lymph-node biopsy alone should not be accepted lightly if other evidence points to the possibility of a coexisting neoplasm. A scalene biopsy, to be useful, should include the scalene fat pad and as much of the deep fibro-areolar tissue in the area as is possible.

Summary

Thirty-nine cases of generalized sarcoidosis seen at the clinics of the Memorial Hospital, have been reviewed with special reference to the thoracic manifestations of the disease.

The clinical features, the radiographic findings, and the possible anatomic bases of the findings have been discussed. A scalene node biopsy was carried out in 10 cases with positive diagnostic material being obtained in 9 cases. A histologic diagnosis of a sarcoid lesion does not rule out the possibility of coexistent, more serious pathologic processes. A sarcoidosis may mimic a primary neoplasm of the lung or the mediastinum, and a specific diagnosis can rarely be made clinically. The delay for an extensive work-up is not justified. In the presence of a suspicous lesion on the chest roentgenogram exploratory thoracotomy may be needed and is justified for positive diagnosis if other methods fail.

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Progress in the Search for Morphine Substitutes

While morphine remains the most potent and reliable all-around analgesic, several new compounds approach it in therapeutic capacity. One of these, SKF 5137, showed definite promise in clinical trials involving 250 hospitalized patients and 15 others, mostly ambulatory, suffering from chronic pain. The author and his associates found that in the range of 10 to 15 mg., given orally or subcutaneously, SKF 5137 provides rapid and effective analgesia, although its beneficial effects wear off quickly so that frequent readministration is necessary. Perhaps the 15 to 20 mg. doses provide longer pain relief, but the series of patients given such doses was too small to make accurate conclusions. As for side-effects, the author says that probably the outstanding feature of this compound is the few and mild unwanted reactions. Whether there may be rapid development of addiction remains to be seen. In several patients with chronic pain who already had tolerance to narcotics there appeared to be rapid development of tolerance to the dose of 5 or 10 mg. SKF 5137 given orally. The clinical trials were preceded by animal experiments and trials on normal subjects.

—*Norman A. David, M.D., The Portland Clinic Bulletin, September, 1957*

Nonspecific Aspects of Endocarditis[*]

Clinical Applications of An Experimental Study

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THE recovery of organisms in bacterial forms of endocarditis and the establishment of the role of group A streptococcus in rheumatic valvulitis have almost suspended all consideration of the nonspecific factors in endocarditis. It is the premise of the present presentation that all forms of endocarditis are initiated in a similar manner, as nonspecific nonbacterial reactions of the interstitial valve tissue particularly. Thrombotic nonbacterial endocarditis is a common and classic instance.[1] Many different debilitating states yield such lesions, and the very synonyms—terminal, cachectic, and marantic endocarditis—emphasize this fact. The realization of the interrelationship of all forms of endocarditis and its meaning was originally based on actual transition encountered in human pathology and has been presented elsewhere.[2] This equivalent, if not the identical, nonspecific underlying mechanism, gives origin to all classic forms of endocarditis, links them together, and accounts for the transitions encountered.[3]

Concept of Mechanism of Endocarditis

The bacterial forms of endocarditis are not initiated as a result of a primary localization of the organism on the valve; rather, they follow a fortuitous incidental contamination of a prior-existing nonbacterial vegetation. The forceful documented presentation of this concept for "mycotic" or bacterial endocarditis in the modern era is to be credited to Königer.[4] The bacteremia itself can and occasionally does act as an effective causative initial stress mechanism. Then with continued bacteremia, early and continued contamination is to be expected. Once contamination of the nonbacterial lesion has taken place, then the virulence of the organism and now, in addition, the influence of effective therapy[5] determine the acuity of the process or its indolence and healing manifestations, resulting in one of the classic forms of bacterial endocarditis, such as acute and subacute.

The concept of the pathogenesis of human endocarditis and the interrelationships of its forms has already been outlined.[2] The experimental production of the basic lesions of valvular vegetations by nonspecific stress mechanisms which exclude infection and sensitization, to be presented later, confirms this and emphasizes the significance of the nonspecific aspect in endocarditis.[6]

Basic Theoretic Considerations

As medicine advanced, the humoral theories were replaced by the interpretations of disease based first on the gross findings and then supplemented by microscopic morbid anatomy. This led to the search for the pathognomonic lesion and then inevitably to the search for the specific etiology. Now in addition, the biochemical aberration, the genetic or acquired enzymatic defect, is also sought.

It was found that identical morphologic lesions could be caused by disparate etiologic agents, as different from each other as the tubercle bacillus is from the histoplasma. Also the same etiologic agent was found

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to yield pathologic lesions as varied as the hyperplastic tuberculosis of tendon sheath, the soft and hard tubercle, or the caseous focus of gelatinous pneumonia. In the evolution of the final anatomic pathologic lesion the etiologic agent is all-important, but the over-all general constitutional contribution of the animal as a whole is very significant in determining the final focal tissue reaction and the exact morphologic nature of the local lesion. This variation in reaction finds its highest expression in the known variable of species susceptibility and immunity, with absolute noninfectivity and the Yersin phenomenon at one extreme, and the fulminant bacteremic infection and the Waterhouse-Friderichsen syndrome at the other. Many general factors contribute to this over-all capacity of the human being as a whole to react. Heredity, sex, age, endocrine and nutritional status, sensitivity, allergy, and humoral and tissue immunity, and other factors all play a part.

The local morphologic lesion is determined by the interplay of all factors, including variables in the etiologic agent, altered tissue reactability, enzymatic defects, and other inherent and acquired reactive changes at the very site of evolution of the local lesion, in the present instance the valve; the final local tissue response varies accordingly. In rheumatic fever, a unique altered reactivity of local connective tissue prevails and determines significantly the final morbid anatomic lesion. This does not imply that the roles of the group A streptococcus, of sensitivity, and of allergy are discounted as playing important parts in rheumatic valvulitis. However, like other influences, these determinants also make their contribution to the local tissue reaction through the general over-all mechanisms controlling the local metabolism and the reaction of the connective tissues.

Applicable Clinical Considerations

This interpretation of endocarditis applies to the valve distortions that follow rheumatic fever. Acute rheumatic fever is ordinarily looked on as an acute infectious disease of a rather specific character with a tendency to involve heart valves. Yet there are many clinical features which are quite nonspecific.[7] It is well known that such nonspecific factors as climate, seasons, and geography do play a part in the incidence of the disease.

The association of rheumatic fever with group A streptococcus is accepted,[8–12] yet only 3 per cent or less of individuals who have throat or other infections with this particular organism develop acute rheumatic fever.[13] In turn, only one third of these patients with acute rheumatic fever develop a cardiac pathologic condition after a single attack.[12,13] Admittedly there exists a wide divergence of opinion on this point. Wilson[14] and White[15] maintain that rheumatic fever invariably produces carditis, while others note less frequent involvement, as Feinstein and DiMassa,[16] 27.6 per cent; Coombs,[17] 25 per cent; Morse,[18] 37 per cent; Ash,[19] 39 per cent; and Boone and Levine,[20] 4.8 per cent. Others who favor recovery from rheumatic fever without valvular involvement include Brown and Wolff,[21] Schlesinger,[22] Bland and Duckett Jones,[23,24] and Hauser *et al.*[13]

Not all patients with established clinical evidence of cardiac involvement by rheumatic fever go on to develop distorting valvular disease. Bland and Duckett Jones[25] note an incidence of 12 per cent of such recoveries; Boone and Levine,[20] 81 per cent; and Ash,[19] 16 per cent.

Wells[26] credited Pitcairn with first noting the cardiac complication in rheumatism in 1788, but Bouillaud[27] established this relationship. Yet in most series of autopsies, 50 per cent of cases with mitral stenosis have had no history of acute rheumatic fever.[28] This indicates that the degree of valve distortion bears no relationship to the severity of the initial rheumatic disease manifestations or that mitral stenosis can evolve independent of rheumatic fever. Despite the known fact that rheumatic fever may be so mild or atypical that its diagnosis may be missed, the long delay in the appearance of valvular disease after acute rheumatic fever[29] can also be interpreted as emancipating the progressive valve distortion from rheumatic fever per se.

Applicable Pathologic Considerations

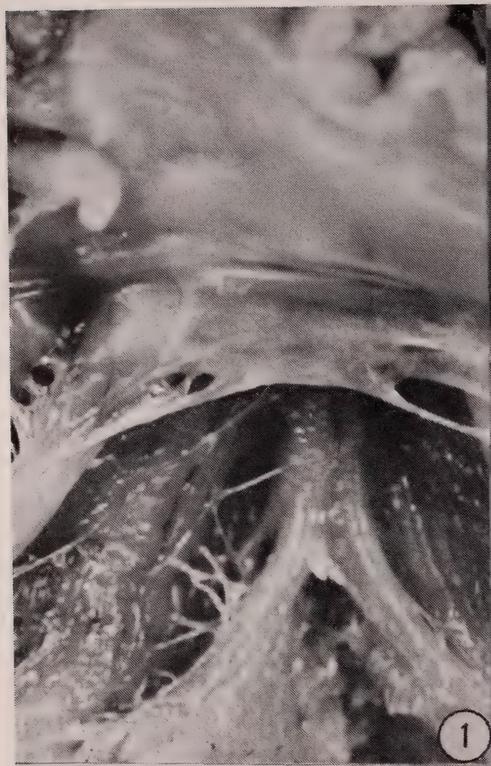
On the basis of pathologic observations, there is good reason to believe that mitral stenosis can progress and possibly develop without rheumatic fever. The specificity of the histology of the cardiac lesions in rheumatic fever does not correspond to the local demonstration of the etiologic agent, as is true in syphilis or in tuberculosis. The demonstration of streptococci in such lesions is not accepted. The classic typical florid Aschoff body is acceptable as a manifestation of rheumatic fever. In many stages of its evolution, the Aschoff body mimics healing focal scarring and is quite nonspecific.[30] Healing nonrheumatic vegetations are encountered which mimic the histology of rheumatic verrucae. Scar tissue in the valve or in the perivascular spaces or within interstitial septal tissue in the cardiac muscle is surely not pathognomonic.

The classic gross stenosis of the mitral valve at autopsy usually leaves very little doubt as to its rheumatic nature. There are cases of mitral stenosis with evidence of arteriosclerosis at autopsy whose pathology indicates that such stenotic distortions can occur independent of a rheumatic infection. Surely the calcific ring changes that are seen so often in mitral stenosis occur independently. Calcific aortic stenosis occurs frequently without any certain basis for implicating rheumatic infection, despite opinions to the contrary (Hall[31]). The ultimate degree of the stenosis bears no relationship to the severity of the clinical picture at the time of the active episode of rheumatic fever. The time required for the development of rheumatic mitral stenosis is not shorter, nor is its ultimate final appearance directly or inversely related to the severity of the manifestations of the attack of rheumatic fever. There is always an interval, and usually a long one, after the subsidence of any of one or more attacks, before evidence is obtained of stenotic mitral valve involvement. Often this happens after a single attack without any evidence of recurrence or exacerbation during the long interval.[29]

In the modern setting, the equivalent is encountered in the frequency (18.8 to 50 per cent) of Aschoff bodies found in the resected auricular appendages at the time of mitral commissurotomy.[32] Such surgical intervention is usually done during a selected period of clinical inactivity. Yet the high incidence of Aschoff bodies in such resected portions of the atrium is attested by many studies in the absence of evidence of recent streptococcal infection.[33] A reappearance of classic rheumatic fever has been described postoperatively, but this complication is admittedly rare and does not explain the incidence of Aschoff bodies in resected appendages at the time of operation without any evidence of clinical rheumatic activity and attests to the significance of nonspecific insult. This compels consideration of the evolution of classic Aschoff bodies without an attack of rheumatic fever or a group A streptococcus infection. Some nonspecific factor would seem implicated in their initiation and continued evolution. This same factor may account for the postcommissurotomy syndrome, which remains still to be elucidated. Tedeschi, Wagner, and Pani[32] suggest that the Aschoff body represents only "tissue response of the connective tissue."

Experimental Applications

The very existence of endocarditis as a pathologic and clinical entity requires an explanation as do the unique features of the localization, incidence, and the distinctive character of the several classic forms of vegetations and their transitions. The experimental procedures designed to elucidate these forms should be related to events in human experience in endocarditis. This would preclude the use of local trauma and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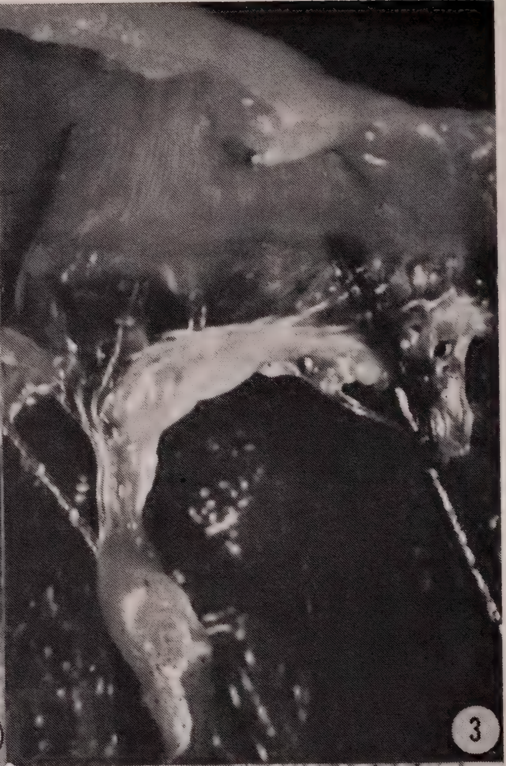
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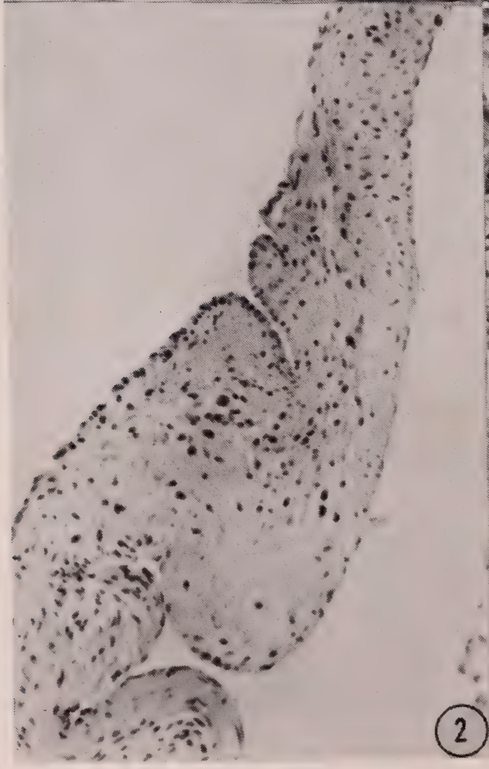
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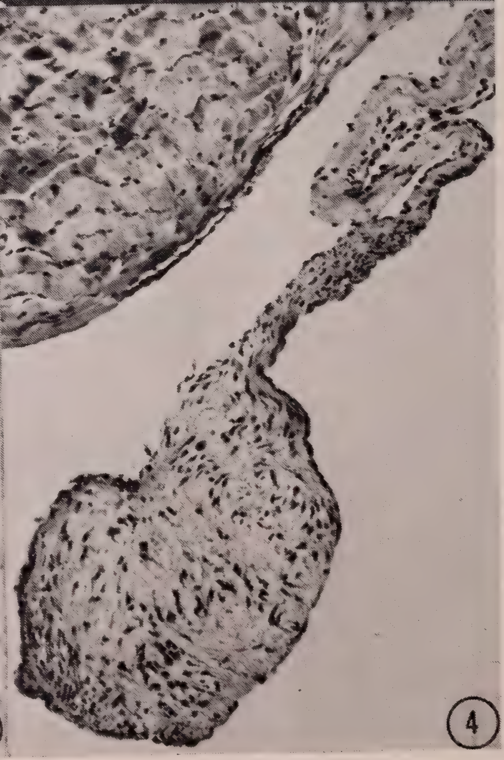
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other unnatural procedures, if the results are to be extrapolated to human pathology.

Many experimenters have injected different organisms and have found them on and in the valve. It is significant that in these experiments massive doses of organisms were utilized, usually in the form of multiple injections, to yield massive and prolonged bacteremias. Local antigen-antibody allergic and hyperergic reactions have been implicated by many investigators using different antigenic substances. Jones and Carter[34] have reviewed much of this experience and have themselves produced lesions with nonantigenic substances, such as vitreous humor, gastric mucin, and neutral polysaccharide.

In all of the experimental methods thus far employed, stressful procedures have been used. In some, means were employed which were neither bacterial nor allergic and were otherwise quite nonspecific such as stress by Selye[35]; a scorbutic state by Rinehart and Mettier[36]; auriculoventricular shunts by Lillehei, Bobb, and Visscher,[37] David, Brunson, and Fehr,[33] and Gowdy, *et al.*[38]; high altitude by Highman and Altland[39]; and cardiovascular stress by Parker, *et al.*[40]

For some years we have been engaged in a study of experimental lesions in the valves and valvular vegetations in rats, produced by different forms of nonspecific stress. The stresses used have included tumbling, cold, cold and high altitude, parabiosis with castration in one partner, auriculoventricular shunts, and ligation of the aorta and the vena cava. We have expressly avoided the use of experimental conditions which may implicate an infectious and allergic or hypersensitive mechanism. It is our impression that such stress mechanisms operate through the changes in the endocrine system, and that an aberration in endocrine homeostasis plays a part in all endocarditis, including the lesions produced via sensitivity and infection.

Figures 1 to 8 demonstrate lesions of the valve produced by some of the experimental methods used. The early lesion is nonbacterial. Edema of the valve and chordae is the earliest alteration found. Endothelial prominence is common. An increased cellularity with Anitschkow cells, monocytes, and fibroblastic proliferation and hypertrophy occurs in most of the more marked lesions. Some show a tendency to platelet thrombi with formation of vegetations. Others show collagen changes with and without fibrinoid within and on the surface of the valve. Only a rare Aschoff-like body has been seen in the experimental rats. Clusters of cells were found frequently in some experimental animals, but no classic Aschoff nodules with central fibrinoid necrosis were seen. It is our impression that many such lesions have been called true Aschoff bodies erroneously.[30] A fibrous thickening of the valve is common with prolonged periods of stress. No classic stenosis has yet been obtained. Spontaneous contamination of a nonbacterial vegetation with resulting bacterial endocarditis has been seen occasionally, and has also been obtained by a single injection of bacteria

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FIGS. 1–4. (*Fig. 1*) Heart from sixteen-week 447-Gm. normal control male rat kept under optimal conditions of minimal stress for twelve weeks. Mitral valve is opaque but thin. (*Fig. 2*) The mitral valve of a 235-Gm. rat subjected to cold conditioning for ten times, then bilateral adrenalectomy (maintained on saline), and again subjected to cold room stress four times. The valve shows swelling, collagen distortion, and increased cellularity with a tendency to focal clustering of cells. Some of the infiltrating cells are large and the endothelial layer shows evident swelling (hematoxylin-eosin staining) (× 90). (*Fig. 3*) The tricuspid valve of a female 160-Gm. rat. In this instance the initial period of conditioning to cold (14 times, four hours a day, five times a week) was followed by adrenalectomy with saline and then by exposure to cold for a total of nine times. The valve shows a localized linear zone of edema and fibrous thickening. Increased cellularity toward the edge of valve and chordae was found on microscopic examination. (*Fig. 4*) Mitral valve of a rat exposed to high altitude (25,000 feet) and cold (4 C.) for four hours a day five times a week for a total of 45 exposures. The distal portion of the valve shows marked edematous swelling, which was strongly stained by alcian blue. The increased cellularity shows a focal arrangement and a tendency to palisading and surface localization.

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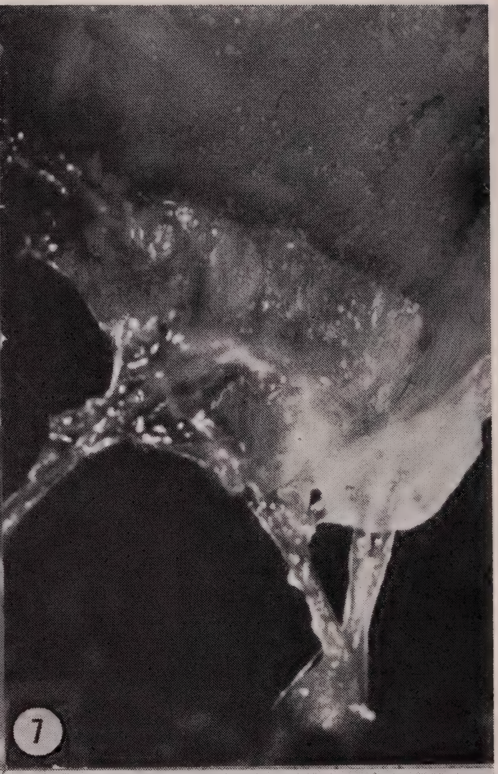

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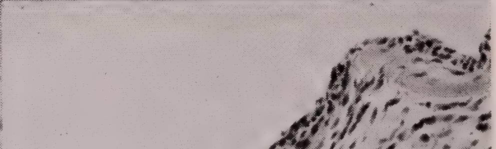

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to animals with early lesions.

We have produced such lesions in groups of rats at will, but invariably not all of the animals subjected to the identical stress showed equivalent lesions. This has an important parallel in human pathology for, as noted, only some patients with type A streptococcus infection develop rheumatic fever, and not all the patients with rheumatic heart disease go on to develop rheumatic endocarditis.

One objective of our study is to determine the basis for the difference between the rats which do not develop the valve lesions and those that do. In this approach the group of animals who failed to show the lesions, a nondramatic and therefore neglected group, are just as important for the understanding of the process at issue. In addition to the etiologic mechanism, nonspecific factors play a part and account for this variation. It is this contribution of the nonspecific factors that requires elucidation and is applicable not only to rheumatic endocarditis but also to all valvular vegetations, to arthritis, and possibly to arteriosclerosis itself—a field of study only now being approached and yet to be explored adequately. In determining the basis for the lack of response in some animals, there is the indication that a variation of endocrine homeostatic control of the connective tissue of the valve is at issue.

Comment

Clinicians in the past have always placed emphasis on constitutional factors. The fair-skinned redhead is presumed to be susceptible to rheumatism. The nonspecific factors such as race, sex, pregnancy, age, geography, season, climate, and malnutrition may well have been overemphasized; yet some wisdom may prevail in these empiric observations.

The present accepted classification of endocarditis and the concept of specific etiology should be viewed in its proper historic perspective. It was Kreysig[41] who first emphasized the role of the inner lining in heart disease and its "inflammatory response with 'polyps,' suppuration, thickening, and rheumatism." Bouillaud[27] coined the term endocardium and conceived of its involvement by rheumatism as in a joint. Laennec,[42] Rokitansky,[43] Luschka,[44] and Virchow[45] all stressed the general common nonspecific origin of vegetations. Friedreich[46] really gave us the modern classification of endocarditis, dividing the lesions into chronic and acute and subdividing the latter into rheumatic, septic, and primary forms. Winge[47] and Heiberg[48] first described organisms in vegetations but it was Weichselbaum[49,50] and Wyssokowitsch,[51] utilizing cultural methods, who established the role of bacteria in endocarditis. Schottmüller,[52] Libman,[53,54] and others established the entity of subacute bacterial endocarditis. Virchow,[45] Eberth[55,56] and Klebs[57] persisted in orienting the bacterial forms to the over-all general picture and maintaining that bacterial endocarditis represented a specialized form of "ordinary" endocarditis with secondary infection supervening. It would seem that there is little new in the present concept when viewed in the light of historic perspective; it merely orients our present knowledge to the incisive analytic

Figs. 5–8. (*Fig. 5*) Tricuspid valve of a 200-Gm. rat conditioned to cold, at 4 C. four hours a day for 14 times, at the rate of five times a week. The rat was then submitted to bilateral adrenalectomy (maintained on 1 per cent saline) and again subjected immediately to similar conditions of identical cold stress for a total of 14 times. The valve shows edematous changes and platelet vegetations (arrow), the histology of which is seen in Figure 6. (*Fig. 6*) The microscopic appearance of the valve illustrated in Figure 5 showing edematous swelling and a fresh platelet vegetation about chorda at tip of valve (hematoxylin-eosin staining) (× 150). (*Fig. 7*) Tricuspid valve of a 175-Gm. rat subjected to the combined stress of oophorectomy and parabiosis, the parabiotic partner having 50 mg. of estradiol benzoate in a four-week period. The valve shows marked edema, thickening, and, in the fresh gross, some surface pinkish granularity, the nature of which is revealed in the microphotograph seen in Figure 8. (*Fig. 8*) Microscopic section of valve shown in Figure 7, showing thickening, edema, and marked cellularity, with an area of fibrinoid within valve, and here shown extending to the surface in the photograph (arrow) (hematoxylin-eosin staining) (× 150).

wisdom of older observers.

Rheumatic fever is observed in children over the age of four years and not in younger ones, and this would indicate "a pattern of clinical reaction of streptococcus A infection which is dependent on types of altered tissues response" (Rantz).[58] There is agreement that Aschoff bodies appear more frequently in the young. The recent report of the Rheumatic Fever Commission of the Royal College of Physicians states, "Undoubtedly there are factors other than the streptococcal infection involved in the genesis of rheumatic fever, but their nature is still unknown."[59]

In rheumatic fever it is the combination of streptococcus A infection and constitutional makeup which yields the acquired altered state of reaction of the connective tissue and of the valves particularly. Once established, the altered state of reactivity yields a similar response of the tissue to all stressful stimuli, and this includes noninfectious nonspecific stimuli independent of group A streptococcus infection. Thus can be explained the finding of fresh active Aschoff bodies in the auricular appendages in the absence of any recent specific streptococcus infection. In this way too the clinically known contribution of such nonspecific factors as cold and cold and wet, high altitude, seasons, climate, auriculoventricular shunts, and possibly the mitral stenosis in Lutembacker's syndrome can be explained.

All the nonspecific stresses used are known to affect the endocrine system, particularly the pituitary-adrenal axis. A hormonal effect on connective tissue is fully established for the thyroid, the ovary, the testicle, the pituitary, and the adrenals. Lesions of the valve have been produced by pitressin (Nedzel),[60] adrenalin,[60] estrogen (Angrist and Marquiss),[5] and in unpublished work with DOCA. We do not understand the mechanism of hormonal action or the reason for the preferential selected sites of their action. Valvular lesions have been associated with serotonin-secreting carcinoid tumors (Spain).[61]

Kobernick and More[62] have studied the effects of protein sensitization in animals subjected simultaneously to cold stress with and without ACTH and with cortisone administration in an effort to evaluate the contribution of the stress mechanism. Stress did not enhance the changes of protein sensitization and ACTH and cortisone lessened the incidence and intensity of the granulomatous lesions in the valve ring following protein sensitization. The authors do not refer specifically to valvular lesions and vegetations. Cold stress did not enhance the stress of protein sensitization, and no correlation was found between the adrenal weights and sensitization. Kobernick and More have interpreted their results to indicate that it is the state of hypersensitivity rather than nonspecific stress which is significant. ACTH and cortisone are known to affect allergic reaction and this might be expected to influence the stress response associated with it. The rabbit is a species uniquely susceptible to sensitization and the factor of species variation may be significant. Stresses such as cold and altitude may not be superimposable.[5]

Experimental work using hormones in varying permutations and combinations and partial and complete ablation of individual and several endocrine organs has yielded valvular lesions and vegetations. This work has failed thus far to establish the exact nature of the aberration of the hormonal control of connective tissue reaction which determines the valvular lesions and vegetations. Our work indicates that the disturbance is a complex one and that the final elucidation of the process will require considerable effort and the bold dynamic application of newer technics. Until a method is established to evaluate the mechanism of hormonal control of connective tissue, the basis of its selective action at preferential sites and the exact sequence of events at the molecular level, the reason for endocarditis as an entity, the understanding of the nonspecific factors in endocarditis, and the inconsistency of the response will remain an enigma.

Conclusion

The established clinical importance of the noninfectious nonspecific contribution in valvular disease seems affirmed by experimental studies. The nonspecific factors may exert their influence on the reacting connective tissue through an alteration of the endocrine system, particularly of the pituitary-adrenal axis. An altered response to stress plays a part in the initiation of valvular disease and is important in the continued evolution of the valvular distortions. The long intervals required in the absence of recurrence of the original etiologic stimulus, such as the specific streptococcus in rheumatic fever, for the evolution of valve distortions is thus explicable.

Present therapy and prevention is properly oriented to the control of group A streptococcus infection for the rheumatic valve and the reduction of bacterial endocarditis by the prevention of bacteremic seeding of the initial nonbacterial vegetation. The experimental findings indicate that all forms of nonspecific stress and infection should be avoided. Ultimately re-establishment of the normal endocrine balance to control reaction of the connective tissue of the valve may prove to be a more fundamental approach and an important objective in therapy for avoiding progressive valvular distortion.

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Who would succeed in the world should be wise in the use of his pronouns. Utter the You twenty times, where you once utter the I.—JOHN HAY

A New Form of Scalp Ringworm in Western New York

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For many years almost all tinea capitis seen in Western New York has been caused by two organisms, Microsporon audouini and Microsporon canis. The characteristic greenish fluorescence under Wood light of hair infected by these organisms largely eliminated the need for a specialized knowledge of mycology in establishing a diagnosis. In the past two years in the Buffalo area, and in a nearby section of the Ontario peninsula, cases of nonfluorescent scalp ringworm have been observed which were caused by Trichophyton tonsurans, a fungus not previously reported in this locality. Because Trichophyton tonsurans tinea capitis is often difficult to diagnose, and because there is a real danger that the disease will become widespread, 26 cases which we have encountered since 1957 are presented here together with a general outline of the clinical picture, certain mycologic considerations, and a brief discussion of management. We believe it is important that general practitioners, school physicians, pediatricians, dermatologists, and all physicians who deal with children, be on the watch for this disease. Experience elsewhere has indicated that early diagnosis and treatment of the first few cases offers the only means by which this form of ringworm can be prevented from becoming a permanent fixture.

The usual clinical situations are represented by the following case histories.

Case Reports

Cases 1 to 4.—Four Negro siblings, the males seven, four, and two years old, and the female five years old, were first seen on April 2, 1957, with scalp eruptions of four weeks duration. Suspecting that her children had "the tetter," the mother had clipped their hair very short prior to the first examination. The boys showed only a faint, diffuse scaling of the skin of the scalp with no demonstrable abnormality in the hairs, which were clipped off almost flush with the follicular orifices. The girl showed the same type of scaling, but only in a poorly circumscribed area over the occiput. There was no fluorescence under Wood light. All of these cases might easily have been dismissed as mild examples of seborrheic dermatitis, but a potassium hydroxide examination of the hairs taken from the girl showed an endothrix Trichophyton infection, and cultures from all of the siblings produced Trichophyton tonsurans. No contact could be established for these children. None had been out of Western New York.

Case 5.—A twenty-five-year-old white female from St. Catherines, Ontario, was first seen on January 19, 1958. An area of hair loss had developed over the left temple three months previously. Topical fungicides had failed to check its spread. A circumscribed area of alopecia, 5 cm. in diameter, was present over the left temple. The hairs in the area were broken off flush with the scalp so that they appeared as black dots at the follicular orifices. The skin in the area was scaly. On the shoulders were several discrete, erythematous, papulosquamous lesions. There was no fluorescence under Wood light. A potassium hydroxide examination of hairs showed them to be infected with a small spored endothrix. Cultures of hair and skin produced Trichophyton tonsurans of the cerebriforme variety. No contacts could be discovered. This woman had never been outside Ontario or contiguous parts of the United States.

The remaining 21 cases were similar to these except for that of a fifteen-year-old girl who showed a scarring alopecia in the involved areas. The youngest patient was two years old and the

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oldest twenty-five years old. Two were adults, the rest were children ten years old and younger. All of the 19 cases we were able to follow were cured by x-ray epilation. Only 2 of the 26 cases had ever been out of the Western New York area.

Clinical Picture and Course

The signs of tinea capitis caused by Microsporon audouini and Microsporon canis are well known. Early inflammatory papulation is followed by peripheral extension to form ring-shaped lesions with central clearing and raised, erythematous borders. When the hairs become involved, the inflammation subsides, the lesions stop their peripheral spread, and the hairs within the area break off a few millimeters above the scalp and have a "frosted" appearance. The skin remains somewhat scaly and in a few cases inflammatory kerion appears.

The signs of Trichophyton tonsurans tinea capitis are not so easily recognized. The disease may resemble the Microsporon form, or may mimic other diseases of the scalp.

Pipkin[1] described the following seven clinical forms:

1. Mildly inflammatory with seborrheic-like scaling, associated with thinning of the hair which is often linear. Broken-off hairs may be few in number and often present as black dots when the fracture is even with or below the follicle opening. (Twenty-five of the 26 cases reported here belong in this group.)
2. Obviously inflammatory with an erythematous areola around follicles containing infected hair.
3. Multiple areas of folliculitis and small furuncles with or without protruding stubs of infected hair.
4. Kerion.
5. Chronic granulomatous type, with nodular lesions, sometimes developing draining sinuses.
6. Forms resembling impetigo.
7. Forms resembling chronic discoid lupus erythematosus, often resulting in atrophy and permanent hair loss. (One such case occurred in our series.)

Tinea corporis and onychomycosis may also be present. The disease is chronic and only occasionally terminates spontaneously. Unlike Microsporon ringworm, it may persist into adult life, and may even begin after puberty.

Mycology

The organism can be seen in hairs and scrapings of skin and nail examined under the microscope after immersion in potassium hydroxide. In the hair it produces an endothrix infection, which is to say that the spores are produced within the substance of the hair cylinder and not outside as is the case with ordinary Microsporon ringworm. Culture on Sabouraud's medium is necessary for exact identification. Colonies are white to yellow, powdery, and convoluted.

Epidemiology

Cases of tinea capitis caused by Trichophyton tonsurans have occurred sporadically in the United States for many years. Howell, Wilson, and Caro,[2] in 1952, were the first to recognize that the incidence was increasing. Their cases were from Texas and California, and they suspected that the organism was imported from Mexico where it is the most common cause of tinea capitis. The same year, Pipkin[1] published an extensive geographic survey of the incidence of the disease in the United States, and reported further endemic areas in Oklahoma, Utah, and Georgia. He felt that in parts of Texas and California this type of tinea capitis had reached almost epidemic levels. An increase was noted throughout most of the South and Southwest, and even in Missouri, Iowa, Wisconsin, and Pennsylvania.

The first case in Western New York was discovered in 1953, by Fritz Reif, M.D., of Niagara Falls. However, his patient was a transient and had clearly been infected elsewhere. The first cases native to this area are reported here.

A part of the increase reported in the studies we have cited is attributed to greater awareness of the disease in recent years and to improved mycodiagnostic technics. We do not feel that these factors can account for our cases. Since the great Microsporon epidemic of tinea capitis in Western New York during the war years, 1941 to 1946, much attention has been devoted to the clinical and mycologic features of the disease. The routine use of Wood light alone would have shown any eariler shift from Microsporon to Trichophyton ringworm. It must be concluded that these cases represent infections new to the area.

Trichophyton tonsurans tinea capitis is endemic in Puerto Rico. In recent years there has been an influx of Puerto Rican farm workers into Western New York, but our initial suspicions that the source of infection lay in this group have not been borne out. No patient discovered thus far has been from Puerto Rico. In view of Pipkin's[1] findings, it is more likely that migrant workers and their families who arrive in Buffalo daily from the southernmost states have brought the organism with them.

The disease is transmitted from individual to individual directly or through the medium of theatre seats, headgear, beauty parlors, barber shops, and so forth. Animal vectors play no significant role.

Treatment

In those few cases which show a marked inflammatory response such as kerion, conservative management may suffice, since such inflammation indicates a basic change in the host-parasite relationship which will result in a spontaneous cure. But in the ordinary noninflammatory case, a spontaneous cure is not to be expected, and in adults will probably never occur. It is usually futile to rely on the topical application of fungicides since the location of the fungus within the substance of the hair cylinder effectively protects it from the medications applied. It must also be remembered that during any protracted conservative regimen, there is a constant danger that siblings and schoolmates will be infected, and that atrophy with some degree of permanent alopecia may occur. Until recently it was our opinion, and the opinion of others,[1,2] that epilation of the scalp by roentgen rays, with careful manual epilation of the hairs remaining in the follicles, was the preferred treatment for the noninflammatory type of tinea capitis caused by Trichophyton tonsurans. However, the excellent results obtained in the treatment of Trichophyton tonsurans tinea capitis with the new antibiotic, griseofulvin, would seem to indicate that this drug will replace x-ray epilation as the preferred treatment for all forms of the disease.

Conclusion

1. Trichophyton tonsurans tinea capitis is a contagious disease and does not respond satisfactorily to topical therapy.

2. It may occur in both children and adults, and does not disappear at puberty. Because of its variable clinical picture and its ability to simulate other diseases of the scalp, it is difficult to diagnose and it may easily be overlooked.

3. Infected hairs do not fluoresce under Wood light, making its detection in schools a serious problem.

4. Mycologic laboratory procedures are necessary for certain identification of the organism.

5. The disease is increasing in the United States and has recently appeared in Western New York. Alertness on the part of the physician, particularly if he deals with children, will be necessary to check its spread.

Summary

Twenty-six cases of tinea capitis caused by Trichophyton tonsurans are reported from Western New York and the adjacent Ontario peninsula. This cause of ringworm of the scalp is new to this area. The clinical picture, mycology, epidemiology, and treatment of the disease are discussed.

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Medicolegal Implications of Operating Room Deaths

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"WE ARE unanimously of the opinion that the deceased, Hannah Greene, died from congestion of the lungs, and that no blame can be attached to Mr. Meggison, the surgeon, nor to his associate, Mr. Lloyd."

The preceding statement was made by the foreman of a jury, considering the case of a fifteen-year-old girl, scheduled for removal of a nail from an infected toe, who, after several deep breaths of chloroform, became blue and rigid and ceased to breathe.[1]

It is somewhat prophetic that this first published case of death under a general anesthesia, over one hundred and eleven years ago, concerned an apparently good-risk patient undergoing surgery of a rather minor scope.

We are going to consider the general topic of operating room deaths and, by inference, we will consider their medicolegal implications. We are confronted on all sides—in newspaper accounts, in feature articles of magazines, in our professional meetings—with an increasing awareness of the problem of malpractice without implying that malpractice as such is indeed on the increase. And I should like to point out at once that there is no different set of standards to consider in viewing a death during surgery from those which would be used in evaluating the responsibility of the physician during other forms of therapy. Each physician is expected to possess and employ, in the treatment of a patient, that reasonable degree of learning, skill, and experience which ordinarily is possessed by others of his profession; to exercise reasonable and ordinary care and diligence in the exertion of his skill and application of his knowledge; to exert his best judgment as to the treatment of the case entrusted to him; and to bestow such reasonable and ordinary care, skill, and diligence as physicians and surgeons in the same neighborhood, in the same general line of practice, ordinarily have and exercise in similar cases.[2] Failure to comply with any or all of these standards may precipitate malpractice action.[2]

A part of the material which constitutes the background for this report is from the published medical literature discussing operating room deaths; one part is a personal survey of the results of twelve years of surgery in a community hospital including nearly 56,000 operating room procedures with an operating room mortality of 21 patients or one death in every 2,650 cases.[3] Still other material represents information obtained from discussion with men who have been engaged actively in the defense of the medical profession in the courts of law in instances where malpractice or negligence has been claimed. In certain instances where an example is used to illustrate a point, there may be some appearance of exaggeration. Let me assure you that such is not the case. Any case, however excessive it may seem, has not been altered merely to prove a point. It is presented so that we may evaluate more adequately our treatment and examine our shortcomings, with our goal: improvement in the care rendered to our patients.

Lahey stated in 1950[4] that the expectancy of death during operation and anesthesia

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was roughly one fatality in 1,000 cases. Milton Helpern, M.D., Chief Medical Examiner of the City of New York, estimates that there is about one operating room fatality a day in his jurisdiction. He hastens to state that seldom does a postmortem examination indicate adequately the cause of death in these instances.[5]

Therefore, we can realize that operating room fatalities involve a significant number of persons annually. And it is more important for us to evaluate these cases, not by criticizing but rather by protecting our patients through improved care and by protecting ourselves from litigation.

There are many factors of causal relationship involved in an operating room death: the general condition of the patient, the magnitude of the surgery, the skill of the operator, the skill of the anesthetist, the technics of therapy employed, the preoperative preparation of the patient, the accuracy of the diagnosis, the available facilities, and the degree of emergency which the case presents.

We shall consider these factors in the light of our definition of malpractice, and in so doing the medicolegal implications will become apparent.

Comment

Quite naturally the general condition of the patient plays a most important role in determining the outcome of the operative procedure. Thus one would not be surprised to find that the very elderly and the very poor-risk patient contributed the greater percentage of operating room deaths. But, in reviewing several series of operating room fatalities, one is surprised to find that over one third of these deaths occurred in the good to excellent risks as evaluated by the anesthetist and the operating surgeon.[6,7] And, as with Hannah Greene of over one hundred years ago, the procedures were not emergency ones but rather elective, and many were of a relatively minor type. In reviewing these reports it was felt that death resulted because of a violation of some fundamental concept of good care or technic. Thus some of these might be considered preventable. One can infer that a poor-risk patient may often survive because of the realization that he was considered unsafe for surgery.[8] There may be some minor surgery, but there is no minor anesthesia.

Kok[9] has outlined a classification of deaths associated with anesthesia and surgery. In the first group we can assign those cases in which, despite adequate information or despite the lack of it, no accurate cause of death could be assigned. Then there are those deaths we might consider as fortuitous, such as a well-worked-up patient who expires of a coronary occlusion during an operative procedure where there had been no prior evidence of coronary disease in his preoperative evaluation. Also there are those cases of inevitable death which, due to the extreme condition of the patient and despite a high quality of professional care and competence, cannot be prevented.

These types of death are not germane to our discussion.

The remainder of Kok's classifications of operating room fatalities are very pertinent, for they reflect to some degree human error and a violation of some fundamental concept of professional skill, and they could be construed in such a way as to represent a potential legal hazard to the physician, to say nothing of the outcome to the patient.

We shall consider first those deaths which are attributed wholly to the anesthetic agents, or to the technic of administration of the agent, or which in other ways come entirely within an anesthetic procedure. Second, there are those cases in which there was some element of doubt whether the agent or the technic was entirely responsible for the fatal outcome. Third, there are those deaths which are due entirely to surgical judgement or technic, and fourth there are those cases in which the demise was brought about by both the surgery and the anesthesia.

In relating some of the following brief case reports, I do not wish to imply that anesthesia is the prime culprit in operating room deaths. But we must constantly be reminded that there are no safe anesthetic agents, only careful anesthetists.

Case Reports

CASE 1.—A thirty-two-year-old white male, in the prime of health, was admitted to the hospital following a traumatic amputation of a finger sustained while working. He was taken, shortly after admission, to the operating room where, under general anesthesia, a debridement and revision of the traumatic amputation was to be done. During the course of induction he vomited, became cyanotic, and subsequently died of asphyxia.

CASE 2.—To cite another instance, let us consider the use of an intern as the administrator of a general anesthesia. In some areas this is done on minor and even major cases, in many instances without adequate supervision or instruction. (What is the policy in your delivery room, where two lives may be at stake instead of one?) One particular example resulted in the patient vomiting during the procedure, aspirating, and then becoming cyanotic and expiring. During the pretrial examination the intern stated: "I didn't know how to give the anesthesia, and didn't want to, but they made me."

CASE 3.—In a similar airway problem there was a case in which the procedure, minor and elective, was done on a healthy young patient without a mishap. At the conclusion of the procedure the surgeon left the room, the nurse cleaned up her table, and the anesthetist went in search of a stretcher to transport the patient. The anesthetist returned in five minutes to find the patient dead, apparently from having lost the airway.

I do not mean to belabor the point of loss of airway through one reason or another as a cause of death. But you would all be as impressed as I have been, in reviewing material, to note these are not isolated instances. Practically every series of operating room deaths indicates that some patients have been lost due to vomitus, aspiration and asphyxia, or some other reason for loss of airway. And I might add that the files of attorneys are full of such cases. It is somewhat incredible to see the repeated violation of fundamental concepts contributing needlessly to our fatalities. Here is an area in which not only are we potentially susceptible to a law suit, but also, more important, this is an area where we are morally bound to improve.

Negligence contributed to the following fatal outcome.

CASE 4.—The surgeon, after scrubbing, entered the operating room to find the patient in extremis, and the patient expired after a few seconds. The patient had been scheduled for an elective hernia repair and was brought to the operating room shortly before the time scheduled. The anesthetist, having a busy schedule, commenced to give a spinal anesthesia, and after having completed the spinal turned the patient on his back and left the room to conclude a case in the next room. Within eight minutes the patient had expired while unattended.

But anesthesia is not solely responsible for untimely deaths. Consider the next situation.

CASE 5.—A moderately obese young male with an acute appendicitis but otherwise healthy was taken to surgery at 2:00 A.M. as an emergency case. The procedure was difficult owing to his obesity, increased by a retrocecal gangrenous appendix, and greatly impeded by the inadequate assistance available in the early morning hours. The surgeon demanded of the anesthetist more and more relaxation to overcome the shortage of adequate retractors and exposure. The anesthetist responded with more and more muscle relaxants until respiratory arrest transpired during the well over two-hour procedure. Having arrived at a level of respiratory paralysis, artificial respiration and oxygen were not maintained, and the patient expired.

CASE 6.—Also, consider the judgment problem of a patient deeply jaundiced, with a long alcoholic history, with liver biopsy displaying advanced cirrhosis, who was operated on for a possible common duct stone. During the course of surgery uncontrolled hemorrhage resulted in the demise of the patient.

All too frequently we can recall a small child scheduled for a tonsillectomy who expires during the procedure. Consider some of the ingredients for this tragedy.

Case 7.—The child may be badly frightened when brought to the operating room. In some instances the preoperative medication is given a considerable time before surgery, and its effect may have been decreased or may have been absent. The airway may have been already partially compromised by enlarged tonsil and adenoid tissue. The patient is induced in a semidarkened room where cyanosis may not be readily detected. Cardiac arrest occurs. Where was the error? Perhaps the cause of death is not clear. But the patient was in excellent health and the procedures were safe. Do these things just happen? Or is this a case of res ipsa loquitur?

With the advent of more extensive procedures on older age groups, open-heart surgery and increasing thoracic procedures are more frequent. Without entering into a discussion of the exact etiology of cardiac arrest, we may discuss certain criteria which seek to identify some patients as being more susceptible to this condition. These extremely debilitated people with severe heart disease—represented by congestive failure, a high grade of valvular disease or coronary sclerosis, any degree of atrioventricular block, a requirement for large doses of quinidine or procaine amode, a high serum potassium, or with a previous history of cardiac arrest—are the prime candidates for an arrest.

Such patients should have continuous monitoring by electrocardiogram while under anesthesia, and a pacemaker should be available.

Recognition of the clinical entity may be presumed when there is an absence of blood pressure or an absence of the pulse at a point where the pulse was previously obtained, or if there is cyanosis with dilated pupils or respiratory arrest, confirmed by absent aortic or carotid pulsations, precordial heart movements, or electrocardiogram complexes.[10]

If the patient is properly monitored, there are always indications preceding the actual arrest which may be detected in advance if the operating team is aware of them. Thus arrest may be averted. The following signs are indicative of hypoxia: bradycardia, downward displacement of the pacemaker from the sacroanterior node to the auriculoventricular node, and changes in the S-T segment. Once such a situation is noted, immediate steps to avoid the arrest should be taken. These consist of temporary cessation of surgery, filling of the endotracheal airway with a high concentration of oxygen, and manual respirations. Further vagal stimulation should be prevented by the immediate intravenous injection of 1 to 2 mg. of atropine, and the patient should be inclined 10 degrees the Trendelenburg position.

There are also those cases of extensive surgery with prolonged hypotension and myocardial ischemia without adequate blood replacement which may precipitate cardiac arrest. Therefore adequate fluid replacement during the procedure is a must. The treatment of operating room arrest needs no repeating here, but vigilance and promptness are the key to its success.

There are other glaring errors which contribute to the death toll. Some include the wrong anesthetic gas attached to the machine, the wrong medication given intravenously, an occluded adapter to an endotracheal tube, and the like.

In considering again the published reports on the subject, we all accept the fact that there are a certain number of deaths which are inevitable. Still, there is room for improvement in these figures. Errors in judgment or technic concerning either the anesthesia or the surgery, or a combination of the two, contribute close to 50 per cent of the mortality in the operating room. It is here that death occurs, not only because of the gravity of the disease or the magnitude of the procedure, but also because someone in a responsible position ignored some fundamental principle of good therapy.

Comment

How are we to improve our operating room statistics? At the outset, I mentioned a twelve-year period in which the operating room fatalities in nearly 56,000 cases numbered 21. I should like to break that figure down further. During the first six years of that period, from 1947 through and including 1952, there were 27,401 cases with a mortality of 18 cases or one death in about every 1,500 cases. We felt that the figure was high and we felt that steps should be taken to correct and improve this condition.

All the deaths coming in that period were reviewed, and certain measures were instituted.

Preoperative work-up was stressed. Those patients over fifty years were subject to electrocardiograms regardless of previous history. A complete medical evaluation was required of all elective cases. Blood replacement was improved, particularly with regard to hypovolemia. All diabetic patients had had adequate amounts of insulin at the time of surgery. The role of spinal anesthesia was reviewed and, as a result, its use was restricted. Preoperative medication, rather than being given on a time schedule, was not ordered for one patient until the operation on the preceding patient was being concluded satisfactorily, so that the hypodermic medication could be given at the proper time in relation to the induction of anesthesia. Various changes in personnel were made.

The result was that in the past six years, in 28,388 cases, there have been just three operating room fatalities, or one fatality in every 9,460 cases. This is quite a contrast to one fatality in every 1,500 cases or to Lahey's[4] estimate of one fatality in every 1,000 cases.

Let us ask ourselves: Are our patients being prepared adequately preoperatively and then built up? Is the stomach empty prior to administration of anesthesia? Do the surgeon and the anesthetist bring to the patient a high degree of professional skill? Is all the necessary equipment on hand in the operating room? Is the equipment modern and up-to-date, providing all safeguards to the patient?

One of the criteria for judgment of a physician is that he should render the standard of care which is ordinarily found in his community. The hiatus between the standard rendered in a university-type hospital and that rendered in a suburban hospital is rapidly diminishing. With increased training programs turning out more specialized doctors and with a more widely informed public in medical matters than ever before we must render to the public a high quality of medical care. We must do this to safeguard ourselves legally. But, more important, we have a strong moral mandate to protect our patient. If we do so, we shall see a further decline in the number of operating room deaths.

Acknowledgment.—The author wishes to express appreciation to William F. Martin, Esq., and to Milton Helpern, M.D., for their interest in this matter. This does not imply endorsement by them of the views expressed here.

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Discussion

Alfred Angrist, M.D., *Bronx, New York.*—Dr. Mannix has presented a most timely topic for our consideration, and a most difficult one. As one who has a distinct interest in autopsy, I can state unequivocally that these cases present the most difficult problems for analysis for the pathologist.

Dr. Mannix underlines the necessity of obtaining a detailed past history and the exact story of the detailed events transpiring in the operating room. This is essential if the autopsy is to contribute properly its true share of information in the analysis of these cases. Particularly significant is the record of vital physiologic functions during the period that just precedes and follows the accident in the operating room and during the dramatic episode that always ensues.

The contribution of Dr. Mannix is significant in noting the hazards of lack of minute attention to every detail in the preparation of the patient: poor judgment in choice of anesthesia and its skillful administration; the benefits to be derived from proper preventive preparation of the patient, as well as for any and every emergency; and the need of physiologic monitoring and recording.

For the present we need all of the facts thus obtained in interpreting autopsy findings to arrive at the final best opinion for the mechanism of death. The more the facts, the better the opinion; so often the cause of death remains only an opinion and not an established fact. Our errors must be many, for this ability to establish the facts and analyze them properly varies, and at best it is none too good. I agree with Dr. Helpern that an autopsy alone seldom shows an adequate reason for the mechanism of death in these instances. These deaths should not be certified as "death due to anesthesia," but rather "death under anesthesia, cause unknown." So often our very learned certified pronouncement with hyperbolic terminology in these difficult cases is no more than the learned opinionated diagnostic statement that "the patient is dead because he died."

In a sense, the case presentations listed by Dr. Mannix do not come to grips with the difficult problems. Asphyxia by obstruction of airway, vomitus, and hemorrhage are gross and obvious causes of death. It is the group of cases where surgery is elective, prior pathology is minimal, and death is truly physiologic that are the most troublesome for the pathologist. These cases often defy analysis, and the cause of death in these cases often remains enigmatic.

In a sense, we have not progressed very far since the foreman of the jury listed the cause of death of Hannah Green more than a century ago. The pathologist just cannot prove with certainty the mechanism of death in a "hypersensitivity reaction," or following a few whiffs of chloroform, or immediately on the initiation of an intravenous barbiturate anesthesia. The sad fact is that not infrequently these most problematic instances involve patients who are ordinarily good risks and who are not at death's door to begin with. It is just this group in which the autopsy can contribute so little. We must admit that our present knowledge is inadequate for a truly scientific analysis of such cases. This constitutes one third of all deaths in the operating room, according to Dr. Mannix.

Operating room deaths are often examples of physiologic deaths with little or no morbid anatomic changes. Lethal physiologic failure may be completely dissociated from any morphologic changes. It is then imperative to get the detailed functional evidence of the exact terminating clinical picture, if the pathologist is to interpret accurately the findings at autopsy and elucidate properly the mechanism of death. As an example, when a body reaches the autopsy table with the obstructed tube in the airway, which caused the death, cleared by subsequent manipulation, a pathologist cannot invoke this mechanism of obstructed airway at the autopsy table. The resultant lethal asphyxia leaves no specific pathognomonic changes for the pathologist.

On this score, may we note that "cardiac failure" is meaningless unless clarified by the establishment of the cause of the heart failure. We should be mindful of the fact that the failing heart usually never shows demonstrable gross or microscopic evidence of failure as such in the heart proper. Cardiac failure is judged by secondary manifestations shown in distant organ sites. Further, the failing heart more commonly continues to beat and can beat for a long time in failure; moreover, with treatment it can be restored to adequate function without further failure. All this makes the unqualified phrase, "cardiac failure," all but meaningless as a cause of death.

Significant advances have been made in our understanding of the physiologic mechanisms of death by ventricular fibrillation and asystole. The role of anoxia, cold, electrolyte and acid-base balance, and of particularly high potassium levels and the like can now be applied to the understanding of the initiating mechanism of such fatal arrhythmias and their correction. Contrary to the usual conception, the heart is a rugged organ with a strong inherent potential for maintaining regular systole, as indicated by modern heart surgery and seen in the excised heart of the turtle. The heart in ventricular fibrillation can be defibrillated, and an artificial pacemaker can restore life to the patient. A heart in asystole can be restored to full function by modern routine therapy, now fully described and being applied extensively. This has introduced difficulties as to when as well as how death occurred, and our definition of death requires re-evaluation.

The problem has been further complicated for the pathologist of late, since cardiac massage has been used for cardiac arrest. The heart can show marked contusion and other evidence of trauma as a result of the massage. This makes most difficult the interpretation of significant myocardial insufficiency changes that may have preceded and initiated the cardiac arrest or ventricular fibrillation.

We concur with Dr. Mannix that we are not directing our efforts to the prevention of these lethal physiologic distortions. How many of us are careful about administration of multiple units of cold blood just received from the refrigerator? How often do we check the toxic potassium ion in banked blood? This can be lethal with multiple transfusions of blood that is not too fresh. How many of us remove this toxic ion before administration by dialysis? How often do we use carbon dioxide anesthesia unwittingly? Does the anesthetist keep oxygen levels in a range to avoid this contribution of hypoxia or of anoxia in promoting lethal cardiac irregularities? How often do we seek a history of drug sensitivity or test for it? How often do we monitor the quantitative levels of the anesthetic used or record the time and the levels of physiologic anesthesia?

Even now we fail to use all the means already available for investigating such deaths. It should be the duty of the anesthetist or the assistant to procure blood samples immediately without delay of life-saving measures when the patient "goes bad," for study of carbon dioxide and oxygen content and for potassium levels and levels of the anesthetic agent. Only thus can advances be made in this field.

Some day our investigative armamentarium may include the means for establishing the nature of such physiologic mechanisms of death at the postmortem table and permitting proof of their existence in the particular instance. Refined technics in the realm of histo- and cytochemistry may help us in the future. As yet, we must accept our limitations and offer a range of possibilities only. Dogmatism in these instances covers our ignorance and perpetuates it; existing limitations should make us modest indeed, and this awareness will promote more detailed studies to increase our understanding.

Richard Ament, M.D., *Buffalo, New York.*—Dr. Mannix has presented a most timely subject. Every effort must be made to educate physicians so that the type of errors he describes can be prevented. I cannot agree that, in general, one third of the operating room deaths occur in good-risk patients. In the medical center, while mortality does occur in occasional good-risk patients, most of our mortality occurs in the poor-risk patient undergoing extensive procedures. I have recently reported a ten-year study of operating room mortality at the Buffalo Children's Hospital to support this thesis. In this ten-year period, 26,000 obstetric deliveries were accomplished without delivery table mortality, and 23,000 adenotonsillectomies were done with only one death. This is quite different from the one fatality in 2,000 presented by Dr. Mannix.

The term "cardiac arrest" no longer describes a specific entity, but it is used as a catch-all for "sudden death, cause undetermined," and therefore should be abandoned. Without autopsy we cannot be certain that cases which appear to be physiologic deaths are not due to pathologic entities such as embolic phenomenon.

As there are no adequate data in the literature of immediate anesthetic-surgical deaths, certain first steps are being taken to shed light on this important problem. A special committee of the American Medical Association, together with the Committee on Anesthesia Study of the American Society of Anesthesiologists, have convened to consider the development of uniform methods of nomenclature, collection, and classification of these cases. As indicated by Dr. Mannix, much can be done to reduce the number of those deaths which are preventable.

In this regard one of the main areas of emphasis should be in the stressing of proper preoperative preparation of the patient, and in stressing better communication between the anesthesiologist and the surgeon.

Changes in Female Sexuality After Adrenalectomy

Patterns of sexual behavior in the human female apparently are much more profoundly influenced by adrenalectomy than by oophorectomy. This conclusion, which the authors find in agreement with other reports in the literature, appears justified on the basis of a study of 29 women with metastatic breast cancer who underwent both bilateral oophorectomy and adrenalectomy.

These women, who ranged in age from thirty-one to seventy-two years, were questioned about alterations in sexual desire, activity, and responsiveness. On the average, the interval since adrenal ablation was about twelve months. Seven of these patients had undergone oophorectomy one to five years before removal of their adrenal glands. All but one of this subgroup retained some sexual desire after oophorectomy. After adrenalectomy, 4 of these lost all desire and in the other 2 sexual interest declined.

Over-all results as summarized by the authors are as follows: Of the 17 patients reporting some sexual desire before adrenal ablation, 14 experienced a decrease, the majority losing desire completely. Of the 17 patients sexually active preoperatively, all reduced their frequency of intercourse, almost half stopping completely. Of the 12 who had been responsive in intercourse preoperatively, 11 experienced a decrease after surgery, almost all becoming completely unresponsive.

In each of these categories, the number losing sexual function entirely was statistically significant. Both sexual feelings and activities declined in all but 2 of the patients not already at zero levels among the 20 patients who obtained remission of metastatic disease after adrenalectomy, as well as all but 1 of the 9 patients who did not present objective evidence of benefit from the operation.—*Sheldon E. Waxenberg, Ph.D., Marvin G. Drellich, M.D., and Arthur M. Sutherland, M.D., Sloan-Kettering Institute for Cancer Research, New York City, Journal of Clinical Endocrinology and Metabolism, February, 1959*

Preoperative Preparation for Tonsillectomy with Hydroxyzine Hydrochloride in Pediatric Patients

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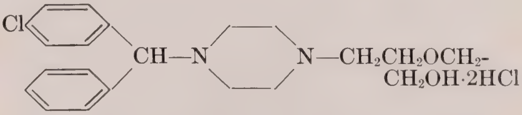
All presurgical patients except very young infants are understandably tense and anxious during initial preoperative office visits, on entering the hospital, and on being brought into the operating room. Although this apprehension is undesirable in all patients, it is particularly traumatic in children selected for tonsillectomy and adenoidectomy. Most adults, including parents and surgeons, accept this as a routine procedure and tend to overlook the fear-provoking nature of this experience for the child. Regardless of the young patient's trust in the surgeon or of his good behavioral adjustment, impending hospitalization and surgery generally induce a degree of anxiety, tension, sleeplessness, and noncooperation. The ideal preoperative preparation, therefore, would include the use of some drug which would not only remedy this situation but also would aid in anesthesia induction with a maximum of safety and a minimum of risk.

In the search for an agent which would aid in bringing a calm, cooperative child to the office and hospital, many standard compounds have been conventionally employed. The ideal product should produce a high degree of preoperative ataraxia in the pediatric patient undergoing tonsillectomy and adenoidectomy. There has been a search for a compound which would not only do this but also would not interfere with standard anesthetic induction procedures; after induction it must not depress the respiratory system, and it must not produce vasomotor changes. If possible, it should also permit a more steady recovery with a minimum of retching and crying.

Because the barbiturates and most of the tranquilizing substances have been found wanting, in preoperative use in the pediatric patient, the present writers undertook to test the effectiveness and safety of hydroxyzine hydrochloride in this field. Unlike meprobamate and compounds in the phenothiazine group, hydroxyzine hydrochloride (Atarax)* has been found to provide a most favorable therapeutic index along with a very low order of toxicity. The present paper will report on the methods and results of the study in which hydroxyzine hydrochloride in the form of hydroxyzine hydrochloride syrup was used as a premedication for children undergoing tonsil and adenoid operations.

Chemistry

Hydroxyzine hydrochloride is designated generically as hydroxyzine and chemically as 1-(*p*-chlorobenzhydryl) - 4 - [2 - (2 - hydroxyethoxy)ethyl] diethylenediamine hydrochloride. Its structural formula is designated as follows:



It is rapidly absorbed in the gastrointestinal tract and its effects are usually noted from fifteen minutes to one-half hour after oral administration.

General Pharmacology

As an established ataractic agent hydroxyzine hydrochloride appears to possess two chief attributes: versatility of neurologic, neuromuscular, and cardiovascular effects; and a low order of toxicity.[1] The drug suppresses some of the hypothalamic nuclei and extends its effects peripherally in the sympathetic portion of the autonomic nervous system where it depolarizes nervous and muscle fibers.[2] Except in extremely high doses, it has no apparent effect on the cerebral, thalamic, or spinal cord areas. There is also evidence that part of its activity is caused by a depressant action on the reticular formation. Hydroxyzine hydrochloride has a nonspecific, spasmolytic action against the effects of histamine, acetylcholine, serotonin, reserpine, and posterior pituitary extract.[3] It has a great and prolonged antihistaminic action as measured against lethal doses of histamine administered intravenously.[4] Finally, it inhibits the somatic effects of excitatory drugs such as epinephrine, dextramphetamine, mescaline, and lysergic acid.

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* Product of the J. B. Roerig and Company (Division of Chas. Pfizer & Co., Inc.), New York City.

Materials and Methods

Dosage.—Initially in a series of 50 patients the parent was advised to give the patient 1 teaspoonful of hydroxyzine hydrochloride syrup* (10 mg.) four times a day. On the morning of admission to the hospital 1 teaspoonful (10 mg.) was given orally without any water. The results with this routine were disappointing and we considered the experiment a failure. We then increased the dosage to from 20 to 30 mg. (2 to 3 teaspoonsful) and we immediately noted a change in our patients. The higher dosage was used in 215 patients.

Currently this dosage is adjusted to the size and activity of each patient. We still prescribe 1 to 2 teaspoonsful (from 10 to 20 mg.) four times a day for three days prior to surgery, and we suggest that it be continued during the first week at home postoperatively. On the morning of admission to surgery each child is given from 2 to 3 teaspoonsful (from 20 to 30 mg.) of hydroxyzine hydrochloride before leaving his home.

Criteria Used

Throughout this study the many patients of other surgeons not using hydroxyzine hydrochloride were observed closely by anesthesiologists, nurses, and the present writers for manifestations of anxiety and noncooperation prior to surgery. They were also observed in the nurseries where tonsillectomized patients were allowed to recover.

In the Rockville Medical Center Hospital, where over 1,800 tonsillectomies and adenoidectomies are performed annually, the nurses who are with these children postoperatively are well qualified as judges. We observed several specific points:

1. Apprehension on arrival.
2. Facilitation of induction of anesthesia.
3. Period of recovery.
4. Nausea and emesis during recovery.
5. Immediate postoperative bleeding.

Observations made on medicated and nonmedicated patients included the following:

1. Medicated patients were calm on arrival at hospital. This was in direct contrast to the majority of patients who cried and screamed when their parents left them.
2. Patients did not cry on entering the operating room; most others did.
3. Patients did not object to nose cone.
4. Patients did not resist anesthesia.
5. Hydroxyzine did not affect respiration.
6. Hydroxyzine did not affect coagulation.
7. Reaction time seemed slower and more gradual. Thus hydroxyzine hydrochloride reduced retching, thereby minimizing the possibility of immediate postoperative hemorrhage. It was noted that the large emesis which usually follows recovery occurred hours later during a period of calmness.

Results

Again attention is called to the fact that in the initial group of 50 patients one tea-

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* Hydroxyzine hydrochloride syrup contains 2 mg. of hydrochloride per cubic centimeter.

TABLE I.—Results of Preoperative Preparation for Tonsillectomy with Hydroxyzine Hydrochloride in 215 Pediatric Patients*

	Number of Patients		
Results	Effective	Not Effective	Questionable
Excellent	146	...	...
Good	30	...	...
Slight	8	...	12
Very poor	...	19	...
Total	184	19	12

* Criteria for evaluation as outlined in the report.

spoonful of hydroxyzine hydrochloride had been given on the morning of admission. The results in this group were generally poor with an occasional cooperative child which compared with the group using no drug at all.

In the next group using 2 or 3 teaspoonsful (from 20 to 30 mg.) of hydroxyzine hydrochloride, an immediate difference was noted. This group consisted of 215 patients. Tabulated results (Table I) indicated that 146 patients were considered excellent, 30 patients were good, and 8 patients were fair. In 19 patients the results were considered poor, and in 12 patients the results were questionable.

Another group of 22 patients were given placebos of simple syrup. In this group 15 patients were poor reactors, and 7 patients followed the usual varied patterns of nonmedicated children.

Therefore, it becomes apparent that over 85 per cent of the children in the observed group responded well to the proper dosage of hydroxyzine hydrochloride. This is in sharp contrast to a large controlled group wherein about 70 per cent of the patients were poor reactors.

Conclusion

Incorporated routinely into the preoperative regimen of pediatric patients about to undergo tonsillectomy and adenoidectomy, hydroxyzine hydrochloride has proved to be a most valuable ataractic drug. Young patients are relieved of the anxiety surrounding the operation, interfering side-effects are not encountered, the anesthesiologist and the surgeon are able to carry out their procedures with better cooperation from the patient, and the prognosis for an uneventful recovery is enhanced. It is most important in using this drug to give an adequate dose for the proper effect. In our experience hydroxyzine hydrochloride is safe and well tolerated in fairly large doses.

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Great people are not affected by each puff of wind that blows ill. Like great ships, they sail serenely on, in a calm sea or a great tempest.—George Washington

Clinical Evaluation of Bunamiodyl

New Contrast Medium for Oral Cholecystography

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IOPANOIC acid (Telepaque), (3-(3-amino-2,4,6-triiodophenyl)-2-ethylpropionic acid) containing 68 per cent iodine, is at present the contrast medium of choice in oral cholecystography. While it is a very satisfactory agent producing excellent gallbladder density and fairly frequent duct visualization, it does produce frequent side-reactions, notably diarrhea, and has the added disadvantage of producing dense, punctate bowel opacities. For these reasons there has been a continuing effort to find new contrast media which might overcome these objections.

Recently a new contrast medium, bunamiodyl (Orabilex*), has been made available. It differs from iopanoic acid by the addition of a butyryl group and the use of acrylic acid instead of propionic acid. The formula is 3-(3-butyrylamino-2,4,6-triiodophenyl)-2-ethyl sodium acrylate, and it contains 57 per cent iodine. Initially it was given in doses of 6 Gm., but the recommended dosage was later reduced to 4.5 Gm. without a significant loss of density. This dosage is utilized regardless of the size or weight of the patient. In this dosage there is 2.56 Gm. of iodine as compared to 2.04 Gm. of iodine in the usual 3 Gm. dosage of iopanoic acid.

The recent literature contains several reports by independent investigators[1–3] who have evaluated the use of this medium for oral cholecystography. The summary of their[4–7] findings, as compared to our own and to previously reported experiences with iopanoic acid, should be of value to the radiologist or other examiner undertaking this type of examination.

Methods and Material

Bunamiodyl was given in the recommended dosage of 6 capsules of 0.75 Gm. each (4.5 Gm.) to 100 patients with possible disease of the biliary tract, and the results were analyzed by a group of radiologists. In 15 cases the examination was repeated after approximately a two-week interval using iopanoic acid as the contrast medium to study and compare these two drugs in the same individual.

The basic criteria considered in analysis were: (1) patient's reactions, (2) density of the gallbladder shadow, (3) duct visualization, and (4) bowel opacities.

Patient reactions were evaluated on the basis of the history obtained at the time of the examination. The patient was questioned directly concerning the various possible effects. A comparative analysis revealed the following reactions in the 100 patients studied and in other reports (Table I).

Density and Diagnostic Value

The density and the diagnostic values were graded first independently and later simultaneously by a group of radiologists who made a visual evaluation on the basis of previous experience with iopanoic acid cholecystograms. Photometric methods were not utilized. Originally an attempt was made to distinguish between films of good density and films of excellent density; however, because of the considerable discrepancy between the various individuals involved, and also with the same individual on a different reading, it was decided that such a division was not practical by visual means and these two categories were grouped

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* Supplied through the courtesy of E. Fougera & Co., Inc., Hicksville, New York.

TABLE I.—Reports of Reactions of Patients Treated with Bunamiodyl or Iopanoic Acid

Series	Number of Patients	Amount Used (Gm.)	Reaction (Per Cent) Nausea	Vomiting	Epigastric Discomfort	Diarrhea	Dysuria	Others	None
Bunamiodyl									
Authors' series	100	4.5	5	4	8	1	0	1 (skin rash)	81
Teplick, Adelman, and Steinberg[2]	112	6.0	8	1.8	5.4	1.8	. . .	. . .	83
Heacock and Wilson[1]	100	4.5	22	1	. . .	5	0	2 (skin rash)	70
Tice[3]	152	4.5	17	3	2.8	2	. . .	0.7	74.5
Iopanoic Acid									
Whitehouse and Martin[7]	500	3.0	5.8	0.5	. . .	25.3	13.7	2.8	62.5
Dunne, Jensen, and Hughes[4]	116	3.0	8.6	0.0	. . .	12	0.8	. . .	79.6

TABLE II.—Comparison of Reports of Density in Patients Treated with Bunamiodyl or Iopanoic Acid

Series	Number of Patients	Amount Used (Gm.)	Density (Per Cent) Good to Excellent	Fair	Poor	Nonvisualization
Bunamiodyl						
Authors' series	100	4.5	59	10 (4 had calculis)	9 (4 had calculis)	22
Teplick, Adelman, and Steinberg[2]	112	6.0	86.5	3.6	5.4	4.5
Heacock and Wilson[1]	100	4.5	89	7	4	3
Tice[3]	152	4.5	79	18	3	10.5
Iopanoic Acid						
Whitehouse and Martin[7]	500	3.0	83	7.6	. . .	9.4
Dunne, Jensen, and Hughes[4]	116	3.0	83	9.6	2.8	4.4

TABLE III.—Comparison of Density, Duct Visualization, and Bowel Opacities in Patients Treated with Both Bunamiodyl and Iopanoic Acid

Condition	Number of Patients Bunamiodyl	Iopanoic Acid
Density		
Good	10	6
Fair	3	6
Poor	1	2
None	1	1
Duct visualization		
Good	2	2
Fair	5	3
Poor	. . .	. . .
None	8	10
Bowel opacities		
None	3	0
Minimal	11	1
Moderate to dense	1	13

together. For purposes of easy comparison we have taken the liberty of combining these groups in the other reports included for comparison (Table II).

The unusually high incidence of nonvisualization in our series merited further investigation. From clinical studies, surgical procedure, or postmortem examination it was found that the nonvisualization was probably the result of gallbladder disease in only 7 of the patients. In the remaining cases it was due to liver metastases, obstructing lesions in the stomach, and jaundice of extrabiliary origin.

The results in the 15 cases studied by using both bunamiodyl and iopanoic acid are shown in Table III.

The results of duct visualization in the 78 cases, where the bunamiodyl was concentrated in the gallbladder, are shown in Table IV.

Bowel Opacities

The gradings of the bowel opacities are shown in Table V. Figure 1 illustrates the types of bowel opacification seen with bunamiodyl as compared to iopanoic acid.

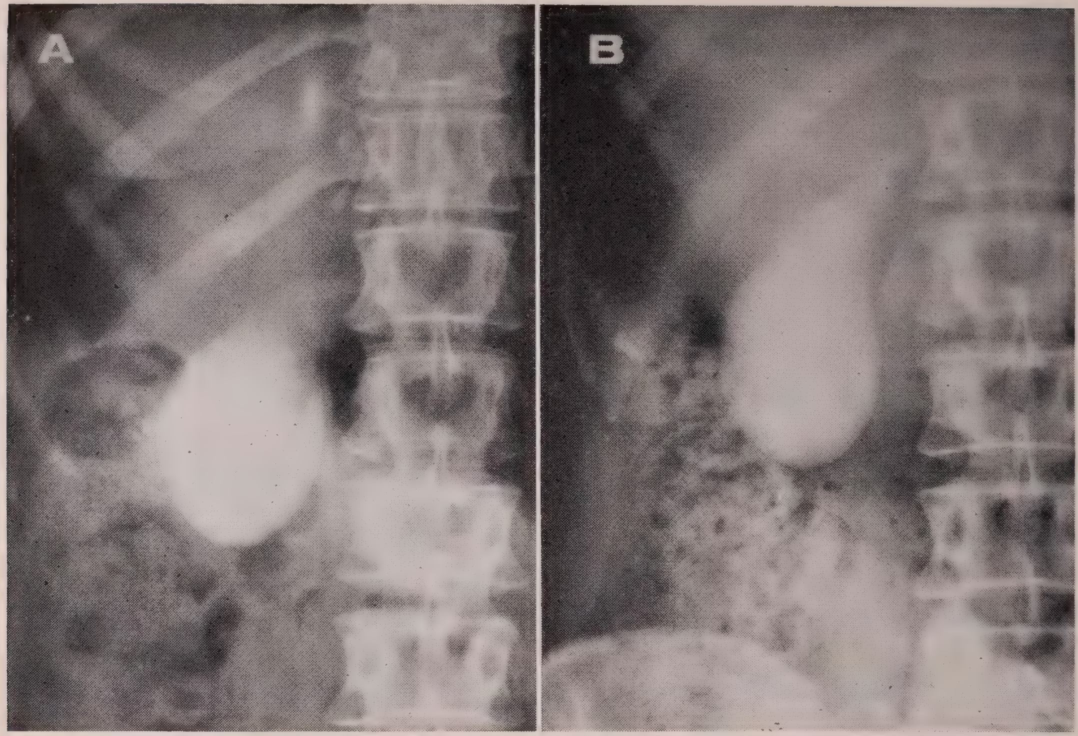

FIG. 1. (*A*) Posteroanterior view of iopanoic acid cholecystogram illustrating the dense, punctate type of bowel opacity. (*B*) Posteroanterior view of bunamiodyl cholecystogram in the same patient illustrating diffuse homogeneous opacification of bowel contents. The density shown here is much greater than average and would be classified as moderate.

TABLE IV.—COMPARISON OF RESULTS OF DUCT VISUALIZATION IN PATIENTS TREATED WITH BUNAMIODYL OR IOPANOIC ACID

Series	Number of Patients	Amount Used (Gm.)	—Duct Visualization (Per Cent)— Good to Excellent	Faint	None
Bunamiodyl					
Authors' series	100	4.5	19.3	30.7	50
Teplick, Adelman, and Steinberg[2]	112	6.0	40	25	25
Heacock and Wilson[1]	100	4.5	44	26	25
Iopanoic Acid					
Renck[6]	65	3.0	25	14	61

TABLE V.—COMPARISON OF REPORTS OF BOWEL OPACITIES IN PATIENTS TREATED WITH BUNAMIODYL

Series	Number of Patients	Amount Used (Gm.)	—Bowel Opacities (Per Cent)— None	Minimal	Moderate to Dense
Authors' series	100	4.5	23	55	22
Teplick, Adelman, and Steinberg[2]	100	6.0	81.3	...	18.7
Heacock and Wilson[1]	100	4.5	82	13	5

Comment

Opacification of the gallbladder is usually of high density, so that diagnostic films are readily obtainable. Reported incidence of good or excellent density is comparable to that of iopanoic acid. In our own series it was somewhat lower than the incidence with iopanoic acid due to the large number of patients seen in this hospital who have hepatic disease. In the small series of patients whom we studied with both drugs there was a slightly better density noted with bunamiodyl. Diagnostic value is not, however, notably increased. As noted in an earlier paragraph, a slight increase in density is to be expected on the basis of the increased amount of iodine which is given.

The incidence of duct visualization in our series was 50 per cent, as noted in Table IV. Both the quality and incidence of duct visualization is lower in our series than in other reported experiences. The explanation for this is not immediately apparent. This may be due to a difference in the media used for stimulating gallbladder contraction. There is, however, still a definite improvement over reported incidence with iopanoic acid. In spite of this increased incidence of visualization of the bile ducts, the diagnostic value in regard to detecting filling in the bile duct system is not too promising. In most cases only outlining of the ducts can be observed without further information, except that the common duct may be patent.

The residual contrast medium in the bowel is in most cases either absent or minimal. Usually there is only a faint opacification of the bowel contents. Originally many of our cases were thought to show no contrast medium within the bowel, but as experience with the type of opacification increased, we became more aware of its presence and reclassified many of them as showing minimal opacification. Since one does not get the same dense, punctate type of opacity as is seen when iopanoic acid is used, obscuring of the gallbladder shadow or false interpretation of radiopaque filling defects is, therefore, less likely when bunamiodyl is used.

As far as patient reactions are concerned, all the series show a definite decrease in the incidence of diarrhea as compared to previous reports on experience with iopanoic acid. The highest incidence with bunamiodyl was 5 per cent, as reported by Heacock and Wilson,[1] still much lower than that seen with iopanoic acid. Other reactions have not been altered significantly. If anything, there is some increase in the incidence of nausea and vomiting over that seen with iopanoic acid. Three allergic reactions manifested by skin rash and itching have thus far been noted. One case was seen in our series and 2 cases have been reported by Heacock and Wilson.[1]

Our experience, as well as that of other investigators, indicates that bunamiodyl is a satisfactory drug for oral cholecystography.

Summary

Bunamiodyl (Orabilex) fulfills the criteria needed in oral contrast medium for cholecystography:

1. Because of better patient tolerance, it is possible routinely to give larger doses of bunamiodyl than iopanoic acid (Telepaque) with a lower incidence of reactions and with some resulting improvement in gallbladder density.
2. Bunamiodyl has the added advantage of fewer confusing bowel shadows.
3. While duct visualization is frequent, it is seldom of such a density or completeness that a pathologic condition in that area could definitely be excluded.

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RECENT ADVANCES IN MEDICINE AND SURGERY

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Some Recent Advances in Cardiovascular Surgery

Part I

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The rapid advances in the technics of surgery of the heart have been mirrored in the advances in diagnostic technics which now make it possible to diagnose almost all lesions of the heart. It is, therefore, incumbent on the general practitioner to be acquainted with this field so that proper treatment can be instituted. The application of surgery to a great number of cardiovascular diseases is now possible. The general practitioner must be familiar with available surgical procedures. Certainly, the internist and the cardiologist would consider themselves inadequate if complete knowledge of this field were not within their realm. No longer are cardiac catheterization, dye dilution studies, or angiocardiography considered esoteric. These procedures are as useful in the diagnosis of cardiac conditions as is making a physical examination.

The knowledge of the physiology involved in the malfunction of the heart has long been known. It is only within the last decade that it has been applied directly to clinical conditions. Vascular resistance, pulmonary blood flow, systemic blood flows, arteriosclerosis of the pulmonary arteries, volume of shunts, and so forth, used to be terms that one used only in medical school during the physiology course. To understand that these terms are everyday language to the cardiologist of today one need only attend a combined surgery-cardiology meeting. In addition, the surgeon has become more than a technician. An intensive knowledge of physiology is a must to the young man in surgery who would become a cardiovascular surgeon. In reality, the cardiovascular surgeon is now an operating physiologist.

It is the purpose of this review to present some of the recent advances in cardiac surgery. It must be remembered, however, that when any surgical procedure is undertaken, or suggested, there must be a mathematic balancing of the condition of the patient, risk of surgery, type of operation, and so forth. The resultant figure, of course, must be on the positive side for the patient. We are fully aware that at any given time in the history of a surgical procedure its full development and successful fulfillment are directly proportional to the experience in the technic of the operator. When comparing two surgical procedures used to accomplish the same thing, the balance of one over the other is purely a temporal one and may change with the increasing experience of an individual and further advances in the ancillary fields of medicine and of anesthesiology.

It is not the purpose of this review to argue for or against a particular technic, but merely to give an opinion when an opinion is warranted. It must be remembered in this rapidly advancing field that this opinion may be purely temporal and may even change by the time of publication of this article.

Simplicity in surgery is the sine qua non of an effective technic. When two procedures can accomplish the same thing with regard to all parameters, the simpler one invariably will be the one much more used. This is logical and sensible. Therefore, when new technics are proposed which are highly dramatic but overcomplicated, the physician must be very wary about changing from a simpler technic that has proved to be effective. However, the physician must also look ahead into the future, when other surgical technics will outmode present methods, and be ready to acquire experience with new procedures.

Patent Ductus Arteriosus

Though everyone seems to agree that cases of patent ductus arteriosus should be operated on, there is still some disagreement as to the timing of operation. It has been stated that in early infancy the murmur of a patent ductus arteriosus is not as typical as it is in later life. We do not agree with this statement. It is our feeling that if these infants are examined carefully, a typical to-and-fro machinery-type murmur can be distinguished. Patent ductus arteriosus is a very common malformation and should be looked for in every instance of heart failure in infancy. When heart failure is present, the operation should be performed as soon as preparation of the patient has been completed.[1] This, of course, would include adequate digitalization, diuretics, and so forth.

Retrograde angiocardiography, done through the brachial artery after injecting the dye into the aorta, is easily accomplished. This procedure will verify the diagnosis in most cases. In the event that the patient is too sick for many diagnostic procedures, surgery should be accomplished as soon as possible.

Patent ductus with pulmonary hypertension should be attacked surgically. Mortalities will vary, depending on the type of case and the severity of the hypertension.[2,3] When the pulmonary hypertension is so severe that a right-to-left shunt is present, then, of course, the mortality rate will be very high. In those cases with hypertension, where such complications have not set in, the mortality rate for patent ductus surgery is fairly low. We have made it a practice to operate on all patients with patent ductus arteriosus if at all possible. It is only at the time of surgery that a final decision can sometimes be made. After closure is simulated by temporary occlusion of the ductus, the observed effects on the blood pressure will determine the final course. If the blood pressure falls to low levels and does not come back, the clamp is removed and the operation is terminated at that point.

Aorticopulmonary Septal Defect

Aorticopulmonary septal defect may simulate patent ductus arteriosus very closely. Many cases have been operated on because of a tentative diagnosis of patent ductus arteriosus only to find that the ductus was closed and this defect was present. It is usually located just where the aorta and pulmonary artery come off the heart. However, the murmur is very much like that of patent ductus arteriosus, the heart is generally larger, and the pulmonary hypertension is of greater severity. The diagnosis can be made or verified by angiocardiography and/or retrograde catheterization through the brachial artery. If the latter is accomplished, the catheter will usually pass through the pulmonary artery via the defect.[4]

Operation can either be done with or without the use of a pump oxygenator and there are a few successful cases reported.[4,5] It is our policy to have a pump oxygenator in readiness and, as the dissection proceeds, either to continue or to use extracorporeal circulation.

Aneurysm of the Sinus of Valsalva

An aneurysm of the sinus of Valsalva may also simulate patent ductus arteriosus. The diagnosis is usually made by the clinical finding of the machinery murmur and by cardiac catheterization which shows increased oxygenation of blood in the right atrium. Retrograde angiocardiography through the brachial artery will demonstrate the dye in the right atrium. With the use of hypothermia[6] or of pump oxygenation[7] these defects can be closed. Our preference at this time is the use of a pump oxygenator and a cardiotomy through the right atrium. The procedure is rather straightforward and offers no peculiarities surgically. The important thing in this entity is the diagnosis. Once the diagnosis is made, surgery must be done.

Coarctation of the Aorta

Coarctation of the aorta is another surgically correctable lesion. Most physicians agree that surgery should be accomplished during the period of ages ten to fifteen years once the diagnosis is made. However, not much mention is made of the fact that coarctation of the aorta in infancy is a serious handicap.[8] In infants and very young children with coarctation of the aorta, the occurrence of heart failure is an indication for operation if medical treatment is not effective. Even if medical treatment is effective in infancy, it is worth while to consider surgery. It is our feeling that surgery should be accomplished in almost all cases of coarctation of the aorta. It is important to note that hypertension does not have to be present in childhood and should not be the indication or contraindication for surgery. As soon as the diagnosis is made, we operate on our patients who have coarctation of the aorta. We have operated on tiny infants and find that surgery for them is not any more difficult than it is for the adult.[9] In a recent review by the American College of Chest Physicians, there was reported an over-all mortality of 8.6 per cent in coarctation surgery.[10] The age of patients is important only in the older-age bracket where the presence of a severe arteriosclerosis may present such difficulties that clamps cannot be applied safely to the aorta itself.

Atrial Septal Defects—Ostium Secundum Types

The common variety of atrial septal defect occurs in the ostium secundum. Repair of such defects can be accomplished by closed[11] or open[12,13] technics. The mortality in either case should be very low. We prefer the use of an open technic with the use of a pump oxygenator. Although we have operated on patients using hypothermia and many clinics will continue to use that adjunct, the increase in allowable time for the procedure gives the pump oxygenator a clear margin. In the ordinary uncomplicated atrial septal defect a surgical mortality of under 5 per cent should be expected with the use of any procedure. If present, pulmonary hypertension often may disappear following the correction of the opening.

It is our feeling at the present time that surgery is indicated in those patients in whom a diagnosis of atrial septal defect is made.[14] Although some of these patients may be asymptomatic, a considerable number of patients will eventually get into trouble. There is no method at the present time of discovering which patients of the asymptomatic group will get into difficulty. Certainly those asymptomatic patients should be operated on who show roentgenologic evidence of striking pulmonary artery enlargement, increased pulmonary vascularity, electrocardiographic changes, and catheterization studies disclosing a left-to-right shunt of twice the systemic flow.

Anomalous Pulmonary Venous Drainage

Partial Anomalous Pulmonary Drainage.—Partial anomalous venous drainage is usually associated with an atrial septal defect and may be only partial in effect in the sense that the defect allows for the drainage of some of the pulmonary veins into the right atrium. Anatomically on some occasions the right pulmonary veins may actually drain into the superior vena cava. Hemodynamically[15] the effect of anomalous pulmonary venous drainage is the same as that of an atrial septal defect. In most instances, as a matter of fact, closure of the atrial septal defect will take care of the anomalous pulmonary drainage of this type effectively. The treatment of this anomaly, of course, depends on the pathologic condition. In the event that the veins drain into the superior vena cava, then partial diversion of the flow of the superior vena cava into the left atrium may be accomplished by a plastic procedure.[16] In the event that only one of the lobes drains into the superior vena cava, it may be possible just to remove the lobe itself. If there is an associated atrial septal defect, of course, that can be corrected by the methods mentioned previously. On most occasions, we have corrected the atrial septal defect and, in turn, corrected the partial anomalous right venous return. On occasion, we have had to enlarge the interatrial septal defect and then suture the anterior medial portion of the defect in such a position that the entire venous return was diverted into the left atrium at the same time as we closed the atrial septal defect. It is because of anomalies like these that the pump oxygenator is, I believe, of more aid because it allows more time for repairing these defects.

Total Anomalous Pulmonary Venous Drainage.—A more complicated defect exists in a total anomalous pulmonary venous drainage. When this is present, most of the veins empty into a common chamber which, in turn, then drains into the right atrium by a single large vein, the coronary sinus or the superior vena cava. At times the common vein may even drain into the portal circulation which, in turn, drains into the inferior vena cava. The hemodynamic disturbances in this instance are very great and most patients are totally incapacitated. It is, therefore, necessary that the diagnosis be made and be made early. Recent articles[17–19] have been published on the recognition of this anomaly by the "figure of 8" sign in the chest film. The lesion, of course, can be diagnosed easily by means of cardiac catheterization. Complete correction of this defect can be made by intracardiac partitioning of the common chamber into the left atrium, if the chamber communicates by means of an atrial septal defect. Pump oxygenator technics, of course, are much more desirable than hypothermia because associated anomalies may require more time than hypothermia can give. Occasionally, closed technics may correct these lesions, but only infrequently.[20] These patients are usually cyanotic, but they can be restored to normalcy by correction of this defect.

Atrioventricular Canal Lesions

Atrioventricular canal lesions have had various other designations. They have been divided into partial and complete forms, and the partial has sometimes been called the ostium primum defect. The differentiation between partial and complete by many cardiologists and embryologists has been related to the presence or absence of a cleft in the septal leaflet of the tricuspid and/or the mitral valves. It is extremely important to identify atrioventricular canal lesions in patients who are being subjected to surgery for interatrial septal defects. If hypothermia is being contemplated in the case of interatrial septal defect, it is well to consider that if a canal lesion is discovered at the time of surgery, the time for the operation offered by hypothermia is usually insufficient to correct such a lesion.[12,21] The important thing in these defects is that they usually cannot be corrected by direct suture since this usually results in a distortion of the heart with a resultant change in hemodynamics, causing heart failure and death. Hypothermia again rarely affords sufficient time. Even with the pump oxygenator repair may be difficult. In either event, these patients should be subjected to open cardiotomy and repair of the lesions.[22] There is no place for the closed technic in this type of anomaly. We like to use a patch to repair the defect. Once the defect is outlined and ascertained, then careful suturing of the prosthesis into the defect can be accomplished easily and an excellent repair results. These patients usually die of pulmonary hypertension if repair is not attempted.

Pulmonic Stenosis

No cardiac anomaly exemplifies the teamwork necessary in cardiac surgery more than pulmonic stenosis. The diagnosis of pulmonic stenosis can hardly be made by physical examination alone. At least it cannot be positively ascertained. Chest catheterization is probably the only way that this diagnosis can be made. The necessity for a catheterization team that can give pressures both proximal and distal to the obstructed valve is obvious. Without right ventricular hypertension and decreased pulmonary artery pressures as demonstrated by catheterization, one can hardly make the diagnosis of pulmonic stenosis.

The answer to the problem of whether all these cases should be operated on seems to be arbitrary. It is my feeling and that of many of my colleagues that when the pressure in the right ventricle does not exceed 70 mm. of mercury systolic pressure, then operation for the relief of pulmonic stenosis can be delayed or even avoided at times. When the pressure is 70 mm. systolic or above, surgery is definitely indicated.[23–26] Much discussion is going on between proponents of closed and of open technics. Some investigators have regarded the results obtained by the closed surgical technic as inferior to those obtained with open,[25] as judged by the findings in postoperative catheterization studies.[27] However, some of the failure to obtain a complete decrease in right ventricular pressure immediately following surgery may be due to hypertrophy in the region of the crista supraventricularis or in the structures of the right outflow tract.[28] This usually regresses over a period of from six months to a year following valvulotomy.

The proponents of the open technic claim that the pressure gradient immediately following surgery is completely eliminated.[25] Hypothermia with inflow occlusion has been used successfully in many cases. The approach is a transarterial one through the pulmonary artery. The pump oxygenator technic allows for the exploration of the atrium as well as of the pulmonary artery.[29] Other defects may be associated with the pulmonic stenosis and should be looked for carefully. In many instances, a small atrial defect allowing for cyanosis becomes nonfunctional on relief of the pulmonic stenosis. The reverse is also true since a relative pulmonic stenosis is present with a large interatrial septal defect. When the interatrial septal defect is repaired, the pulmonic stenosis disappears. Recently, an attempt at repair of the pulmonic stenosis without the use of hypothermia or pump oxygenator has been made.[30] This is not a new technic; however, it may be dangerous because of the limitations of time. In this procedure the superior and inferior cava are simply clamped and the pulmonary artery opened. The valves are cut and the cava unclamped. All this should be done within a period of from two to three minutes, to avoid brain damage. It should be mentioned that in any series of cases even the open technic does not always result in an immediate complete disappearance of the gradient between the pulmonary artery and the right ventricle.

It is suggested that those surgeons who contemplate carrying out this operation for the first time would do well to study direct vision methods. Those who have had extensive experience and have obtained good results with the closed technic probably will continue to use this method. It is to be remembered that reductions in pressure in the right ventricle may take a long period of time whether the open or the closed method is used.

Vascular Rings

Anomalies of the aortic arch which lead to difficulties in respiration stridor or distress during swallowing are still being overlooked. It is incumbent on the general practitioner or pediatrician who comes across this type of case to attempt further investigative efforts. These vascular rings which compress the trachea and esophagus can be cured completely surgically.[31] Double aortic arch and right aortic arch with a left ligamentum arteriosum are the common anomalies causing stridor or difficulty in swallowing. Awareness of this condition is probably the most important single factor in the eventual treatment. We prefer operating on these children at the time the symptomalogy is discovered.[32] They do not outgrow this condition and in fact their growth may be hindered. Awareness of this condition is probably the most important single factor in this condition.

Ventricular Septal Defect

Ventricular septal defect of symptomatic origin should be subjected to surgery and closure with the aid of a pump oxygenator. There is no place for the use of pure hypothermia. The combined use of hypothermia and pump oxygenator[33] is of great value and in our hands has been a very useful adjunct. Cardiac arrest during the repair of these defects is of great value and will be discussed under a separate heading later on. The technic of repair is essentially one of the use of prosthesis or of a direct suture. Our preference at the moment is the use of a prosthesis to avoid any secondary conduction system defects.[34] The presence or absence of pulmonary hypertension is definitely related to the mortality. When the pulmonary blood pressure exceeds 80 mm. of mercury, or 80 per cent of the systemic systolic pressure, the mortality is quite high, sometimes in the neighborhood of from 75 to 80 per cent. When the hemodynamic changes in the right ventricle and pulmonary artery are such that the pressure is elevated, but not to this degree, the mortality is usually in the neighborhood of from 5 to 15 per cent.[35] With a better selection of cases, the mortality rate may be as low as 2 to 3 per cent.[36–38] Since more than half the patients with ventricular septal defects are said to die very early in life, operation should be undertaken in those infants with heart failure that cannot be controlled. There is a definite correlation between age and mortality.[37] This, of course, may be related to the presence or absence of hypertension.[39] Naturally, those infants with ventricular septal defect and pulmonary hypertension will either die or will be uncontrollable medically. These, therefore, will come to surgery and, of necessity, there will be a higher mortality because of the increased pulmonary artery pressure.

Recently, study has shown a correlation between not only the pulmonary blood and the systolic pressures but also between the flow and the pressure indicating that pressure may be a reflection of increased flow. Thus, if computations are made in which the pressure is merely due to flow and the resistance is not high, the surgical mortality on closing these high-pressure ventricular defects may be quite low. On the other hand, if the pulmonary resistance has been calculated as being quite high, it is probably due to irreversible pulmonary artery changes and perhaps surgery should be deferred. This latter problem has not been resolved. When widespread obstructive intimal lesions are present in the small pulmonary arteries, there may be no drop in pulmonary hypertension and there is some question as to whether the microscopic lesions are reversible.[39–41]

One of the more serious complications that can occur following this type of surgery is related to complete heart block. The use of cardiac pacemakers with electrodes connected directly to the heart have been of assistance in overcoming this difficulty.[42] However, when this fails it has been shown that, in all probability, there will be death. More recently a cardiac pacemaker which utilizes the beat of the atrium in stimulating the ventricle has been used experimentally.[43] Isuprel hydrochloride facilitates the restoration of sinus rhythm, but the results are not constant. This drug is indicated in adults when the pulse rate drops below 60 and in youngsters when it drops below 70. The use of a cardiac pacemaker is probably indicated in most cases of ventricular septal defect with pulmonary hypertension.

Whether surgery is indicated in cases of Eisenmenger's disease or in cases in which the right ventricular pulmonary artery pressure has proceeded to the point of irreversibility and the shunt is now from right to left is still a moot question.

The use of tracheostomy is, in our opinion, of great help in the survival of many of the more severe cases. Many years ago we showed that tracheostomy is useful in many diseases in which the pulmonary ventilation is decreased.[44] Bronchial toiletry which is of extreme importance in these cases postoperatively is made much simpler with the use of a tracheostomy setup.

Tetralogy of Fallot

Most recent advances in the treatment of Fallot have really related themselves to the diagnosis of some of the defects present in the tetralogy and to methods of repair. The Blalock-Taussig and the Potts operations in the past have been exceptional in their relief of cyanosis, dyspnea, and diminished exercise tolerance. Reviews of cases operated on five to ten years previously have revealed a 70 per cent beneficial result in those patients who survived the original operation.[45] Because the Blalock-Taussig, Potts, and other anastomotic procedures introduce a new defect into the circulation, attempts were made successfully to correct the tetralogy of Fallot completely by direct attack with the use of a bypass. With more experience as time passed, the mortality rate, which initially was quite high, in the neighborhood of from 60 to 70 per cent, has now been reduced to approximately 20 to 25 per cent. This latter figure will be, in all probability, the usual mortality rate in large collective series.[46,47] The mortality probably is related to the disturbed anatomy of the outflow tract of the right ventricle. Too often this cannot be remedied. It is, therefore, necessary that angiographic studies be accomplished preoperatively to delineate some of these situations. The presence or absence of a pulmonary artery may be ascertained in this manner. We have found that the absence of this artery is not too uncommon an occurrence and may even prevent the use of a shunting procedure.

Some authors have divided the tetralogy of Fallot into the blue and pink types.[48] The mortality claimed in the pink types has been quite low, whereas those in the cyanotic or blue types has been quite high. This probably is related, of course, to the degree of obstruction of the outflow tract and the difficulty of repair. Whether the prosthetic material used to increase the outflow tract will stand up over a period of time is still debatable. Our preference now is for the direct suture of the ventricle, if this is at all possible. It must be remembered, however, that there must be no residual outflow obstruction after repair of the ventricular septal defect and removal of the infundibular stenosis. This latter point has been somewhat questioned by some surgeons. Their claim is that the left side of the heart is not ready to accept the complete diversion of flow in the normal manner.[49] They therefore claim that a two-stage operation should be performed in tetralogy of Fallot. The first stage that is suggested is a blind technic in which the infundibular obstruction is removed, and the second is a direct closure of the ventricular septal defect employing a pump oxygenator. There is no evidence to support this contention other than the high mortality rates associated with the complete operation in certain instances. It is our feeling that the shunting operations are of definite use in the tiny infant and the extremely cyanotic patient. Those patients who are not in any severe trouble, but who are only moderately so, can withstand the direct attack on the defects. Those who are not in any trouble at all, and who still have been diagnosed as having tetralogy of Fallot, can await further developments in cardiac surgery. It must be realized that there is some danger associated with a secondary operation of a corrective nature following an initial Blalock-Taussig or Potts operation. There have been some difficulties with the direct attack in the tetralogy of Fallot related to bleeding tendencies following surgery. The explanation for this has yet not been found and work is progressing in this vein.

FIFTH AVENUE AND 100TH STREET

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Cystic Disease of the Lungs

Cystic disease of the lung in young infants (with or without superimposed infection) usually falls into one of three classes: (1) congenital cystic disease; (2) postpneumonia pneumatocele; and (3) lobar emphysema. The congenital type will persist indefinitely; cysts have been demonstrated in persons dying at age seventy. If such cysts should give rise to symptoms, the only known treatment is surgical removal. As for postpneumonia pneumatocele, the condition takes care of itself in about 90 per cent of the cases, but complications may occur. Lobar emphysema will progress for days and weeks and, unless successfully treated, may terminate fatally.

—George William Ware, M.D., Clinical Proceedings of the Children's Hospital, July, 1958

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by C. LENORE SIMPSON, M.D.

MARCH 14, 1959

Discussed by JULIAN L. AMBRUS, M.D.

Case History

A sixty-eight-year-old female was first seen at the Roswell Park Memorial Institute a year prior to her death complaining of postprandial pain, a 20-pound weight loss, and weakness. She had had a hysterectomy for uterine polyps ten years previously and a subtotal gastric resection for a chronic gastric ulcer five years previously. The pain had recurred shortly after gastrectomy but was worse for three months prior to admission. On admission the hemoglobin was 5.5 Gm. per 100 ml., blood pressure 150/70, and blood urea nitrogen 27 mg. per 100 ml. After several blood transfusions revision of the previous gastrojejunostomy was performed, and a marginal ulcer was found.

She did well for six months and then began to complain of vague gastric symptoms, gross hematuria, and skin petechiae. When seen at Roswell Park Memorial Institute two months later her hemoglobin was 6.5 Gm. per 100 ml., her blood urea nitrogen was 45 mg. per 100 ml., and her urine contained Escherichia coli. An intravenous pyelogram showed poor visualization of the right kidney. The left kidney was not visualized. A retrograde pyelogram showed downward displacement of the right kidney but good outlines of the infundibulum and minor calyces. The left kidney showed some irregularity and the minor calyces appeared "moth-eaten." The patient received treatment for urinary infection as an outpatient.

The patient was readmitted three weeks prior to her death with a hemoglobin of 7.3 Gm. per 100 ml., a white cell count of 5,000 with 79 per cent neutrophils, platelets 345,000, blood urea nitrogen 124 mg. per 100 ml., and a blood pressure of 160/100. The electrocardiogram showed some S-T changes compatible with arteriosclerotic heart disease. Sulfisoxazole (Gantrisin) was started while a urine culture was awaited. A bone narrow examination showed a cellular marrow with a normal myelocyte-erythrocyte ratio. At this time there was no blood in the urine or feces. Five days after admission a few muscular twitchings were noted, and later nausea developed. She received several transfusions of packed red cells, but despite maintenance of maximum possible urine flow without edema, the blood urea nitrogen remained high.

Blood chemistries a week after admission were: blood urea nitrogen 170 mg. per 100 ml., sodium 135 mEq. per L., potassium 5.5 mEq. per L., carbon dioxide content 17.5 millimols per L., chlorides 104 mEq. per L., calcium 9.3 mg. per 100 ml., phosphorus 8.4 mg. per 100 ml., albumin 4.2 Gm. per 100 ml., and globulin 2.0 Gm. per 100 ml. Four days later the sulfisoxazole was stopped and chloramphenicol (Chlormycetin) started.

The patient still failed to improve, and E. coli persisted in the urine. There was little change in the blood chemistries. After another four days the chloramphenicol was replaced by intravenous nitrofurantoin (Furadantin). The next day the patient's condition rapidly deteriorated, with increasing weakness and apathy. The following day the blood urea nitrogen was 125 mg. per 100 ml., sodium 124 mEq. per L., potassium 5.9 mEq. per L., carbon dioxide 6.4 millimols per L., chloride 96 mEq. per L., calcium 12.6 mg. per 100 ml., phosphorus 11.5 mg. per 100 ml., and hemoglobin 12.9 Gm. per 100 ml. The white cell count was 20,600. A repeat serum carbon dioxide determination that afternoon was 3.6 millimols per L. All attempts to restore the electrolyte balance, including vigorous therapy with alkali, failed, and the patient became comatose and died the following day.

A chest roentgenogram taken two hours prior to death suggested pulmonary edema. An electrocardiogram taken in the morning of the day of her death showed little change from the prveious ones; in the afternoon it showed changes associated with a "dying" patient. Blood chemistries that day were: blood urea nitrogen 180 mg. per 100 ml., sodium 122 mEq. per L., potassium 7 mEq. per L., carbon dioxide 4.1 millimols per L., chloride 92 mEq. per L., and calcium 14.2 mg. per 100 ml.

Discussion

Julian L. Ambrus, M.D.: The previous history of a hysterectomy for uterine polyps ten years before the first admission is not startling, but there are some interesting and unusual features in this clinical story. One, a chronic gastric ulcer was resected five years previously. This is somewhat unusual in that it is a disease found four times more frequently in males than in females and it is a disease of the young and middle aged; it is unusual in a rather elderly lady. There is no indication whether a vagotomy was performed at surgery. Her pain recurred shortly after the operation and became worse about two months before admission to Roswell Park. The pain was postprandial and was associated with weight loss and weakness.

A second notable aspect is the rather pronounced anemia, with the hemoglobin level at 5.5 Gm. The possible mechanisms of her anemia at that time are: (1) iron deficiency resulting from the subtotal gastrectomy with a loss of hydrochloric acid, (2) loss of the intrinsic factor, (3) bleeding from a marginal ulcer, and (4) kidney disease. The surgeons apparently decided that she had a marginal ulcer and a revision of her previous gastrojejunostomy was performed.

The third condition developed six months after the gastrectomy, when she started to complain of gastric pain, gross hematuria, and skin petechiae. She was seen at this hospital about two months after these episodes, and laboratory studies showed a hemoglobin of 6.5 Gm. per 100 ml., a blood urea nitrogen of 45 mg. per 100 ml., and E. coli in the urine. An intravenous pyelogram showed poor visualization of the right kidney; the left kidney was not visualized at all. A retrograde pyelogram showed a downward displacement of the right kidney but good outlines of the infundibulum and minor calyces. The left kidney showed some irregularity and the minor calyces appeared rather "moth-eaten." Several urinary conditions may give a picture of this sort.

1. Chronic pyelonephritis. Her urinary findings are consistent with pyelonephritis, possibly of a chronic nature. Her renal function was obviously impaired, and E. coli were isolated from the urine. On the other hand, the intravenous pyelogram certainly does not indicate chronic pyelonephritis. However, chronic pyelonephritis is a disease that is very difficult to diagnose by x-ray examination alone.

2. Necrotizing pyelonephritis. Acute necrotizing pyelonephritis, better called necrotizing papillitis, is a relatively new disease. People have been conscious of it only in about the last ten years. Robbins,

Mallory, and Kinney[1] and Edmondson, Martin, and Evans[2] described the disease in 1946 and 1947. Survey of the literature by the latter yielded 110 cases on which they were able to make this diagnosis from the data given. The earliest case with sufficient data was reported in 1877. This disease is most common in diabetic individuals, but many cases have been described in nondiabetic individuals. Peculiarly enough, however, the disease is chiefly unilateral in nondiabetic individuals but bilateral in those with diabetes. The disease essentially is fulminating pyelitis which leads to necrosis, either of the tip or entire papilla. Certainly the descriptions of the intravenous pyelogram and the hematuria are consistent with this disease. On the other hand, the patient should have been much sicker, with chills, fever, and acute distress. Occasionally, however, these patients do not have this pattern of toxicity, and too often a necrotizing papillitis can be differentiated from pyelonephritis only by examination at autopsy. Examination of the urinary sediment would have been helpful because in this disease necrotic tissue can be found in the urine; in fact, this laboratory finding is the most important one in establishing the diagnosis.

3. Amyloidosis. The downward displacement of the right kidney, as shown by the retrograde pyelogram may have been due to an enlarged liver. Amyloidosis can produce loss of kidney tissue and an enlarged liver with secondary downward placement of the right kidney. The size of the spleen is not indicated, nor is there any evidence of any chronic suppurative disease which could have formed the background for secondary amyloidosis.

4. Miscellaneous diseases. Other lesions that may cause abnormalities of the minor calyces are tuberculosis, papillomas, hemangiomas, and thrombosis. None of these are borne out by the subsequent course of the patient.

5. Vascular disease. Vascular disease must be considered in an old lady whose cardiogram shows arteriosclerotic changes and whose blood pressure is slightly elevated; her renal vessels also may have been regionally affected. Thrombosis in the region of an arteriosclerotic narrowing of the renal vessels could have caused her original disease, which was manifested by hematuria and finally resulted in an infarction of one of the kidneys. The other kidney might have become infected, with the resultant development of chronic pyelonephritis.

My guess is that her original kidney trouble probably was a vascular disease followed by chronic pyelonephritis.

Another interesting aspect is the petechiae. Pernicious anemia may present with petechiae, and she may have had a mild degree of pernicious anemia. Bright's disease or any advanced renal insufficiency of course can produce petechiae. Hepatomegaly in this patient may have been due to some sort of liver disease which caused secondary blood coagulation difficulties. Endocarditis may cause multiple embolizations that give rise to "flea-bitten" kidneys. These patients may very well have "moth-eaten" calyces on retrograde pyelograms. In this disease loss of kidney function, hematuria, and petechiae may be seen.

On readmission the patient's anemia recurred. At this time there was no evidence of a bleeding ulcer. She had evidence of renal disease. The types of anemia in patients with renal insufficiency have been studied by Loge, Lange, and Moore.[3] From their studies they conclude that three separate mechanisms play a role: (1) Most important is the depression of erythropoiesis, as demonstrated by poor utilization of radioactive iron. (2) At times an unidentified hemolytic factor which results in an increased breakdown of red cells is present. The red cells themselves, however, are normal, for if they are injected into normal patients they have a normal life span. On the other hand, red cells from normal patients transfused into these patients sometimes show a decreased life span. These findings again are not correlated with uremia. (3)

Urinary hemorrhage, of course, is frequent in these patients and most likely was present in this patient.

Before I continue, I will let Dr. Lessmann tear me apart on the basis of the intravenous pyelogram.

Franz Lessmann, M.D.: The chest roentgenograms, taken on admission and during the hospitalization, show conditions often seen in a patient of this age, namely emphysema, left ventricular enlargement, elongation and dilatation of the aorta, and considerable calcification of the trachea and bronchial system. The film prepared shortly before her death reveals some evidence of pulmonary edema.

Roentgenographic examination of the colon reveals radiolucent areas in the descending colon and sigmoid, more suggestive of fecal material than of polyps. The gastrointestinal study reveals evidence of a marginal ulcer near the gastrojejunostomy. The residual of the stomach appears somewhat decreased after the revised gastrojejunostomy but it has an intact mucosa. The abdominal flat plate shows evidence of small calculi in the gallbladder. The liver is slightly enlarged. The intravenous pyelogram shows poor visualization of the right kidney, which is somewhat displaced downward. Absence of visualization of the left kidney suggests nonfunction. The retrograde pyelogram shows early hydronephrosis on the right and a small contracted left kidney. "Moth-eaten" irregularities of the upper and lower left calyces are suggestive of acute pyelonephritis, but necrotizing papillitis and specific inflammatory reactions must be mentioned.

Dr. Ambrus: At this point I feel that there are three possible conditions that might be involved: (1) a vascular occlusion of renal vessels, (2) chronic pyelonephritis, and (3) an acute episode of the pyelonephritis, such as an acute necrotizing papillitis. All three of these conditions are more common in, although not exclusively restricted to, diabetic patients. Was there any clinical evidence of diabetes?

Robert Tarail, M.D.: No.

Dr. Ambrus: During her final admission, which began three weeks prior to death, her blood urea nitrogen was very high, 170 to 180 mg. per cent, which with therapy dropped on one occasion to 125 mg. per cent. The serum sodium was normal initially (135 mEq.) but later fell to 124 and 122 mEq. In patients with tubular dysfunction, ammonia production is impaired, and accordingly loss of sodium may result in hyponatremia and acidosis. Potassium levels were 5.5 and 5.9 mEq. per liter except for the terminal phase, when they rose to 7 mEq. I believe that this elevation was a consequence of her agonal period rather than a cause of it. Her chloride level was essentially normal. Although in renal failure one may see all sorts of strange and fluctuating changes in the chloride level, because of emesis, and so on, her chloride level remained constant. Her phosphate level was high, 8.4 to 11.5 mg. per cent, which indicates impaired renal function. Normally, when the phosphate level is elevated, one would expect the calcium to drop. Instead, her calcium level was somewhat above normal, 12.6 and 14.2 mg. Muscular twitchings after gastrectomy are frequent, and they usually are due to a high phosphate level, which depresses the calcium content and thus increases nervous irritability. Her high calcium level may well have been due to adequate therapy. Muscle twitchings are frequent in uremia even in the face of normal serum calcium levels.

C. Lenore Simpson, M.D.: Calcium was administered intravenously in the interval between these reports.

Dr. Ambrus: In patients with renal insufficiency a certain degree of hyperparathyroidism may occur. In this patient adequate therapy may have prevented secondary hyperparathyroidism. Her nausea is obviously explainable by uremia.

The extreme degree of acidosis, another unusual feature, is completely out of proportion to the other chemical changes of chronic renal insufficiency. The carbon dioxide con-

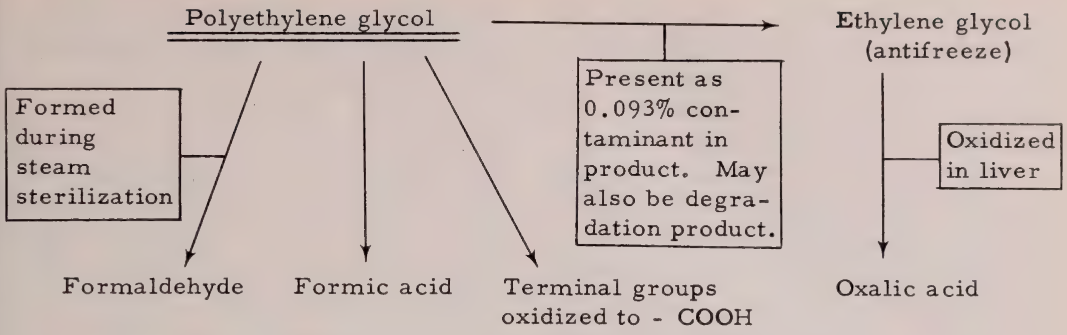
Polyethylene glycol
Ethylene glycol (antifreeze)
Formed during steam sterilization
Present as 0.093% contaminant in product. May also be degradation product.
Oxidized in liver
Formaldehyde
Formic acid
Terminal groups oxidized to - COOH
Oxalic acid

FIG. 1. Metabolic fate of ethylene glycol and polyethylene glycols.

tent of her serum dropped to 17.5, 6.4, and finally 3.6 millimols. A cause other than chronic renal insufficiency must be investigated. Can any of the medications she was receiving be incriminated: sulfisoxazole, chloramphenicol, or intravenous nitrofurantoin? The extreme acidosis occurred after she has received a dose of intravenous nitrofurantoin. Oral nitrofurantoin has been prescribed for a large number of patients, some of them receiving huge doses over a long period of time. Blood level studies of such patients have shown persistent high levels of nitrofurantoin without any incident resembling this case. On the other hand, Sweet[4] described the effect of this drug on two adults afflicted with paralytic poliomyelitis who developed antibiotic-resistant urinary infections and renal calculi. Following urologic surgery both were given intravenous nitrofurantoin, 10 mg. per K. per day, a rather moderate amount. Both of them developed extreme degrees of acidosis. One died despite good urinary output. The survivor responded well to vigorous sodium lactate therapy administered after the intravenous nitrofurantoin was discontinued. Sweet makes reference to 25 other instances of acidosis occurring in patients who had received intravenous nitrofurantoin.

Since oral administration of nitrofurantoin to individuals with high blood levels does not result in acidosis, one would suspect that some other factor in the intravenous form of nitrofurantoin is involved. Intravenous nitrofurantoin was on the market for a relatively short period of time and then withdrawn.- I was unable to obtain the package information to check whether there was some sort of warning in it.

DR. TARAIL: Package information at the time contained no warning.

DR. AMBRUS: However, I learned that the preparation contained polyethylene glycol, used as a solvent for the nitrofurantoin. The general chemical formula of polyethylene glycol is: $HOCH_2(CH_2OCH_2)_nCH_2OH$. Depending on the number of these groups, a whole series of compounds varying in molecular weight can be produced. Compounds with mean molecular weights of 200, 300, and 400 are liquids and are used extensively in various pharmaceutic preparations. Number 300 was used as a solvent for intravenous nitrofurantoin. The higher molecular weight compounds of this series, ranging from an ointment-type consistency to very hard solids (called carbowaxes), are very popular vehicles for various dermatologic preparations. Figure I shows the known information about the metabolic fate of these compounds. Polyethylene glycol is a polymer of ethylene glycol. Ethylene glycol is used extensively as an antifreeze and in this form has resulted in a number of accidental poisonings. This poison kills at various stages by three mechanisms: (1) cerebral edema, (2) pulmonary edema, and (3) kidney damage. In the third stage the clinical picture is much like nephritis, but pathologically the most prominent factor is the deposition of calcium oxalate crystals in the tubules with tubular degeneration resulting. Ethylene glycol is oxidized in the liver to oxalic acid, which produces renal damage. The metabolic fate of polyethylene glycol has not been extensively studied and the literature is therefore somewhat hazy. We know that polyethylene glycol contains about 0.093 per cent of ethylene glycol and a similar small percentage of diethylene glycol, but these constituents, I suppose, are so small that we don't have to worry about them. When it is steam-sterilized, a small amount of formaldehyde is formed. One would expect metabolism of polyethylene glycol to yield oxalic acid. However, in experimental studies no calcium oxalate crystals have been found in the kidney no matter how high the dose. On the other hand, the urine of these animals shows a very large amount of formic acid, as one might expect from oxidation. A bibliography on the metabolic fate and toxicology of ethylene glycol and the polyethylene glycols is appended.[5-29] Intravenous nitrofurantoin has been used in a large number of patients with acidosis occurring in only a few. The acid products are most likely disposed of by normal kidneys; however, in this case, these acid products accumulate and produce extreme acidosis.

The actual cause of death in the case under discussion was apparently pulmonary edema. The coma may be explained on the basis of uremia and extreme acidosis. The pulmonary edema was most likely due to congestive heart disease, which was probably brought about by several factors: (1) polyethylene glycol intoxication, (2) extreme anemia, and (3) a small degree of hypertension. My diagnosis, then, is polyethylene glycol intoxication in a patient with impaired kidney function, due most likely to chronic pyelonephritis and possibly necrotizing papillitis.

Diagnoses

Clinical.—(*1*) *Chronic and acute pyelonephritis*, (*2*) *severe acidosis, etiology unknown.*

Dr. Ambrus.—(*1*) *Chronic pyelonephritis*, (*2*) *necrotizing papillitis*, (*3*) *polyethylene glycol introxication.*

Anatomic.—(*1*) *Chronic pyelonephritis*, (*2*) *necrotizing papillitis?*, (*3*) *polyethylene glycol intoxication.*

Pathologic Report

Dr. Simpson: At autopsy this patient was extremely emaciated. She was a small woman (height 152 cm., weight 35 Kg.). She had fibrinous pericarditis and a slight increase in pericardial fluid, probably associated with the terminal uremia. The heart was not very large, 295 Gm., but in view of her size, it might have been slightly enlarged. I am surprised, however, that the roentgenograms were suggestive of cardiac enlargement. The anastomosis was intact, and no ulcerations of the stomach were present.

The most important findings pertain to the patient's kidneys. The right kidney—the nonfunctioning one—weighed 125 Gm. Interestingly, it was the larger kidney. The left weighed 105 Gm. Both kidneys showed considerable scarring, adherent capsules, pitting of the cortex, and poor demarcation of the cortex from the medulla. Both kidneys, particularly the right one, showed papillary necrosis, most likely a terminal event.

Dr. Ambrus: Do you think that this necrosis could have caused her original hematuria, which occurred before she was admitted?

Dr. Simpson: I don't know how I can tell. All I can say is that it is an acute terminal necrosis with formations of small abscesses associated with very marked chronic pyelonephritis that must have been present over a long period of time. None of these pathologic findings explains the extreme acidosis. We were at a loss to determine its pathogenicity until Dr. Tarail notified us about the reported deaths of patients after receiving intravenous nitrofurantoin. A study of these reports shows that these patients also had renal disease.

The pharmaceutical company* has provided us with some information on the toxicity of this drug in animals. In dogs treated with intravenous nitrofurantoin the findings were in the liver and kidney. Mild tubular changes appeared. In rats polyethylene glycol resulted in hydropic degeneration of the proximal tubules and finally tubular necrosis. These changes are similar to the ones found in human beings who have died following intravenous nitrofurantoin administration. However, these changes are not at all specific for they may be seen in potassium deficiency or dehydration alone. Certainly the picture is not that of ethylene glycol intoxication. We are therefore left with a chemical condition that does not cause a specific anatomic derangement. I agree entirely with Dr. Ambrus that the severe acidosis was probably secondary to polyethylene glycol administered to a patient with severely damaged kidneys.

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* Eaton Laboratories, Norwich, New York.

James Holland, M.D.: How much polyethylene glycol did the patient receive?

Dr. Tarail: I cannot answer that offhand. Her condition three days before death began to deteriorate with the development of two things: oliguria and vomiting. Since previous antibiotics had not worked very well, intravenous nitrofurantoin was started. Since we were not aware of any acid-base problems related to intravenous nitrofurantoin, the drug was continued in the face of severe electrolyte imbalance. The patient was treated very vigorously with sodium lactate and sodium bicarbonate after the low carbon dioxide content was discovered. After death, when striking papillary necrosis was found on postmortem examination, we thought all was explained and were satisfied that this patient had suddenly developed oliguria on the basis of exacerbation of the infection. A few months later, when I had occasion to consider intravenous nitrofurantoin for another patient, I learned that the product had been withdrawn because polyethylene glycol can cause acidosis. I then remembered the severe acidosis in this patient and brought the matter to the attention of the pathologists. It should also be pointed out that the high concentrations of serum calcium were induced purposefully in an effort to counteract impending potassium intoxication.

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Cardiovascular Insufficiency During Aortic Revascularization

Surgery of the blood vessels has increased in recent years largely because of improved technics of implanting prostheses for bridging a gap in a vessel. Resection of an aortic aneurysm may involve various technical problems, depending on the site of the aneurysm. Arrest of aortic circulation during surgical intervention with its subsequent ischemic effects will determine whether adjunct measures should be employed during surgical anesthesia. If the aneurysm is situated at the lower end of the aorta below the renal arteries, no vital organs need suffer any effects of circulatory insufficiency when the aortic clamp is applied, and usually no protective measures need be employed. Nonetheless, significant fluctuations in arterial systemic blood pressure should be anticipated and properly controlled since many of the patients involved have cardiovascular disease, pulmonary disease, and other impaired physiologic processes. The following case report illustrates some of the problems encountered in this type of surgery.

Case Report

A sixty-four-year-old man came to surgery for resection of a lower abdominal aortic aneurysm. He had arteriosclerotic heart disease and his electrocardiogram revealed a posterior wall myocardial infarct. His aneurysm was discovered during treatment of his cardiac condition. He also had obstructive pulmonary emphysema.

Preanesthetic medication consisting of Demerol hydrochloride 50 mg. and atropine sulfate 0.4 mg. was injected intramuscularly. When the patient arrived in the operating room an hour and a half later, his arterial blood pressure was 128

Discussed at a conference held at Bellevue Hospital, New York City, April 6, 1959. Clinical Anesthesia Conferences are held on the first Monday of every month.

mm. Hg systolic and 82 diastolic. His pulse rate was 86 per minute, and his respirations were 18 per minute. Anesthesia was induced by means of the intravenous drip administration of a 0.4 per cent solution of thiopental sodium until the patient became somnolent and then cyclopropane-oxygen was administered in a closed carbon dioxide absorption system. An endotracheal tube was inserted under direct vision following the intravenous injection of 40 mg. of succinylcholine. Anesthesia was then maintained with light cyclopropane and an intravenous drip of succinylcholine whose rate was regulated by various indications during the surgical procedure. The patient's pulmonary respirations were assisted either artificially or manually throughout the operation.

Surgical intervention progressed uneventfully for three and a half hours. At this time the surgical clamp was placed on the aorta and the patient's arterial blood pressure rose sharply from 120/80 to 180/90. The latter pressure was maintained during most of the period of aortic clamping. It was not deemed excessive and nothing was done to lower this pressure during the next two hours which was the time required to insert the aortic prosthesis. When this was accomplished, the clamp over the right common iliac artery was removed and then the clamp over the aorta was released gradually. Following this, the patient's arterial blood pressure became unobtainable. This had been anticipated and to combat this circulatory insufficiency an intravenous blood transfusion which had been dripping slowly was accelerated while an intravenous drip of phenylephrine (Neo-Synephrine hydrochloride) was started. In two and a half minutes the blood pressure returned to its preoperative level and the phenylephrine drip was discontinued. A similar dropping out of blood pressure occurred an hour later when the left common iliac clamp was gradually removed. This was counteracted without delay in a similar fashion and, again, this was followed by a rapid return of the patient's blood pressure to a normal level. The operation was then completed uneventfully, and the patient's postoperative course was good.

Comment

Most of the patients for this type of surgery are in the older-age group. They usually have arteriosclerotic heart disease, pulmonary emphysema, and other complicating pathologic processes which are the factors that influence mortality and morbidity. For their anesthetic management it is usually recommended that a light general anesthesia be administered with an endotracheal airway and that a muscle relaxant be used when needed rather than a deepened plane of anesthesia. The importance of controlling marked fluctuations in arterial blood pressure and avoiding prolonged depression of circulation in these patients is apparent.

Two important phases of blood pressure change are related to the application and release of the aortic clamp. Immediately following application of the aortic clamp a significant hypertension results. In the case presented it was elevated from 120/80 to 180/90 at which level it was maintained for two hours without any other untoward effect. In some cases application of the aortic clamp may result in a brachial arterial blood pressure of 240 mm. Hg systolic or over, associated with significant elevation of the venous pressure reflected by bulging, tense jugular veins and a marked cyanosis of the patient's head and upper extremities. In these cases it is recommended that at least one pint of blood be collected from an arm vein into an ordinary blood donor-collecting bottle containing the usual anticoagulant solution. This withdrawn blood may then be held in readiness until the aortic clamp is released, at which time the blood may be administered back into the patient. This is a more physiologic method of coping with this phase of hypertension than reducing it with a hypotensive drug.

The second important phase of blood pressure change in these types of operations occurs when the anastomotic revascularization has been accomplished and the aortic clamp is removed. If this is done suddenly, the gush of blood through this new aortic channel may be so great that the important major organic areas proximal to this new anastomosis may become functionally deficient and result in death. Even when, as in this case, the aortic clamp is removed slowly and gradually, severe arterial hypotension is to be expected. To control such severe hypotension at this time it is advisable to administer a blood transfusion and a vasopressor (whose cardiac irritability is slight) by intravenous drip, as were utilized in this case.

Reported deaths in these patients occur usually from pulmonary embolism, myocardial infarction, acute renal failure, infection, leaking grafts, and also during application or release of aortic clamps. Good management and judgement are necessary in reducing morbidity and mortality in these procedures.

(*Number eighty-three in a series of Clinical Anesthesia Conferences*)

Occurrence of Thyroid Nodules in Children Following Therapy with Radioiodine for Hyperthyroidism

In a study of 213 patients treated with I^{131} for diffuse toxic goiter (1945–1953) it was found that 2 of 5 patients (under ten years old at the time of treatment) had developed thyroid nodules. Nodules also had appeared in 1 to 13 patients who had been between ten and twenty years of age at the time of treatment. In the other 195 patients, all of whom had been over twenty at the time of treatment, only 2 presented palpable nodules and these appeared four and six months after the patient became euthyroid. Nodules in the young patients, who were aged five, nine, and seventeen years at the time of treatment, did not become palpable until five and a half to ten years after I^{131} treatment was started.

In each of these, there was a period after therapy in which the gland was of normal size and nodule-free; hence it might be concluded that the nodules were of neoplastic origin. While this is a small series, the authors feel that the findings strongly suggest the avoidance of I^{131} in treating thyroid conditions in patients under twenty years old. When such therapy appears necessary regardless of age, they recommend doses of radioiodine large enough to produce hypothyroidism, thus reducing the possibility of leaving thyroid tissue capable of undergoing subsequent diffuse or nodular hyperplasia. The patient would then be given thyroid as replacement therapy.—*Glenn E. Sheline, M.D., Stuart Lindsay, M.D., and H. Glenn Bell, M.D., Journal of Clinical Endocrinology and Metabolism, January, 1959*

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Sodium Fluoride and Acid Fume Poisonings

With Special Notes on Garden Hazards and Blood Dyscrasia Registry

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Sodium Fluoride	47 years	Male

This incident occurred in New Jersey, and this Center was asked to suggest the possible cause of the symptoms. The patient was in coma and vomited red-tinged fluid which was found to be strongly positive for blood. In addition, the patient also had a low blood pressure, 90/60, which soon became entirely undetectable. The patient also had profuse diaphoresis.

The Center suggested a search of the home for an incriminating product. Because of a hematocrit of over 65 the condition was originally diagnosed as polycythemia vera. When the Center was called back and informed that a green powder was found, the possibility of sodium fluoride poisoning was suggested. The police later found that the powder contained 95 per cent sodium fluoride. Thirty hours following admission, after the patient was on the road to recovery and able to talk, he admitted on questioning that he had ingested the powder (dissolved in wine).

On the Center's suggestion that the symptoms might be due to an ingestion of a fluoride, the patient was treated accordingly. T. M. Rein, M.D., reported to the Center as follows:

Isotope study of the blood volume revealed no polycythemia vera; however, before this study was completed a pint of blood was drawn from the patient with extreme difficulty. At the time the blood was drawn, the patient was given Levophed with calcium chloride. He was also given Cedilanid-D intravenously, which gave him a pulse beat. The blood pressure was maintained only with continuous administration of Levophed. The electrocardiogram gave the impression that the patient suffered from a pulmonary embolus; however, the chest x-ray film was negative for an embolus. The patient started to spike a temperature, and an antibiotic was administered.

The blood urea nitrogen was never greatly elevated. A gastrointestinal series revealed a thickened gastric mucosa. Also, for the first several days the patient had great difficulty in swallowing. The patient was finally discharged with a normal electrocardiogram, chest x-ray film, and chemistries and appeared clinically well.

With the advent of less toxic pesticidal products, the use of sodium fluoride has been decreased significantly. However, increasing resistance to the organic insecticides has caused a return to this more dangerous product. Physicians noticing any green powder on home visits should take occasion to warn the families of the potential dangers, especially to children. Although green is the color usually associated with fluorides, we have recently noted an unfortunate trend to so color the less dangerous anticoagulant rodenticides. The Health Code, which formerly permitted the use of fluorides in food establishments, now restricts their use to those issued a permit for each application of the fluoride. However, this restriction does not apply to homes, where the use of these products will continue unrestricted.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Acid Fumes	Adults	Both

The Center was called to suggest treatment of several patients involved in the inhalation of acid fumes. The administration of oxygen and supportive therapy—the standard mode of therapy—was recommended. It later developed that a large number of people were involved in this incident.

The accident occurred at a radio parts factory where a nitric acid delivery was made. The acid was to be used in an electroplating process. The acid was delivered by tank truck and transferred at a curb delivery port to a tank in the cellar. The setup at the plant included two twin 1,500-gallon hydrochloric acid tanks and one 1,500-gallon nitric acid tank. By error the nitric acid was pumped into the hydrochloric acid tanks, and an estimated several hundred gallons were delivered into the 2,300 gallons of hydrochloric acid. The resulting fumes, arising from the aqua regia created by this error, permeated the plant and the immediate area. The accident occurred because the curb delivery inlets were not identified. The fumes affected workers in the plant as well as firemen and patrolmen who responded to the emergency call. Thirty of the employes were admitted to a nearby hospital (St. Catherine's Hospital, Brooklyn). Eighteen of these were admitted to the inpatient service, and twelve were given emergency treatment and sent home.

Ottavio J. Pelliterri, M.D., an epidemiologist at the Bureau of Preventable Diseases of New York City, who made a medical investigation of this outbreak, tabulated the symptoms and physical findings:

Symptoms	*Number of Cases*
Nausea and vomiting	30
Sore throat (burning)	30
Dyspnea	28
Cough	11
Choking	7
Physical Findings	*Number of Cases*
Pulmonary wheezing	7
Crepitant rales	5
Diminished breath sounds	2
Cyanosis	1

The temperature ranged from 99 to 100.2 F. Complications occurred in only 2 instances; both patients had mild pneumonitis. Two of the employes gave medical histories of chest pathology; one stated having had asthma in the past, and the other had a coronary heart disease of several years duration. Neither one developed any complications. X-ray studies were done on all 30 patients. Eighteen of the patients admitted to the hospital had additional laboratory studies. The results were as follows:

1. The white blood cell counts ranged from 5,000 to 14,900, with an average of 8,500.

2. Nonprotein nitrogen studies disclosed a range from 27 to 44 mg. per 100 ml., the average being 35 mg. per 100 ml.

3. Blood sugar studies disclosed a range from 72 to 122 mg. per 100 ml., an average of 100 mg. per 100 ml.

4. Urine study findings were normal in all instances except for a 2 plus albumin in 1 patient and 10 to 20 white blood cells in 2 patients.

5. X-ray studies revealed infiltration of the lower left pulmonary field in 2 patients (those with pneumonitis), emphysema in 2 patients, and peribronchial thickening in 2 patients.

Of the 30 patients who were seen at St. Catherine's Hospital, 22 were male and 8 female. The ages ranged from twenty-two to fifty-six years. The hospitalized patients were admitted during the late evening of August 11 to the early morning hours of August 12. In addition to these 30 patients, 17 employes were given treatment at the scene of the accident. Two patients were taken to the emergency room of Cumberland Hospital, Brooklyn. Eight were seen by their private physicians. Nine firemen, 2 patrolmen, and 4 other individuals who were passerbys also suffered from acid fume poisoning.

The continued presence of the mixed acids at the plant created a public health problem of major importance, and its removal presented a difficult task because of the corrosive effect on equipment. Pumping this material into the sewer and river presented problems of safety and harbor pollution. After much travail to obtain the proper acid-resistant pump and equipment, the acid was forced out under minimum pressure into a rubber-lined tank and removed under police escort from the city. The emergency services of the Fire and Police Departments, the State Labor Department, and various units of the Health Department were involved in this near major catastrophe.

These Briefs have stressed the role of the private physician in preventing chemical accidents within the home. The industrial physician has perhaps a greater function and responsibility as an integral part of his practice to make an inquiry into the nature and labeling of hazardous material within the plant and its environs. We are certain that many potential hazards similar to this incident exist within industry. A company which might give meticulous attention to the labeling of the final product can be grossly negligent of the intramural hazards created by failure to label material during the various stages of processing. This situation is sometimes grossly aggravated by the compulsive insistence of commercial firms on secrecy. It is obvious that industrial physicians as well as general practitioners attached to plants should have a knowledge of the natures of materials used by the plant, the hazards involved, and the indicated countermeasures.

Garden Hazards

This Center is frequently consulted about animal poisonings. Roy K. Imhoff, D.V.M., of the Animal Medical Center (Speyer Hospital for Animals), New York City, reported to the Center the death of a cat in the ingestion of an azalea of the Kurume variety. The Kurumes are hybrids of three species. The azaleas are all of the Rhododendron genus, as is the plant commonly known as the rhododendron. The poisonous principles found in this group are reported to be arbutin, ericolin, and andromedotoxin.

Various members of the plant family Ericaceae have from time to time caused loss in domestic and wild animals. All such plants which were carefully investigated have been shown to contain a resinoid poisonous principle which has been crystallized and partially characterized. It is given the name andromedotoxin. Possibly other active principles are present as well. According to the literature, the chief effect of andromedotoxin is the paralysis of the motor nerve endings, particularly the phrenic ones. It also has a direct action on striated muscle, causing stimulation followed by paralysis of vagal nerve endings and injury to the conducting tissue of the heart. Symptoms in sheep include depression, weakness, staggering, salivation, nausea, and irregular respiration. Postmortem examination reveals no characteristic lesions.

Although the Center's local experience with children has not been too alarming, according to the literature the potential hazards in the garden are very frightening. Parents should impress on children, particularly very young ones, not to nibble or chew on anything but known foods. The random ingestion of leaves, berries, roots, and fungi is fraught with danger.

Reporting of Blood Dyscrasias

The Subcommittee on Blood Dyscrasias, Committee on Research, Council on Drugs of the American Medical Association, established a registry on blood dyscrasias resulting from drug ingestions. The various categories are classified by the Subcommittee as follows:

Group 1: Dyscrasias in which a single drug or chemical substance was associated with the production of the dyscrasia. Some of the drugs in this category are well recognized as potential toxic agents; others, however, such as chlorpropamide, chlorothiazide, methylpromazine, ristocetin, and sulfamethoxypyridazine, are relative newcomers.

Group 2: Dyscrasias associated with multiple drug administration if one or more of the drugs is potentially toxic to the hemopoietic system.

Group 3: Dyscrasias associated with multiple drug administration if none of the drugs had been thought to possess a potential for ill effect on the hemopoietic system.

It is pointed out that the mere fact that the name of a drug may appear on the list does not necessarily mean that the drug is potentially harmful or that it was the cause of the reported dyscrasia.

TABLE I.—POISONINGS ABOUT WHICH INFORMATION WAS REQUESTED OVER A RECENT WEEKEND

Product Ingested	Patient Age*	Sex
Vikki Nail Enamel Remover	$1^{1}/_{2}$	F
Barbiturate	49	M
Turpentine	22 months	F
Red liquid of thermometer	Child	M
Barbiturate	49	F
Black Flag Insect Spray	36	M
Sani-Pine (disinfectant)	20 months	F
Moth ball	$2^{1}/_{2}$	F
Drug (overdose)	21	F
Meprobamate	25	F
Lestoil (detergent)	45	M
Narcotic (overdose)	28	M
Plantab (1 tablet 1 to 2 days previously)	Adult	F
Desenex Ointment ($^{1}/_{2}$ teaspoonful)	$1^{1}/_{2}$	M
Tar (less than $^{1}/_{2}$ teaspoonful)	. .	. .
Diluted ammonia	3	M
Nonbarbiturate sedative	18	M
Barbiturate (overdose)	. .	. .
Morphine (intoxication)	19	M
Menthol camphor	24	F
Household ammonia	2	M
Anticonvulsant	9	M
Creosol (4 ounces)	22	F
Tincture of Thimerosal	2	M
Lemon extract	19 months	F
Narcotic (overdose)	31†	M
Drug (overdose)	Adult	M
Polyvinyl in petroleum solvent and analine dye	6	. .
Narcotic (overdose)	32	F
Clinitest tablets (2)	54	M
Dikes Paint (from painted chair)	2	M
Crory Kat Wafer Color	2	F
Clorox	$3^{1}/_{2}$	M
Clorox	25	F
Nestlés Baby Hair Treatment	8 months	. .
Sino-Vat	15 months	F
Larvex (insecticide)	92	M
Sanford Green Ink	2	M
Liquid from flash light	$2^{1}/_{2}$	M

* In years unless given in months.
† D.O.A.

The New York City Poison Control Center volunteered to the Subcommittee on Blood Dyscrasias to use its network of Poison Control Officers to obtain reports of such incidents and to submit the reported incidents to the Subcommittee. Poison Control Officers as well as practicing physicians anywhere in the State are solicited to report such incidents to this Center. Forms for such reports may be obtained from the Center. They are now being distributed to all Poison Control Officers. The reporting of a drug as the suspected cause of a dyscrasia, even though not conclusive evidence, would be exceedingly helpful to the Subcommittee. The August 15, 1959, issue of the *Journal of the American Medical Association* (vol. 170, p. 1931) carries an editorial comment about this registry. It aptly states that:

> The accumulation of a larger number of cases will make it possible to determine with greater certainty whether a casual relationship exists. The untoward side-effect of many of the newer therapeutic agents may not become apparent until the drug has had wide distribution. It is hoped that the registry can serve a useful purpose by alerting physicians and that they, in turn, will report all cases in which they suspect such a possibility. The success of the project will depend therefore on the cooperation of the physicians of the United States.

It is of interest that at the meeting of the Poison Control Advisory Committee of the New York City Department of Health held on April 10, 1959, the subject of blood dyscrasias and side-reactions was discussed in great detail and it was unanimously agreed that it is an essential part of Poison Control Center activity. Any reports of blood dyscrasias suspected from cosmetics and drugs, in fact, from any chemical, are of special interest and should be meticulously reported by physicians and hospitals to the Center.

(*Number forty-nine in a series of Briefs on Accidental Chemical Poisonings*)

Thymoma and Myasthenia Gravis

A general discussion of the relationship of thymoma and myasthenia gravis is based on 2 cases from the authors' recent experience. These writers note the importance of reporting all such cases in the hope that some light can be thrown on the difficult problems of management. One of the patients died of myasthenia gravis two years after irradiation for an inoperable thymoma, and the authors speculate that this treatment may have delayed the onset of the muscular symptoms. The other patient, treated by irradiation prior to surgical removal of the tumor, enjoyed almost complete remission of her myasthenia gravis. The operation took place in August, 1956; when last seen in April, 1957, there was no radiographic evidence of recurrence of the tumor, and the patient had only mild weakness of the shoulder girdle muscles. A year later, the patient reported that she was doing well on 1 to 3 tablets of neostigmine daily. Whatever the causal relationship between thymona and myasthenia gravis may be (which is uncertain), every patient with a muscular disorder should have the benefit of roentgenographic examination of the chest, including lateral or oblique views to show the possible presence of a thymoma.—*Harold Collings, Jr., Major, MC, USA, and William R. Sweetman, Major, MC, USAR, U.S. Armed Forces Medical Journal, July, 1958*

NECROLOGY

Abraham Jacob Beller, M.D., of Philadelphia, Pennsylvania, formerly of New York City, died on January 14 in the Albert Einstein Medical Center at Philadelphia at the age of seventy-three. Dr. Beller graduated in 1910 from Columbia University College of Physicians and Surgeons and interned at Mount Sinai Hospital. He had been a consultant in surgery at Beth Abraham Home, the Home and Hospital of the Daughters of Israel, and the Hospital for Joint Diseases. Retired in 1954, he had served at Mount Sinai Hospital as an associate in surgery from 1915 to 1931, was a past president of the medical board of the Home and Hospital of the Daughters of Israel, and from 1919 to 1931 taught at Cornell University Medical College. Dr. Beller was a Fellow of the American College of Surgeons, a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Isidore Bloom, M.D., of New York City, died on January 24, 1959, at the age of fifty-three. Dr. Bloom received his medical degree from the University of Bern in 1937.

Marcellus Bronk, M.D., of New York City, died on May 10, 1959, at the age of seventy-two. Dr. Bronk graduated in 1914 from Harvard Medical School.

Jacob Emerson Burtan, M.D., of the Bronx, died on January 6 at the age of seventy. Dr. Burtan graduated in 1916 from Jefferson Medical College of Philadelphia and interned at Fordham Hospital. He was a consulting physician at Fordham Hospital. Dr. Burtan was a Fellow of the American College of Cardiology and a member of the New York Cardiological Society, the Bronx County Medical Society, and the Medical Society of the State of New York.

Lloyd Houghton Clark M.D., of Penfield, died on December 24, 1959, at the age of seventy-five. Dr. Clark graduated in 1908 from New York Homeopathic Medical College and Flower Hospital. He was a consultant in ophthalmology at Genesee Hospital. Dr. Clark was a Diplomate of the American Board of Ophthalmology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, and the Rochester Academy of Medicine.

David Gordon Cooper, M.D., of Albion, died on December 30, 1959, in the Arnold Gregory Memorial Hospital at the age of seventy-three. Dr. Cooper graduated in 1909 from the University of Buffalo School of Medicine. He was chief of staff at the Arnold Gregory Memorial Hospital. Dr. Cooper was a member of the Orleans County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Taylor Dannreuther, M.D., of New York City, died in St. Clare's Hospital on January 27 at the age of seventy-four. Dr. Dannreuther graduated from Long Island College Hospital Medical School in 1906 and interned at Jersey City Hospital, Jersey City, New Jersey. He was a consultant in gynecology at Mother Cabrini Memorial Hospital, St. Clare's, the New York Infirmary, and Jamaica Hospitals, Flushing Hospital and Dispensary, and North Hudson Hospital (Weehawken, New Jersey), a consultant in obstetrics and gynecology at Gouverneur, University, Wyckoff Heights, Horton Memorial (Middletown), and Fitkin Memorial (Neptune, New Jersey) Hospitals.

Dr. Dannreuther was professor emeritus of obstetrics and gynecology at the New York University Post-Graduate Medical School, a founder and first president (1930) of the American Board of Obstetrics and Gynecology and president of the board until 1955, former chairman of the New York University-Bellevue Medical Center medical board and former director of obstetrics and gynecology. He was the only medical member of the board which founded the Associated Hospital Service and was also a former president of the New York County Medical Society. He began teaching as an instructor in gynecology in 1914 at the New York Post-Graduate Medical School and Hospital (now University Hospital) and helped to establish the hospital's first laboratories for cytology and endocrinology.

Dr. Dannreuther was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, a Fellow of the American College of Obstetricians and Gynecologists, and a member of the American Gynecological Society, the American Association of Obstetricians and Gynecologists, the New York Academy of Medicine, the New York Obstetrical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick M. Dearborn, M.D., of New York City, died on January 22 at the age of eighty-three. Dr. Dearborn graduated in 1900 from New York Homeopathic Medical College and Flower Hospital. He was a consultant in dermatology at Flower and Fifth Avenue, Metropolitan, Yonkers General, and Stamford (Connecticut) Hospitals. He was a former trustee of the New York Medical College and a professor emeritus of dermatology. Dr. Dearborn was a Diplomate of the American Board of Dermatology, Inc., and a member of the New York State Homeopathic Society, the American Academy of Dermatology and Syphilology, and the Society for Investigative Dermatology.

David William Johnson, M.D., of White Plains, died on September 24, 1959, in Cincinnati, Ohio, at the age of sixty. Dr. Johnson graduated in 1928 from Tufts College Medical School.

Leonard Warburton Jones, M.D., of Rochester, died on January 13 in Rochester General Hospital at the age of eighty. Dr. Jones graduated in 1902 from Queens University Faculty of Medicine, Ontario, and interned at Manhattan Eye, Ear and Throat Hospital. He was a consultant in ophthalmology at Rochester General Hospital and Iola Sanatorium. He was a Diplomate of the American Board of Ophthalmology and a member of the American Academy of Ophthalmology and Otolaryngology, the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Maximilian E. Jutte, M.D., of New York City, died on January 14 at the age of eighty-four. Dr. Jutte graduated in 1906 from New York University and Bellevue Hospital Medical College. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James H. Kellogg, M.D., of Bemus Point died in Florida on January 2 at the age of eighty-four. Dr. Kellogg graduated in 1902 from the University of Buffalo School of Medicine. He was a member of the Chautauqua County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Oberwager, M.D., of New York City, died in Mount Sinai Hospital on January 2 at the age of seventy-six. Dr. Oberwager graduated in 1906 from Columbia University College of Physicians and Surgeons. He retired in 1956 as general medical officer of the New York City Department of Health which he joined in 1904 as a tenement inspector. Dr. Oberwager was a member of the American Public Health Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leigh Francis Sturges, M.D., of Manhasset, died on February 28, 1959, at the age of eighty-five. Dr. Sturges graduated in 1900 from New York University and Bellevue Hospital Medical College. He was an honorary assistant in surgery at New York Eye and Ear Infirmary. Dr. Sturges was a member of the American Academy of Ophthalmology and Otolaryngology, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Chester Bruce Van Gaasbeek, M.D., of Kingston, died on January 4 at the age of sixty-five. Dr. Van Gaasbeek graduated in 1917 from Albany Medical College. A veteran of World War I, he was an attending surgeon at Kingston Hospital and chairman of its medical board. He was a member of the Ulster County Medical Society and the Medical Society of the State of New York.

John Edmund White, M.D., of Malone, died on January 1 at the age of seventy-one. Dr. White graduated in 1910 from Albany Medical College. He was an attending in surgery at Alice Hyde Memorial Hospital. Dr. White was a member of the Franklin County Medical Society and the Medical Society of the State of New York.

Louis Zuerndorfer, M.D., of the Bronx, died on January 6 at the age of seventy-nine. Dr. Zuerndorfer received his medical degree from the University of Wurzburg in 1909. He was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Erratum.—It has been brought to the attention of the Journal that the report of the death of **William Herbert Burwig, M.D.,** of Buffalo, published in the December 1, 1959, issue, is erroneous. Mr. William Burwig, also of Buffalo, the father of Dr. Burwig, is deceased, and the Journal received incorrect identification. The editors apologize to Dr. Burwig for this error.

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Legislation

The members of the Woman's Auxiliary are earnestly committed to the study of State and Federal legislation. The State and county chairmen strive hard to respond to calls for assistance on legislation. The ability to act during the legislative session which is so brief, hence dramatic, in New York State is proof of the county chairmen's constant vigilance.

"Why must we always do things at the last minute?" is a question which the State chairman of legislation is always asked whenever she sends out word requesting sudden intense effort. The reply is that letters must be sent precisely when the legislators are considering the bill in which the Medical Society is interested. To write beforehand or even shortly afterwards is almost useless, it is explained. The need for exact timing and responsiveness of Auxiliary members is illustrated in the July results on the Forand Bill. Other groups interested in legislation keep up to date on such things; therefore it is necessary that the Auxiliary at both the State and national level do likewise.

The Auxiliary chairman on legislation has proposed the following to aid members in their legislative activities:

1. *Keep informed.* The blue bulletins sent from the State Medical Society's office as well as any written matter from the State or national auxiliary should be discussed at county auxiliary meetings.

2. *Keep calm,* in the realization that sometime between January 1 and the end of March of each year the Auxiliary members will be called on to move swiftly and with complete cooperation of all its members.

3. *Be prepared to act immediately.* Each county Auxiliary will need a telephone committee to contact all members. Members who know legislators should contact them personally.

4. *Make communications clear.* Refer to the bills by titles as well as by numbers since the numbers change as the bills are amended.

5. *Encourage members to educate other groups of women.* The Auxiliary is a relatively small group and can use any outside assistance eager to promote proper health practices.

It is well known that the chiropractors are brimming with confidence this year, having engaged professionals in public relations to aid them. A hard fight is anticipated, but the Medical Society will win again.

The national picture is volcanic with the Forand Bill, H. R. 4700. It is anticipated that this issue will arise much earlier than it did in 1959, and the county chairmen are asked to appoint their committees and one person responsible in the absence of the committee chairman. The Forand Bill will be defeated only with a hundred per cent effort.

Mrs. Harvey Kausel, *Chairman*
Committee on Legislation

Bullock Road
Slingerlands, New York

MEDICAL NEWS

Swedish Hospital in Brooklyn Opens Department of Angiology—The Swedish Hospital in Brooklyn has announced the opening of a Department of Angiology. The inpatient service is in charge of Saul S. Samuels, M.D., and is prepared to admit cases of peripheral gangrene and chronic leg ulcers. The outpatient clinic is under the direction of Herbert Shaftel, M.D., and Dr. Samuels, and will admit ambulatory cases of peripheral arterial disease on Tuesdays at 10:00 A.M. Physicians are invited to admit suitable patients for diagnosis and treatment.

The Swedish Hospital in Brooklyn is located at 1350 Bedford Avenue and Dean Street.

Seminar on Advances in Rehabilitation Medicine—The American Academy of Physical Medicine and Rehabilitation, State University of New York Downstate Medical Center, and Kings County Chapter, American Academy of General Practice, will sponsor a seminar on recent advances in rehabilitation medicine. The seminar will be held on Friday and Saturday, April 15 and 16, at the State University of New York Downstate Medical Center, 450 Clarkson Avenue, Brooklyn 3, New York. Members of the American Academy of General Practice are entitled to 12 hours of category 1 credit.

Physician Conducts Course in Mental Hygiene—James A. Brussel, M.D., F.A.P.A., F.A.C.P., Assistant Commissioner, Department of Mental Hygiene, State of New York, is conducting a course on "Mental Hygiene for Graduate Psychology Students" at the Graduate School of Education, Yeshiva University. The course, which started on February 3, will run for 8 double sessions on alternate Wednesday evenings from 7:00 to 9:55 P.M.

Course Offered in Corneal Transplant Surgery—An intensive, three-day course in corneal transplant surgery and allied subjects will be given at the Brooklyn Eye and Ear Hospital under the direction of A. Benedict Rizzuti, M.D., Thursday through Saturday, May 12 through 14.

Address all inquiries to Mr. Henry Williams, Superintendent, Brooklyn Eye and Ear Hospital, 29 Greene Avenue, Brooklyn 38, New York.

New Research Professorship in Cardiovascular Disease—A new research professorship in cardiovascular disease has been established at the Columbia University College of Physicians and Surgeons. The chair, called the "Westchester Heart Association Professorship of Cardiovascular Research," is supported partially by a grant from the Westchester Heart Association, Inc. The grant is for $10,000 each year for five years, subject to renewal at the end of that period.

Andre F. Cournand, M.D., professor of medicine, Columbia University College of Physicians and Surgeons, and a joint winner of the 1956 Nobel Prize in medicine, has been named first incumbent of the new professorship.

Formation of College of Nutrition Announced—Formation of the American College of Nutrition was announced recently by a group of New York and New Jersey specialists in nutrition, metabolic diseases, and gastroenterology. The college will not be limited to physicians in these fields but will also include gerontologists, endocrinologists, surgeons, and others. Its purpose is to promote postgraduate research and education in therapeutic nutrition.

The college is incorporated as a nonprofit organization subject to American Medical Association regulations. Its annual meeting will precede the A.M.A. convention in the same city each year, with the first meeting scheduled for Miami, Florida, in June. Fellows of the college will be entitled to use the initials F.A.C.N. as part of their signature. Physicians eligible for fellowship are those whose professional activity is chiefly concerned with metabolism and nutrition, as in the treatment of such diseases as sprue, diabetes, gastrointestinal disorders, conditions in which electrolyte balance and metabolite supply to the tissues are involved, and others in which nutritional or metabolic factors are important, including postoperative convalescence.

President of the new college is S. William Kalb, M.D., Newark, New Jersey. Secretary-treasurer is Robert A. Peterman, M.D., New York City.

New Publication—Announcement has been made of the publication of a new journal, *Clinical Pharmacology and Therapeutics*. The new journal will provide expert opinions on new drugs when sound evaluations based on clinical experience are not yet available. It will also publish original contributions to applied pharmacology and will feature a special department in which concise commentaries on whole families of drugs will be published.

The new journal will be published by The C. V. Mosby Company, St. Louis, Missouri. Editor of the new journal is Walter Modell, M.D., New York City. Other physicians from New York City who are on the editorial board are: Drs. Arthur C. DeGraff, Raymond W. Houde, David A. Karnofsky, Herbert S. Kupperman, and H. Houston Merritt.

American Board of Obstetrics and Gynecology—The next scheduled examinations (part II), oral and clinical for all candidates will be conducted at the Edgewater Beach Hotel, Chicago, Illinois, April 11 through 16. Formal notice of the exact time of each candidate's examination will be sent him in advance of the examination dates.

Candidates who participated in the part I examinations will be notified of their eligibility for the part II examinations as soon as possible.

The deadline date for receipt of new and reopened applications for the 1961 examinations is August 1.

For further information contact: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

Invite Requests for Research Grants to Study Blindness—The research committee of the National Society for the Prevention of Blindness invites requests for research grants in 1960. Funds are available for projects that may contribute to basic understanding of eye function and pathology, or that may improve methods of diagnosis, treatment, or prevention of blinding eye disease. Grants will be made this spring for requests received by April 1.

Inquiries should be addressed to: Research Committee, National Society for the Prevention of Blindness, 1790 Broadway, New York 19, New York.

New York State Launches Pilot Program to Combat Phenylketonuria—For the first time New York State will go directly into the community to provide a treatment for the prevention of mental deficiency in children. Paul H. Hoch, M.D., Commissioner of Mental Hygiene, reports that the treatment will consist of a special diet formula which will be supplied by the Department of Mental Hygiene for children suffering from phenylketonuria.

The program is being organized on a research basis and will make it possible for physicians throughout the state to secure supplies of the necessary diet for patients if their financial circumstances are such that they require assistance. The diet will be supplied for all children up to the age of five who suffer from the disease and who are expected to respond to treatment.

An estimated 20 new cases of this rare form of mental deficiency occur each year in New York State. While irreversible brain damage takes place within the first five years of life in the absence of treatment, there is good reason to believe that a child identified in early infancy and treated with the special diet will not become mentally defective.

The operation of the pilot program, believed to be the first state project of its kind in the country, will be centered at Letchworth Village, Thiells, under the direction of George A. Jervis, M.D., director of psychiatric research and a pioneer in this field of mental deficiency. Information on the service may be obtained from Dr. Jervis.

New Grants Awarded by Easter Seal Foundation—Research to aid children and adults crippled by cleft palate, speech defects, hearing losses, brain injury, and paralysis will be supported through new grants awarded by the Easter Seal Research Foundation.

Recipients of grants in the New York area are: Medical and Health Research Association of New York City—$15,720 a year toward a two-year project attempting to evaluate screening, referral, and rehabilitation services for children with hearing problems. Harold Jacobziner, M.D., will be the principal investigator. College of Engineering, New York University—$10,000 a year toward a study aimed at improving methods of bracing for persons crippled by paralysis of the lower extremities. Renato Contini and Sidney Fishman, Ph.D., principal investigators, will analyze and evaluate principles now used in orthotic management.

Pediatric Courses to be Given in Philadelphia—The following short refresher courses will be given by the Children's Hospital of Philadelphia and the Graduate School of Medicine, University of Pennsylvania.

Pediatric Advances—May 30 through June 3. This course will be conducted by the staff of The Children's Hospital of Philadelphia. The curriculum will consist of clinics, demonstrations, and panel discussions in selected aspects of contemporary pediatrics in which important advances are being made.

Practical Pediatric Hematology—June 6 through 10. Conducted by members of the Hematology Department of the Children's Hospital of Pennsylvania, this course will consist of discussions of the problems of blood grouping, neonatal jaundice, kernicterus, and exchange transfusions.

Requests for further information and inquiries concerning tuition should be addressed to Irving J. Wolman, M.D., Director, Post-Graduate Education, The Children's Hospital of Pennsylvania, 1740 Bainbridge Street, Philadelphia 46, Pennsylvania.

New York Academy of Medicine Presents Post-

graduate Radio Programs—The following radio addresses will be heard during March and April as a part of the forty-third series of postgraduate radio programs of the New York Academy of Medicine over station WNYC-FM 93.9 megacycles on the FM dial:

March 3—"Radioiodine in the Diagnosis and Treatment of Hyperthyroidism and Heart Disease," Bernard A. Sachs, M.D., associate attending physician, research associate, associate chief, Endocrine Clinic, Montefiore Hospital, the Bronx; "Unsuspected Potentialities of Normal and Malignant Human Cells Implanted in Heterologous Hosts." Helene W. Toolan, associate, Sloan-Kettering Institute for Cancer Research, New York City.

March 10—"Faith and Science—Are They Reconcilable?" Patrick Romanell, professor of medical philosophy and ethics, University of Texas, Medical Branch, Galveston.

March 17—"The Effects of Emotional Stress on Coronary Heart Disease" (panel in connection with psychosomatic conference): Section I—Stewart Wolf, M.D., moderator, professor and head, Department of Medicine, University of Oklahoma Medical School, with William Dock, M.D., Irving S. Wright, M.D., Henry I. Russek, M.D., and Edward Weiss, M.D.

March 24—"The Effects of Emotional Stress on Coronary Heart Disease." Section II of the preceding panel discussion.

March 31—"On Understanding Science," Charles G. King, executive director, The Nutrition Foundation, Inc., New York City. "The Use and Abuse of Tranquilizers" (panel): Section I—John M. Cotton, M.D., moderator, director, Department of Psychiatry, St. Luke's Hospital, New York City, with J. Frederick Eagle, M.D., Sidney Malitz, M.D., Lester C. Mark, M.D., and Isadore Rosenfeld, M.D.

April 7—"The Use and Abuse of Tranquilizers." Section II of the preceding panel discussion.

April 14—"Stabilizing the Family for Health and Social Effectiveness," M. Robert Gomberg, executive director, Jewish Family Service and Family Mental Health Clinic, New York City.

April 21—"Glomerulonephritis and Pyelonephritis" (panel): Section I—William Goldring, M.D., moderator, associate professor of medicine, New York University College of Medicine, with Herbert Chasis, M.D., John P. Merrill, M.D., Conrad M. Riley, M.D., and George E. Schreiner, M.D.

April 28—"Glomerulonephritis and Pyelonephritis" (panel): Section II of the preceding panel discussion. "Manifold Motivation," John W. R. Thompson, M.B., Ch.B., assistant professor of psychiatry, Albert Einstein College of Medicine.

Personalities

Awarded

Virginia Apgar, M.D., New York City, the annual Elizabeth Blackwell Award.

Honored

I. H. Goldberger, M.D., director of health education emeritus of the Board of Education of the City of New York, and former clinical professor of pediatrics at New York University School of Medicine, as the guest of honor at an anniversary dinner on December 19 given by the medical board of the Morrisania City Hospital.

Elected

Morris B. Bender, M.D., New York City, as vice-president of the medical board of Mount Sinai Hospital . . . Milton M. Berger, M.D., New York City, as president-elect of the American Group Psychotherapy Association . . . William A. Brumfield, Jr., M.D., Westchester County Health Commissioner, as president of Annual Health Conference . . . James T. Daniels, M.D., Bronx, as president of the medical board of Misericordia Hospital . . . Alfred P. Fishman, M.D., New York City, as a member of the board of directors of the New York Heart Association . . . Joseph L. Goldman, M.D., and Robert K. Lippmann, M.D., New York City, as secretary and president respectively of the medical board of Mount Sinai Hospital . . . Fred W. Stewart, M.D., New York City, as president of the board of directors of the New York City Cancer Committee.

Appointed

S. Charles Franco, M.D., F.A.C.P., New York City, associate professor of industrial medicine at New York University-Bellevue Medical Center, as executive director of the Medical Department of Consolidated Edison Company of New York . . . Wallace B. Hamby, M.D., Buffalo, to the staff of the Department of Neurologic Surgery at the Cleveland Clinic, Cleveland, Ohio . . . Frank L. Horsfall, Jr., M.D., New York City, as president and director of the Sloan-Kettering Institute for Cancer Research . . . Abraham S. Jacobson, M.D., New York City, as medical director of William Douglas McAdams, Inc. . . . Calvin H. Plimpton, M.D., New York City, as president of Amherst College.

Speakers

Morris Herman, M.D., New York City, on February 17 on the subject "Acts of Violence" at a meeting of the Association for the Psychiatric Treatment of Offenders . . . George A. Perera, M.D., New York City, on January 26, at the annual conference of the

New York Heart Association . . . Philip Reichert, M.D., New York City, on January 18 at New York University's Washington Square Center . . . Howard A. Rusk, M.D., New York City, on February 3, before the Community Club of Garden City-Hempstead and on January 20, before the convention of the National Association of Home Builders . . . William J. Turner, M.D., Central Islip, before a meeting of the Nassau Neuropsychiatric Society on January 19.

MEDICAL MEETINGS

Bronx Pediatric Society

The Bronx Pediatric Society will hold its regular monthly meeting on Wednesday, April 13, at 8:30 P.M., at Morrisania City Hospital, 168th Street and Walton Avenue, the Bronx.

A feature of the meeting will be the presentation of cases by the Department of Pediatrics of the Jewish Memorial Hospital in New York City.

Cases to be presented are as follows: "Case of Teratoma in the Newborn" by Keith Schneider, M.D.; "Pseudohemophilia" by Nathan Greenstein, M.D.; "Pitressin Resistant Diabetes Insipidus" by Jesse Diamond, M.D.; "Hemorrhage into Small Intestine with Spontaneous Perforation" by Howard Wesson, M.D.; and "Kwashiorkor" by Mollie Niv, M.D.

Annual Convention, Medical Society of the State of New York

The Medical Society of the State of New York will hold its one hundred fifty-fourth annual convention at the Statler Hilton Hotel, New York City, May 9 through 13. The theme of the convention will be "Horizons of Clinical Medicine."

Ninth Annual Convention of the American College of Cardiology

The American College of Cardiology will hold its ninth annual convention at the Claypool Hotel, Indianapolis, Indiana, May 23 through 28.

Samuel A. Levine, M.D., Boston, will deliver the guest lecture entitled, "Some Prevalent Errors in the Practice of Cardiology." A feature of the meeting will be a symposium on recent advances in the treatment of congestive heart failure which will cover physiology, pharmacology, changing mechanisms, fluids, electrolytes, and cardiac glycosides. Scientific sessions will be devoted to surgical management of coronary artery diseases, with emphasis on criteria for the selection of patients, and the availability of surgical methods for the improvement of collateral circulation. The convention will again contain the popular fireside conferences.

John S. LaDue, M.D., New York City, is chairman of the program committee and Gabriel F. Greco, M.D., Ozone Park, is chairman of the publicity committee. Full information concerning the meeting can be obtained from Philip Reichert, M.D., Executive Director, American College of Cardiology, Empire State Building, New York 1, New York.

International War—Prophylaxis Congress for Physicians

The "International War—Prophylaxis Congress for Physicians" will be held at the Grand-Hotel Huis ter Duin, Noordwijk on Sea, Holland, May 23 through 28. The congress will be conducted in English, French, and German.

For general information or information concerning the presentation of papers contact: Professor M. Knap, 46 Schubertstraat, Amsterdam, Holland.

Seventh Conference on Biological Rhythms

The seventh conference on biological rhythms will take place in Siena, Italy, September 5 through 7. The main topics to be discussed will be "Endogenous Rhythms" and "The Law of Initial Value."

Requests for information and abstracts of papers to be presented should be sent to: Dr. Arne Bollberger, Department of Anatomy, Caroline Institute, Stockholm 60, Sweden. Abstracts should be at least 200 words and should be submitted in two copies prior to June 1.

Pan-Pacific Surgical Association

The eighth congress of the Pan-Pacific Surgical Association will be held in Honolulu, Hawaii, September 27 through October 5. Ten surgical specialty sections will be held.

All physicians are eligible to register and are urged to make early arrangements so that they will be assured of adequate facilities. Further information and brochures can be obtained from F. J. Pinkerton, M.D., Director General, Pan-Pacific Surgical Association, Suite 230, Alexander Young Building, Honolulu 13, Hawaii.

SUMMARY OF COUNCIL MINUTES

November 19, 1959

THE Council of the Medical Society of the State of New York met at the Society's headquarters, 750 Third Avenue, New York City, Henry I. Fineberg, M.D., president, presiding.

Executive Committee

The Council *approved* the recommendations of the Executive Committee, including the following:

1. That the Society forward dues to the American Medical Association as they are collected;
2. That the Council request a waiver by the American Medical Association of 1959 dues still unpaid;
3. That the Council instruct staff members and legal counsel to draft and submit to the Special Committee on Constitution and Bylaws specific changes in the Constitution and Bylaws to provide that (*a*) dues are payable on January 1 of each year and (*b*) with the exception of persons who apply and are eligible for life membership, members be retained in good standing without payment of dues only until March 1, instead of May 31, of any year;
4. That the Society pay the dues of staff members in an approved professional society or organization if (*a*) membership is mandatory or necessary in order for the employe to perform his or her duties or (*b*) membership improves his or her status, providing it is also of benefit to the employer;
5. That the Council adopt the policy of inviting the president or other representative of each of eight state medical societies to attend the annual conventions of this Society and of paying their expenses, other than travel expenses; the societies to be included are those of Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New Jersey, and Pennsylvania;
6. That the Society invite the American Medical Association to hold its June, 1964, meeting in New York City;
7. That President Fineberg and James M. Blake, M.D., represent the Society at a dinner on December 8, 1959, in honor of Speaker Joseph F. Carlino, of the State Assembly;
8. That the State Society approves the proposed plan for joint operation of the library of the Medical Society of the County of Kings with the State University of New York Downstate Medical Center, provided that in the event the county medical society and the Center ever contemplate a new agreement, the State Society be consulted;
9. That the delegates from the State Society to the meeting of the American Medical Association in Dallas, Texas, introduce the following resolution:

> WHEREAS, the term "Dr." is commonly used today to preface the names of doctors of chemistry, laws, divinity, and others, including those in the practice of cultism and quackery, as well as those in the practice of medicine; and
>
> WHEREAS, the designation "M.D." singles out and identifies the physician as a "doctor of medicine" properly and adequately trained to treat the sick; and
>
> WHEREAS, it is vitally necessary to protect uninformed and misguided people needing medical attention against falling prey to unqualified or unlicensed individuals who use "Dr." and hold themselves forth as able to treat the sick and injured; and
>
> WHEREAS, the Medical Society of the State of New York has instituted a campaign to encourage physicians in New York State to use "M.D." after their names instead of "Dr." before and to inform the public of the meaning of "doctor of medicine" as contrasted with other "doctor" designations; and
>
> WHEREAS, this problem exists not only in New York State but nation-wide as an obstacle to overcome in the public interest; and
>
> WHEREAS, a national campaign, similar to that being conducted by the Medical Society of the State of New York, conducted by the American Medical Association, would be a timely and valuable public relations endeavor; now therefore be it hereby
>
> *Resolved*, that this House of Delegates hereby directs the Division of Communications of the American Medical Association to organize and implement a national campaign to encourage physicians to use "M.D." after their names in-

[Continued on page 732]

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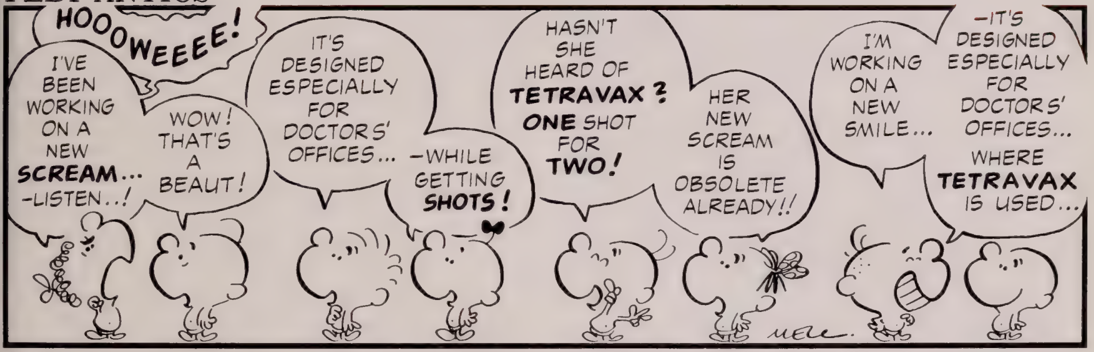
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[Continued from page 730]

stead of "Dr." before and to inform the public of the meaning of "doctor of medicine" as contrasted with other "doctor" designations.

President

Henry I. Fineberg, M.D., president, reported on his attendance at committee and district branch meetings and at the Centennial Convocation of New York Medical College.

The Council *approved* the appointment of the following to committees of the Society: William A. Cooper, M.D., New York City, Nursing Education; Milton B. Spiegel, M.D., Brooklyn, Economics; Charles J. Woeppel, M.D., Buffalo, and Ferdinand J. Schoeneck, M.D., Syracuse, regional chairmen in obstetics and pediatrics, Maternal and Child Welfare; Milton Helpern, M.D., New York City; George Burgin, M.D., Little Falls, and Samuel Sanes, M.D., Buffalo, to meet with Bar Association to study role of physician in court.

Secretary

William L. Wheeler, Jr., M.D., secretary, recommended dues remission, as follows: 14 members for 1959 because of illness, 3 members for 1959 because of military service, and 1 member for 1959 because of financial hardship, which *were approved.*

Treasurer

Maurice J. Dattelbaum, M.D., treasurer, presented the treasurer's report, with requests for additions and reductions to the 1959 budget, which *were approved.* The Council *voted* to have an abbreviated copy of the 1960 budget sent to each member.

Executive Director

Herbert T. Wagner, M.D., executive director, reported on his activities during the preceding month, including meetings attended and conferences held. The report *was approved.*

Reports of Committees

COMMISSION ON MEDICAL SERVICES

Gerald D. Dorman, M.D., chairman, reported on the work of the Commission and introduced committee chairmen for individual reports, as follows:

Economics.—Warning Willis, M.D., chairman, reported on meetings attended by Mr. George P. Farrell, director of the Bureau of Medical Care Insurance, at which coverage for Federal employes under Blue Shield was discussed. The report *was adopted.*

Industrial Health.—Peter J. Di Natale, M.D., chairman, reported that the committee had voted to award the 1959 Occupational Health Plaque to the medical department of the Eastman Kodak Company of Rochester; that the committee voted to participate in the International Congress of Industrial Health in New York City in July, 1960, at which Dr. Di Natale will present a paper and the Bureau will have an exhibit. Approval *was voted.*

Rural Medical Service.—In the absence of Edward C. Hughes, M.D., chairman, Dr. Dorman reported that meetings had been scheduled for November 24 in Fulton and December 8 in Cortland. The report *was approved.*

Workmen's Compensation—William E. Pelow, M.D., chairman, reported on several meetings held to discuss the legal aspects of occupational loss of hearing and the problem of industrial noise and such loss; examinations held in diagnostic radiology; activities of the Bureau and its director, Anthony A. Mira, M.D.; a meeting of the Advisory Committee of the Workmen's Compensation Board; a meeting of a special committee to consider amendments to Article 3-A, Workmen's Compensation Law, "Occupational Loss of Hearing." The chairman requested that the president consider revision of the personnel of the committee. The report *was approved.*

The report of the Commission as a whole *was approved.*

OTHER COMMITTEES

Blood Banks Commission.—Norman S. Moore, M.D., chairman, reported that the American Association of Blood Banks had offered to take over operation of the North East District Clearing House and would reimburse the Medical Society of the State of New York for what it had advanced as loans for past deficits and future deficits until the transfer is completed and that the Commission recommended such a transfer. Approval *was voted.*

The following motion *was adopted* by the Council:

> WHEREAS, the Council has approved the Blood Banks Commission's recommendation, which is also the recommendation of the Blood Banks Association of New York State, that the North East District Clearing House be transferred to the American Association of Blood Banks for operation because this move will enhance the blood program for the citizens of New York; and
>
> WHEREAS, the welfare of the citizens of New York State is of primary concern to the Medical Society of the State of New York; now therefore be it hereby
>
> *Resolved,* that the Council go on record that the Medical Society of the State of New York will continue to do its utmost to see that the citizens of the State of New York have an adequate blood program.

The request of the Commission for inclusion in the

1960 budget of $6,000 to cover anticipated deficit for the Blood Banks Association of New York State and $5,000 as a loan for the North East District Clearing House *was approved.*

Columbia University Study of Nonprofit Medical Insurance Plans.—John C. McClintock, M.D., chairman, reported that a meeting of the advisory committee had been held with the Columbia University study staff and that portions of the report were to be published in December.

Constitution and Bylaws.—In the absence of Ezra A. Wolff, M.D., chairman, Secretary Wheeler presented recommendations of the committee concerning county society constitutions, which *were approved.*

Legislation.—James M. Blake, M.D., chairman, presented a progress report.

Federal Legislation.—George J. Lawrence, Jr., M.D., chairman, presented a report for information concerning plans for combating enactment of the Forand Bill.

Nursing Education.—John M. Galbraith, M.D., chairman, recommended that the State Society actively support the idea of the Hospital Association of the State of New York that graduates of hospital registered nursing schools be granted associate degrees by the Education Department of the State of New York. Approval *was voted.*

Office Administration and Policies.—John J. Masterson, M.D., chairman, reported on the present status of the pension plan funds and recommended approval of three forms for expense vouchers and meetings. The report *was adopted.*

Publication.—Alfred P. Ingegno, M.D., chairman, reported on routine matters concerning the JOURNAL. The report *was adopted.*

Planning.—Peter J. Di Natale, M.D., chairman, presented a progress report.

Public Health and Education.—Norman S. Moore, M.D., chairman, reported on meetings of his committee and its subcommittees, with the following recommendations, which *were approved:*

1. That an appropriate staff member of the State Health Department word a general question which will satisfy the health interrogation requirement of the Bureau of Motor Vehicles to an applicant for a license and yet will not compromise the physician;

2. That the Commissioner of Motor Vehicles be granted strong, broad, nonspecific powers enabling him to set standards for operators of renewal as well as on original issuance, with the advice and counsel of the State Department of Health;

3. That the Legislation Committee be urged to prepare legislation whereby a physician will be en-

[Continued on page 734]

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[Continued from page 733]

abled ethically and legally to report to the State Health Department those patients whom he deems unsafe to drive:

4. That the report of the Ad Hoc Committee on Rehabilitation, as submitted by Irving L. Ershler, M.D., with its recommendation that there be a reorganization of rehabilitation services into a State-wide program under the supervision of the State Health Department, be adopted as the official position of the State Medical Society and that it be forwarded to the Governor's Council on Rehabilitation; which was amended to add the recommendation that, to the greatest possible extent, the private practitioner should participate and be integrated in this program and be given every possible aid in this facet of his practice;

5. That the 25 cents fee to physicians reporting communicable diseases be abolished;

6. That county medical societies be notified of the availability of the mobile unit of the State Department of Health for the detection of diabetes and glaucoma;

7. That 12 programs of postgraduate instruction had been arranged;

8. That I. Jay Brightman, M.D., director of the State Interdepartmental Health Resources Board, be named for the Physician's Award of the President's Committee on the Employment of the Physically Handicapped.

Public Relations.—John C. McClintock, M.D., chairman, reported on projects undertaken and routine work by the Department of Communications and presented the following recommendations which *were adopted:*

1. That a sum not to exceed $750 be appropriated to conduct a random sampling survey of members of the State Society to ascertain the amount of free time given by physicians throughout the State in the care of patients.

2. That the State Society reaffirm its approval of participation in the "Hi Mom" television program and that certificates of appreciation be presented to the program and the physicians who have participated.

Woman's Auxiliary.—Leo E. Gibson, M.D., chairman, reported on activities of the Auxiliary and recommended approval of revisions of its constitution. The report *was approved.*

Resolution 58–49.—George J. Lawrence, Jr., M.D., chairman, reported that the resolution would be activated by several regional meetings, the first to be of the Seventh and Eighth District Branches in January and requested funds for expenses for such a meeting. Approval *was voted.*

New Business

World Medical Association.—Louis H. Bauer, M.D., secretary-general, described some current activities of the Association.

Executive Session

The following actions of the Council in executive session were reported by Secretary Wheeler:

1. That the resignation of Anthony A. Mira, M.D., as director of the Bureau of Industrial Health and Workmen's Compensation, be accepted with regret;

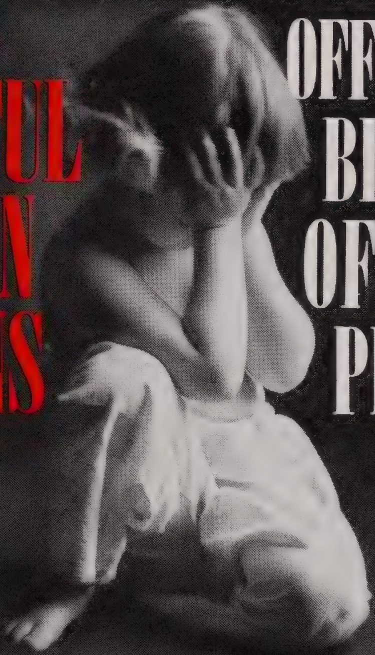
2. That a proposal of the State Charities Aid Association that a bill be introduced in the State Legislature calling for the establishment of a commission to carry on a broad study of licensure in the healing arts be disapproved;

3. That the employment of Harold B. Smith, M.D., for the future, on a retainer basis, be approved, changing his title from "executive officer" to "legislative analyst."

The meeting adjourned at 4 : 20 P.M

A Comparative Human in Vivo Study of Antacids

Experiments carried out in human subjects showed that of four well-known antacids only dihydroxy aluminum sodium carbonate (DASC) in a dose of 1.0 Gm. maintained the gastric pH within or close to the optimum range of pH 3 to pH 5 over a seventy-five minute observation period. Based on the maintenance of this range, the other antacids in decreasing order of effectiveness (at the same dosage) were aluminum hydroxide, calcium carbonate, and sodium bicarbonate. The comparisons were made by removing samples of gastric juice at specified intervals. These tests were carried out on "good acid producers" so that no gastric secretory stimulants were needed. Preliminary experiments had indicated that histamine, alcohol, and caffeine did not produce a uniform response from day to day; also, several subjects became sensitive to histamine. —*E. W. Packman, D. D. Abbott, J. I. Feinman, and J. W. E. Harrison, Journal of the American Pharmaceutical Association, September, 1957*



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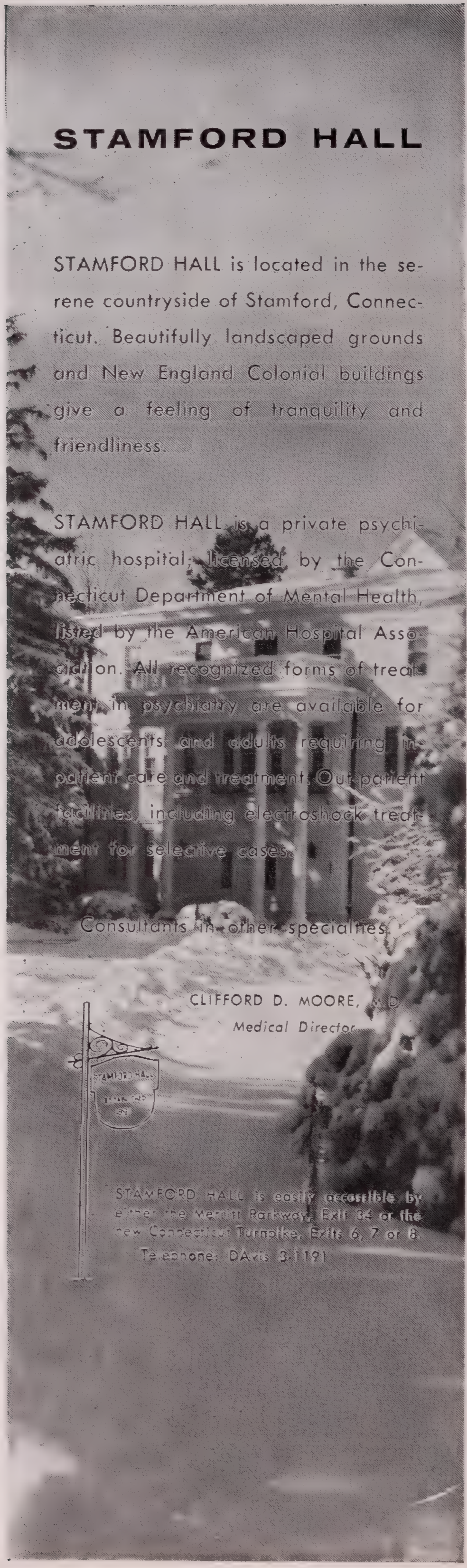

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BOOKS REVIEWED

Open Reduction of Common Fractures. By Oscar P. Hampton, Jr., M.D., and William T. Fitts, Jr., M.D. Octavo of 212 pages, illustrated. New York, Grune & Stratton, 1959. (Modern Surgical Monographs.) Cloth, $8.75.

The ideal management of a fracture is to attain solid union in perfect alignment with all joints freely movable in a physiologic range of motion within a reasonable time. There are usually several methods of treatment of fractures. Open reduction is one method. Usually it is the radical form of therapy. However, in certain indicated situations it may be the conservative procedure. This especially applies where the skilled, experienced surgeon is in charge of the management of the injury.

The authors are well-qualified experienced bone and joint surgeons. They have had extensive experience of their own, and are well trained to call on the experience of others. They have done so. They write clearly and concisely and show excellent judgement in the approach to the subject.

The volume is arranged in 3 chapters. These are entitled general considerations, fractures of the upper extremity, and fractures of the lower extremity. There is a short but practical bibliography.

The section on methods of internal fixation are well arranged and the mechanical principles explained are unavailable to the training of new surgeons in this technical field of bone surgery. The line drawings throughout are numerous and help to explain the text.

The authors make no claim for originality for any of the operations described. They have drawn freely from the literature. However, in 205 pages they cover a wide field. The book is recommended especially for the resident.—Alan A. Kane

Neuropharmacology, Transactions of the Fourth Conference, September 25, 26, and 27, 1957, Princeton, N. J. Edited by Harold A. Abramson, M.D. Octavo of 285 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $5.00.

Neuropharmacology is not a new field. Many of the classical pharmacologic experiments—as with

[Continued on page 743]

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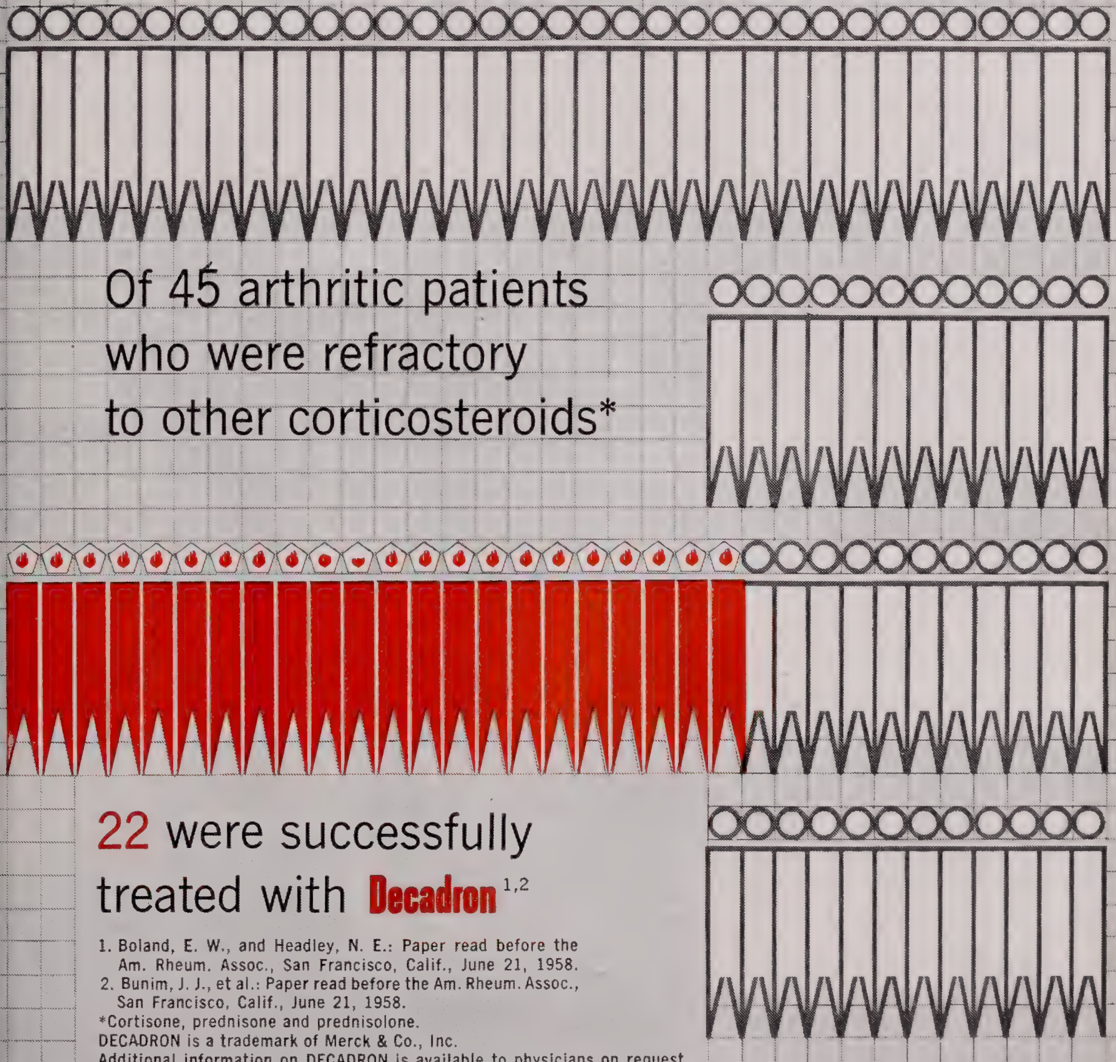

Of 45 arthritic patients
who were refractory
to other corticosteroids*

22 were successfully
treated with **Decadron**[1,2]

1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

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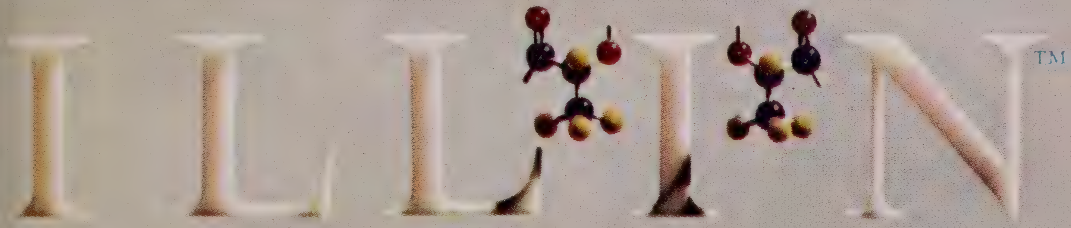


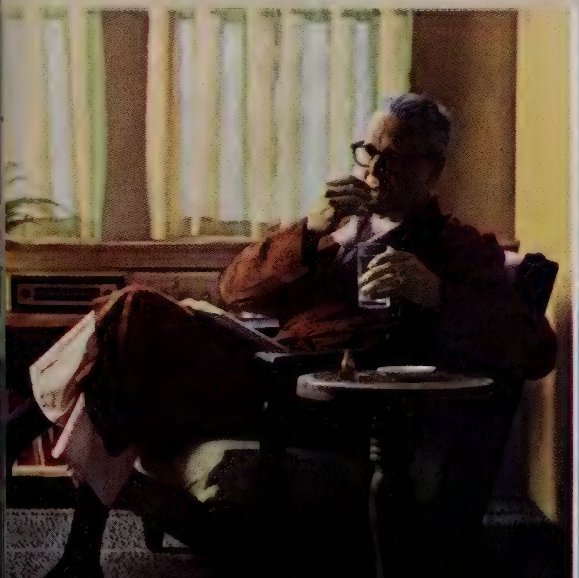
POTASSIUM PENICILLIN-152

ANTIBIOTIC ACTIVITY DIRECTLY PROPORTIONAL TO ORAL DOSE

REDUCED RATE OF INACTIVATION BY STAPH PENICILLINASE

MANY STAPH STRAINS MORE SENSITIVE TO SYNCILLIN IN VITRO

BRISTOL



FOR HIGHLY EFFECTIVE THERAPY OF THE LARGE VARIETY OF INFECTIONS CAUSED BY SUSCEPTIBLE PATHOGENS...NEW

SYNC

Significance of complementary action of isomers in SYNCILLIN

The antibiotic effect of the clinically available mixture, SYNCILLIN. is greater than that of either of its two component isomers alone against many important pathogens, including some penicillin-resistant staphylococci. This phenomenon has been described as *Isomeric Complementarity.*

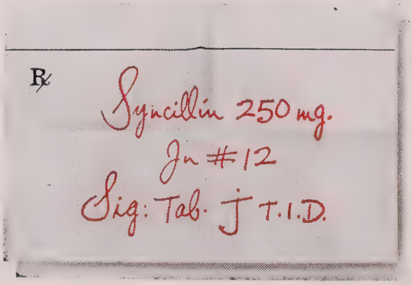
Significance of higher blood levels with SYNCILLIN

Higher blood levels may be of value with organisms of only moderate penicillin sensitivity where doubling the blood concentration may be essential for effective bactericidal action. In addition. these higher levels may be necessary where there is infection in areas with a poor blood supply. A higher blood concentration may then provide the increased diffusion pressure required to deliver adequate amounts to the tissue. Also, antibiotic activity of SYNCILLIN is directly proportional to oral dosage. Increasing the dosage may, therefore, enhance the drug's effectiveness in certain cases.

Efficacy of SYNCILLIN against staphylococci and other resistant organisms

Studies have shown that SYNCILLIN is effective *in vitro* against 60 to 75% of hospital "staph" strains, while penicillin G and penicillin V are now effective against only 30 to 50%.[1, 2] Therefore, if clinical judgment indicates the use of penicillin, SYNCILLIN would be expected to be the most effective. However, since some strains are still resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment.

There have recently been reports of decreased efficacy of penicillin in streptococcal[3] and gonococcal[4, 5] infections. The emergence of penicillin-resistant gonococci appears to be associated with an increase in the incidence of gonorrhea all over the world. When a less sensitive strain is encountered the higher blood levels produced by SYNCILLIN may be most helpful.



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Syncillin 250 mg.

Jn #12

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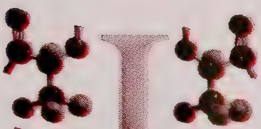
major therapeutic advantages accompany molecular asymmetry



ILLIN™

Relation of intermittent high blood levels of SYNCILLIN to antibacterial efficacy

SYNCILLIN, like all clinically available penicillins, is bactericidal. Periodic high blood concentrations may be sufficient to permit complete eradication of sensitive pathogens. According to Eagle,[6] "Soon after penicillin attains effective concentrations, the bacteria cease multiplying; and the bacteriostatic effect persists for a number of hours after penicillin has fallen to concentrations that are wholly ineffective. . . . The therapeutic significance of this postpenicillin recovery period is enhanced by the fact that the recovering bacteria, damaged but not killed by the previous exposure to penicillin, are abnormally susceptible to the host defenses. In consequence, the bactericidal process *in vivo* continues for many hours after the drug itself has fallen to ineffective concentrations."

Reduced rate of inactivation of SYNCILLIN by staph penicillinase

Bacterial resistance to penicillin has been attributed to the action of penicillin-inactivating enzymes produced by the invading organisms. SYNCILLIN is less affected by staphylococcal penicillinase than either of its component isomers. Further, SYNCILLIN is shown to be less inactivated by this enzyme than penicillin V or penicillin G. Penicillinase from *B. cereus* likewise inactivates SYNCILLIN less rapidly than penicillin V or G.

Indications: Infections caused by pneumococci, streptococci, gonococci, corynebacteria, penicillin-sensitive staphyloccocci, as well as certain strains of staphylococci resistant to other penicillins. SYNCILLIN, like other oral penicillins, is not recommended at the present time in deep-seated or chronic infections, subacute bacterial endocarditis, meningitis, or syphilis.

Dosage: 125 mg. or 250 mg. t.i.d., depending on the severity of infection. Larger doses (e.g., 500 mg. t.i.d.) may be used for more severe infections. SYNCILLIN may be administered without regard to meals. Beta hemolytic streptococcal infections should be treated with SYNCILLIN for at least ten days.

Precautions: At the present time it is not possible to draw definite conclusions regarding the incidence of allergenicity to SYNCILLIN or its cross-allergenicity with natural penicillins. *Therefore, the usual precautions for oral penicillin therapy should always be observed.* Patients with histories of asthma, hay fever, urticaria, or previous reactions to penicillin should be watched with special care. Administration of oral penicillin, in rare instances, may provoke acute anaphylaxis, particularly in penicillin-sensitive individuals.
If diarrhea occurs, lengthen the interval between dosages.
If superinfection occurs during therapy, appropriate measures should be taken.
Since some strains of staphylococci are resistant to SYNCILLIN as well as to other penicillins, cultures and sensitivity tests should be performed where indicated by clinical judgment. As is true with all antibiotics, clinical response does not always correlate with laboratory bacterial sensitivity reports.

Supply: 125 and 250 mg. tablets, bottles of 25 and 100. 125 mg. powder for oral solution, 60 ml. vials.

References: 1. Wright, W. W.: Microbiology Report to Bristol Laboratories Inc. 2. Morigi, E. M. E.; Wheatley, W. B., and Albright, H.: Paper presented at the Seventh Antibiotic Symposium, November 4-6, 1959, Washington, D.C. 3. Editorial: New England J. Med. **261**:305 (Aug. 6) 1959. 4. King, A.: Lancet **1**:651 (March 29) 1958. 5. Epstein, E.: J.A.M.A. **169**:1055 (March 7) 1959. 6. Eagle, H. and Musselman, A. D.: J. Bact. **58**:475, 1949.

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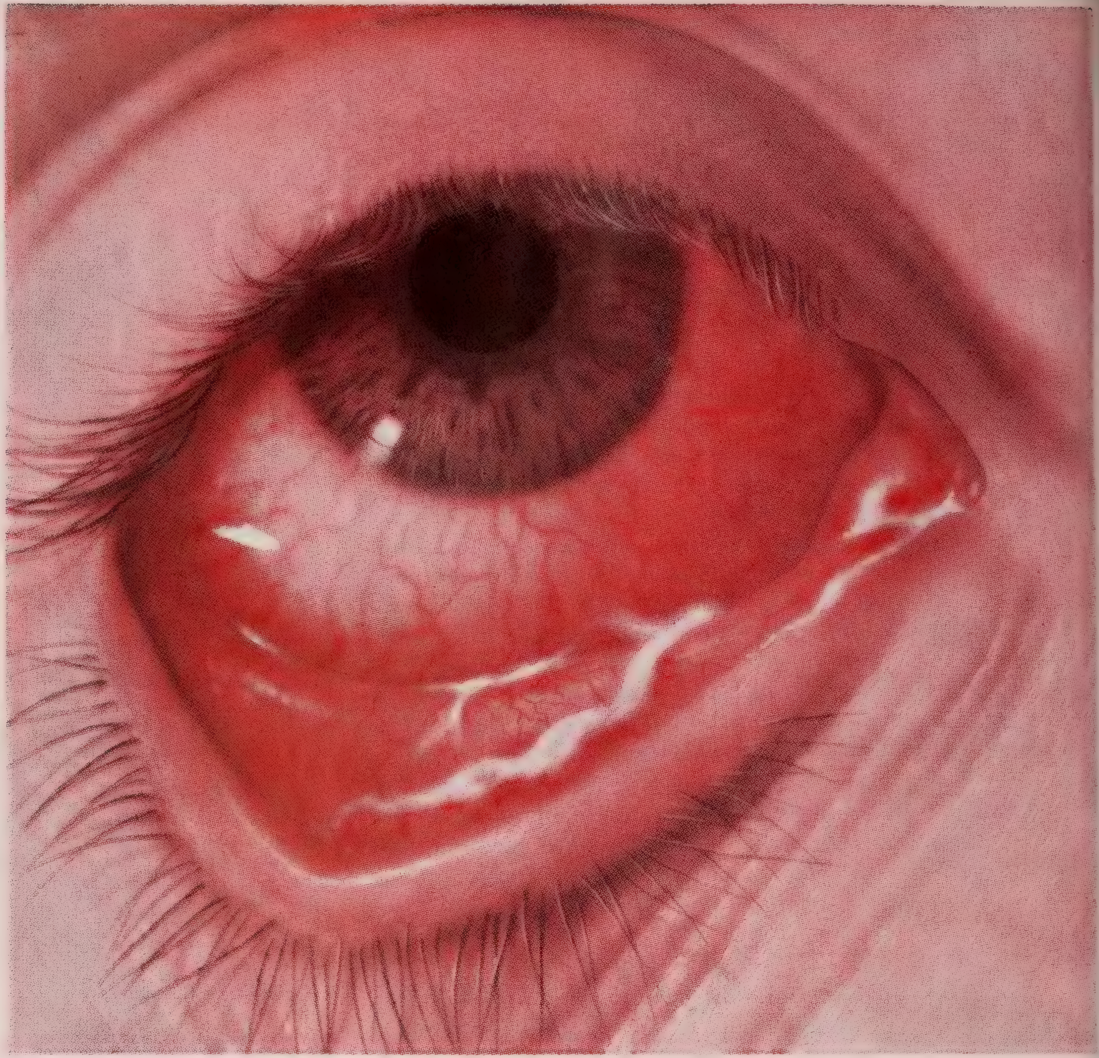

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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[Continued from page 736]

autonomic drugs for example—are in that realm. But with the advent of recently available drugs affecting the nervous system or behavior, entirely new clinical experiences are reported. In order to determine the mechanisms or the pathways through which drugs act, or to find what influences modify their activity, and fundamentally, to seek the physical origins of operations of the psychic manifestations, there are undertaken basic studies such as those described in this book. Also, in response to this need, new methods of study in the lower animals as well as in man had to be developed.

One example of such a study in the lower animals comprises a study of the effect of respiratory poisons on Siamese fighting fish when exposed to LSD-25. Though this chapter does not necessarily reveal substantial data, the use of that animal as a living reagent can well be productive. The early studies of progesterone, for example, used fish as reagents.

An excellent, 110-page chapter deals with clinical studies with taraxein, a protein presumably found only in schizophrenic serum. The reports of the changes found in presumably normal individuals upon receiving taraxein are overshadowed by the interest created in discussing the various possibilities involved in the changes. The method of obtaining taraxein, its purification, the assessment of its activity, its presence in other than schizophrenic patients, its effect in the presence of auxiliary agents are described and explored.

A chapter of particular value is on mescaline and other substances pharmacologically related to it (as the sympathomimetic amines) with respect to the relationship their chemical structures bear to their pharmacologic activity. This is the type of material on which much of the work on MAO is based—which results in the development of psychic energizers. The work in this chapter is not clinical but many of the mechanisms on which clinical activity are based are found here. Experiences with other materials having a psychomimetic effect are also disclosed by the discussants.

The treatment is highly critical—the discussions relating to each chapter are lively, searching, and take little—including definitions of normals—for granted.

The book has a broad appeal: pharmacologists, biochemists, psychiatrists, and other physicians will find that whereas it does not glibly answer numerous questions it poses very many questions. Well-formulated questions allow us to define the problems; and answers to well-formulated problems are bound to be considerably more enlightening than answers adduced by elimination.—Erwin Di Cyan

A Manual of Anaesthetic Techniques.—By William J. Pryor, M.B. Second Edition. Octavo of

[Continued on page 744]

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Schering

[Continued from page 743]

228 pages, illustrated. Bristol, John Wright & Sons, Ltd. (Baltimore, Williams & Wilkins Co.), 1959. Cloth, $7.00.

This book simply outlines for the beginner the technics of anesthesiology and fundamental principles therefore are omitted. Such omissions do not accord with the established teaching of a profession by basing and varying its technics on scientific sources and theory. Discarded and unsafe methods, viz. the use of nitrous oxide with less than 20 per cent oxygen, "crash intubation" to avoid aspiration of gastric contents, intravenous procaine to prevent and treat arrhythmias, are unfortunately included. This book is not recommended.—Samuel Berkowitz

Color Atlas and Management of Vascular Disease. By William T. Foley, M.D., and Irving S. Wright, M.D. Quarto of 170 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1959. Cloth, $18.

This atlas is not only well prepared but it is the only publication of its kind with photographic reproductions in color. It represents an heroic effort to give an actual color reproduction of the problems presented not only in the diagnosis of peripheral vascular problems but also the results of some of the treatment. Because of the intent of the book, the discussions of clinical pictures and the various types of treatment employed are of necessity brief.

It is a must on the shelf of every physician interested either directly or indirectly in the diagnosis as well as in the management of problems pertaining to the peripheral circulation.

The authors are to be congratulated not only for the preparation of the atlas but also upon the fact that the cost of the atlas was maintained at a low level considering the amount of work which went into the preparation of the color photographs.—Irving Greenfield

Handbook of Circulation. Compiled by Philip L. Altman. Quarto of 393 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Paper, $7.50.

This text is a compilation of many phases of circulation in health and disease. A number of authors participated in the work and a large bibliography is employed. The work covers comparative analytic data of the circulation in man and lower animals including features in anatomy, chemical composition, blood volumes, heart rate, blood pressure, lymph flow, the electrocardiogram, heart sounds and murmurs, effect of pregnancy, effect of compression, decompression and acceleration, of radiation, blood coagulants and anticoagulants, effect of drugs and chemical substances, translocation in plants, and effects of pathologic conditions. The voluminous material is condensed in numerous tables which require a great deal of concentration and careful study in order to obtain some benefit from them.

The book should be of value as a reference for the research worker in medical and biologic sciences, but it will serve no particular purpose to the medical practitioner who is interested in the practical phases of medicine.—Louis H. Sigler

The Emergency Syndromes In Pediatric Practice. By Alfred J. Vignec, M.D. Octavo of 382 pages, illustrated. New York, Landsberger Medical Books, Inc., 1959. Cloth, $9.00

The book has many admirable features. It might well serve as a reference work in the hospital nursery and the children's ward for the resident staff.

It differs from the average work of its kind, in that the thoughts expressed are the opinion of one man's rounded experiences of many years as a pediatrician, without loading the pages with many references.

The chapters on respiratory diseases and on blood dyscrasias in the newborn are worth studying. Indeed the book may serve as a refresher course for the general practitioner, and for the less experienced young pediatrician.

It is regrettable that such an excellent work should present one flagrant weakness, namely on some of the diseases of the gastrointestinal tract. We regard the subject matter dealing with acute appendicitis and intussusception entirely out of date and impracticable. The author admits that "a positive diagnosis of acute appendicitis in a child under four years of age, before rupture, is a rarity," and he further substantiates his view by quoting Professor "X" of a well-known medical school who "never observed an acute appendicitis in a child under three years of age without rupture." The fact that "80 per cent of cases of acute appendicitis under four years are ruptured," should not speak well for the diagnostic acumen of any pediatrician.

The surgeon as well as the patient look to the pediatrician for an early diagnosis in these cases.—Harry Apfel

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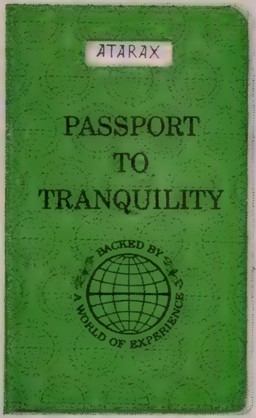

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IN ELDERLY PATIENTS well tolerated by debilitated patients	"...seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: J. Am. Geriatrics Soc. **7**:61 (Jan.) 1959.	Settel, E.: Am. Pract. & Digest Treat. **8**:1584 (Oct.) 1957. Negri, F.: Minerva med. **48**:607 (Feb. 21) 1957. Shalowitz, M.: Geriatrics **11**:312 (July) 1956.
IN ALLERGIC PATIENTS useful adjunctive therapy for asthma and dermatosis; particularly effective in urticaria	"All [asthmatic] patients reported greater calmness and were able to rest and sleep better...and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medicament." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.	Eisenberg, B. C.: J.A.M.A. **169**:14 (Jan. 3) 1959. Coirault, R., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. Robinson, H. M., Jr., et al.: South. M. J. **50**:1282 (Oct.) 1957.
IN HYPEREMOTIVE ADULTS does not impair mental acuity	"...especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

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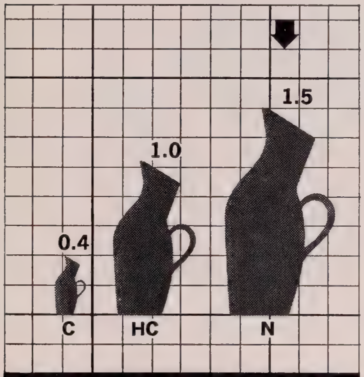
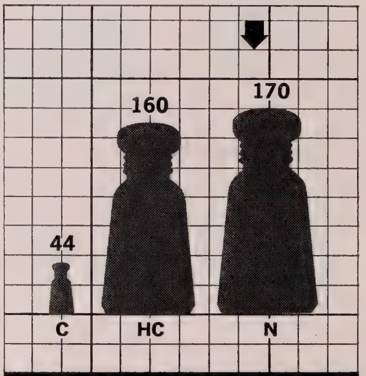
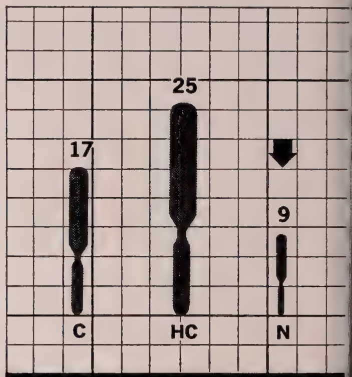
Comparison of electrolyte excretion pattern for the 24 hours following typical doses of chlorothiazide, hydrochlorothiazide, and Naturetin



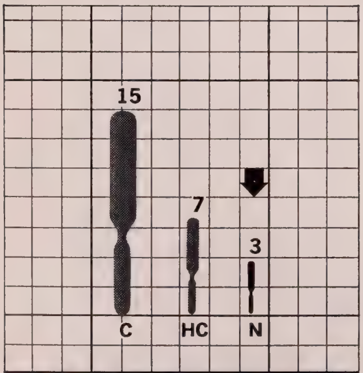
Urinary Volume (liters)
significantly increased
with Naturetin



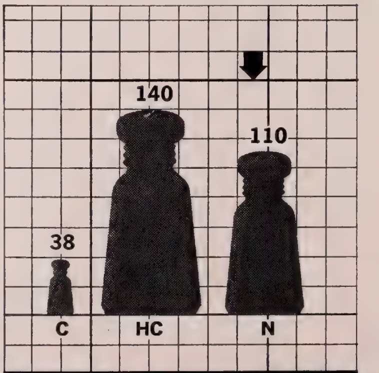
Natriuresis (mEq./24 hr.)
sodium excretion significantly
increased with Naturetin



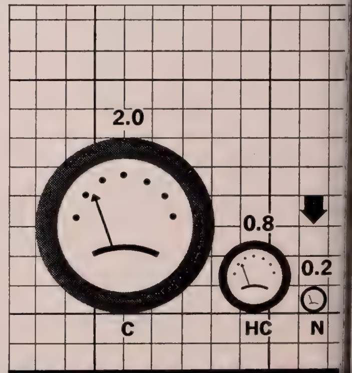
Potassium Excretion
(mEq./24 hr.)
least with Naturetin



Bicarbonate Excretion
(mEq./24 hr.)
least with Naturetin



Chloride Excretion
(mEq./24 hr.)
marked increases



Urinary pH
least increase with Naturetin

Typical Doses: Chlorothiazide—1,000 mg.; Hydrochlorothiazide—50 mg.; Naturetin (Benzydroflumethiazide)—5 mg.

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1. Adapted from: Ford, R. V., Squibb Clin. Res. Notes 2:1 (Dec.) 195

A single 5 mg. tablet once a day provides all these advantages[2]

- prolonged action — in excess of 18 hours
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- low toxicity — few side effects — low salt diets not necessary
- comparative studies with chlorothiazide, hydrochlorothiazide, and Naturetin disclose that smallest doses of Naturetin produce greater weight loss per day
- in hypertension, Naturetin, alone or in combination with other anti-hypertensives, produces significant decreases in mean blood pressure and other favorable clinical effects
- purpura and agranulocytosis not observed
- allergic reactions rarely observed

[2] Reports (1959) to the Squibb Institute for Medical Research.

Naturētin —*Indications:* in control of edema when diuresis is required, in congestive heart failure, in the premenstrual syndrome, nephrosis and nephritis, cirrhosis with ascites, edema induced by drugs (certain steroids); in the management of hypertension, used alone, combined with Raudixin (Squibb Rauwolfia Serpentina Whole Root), or with other antihypertensive drugs, such as ganglionic blocking agents.

Contraindications: none, except in complete renal shutdown.

Precautions: when Naturetin is added to an antihypertensive regimen including hydralazine, veratrum, and/or ganglionic blocking agents, immediate reduction must be made in the dosage for all preparations; the dosage for ganglionic blocking agents must be decreased by 50% to avoid a precipitous drop in blood pressure. This also applies if these hypotensive drugs are added to an established Naturetin regimen . . . in hypochloremic alkalosis with or without hypokalemia . . . in cirrhotic patients or those on digitalis therapy when reductions in serum potassium are noted . . . in diabetic patients or those predisposed to diabetes . . . when increased uric acid concentrations are noted . . . when signs—leg or abdominal cramps, pruritus, paresthesia, rash—suggestive of hypersensitivity, are noted.

Naturētin —*Dosage: in edema,* average dose, 5 mg., once daily, preferably in the morning; to initiate therapy, up to 20 mg., once daily or in divided doses; for maintenance, 2.5 to 5.0 mg., daily in a single dose. *In hypertension:* suggested initial dose, 5 to 20 mg. daily; for maintenance, 2.5 to 15 mg. daily, depending on the individual response of the patient. When Naturetin is added to an antihypertensive regimen with other agents, lower maintenance doses of each drug should be used.

Naturētin —*Supplied:* tablets of 2.5 mg. and 5 mg. (scored).

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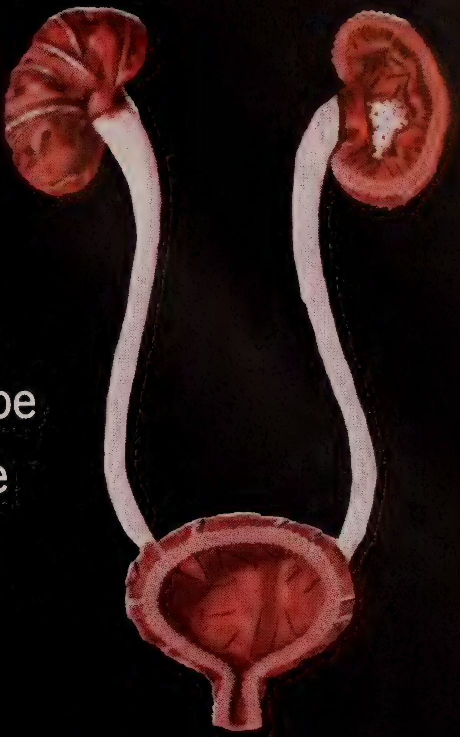

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REFERENCES: 1. Campbell, M. F.: Principles of Urology, Philadelphia, W. B. Saunders Co., 1957. 2. Colby, F. H.: Essential Urology, Baltimore, The Williams & Wilkins Co., 1953.

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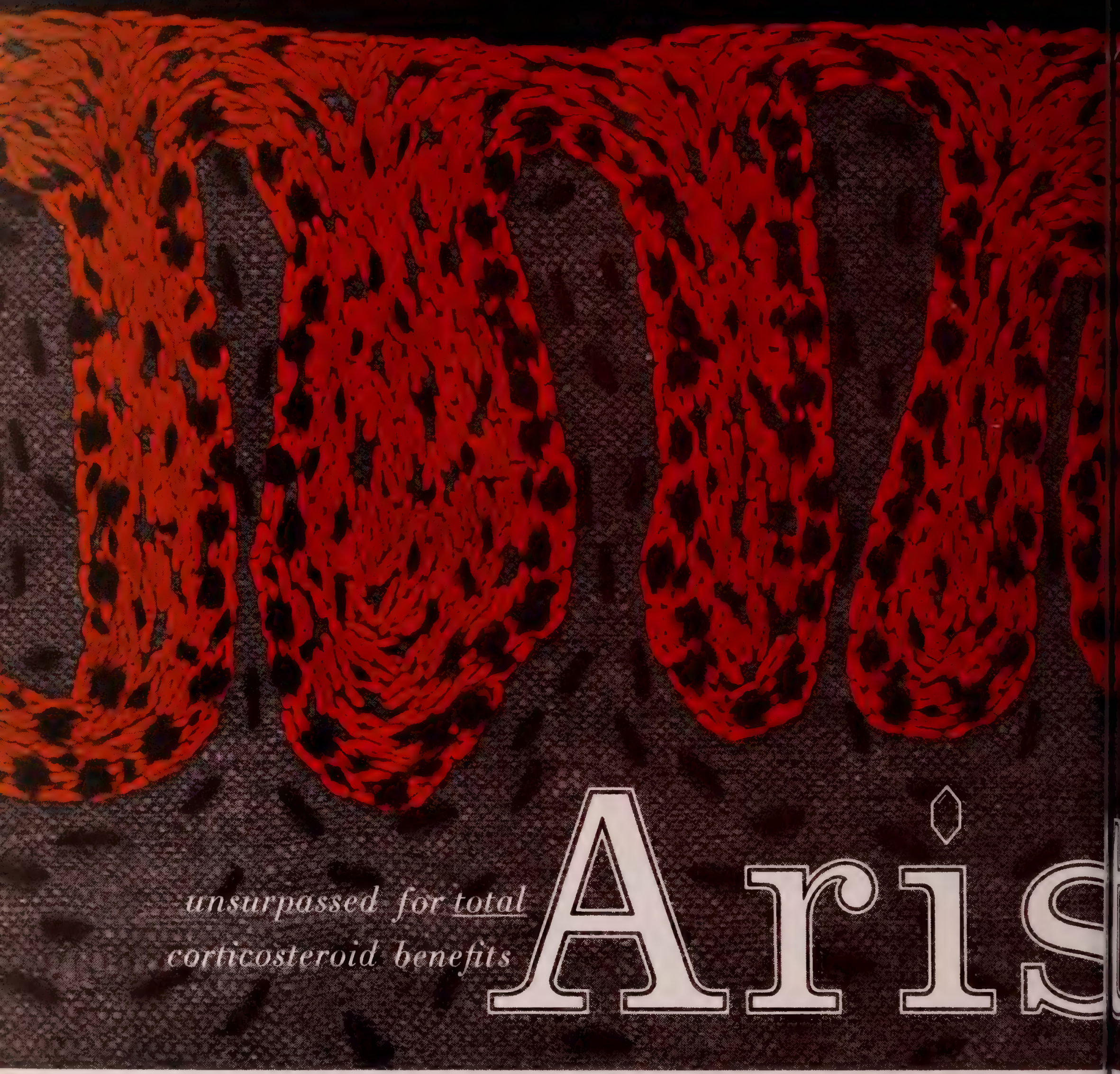
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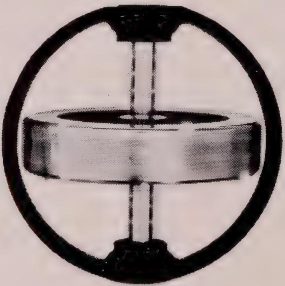
- **effective control** of allergic and inflammatory symptoms[1-3,7,8,12-15,17,18]



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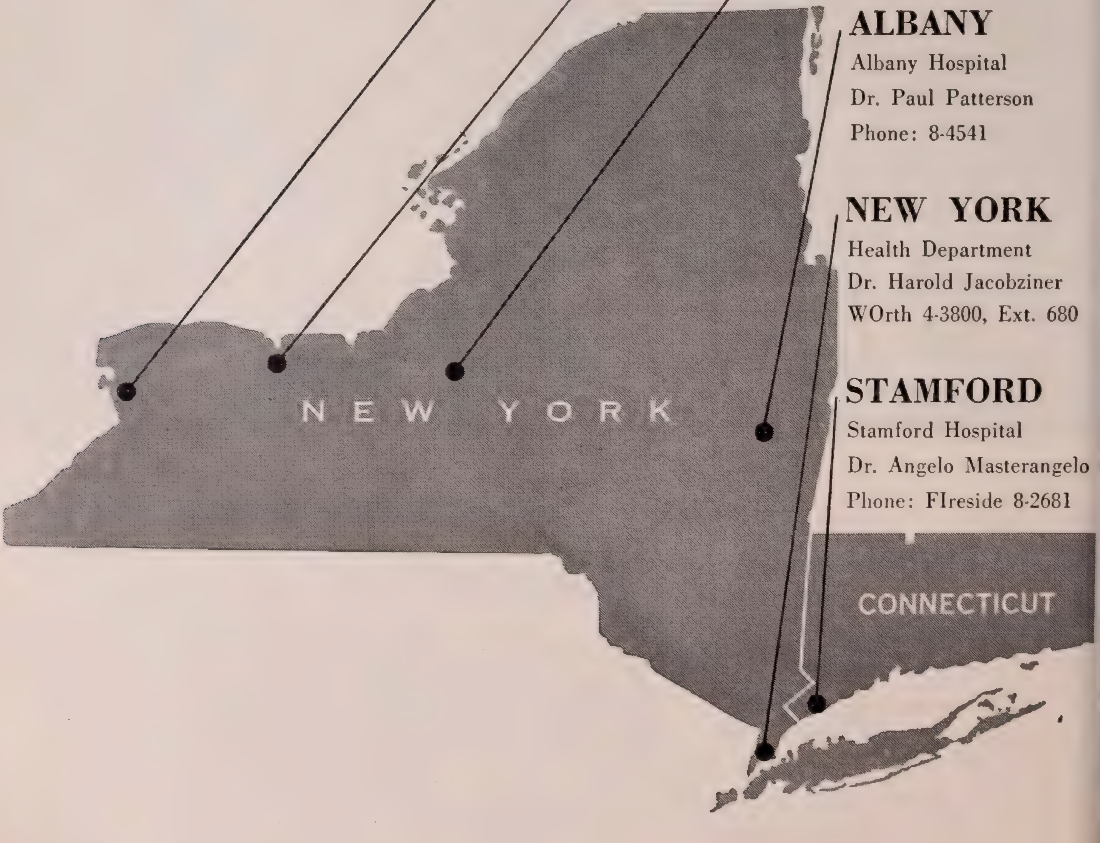

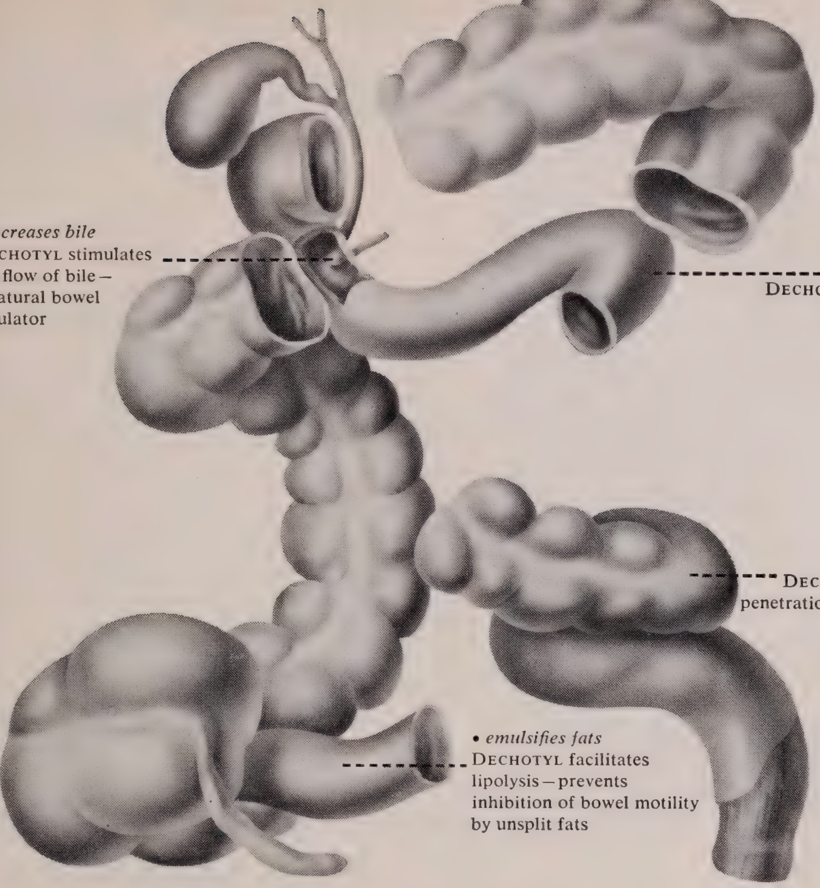

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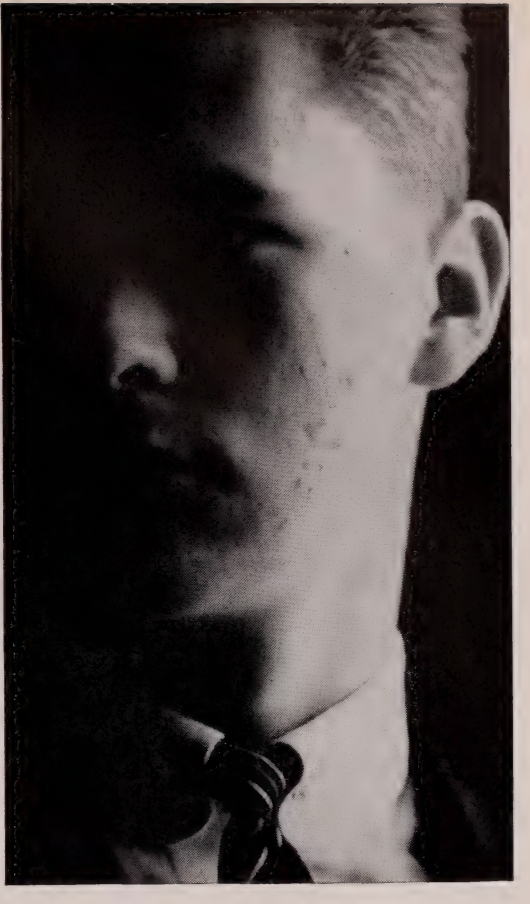

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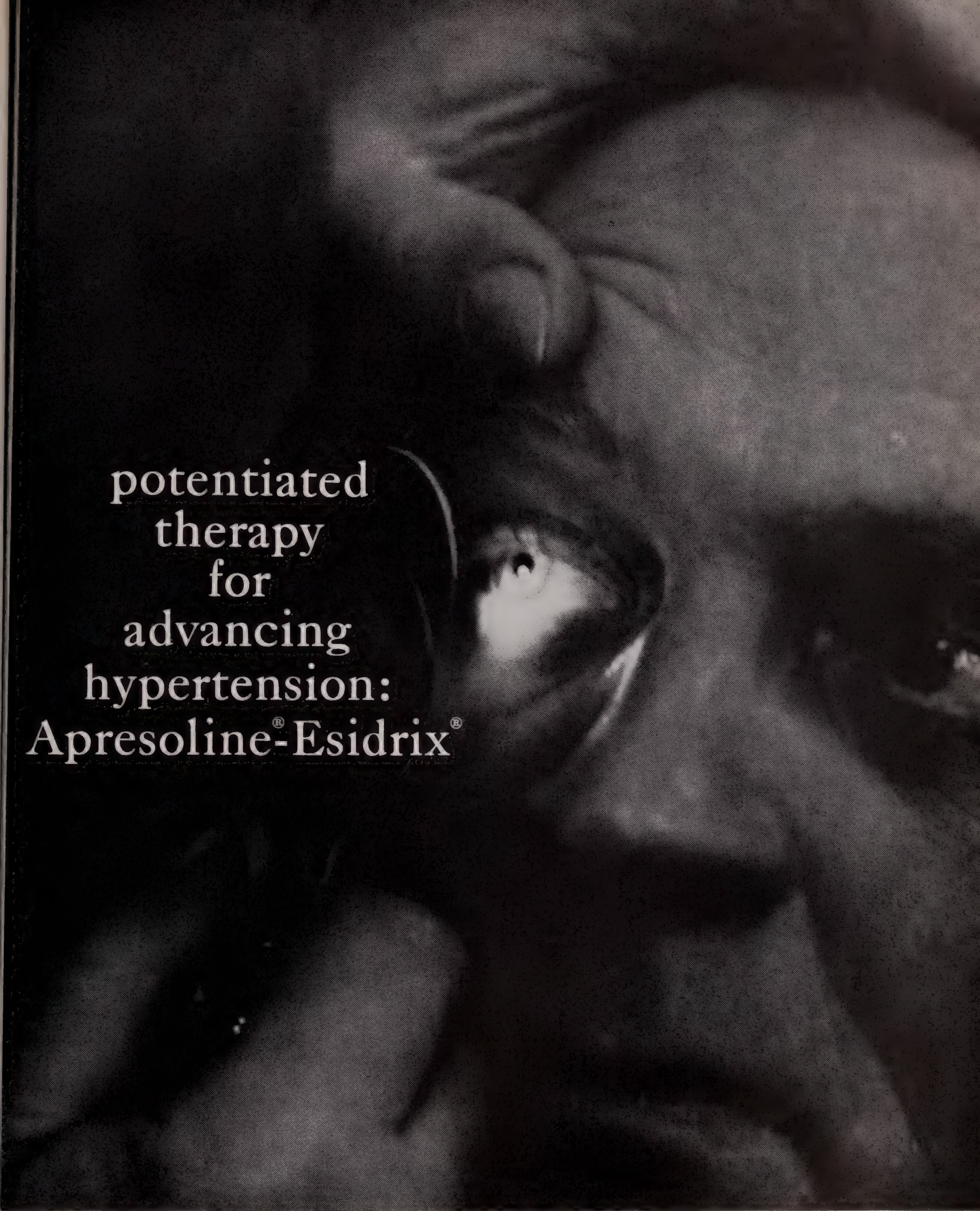
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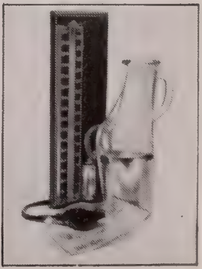

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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

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References: 1. Lichtman, A. L.: Scientific Exhibit, meeting of the International College of Surgeons, Miami Beach, Fla., Jan. 4-7, 1959. 2. Mullin, W. G., and Epifano, Leonard: *Am. Pract. & Digest Treat.* 10:1743, Oct., 1959. 3. Ganz, S. E.: *J. Indiana M. A.* 52:1134, July, 1959. 4. DeNyse, D. L.: *M. Times* 87:1512, Nov., 1959. 5. Shanaphy, J. F.: *Current Therap. Res.* 1:59, Oct., 1959. 6. Stough, A. R.: *J. Oklahoma M. A.* 52:575, Sept., 1959.

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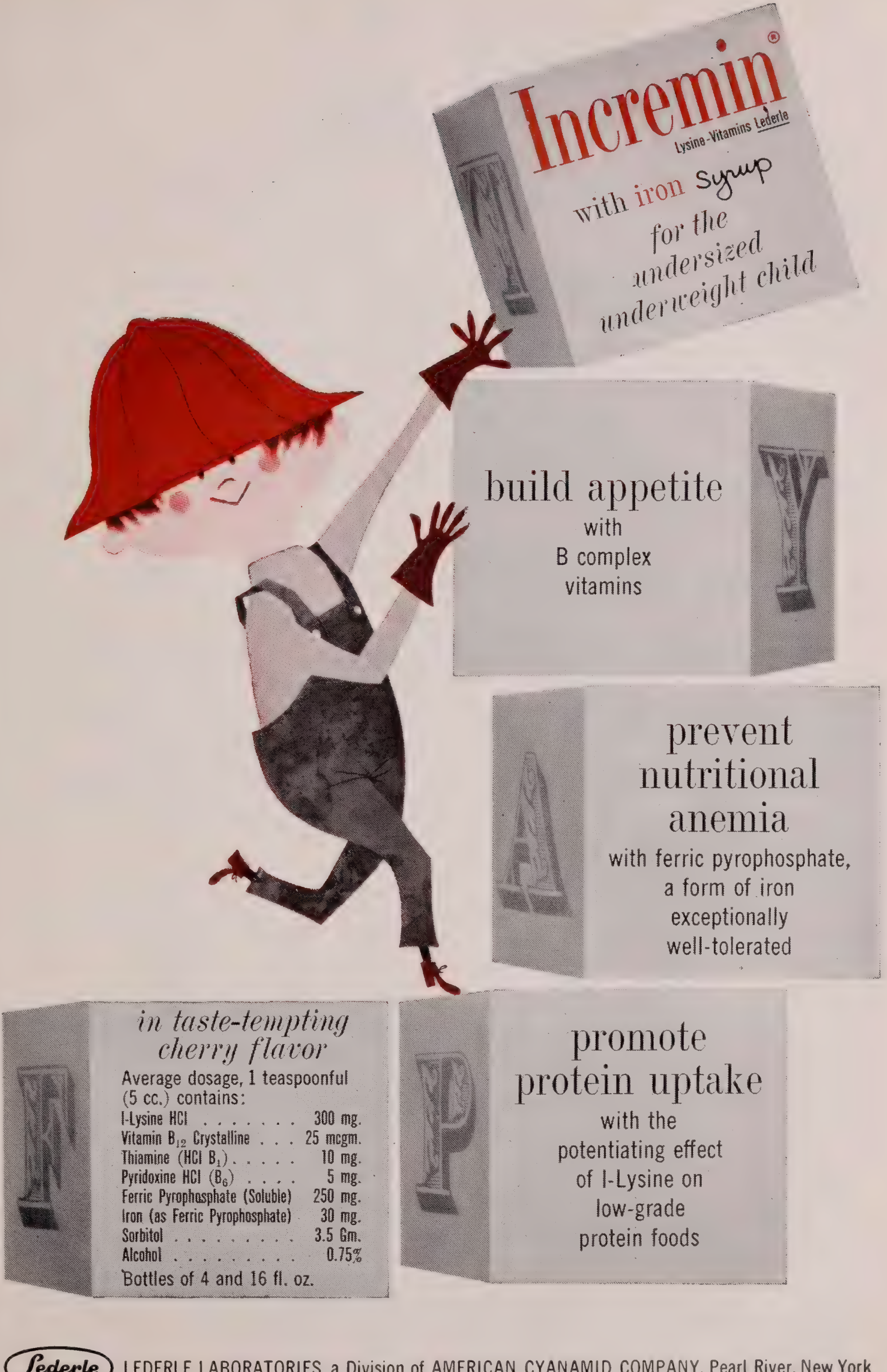
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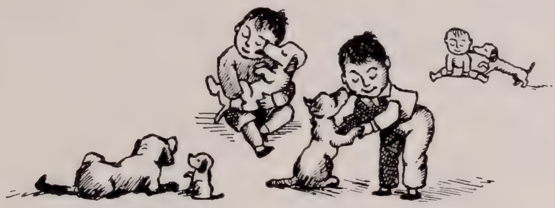

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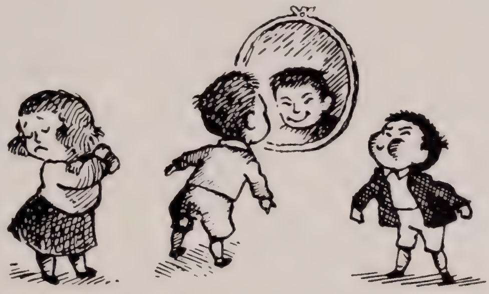

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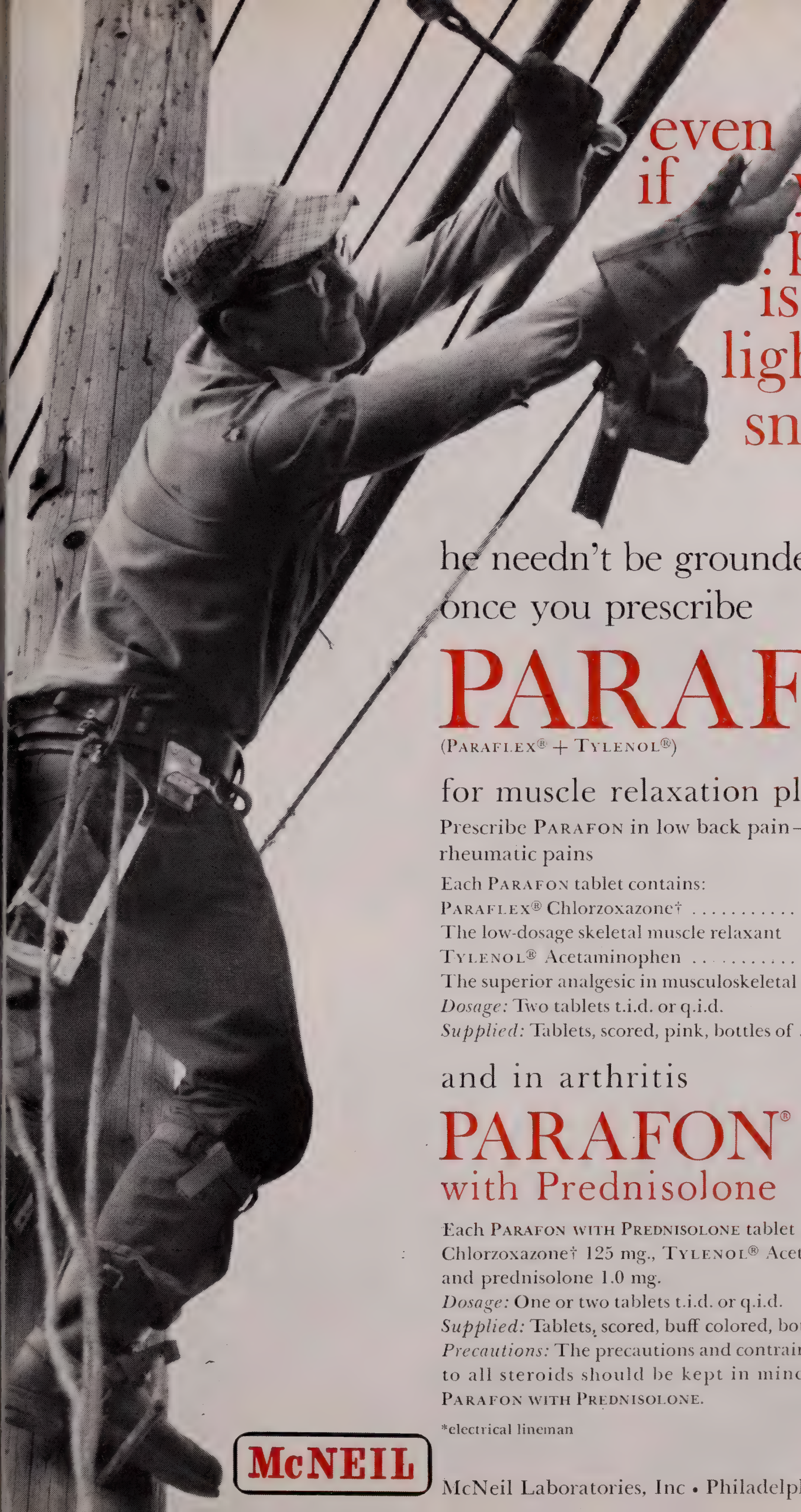

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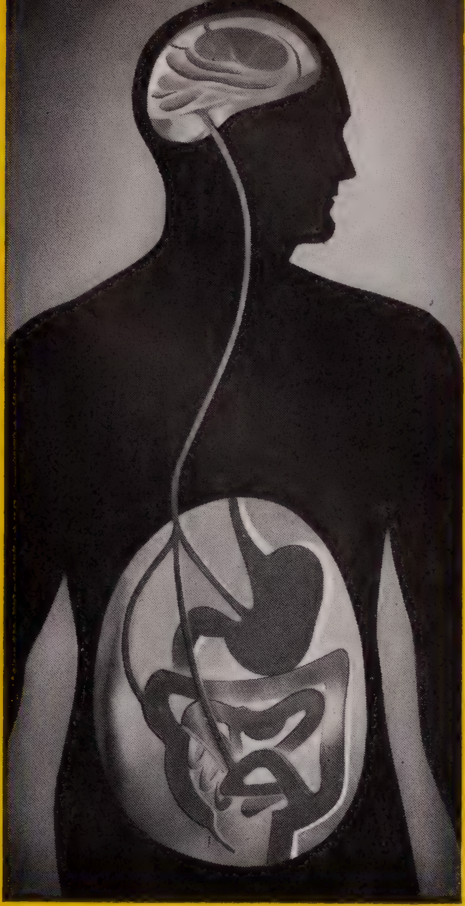

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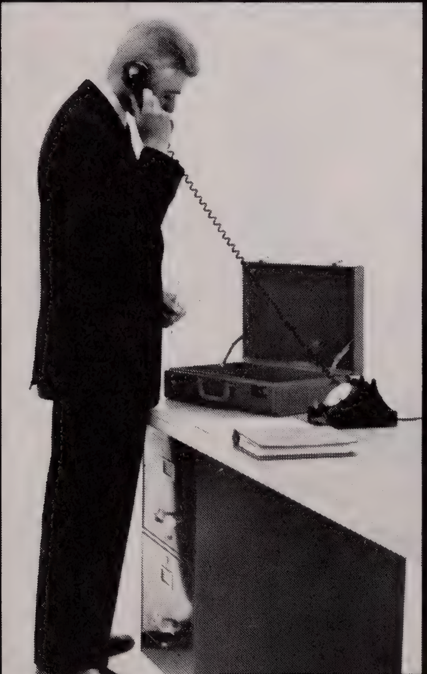

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*Knudsen, E. T., and Rolinson, G. N.: Lancet *2*:1105 (Dec. 19) 1959.

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effective by intrapleural instillation[1]

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1. Perkins, J. L.: Kansas State M. J. (to be published).

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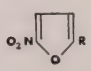

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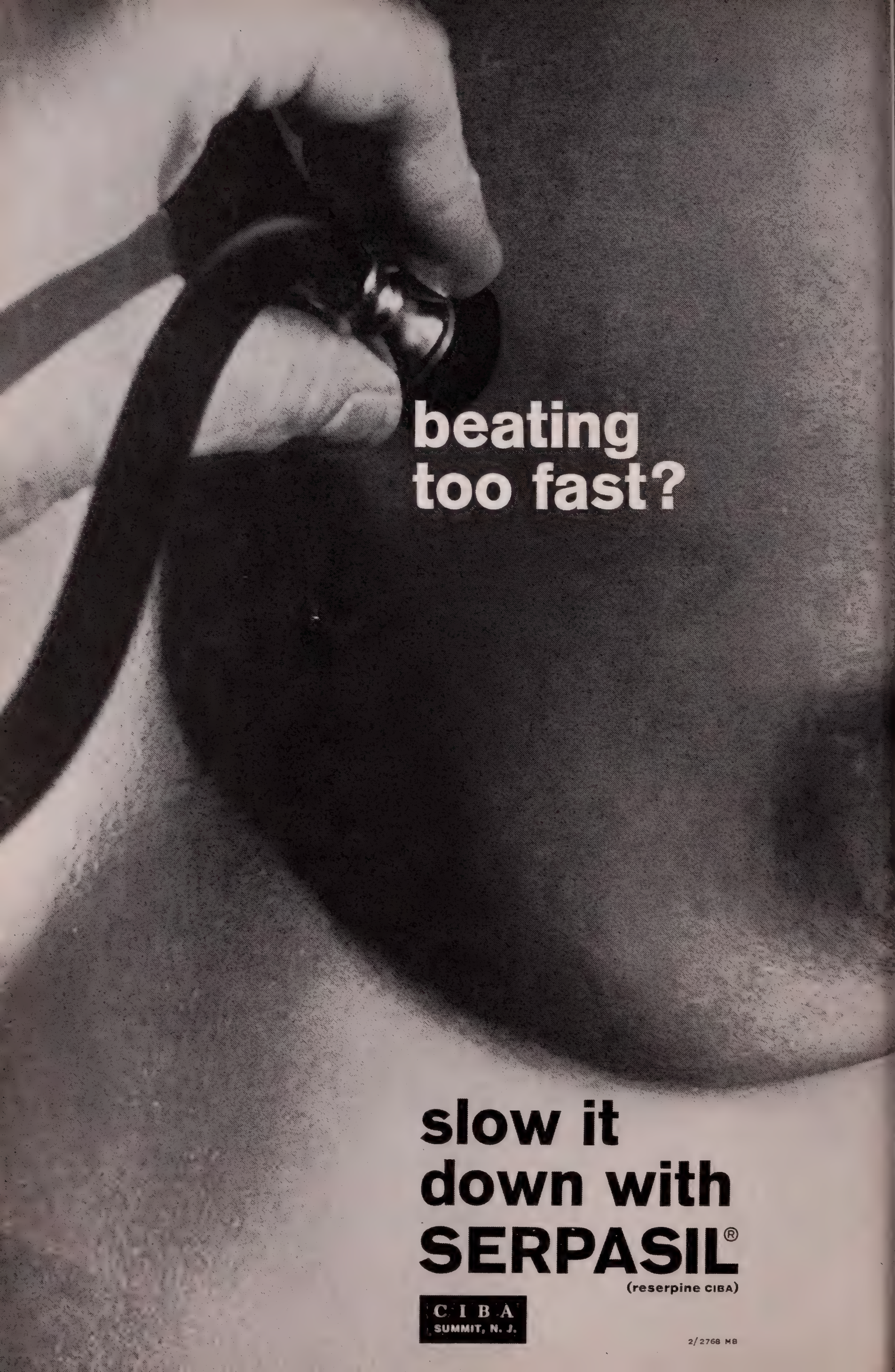
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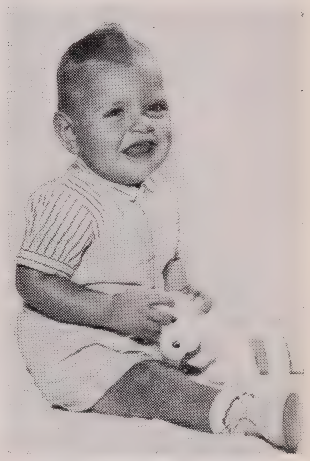
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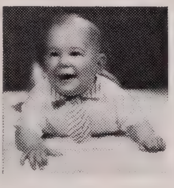
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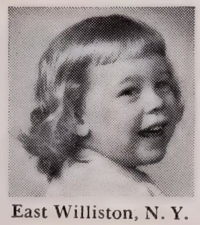
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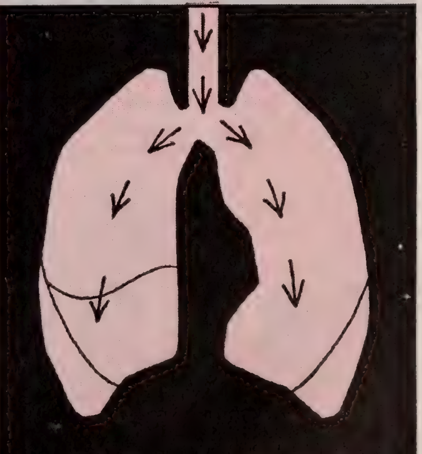

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[1] *Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958*

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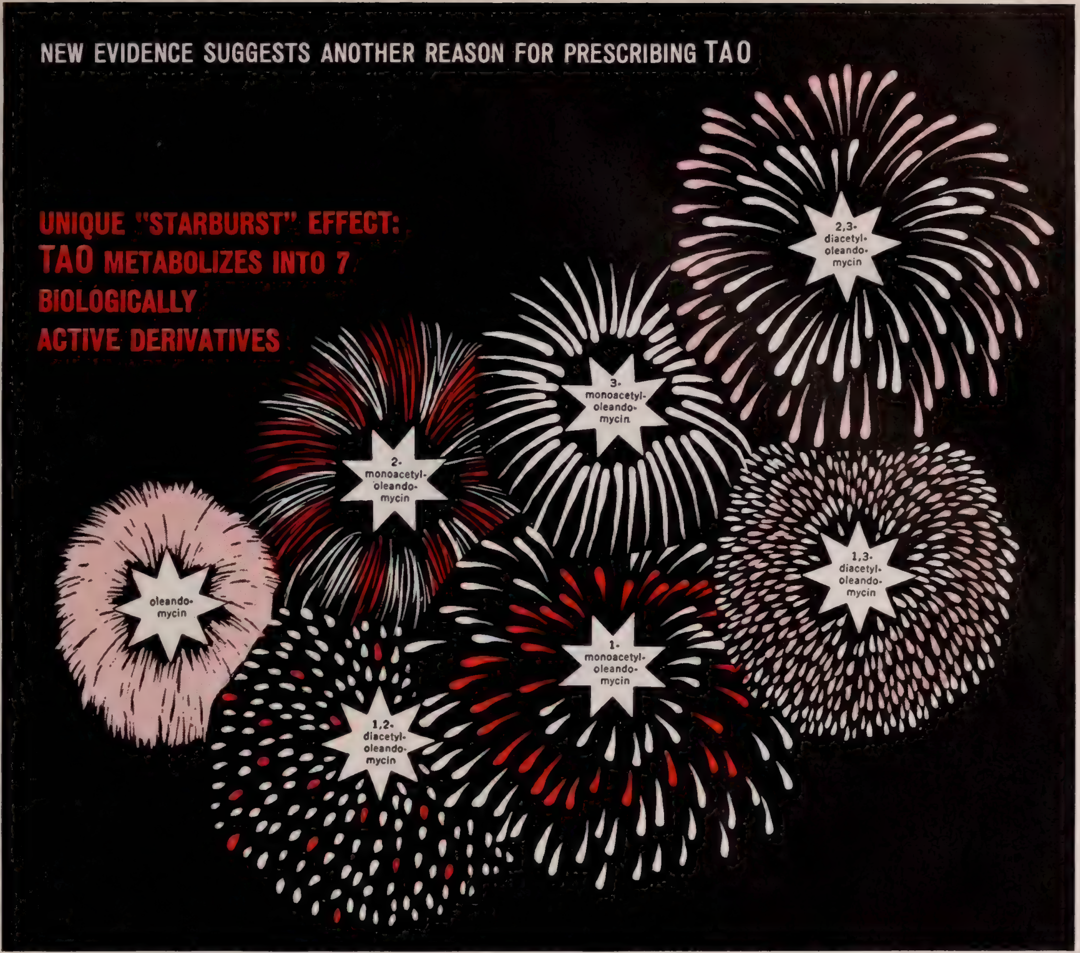
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1. English, A. R., and McBride, T. J.: Proc. Soc. Exper. Biol. & Med. **100**:880 (Apr.) 1959. 2. Celmer, W. D.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 277. 3. English, A. R., and Fink, F. C.: Antibiotics & Chemother. **8**:420 (Aug.) 1958.

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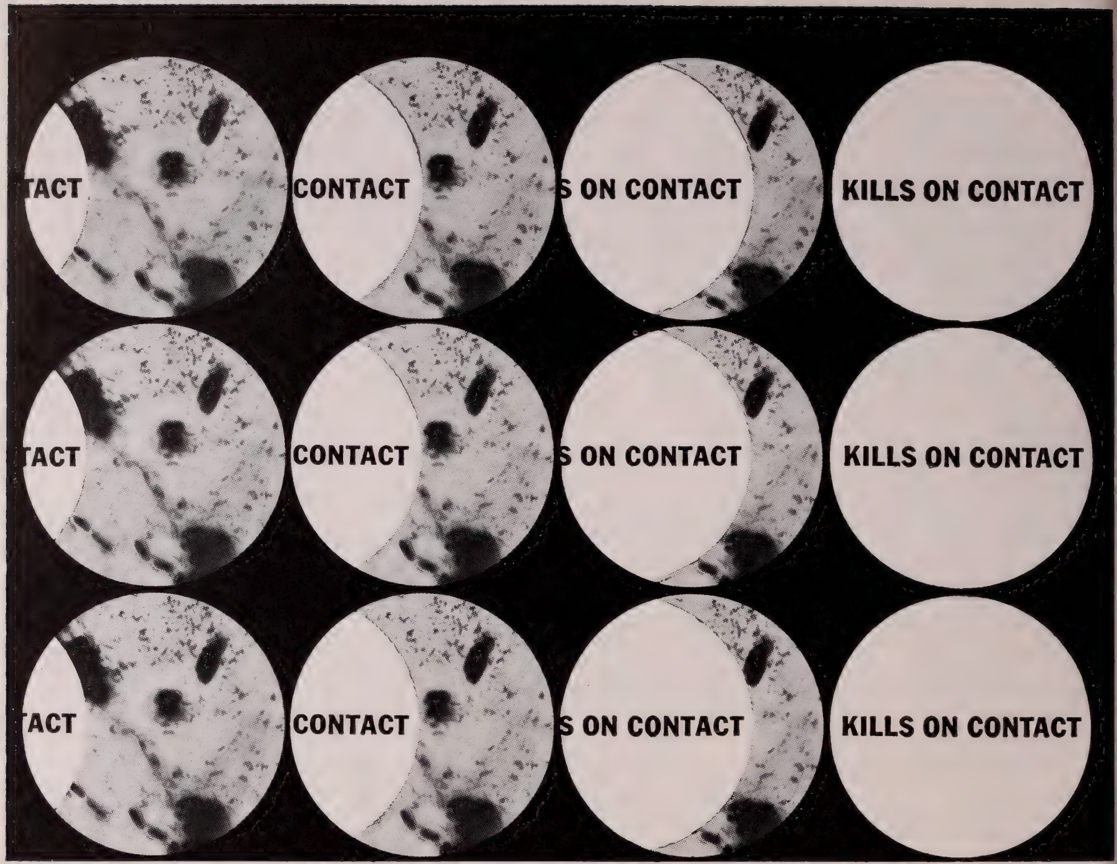

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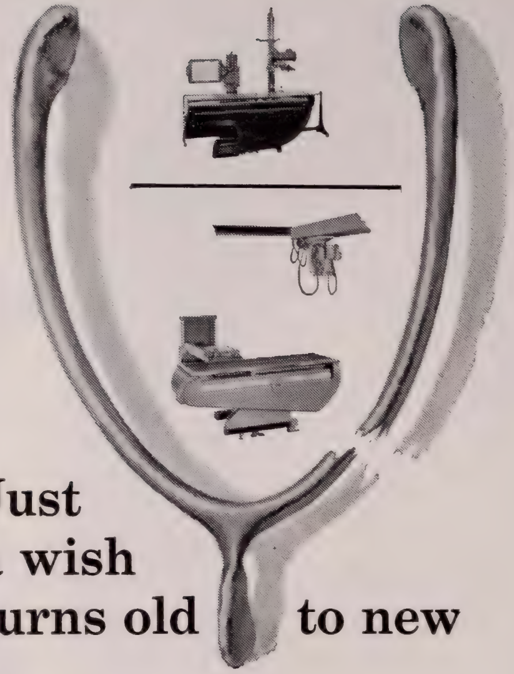

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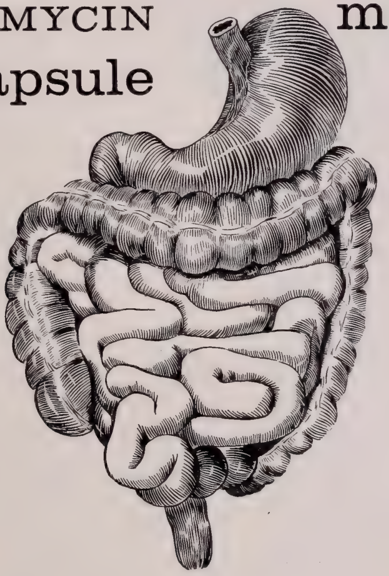

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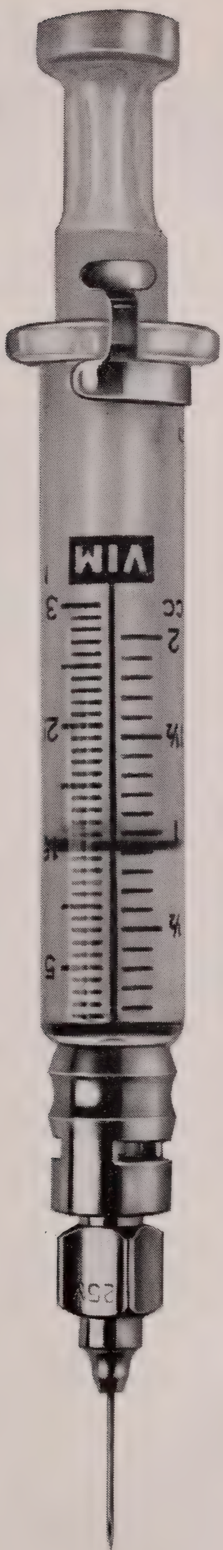

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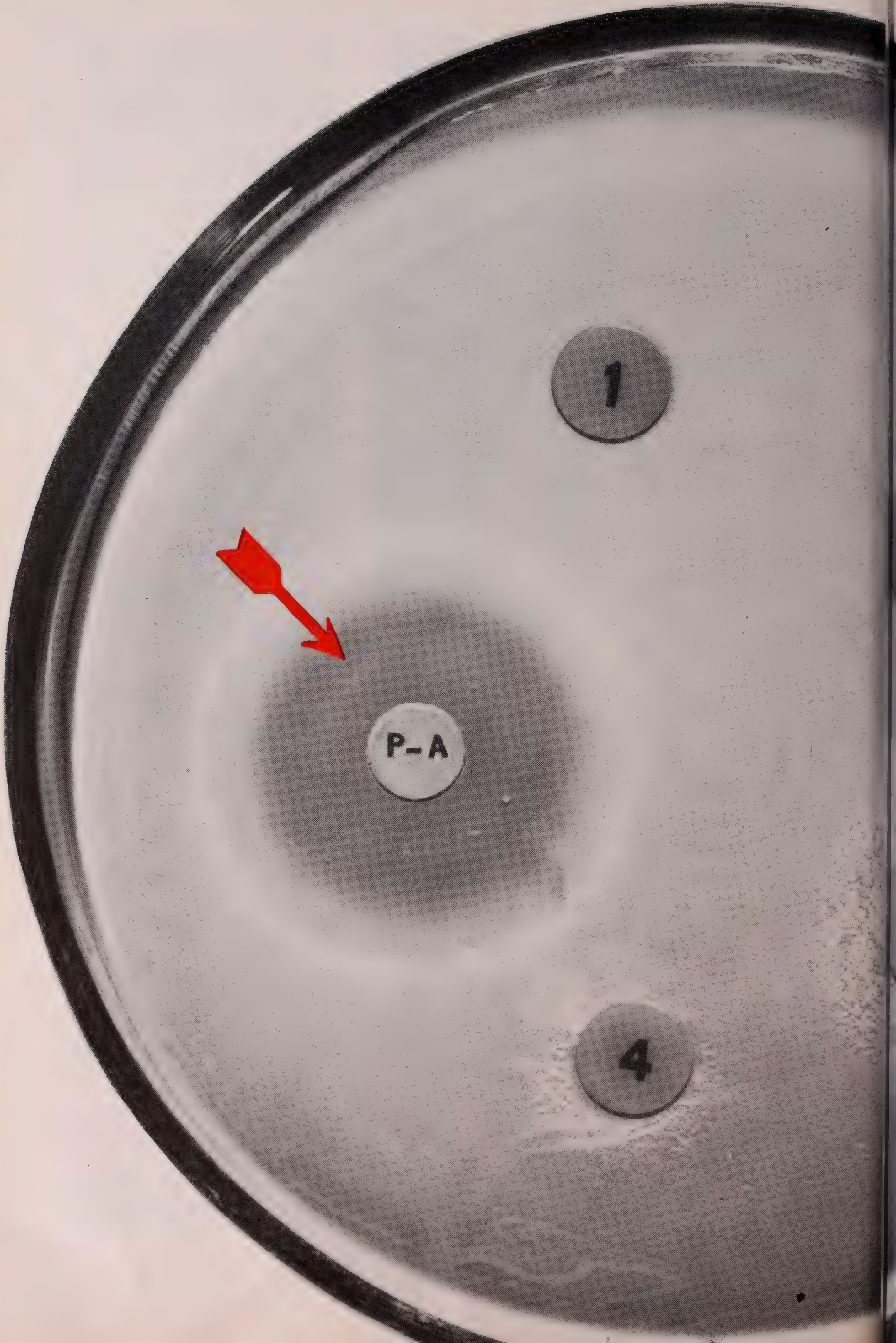
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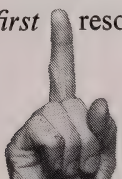

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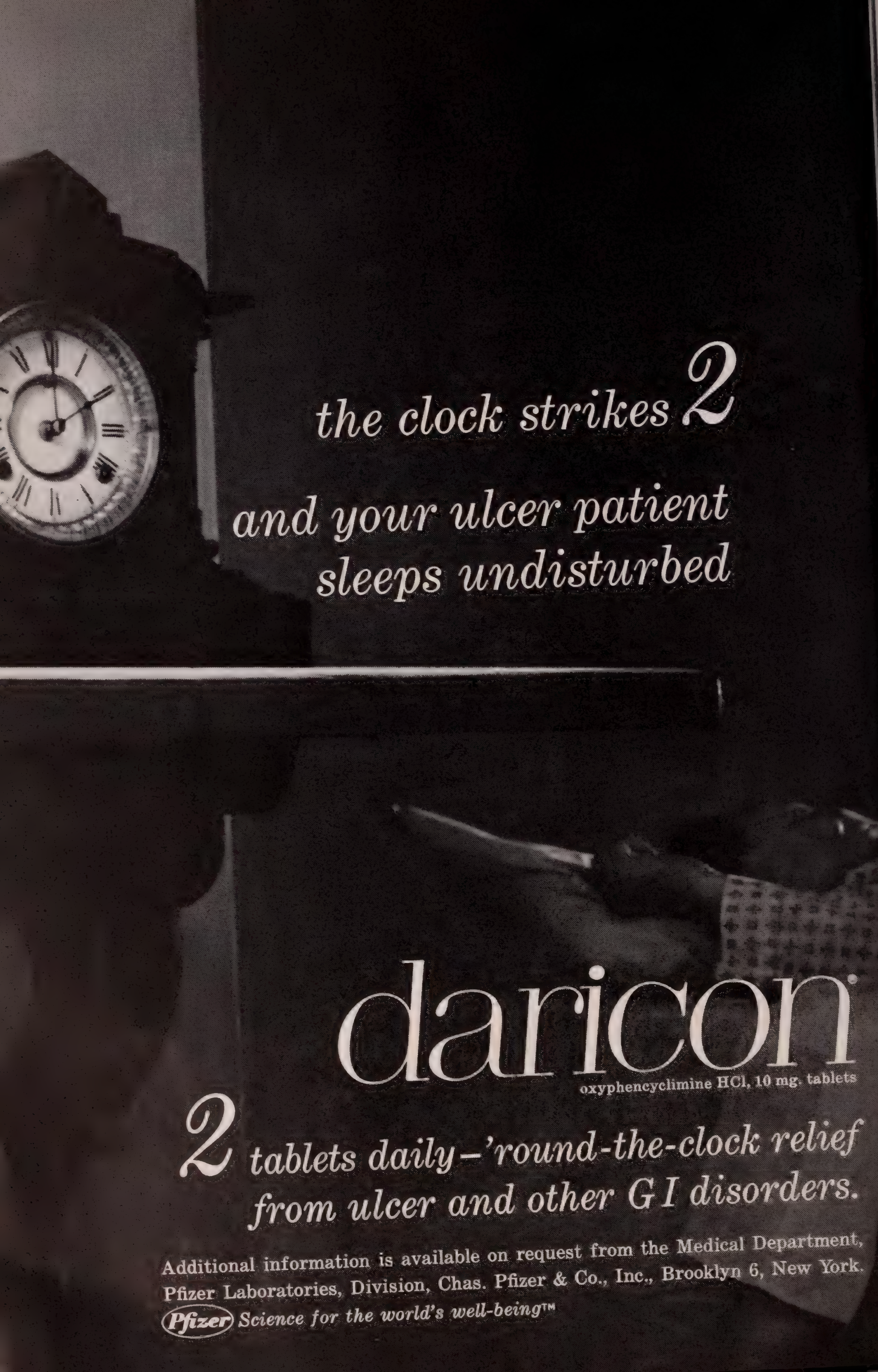
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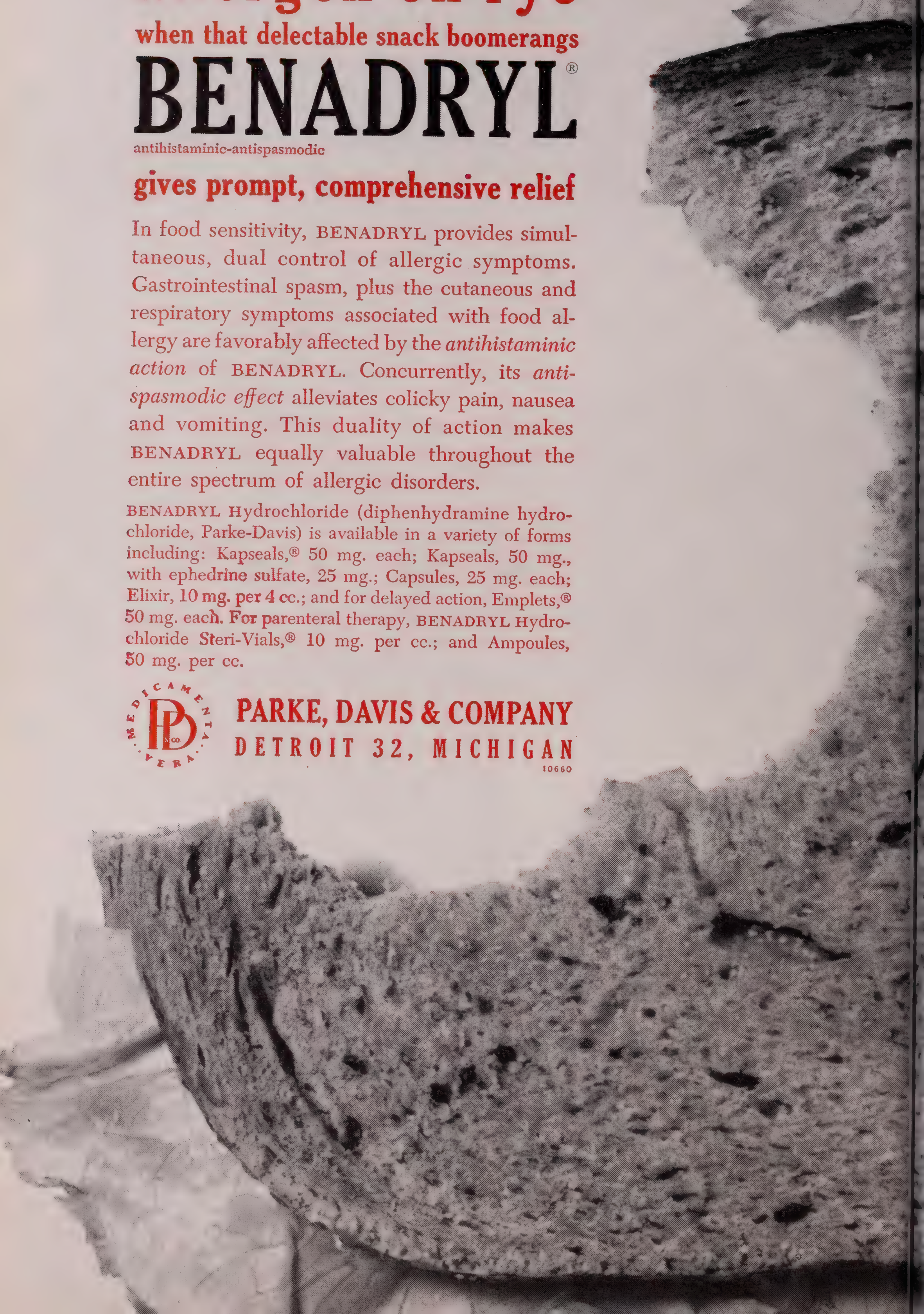

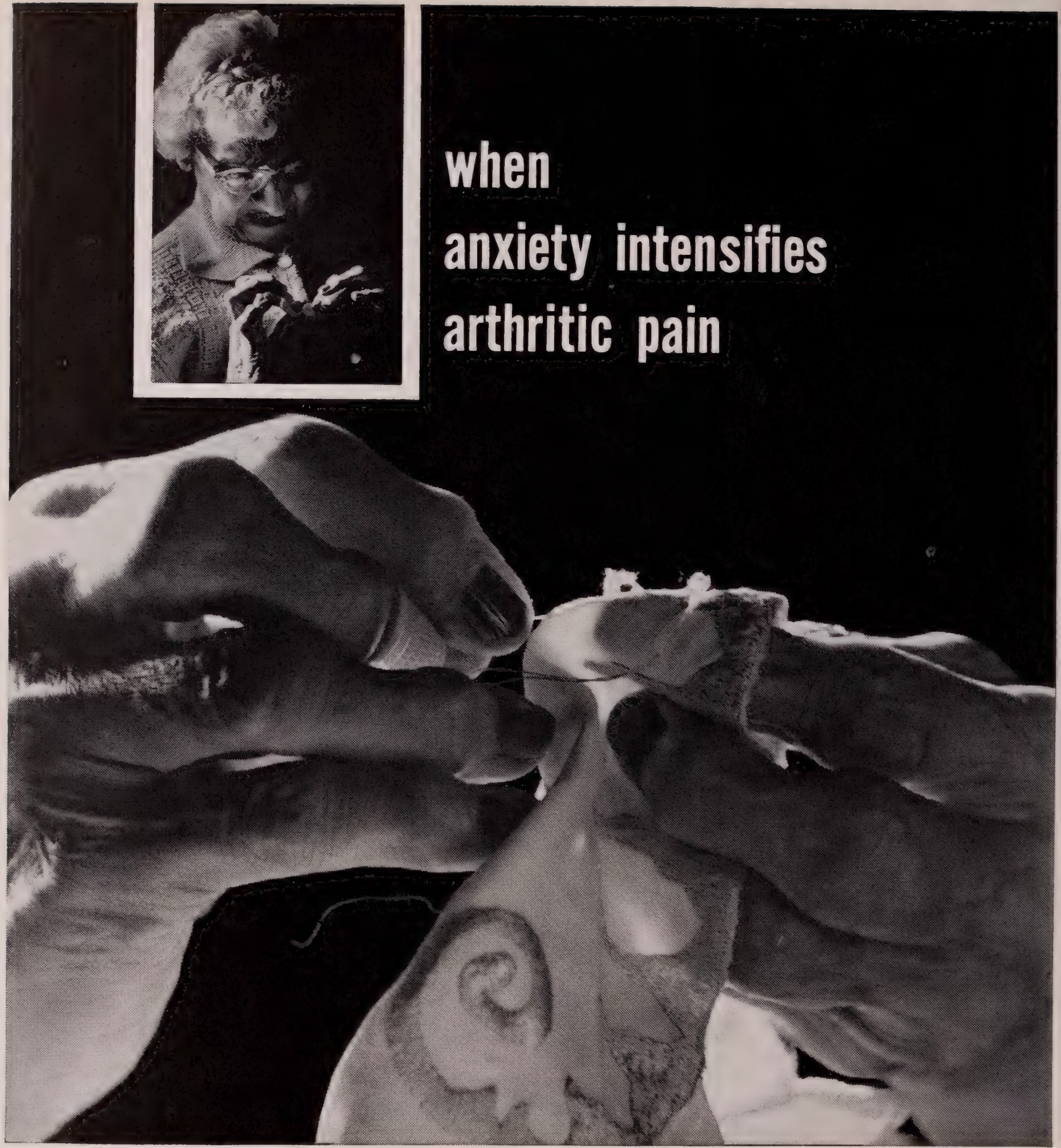

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EDITORIALS

Improvement in Standards of Care in Private Nursing Homes

With the number of individuals of age sixty-five and over increasing in the United States at a rate of about 1,000 per day, there is increased need for facilities for the care of the ill and disabled among them. General hospitals are receiving more and more of these aged individuals, and nursing homes are often called on for continued care over a long period of time.

Nursing home operators are sensing their responsibility in providing good care for these people and have organized themselves for the purpose of exchanging information which will result in the raising of standards of care. Their efforts are commendable and are meeting with an apparent degree of success. They are stimulated and encouraged by local and State agencies whose rules and regulations complement the nursing home operators' efforts to raise standards of care in their homes. In many of the larger communities, the local health departments share this regulatory responsibility with the State Department of Social Welfare and may even formulate their own ordinances. These local requirements, however, cannot be less strict than the "Rules and Regulations for Private Nursing Homes" of the New York State Department of Social Welfare.

The Subcommittee on Aging and Nursing Homes of the Medical Society of the State of New York applauds all efforts throughout the State to improve standards of care in nursing homes, but at the same time it holds that the physician is primarily responsible for assuring good care for his patients, be this in a nursing home or elsewhere. By seeing his patients often enough, by giving them individual good care, and by meeting requirements as regards records, the physician can often spark the nursing home personnel to a better quality of care. By expressing dissatisfaction with things as they are and pointing out a better way, the physician can help the nursing home operators to raise the standards of care in their homes. The physician who gives his patient good medical care is in a strong position to require similar care from other personnel who serve his patients.

The physician would do well to familiarize himself with the "Rules and Regulations for Private Nursing Homes," because these point out how he must share responsibility with nursing home operators for good patient care.

Copies of these rules and regulations may be obtained by writing to the State Department of Social Welfare, 112 State Street, Albany, New York. The physician should also check with the county or city health commissioner or district health officer in his area to determine whether or not the local health department has licensing responsibilities for nursing homes in his area and, if it has, obtain a copy of the rules and regulations of the local department.

Congressional Investigation of the Drug Industry

Committees of the Congress in the public interest have made inquiry into the operations of industry on many occasions—and are now holding hearings on the drug industry. This is the first time that a business so closely connected to the practice of medicine has been subjected to such scrutiny.

The preliminary skirmishes of the first few days of this investigation developed some unfortunate and misleading headlines—one sensational one pointed to profits in the thousands of per cent on some items.

Physicians have respect and admiration for the pharmaceutical industry which has made this present era of chemotherapy possible. Many of those who practiced medicine at the time of Oliver Wendell Holmes and later in Osler's time became therapeutic nihilists because of the ineffectiveness of the remedies at hand. Not so now—our materia medica is large, uniform, specific, potent, and reliable. We know that responsible members of a fiercely competitive industry with high ideals have made it so. A startling fact is that of every 100 prescriptions written today 90 are for drugs that were not available even fifteen years ago.

We also have respect for the processes of our government which seek to promote the common good. But we also expect fair play. In the astronomic profit accusation based solely on the cost of raw material, no account was taken of the added costs of distribution, marketing, taxes, and administration. Also uncounted were the costs of two important operations inherent to the industry, research and education. One dollar out of every nine received from sales is currently going into research—the laboratories must be staffed by highly paid personnel such as chemists, biochemists, pharmacologists, physicians, veterinarians, bacteriologists, virologists, biostatisticians, and the hosts of technicians who serve them. Last year these laboratories worked on 114,600 different substances. Only 1,900 of these potentials proved to be worthy of clinical testing, and eventually probably only 40 of these will become prescription drugs. This is a rather discouraging laboratory success rate of three ten-thousandths of one per cent. Who is there, however, who will not admit that the antibiotics, vaccines, and steroids available today were worth the prodigious effort and expense.

The matter of the education of the prescribers in the use of these products must be up to the minute. The brochure for a new drug is frequently the only source of information available to the physician. It must be reliable and detailed. Some of us shudder when the weary mailman dumps the daily load of printed matter on our doorstep, but read it we must for we all do understand the necessity for this educational and promotional material, and there are few of us who do not learn from it something good and useful for our patients.

We who are more than merely interested bystanders at this investigation expect to see all the facts presented fairly and dispassionately and a just conclusion arrived at—one which will be worthy of our democratic free enterprise system.

Chiropractic

It is hardly conceivable that a responsible legislature of the State of New York would pass the current chiropractic bill. For years the Medical Society of the State of New York has opposed licensure for chiropractors on the ground that the cult has no valid scientific basis. If the legislature were to license them in this State it would be tantamount to the perpetration of a fraud upon the people, since the cult would be just as unscientific when licensed as it is now unlicensed. Furthermore, if licensure were ever granted it would appear to place the weight of approval by the State behind such practitioners to the detriment of the public health.

There are many reasons why chiropractors should not be licensed. Chiropractors endanger the public health because they do not believe in the well-established, scientifically proved, and publicly understood germ theory of disease. They claim they can prevent and cure infantile paralysis, tuberculosis, diphtheria, scarlet fever, pneumonia, syphilis, gonorrhea, and other contagious diseases by their so-called "manipulation of the spine." This claim is false! Besides, it is impossible to manipulate the spine by hand. Too vigorous attempts to do so have caused fractures and even fatalities. Chiropractors are unable to diagnose and fail to isolate contagious diseases, thereby allowing such diseases to be spread to others.

Chiropractors do not believe in vaccination even though vaccine protection against typhoid fever, lockjaw, and diphtheria saved thousands of soldiers' lives during the wars and has reduced civil incidence to minimum occurrence. Their diagnosis and treatment are based on a false assumption . . . an assumption never substantiated by scientific evidence.

No matter how long their course of study—no matter what subjects they are taught—it is against the public interest to license them, thereby giving them "legislative recognition" which could only serve to mislead an unknowing public! Including basic sciences in their curriculum, which actually have no place in chiropractic theory, is done for the purpose of pulling the wool over legislators' eyes. Besides, these highly technical subjects are taught mainly by chiropractors who themselves are inadequately prepared to teach such subjects.

Chiropractic treatment delays proper medical or surgical treatment until it is often too late to save patients afflicted with a brain tumor, cancer, gallstones, and other serious conditions. To believe that malaria, pernicious anemia, ptomaine poisoning, or cholera are caused by pressure on spinal nerves by supposedly dislocated vertebrae is an absurdity! To attempt to treat such conditions by alleged manipulation of the spine is to gamble with people's lives! Licensing an unqualified practitioner of the healing arts does not change the fact that he is still unqualified. Requiring chiropractors to pass a "Special Chiropractic License Examination" prepared by a board of chiropractors, such as is done in states where chiropractic lobbying succeeded in inducing legislators to grant such legal recognition, has failed to protect the public. Chiropractors are illegal and nonqualified. They should not be permitted to practice their cult!

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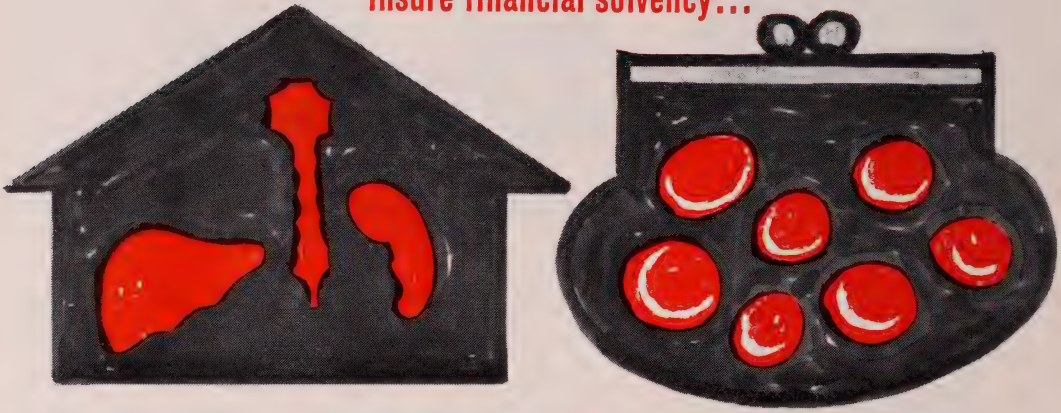

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SCIENTIFIC ARTICLES

Use of Medical Hypnosis in Internal Medicine

VICTOR L. PELLICANO, M.D., F.A.C.P., NIAGARA FALLS, NEW YORK

(*From Mount St. Mary's Hospital*)

Hypnosis is defined as a state of exaggerated suggestibility produced by suggestion and fixing of the attention.[1] Normal people spontaneously experience hypnotic phenomena in situations such as listening to a symphony, driving on a long trip, fishing, or just plain daydreaming, when reality is temporarily suspended. In his art every physician employs suggestion to some degree, consciously or unconsciously, in his interpersonal relationships with patients. If this type of suggestion is effective, then the acme of scientifically applied suggestion, hypnosis, would be even more efficacious.[2]

The British Medical Association approved the medical use of hypnosis by qualified persons several years ago. In June, 1958, the Council on Mental Health of the American Medical Association indicated that "there are definite and proper uses of hypnosis in medical and dental practice in the hands of those who are properly trained."[3] The report condemns thoroughly the use of hypnosis for entertainment purposes because of the adverse effects it can bring when used by persons not thoroughly medically or psychiatrically oriented.

Most of the skepticism toward hypnosis stems from the lack of understanding as to the exact nature of the hypnotic phenomenon. Antagonism is likewise engendered by extravagant and unfounded claims by some of its ardent proponents plus sensationalism in its application in the field of entertainment. At intervals over the past century hypnosis has been hailed as a panacea by its protagonists and then it has been discarded as useless by its antagonists. Neither valuation is correct; it is a physiologic phenomenon with real uses and equally real limitations.

The phenomena which can be induced under hypnosis include muscle relaxation (of a mild degree or of a marked degree to the point of paralysis), rigidity, increase in muscle strength, analgesia or anesthesia of the skin and mucous membranes, decrease in capillary bleeding, decrease in gastric secretion, hyperacuity of the special senses, automatic obedience, somnambulistic trance, posthypnotic suggestion, posthypnotic amnesia, age regression, abreaction, and time distortion.[4] How many of these physiologic changes are due to an effect on various portions of the brain or spinal cord or on chemical or humoral changes in the blood has not yet been determined.

The explosive growth in the use of hypnosis without a concurrent growth in educational facilities for its study has led to many misunderstandings as to its indications and contraindications. The frequency with which it has been used for the relaxation of patients, for the relief of pain, and for anesthesia has overshadowed its other more important functions.

There are sufficient drugs in the pharma-

Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Medicine, May 13, 1959.

copeia to handle the vast majority of cases of anxiety, restlessness, and fear. Our analgesics and anesthetics are not ideal but they are quite adequate for most patients requiring these effects. Only in rare instances is hypnosis required for these purposes in spite of its widespread use.

While it is true that the neophyte in hypnotism must start using it first for relaxation and analgesia, it is hoped that as he understands this modality better he will realize that hypnosis will find its greatest use in areas of differential diagnosis, psychotherapy, the investigation of human behavior, and in the investigation of its effect on the various body functions.[5]

Whenever it is decided to use medical hypnosis, it is of utmost importance to carry out a complete medical history and physical examination. During the examination one should try to determine whether the patient's personality is intact: if he is well integrated and functioning well, and if he is free of psychotic or prepsychotic symptoms. If the answer to these questions is "yes," and if a good indication is present, then it is safe to proceed.

Hypnosis should not be used with psychotic patients, severely depressed patients, obsessive-compulsive patients, those with conversion reactions, or those with a multiplicity of symptoms, unless the physician is one well oriented in psychodynamics and hypnoanalysis.[6]

Hypnosis should not be used when simpler methods are found to be adequate. If a headache can be relieved by an aspirin tablet or if insomnia can be alleviated by a mild sedative or hypnotic, one should not resort to hypnosis. However, if the patient suffers from porphyria and cannot tolerate salicylates or barbiturates, then medical hypnosis might be indicated. Ordinarily sigmoidoscopic examinations can be carried out with relatively little discomfort. However, in a very tense individual or in one with a partial stricture of the anal orifice, the supplemental use of hypnosis is often extremely helpful and rewarding.

Case Reports

CASE 1.—An eighty-one-year-old white female was seen in July, 1958, complaining of rectal bleeding of several days duration. Because of a local skin lesion of long duration, there was partial stricture of the anal canal which failed to admit even the tip of the little finger. She was advised of the necessity of careful anoscopic and sigmoidoscopic examinations and she was told that these procedures could be carried out with relatively little discomfort under hypnosis. Hypnosis was easily induced. She was placed in a knee-chest position and gradual digital, anoscopic, and sigmoidoscopic examinations were completed with ease. There was some bleeding from the partial tearing of the stricture, but she exhibited no evidence of discomfort. She was given a posthypnotic suggestion that the anorectal area would remain numb and anesthetic for two weeks. When seen a month later, she stated that she felt "on top of the world" for two weeks and after that she felt just the same as usual. She never did experience any anorectal discomfort.

The relaxing and analgesic effects of hypnosis are also useful, at times, in other diganostic procedures used in internal medicine. These include gastroscopy, esophagoscopy, passage of Levin's tube for gastric analysis, bone marrow aspiration, and needle biopsy of the liver. Whenever a poor-risk patient with a questionable pelvic lesion requires "examination under anesthesia," hypnotic induction can achieve sufficient relaxation to carry this out much more safely than chemical anesthesia can achieve.

In certain patients with adrenal insufficiency or on steroid medication, the use of hypnosis in place of or in conjunction with small amounts of chemical anesthesia for surgical procedures will diminish the likelihood of precipitating an adrenal crisis. There may be an occasional patient who is allergic both to barbiturates and to the newer tranquilizers who can be helped with hypnotic induction for the relief of tension and insomnia. Morphis,[7] a radiotherapist, has found hypnosis a great help in controlling the anxiety of patients with malignant conditions. He uses it also as a preanesthetic agent and to prevent postoperative and postradiation symptoms. The problem of nausea and vomiting, which is often associated with radiation therapy, has almost completely disappeared from patients treated in his department.

Members of the dental profession have demonstrated that they can control capillary bleeding after oral surgery by means of hypnosis.[8] Whether this hemostasis is due to capillary constriction by way of the sympathetic nervous system or to some change in the blood-clotting factors of the blood remains to be proved. In internal medicine this fact is useful to those patients who are on continuous anticoagulation and require dental extraction or other minor surgical procedures.

Case 2.—A seventy-two-year-old white male had experienced his first myocardial infarction in February, 1958, and he had experienced a second one in April, 1958. After the second myocardial infarction he was maintained on continuous anticoagulation. In July, 1958, he wished to have two remaining lower teeth extracted. Even though the prothrombin time the day prior to extraction was thirty-five seconds, the teeth were extracted under hypnodontia with minimal bleeding. Although this does not prove that the same results might not have been obtained with some form of chemical anesthesia, I believe this procedure is safer for this type of patient since it allays restlessness, and it controls pain and bleeding without the added risk of an anesthetic agent.

Certain dermatologic conditions such as chronic atopic eczema, pruritis, neurodermatitis, hyperhidrosis, and warts have at times been successfully treated with hypnosis when all other forms of therapy have failed.[9,10]

Case 3.—A sixty-four-year-old white female had tried practically all known therapies for pruritis ani. These included the usual hygienic measures, various ointments with and without steroids, hemorrhoidectomy, and local x-ray therapy. It was decided to try hypnosis. She was easily induced and experienced anesthesia of the anorectal area but relief lasted only a short time. This was repeated on three occasions using various reinforcement technics but with only short-term relief. As a last resort, the perianal area was infiltrated with a long-acting local anesthetic. This gave her relief for several months with only minor recurrences. In this case, hypnosis failed to produce prolonged relief as did most other modalities.

Case 4.—A sixteen-year-old white female was seen at one o'clock in the morning with severe generalized urticaria. She was given oral and intramuscular antihistamines with no immediate relief. Rather than leave her still writhing with discomfort, it was decided to try hypnosis. She responded quickly and within two minutes had immediate and complete relief. No doubt she would have been relieved eventually with the medication she had received, but hypnosis hastened relief. Whenever one does not have any medications available, as might occur on a camping or fishing trip, knowledge of hypnotic technics can be extremely useful.

Leonard, Papermaster, and Wangensteen[11] have reported a total of 16 patients with incapacitating dumping syndrome following gastric resection that they treated by hypnotic suggestion with complete or nearly complete relief in each case.

Case 5.—A forty-one-year-old white female had undergone subtotal gastrectomy and vagotomy in August, 1957, for an intractable duodenal ulcer with recurrent bleeding. After surgery she experienced some symptoms of cardiospasm and abdominal distress with from four to nine loose bowel movements per day. The symptoms of cardiospasm disappeared in December, 1957, but the abdominal distress with occasional near syncope and frequent bowel movements persisted in spite of various types of oral medications. After having noted the article by Wangensteen and his group,[11] it was decided to attempt hypnotherapy. After the first induction, there was some decrease in abdominal discomfort and a slight decrease to four or five bowel movements per day. Sessions were repeated at regular intervals and she showed gradual improvement. After the fourth visit she felt much improved, was having one or two formed movements per day, was free of abdominal distress, and had gained 8 pounds. She remained well for six months, after which time an occasional episode of diarrhea responded quickly to hypnotherapy.

Some success has been reported in the use of hypnosis for the cure or amelioration of such habits as smoking, alcoholism, narcotic addiction, overeating, nailbiting, stammering, and enuresis.[12] In many cases if the patient has a real incentive or good motivation to overcome his habit, the physician may be successful without using hypnosis. If cigaret smoking or overeating serves as an escape from problems, the eradication of these habits may lead the person to find other perhaps less desirable ways to release tension. Therefore, it is important that good psychotherapy which tries to get at the cause of the tension should accompany the hypnotic suggestion.

It should be remembered that when all known forms of therapy fail to relieve a disabling symptom, such as a hiccup, severe harrassing cough, or insufficient food intake to the point of endangering a patient's life, hypnosis may be successful. Fogelman and Crasilneck[13] at the University of Texas Southwestern Medical School reported the use of hypnosis in 12 patients suffering from a variety of diseases associated with nutritional aberrations. These patients had such primary disorders as acute ulcerative colitis, severe burns with mental depression, rheumatoid arthritis with multiple abscesses, poliomyelitis with quadriplegia and contractures, chronic alcoholism, chronic ulcerative colitis, and diverticulitis. All of these patients were incapable of developing an appetite consistent with their physiologic needs owing to factors such as pain, psychologic aberrations, gastrointestinal disease, or habitual food restriction. Hypnosis served to alleviate one of these factors and to establish a compulsion to eat, so that all 12 patients were improved and gained from 15 to 50 pounds within one to six months.

Gwartney and Krikes[14] reported the case of a fourteen-year-old girl with Lutembacher's syndrome who was admitted to the hospital with a constant, deep, brassy, nonproductive, body-shaking cough that had persisted continuously day and night for seventy-two hours. All known treatment was to no avail. When the patient had been coughing for eight days and appeared dangerously near death from exhaustion, hypnosis was suggested. She was induced slowly and gradually she was encouraged to suppress the cough for increasingly prolonged intervals. At the end of about one and one-half hours she was able to suppress the cough for five minutes and by the end of the day she was able to suppress it for sixty minutes. By the third day she was free of cough and was discharged.

Comment

Until recently much of the pioneering work on the physiologic and clinical aspects of hypnosis has been done in Germany and Austria.[15,16] In general, most physiologic processes under hypnosis are the same as they are in the waking state. However, with various suggestions, age regression, and abreaction, certain changes have been elicited in pulmonary ventilation, cardiac rate, blood count, blood chemistry, gastrointestinal motility, gastric acidity, and neurologic reflexes. Fortunately a few centers in the United States are carrying on significant basic research which is necessary to encourage the proper use of hypnosis and to keep it on a firm scientific basis and out of the realm of quackery and chicanery.

Eichhorn and Tracktir,[17] at Baylor University College of Medicine, studied the effect of hypnosis on the gastric secretion of 24 male subjects during prehypnotic, hypnotic, and posthypnotic periods. By gastric intubation, specimens of fasting gastric secretion were obtained from each subject at fifteen-minute intervals during a ninety-minute period for each condition. Measures of free hydrochloric acid, total acid, volume, and pepsin showed no reliable difference between the pre- and posthypnotic periods except for pepsin which was higher in the posthypnotic period. However, during the hypnotic period all measures were significantly lower, showing that hypnosis has a depressing effect on gastric secretion.

A group of investigators[18] working at the Long Island College Hospital recently reported on the effect of sedation on the abnormal ballistocardiogram. Certain abnormalities were produced by the induction of fatigue in the direct body and ultralow-frequency ballistocardiograms of patients with and without heart disease. These abnormalities were obliterated during sleep induced by sodium amytal and during relaxation under hypnosis. By suggesting under hypnosis that they were very uncomfortable and tired, all 6 patients of those tried showed abnormal ballistocardiograms. While under hypnosis, the patients were told to relax and the ballistocardiograms were returned to the prefatigue pattern. This technic has the additional advantage of permitting held respiration, even though the patients are asleep.

Schwarz, Bickford, and Rasmussen[19] at the University of Minnesota and the Mayo Clinic, studied hypnotic phenomena and hypnotically induced seizures with the electroencephalogram. Some changes were noted during the occurrence of visual hallucinations with the eyes closed and during hypnotic blindness or negative hallucinations. No consistent changes in the electroencephalogram were noted in patients with subjective anesthesia induced by hypnosis or in those in whom hypnotic age regression was carried out. In 16 patients with convulsive disorders and concomitant electroencephalographic findings, hypnotic activation technics failed to precipitate seizures and produced no changes in the electroencephalogram or recall of pertinent material in connection with their seizures. In 10 patients referred for electroencephalogram because of seizures, hypnotic activation technics both induced and ended their spells without any change in findings on the electroencephalogram. Thus it was concluded that hypnosis during electroencephalography is useful in attempting to distinguish between psychogenic and organic convulsive disorders.

This brief review of a few investigations carried out in well-recognized medical centers in this country gives some indication of the many and varied fields in which research in hypnosis can be carried out. With the advent of more and more such basic research, the proper uses for hypnosis will be more firmly established and no doubt more valuable information will be learned in regard to human behavior and psychodynamics.

Summary

1. The various phenomena which can be induced under hypnosis include muscle relaxation, rigidity, increase in muscle strength, analgesia or anesthesia of skin and mucous membranes, decrease in capillary bleeding, decrease in gastric secretion, hyperacuity of the special senses, automatic obedience, somnambulistic trance, posthypnotic suggestion, posthypnotic amnesia, age regression, and time distortion.
2. The need for further basic research in hypnosis by experienced and competent investigators has been noted.
3. Hypnotic technics are useful in the differential diagnosis of psychogenic and organic convulsive disorders.
4. Although hypnosis is more frequently indicated in various other medical specialties, it has definite indications in the field of internal medicine. These include its use, at times, in such diagnostic procedures as esophagoscopy, gastroscopy, sigmoidoscopy, bone marrow aspiration, and needle biopsy of the liver. Its relaxing and analgesic effect is indicated in those patients who are allergic to most sedatives and anodynes and in patients with prophyria who cannot tolerate such medications as salicylates and barbiturates. Certain dermatologic conditions, such as atopic eczema, pruritis, neurodermatitis, hyperhidrosis, and warts, which fail to respond to conventional therapy, at times respond to hypnotherapy.

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Discussion

Philip Ament, D.D.S., *Buffalo, New York.*—Dr. Pellicano has presented an interesting and informative paper. It is evident that a tremendous amount of research and clinical material has gone into the final draft of his paper. He has enumerated many of the areas in which hypnosis can be used in the field of internal medicine. As an instructor in the postgraduate study of medical and dental hypnosis, I have seen many interesting cases. I would like to bring to your attention 1 case in particular which may be related to Dr. Pellicano's discussion of patients with convulsive disorders and concomitant electroencephalographic findings.

Leonard Zinker, M.D., of Rochester, New York, a neurosurgeon, operated on a seventeen-year-old male and removed a glioma on January 16, 1959. Between January 16 and January 29 the patient had three Jacksonian seizures on his left side. These seizures had not occurred before surgery. On January 29 we had our workshop in which the patient was given a hypnotic induction. It was suggested under hypnosis that he develop a seizure. He was then taught how to stop the seizure. It was also suggested that the patient produce an aura and stop the aura before it continued into the form of a seizure. He was able to do all these things, in spite of the fact that we do know that these seizures were produced because of the organic lesion. If we could stop seizures by hypnosis, we could not always consider it on a psychogenic basis. In this boy's electroencephalogram, on a preliminary study, definite changes were seen under the influence of hypnosis. There was a cessation of alpha activity in the electroencephalogram. The work of Schwarz, Bickford, and Rasmussen,[19] referred to by Dr. Pellicano, is of great importance, since it may shed more light on this interesting phenomenon. It is hoped that more work can be done clinically with a number of epileptic cases where routine medication has not given as much relief from symptoms as desired. Although the results in this case are somewhat different, it is evident once again, that there is no tool in medicine that is absolute.

Medical hypnosis is a dynamic subject and touches every field of medicine. The dramatic effect of raising the threshold of pain for terminal cases of cancer, where no other therapy is effective, should be mentioned. There have been a number of cases of anorexia nervosa reported where weight loss had been so great as to produce considerable concern. These patients have been helped through hypnosis, the doctor or nurse becoming the parent figure and proper feeding being instituted until such time as the patient is in good enough condition to receive psychotherapy. We could also mention the handling of many patients by the internist on a postsurgical level, so that patients have a smoother recovery period with a minimum of postsurgical discomfort. However, we hasten to add that this is not a panacea, and is not equally effective in all cases.

When hypnosis is used as an anesthetic, as in the case of anorectal pain, as related by Dr. Pellicano, it is significant that invariably we can keep a patient comfortable postsurgically by leaving the psychic anesthesia in the area of surgery for long periods of time, two weeks in this case. However, we must bear in mind that it is of equal importance with the use of hypnosis to have insight and understanding and not to attempt to suggest the removal of pain where it is a cardinal sign or symptom in a developing disease. We should also recognize psychogenic pain and not remove the entire amount of it.

Dr. Pellicano mentions the work of Eichhorn and Tracktir[17] who observed that when hypnosis was used there was a depressing effect on gastric secretion. I am particularly pleased with this reference since it explains the work we did with Donald Taylor, M.D., of Niagara Falls, on a clinical basis in the use of hypnosis in gastroscopy. It was observed in many cases that there was an absence of burning of the hydrochloric acid when the gastroscope was removed.

It is most interesting to read of Dr. Pellicano's utilization of hypnotic technics along with routine medical procedures. At no time has he used suggestive therapy to obtain hidden material. He has used hypnosis in the field of internal medicine mainly as a relaxant and as an anesthetic. In following this course, the internist who uses hypnosis can do no harm if he employs this tool in his own specialty without invading the field of psychiatry. Dr. Pellicano is to be commended on a very fine and informative paper.

Bernard H. Smith, M.D., *Buffalo, New York.*—Medical hypnosis is a field which at present is flourishing in tropical abundance. Such a soil is a ready breeding ground for fanaticism and its corrective cynicism. In the welter of literature on the subject, extravagant claims and excessive enthusiasms are all too common. Dr. Pellicano has avoided these pitfalls and has given a restrained and eminently fair assessment of the subject as it applies to internal medicine. He has shown that in responsible hands hypnosis can be a useful medical tool.

He has stressed the need for a thorough medical history and physical examination. Hypnosis carries a danger common to all forms of symptomatic treatment: Early symptoms and signs of organic disease may be exercised, the patient and his physician may be lulled into a false security, and precious time may be wasted before radical therapy is brought to a serious malady.

Dr. Pellicano has stressed the importance of a critical assessment of the patient's personality and he has implied the dangers of physicians using hypnosis with ill-balanced patients. The motives which impel a patient to hypnosis may be perverse; under hypnosis explosive psychologic material may be released, which may precipitate an emotional crisis; and during hypnosis excessive transference may develop and lead to undue dependence on the hypnotist. It may be that these dangers are less serious than some psychiatrists would maintain, but I think there can be little doubt that they exist. A knowledge of psychodynamics is therefore necessary for all physicians conducting hypnosis.

Dr. Pellicano has also stressed the need for further research in this field. We know little of the neurophysiology underlying hypnosis and, although it has contributed much to our understanding of psychopathology and may indeed have been the starting point of psychoanalysis, there is still much ignorance of the mental mechanisms of hypnosis. Surely here lies a fruitful field for investigation.

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Hypnosis as an Adjunct in Anesthesiology

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THE continuing challenge to the anesthesiologist of major surgical procedures has produced technics which embody new pharmacologic agents, electronic devices, hypothermia, and extracorporeal circulation. It may well be that anesthesiology will become a push-button specialty.[1] It is our feeling, however, that we would be remiss in our duty if we did not focus attention on the patient as a sensitive individual, subject to fears and apprehension, who is faced with an experience wherein he knows that he is to surrender himself to a stranger and from which he may not return. Hypnosis may be a useful tool in anesthesiology to add depth to the patient-doctor relationship and to render the patient more suitable for anesthesia. The object of this paper is to attempt to clarify some of the trends taking place by which hypnosis can be integrated with the other adjuvants of anesthesia.

Dramatic use of hypnosis had been made for the prevention of pain in surgery long before the advent of chemical anesthesia. Its first specific use in operations was perhaps initiated in France by Recamier in 1821 and by Cloquet in 1829.[2] Other experiences with hypnosis in surgery were reported by Elliotson[3] in Edinburgh, Braid[4,5] in England, and Esdaille[6] in India between 1840 and 1850. The widespread use of chemoanesthesia after 1846 prevailed from then on until 1938, when a re-evaluation of the use of hypnosis in anesthesia was begun by Raginsky.[7] Since then there have appeared reports of its use in various surgical, obstetric, and dental procedures either alone or in conjunction with chemoanesthesia.[8–15] Hypnosis has been utilized, also, to overcome a patient's inability to retain a Levin tube[16] and in treating postoperative hiccup.[17]

Hypnosis in Preparation of Patient for Surgery

The average patient is understandably terrified at the thought of an operation and perhaps even more so at the thought that he must go to sleep, not of his own free will but at the hands of someone else. The anesthesiologist must, therefore, show sympathy toward the patient and should remember that he is dealing with a human being.[18,19] One should not treat every patient as just a routine case.

Schultz[20] has classified the various fears that patients present in the preoperative period. Among these are the following fears: of injections, of anesthesia, that he may tell his secrets during the induction period, of suffocating, that the operation may start too early, that he may awaken during surgery, that he may not awaken during surgery, that he may not awaken after the operation, of mutilation, of cancer, of postoperative vomiting, and of postoperative therapy.

It is the duty of the anesthesiologist to ascertain these fears during the preoperative visit on the evening before surgery. It is at this first meeting that the anesthesiologist, trained in hypnosis, can, to a considerable extent, calm an agitated patient by an attitude of confidence and ease, and give the necessary reassurances. If he accomplishes this, he has used a form of hypnosis. Often this is all that is necessary. If he can establish rapport with the patient so that the latter willingly cooperates or responds to his suggestions, he can further determine the range and the depth of hypnosis he can attempt.

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CASE 1.—A fifty-six-year-old white male entered the hospital for the repair of an inguinal hernia. He was obviously agitated and extremely apprehensive when he was visited the evening before surgery. He spoke only of being afraid he would not be able to stand the operation. His history and physical examination revealed no organic abnormality except for the hernia. He was asked if he would permit me to try and relax him. After agreeing he was told to lie back on his bed and to stare at a fixed spot on the ceiling. It was then suggested to the patient that he was becoming more relaxed and drowsy. As the patient's eyes began to close, they suddenly flew open, he looked at me, smiled, and turned back to face the ceiling. Thereafter, he responded to my suggestions of relaxation. He was told he would have a restful night and that the procedure would be repeated in the morning. No preoperative sedation was ordered. At the scheduled time the patient was placed on the operating table, and hypnosis was again induced. With the patient relaxed, he was placed in the lateral position and spinal anesthesia was administered. The operative procedure was carried out with the patient's eyes closed and with the patient completely relaxed. He was given reassurances throughout the operation and the posthypnotic suggestion was given that he would have no discomfort postoperatively. No analgesic agents were necessary afterward.

Hypnosis for Basal Anesthesia

Raginsky[21] has applied the term "balanced anesthesia" to the sequence of hypnosis and chemoanesthesia. This combination produces a more satisfactory anesthesia than can be obtained with any one agent alone. This technic reduces the need for heavy preoperative sedation, obviates the use of basal chemical agents such as avertin or intravenous barbiturates, and reduces the amount of inhalation agent necessary. This technic has its greatest application in pediatric surgery.[22] Psychic trauma, especially in children, is not shed as quickly as the effects of the anesthetic agents. Levy[23] and Coleman[24] have described some of the harmful effects of hospitalization, anesthesia, and surgery in children. Eckenhoff,[25] studying the possible relationship between anesthesia and personality changes, concluded that 17 per cent of children manifested changes due in part to inadequate preanesthetic or anesthetic management.

Children are very easy to hypnotize during the induction of anesthesia. They usually make good subjects because they are imaginative. Visual imagery is projected by placing them in a trance and having them relive a television program which they enjoy particularly. The imagery becomes so real in their minds that they even report when the commercial appears on the screen. In all cases, the anesthetic mask is held a few inches above their faces and the gases allowed to fall by gravity over the nose and mouth. The mask is gradually lowered at evidence of sleepiness. Complete chemoanesthesia is then administered. During the induction phase the posthypnotic suggestion is given that they will have no pain or discomfort on awakening. Most of the patients require little or no sedation or analgesia postoperatively.

CASE 2.—A twelve-year-old boy was admitted to the hospital for the surgical correction of bilateral congenital clubfoot. He was seen on the afternoon before surgery at his bed on the open ward. His parents had been spoken to previously and after explaining the procedure, permission for it had been given. After ascertaining the personality of the child in conversation, he was asked to fix his eyes on a spot on the wall and hypnosis was induced. In a matter of moments his eyes closed and he was asked to take us to the room in his house where the television set was placed, to turn on the knob, and when his favorite program came on to describe it. He was told that the more tightly he kept his eyes closed, the clearer the picture would appear on the screen. He proceeded to describe this program as if he were actually viewing it in the ward. The session was terminated by telling him to turn off the set and to open his eyes at the count of three. He was told that we would repeat this in the morning. The only preoperative medication ordered was a small dose of scopolamine.

As had been noted in other children, he was eager to start the program when he arrived in the operating room and saw me. He was completely impervious to his surroundings and the real purpose for coming to the hospital. Hypnosis was again induced easily and the television program started. During this phase he was to inform me when the commercial appeared. In this interval, he was told that he was becoming sleepier (because of the suspended mask) and would soon go to sleep. Posthypnotic suggestions were given that when he awakened he would have no discomfort, would ask to drink fluids, and would give the anesthesiologist a big smile. He was not aware of the mask being held from which the gases were falling over his face. When his words began to slur the mask was applied to his face and anesthesia deepened. A nonrebreathing technic using nitrous oxide and top ether was employed for a procedure lasting two hours, with only minute amounts of ether being necessary. His postoperative course was completely free of discomfort and required no analgesics or sedatives. He re-entered the hospital a month later for the correction of the other extremity. The same eagerness to start the television program was again evident.

Hypnosis as Major or Sole Anesthetic Agent

Total hypnoanesthesia may be used successfully in minor surgery in suitable patients. This includes reduction of dislocations and simple fractures, repair of lacerations, changing painful dressings, dental extractions, and dilatation and curettage. It is of value in emergency minor procedures in patients with full stomachs. One must be careful to explain to patients what will be done. They usually will agree readily.

Hypnosis is seldom achieved nor is it completely justified as the sole agent in major surgery except in certain carefully selected patients and under suitable circumstances. Carefully planned rehearsal of surgery under hypnosis is necessary. Blunt instruments are used in these demonstrations. Hypnosis is not a substitute for chemoanesthesia, however. The latter is still technically superior to hypnoanesthesia. Further, hypnosis can be used only in about 10 per cent of selected patients. It should be reserved for patients who are poor anesthetic risks or are known to be excellent hypnotic subjects. In some cases infiltration of the skin with a local anesthetic agent supplements the hypnotic anesthesia.

CASE 3.—A ten-year-old girl had been admitted to the hospital six months prior to the present admission for third-degree burns of the neck, anterior chest, and both upper arms. She received only supportive therapy during the first two weeks because of her critical condition, except for emergency skin grafting to the arms and chest. This was accomplished under general anesthesia. Later, as the changings of dressings became numerous and required anesthesia each time, hypnosis was used successfully.

Her second admission was for the purpose of releasing severe contracture scars of the neck which had forced the chin onto the sternum with a complete inability to extend the head. An operation was scheduled for the release of the flexion contracture and for skin grafting. A hypnoinduction technic was used and then switched to chemoanesthesia. As the anesthesia was deepened to allow the insertion of an endotracheal tube, respiratory obstruction was immediately apparent. The anesthesia was lightened, 10 mg. of succinylcholine were given intravenously, but cyanosis again appeared. The diameter of the respiratory tract, already encroached on by the acute angle of flexion of the head, was further reduced by the depressive effect of the anesthetic agent. The operation was cancelled and it was decided to reschedule it at a later date under hypnosis.

Two weeks later the child was readmitted a few days before surgery. The patient and her parents were given an explanation of the method of anesthesia and since they were familiar with its use for the changing of the painful dressings during her first admission, they agreed readily. Two rehearsal sessions were performed on the days prior to surgery. Suggestions were given that her left arm was becoming numb. When the numbness was complete she was to place it across her neck for transference of the numbness. Complete analgesia to pinprick was achieved at each session. The operation was rehearsed step by step using a blunt instrument and demonstrating how the surgeon would do the procedure. No premedication was given to the patient. On the operative day, the patient was again hypnotized in her room and taken to the operating room. After the patient was placed on the operating table, the hypnosis was deepened. Numbness was achieved in her left hand and was transferred to her neck.

During the preparation by the surgeon, constant reassurances were given to reinforce the numbness in the region of the neck. Although analgesia to pinprick was complete, the patient began to whimper softly at the incision of the scalpel. The face had been covered by the sterile drapes since the operative area was from the mandible to the sternum. This draping was utilized to fashion a tent over the face and an anesthetic tube was placed in this area to allow the gases to flow over her face. The analgesia proved sufficient to allow the surgeon to proceed without any objection from the child. As soon as the neck was opened wide, the anesthetic mask was attached to the tubing and was applied to the face. Total chemical anesthesia was then produced. It was simple to introduce an endotracheal tube with the head now fully extended. The surgeon then completed the necessary surgery including skin grafting in two and a half hours. Only small increments of cyclopropane anesthesia were necessary for the smooth conduct of the anesthesia. Since posthypnotic suggestions had been given, the postoperative period was completely without discomfort even though the child was placed in a plaster of Paris shell from the head to the waist.

Hypnosis in Treatment of Pain

The anesthesiologist who conducts a pain clinic will frequently see patients who complain of pain of unknown origin, postoperative pain, and pain of malignant conditions. Nerve block therapy may have proved ineffective. Hypnosis can raise the pain threshold and relieve anxiety. The patient is given the posthypnotic suggestion that he will not mind the pain and that no stimulus, no matter how intense, will disturb him. To be successful, the patient must accept the suggestion uncritically.

Case 4.—A forty-four-year-old male had previously been operated on at this hospital for a laminectomy because of back pain. Postoperatively he developed pain down his left lower extremity posteriorly from the gluteal region to his heel. He was unable to sit or stand for any long period of time. There was also a feeling of tightness and pressure in the thigh and calf muscles. He found it necessary to use analgesic agents and sedatives for temporary relief of pain and insomnia. Two nerve blocks had been performed without success. A neurologic consultation had not revealed any overt pathologic condition to explain the symptoms. The patient was then referred for hypnotherapy. He agreed to try hypnosis and proved to be a good subject. Suggestions were given that the extremity was becoming numb and that the pains and pressure would soon disappear. At succeeding sessions the suggestion was made that only a mild discomfort was remaining and that no stimulus, no matter how strong, would disturb him again. He was able to reduce all medication gradually and to increase his hours of untroubled sleep. He received a total of ten sessions. It was suggested to him that if he had pain at home he was to sit on a chair, close his eyes, and concentrate only on his left leg. He was to suggest to himself that the muscles in his leg were becoming more and more loose. This form of self-hypnosis enabled him further to aid his recovery.

Hypnosis in Postoperative Complications

Occasionally patients develop symptoms postoperatively with no known pathologic condition. In such conditions hypnosis may be used for differential diagnosis followed by short-term psychotherapy. These symptoms include inability to produce adequate range of motion of an extremity, palpitation, pressure sensations in the chest and throat, flushes, sweating, hiccups, and inability to void spontaneously. Here the anesthesiologist must have some understanding of psychodynamics. If there is resistance to hypnosis it may be a reflection of the intense anxiety present in the patient. A psychologic or psychiatric evaluation of these patients should be done if an underlying emotional disturbance is suspected. In these instances, if the testing confirms the clinical impression, hypnosis should not be attempted by the anesthesiologist.

Case 5.—An anterior and posterior colporrhaphy had been performed on a thirty-five-year-old white female. She had failed to void spontaneously for three weeks postoperatively. The operation was considered successful and at each catheterization the catheter was inserted easily. Hypnosis was suggested and the patient agreed eagerly. She entered a state of somnambulism quickly and easily, and the suggestion was given that she was relaxed and she would now be able to void. After she was awakened she stated that she felt that she could void in the standing position. In the next twelve hours she was able to "dribble" slightly in this position which was the first time that some spontaneity had occurred in the postoperative period. She then became panicky and demanded to be catheterized. However, when seen the next morning she was anxious to begin the session for she felt she had been helped. During the following twenty-four hours, although she still could void only when standing, she did not require catheterization. After the third session she voided spontaneously in the seated position and was discharged from the hospital.

Comment

Although the use of hypnosis in medicine goes back to antiquity in the early attempts of man to arrive at a means of analgesia in surgery, this form of primitive therapy can be utilized again with an organized rational approach in modern practice. The return to the use of hypnosis in anesthesiology is in part attributable to the current realization that psychologic factors are as pertinent as is the actual administration of an anesthetic technic. The cases presented represent situations in which forcing the conventional methods of anesthetic technics on fear-ridden patients might have resulted in poor anesthesia and possibly in tragic consequences. The patient who is very fearful before operation will often do poorly postoperatively. Schultz[20] has suggested that deaths have occurred in the operating room with negative findings at postmortem which may well have been due to excessive fear.

Cases 1 and 2 enjoyed a smoother course during the operative procedure and postoperatively than would have been the case without the adjunct use of hypnosis. In the latter instance the procedure was marked by a reduction in the total amount of chemoanesthesia necessary. In case 3 a tracheotomy was considered before surgery could be attempted owing to encroachment on the respiratory tract by the flexion contracture of the neck. Hypnosis permitted the surgeon to reverse the flexion without total chemical anesthesia. The value of this technic is proved by the fact that once the head could be extended, intubation was accomplished easily. The discomfort contiguous with the incision by the scalpel despite the fact that the skin was completely analgesic to pinprick has been noted by others employing hypnosis in plastic surgery.[26]

Cases 4 and 5 show that the anesthesiologist trained in hypnosis may contribute to the well-being of the patient and to the ultimate success of the surgical procedure by applying the principles of hypnosis for short-term psychotherapy in pain and in other postoperative complications. In the case of the patient who could not void spontaneously, after three weeks of this painful discomfort, she had a strong desire for relief but needed such help as hypnosis apparently afforded her to bridge this gap. Provided the anesthesiologist is aware that hypnosis may arouse more overt symptoms in a patient with psychiatric problems and acts accordingly, he may use this instrument without producing abreactions.

Every patient scheduled for surgery is entitled to a sympathetic approach by the anesthesiologist. The relationship established by the anesthesiologist with the patient is a result of the confidence and understanding he can instill in the patient. This in itself is a form of hypnosis and, depending on the ability of the patient to respond uncritically to suggestion, the depth of hypnosis can be increased with further reduction in the amount of chemical anesthesia necessary for operation.

Hypnosis is indicated in patients whose apprehension regarding the anesthesia is so great that it interferes with the smooth induction of the anesthesia, in patients in whom the use of pharmacologic agents is contraindicated, in patients in whom the necessity for repeated anesthesia may create disturbances in the physiologic and mental status, in patients needing emergency surgery in which general anesthesia is precluded by factors such as a full stomach, and, last, as a short-term psychotherapeutic measure in patients with postoperative complications. Complete success is not always necessary as any degree of hypnosis obtained may prove beneficial to the patient. Any reduction in psychic tension will diminish the amount of chemical agents needed.

The disadvantages of hypnosis are that it is time consuming; it requires special training and skill on the part of the anesthesiologist and an ability to manifest warmth, kindness, and understanding toward patients; and not all patients can be hypnotized. There is also a risk in hypnotizing patients with serious psychologic problems. This is not a major issue if hypnosis is being used only as a adjunct to other methods of anesthesia. It is important to obtain a psychiatric evaluation if hypnosis is to be used as a psychotherapeutic measure.

Summary

The trend in anesthesiology is to consider the patient and his individuality. It has been shown that hypnosis can be applied profitably along with other methods of anesthesia to prepare the patient for surgery. The patient's postoperative comfort may be enhanced by posthypnotic suggestion. Hypnosis is an ideal and safe preoperative and basal instrument. The very fact that the anesthesiologist deals with pain should cause him to investigate the possibilities of hypnosis. He will find that hypnosis will produce a tranquil patient who requires minimal amounts of pharmacologic agents for anesthesia and sedation and who will have a comfortable postoperative period through posthypnotic suggestion. Hypnosis is thus another adjunct in anesthesiology to produce safe anesthesia.

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Discussion

Victor J. Tofany, M.D., *Rochester, New York.*—Dr. Betcher's paper serves to emphasize a phase of anesthetic practice which will, in the very near future, become a fundamental requirement for the well-rounded anesthesiologist.

I should like to reiterate Dr. Betcher's emphasis on "adjunct." Just as is the case in muscle relaxants and ultrashort-acting barbiturates, medical hypnosis should be used to supplement rather than to supplant conventional chemoanesthetic technics. It should never be employed in situations which exceed its limitations. Here, as in many other situations, the "purist" is doomed to frustration and often to mediocrity, while the patient is forced to fit himself to a method, instead of the method being fitted to the patient.

When indicating the area of anesthesia, the choice of vocabulary is important, especially when dealing with children. One must be sure the patient understands what is desired. Also, when indicating anesthesia, every stimulus applied, such as skin preparation, examination, pressure of sponging, and so forth, should be utilized to reenforce the anesthesia already present in the area.

We find it preferable to carry out the induction of hypnosis before bringing the patient into the operating room. This prevents the undesirable stimulation caused by the sight of the operating room "props" since the patient then enters the operating room with his eyes closed. We invariably use rapid induction technics advocated by Philip Ament, D.D.S., incorporating proper philosophies with insight and understanding. These technics eliminate the large expenditure of time and effort required by longer induction technics and are more practical in a busy operating room schedule. This is especially true in the case of emergencies.

In the majority of cases it is possible to make the patient understand what is desired of him without lengthy explanation and discussion. Once he understands what is desired, induction can be accomplished in a short space of time. However, as Dr. Betcher has stated, rehearsal is necessary in cases of major surgery under hypnoanesthesia.

Many problems arise in conjunction with the use of hypnosis and therefore its use should be restricted to qualified operators who have an adequate background in psychodynamics. Under hypnosis the promise is elicited from the patient that he will never engage in hypnosis with anyone but a qualified physician or dentist. This serves to protect the subject from the danger of submitting to amateurs and, likewise, prevents autohypnosis with its concomitant misadventures.

The psychologically disturbed patient stands a good chance of becoming more disturbed when subjected to hypnosis. In such a case the side-effects of the technic may well outweigh the primary or desired effect.

In the case of the patient who uses his pain or symptom for secondary gain, as in compensation cases, the use of medical hypnosis may well result in frustration both for the operator and for the subject. In such a situation the problem is generally at the unconscious level so that the patient is not aware of it. Whether or not to embark on a psychotherapeutic regime with such a patient should be determined by the background of the operator. I feel that this problem is better handled by someone other than the anesthesiologist, and I would, personally prefer to avoid this type of case. This does not mean, however, that I object to the "minor psychotherapy" described by Dr. Betcher. On the contrary, we are enthusiastic about our results to date, and feel that this area may prove to be a most fertile one for medical hypnosis.

During the postoperative period one must be careful to avoid masking postoperative complications when using posthypnotic suggestions. For example, the anesthesia indicated for the post-appendectomy patient should be located in the area of the wound only and not in the entire abdomen. Time distortion can be utilized in the case of the patient with an indwelling catheter or a nasogastric tube to make the appliance feel "as if a part of" the patient.

The horizons of medical hypnosis are yet to be defined and the swift turning of the clock precludes philosophizing at this time. I would close with one simple, but, I hope, not trite statement.

If the use of medical hypnosis as an adjunct in anesthesiology achieves nothing more than the establishment of a solid doctor-patient relationship, a definite forward step will have been made in the development of anesthesiology. This eventuality will, I am sure, be welcomed most readily by that forgotten man, the patient.

Nothing on earth consumes a man more quickly than the passion of resentment.—NIETZSCHE

Breast Cancer Detected by Routine Physical Examination

Three-Year Survey of the Strang Cancer Prevention Clinic

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IN THE clinical management of breast cancer early recognition and prompt treatment are primary goals. Although some neoplasms are presumably incurable from their inception, most breast cancers treated prior to regional lymph node metastasis will yield a high rate of cure. For this reason we believe that delay should be avoided and that every effort should be made to detect breast cancer in its localized phase.

It is the purpose of the Strang Cancer Prevention Clinic to discover unsuspected cancer by thorough physical examination at regular intervals. The type of examination and the routine screening procedures have been outlined in previous reports.[1,2] A consistently high level of clinical suspicion —"cancer until proved otherwise"—has been helpful in the detection of malignant tumors which might have been overlooked.

At the Strang Clinic the detection of a breast mass by the examining physician is followed by confirmatory examination by the senior attending physician. If the findings warrant surgical investigation, the patient is referred to the family doctor for necessary care. When there is some indecision about management, the services of a breast consultant are available to render a final opinion. The subsequent course of the patient for whom surgery is advised is followed closely, especially to learn the ultimate histologic findings.

Materials and Methods

An evaluation of the cancer yield in a population subjected to periodic examinations requires a definition of terms, since not all cancers occurring in this population are detected at the time of routine periodic examination. Accordingly, the cancer yield of Clinic patients has been divided into the following categories:

1. Strang Clinic diagnosis, routine examination: The initial suspicion of cancer occurred as a direct result of a routine annual examination, either the initial or a subsequent one.
2. Strang Clinic diagnosis, interval pickup: There was no suspicion of the disease on routine annual examination, but during a consultation for another site or as a result of a request by the patient for a consultation the suspicion was established and a diagnosis of cancer made.
3. Diagnosis elsewhere under six months: At some time within six months of the last examination at the Clinic a diagnosis of cancer was established elsewhere. The Clinic played no role.
4. Diagnosis elsewhere over six months: At some time after six months of the last examination at the Clinic a diagnosis of cancer was established elsewhere. The Clinic played no role.

Although the patient accepted for examination at the Strang Clinic is presumably a

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TABLE I.—NUMBER OF WOMEN RECEIVING COMPLETE EXAMINATIONS AT THE STRANG CANCER DETECTION CLINIC DURING 1954–1956

Year	Number of Examinations		
	Initial	Annual	Total
1954	5,244	8,892	14,136
1955	5,104	9,457	14,561
1956	4,568	10,146	14,714
TOTAL			
EXAMINATIONS	14,916	28,495	43,411
PATIENTS	14,916	10,713	25,629

TABLE II.—NUMBER OF BREAST TUMORS DIAGNOSED IN 25,629 WOMEN EXAMINED AT THE STRANG CLINIC, 1954–1956

Year	Type of Tumor (Number of Cases)	
	Malignant	Benign
1954	22	126
1955	34	172
1956	41	160
TOTAL	97	458
RATE PER 1,000	3.8	17.9

well adult, a proportion of examinees present symptoms which may be related to cancer. The patient's status with regard to symptoms is evaluated as follows:

1. Asymptomatic: The patient is totally without symptoms which are evident to the patient or examining physician.

2. Symptomatic but not seeking care: The patient has symptoms but is not aware that these symptoms have significance. Periodic examination is the only motive for the visit.

3. Symptomatic and seeking care: The patient is aware of symptoms and is using the Clinic for evaluation of them.

This report covers the period from January 1, 1954, through December 31, 1956. During this three-year interval 25,629 women received 43,411 complete examinations. Of these, 14,916 women were initial examinees and 10,713 were Strang Clinic patients returning for annual examinations (Table I).

Over-All Results

A total of 97 histologically proved breast cancers and 458 benign breast conditions are known to have been diagnosed in this population, a rate of 3.8 cancers and 17.9 benign tumors per 1,000 patients (Table II). Of the 97 breast cancers, 70 were detected at the Clinic, on routine examination or interval consultation, and 27 were detected elsewhere. Of the 27 cases in which the Clinic played no active role, 8 were diagnosed within six months of the last routine examination, 10 within seven to twelve months, and the remaining 9 after more than twelve months (Table III).

TABLE III.—BREAST CANCER YIELD IN 25,629 STRANG CLINIC PATIENTS, 1954–1956, ACCORDING TO PLACE AND TIME OF DETECTION OF THE 97 CASES

Place and Time	Breast Cancer Cases			
	Number		Per Cent	
Strang Clinic, routine examination	63	70	64.9	72.1
Strang Clinic, interval pickup	7		7.2	
Elsewhere 6 months or less since last examination	8	27	8.3	27.9
Elsewhere over 6 months since last examination	19		19.6	

Of the 458 benign breast conditions detected during this three-year period, 8 were bilateral. The histologic findings of the benign group are recorded in Table IV. The major indication for surgical intervention was the discovery of a discrete or asymmetric breast mass. Excisional biopsy was recommended to rule out the possibility of carcinoma.

The remainder of this paper is devoted to an analysis of the 70 histologically proved cases of breast cancer in which the Strang Clinic was directly instrumental in the diagnosis.

Results in the 70 Strang Clinic-Detected Malignant Breast Cases

SYMPTOMATOLOGY.—Of the 70 patients with breast cancer detected by the Strang Clinic from 1954 through 1956, 44.3 per cent were totally asymptomatic, 21.4 per cent had symptoms but were not seeking care, and 34.3 per cent had symptoms and were using

TABLE IV.—Benign Breast Conditions Detected Among 25,629 Women (43,411 Examinations) at the Strang Clinic During the Three-Year Period Under Study

Benign Condition	Number of Patients	Number of Patients in Each Year 1954	1955	1956
Chronic cystic mastitis	198	58	77	63
Fibroadenoma	93	28	29	36
Lipoma	33	8	13	12
Benign cyst	40	11	14	15
Single	31	8	13	10
Multiple	9	3	1	5
Sclerosing adenosis	26	6	12	8
Duct dilation and stasis	18	5	6	7
Duct papillomatosis	19	3	7	9
Intraductal papilloma	14	3	8	3
Periductal mastitis	9	1	2	6
Blunt duct adenosis	3	2	1	
Other	5	1	3	1
Fat necrosis			1	
Lobular hyperplasia			1	
Intramammary node			1	
Hyperplastic node				1
Unclassified	1			
Total	458	126	172	160

TABLE V.—Symptomatology in the 70 Patients with Breast Cancer Detected at the Strang Clinic, 1954–1956

Symptom Category	Patients Number	Per Cent
Asymptomatic	31	44.3
Symptomatic, not seeking care	15	21.4
Symptomatic, seeking care	24	34.3

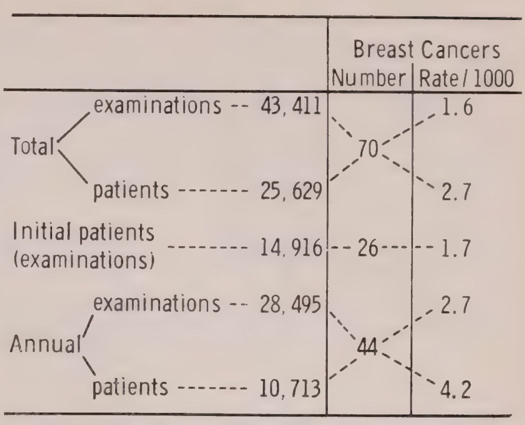

Fig. 1. Cumulative breast cancer detection rates for Strang Clinic, 1954–1956.

TABLE VI.—Annual Incidence of Breast Cancer Detected at the Strang Clinic During the Three-Year Period Under Study

Year and Examination Category	Number of Examinations	Number of Breast Cancer Cases	Rate per 1,000 Patients
1954			
Initial	5,244	7	1.3
Annual	8,892	12	1.3
Total	14,136	19	1.3
1955			
Initial	5,104	6	1.2
Annual	9,457	15	1.6
Total	14,561	21	1.4
1956			
Initial	4,568	13	2.8
Annual	10,146	17	1.7
Total	14,714	30	2
Average Annual Rate			
Initial			1.7
Annual			1.5
Total			1.6

the Clinic for evaluation of them (Table V).

Incidence Breakdown.—Of the 70 cases, 26 (37.1 per cent) were found on initial examination and 44 (62.9 per cent) on subsequent examination. Of the latter group, 37 were diagnosed on annual examination and 7 during an interval consultation.

Table VI gives the annual incidence of breast cancer detected at the Clinic in each of the three years under study with a breakdown according to initial and subsequent examination. The average for the three years shows an annual incidence of 1.7 per 1,000 women on initial examination and 1.5 per 1,000 women on annual or interval examination. Figure I illustrates the over-all three-year experience, with an incidence of 1.6 breast cancers per 1,000 examinations, or 2.7 per 1,000 patients, indicating the importance of periodic examinations. In the 14,916 routine initial examinations, 26 breast cancers were detected, an incidence of 1.7 per 1,000 patients. In the 28,495 interval or routine annual examinations, performed on 10,713 women, 44 breast cancers were detected, a cumulative rate of 2.7 breast cancers per 1,000 examinations and 4.2 breast cancers per 1,000 patients. It is significant that the increasing yield in this Clinic population

TABLE VII.—Age Distribution of the 70 Cases of Breast Cancer Detected at the Strang Clinic, 1954–1956

Age (Years)	Initial Patients: Total (Per Cent)		Initial Patients: Breast Cancer Number	Initial Patients: Breast Cancer Per Cent		Annual Patients: Total (Per Cent)		Annual Patients: Breast Cancer Number	Annual Patients: Breast Cancer Per Cent	
under 30	9	69.4	0	0	38.5	1.4	57.2	0	0	52.3
30–39	29.3		4	15.4		18.7		2	4.6	
40–49	31.1		6	23.1		37.1		21	47.7	
50–59	22	30.6	8	30.8	61.5	30.4	42.8	18	40.9	47.7
60–69	7.7		7	26.9		11		3	6.8	
70 and over	0.9		1	3.8		1.4		0	0	
Total			26					44		

TABLE VIII.—Histologic Types of Breast Cancer in the 70 Cases Detected by the Strang Clinic, 1954–1956

Pathology	Number of Patients	Axillary Node Status (Number of Patients): Negative	Positive	Unknown*
Infiltrating duct carcinoma	55	32	22	1
Mammary carcinoma, unclassified	5	1	4	..
Medullary carcinoma	3	2	1	..
Intraductal noninfiltrating carcinoma	1	1	..	..
Other types	6	4	..	2
Paget's disease of nipple		1		
Mucoid carcinoma		1		
Colloid carcinoma		1		
Lobular carcinoma in situ				2
Comedo carcinoma		1		
Total	70	40	27	3

* Because simple mastectomy or local excision was performed.

correlates with the American Cancer Society's estimate that 50 of every 1,000 American women will develop breast cancer within their lifetimes.

Age.—Table VII compares the age-group distribution of the 70 breast cancer patients with that of the examined population in both initial and annual (including interval) categories and compares the results of both categories. In the initial group 61.5 per cent of the breast cancer patients were over age fifty as compared with 30.6 per cent of the base population. The degree of contrast in the annual group, 47.7 per cent and 42.8 per cent, is negligible. The considerable difference between the initial and the annual groups is related to the larger younger-age distribution of the initial group.

Types of Cancer.—Table VIII lists the histologic diagnoses of the 70 breast cancer cases, obtained from each patient's personal physician or from the hospital at which the surgery was performed. The most common histologic type of breast cancer reported was infiltrating duct carcinoma. Of the 70 breast cancer patients, 40 (57.1 per cent) did not have microscopic evidence of regional node metastasis. In 3 patients simple mastectomy was performed and therefore their axillary node status is unknown. The pathology in 2 of these patients was lobular carcinoma in situ, and in the other, infiltrating duct carcinoma. The low incidence of axillary node involvement suggests that the breast cancer had been detected at a stage which was amenable to cure. There was in situ, or noninfiltrating, breast cancer in 3 patients. The discovery of preinvasive carcinoma of the breast in 4.3 per cent is very encouraging since at this stage appropriate therapy can practically ensure cure.

Symptomatology in Relation to Axillary Node Status.—Patients who were asymptomatic or symptomatic but not seeking care showed respectively a 58.1 per cent and 66.7 per cent incidence of negative axillary nodes, while those with breast symptoms who were using the Clinic for evaluation had a 50 per cent incidence of negative axillary nodes (Table

TABLE IX.—Symptomatology in Relation to Axillary Node Status in the 70 Patients with Breast Cancer Detected at the Strang Clinic, 1954–1956

		Axillary Node Status					
		Negative		Positive		Unknown	
Symptom Category	Number of Patients	Number of Patients	Per Cent of Patients	Number of Patients	Per Cent of Patients	Number of Patients	Per Cent of Patients
Asymptomatic	31	18	58.1	11	35.5	2*	6.4
Symptomatic, not seeking care	15	10	66.7	5	33.3	...	...
Symptomatic, seeking care	24	12	50	11	45.8	1†	4.2
Total	70	40	57.1	27	38.6	3	4.3

* Lobular carcinoma in situ infiltrating duct carcinoma, and, both a symptomatic.
† Lobular carcinoma in situ, symptomatic.

IX). No conclusions can be drawn from these findings.

Follow-Ups.—Follow-up studies on this group of 70 women will be continued. When sufficient time has elapsed, it is planned to report the survival rate and to relate these to the symptomatology, histology, and nodal involvement.

Summary

Several categories are proposed and explained to help evaluate the role of a clinic which performs routine physical examinations for the purpose of discovering cancer.

From January, 1954, through December, 1956, 43,411 routine physical examinations were performed on 25,629 women at the Strang Clinic. During this three-year period 97 histologically proved breast cancers were detected in this population, a rate of 3.8 per 1,000 patients. Of these, 70 were detected on routine periodic examination or on interval consultation at the Clinic, an incidence of 2.7 per 1,000 patient or 1.6 per 1,000 examinations. In addition, there were 458 histologically proved instances of benign breast disease.

Of the 70 cases of breast cancer discovered by the Clinic, 37.1 per cent were found on initial examination and 62.9 per cent on subsequent examination. In this group of 70, 47.1 per cent were under fifty years of age and 44.3 per cent were totally asymptomatic.

The most common histologic type of cancer was infiltrating duct carcinoma. There were uninvolved axillary lymph nodes in 57.1 per cent of the patients. Preinvasive breast cancer was present in 3 patients.

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Every man desires to live long, but no man would be old.—Jonathan Swift

Ulcerative Colitis in Older-Age Patients

Diagnosis, Differential Diagnosis, and Treatment

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ULCERATIVE colitis in older-age patients occurs in two forms: as a primary disease which develops at fifty years of age or older and as chronic ulcerative colitis of many years duration.

When ulcerative colitis develops in patients fifty years of age or older, it is a serious disease and the prognosis is directly related to the age at onset. It is often acutely fulminating and so rapidly progressive that surgical emergencies requiring total colectomy develop within the first one or two years after the onset of the disease.[1]

The mode of onset differs among individuals. A review[2] of the histories of 52 ulcerative colitis patients fifty years of age or older showed that watery diarrhea only was the mode of onset in approximately 50 per cent of the cases and that rectal bleeding was the presenting symptom in a third of the patients. Other individuals may be acutely ill at the onset and have diarrhea with blood, mucus, pus, rectal pain, straining, tenesmus, and abdominal cramps. In less seriously ill patients the same clinical symptoms may be present in a milder form, particularly when the disease is confined to the rectum, sigmoid, and distal descending colon, with or without associated diverticula. Almost all patients in the older-age group have loss of rectal sphincter control. The first symptoms in a few individuals resemble obstruction of the colon. As a rule, simple measures such as enemas or colonic irrigations will give them relief, but subsequent x-ray studies reveal evidence of advanced chronic ulcerative colitis in spite of a history of no previous bowel disorder.

Of the 52 patients reported,[2] 61 per cent had the onset of their ulcerative colitis after age fifty, while 39 per cent had their first symptoms at a younger age and have suffered with the disease for many years. The latter are readily recognized and usually give a characteristic history complete with confirmatory x-rays.

The course of the disease when it starts after age fifty is quite variable, but the older the patient at onset the more serious is the course likely to be. The original episode of diarrhea is often severe and prolonged, and there may be serious weight loss and debilitation. The patient may have to be hospitalized and be given numerous infusions. When the watery diarrhea is finally brought under control, the period of convalescence is often drawn out and complicated by the difficulty in feeding the older-age patient, who gains weight very slowly.

When bowel hemorrhage is the predominant symptom, several blood transfusions may be necessary. In some patients the bleeding may stop as abruptly as it began and there may be no other bowel symptoms for a number of years until another hemorrhage occurs. However, these patients often have x-ray evidence of acute or chronic ulcerative colitis.

In some older patients the ulcerative colitis is localized, especially in the rectum, sigmoid, and distal descending colon. Diverticula may or may not be present in the same area. The sigmoidoscopic appearance of the bowel is typical of ulcerative colitis. These patients often have rather

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severe symptoms of rectal pain; straining; tenesmus; blood, mucus, and pus mixed with small amounts of fecal matter; and poor sphincter control. They have frequent relapses and remissions but usually respond quite promptly to therapy. However, as time goes on the colon may finally develop areas of narrowing, with evidence of partial obstruction. For reasons not entirely clear, some of these patients who are given steroid therapy suddenly develop a fulminating, generalized form of the disease, with necrosis and giant ulcerations. In others, extension of the disease to the entire colon is more gradual and follows many relapses and remissions.

Those who have evidences of intestinal obstruction as the first symptoms must be followed as potential candidates for complete obstruction later on. A daily dosage of saline laxative, regulated to give them soft, mushy bowel movements each day, is usually sufficient to keep them quite well for long periods of time. The patient must understand that since there is narrowing and contraction of the bowel, a large, formed fecal mass may cause intestinal obstruction.

X-Ray Diagnosis

The roentgenologic patterns of ulcerative colitis in older-age patients are related to the age of the patient at the onset of the disease. The classic x-ray findings in patients who have been chronically ill with ulcerative colitis for many years are well known, but when the disease starts at fifty years of age or older the picture is somewhat different because the condition is more acute or fulminating.[3] The x-ray diagnosis of ulcerative colitis has to be based on a composite of several factors, all of which taken together suggest the diagnosis. The only completely pathognomonic single sign is that of ulcerations.

During acute inflammatory stages, either at the onset of the disease or at the time of an exacerbation, the involved region of the colon may be either dilated or redundant. These areas may be completely relaxed and without any tone, or they may appear stiff, especially if there have been repeated episodes of inflammation. The normal haustral markings may be diminished or absent. In some instances there is also asymmetry in the ulcerated area, so that coincident with the tendency to dilatation there is diminished haustration along one edge of the colon and a stiff, straight line directly opposite. These findings are best visualized on air contrast studies. Many air contrast films also show a hazy, ground-glass appearance of the bowel wall, with a sharp line of barium along the edges. These two findings are considered to be due to retained barium in the ulcerations and are almost universally found in patients who have roentgenologic evidence of ulceration in the same areas. Changes in mucosal patterns also occur, with a tendency toward a coarse, irregular appearance, which is later followed by the development of longitudinal lines running parallel to the long axis of the bowel in the involved portions. Both the coarse, irregular mucosa and the longitudinal lines may appear on the same films. In many of the acutely fulminating cases the entire colon is involved and most of the features described may be present. On the other hand, when the disease is quite localized an essentially normal colon may be visualized in the unaffected areas. This is especially true when the disease involves only the descending and sigmoid segments of the colon. All of these findings have been confirmed by pathologic specimens obtained at numerous operations.

The classic x-ray appearance of chronic ulcerative colitis has also been seen in older-age patients who have had only a single episode of obstruction or a single bowel hemorrhage without any previous history of disturbed bowel function.

Differential Diagnosis

The differential diagnosis of ulcerative colitis in older-age patients includes not only those diseases which cause similar symptoms but also the complications which may develop.

Bleeding from the bowel is most commonly due to carcinoma, diverticulitis, polyposis, chronic ulcerative colitis, duodenal or gastric ulcer, gastric carcinoma, or esophageal varices. Among the less common causes is hemangiomata, either localized or generalized throughout the small or large intestine. This condition, known also as the Weber-Osler-Rundel syndrome, may occur more often than previously suspected, especially in females well beyond the menopause where it is apparently related to failure of estrogenic hormones. Small bowel polyposis, telangiectasis of the small or large intestine, and mesenteric thrombosis are other causes of bleeding.

Carcinoma anywhere in the gastrointestinal tract may either simulate ulcerative colitis or complicate it. Rectal and sigmoid neoplasms are those which most commonly cause symptoms suggestive of ulcerative colitis.

Carcinoid tumors of the gastrointestinal tract are usually located in the region of the appendix and cecum. In addition to diarrhea, cutaneous flushing may appear anywhere on the body and last for varying periods of time. The flushing may be related to hot drinks, alcohol, eating, or bowel movements, and may also at times be precipitated by palpation of the enlarged liver. Diarrhea may vary from a few movements daily to 20 to 30 times in twenty-four hours. Blood has not been reported in these cases. The diagnosis is made by finding 5-hydroxy-3-indole-acetic acid (serotonin) in the urine.

Diverticulitis of the sigmoid or descending colon is one of the most common causes of symptoms resembling ulcerative colitis. The clinical picture of partial intestinal obstruction may be present owing to inflammatory narrowing in the region of the diverticula. The diagnosis has to be confirmed by x-ray studies, including air contrast films. Diverticula and carcinoma may be found simultaneously in the same patient, either in close proximity or in entirely different locations in the colon. Repeated episodes of partial obstruction of the sigmoid colon, with x-ray evidence of progressive stiffness, may require an exploratory operation to facilitate the diagnosis and to give the patient definitive therapy.

Partial obstruction of the colon may have the symptom of diarrhea and be the result either of carcinoma or of chronic inflammation with scar tissue causing localized stricturing. Most obstructions due to chronic ulcerative colitis are located in the transverse, sigmoid, or descending colon. The differential diagnosis of obstruction due to carcinoma or endometriosis of the sigmoid can only be resolved by microscopic examination of specimens obtained at surgery.

Polyps in any part of the colon may give rise to symptoms suggesting ulcerative colitis. Multiple small bowel polyposis (Peutz-Jeghers syndrome) is included in the differential diagnosis.

Staphylococcus enterocolitis may follow either the administration of one of the antibiotics such as Terramycin or Aureomycin or may occur spontaneously. The onset is usually sudden with cramps, abdominal pain, fever, copious diarrhea, blood, and pus. There may be great prostration. The disease progresses rapidly and within a very short time there may be generalized peritoneal irritation, with an enlarged, distended bowel and even, perhaps, perforation of the wall of the colon. These patients are medical and surgical emergencies. If operated on, the colon is usually found to be dilated and grossly inflamed and there may be free fluid in the peritoneal cavity. The slightest touch may result in penetration of the wall, and on opening the colon giant irregular ulcerations, inflammation, and denuding of the entire mucosa are found.

Shigella (bacillary) dysentery is the only other acute condition which approximates the severity of staphylococcus enterocolitis. Its onset is also very abrupt, with fever, toxemia, straining, and tenesmus. There is frequent passage of very small amounts of sticky blood, mucus, and pus, in contrast to the copious bowel movements of enterocolitis where there is a great loss of fluid.

The onset of amebic dysentery is usually more insidious. As a rule, the patient has six or eight bowel movements daily, with clear, glairy, blood-streaked mucus in which the Endamoeba histolytica are found. Unless complicated by the Shigella group of organisms, the clinical picture of amebiasis is much milder.

Regional ileitis, either at the terminal ileum or elsewhere, has to be considered in the differential diagnosis. Granulomatous ileitis and ulcerative colitis may exist coincidentally.

The malabsorption syndrome is especially prevalent in older patients whose eating habits may not be satisfactory or who are unable to have an adequate food intake for various reasons.

Duodenal ulcer may also cause diarrhea of varying degrees in older patients. An ulcer crater may not be demonstrable because of a large amount of spasm in the duodenal bulb, but administration of propantheline bromide (Pro-Banthine) one hour before x-ray examination will give sufficient relaxation to facilitate the diagnosis.

The postbulbar duodenal spasm syndrome[4,5] has diarrhea as the predominating and presenting symptom in a large proportion of the cases including older-age individuals. The diarrhea associated with postbulbar duodenal spasm is rather profuse, watery, and without blood or mucus. The most important diagnostic feature is x-ray evidence of stiffness of the postbulbar area, with narrowing, constriction, and spasm so that the second portion of the duodenum often has the appearance of a string or a piece of coarse hemp rope. Marked hypermotility throughout the small bowel is also a characteristic of postbulbar duodenal spasm. A dosage of propantheline bromide given one hour before x-ray examination will cause complete relaxation of the postbulbar area and inhibition of the hypermotility, thus aiding in the diagnosis.

Chronic pancreopathy, whether related to chronic pancreatitis secondary to hepatitis or due to carcinoma of the pancreas, may cause profound diarrhea.

Treatment

The medical management of ulcerative colitis in older-age patients involves some problems not encountered in younger individuals. Arteriosclerosis, cardiovascular complications, and glaucoma have to be evaluated seriously in each case when present. Emergencies develop more rapidly in this group of patients and must be dealt with more vigorously.

Watery diarrhea causes profound loss of electrolytes, proteins, and fluids, frequently requiring replacement therapy by intravenous infusions. In addition to fluids and electrolytes, blood is often indicated and should be used.

When massive hemorrhage occurs, it has to be met with massive replacement of blood until the blood pressure, red blood count, hemoglobin, and hematocrit are stabilized. The intravenous injection of 20 mg. of Premarin has recently been used to stop the intestinal bleeding of ulcerative colitis. The rationale is not explained, but it has been a valuable adjunct in the prompt control of bleeding. Vitamin K and ascorbic acid are also indicated.

The basic therapy has included antibiotics, antispasmodics, and anticholinergics where it was clear that the patient did not suffer from glaucoma. Cautious use of corticosteroids has been valuable. Chloromycetin has been the antibiotic of choice and over a ten-year period has been given both orally and intravenously with no untoward reactions. In acutely fulminating cases where surgery was imminent, 2 to 3 Gm. have been added to a 1,000 cc. infusion; a total of up to 6 Gm. has been given in twenty-four hours prior to emergency surgery. When perforation of the bowel has taken place in such cases, or there has been contamination of the peritoneum with bowel contents, the operation has been completed and healing has taken place without peritonitis. Less seriously ill patients are given oral dosages of 1 to 3 Gm. daily in conjunction with other medications.

Diphenhydramine hydrochloride (Benadryl hydrochloride) has been used primarily for its relaxing and antispasmodic action on smooth muscle. It also causes a certain amount of sedation.

Propantheline bromide has been used to inhibit hypermotility of the small bowel and thus reduce the amount of fecal matter delivered to the colon. In this way it helps to control the diarrhea even though the anticholinergic drugs have no effect on the large intestine. The anticholinergic agents are contraindicated in glaucoma.

The corticosteroids have been used in older-age patients both during acute exacerbations of chronic ulcerative colitis and at the onset of the disease. Under any circumstances they must be given with utmost caution since serious complications may result from this type of therapy. These complications include hemorrhage, perforation, and sudden change from a relatively mild form of the disease to an acutely fulminating condition, with giant ulcerations and generalized necrosis of the bowel.

The steroid program usually includes small amounts of ACTH, such as 20 units two or three times weekly at the start of treatment. This is reduced to once a week after the patient improves and then is finally withdrawn. The oral forms of prednisolone, such as Meticortelone, are given; the usual starting dosage is 5 mg. once or twice daily. Aristocort and Kenacort also appear to be quite effective and are reported to have fewer side-effects and to be less dangerous from the standpoint of perforation and hemorrhage. They have been used at a starting dose of 2 mg. twice daily for a few days, and if necessary then increased to 4 mg. three times daily and maintained at that level until the patient improves. The corticosteroids constitute only one part of the program of therapy and are given simultaneously with the antibiotics and antispasmodics. As the patient improves, the dosage is gradually reduced and finally withdrawn.

During the past two years the intrarectal instillation of prednisolone acetate has been used with good results, especially in patients with serious rectal and sigmoid involvement who complain of severe rectal pain, straining, and tenesmus. Twenty-five mg. (1 cc.) of the prednisolone acetate are mixed with 30 cc. of tepid tap water and given intrarectally by means of a small rubber catheter. The instillation is made to just within the rectal sphincter and is retained by the patient for as long as possible. There has been striking relief of symptoms even after the first instillation of the medication. The usual program has been one instillation daily in the evening, but occasionally instillations have been given twice daily, at morning and at bedtime. This therapy is continued only for as long as is absolutely necessary and then gradually withdrawn. If the patient fails to have relief, or if after improving has increased symptoms in spite of the rectal instillation, this form of medication must be discontinued. Three such patients who apparently had a simple ulcerative colitis involving only the rectum, sigmoid, and distal descending colon, developed fulminating, generalized ulcerative colitis with giant ulcerations and perforations.

Corticosteroids have a definite place in the preoperative and postoperative management of older-age ulcerative colitis patients, whether or not these preparations were given prior to surgery. The adrenals are depleted because of the disease, and the reduced amount of circulating adrenal hormone is not sufficient to meet the stress of an operation. As a result, there is a tendency toward peripheral vascular failure during surgery and in the immediate postoperative period. The addition of 100 mg. of hydrocortisone to the infusion during the operation is usually sufficient to keep the blood pressure stabilized. Hydrocortisone should also be added to the postoperative infusions and then gradually reduced over a period of a few days as the patient becomes stabilized. Delayed reactions to adrenal hormonal failure have been observed as late as two to three weeks after surgery, and the clinical symptom picture is not always perfectly clear. It may be characterized by a patient who has done well up to that point but suddenly starts to go downhill for no obvious reason. The blood pressure drops, the appetite disappears and gives way to nausea, and there is loss of energy with a curious sense of weakness and depression. This picture often can be reversed promptly by relatively small dosages of corticosteroids. After a few days of such support, the medication is withdrawn again gradually. The danger lies in continuing the steroid therapy for too long a period of time. It is under those circumstances that the complications of perforation and hemorrhage have most often occurred.

Some older-age patients who have not received adrenal corticosteroid therapy before operation have appeared to withstand the surgical procedure satisfactorily. However, within a day or so after operation they have gone into peripheral vascular failure and died. At autopsy the adrenal glands have been found to be atrophied completely. These patients needed adrenal steroid support in the postoperative period.

Sedation in the older patients is at times difficult to accomplish because they often do not respond to the phenobarbital group of drugs. Diphenhydramine hydrochloride, dimenhydrinate (Dramamine), and chloral hydrate have been the most useful preparations. A combination of diphenhydramine hydrochloride or dimenhydrinate with chloral hydrate will usually give the older-age patient a restful night with no aftereffects.

The major dietary problem is the tendency of many older patients to blame their ulcerative colitis symptoms on foods they previously liked but now believe cause bowel disturbance. They must understand that food does not cause the disease and be encouraged to eat full, regular meals. Proteins, vitamins, and minerals are stressed, and the patients are told they will improve much more rapidly if they eat adequate amounts of a well-balanced diet.

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Advice is like snow; the softer it falls, the longer it dwells upon, and the deeper it sinks into the mind.—Coleridge

Recent Experience with Gastrointestinal Hemorrhage Complicating Severe Liver Disease[*]

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THE problem of massive hematemesis presents itself so dramatically to both patient and physician that it has always attracted great interest. A review of the present status of this problem indicates that the mortality associated with massive hematemesis is generally low except when hematemesis results from bleeding esophageal varices. As we have learned more about the general disturbances of function resulting from marked hepatic insufficiency, we have become more aware that hemorrhage into the gastrointestinal tract is not only a common but also a lethal complication of liver failure. Indeed, it is likely that one of the chief factors that determines mortality from massive upper gastrointestinal hemorrhage from any source is the degree of reserve of hepatic function. In the light of present knowledge of the physiopathology of severe hepatic insufficiency, this report reviews our recent experience in dealing with gastrointestinal hemorrhage complicating severe liver disease.

Selection of Cases

Although it is generally realized that most patients with liver disease who hemorrhage do so from ruptured esophageal varices, it is, nevertheless, often not appreciated that many patients with liver disease hemorrhage from sources other than ruptured esophageal varices. Dagradi, Sanders, and Stempien,[1] for example, have reported a series of 92 instances of upper gastrointestinal bleeding in patients with hepatic cirrhosis in which 48 per cent, or practically half, of the patients were bleeding from a source other than varices. All patients with severe liver disease and massive upper gastrointestinal hemorrhage from any source should probably be grouped together, since the general derangements resulting from hepatic insufficiency are present in all, and all of them have related problems. We have not confined this series of cases to patients who hemorrhage from varices. Postmortem examinations were done on 22 of the 30 patients in the series who died, and 6 patients were found to have other sources of hemorrhage than varices. A somewhat higher incidence of sources of hemorrhage from sites other than varices is usually found if the diagnosis is based on endoscopic rather than on autopsy findings. All patients, however, had massive hemorrhage and severe cirrhosis. Many were referred to us because they presented especially difficult problems.

Method of Treatment

The therapeutic approach to the cases presently under review evolved from experience with a series of 50 cases previously published in 1956[2] in which the mortality rate was 66 per cent. The fact that all deaths in this initial series seemed to be caused by hemorrhage or coma or both was striking. Exsanguination occurred in 20 patients. Coma was present in 13 patients, and no patient who became comatose recovered. Our review of these cases in 1955 coincided with a period of renewed awareness of the significance of ammonia intoxication in hepatic insufficiency.[3] During this period it became increasingly apparent that an ele-

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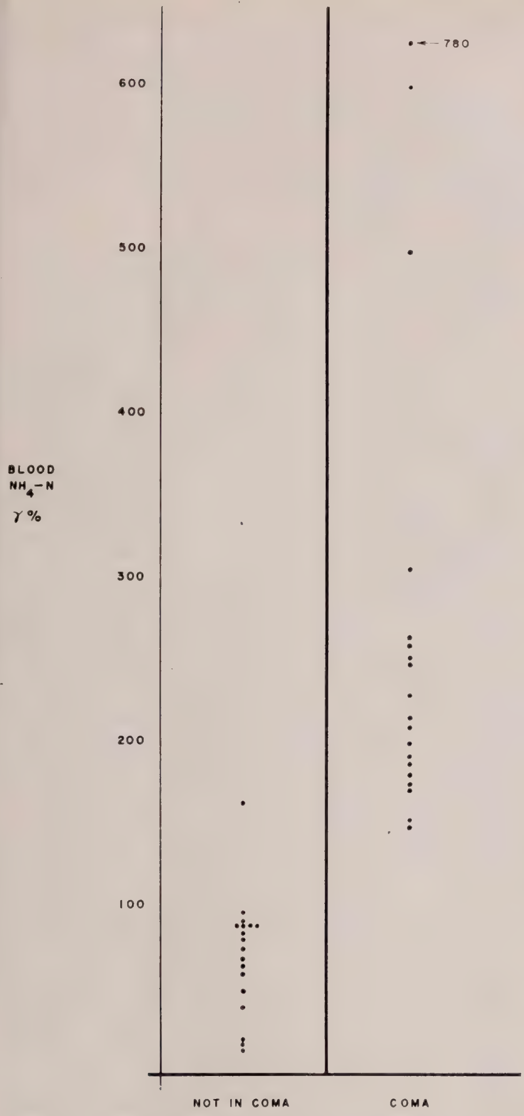

FIG. 1. Peripheral venous blood ammonia levels in patients with severe liver disease following gastrointestinal hemorrhage.

vated concentration of ammonia in the blood associated with coma frequently occurred following ingestion of ammonium compounds or large quantities of protein by patients with liver disease. It was therefore reasonable to suppose that the coma seen following hemorrhage from esophageal varices was often the result of ammonia intoxication due to the inability of the diseased liver to metabolize normally the products of the digestion of blood in the bowel.

This supposition was confirmed by three types of observations. First, the measurement of ammonia in the peripheral venous blood of patients with liver disease following massive gastrointestinal hemorrhage showed that coma practically always occurred when the ammonia level clearly exceeded 150 micrograms per cent (Fig. 1). Second, the feeding of blood to dogs with Eck's fistulas produced ammonia intoxication and coma.[4] Third, Young, *et al.*[5] found that the introduction by tube of 500 ml. of blood into the stomachs of patients with liver disease caused a marked elevation of the blood ammonia concentration. Inasmuch as one quarter of the fatalities in our initial series had died in coma and no patient had recovered from coma, we adopted a therapeutic approach particularly designed to prevent or minimize ammonia intoxication following hemorrhage. This therapeutic approach emphasized three major points: (1) stop the hemorrhage; (2) prevent ammonia intoxication; and (3) detoxify ammonia if intoxication occcurs.

Prompt esophageal tamponade with the Sengstaken-Blakemore tube was the mainstay of hemostasis. Esophageal tamponade was supplemented by exploratory operation and ligation of varices, by portacaval shunt, and occasionally by other operative procedures with a view to obtaining more permanent hemostasis. This aspect of the problem will be discussed later in more detail.

The prevention of ammonia intoxication was based on prompt removal of blood from the bowel and elimination of enteric bacteria. Once the Sengstaken-Blakemore tube was in place, gastric lavage was performed both to remove blood from the stomach and to test the adequacy of hemostasis. If hemostasis was secured, a laxative such as milk of magnesia was given hourly until a movement took place and enemas were administered. Evacuation of the bowel was undertaken cautiously only after the cardiovascular system was stabilized. Blood and water and electrolytes were administered when necessary. Since the work

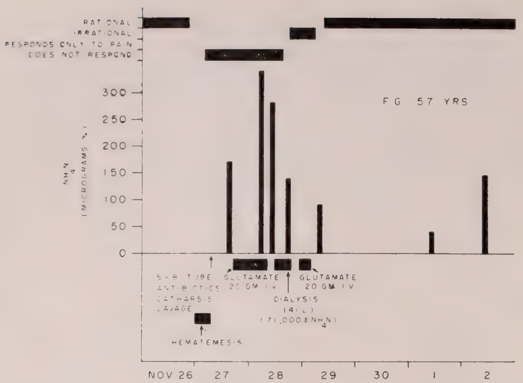

FIG. 2. Hospital course of a cirrhotic patient following gastrointestinal hemorrhage. (*Reprinted by permission of the New England J. Med.* ***259:*** *1157 [Dec. 11] 1958.*)

of Faloon[6] and others demonstrated that suppression of enteric bacteria by neomycin decreased the likelihood of ammonia intoxication from protein within the bowel, neomycin was given after the bowel was cleansed.

Ammonia concentration in the peripheral venous blood was determined usually twice daily. If neurologic abnormalities were present and associated with a blood ammonia concentration of over 100 micrograms per cent, a diagnosis of ammonia intoxication was made unless some other cause for the neurologic abnormality was evident. If ammonia intoxication was present, attempts were made to lower the concentration of ammonia in the blood. Glutamate in the form of either the sodium or sodium and potassium salt was administered intravenously and, in a few instances, when ammonia intoxication appeared overwhelming, ammonia was removed from the blood by hemodialysis. Arginine was not used in this series.

Although this approach to therapy emphasized hemostasis, prevention, and treatment of ammonia intoxication, many other problems presented by these patients required considerable attention. Replacement of blood and body fluid losses, restoration of the clotting mechanism, administration of carbohydrate and vitamins, and prevention of accumulation in the lungs of secretions from the upper respiratory tract required careful supervision.

Figure 2 demonstrates the manner in which these principles of therapy were applied to a patient. Hemorrhage occurred on November 26. Hemostasis was secured promptly by esophageal tamponade. The stomach was lavaged, and the colon was cleansed by catharsis and enemas. Blood loss was replaced by transfusion and the patient was given glucose and water intravenously. Neomycin, 4 Gm. initially and then 1 Gm. four times daily, was given by stomach tube. Despite this therapy, the blood ammonia level rose to 170 micrograms per cent and the patient rapidly became completely unresponsive. Twenty Gm. of glutamate were administered. Because of a rise of blood ammonia to over 300 micrograms per cent during glutamate therapy and because of the deep coma, the patient was treated with the artificial kidney, and 71 mg. of ammonia nitrogen were removed. After this an additional 20 Gm. of glutamate were given. These efforts to detoxify ammonia were associated with a fall in blood ammonia and a gradual return to a rational state. The Sengstaken-Blakemore tube was deflated and removed on the fourth day after the hemorrhage.

Results

The results obtained in this series, managed in accord with the principles just reviewed, can be discussed in terms of the effect on coma, the problem of hemostasis,

TABLE I.—HEPATIC COMA FOLLOWING MASSIVE GASTROINTESTINAL HEMORRHAGE IN CIRRHOTIC PATIENT

Years	Number of Patients	Hemorrhage Number of Episodes	Coma Number of Episodes	Coma Recovery	Coma Death
1946 to 1953	50	50 (initial)	13	0	13
1955 to 1958	47	47 (initial)	21	14	7
1955 to 1958	47	72 (total)	34	25	9

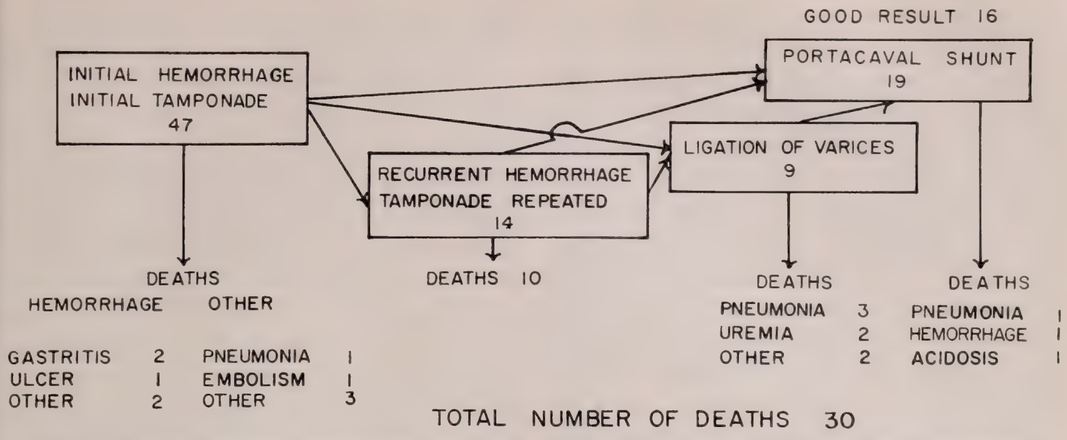
GOOD RESULT 16
INITIAL HEMORRHAGE
INITIAL TAMPONADE
47
PORTACAVAL SHUNT
19
LIGATION OF VARICES
9
RECURRENT HEMORRHAGE
TAMPONADE REPEATED
14
DEATHS
HEMORRHAGE
OTHER
GASTRITIS 2
ULCER 1
OTHER 2
PNEUMONIA 1
EMBOLISM 1
OTHER 3
DEATHS 10
DEATHS
PNEUMONIA 3
UREMIA 2
OTHER 2
DEATHS
PNEUMONIA 1
HEMORRHAGE 1
ACIDOSIS 1
TOTAL NUMBER OF DEATHS 30

FIG. 3. Gastrointestinal hemorrhage complicating severe liver disease: the problem of hemostasis.

TABLE II.—MANAGEMENT OF HEPATIC COMA FOLLOWING GASTROINTESTINAL HEMORRHAGE

Treatment	Number of Patients	Fall in Ammonia Yes	No	Recovery from Coma Yes	No
Hemorrhage controlled	26	25	1	24	2
Neither glutamate nor dialysis	7	6	1	6	1
Glutamate	16	16	0	15	1
Dialysis	3	3	0	3	0
Hemorrhage uncontrolled	8	0	7	0	8
No glutamate	6	0	6	0	6
Glutamate	2	0	1	0	2

and the general significance of the results obtained.

HEPATIC COMA.—The results with respect to hepatic coma are shown in Table I. It is, first of all, striking that there is no decrease, but, instead, there is an increase in the incidence of coma. To conclude that this program, designed to prevent or mitigate coma, actually caused an increase in coma would seem unreasonable, and we believe, instead, that in this latter series, basing the diagnosis of coma on an elevated blood ammonia associated with neurologic abnormality resulted in the inclusion of so-called "prehepatic coma" in the coma group and accounted for the increased number of episodes of coma. Despite the fact that the therapeutic approach employed showed no effect in decreasing the incidence of coma, the mortality from coma was lowered. In the former series no patient recovered from coma, but in the latter recovery took place in slightly over two thirds of the episodes of coma. As a result, death in coma in the latter series was observed only about one-half as often as in the initial series. In summary, these observations indicate that the therapy used mitigated, although it did not prevent, coma. The time lag between the onset of hemorrhage and the effective treatment is probably associated with sufficient digestion of blood and absorption of ammonia into the body so that clinically apparent ammonia intoxication may be expected to follow in about half the hemorrhages.

Details of the management of coma are shown in Table II. As can be seen from this table, recovery from coma was determined mainly by whether or not the hemorrhage was controlled. Recovery from coma occurred in all but 2 of the 26 episodes of coma during which hemorrhage could be controlled, and death in coma occurred in each of the 8 cases in which hemorrhage was not stopped. Evacuation of blood from the gut and neomycin administration were carried out in all cases as soon as hemorrhage was controlled. In 6 of these 26 instances in which hemorrhage was controlled, a fall in ammonia and subsiding coma occurred relatively promptly. One patient died suddenly after the rupture of the esophagus. Nineteen cases were given glutamate because of persisting elevation of ammonia levels despite control of hemorrhage, and 15 of these patients had a prompt fall in the ammonia level with improvement. Of the 4 remaining cases, those without prompt improvement after glutamate administration, 1 patient died and the rest recovered after removal of ammonia by hemodialysis.

Control of Hemorrhage.—These preceding results serve well to introduce the problem of control of hemorrhage. Figure 3 shows, in outline form, our experience with the problem of securing hemostasis and its relationship to the cause of death in this series.

As previously pointed out, the mainstay in initial control of hemorrhage was esophageal tamponade with the Sengstaken-Blakemore tube. Of the 47 hemorrhages for which the patients were initially seen, tamponade stopped the hemorrhage in all but 5 cases. Postmortem examination was allowed in 3 cases and the source of hemorrhage was found to be gastritis or ulcer, emphasizing that the failure of properly applied esophageal tamponade to control hemorrhage suggests a source other than esophageal varices. This again stresses the fact that many upper gastrointestinal hemorrhages in cirrhotic patients are not from varices, and a vigorous diagnostic approach is necessary in association with vigorous therapy.

For a more permanent control of hemorrhage, portacaval shunt was carried out whenever the patient's general condition did not seem to indicate a prohibitive risk. The efficacy of portacaval shunt for prevention of hemorrhage from esophageal varices is by now well established and requires no further comment. It was possible to perform portacaval shunt in 19 patients. Death occurred in 3 of these patients due to the following causes: severe acidosis following operation under hypothemia, staphylococcus pneumonia, and a severe generalized bleeding tendency about one week after operation.

Despite the fact that esophageal tamponade was generally effective in controlling the initial hemorrhage, and the portacaval shunt, when it could be performed, provided more permanent hemostasis, the overwhelming problem in this series was that of securing lasting hemostasis in patients who were too ill to permit completion of a portacaval shunt. Although esophageal tamponade was effective in controlling the initial hemorrhage, a recurrence of hemorrhage after deflation and removal of the tube was a major problem. Fourteen patients whose initial hemorrhage was well controlled, but who were not sufficiently well to be candidates for portacaval shunts, had recurrent hemorrhage. These 14 patients had on the average 2.8 hemorrhages each, and some had as many as 5 and 7 separate episodes of hemorrhage. With each hemorrhage the patient became worse and therapy became more difficult until all but 1 of these patients died. Ten patients died of uncontrolled hemorrhage. Somewhat later 2 died of pneumonia; and 2 died of liver failure with jaundice, ascites, oliguria, and uremia. Here again failure to control hemorrhage can be attributed in 2 cases to the fact that the hemorrhage was not from varices but, rather, from gastritis and gastric ulcer.

In an attempt to find a solution to the problem of recurring hemorrhage in patients too ill for shunts, ligation of varices by the transabdominal route was tried but was disappointing.[7] Nine patients were so treated, usually after the first recurrence of hemorrhage following removal of the Sengstaken-Blakemore tube. Although this procedure was successful in preventing further hemorrhage, only 2 patients made a successful recovery. Three patients died of pneumonia and 2 died of uremia. One patient died as a result of perforation of his esophagus during postoperative passage of a gastric tube, and in 1 case the cause of death was obscure.

These results need not indicate that ligation of esophageal varices either by the abdominal or the thoracic route does not have some merit and place in the treatment of this serious problem. It does, and can control hemorrhage, but whether or not the patient does well depends on the liver and other complications. The operation was usually employed in desperate situations.

Summary

In this series of 47 patients with cirrhosis, seen because of massive hematemesis and treated with special attention to ammonia intoxication, there was some reduction but no significant decrease in mortality in comparison with a previous group of 50 similar patients, although recovery from coma caused by ammonia intoxication occurred, and the incidence of death in hepatic coma decreased.

Although the initial episode of hemorrhage was usually managed with relative success by esophageal tamponade and careful metabolic support, and although portacaval shunt provided satisfactory long-term prevention of hemorrhage when it could be performed, the mortality remained high because of our inability to prevent recurrent hemorrhage in patients who were poor operative risks, namely those with marked jaundice and ascites.

Successful management of massive gastrointestinal hemorrhage in cirrhotic patients depends greatly on permanent hemostasis obtained usually by the performance of a portacaval shunt. In spite of increased understanding of deranged physiology in hepatic disease, hemorrhage in a patient with jaundice, ascites, and oliguria, who is too sick to withstand major surgery, will usually be fatal; the frequency with which such patients are encountered keeps the over-all mortality high.

This continuing high mortality, despite progress in understanding liver disease, suggests the need for a fresh approach to the problem. In this regard, these questions deserve further investigation. First, in the cirrhotic patient with portal hypertension and clearly progressive cirrhosis, should a prophylactic portacaval shunt be done at some point prior to the late stage of the disease when the patient cannot withstand surgery? Second, in the cirrhotic patient, does portal hypertension magnify the danger of hemorrhage from peptic ulcer or gastritis, and would portacaval shunt diminish this? Third, in patients with cirrhosis, portal hypertension, and ascites, how is the role of portacaval shunt in the management of liver disease modified by the recent demonstration of increased salt tolerance following side-to-side shunt?[8,9]

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Discussion

William F. Lipp, M.D., *Buffalo, New York.*—I have enjoyed Dr. Kiley's lucid discussion very much. In 1952 we first offered clinical and pathologic evidence to show that the incidence of peptic ulcer in portal cirrhosis (11.5 per cent) was greater than the expectancy rate for ulcer in the population at large (6.6 per cent). Since then, this observation has been confirmed by others. At that time our interest was aroused also by problems surrounding the management of massive hemorrhage. I would agree that if massive hemorrhage occurs in a patient with known portal cirrhosis, the immediate and urgent treatment should be the same with, of course, the addition of balloon tamponade. As you know, this therapeutic maneuver has important differential diagnostic value. Although it is reasonable to presume that the existence of portal hypertension would abet bleeding from peptic ulceration, there are so many understood and poorly understood factors having to do with coagulation in portal cirrhosis that I would question the wisdom of advocating a shunt procedure here, but would feel, rather, that direct attack on the ulcer was indicated, hazardous as this would be. I say this because in our experience the prognosis of massive hemorrhage from peptic ulcer in cirrhosis is indeed poor, accounting for 20 per cent of our deaths in an earlier series when medical treatment alone was employed.

Two important points are emphasized in Dr. Kiley's paper.

1. Hepatic coma can be reversed in approximately 60 per cent of cases, especially in so-called exogenous coma and particularly when the exogenous coma is associated with the release of blood into the intestinal tract. Dr. Kiley has outlined the accepted principles of treatment. This is in marked contrast with the experience of all of us just a few years ago when hepatic coma was considered almost uniformly fatal.

2. At the same time, unfortunately, there has been little improvement in the rate of salvage of these patients. Of course one of the reasons for this is that we are treating a symptom of the disease and not the underlying primary liver disease. Furthermore, it is obvious that death will occur in any hemorrhage that is uncontrolled.

In regard to the first point, the assumption that hepatic coma is due to ammonia intoxication may be too sweeping, although the evidence accumulated in recent years is quite striking, especially when one analyzes the sequence of events that lead to coma following hemorrhage where 1 L. of blood releases approximately 200 Gm. of protein into the intestinal tract, where there is bacterial decomposition, where there is usually a rise in the blood ammonia, and where improvement follows elimination of bacterial decomposition. Although ammonia seems to fulfill all the criteria, it may be another product that is the cerebral intoxicant; we have all seen instances of coma without an increase in ammonia.

Dr. Kiley's satisfactory results with the glutamates are somewhat surprising. In our experience they have proved generally ineffective. Our experience with dialysis is limited. The dialysis team informs me that in 1 instance it was of definite help. In 1 other case with progressive hepatic insufficiency it was of no value. Like Dr. Kiley and others, we have found that nothing seems particularly helpful in spontaneous or endogenous coma where there is overwhelming disease with rapid hepatic failure, such as fulminating viral hepatitis.

In regard to the second point that has to do with mortality, Dr. Kiley reports unfavorable results with ligation, although it is admitted that the operation was used only in desperate cases. Our group now has 3 patients in whom shunting procedures seemed contraindicated and in whom we combined ligation with splenectomy (generally considered at present a disreputable procedure) and who are alive seven years, two years, and one year without recurrence of hemorrhage. Finally, I cannot as yet subscribe to the principle of prophylactic shunt procedures in patients with portal cirrhosis who have not bled.

It is a mark of intelligence, no matter what you are doing, to have a good time doing it.—BESS WHITE COCHRAN

Effect of Sulfonylurea Preparations on Angina Pectoris and Intermittent Claudication in Diabetic Subjects

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EARLY in our work with the antidiabetic sulfonylureas we became aware that the range of usefulness of these compounds transcends their hypoglycemic action. Most patients given such compounds experienced a feeling of well-being which was not related to a better control of their diabetes since it was observed also in those whose hyperglycemia and glycosuria were not affected by this therapy. Of particular interest to us was the unanticipated improvement in certain cardiovascular complications of diabetes. Shortly after the institution of therapy with the oral antidiabetic agents some patients suffering from angina pectoris noticed a marked relief from their anginal attacks, and those afflicted with intermittent claudication noticed increased walking capacity, with complete disappearance of pain for some of them. The present report is concerned with our observations on the effect of sulfonylureas on these two vascular complications of diabetes.

Clinical Materials and Methods

As shown in Table I our group of patients included 18 with angina pectoris, 20 with intermittent claudication, and 3 with both vascular conditions. Among patients with angina pectoris a history of previous myocardial infarction was obtained in 2 and hypertension was recorded in 6. Except for 1 patient who used glyceryl trinitrate only once or twice a week, the remaining patients with angina pectoris consumed between 3 and 8 tablets daily, and 1 was compelled to use 3 tablets during the night. In addition, all patients were treated with sedatives such as phenobarbital; tranquilizers, especially meprobamate and compazine; and some also with $1^1/_2$ gr. of papaverine hydrochloride three or four times daily.

Among our patients with intermittent claudication, 15 experienced severe pain and a marked tiredness in the calves, and 8 felt mild pain on walking short distances (a city block or less). All employed conventional

TABLE I.—EFFECT OF SULFONYLUREAS ON PAIN OF ANGINA PECTORIS AND INTERMITTENT CLAUDICATION IN DIABETIC PATIENTS

Clinical Diagnosis	Number of Cases	Age (Years)	Duration of Diabetes (Years)	Insulin Prior to Tolbutamide Yes	No	Relief from Pain Yes	No
Angina pectoris	18	50 to 73	8 to 31	15	3	12* 2	4
Intermittent claudication	20	44 to 69	$^1/_2$ to 23	2	18	1** 14	1 4***
Angina pectoris and claudication	3	57 to 68	$2^3/_4$ to 20	3	. . .	3	. . .

Four patients with angina pectoris (*) and 1 with claudication (**) are maintained on combined insulin-tolbutamide therapy; all others are treated with tolbutamide without insulin, except for 2 (***) who failed to respond to tolbutamide and were now successfully treated with chlorpropamide without insulin.

vasodilators such as sustained-action nitrites, xanthines, Priscoline hydrochloride, Roniacol, and Arlidin for varying periods of time.

At the start of therapy with sulfonylureas patients were told about the beneficial effects of these drugs on hyperglycemia and the urinary sugar excretion, and no mention was made of their possible beneficial effect on the cardiovascular complaints since at first no such effect was even anticipated, and in the subsequent patients of this group the information was withheld so that their spontaneous complaints would not be influenced in any way.

A detailed inquiry into the frequency and severity of pain related to angina pectoris and to claudication was obtained only after the patients volunteered statements on the improvement experienced in at least three subsequent weekly visits or if no improvement was reported after four weeks of therapy. Patients with angina pectoris were asked about the number of nitroglycerin tablets they used but special cards to record such data were not employed to avoid undue emphasis on this aspect of our study. The walking capacity in patients with intermittent claudication was estimated by the number of city blocks they could walk without discomfort.

Even before the start of therapy with sulfonylureas basal blood pressure determinations, palpatory and oscillographic examinations of arterial circulation in lower extremities, and electrocardiograms were obtained routinely in most patients of this series because of their cardiovascular complications. Subsequently, when it was decided to make the inquiry into the effects of these compounds on the cardiovascular complications of diabetes these data were recorded at intervals of from one to three months.

We have used carbutamide initially for a few months, then chiefly tolbutamide (Orinase), and less often chlorpropamide. The patients were observed for periods of from twelve to forty-two months while they were on this therapy.

We have previously reported that the improvement in diabetic control and the feeling of general stability and well-being seen in patients treated with hypoglycemic sulfonylureas may persist for many months after the discontinuation of this therapy.[1,2] This fact renders meaningless the use of placebo control periods following the improvement obtained with sulfonylurea preparations. For this reason, in the further course of the present study 10 diabetic patients with angina pectoris and 6 with intermittent claudication were given placebo tablets for three months before they were placed on tolbutamide therapy. The placebo tablets, 38-F,* were identical in appearance with the tolbutamide preparation.

Results

Within one to two weeks of therapy with sulfonylureas the need for nitroglycerin decreased in 16 of the 21 patients with angina. As a result, the successful patients felt no need for the tablets except on occasions of unusual degrees of excitement or exertion. This ability to tolerate exertion and emotional upsets persisted, through our forty-two months of observation. A closer scrutiny of the 5 therapeutic failures revealed congestive heart failure in 2 patients, with dyspnea on mild exertion in 1, and with manifestations of intercapillary glomerulosclerosis in the other, but no explanation was found for the unsatisfactory response in the remaining 3 patients.

It is of interest that the employed sulfonylureas had no effect on the underlying cardiovascular condition or on the hypertension and produced no changes in the electrocardiogram. A fifty-five-year-old woman developed myocardial infarction while on this therapy and another one, aged fifty-nine, died suddenly with symptoms of myocardial infarction after four months of therapy. Still another patient, a sixty-nine-year-old woman, whose angina pectoris improved remarkably after tolbutamide therapy was instituted over three years ago, recently developed gangrene of her left foot. She underwent transmetatarsal amputation followed by above-knee amputation, but needed only 6 nitroglycerin tablets during this ordeal.

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* Supplied by The Upjohn Company, Kalamazoo, Michigan.

In the group of patients with intermittent claudication 14 were able to walk greater distances than they could before sulfonylureas were used, and 5 experienced complete disappearance of the pain of walking. This improvement in subjective symptoms occurred without a change in color, temperature, or oscillations in the affected extremities. Four patients reported no change in pain while on tolbutamide therapy. In 1 who had severe peripheral neuropathy with pain at rest and particularly at night the lack of improvement could be attributed to his neuropathy, but no explanation was found for the therapeutic failure in the other 3 patients. Since intermittent claudication is a frequent manifestation of the Leriche syndrome, x-ray studies of the abdominal aorta and iliac arteries and a careful examination for atrophy of the lower limbs were done in these 4 patients, but the amount of atrophy and of vascular calcification did not differ from that in other patients of the group. Interestingly, 2 patients who were not benefited by tolbutamide therapy obtained a marked relief of pain when they were given chlorpropamide.

Of the 16 patients given placebo tablets, 7 showed an improvement in their diabetic control, possibly because they were more careful about their diets. However, there was no significant change in the pain pattern in any of these patients during the placebo control period, and a marked relief from pain occurred when they were placed on tolbutamide.

Discussion

The pain of angina pectoris is generally ascribed to an insufficiency of the coronary circulation with a resulting ischemia of the heart muscle. The management of this condition consists therefore in giving vasodilator drugs to dilate the coronary vessels. In acute anginal attacks such therapy is indeed very effective and the attacks are relieved promptly by nitroglycerin. By contrast, vasodilators are notoriously ineffective in the prevention of anginal pain. Because of this and because anginal attacks may be precipitated by emotional factors, sedative and tranquilizing preparations are widely employed in an effort to protect the patient against his painful attacks.

In intermittent claudication the pain on walking is ascribed to the narrowing of arteries in the lower extremities and to their inability to dilate fully in response to muscular activity. The conventional management of such patients also consists of giving vasodilators, but their value in the prevention of pain during walking remains doubtful.

In reality the mechanism of pain in the two vascular conditions under discussion is unknown. Advanced atherosclerosis with an almost complete occlusion of the coronary arteries may be found at necropsy in subjects who during their lives were free of anginal pain or had only minimal anginal complaints. A recent postmortem evaluation of the coronary bed revealed that even with severe coronary atherosclerosis the over-all coronary capacity may well be preserved.[3]

Because of such discrepancies between the pathologic changes of the arterial structures and subjective clinical complaints, we have at present no means of securing objective evidence of improvement in clinical studies of angina and of intermittent claudication. The electrocardiogram, which is used frequently in the evaluation of coronary artery disease, may give valuable information on the condition of the heart muscle, but it fails to reveal the pathologic condition and the functional status of the coronary arterial tree. It shows, for instance, perfectly normal findings in a large proportion of patients with angina pectoris.

Similarly, with the use of arteriographic technics we may visualize the narrowing and calcification of the coronary arteries of the lower extremities, but we are unable to assess their functional capacity. Oscillography may demonstrate the vasodilating effects of certain drugs, but since such effects may be confined to healthy blood vessels no information is obtained concerning the diseased vessels which are involved in the development of peripheral vascular insufficiency.

We must remember that angina pectoris and intermittent claudication represent syndromes which refer to subjective complaints and that the diagnoses are based primarily on clinical history and not on objective findings. For these reasons the effect of therapy in these two conditions can be measured only by the symptomatic improvement as indicated by the diminished frequency and severity of pain, the reduced amounts of nitroglycerin tablets needed, or the increase in walking capacity. We therefore feel that in evaluating improvement in these two conditions it is best to have each patient serve as his own control, considering the period before sulfonylurea therapy as the control period.

It is recognized that in any disease characterized chiefly by subjective symptoms control problems are complicated by the possible personal influence of the physician and the increased medical attention. Furthermore, the interest aroused by the use of a new drug may in itself have an excellent psychologic influence on the patient. It is to be pointed out, however, that in our patients the alleviation of painful attacks and the increased working capacity associated with the employment of sulfonylureas persisted for long periods of time, in some patients throughout the forty-two months of observation; and that after the few months of initial therapy the patients have been seen rather infrequently, once every two or three months. We are therefore quite certain that the observed beneficial effects were not related to iatrogenic factors.

An outstanding result of therapy with the sulfonylureas is the general feeling of well-being.[1,2] It is, of course, tempting to assume that the improvement in angina pectoris and in claudication in patients given sulfonylureas reflects the enhanced feeling of well-being in patients so treated, but we have no evidence to support such a view. Although we are aware that the actual mechanism of pain in these conditions is still unknown and that evaluation of the therapeutic agents used in both conditions is extremely difficult because they do not lend themselves to objectively well-controlled studies, we should like to suggest that sulfonylurea preparations may produce the relief from pain of angina pectoris and claudication: (1) by influencing the enzyme systems involved in the production and utilization of energy in the contracting muscles and (2) by blocking the transmission of pain or by reducing the responsiveness to painful stimuli, that is, by increasing the pain threshold in vascular disorders affecting the cardiac and the skeletal muscles. Studies designed to clarify these points and to corroborate the existence of a relationship between the employment of sulfonylureas and the observed relief from pain are now in progress and will be reported in a separate communication.

At this point we should like to emphasize the fact that in our studies the employed sulfonylureas had no effect on the associated cardiovascular disorders. They did not lower the blood pressure in patients with hypertension and did not prevent the development of myocardial infarction in 2 patients, with fatal outcome in 1 of them, or prevent the development of gangrene which required amputation of an extremity in another patient. Our experience with a large number of patients treated with oral antidiabetic agents indicates that the drugs are also ineffective in other degenerative complications of diabetes such as retinopathies, uropathies, and peripheral neuropathies.

Adverse effects from the use of sulfonylurea compounds were not observed in the present series. In this regard the compounds compare favorably with drugs used in the treatment of hypertensive cardiovascular disease which are known to carry the danger of postural hypotension with fainting and syncope, and with amine oxidase inhibitors recently introduced for the treatment of angina pectoris, which may give rise to serious hepatic, dermatologic, and neurologic side-effects.

Summary

A chance observation on relief from the pain of angina pectoris and of intermittent claudication in diabetic subjects treated with sulfonylureas prompted a long-term study of such patients. The present report is concerned with observations on the effect of sulfonylureas on these two vascular complications of diabetes in a group of 41 patients observed for periods from twelve to forty-two months. A single-blind test control was used in 16 patients of this group by placing them on placebo tablets for three months prior to the administration of sulfonylurea compounds.

Since angina pectoris and intermittent claudication represent clinical syndromes which refer to subjective complaints, the effect of therapy was measured by the symptomatic improvement in the painful episodes. In angina it was measured by the diminished frequency and severity of pain and by the reduced number of nitroglycerin tablets used, and in claudication it was measured by the increase in the number of city blocks the patients were able to walk without discomfort. By these criteria 16 patients with angina responded favorably and were able to discontinue the use of nitroglycerin except for rare occasions of unusual physical and mental strain. Among the 20 patients with intermittent claudication beneficial results were obtained by 15 who were treated with tolbutamide and by 2 who were treated with chlorpropamide. Beneficial effects were also noted in 3 patients suffering from both angina and claudication. By contrast there was no change in the pain pattern of 16 patients of this series during the placebo control period.

It is emphasized that in the patients treated successfully the employed sulfonylureas had no effect on the associated cardiovascular disorders and failed to prevent the development of myocardial infarction in 2 patients and of diabetic gangrene in 1 patient of this series.

Addendum

Since this paper was submitted for publication we have employed tolbutamide in the management of angina pectoris and intermittent claudication in 8 subjects with latent diabetes, that is, subjects with abnormally high glucose tolerance curves but free from glycosuria and from clinical manifestations of diabetes, and in 10 nondiabetic persons. Beneficial results were noted in both groups, but the series is not large enough for a definitive evaluation of the observed benefits. In the meantime Singh and Bardhan in a letter to the editor of the *Lancet* (December 19, 1959) reported progressive improvement in angina pectoris in 9 diabetic and 15 nondiabetic subjects treated with tolbutamide.

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Knowledge comes, but wisdom lingers.—TENNYSON

Symposium and Panel Discussion

CONTROL OF INFECTIOUS HAZARDS IN HOME AND HOSPITAL

Moderator

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Panelists

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SIDNEY LEIBOWITZ, M.D., NEW YORK CITY, *Medical Director, Board of Education, the City of New York; Associate Physician, Beth Israel Hospital*

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Introduction

MORRIS GREENBERG, M.D.: The success in the control of communicable diseases over the past fifty years or so has given some people the impression that there is no need to do anything further and that all we need do now is concentrate on the degenerative diseases. I think this opinion is far from true, and I think that all of you realize that we have not only many new problems, such as those with a large number of newly discovered viral diseases, but also some of the older problems, some of which we are going to discuss.

The first of these is the problem of tuberculosis. Great strides have been made in the control of tuberculosis; but, nevertheless, we still have some 14,000 deaths and 70,000 new cases a year in the United States. Jean Huddleston, M.D., is going to discuss the subject of tuberculosis.

Tuberculosis

JEAN F. HUDDLESTON, M.D.: As Dr. Greenberg has indicated, chemotherapy has changed the treatment of tuberculosis profoundly. The new drugs have produced what we might almost term a treatment miracle. However, we have not yet found any miracle to solve the problem of the control of the infection.

In dealing with this problem we must cling very close to the solid foundation learned

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from many years of bitter experience. We have to keep in focus the particular organism we are dealing with and the specific characteristics which make it difficult to destroy. We must bear in mind the various modes of transmission and think of the implications of any newly found case or any newly found tuberculin reactor. Remembering the universal susceptibility of man, it is important to recall those factors which may qualify the degree of that susceptibility. With this broad picture in mind, we can consider the measures which may be useful in control. The standard elements in a control program are applicable, with few exceptions but with some variations in emphasis, in the home, the hospital, and the community at large.

Education of the Public.—First and foremost, perhaps, is education of the public. This is basic. If we are to make further progress in control it is necessary to extend public information in regard to the disease. It is particularly necessary at this time to combat the widespread complacency which has developed because of chemotherapy. It is especially important in any community where rapid changes in the population profile may be occurring, with the associated problems of differences in language, customs, standards, and educational background to be overcome.

The familiar measures for the improvement of housing and sanitation must be reinforced. The controls over cattle and dairy products, established for many years in this State, must be diligently guarded and efforts made to encourage the establishment of similar controls where they do not already exist. The teaching of measures to improve general hygiene and build better general health must be continued with full vigor.

Case Finding.—Case finding, by any and all methods, is another cornerstone. Herein the effort of the private physician, especially the one in general practice, makes an important contribution. Other rewarding efforts are the routine examination of contacts; mass surveys, especially among certain now well-recognized groups; and widespread tuberculin testing followed by a diligent search for the source case of any newly found positive reactor or known recent converter. The tuberculin test is coming to have increasing importance as the incidence of positive reactions decreases. Even in the congested population of urban centers we are finding a definite lessening in the proportion of the population at all ages with positive reactions to tuberculin.

Isolation of the Open Case.—Another basic principle is, of course, the isolation of the open case. This should be continued until effective therapy has been established and until there is sound assurance that this effective regime can be maintained for a sufficient length of time. The requirement that effective therapy should be established before the patient is returned to his home environment must be especially emphasized, since we are finding difficulties in this regard. The rapid success of chemotherapy with some patients has made it harder to keep in the hospital the many who need more time before their disease is controlled. Furthermore the undue confidence inspired by the easy response found in some patients leads others to resist any recommendation of hospitalization. On the other hand, the experiences with and opinions concerning compulsory hospitalization vary so much that it seems wisest, at present, to allow the policy to be settled locally by each community.

Follow-Up.—That follow-up is necessary on all cases after discharge from a hospital or a sanatorium has been a long-established principle. Follow-up is also necessary for all patients recently taken off drug treatment. Even patients whose tuberculosis has been long arrested should not neglect check-ups at prescribed intervals. In fact, there has been some discussion of the wisdom of maintaining a Department of Health roster for registration of the names not only of those persons who are known to have manifest postprimary tuberculosis, but also of all persons who are known to react positively to tuberculin. Such a register is not likely to become feasible in the near future, but the suggestion does serve to underline our growing conviction as to the probable major source of infection in the future.

Hospital Procedures.—In turning to the application of these basic principles in the hospital, there are certain points to be emphasized. The hospital certainly offers the best opportunity for education of the patient in regard to the disease of tuberculosis, its implications, and its probable course. This is also the place where he can be taught best the technics of personal hygiene which are of prime importance in safeguarding the health of others. In the atmosphere of the hospital ward, and under the supervision of the hospital staff, the proper disposal of sputum, the covering of mouth and nose, the washing of hands, and the care of utensils become thoroughly ingrained habits which will stand the patient in good stead after he is discharged. Additional precautions are advised for protection of the hospital personnel and, in any general hospital, for the protection of patients on other services. On the Bellevue Hospital Chest Service the patients are asked to wear masks during visiting hours, whenever they are required to leave the ward, and whenever they are under individual examination or treatment or are being tended by a nurse.

Experience has taught us that the hospital personnel, especially those who have direct patient contact (nurses and house staff), do face a special hazard. Various studies have been made which reveal the incidence of tuberculous infection to be higher among student nurses and interns than among other groups of similar age and sex. Such a study of the students entering the Bellevue School of Nursing over the past eighteen years illustrates this point. The findings reveal that, of all the students who enter the school with a negative tuberculin reaction, 63 per cent will later show a positive reaction, the average elapsed time being eighteen months. Experience has also shown that the greatest hazard is not on the Chest Service but on the general wards. To some degree this may be a testimony to the effectiveness of the measures in use on the Chest Service. Another important factor is that nurse and doctor, as well as patient, are alerted to the diagnosis and, therefore, to the need for precautions. On the general wards, when the diagnosis of tuberculosis has not yet been established, no one may be led to consider the possibility that tuberculosis is present as a concurrent or complicating condition in a patient admitted for some other complaint.

Bearing the occupational hazard in mind, a routine of special supervision has been developed for this personnel group. Currently, in Bellevue Hospital, as in many other general hospitals, a tuberculin test and a chest roentgenogram are obtained on each new staff member as he, or she, starts working in the hospital. X-ray films of the positive reactors to tuberculin are made at regular intervals of from three to six months. BCG vaccine is offered to the negative reactors. Those who refuse the vaccine are retested at regular intervals. Any change in reaction is noted; the individual is checked immediately by x-ray study and is followed with especial closeness by x-ray and clinical examination for the subsequent nine to twelve months. In this way any evidence of manifestly progressive tuberculosis can be detected at its inception and can be controlled by immediate chemotherapy, at a time when results tend to be most satisfactory.

Realization of the problem of the undiagnosed case in the general clinics and on the general wards is, in part, the basis for another case-finding drive. The New York State Department of Health inaugurated a program about two years ago underwriting the Hospital Inpatient and Outpatient Admission X-Ray Survey. Data have not yet been collated but there is no question but that this is to be a truly important measure in the control of the spread of tuberculosis in hospitals.

Before turning from hospital aspects to the home, I would like to refer you to some fascinating work being done in regard to the aerial dissemination of pulmonary tuberculosis. A unit with a closed-circuit ventilating system has been established at the Johns Hopkins University School of Medicine. There, using guinea pigs, R. L. Riley, M.D., and other workers have been able to determine the exact quantum of infection units in a given amount of circulating air. Their findings with the guinea pigs could be correlated with the average incidence of conversion of tuberculin reaction among student nurses after breathing analogous amounts of air. Furthermore, the incidence of manifest infection in the guinea pig could be reduced by the irradiation of the circulating air with ultraviolet light. This opens up possibilities for adding considerably to the effective control of infection in appropriate areas by devising systems incorporating such irradiation of circulating air by ultraviolet light.

Infection in the Home.—In considering the problem of control of infection in the home we have, as already stated, to return to fundamentals. In the home environment we must stress especially the education of the patient's family in the problems associated with the presence of tuberculosis in any family member. The contribution of the visiting nurse in this effort cannot be overemphasized. We cannot afford to allow such essential service to be relegated to second place "because the disease is licked." The teaching of measures for decontamination and the supervising of technics in personal hygiene, as they apply to the household, are among the essential services she provides. The nurse also makes a large contribution as a case finder in referring and obtaining family cooperation for the examination of contacts.

The need for isolation of the open case has certainly strong support from every quarter as it applies to the home and to the members of the household. This is one of the first questions which has been raised in regard to home treatment regimes which have been made possible by the advent of chemotherapy. Added importance is given to this question by the realization of the extra seriousness of possible exposure to drug-resistant organisms. On the Bellevue Hospital Chest Service, in association with the New York Tuberculosis and Health Association and Columbia University, we have been conducting a special study to obtain statistical bases for judgment as to the hazards involved. As of this date, we have been accumulating data on 1,432 persons who are members of households with patients under drug treatment. The follow-up has been continued variously from one to five years, and, out of this total number, we have had only 7 instances in which manifest tuberculosis has been found to develop in a member of the family after the patient returned home. There have been only 18 instances in which a previously tuberculin-negative child has shown a conversion of reaction subsequent to a patient's return home on drug treatment. Of the 7 instances in which manifest disease was found, 2 were in infants under two years of age in whom no previous data on the tuberculin reactions are available. In these instances also, the patient was not at home with medical approval nor was he considered to be under effective chemotherapeutic control. A third infant was tuberculin negative until he was three and a half months old, although he was at home with both parents who were on chemotherapy. After the tuberculin test became positive at age five months and the baby was hospitalized, it was found that the child's maternal uncle, a frequent visitor, had been admitted to the adult ward with acute caseous pneumonic tuberculosis. It is noteworthy also that the maternal grandmother, delinquent in supervision as a case of minimal tuberculosis of undetermined activity, was later found, through the efforts of the City Department of Health, to have a positive sputum. In the other 4 instances, in contacts aged fourteen to twenty-eight years, the tuberculin test had been positive before the patient's return home and intervals of from twenty-two to forty months had elapsed between the patients' return and the manifestation of the new disease. In 2 of these cases, a new source in the household was later found who had joined the family unknown to us. In the other 2, the new disease appeared to be related to a reactivation of heavy primary infection which is frequently associated with specific age group vulnerability or with specific conditions of health in the individual. In other words, although our study is not yet completed, a review of our findings to date supports the general impression that the incidence of infection is not measurably increased among contacts of patients on home treatment, provided the patients are under effective drug treatment and remain under active clinical supervision, and provided the family relationships and home situations have been cleared as satisfactory for the regime necessary. The data collected so far also served to emphasize the need for careful supervision of the entire household, with regular checkups on known contacts and also on any other possible new additions to the home environment.

BCG Vaccine.—It is necessary to discuss further the BCG vaccine. I mentioned that the vaccine is offered, on a voluntary basis, to negative tuberculin reactors among the student nurse groups at Bellevue. In some institutions it is compulsory where there is much risk of exposure. The City of New York Department of Health recommends it to all contacts who have negative reactions. No one seriously questions its safety, properly administered. There cannot be many who are unimpressed by its effectiveness where the incidence of tuberculosis is high. In many areas of this country, where the incidence is quite low, there have been questions as to the wisdom of using it generally as a control measure in the community. The chief argument raised against it is that following the vaccination we have lost a diagnostic test of tremendous value and importance: the tuberculin test. The difficulties of establishing the exact durations of the vaccine's protection are obvious. However, the various reports on its use in certain communities, even over fairly long periods of time, have been very encouraging. The fact that after vaccination the tuberculin reaction may be relatively slight or may revert does not appear to reflect an analogous variation in the immunity provided. Like all other vaccines, the BCG has been known to have its failures of protection. Where incidence is low, therefore, we may be wiser to stress regular use of the tuberculin test, especially in view of the good reports, recently published, on the effectiveness of early drug treatment of converters. This may be true also, where the risk is considered to be relatively slight because of good control of the disease in the known potential source. Where the danger of exposure is great or where dangerously vulnerable age groups are involved, the BCG vaccine can provide good protection and for these situations has tremendous value.

In conclusion, I should mention the current studies being made of the use of isoniazid in prophylaxis. The ease of administration of the drug and its low toxicity make this an attractive plan. The risk of drug resistance, the danger of lapse of supervision, and the difficulty of insuring maintenance of dose make for some doubts. There is also in process a study of the effectiveness of drug therapy in controlling the development of complications in the course of active primary tuberculosis in infants and children, especially complications such as tuberculous meningitis and miliary tuberculosis. Reports to date provide a foundation for the recommendation of such a regime. Complete data are not yet available but are awaited with eager interest.

Dr. Greenberg: Thank you, Dr. Huddleston. The next subject that we're going to discuss is one which has become prominent since World War II, although it had been known for a long time. The subject is hepatitis. It was first reported in the early 1950's. The incidence of the disease kept rising every year until 1955, owing possibly to the fact that physicians realized that they had to report it; but from that time on there has been a gradual decline in the number of reported cases. That is true in New York City, and I know it is true all over the United States. I do not know the reason for it.

At any rate, hepatitis is certainly an important disease; it can be spread in two different ways, and its control is a little different in each. We're fortunate in having Sidney Leibowitz, M.D., to discuss the subject.

Infectious Hepatitis

SIDNEY LEIBOWITZ, M.D.: As Dr. Greenberg has just indicated, we are becoming increasingly aware of the possible modes of spread of acute viral hepatitis. Physicians, nurses, and hospital administrators have been particularly aware of these possibilities insofar as spread may stem from the hospitalized patient; but the principles of prevention in the hospital locale apply in good measure also to the patient in the home.

The reasons for this increased interest are both medical and legal, but they are based primarily on increased incidence of the disease itself. This increase is generally attributed to the following factors: (1) a heightened suspicion resulting in readier recognition and diagnosis; (2) increased use of blood, blood products, and other parenterally given modes of therapy; (3) the existence of large numbers of unrecognized carriers; and (4), and this is merely a suggestion, increased susceptibility of the population to the viruses in question.

BACKGROUND.—The clinical and epidemiologic background shows that two forms of viral hepatitis infection exist: the infectious hepatitis or virus A form with a short incubation period of from fifteen to forty days, and the serum hepatitis or virus B form with a long incubation period of from fifty to one hundred eighty days.

The clinical pictures are indistinguishable. Neither results in immunity to the other. The infectious hepatitis form confers immunity to itself; the serum form often does not furnish this kind of immunity.

The infectious form is communicable from person to person mainly by the fecal-oral route. It is believed that this virus enters the oral cavity and is excreted in the stools. Since this is the common means for transmission, the following prophylactic measures are essential: hygienic care in handling these patients, avoidance of close contact with them, care in the handling of their thermometers, care in the disposal of feces, and the sterilization of their bedpans after use.

In addition, but less commonly, this virus is present in the blood stream and is transmitted from an infected person by means of insufficiently sterilized needles and syringes or by transfusion with the whole blood or plasma of an infected person.

Serum hepatitis is transmitted solely by the parenteral route from infected blood. The virus is not identified in the stools. Hence, in this type, prophylaxis is aimed at proper sterilization of needles and syringes, avoidance of the use of contaminated instruments and needles, and, insofar as is possible, transfusion with blood or plasma only when this is absolutely necessary.

HOSPITAL PRECAUTIONS.—The following is a resume of a hospital program of precautions for nurses, attendants, and technicians in handling these patients:

1. Foremost are stool precautions and some degree of patient isolation. The aim is not to handle the stools and to be careful with the bedpan. Soap and water cleansing of contaminated skin should be resorted to promptly. Contaminated linens should be segregated and specially laundered. The bed and mattress of a patient with hepatitis should be thoroughly cleaned and aired at least overnight before it is used by another patient. The stools may

be disposed of in the usual sanitary facilities. The bedpan should be assigned solely to the individual patient with hepatitis and it should be cleaned thoroughly and handled carefully between uses until it can be sterilized at dry heat for at least two hours.

2. The patient should be isolated insofar as is practicable short of employing the gown and mask technic. During the first few weeks of illness the patient is ordinarily confined to bed and utilizes a bedpan when moving his bowels. For the ambulatory patient either a private toilet or a private commode should be available. The patient must not use toilet facilities in common with others.

3. The isolation technic should be used in handling dishes and utensils. Food remnants may be discarded in the ordinary way. Dishes and utensils which can later be discarded should be used. Food attendants should handle these carefully while disposing of them. In this way, special dishes and utensils need not be assigned permanently to the patient with hepatitis for his exclusive use, as is the case with thermometers, except possibly if a glass and a drinking tube are provided for drinking or for the storage of dentures. Such a glass should be sterilized after the patient is discharged, as will shortly be described.

4. Each patient with hepatitis must have a thermometer for his sole use which shall be destroyed on his discharge. Through careless handling rectal thermometers are sources particularly for transmitting the disease. After contact with the thermometer the attendant should scrub his exposed hands immediately and copiously with soap and water with the usual aseptic technic.

5. Special care must be taken not to contact the blood of a patient with hepatitis, directly or indirectly. This refers especially to the dressing of wounds, giving parenteral medication, removing intravenous needles, and the general handling and use of syringes and needles. After handling and washing such instruments, the individual should wash his hands promptly and carefully with soap and water.

6. Multiple doses per syringe technic should be avoided for any inoculation or venipuncture.

7. Blood for a cell count should be obtained by means of a disposable lancet.

8. The sterilization of needles, syringes, and instruments after use in a patient with hepatitis should consist of boiling them in water for not less than thirty minutes or of autoclaving them at 15 pounds of pressure for a minimum of twenty minutes. If dry heat is employed, the minimum period suggested is two hours.

9. Visitors should be limited as much as is feasible by advising the patient of the communicability of the disease. Visitors should be warned against making intimate physical contact with the patient and against sharing food and eating utensils.

PRECAUTIONS FOR DOCTORS.—For doctors the following precautions are suggested: The nine precautions which we have mentioned apply similarly, when appropriate, to the examining physician; the dental surgeon; the physician engaged technically with injection, drawing blood, or a roentgenologic procedure; the operating surgeon; the sigmoidoscopist; and the pathologist. In addition, the physician is urged to consider the following principles.

1. Use blood transfusions sparingly and only when absolutely necessary. Pooled plasma should be used only if it cannot be avoided, and then only if previously prepared by standing it for six months at room temperature.

2. Blood donors should be selected with caution excluding those who give a history or other evidence of hepatitis.

3. Prescribe gamma globulin to exposed persons as indicated. At present, persons with generally accepted indications are children, pregnant women, debilitated persons, and those exposed during an epidemic. Gamma globulin, in addition, should be made available to any medical, nursing, or allied personnel who are exposed unduly.

Gamma globulin has preventive effect only against the infectious (virus A) form of viral hepatitis, although in most circumstances one cannot be certain of the type with which one deals. Therefore, all doubtful situations should be resolved by giving gamma globulin. The dosage for prophylaxis should ordinarily be $^1/_{100}$ to $^2/_{100}$ ml. per pound of body weight, although up to $^6/_{100}$ ml. per pound has been found more effective under certain circumstances.

These precautions, composed originally with a hospital environment in mind, can be applied similarly to the home when a patient with hepatitis is being cared for there. The precautions for doctor, nurse, and technician are identical in hospital or home. The precautions for the family attendants are important, particularly with respect to the handling of thermometers, contact with the patient and his excretion or blood, disposal of stools, assignment of toilet facilities, and feeding the patient.

Certainly the question of the advisability of the use of gamma globulin will receive early attention, and probably gamma globulin should be given to the immediate and intimate family members. It is often said that when the illness is diagnosed in a patient at home, the peak of the illness has usually passed and therefore the communicability hazard has lessened; but this is conjecture because in these cases nobody can say how long the patient has harbored the virus.

Dr. Greenberg: Thank you, Dr. Leibowitz. The third subject that we are going to discuss today is one that has come to the attention of all physicians in the past few years, particularly those who deal with children, with surgical cases, or with old and debilitated people. I'm referring, of course, to the subject of staphylococcal infection, particularly staphylococcal infections in closed institutions and hospitals and so forth.

We are certainly fortunate in our speaker for today who is Andrew C. Fleck, Jr., M.D. He has a fine background in public health. During the past year he has devoted a considerable amount of his time to the investigation of the staphylococcal problem in Upper New York State so that I am sure he is going to give us a good deal of information that will be of benefit to all of us.

Staphylococcal Infection

Andrew C. Fleck, Jr., M.D.: I'm going to talk about an old friend. As you may recall, in our medical school days, one of the first of the bacteria to which we were introduced was the staphylococcus. If you went to medical school in the era between neoprontosil and penicillin, the staphylococcus was not regarded as particularly troublesome. It was given to us as medical students for that reason. We knew it occurred in boils. We also knew the staphylococcus was a relatively benign organism which we could commonly find on the surface of our skin and in the environment. Recent investigations are rediscovering the fact that the staphylococcus can be found in many places.

However, my remarks today are going to deal with only one or two strains of staphylococci which fall within the coagulase-positive group. I am not going to concentrate on the hospital problem but rather on the observations made by my colleagues and me in the Office of Epidemiology about the hospital strains of staphylococci as they affect the family.

We have found instances of particularly severe staphylococcal disease occurring in families, usually manifested by a fatality or a particularly severe problem of chronic furunculosis. In the investigation of these family outbreaks we have invariably found that we were dealing with an antibiotic resistant strain of staphylococcus originating in a hospital.

As you know, Gould[1] has shown that penicillin factories are foci of resistant strains of staphylococci. Knight[2] has done some excellent work showing that in hospitals staphylococcal resistance to antibiotics is related to the usage of antibiotic drugs.

We can conclude that if you use drugs in any environment, antibiotic resistant strains will develop.

Let me give you a few illustrative histories of family outbreaks. All the cases that we have investigated follow a common pattern.

Outbreaks in Families.—One of the most severe family outbreaks that we have identified came to the attention of a local health department because the family was suffering from chronic furunculosis. Ten of eleven members were afflicted.

Investigating the problem retrospectively, the following sequence of events was delineated. The first case in this family with furunculosis was a ten-year-old child who developed his furuncles one month before being admitted to a general hospital. Shortly after the ten-year-old child returned home, a second child from this family was admitted to the same hospital for a tonsillectomy. When the second child returned home, he developed furunculosis. Bacteriophage type 80/81 staphylococci were isolated from both of these lesions. This type is found commonly as a nursery offender and is also present as a cause of wound infections on surgical wards.

During an ensuing ten-week period a one-year-old sibling, the father, the mother, and 4 other siblings developed furunculosis, all caused by type 80/81. One two-year-old sibling developed recurrent sties, type 80/81. The father-in-law and a public health nurse who attended the family also developed chronic furunculosis. The public health nurse received a compensation award since her disease was acquired in the course of her work. I believe this is the first compensation award for this problem in New York State.

Another outbreak which was also identified retrospectively started with the admission of a child to a hospital for a tonsillectomy. After discharge, she developed furunculosis. Her father developed perineal boils nine days later. The mother developed staphylococcal pneumonia a few days after this. With only 3 people in this family, we had a 100 per cent involvement. All lesions contained type 80/81 staphylococci.

In another instance, a child with chronic cystic fibrosis was hospitalized and the diagnosis was established for the first time. After the discharge of this child to home, it was observed by the family that he had an upper respiratory syndrome. It was not known whether this was a purulent infection. However, the child's mother and father both developed type 80/81 staphylococcal pneumonia within a few days after the infant's return to the home. The mother expired and the father had a very stormy hospital course. The three siblings in this family were unaffected.

Now, without saying any more about the family case histories, let me point out that they are all characterized by common features. First, the outbreaks are heralded by the return of some member of the family from a hospital, usually with suppurative disease. Some of the index patients returning home have been infants with very minor pustular disease of the skin. They may have these lesions at the time of discharge or after return to home.

If an infant is the index case then the disease spreads most frequently to the mother, producing breast abscesses or hand and arm lesions. Female siblings who assist in the care of the index infant are the persons next most often affected. The father seems to run the least risk.

These common features suggest that the risk of developing disease is associated with the degree of intimacy with the index infant and tends to lend support to a contact route of transmission.

Family outbreaks have been investigated by Wentworth[3] in Ohio, Colebeck[4] in Canada, Rountree[5] in Australia, and others. However, these investigators left unanswered the question as to how frequently family outbreaks occur in the general community in families with and without an index case returning from a hospital.

Material and Methods.—To answer this question we set up a prospective study of family disease in a group of families with index infant cases of hospital-acquired suppurative disease and in a control group. For the study group we selected a nursery outbreak which we felt was typical of the outbreaks which we had been seeing throughout New York State.

In nursery outbreaks the most common

infant lesion seen consists of pyoderma. This term includes impetigo; minor and sometimes solitary pustules; "sticky eye," a purulent conjunctivitis; and omphalitis, a red smelly cord occasionally with a little purulent material on the raw surface. In our experience, these minor lesions account for 80 to 85 per cent of all cases and have their onset after discharge from the hospital. The more severe manifestations of staphylococcal disease in infants are less common.

In the epidemic selected, there was a 20 per cent attack rate. In the other epidemics we have investigated, the attack rate rarely exceeded 10 per cent and in this respect the study group was not typical.

The study approach was to break down the cases into four classes of infants. In the first class were those infants who were born during the epidemic period and who developed suppurative disease during or within fifteen days of hospitalization. The second class contained those infants who were born during the epidemic period but who did not develop suppurative disease. They had no evidence of suppurative disease either during or after their hospital stay. A third class was a group of 17 infants born during one week of the epidemic period and who were treated with an antibiotic cream applied to their anterior nares. This was one of the measures that we used in our effort to control this outbreak. A fourth class was the control group. They were infants born after the outbreak was over.

There were 30 case infants, 43 noncase infants, 48 controls, and 14 infants in the group treated with nasal creams. The results were quite interesting and are statistically significant.

One hundred nineteen people were household contacts of the 30 infants with suppurative disease. Of these persons, 12.6 per cent came down with suppurative disease during the ten-month follow-up period. In comparison, the attack rate for the noncase group was 1.3 per cent and of the control group, 1.9 per cent. The infant, therefore, increases the risk of family suppurative disease if he comes home with or incubating such disease.

The implications for control are many. We think that the predilection of certain exposed anatomic sites for the development of disease in the family supports the theory of a contact route of transmission. By contact route I mean direct contact, indirect contact, and droplet projection, but excluding such routes as air transmission.

With the hospital-acquired disease in infants spreading by contact, there are two basic principles involved in controlling the problem in the family. The first is to direct treatment for the whole family, place the entire family under the care of one physician. In some of these families we find different members of the family being treated by different physicians and using different antibiotics without coordination of effort or treatment. The need for this approach was reported in 1953 by Kempe.[6] It calls for a plan for treatment of the entire family at one time. The disease, if not handled this way, tends to become chronic because of autoinoculation and cross-infection within the family group.

The most common mechanism of contact transmission is transmission by placing the hands on infective lesions and then putting the hands on susceptible areas of the same person or another member of the family. The second principle of control is handwashing before and after handling persons with lesions. This is elementary but hard to place in practice since families are not particularly sophisticated about aseptic technics.

A third point concerning the family is that we feel that the bathroom is one of the points of moist transmission. Separate bathing towels and wash cloths should be provided. Articles common to all should be eliminated. The risks associated with these practices should be pointed out to the family.

A fourth point is to attempt, if possible, to eliminate overcrowding. We know that if a newborn infant with minor pustules is placed in an overcrowded room with other siblings, the amount of handling that takes place tends to increase opportunities for contact transmission. Some provisions should be made for separate housing of the index case in the household, whether it be a post-tonsillectomy case or an infant with minor pustules.

Tub baths should be discouraged. We schedule shower bathing in the same way we schedule cases in the operating room. People without lesions shower first; people with lesions shower last. A disinfecting rinse such as hexachlorophene should be used between each bath. Scheduling persons with lesions last insures that a lapse of time takes place between the infected person's bathing and the next round of bathing. Since staphylococci are not immortal this enlists the ally of time.

Comment.—A few practical questions should be answered. Should a mother who has a diseased infant nurse the infant? The answer must be no because of the predilection of the breast for the acquisition of staphylococci from the infant.

Should siblings be allowed to help care for the infant? Again, I think the answer is no if the infant has any evidence of suppurative disease.

Recently Rountree[5] reported that the proportion of admissions with antibiotic-resistant suppurative disease to general hospitals in Australia has increased. This trend may also be present but undetected here.

In summary, three things are evident which I should call to your attention. First, hospitals can detect the presence or absence of a problem only by follow-up on discharges. Second, they have no idea as to what their disease impact on their community is unless they do a follow-up on the contacts of their discharges. Third, I'm almost certain that there is going to be a return of persons with suppurative antibiotic-resistant disease to the hospitals from the community, reinoculating hospitals with epidemic strains, perhaps originally acquired there.

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Question and Answer Period

Dr. Greenberg: The floor is now open to discussion on any of the three subjects.

George A. Friedman, M.D.: Just a comment on Dr. Fleck's remarks about compensation. I would predict you would see much more of this kind of compensation case if there was a more prevalent coverage of such persons as maids or baby nurses or other persons employed in the home to take care of babies. They are usually not covered and that's why you're not seeing them.

I. Jay Brightman, M.D.: May I ask Dr. Fleck whether he saw much of, or his study uncovered, a problem in infants being returned to the hospital or found infected at home when they were discharged from the hospital with no record of any staphylococcal infection?

Dr. Fleck: This is actually the rule: Not only did we find infants who were not diagnosed after discharge, but also there were some who actually had records of pustulation in the hospital on the fourth day. This was not reported as such to a cross-infection committee. Such minor diseases was not considered as sufficiently severe to be considered a contraindication for scheduled discharge. Children are discharged with no evidence of disease and then may develop minor pustules or, after a delayed incubation period, more severe manifestations such as septicemia which develop sometimes as long as two months after discharge.

This delay is something different from our usual concept of a biologic incubation period. It's probably related to the fact that the organism is intracellular, inside leukocytes, and waits for some sort of trigger mechanism to precipitate the onset of disease. Such latent states are not diagnosable in the hospital as a matter of practice.

DR. GREENBERG: Are there any further questions?

WILLIAM A. KELLY, M.D.: I suppose this question might be directed to both Dr. Leibowitz and to Dr. Fleck. I don't think there's any doubt in the minds of any of us that, as they have described both these conditions, hepatitis and the staphylococcal infections are extremely serious. Both have outlined some detailed procedures that should be taken, and I think both have indicated perhaps by their manner if not by what they actually said that they are aware that for the most part these things are not being done to any great extent in many hospitals today.

When we used to send all contagious diseases to a contagious disease hospital, one of the big advantages was that the whole program was pretty well confined as far as administration was concerned. An attending staff saw all cases, and the nursing service was dedicated and assigned just to that work.

In the average community hospital today these patients are being admitted by any number of different doctors. There is very little coordination of the program in taking care of them. I'm sure that in most hospitals a case of hepatitis may very well be in a 2- or a 3- or a 4-bed room; and certainly these staphylococcal cases in adults are being admitted to facilities where they immediately expose other patients.

I wonder what they have to suggest. Perhaps one practical suggestion, if we're not going to get these patients out of the community hospital entirely, is to say, for example, that in just the manner that we're organizing premature infants teams, every hospital should have a hepatitis team or a staphylococcus team which will see every case regardless of whether it's a private or a ward patient.

DR. GREENBERG: I wonder whether I could say a few words on that. We have been very much concerned with the problem in New York City since Willard Parker Hospital and Kingston Avenue Hospital, which were communicable disease hospitals, were given up. We've solved it in a different way. We have an infectious unit in several hospitals in the city. I think we have tended for a long time to think of communicable disease as somehow different from other disease. In other words, a patient with scarlet fever or measles has no relationship at all to a patient with osteomyelitis or rheumatic fever. I don't think that that's so. The cases are alike in need of medical care. The difference is in the amount and kind of care and in the precautions necessary to prevent transmission.

Within the group of communicable diseases you don't have the same transmission rates. I wouldn't have a child with measles in a room with other susceptible children unless I wanted the other children to get measles. But I wouldn't have any great fear in having a child in a ward with a cubicle arrangement if the child had scarlet fever. I would have no hesitation in allowing a case of hepatitis to stay in an open ward in spite of the fear that you have and the fear that Dr. Leibowitz expressed. I would have no fear of that, for the same reason that I have no fear of having a case of typhoid fever in an open ward. We treat such cases in open wards in New York City. We know that in infectious hepatitis, as in typhoid fever, transmission occurs through the fecal-oral route. If nurses are taught that and are also taught that precautions should be taken to prevent contamination by feces from the patient there is no reason why such patients can't be taken care of in a ward.

We have published a guide and the State Health Department also has a guide in which there are suggestions and recommendations for the use of private room, cubicle, or ward for different types of communicable disease.

Let me make another point. When we had Willard Parker Hospital and Kingston Avenue Hospital, we were extremely careful that not only were children in separate wards and, in many instances, in separate buildings for different communicable diseases—we used to have separate buildings for measles and for diphtheria and for scarlet fever—but also we had separate nurses. No nurse was ever permitted to take care of a case of measles as well as a case of scarlet fever and, of course, there was a rigid gown technic. Now we have changed this.

I had been interested in transmission of respiratory disease by the gown technic for a great many years, and I was never convinced that there is much transmission that way. And so we started an experiment at Bellevue Hospital. We permitted the doctors to go from room to room wearing the same gown, irrespective of the fact that they might have a case of measles in one room, scarlet fever in another, and chickenpox in a third. There was no evidence of any greater cross infection than there had been at Willard Parker where rigid gown technic was enforced.

Then we extended the study to the nurses. At the present time in all our communicable disease units in the various hospitals the same nurse takes care of cases of measles, chickenpox, whooping cough, mumps, or what have you. Furthermore, she does not change her gown. She wears a gown in the measles room and comes out of the measles room and goes into the chickenpox room wearing the same gown. What we do insist on is careful personal hygiene, careful washing of hands before and after care of a patient, and we have had no increase in cross infection in the hospitals since the procedure was introduced several years ago.

I would like to ask Dr. Leibowitz a question, conversely, about hepatitis. First of all, what laboratory tests do you utilize in following the course of these patients to establish when the patient may be up and around or ambulatory, and when the patient has to all intents and purposes recovered?

Second, what incidence of relapse rate do you find? In my own experience, I have found that approximately 10 per cent of my cases will run the course of relapses, some as long as three years.

Third, I'd like to ask you to comment on the recent trend in the Veterans Administration to consider any quantitative total serum bilirubin up to 2 mg. as within nearly normal limits. I see that they're going a little higher all the time. I think that is a little bit preposterous, and I think that grossly it's an abnormal realm.

Dr. Leibowitz: The last one is the easiest one to answer, Dr. Greenberg. I quite agree with you that a 2 mg. per cent total is higher than our normal. Our normal in our own observations has been up to 1.4 mg. Other observations are about the same, that 2 is high. The V.A. may interpret the patients as being in the recovered phase of the disease and, therefore, not to be viewed too ominously. If it has come down to 2 from a total of 8, 10, 15, or 20 mg., 2 is not very much and it can be correlated with a stage where the patient may be ambulated at that point possibly but should not be called normal. The patient should be watched for some time to come.

As to the first question about the tests to be used: In the icteric patient the bilirubin test is possibly the best. Its diminution correlates best with the return of appetite and with other symptoms and signs heralding improvement.

In the nonicteric patient the bromsulphalein test is useful. The flocculation tests are of relatively little use prognostically as I think you will agree. They are mainly of use diagnostically; they continue to be positive far into the stage of recovery and they may then be a parallel to the actual regeneration of the liver cell itself rather than a reflection of continuing necrosis or inflammation.

Transaminase is of some use, I think, prognostically; and if I had to limit myself to a few tests with a laboratory that could do whatever one wanted to have done, the bilirubin total and possibly the direct fraction and the transaminase tests would be the simplest and most helpful guides, with the bromsulphalein test as a last shot comparison.

The second question concerned the relapse rate. In our experience relapses—depending on the number of years of follow-up and still considering four to six months as the end stage of the initial acute illness—at one year show evidence of continued activity in under 6 per cent (between 3 and 6 per cent); at two years the general finding is about 1 per cent. We have a feeling that if followed long enough most patients with viral hepatitis will recover.

May I take one more moment, Dr. Greenberg. I'd like to set the record straight.

Dr. Kelly's question was a very interesting and pertinent one insofar as it relates to hepatitis from the standpoint of the hospital administrator. I do not feel that these patients must be treated in isolation. That's what I'd like to clarify. These are ward problems on our wards and we have never attempted to treat them otherwise. This is an education problem from the standpoint of the hospital personnel. If, as Dr. Greenberg has so clearly outlined, the staff who handles these patients, both medical and nonmedical, is educated repeatedly as to the means of transmission and the epidemiology of this disease, then the patients can be handled anywhere in the hospital with good technic, minimizing the chances for transmission whether in single-bed rooms, 2-bed rooms, or in wards. But wherever patients are treated, for both legal and medical purposes I would urge that stool precautions be rigid and that the technic against transmission with blood products be equally rigid; these precautions can be visualized readily if their basis is understood.

It means that if 2 patients are treated in one room they shall not share bathroom facilities and they shall not share toilet facilities. If they are bed patients, the problem is solved by the individual bedpans. If they become ambulatory patients in the second, third, or fourth week we must still consider them potential transmitters because we do not know how long they are carriers of the virus. As long as they are patients in our hospital or institution I would suggest we consider them potential transmitters.

During that period when they become ambulatory the problem arises: What sanitary facilities will they use? On a ward such as ours at Beth Israel we have 24 beds. There is one bathroom per ward. That might entitle 24 patients to use one bathroom. We urge—and our hospital carries out this policy—that such hepatitis patients use single (separate) commode or bedpan facilities while they're still in our hospital, even though they are ambulatory. In a 2-bed or a 4-bed room, we follow the same procedure. In other words, the common principle is a single toilet facility for each patient with hepatitis in the hospital; but we don't use gown or mask technic or isolation.

Adelbert A. Grabau, M.D.: I'd like to ask Dr. Huddleston if she has had an intensive experience with tuberculin testing as a method of case finding among children and their contacts and what results she has found or knows of in the New York City area with this means of survey primarily of children.

Dr. Huddleston: A good deal of tuberculin testing of children has been done in New York City. I think that, by and large, only in the period of the last two or three years has it been pursued particularly as a means of case finding. It was because of the fact that we had such a high percentage of positive reactors at one time that it wasn't considered necessarily fruitful for us to search; the younger the child, of course, the more fruitful would be the search for a possible source. Recent figures indicate that about only 1 per cent of those children under five years of age who are carried in the child health stations now are found to be positive reactors.

There are no figures, I believe, concerning the grammar school age, but again a course of tuberculin testing of the high school age group, around fifteen years of age, has been pursued; and I believe that there the percentage of positive reactors runs around 10 per cent. We estimated that at the college age, another two or three years older, as many as 15 or even 20 per cent might be positive reactors.

It is a basic rule that, given an instance of a positive reaction, the family contacts should be examined; and in that project again, as I said, the younger the child the more likely you are to find the source in the family.

I don't have figures on how many have been found by that method. Perhaps you do, Dr. Greenberg.

One of the difficulties we have in New York City is the very large influx of Puerto Ricans, as well as a generally mobile population. As I indicated when I was talking about those patients on chemotherapy at home, unless you recheck, especially the Puerto Rican group, with practically every single clinic visit, you may be surprised by what has changed in that household: not necessarily a change in numbers but a change of personnel in the household. New relatives or friends come from Puerto Rico with great ease and go away just as fast. In any case I really don't know whether we have any definite figures about results of that method. However, I do think it is most important.

Dr. Greenberg: I think that my recollection is the same. I don't have direct access to it, but my recollection is that in the survey that was done of the high schools the positivity was about 7 per cent, something of that nature, and that comparatively few actual cases were found in following those up.

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Family Spread of Staphylococcal Disease Following a Nursery Outbreak

JEROME O. KLEIN, M.D.,* BOSTON, MASSACHUSETTS

(*From the Communicable Disease Center, Public Health Service, United States Department of Health, Education, and Welfare, Atlanta, Georgia*)

FREQUENTLY the hospital nursery has been called a focus of staphylococcal infection and disease for newborn infants. There has been little documentation, however, of infant transmission of infection and disease to the family group. The study reported here is a survey of suppurative disease in families of infants born during and following a staphylococcal nursery outbreak in a central New York hospital.

Epidemic Background

The hospital nursery consists of two 8-bassinet units; between 30 and 60 infants are delivered there each month. During the period from October, 1957, through March, 1958, the hospital experienced a 25 per cent attack rate of suppurative disease of the newborn. The outbreak and the methods of surveillance and control which were utilized have been described previously.[1] Most of the lesions were minor, in the form of pustules or impetigo. The most severe clinical entity in the infants was the breast abscess. Eleven of the 14 infant lesions cultured grew out coagulase positive, hemolytic Staphylococcus aureus—phage type 80/81; sensitive to chloramphenicol and erythromycin; and resistant to penicillin, tetracycline, and chlortetracycline. The outbreak terminated in mid-March, 1958, following the use of a nasal antibiotic cream (neomycin-gramicidin) in infants and nursing personnel. Surveillance continued and no new cases were apparent during the succeeding nine months. The etiology of the outbreak was not determined, but a significant infant nasal reservoir was suggested as a major operating cause.

Method

During February and March, 1959, infants born during and following the epidemic period of the previous year were surveyed. The infants were ten to fourteen months of age at the time of the survey. The purpose of this follow-up was twofold: (1) to determine the severity and duration of hospital-acquired disease in the infants, and (2) to note the amount of disease in family contacts of infants born during and following the outbreak.

A total of 135 interviews were made: 74 by direct interview in the home, and 61 were made by using the telephone technic. The same physician conducted both home and telephone interviews. Mothers were questioned as to the general health of the infant during the first year and as to the presence, severity, and duration of pustular disease in the infant and in the family members. Pustulization and obvious abscess formation were used as the indicators of staphylococcal disease. Since the youngest infants were ten months old at the time of the survey, family histories of suppurative disease were considered for this period of time following the infants' births.

Results

SUPPURATIVE DISEASE IN FAMILY MEMBERS.—Data were gathered from 73 families whose infants had been born during the epidemic period and from 62 families of infants born during the postepidemic period.

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*Epidemic Intelligence Service Officer, assigned to the New York State Department of Health, Albany, New York.

TABLE I.—Suppurative Disease in Family Contacts of Newborn Infants

Groups	Period Epidemic Cases	 Noncases	 Postepidemic (Noncases)	Totals
Families				
Number at risk	30	43	62	135
Number with 1 or more cases	11	2	3	16
Per cent with 1 or more cases	36.7	4.7	4.8	11.9
Family contacts				
Number at risk	119	157	210	486
Number of cases	15	2	4	21
Per cent of cases	12.6	1.3	1.9	4.3
Mothers				
Number at risk	30	43	62	135
Cases	5	0	1	6
Per cent of cases	16.6	0	1.6	4.4
Fathers				
Number at risk	30	42	62	134
Cases	3	0	1	4
Per cent of cases	10	0	1.6	3
Siblings				
Number at risk	59	72	86	217
Cases	7	2	2	11
Per cent of cases	11.9	3	2.3	5.1

The results of the survey are noted in Table I. The infants were classified as to whether or not they had suppurative lesions and were designated as "case" and "noncase" respectively. There were no cases during the postepidemic period.

A significantly higher rate of suppurative disease in families of infant cases is apparent. Of the 30 families with an infant case, 11 families (36.7 per cent) had 1 or more members with pustular disease during the ten-month period following the infants' births. Of those families of infants born during the epidemic who did not develop pustular disease, only two families (4.7 per cent) had 1 or more family members with pustular disease. This figure is similar to the attack rate in family contacts of infants born during the postepidemic period. Of the 62 families of infants born during the postepidemic period, 3 infants, or 4.8 per cent, developed disease. If family contacts are considered as individuals at risk, the figures are similar: 12.6 per cent of family contacts of infants who developed disease as compared with 1.3 and 1.9 per cent of family contacts of healthy infants born during the epidemic and postepidemic periods.

Mothers developed disease slightly more frequently than siblings and fathers, although the numbers are too small to be statistically significant. These results are noted on Table I.

The onsets of suppurative disease in family contacts are noted in Figure 1. Ten of the 15 cases in family contacts of the infant cases had onsets during the first three months following the infants' births. In the family contacts of healthy infants born during and following the epidemic period, the onsets were sporadic, with 1 case developing during the first and eighth months and 2 cases developing during the fifth and ninth months. This suggests that purulent lesions in the families of the healthy infants were an expression of the normal incidence of such lesions in the general population and were not contracted from the infant.

Fourteen of the 62 infants in the postepidemic group were treated with a nasal antibiotic cream. Forty-nine family contacts were at risk in this group, and 1 case (2.1 per cent) had suppurative disease following the introduction of the infant into the household. Thus the attack rate in family contacts of treated noncase infants was similar to the attack rates of untreated noncase infants born during the epidemic and postepidemic periods.

Duration of Skin Sepsis in the New-

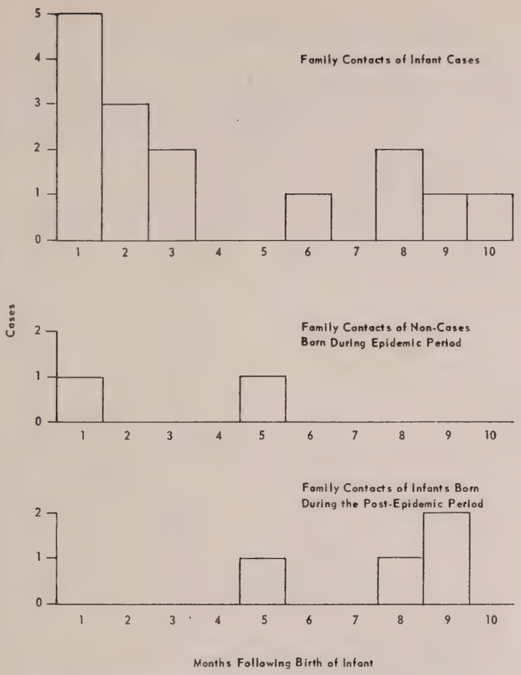

FIG. 1. Suppurative disease in family contacts; onset by month following birth of infant.

BORN.—During the outbreak all of the infants who had pustular disease developed their lesions within three weeks after birth. The duration of disease was less than one month in 22 babies (74 per cent) (Table II). Three infants (10 per cent) had recurrent disease during the first two months of life, 1 case (3 per cent) had disease persisting until four months of life, and 4 infants (13 per cent) had repeated bouts of disease during the first year of life. The disease manifestations tended to increase in severity from pustulization to breast abscesses and chronic furunculosis.

Comment

The impact on the household of the infant with staphylococcal disease has been noted in previous studies. Colbeck[2] cited histories of 10 infants with staphylococcal skin sepsis as a source of disease. During the ten months following the birth of the infants, 8 fathers, 8 mothers, 2 grandparents, and 1 sibling developed suppurative disease. Kempe[3] and Wentworth[4,5] have presented similar cases of multiple family infections from the newborn with a staphylococcal lesion.

TABLE II. DURATION OF SUPPURATIVE DISEASE IN NEWBORN INFANTS

	Infants	Months	Per Cent of Total Cases
	22	<1	74
	3	2	10
	1	4	3
	4	12+	13
TOTAL	30		100

In this outbreak an increased risk of disease in family contacts was limited to those infants with lesions. The families of infants who were born during the epidemic but were not cases did not have any higher attack rate than those families of infants born during the postepidemic period.

The results obtained by means of the telephone survey were comparable to the results obtained by household interviews. The telephone interview technic provides an excellent surveillance tool when the index of disease is as overt as pustulization or abscess formation.

Summary

A survey of epidemic and nonepidemic infants was made at ten to fourteen months of life to determine the sequelae of a nursery outbreak of staphylococcal disease. Thirteen per cent of the infants had repeated furunculosis throughout the first year of life. Of the family contacts of infant cases, 12.6 per cent had developed a suppurative lesion during the ten months following the introduction of the infant into the household. Family contacts of infants without staphylococcal disease born during and following the epidemic had similar disease rates of 1.3 and 1.9 per cent. Thus a significant suppurative disease attack rate occurred only in family contacts of infant cases.

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ACKNOWLEDGMENT.—I am indebted to Robert Albrecht, M.D., and to Andrew Fleck, M.D., for their

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Clinical Experience with Phenelzine in Psychosomatic and Psychophysiologic Disorders

A Preliminary Report

WALTER L. EVANS, M.D., NEW YORK CITY

(*From the Outpatient Department, St. Clare's Hospital*)

DURING the past two years the monoamine oxidase inhibitors have become well established in the psychiatric treatment of depressive states, often obviating the necessity for electroshock therapy. The collateral effects of iproniazid, the first of these drugs to be employed on a large scale, necessitate a very cautious approach, and this has curtailed its use in psychosomatic and psychophysiologic conditions, so commonly encountered in the general practice of medicine. Scherbel,[1] who has had extensive experience with iproniazid in rheumatoid arthritis, found that with concomitant administration of iproniazid, steroid maintenance doses could be kept at a very low level. He warns, however, that supervision must be very careful and that the dose must be immediately reduced at the appearance of dizziness, constipation, or other side-effects. The suspected association of iproniazid with fulminating hepatitis has also curbed its use in rheumatism.

The recent development of another hydrazine compound, phenelzine dihydrogen sulfate,* has altered the picture somewhat in that this drug appears to have more of an affinity for brain monoamine oxidase and has little hepatic effect. Its antidepressant effect seems to be much more pronounced at a dosage level that has relatively few side-effects. The experience of Thal,[2] Saunders *et al.*,[3] and Furst,[4] who all used this agent in the various depressive states, has encouraged broader use of it in other disorders, and this is the subject of the present report.

TABLE I.—CLINICAL DIAGNOSES OF THE 26 PATIENTS TREATED WITH PHENELZINE

Diagnosis	Number of Patients
Osteoarthritis	2
Alcoholism	2
Fibrositis	1
Bursitis	2
Neuritis	1
Psychophysiologic gastrointestinal reaction	5
Rheumatoid arthritis	3
Asthmatic bronchitis	4
Herniated disk	2
Angina pectoris	2
Relapsing pancreatitis	1
Hypertension	1

The pharmacologic treatment of such disorders as rheumatoid and osteoarthritis, asthma, bursitis, psychophysiologic gastrointestinal reactions, fibrositis, angina pectoris, and hypertension has always been difficult to evaluate since both the psychotherapeutic influence and the subjective grading of a subjective symptom cannot be recorded in units. Even a double-blind study cannot entirely eliminate the difficulty in this type of evaluation.

Material and Method

The 26 patients included in this study, 15 treated in private practice and 11 in the outpatient department, had been refractory to previous medication or had shown only minor improvement over periods of from three to eighteen months. The clinical diagnoses of these patients are given in

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* Phenelzine is supplied as Nardil by Warner-Chilcott Laboratories, Morris Plains, New Jersey.

TABLE II.—RESULTS ACCORDING TO DIAGNOSIS IN THE 26 PATIENTS TREATED WITH PHENELZINE

Diagnosis	Response (Number of Patients) Excellent	Good	No or Slight
Osteoarthritis	1		1
Alcoholism	1		1
Fibrositis	1		
Bursitis	2		
Neuritis	1		
Psychophysiologic gastrointestinal reaction	2	2	1
Rheumatoid arthritis	1	1	1
Asthmatic bronchitis	3	1	
Herniated spinal disk	1	1	
Angina pectoris	2		
Relapsing pancreatitis		1	
Hypertension	1		

Table I. There were 7 males and 19 females, ranging in age from thirty-two to seventy years. In each instance an undertone of a depressive affect was evident.

As is usual in dealing with a refractory symptom complex, a number of new drugs had been employed in the hope of inducing a remission. Each new drug—inaugurated with the optimism that accompanies the initiation of any form of medication—had produced either no effect or only minor improvement. In each instance, phenelzine therapy was initiated during a two-week period with no more conscious enthusiasm than had accompanied the prescription of the previous medications.

Those patients treated after it became immediately apparent that this drug was producing a very unexpected degree of symptomatic improvement were excluded from the study, since the attitude of the physician toward the drug would be expected to color the response of the patient.

Each of the 26 ambulatory patients was given 15 mg. of phenelzine three times daily, the dosage being reduced to 15 mg. twice daily after one to three weeks and to 15 mg. once daily several weeks later. The medication was supplied in a plain envelope, and nothing was said other than some neutral statement like "suppose we try this instead of the other medicine." In the 3 patients with rheumatoid arthritis the maintenance dose of prednisolone, 7.5 mg. per day, was not changed. Each patient was seen at weekly intervals, at which time the abdomen was palpated and the reflexes and blood pressure postural response were checked. In 4 patients the thymol turbidity and cephalin flocculation were measured before treatment and three to four weeks after the initiation of treatment.

Results

IMPROVEMENT.—Among the total 26 patients treated, 16 (62 per cent) showed an excellent response, having been restored in four weeks to a state which they considered equal to or better than that at any time during the preceding ten years. A good although incomplete response was achieved in 6 patients (23 per cent). Only 4 patients showed slight or no improvement. The response according to diagnosis is given in Table II.

The patients with arthritis listed as markedly improved exhibited a great deal more energy and activity, and their degree of swelling seemed significantly reduced and range of motion increased although no attempt was made to grade these. The 3 patients with asthma showing an excellent response were freed of all objective and subjective evidence of the disease. The 2 patients with angina pectoris showed complete disappearance of the symptom but no electrocardiographic changes, and the 1 patient with hypertension showed a reduction of the arterial tension from 210/120 to 120/80. Improvement was generally evident in several days, with one to three weeks required for maximal response. The alteration in mood was clearly stamped on the patient's facial expression when the drug had worked well, and one could clearly see a more erect posture and a lighter gait. This kind of evidence was equally as impressive as the subjective evaluation of improvement. It is interesting that the patient with hypertension had extensive psoriasis which completely cleared up during three weeks of therapy with phenelzine alone.

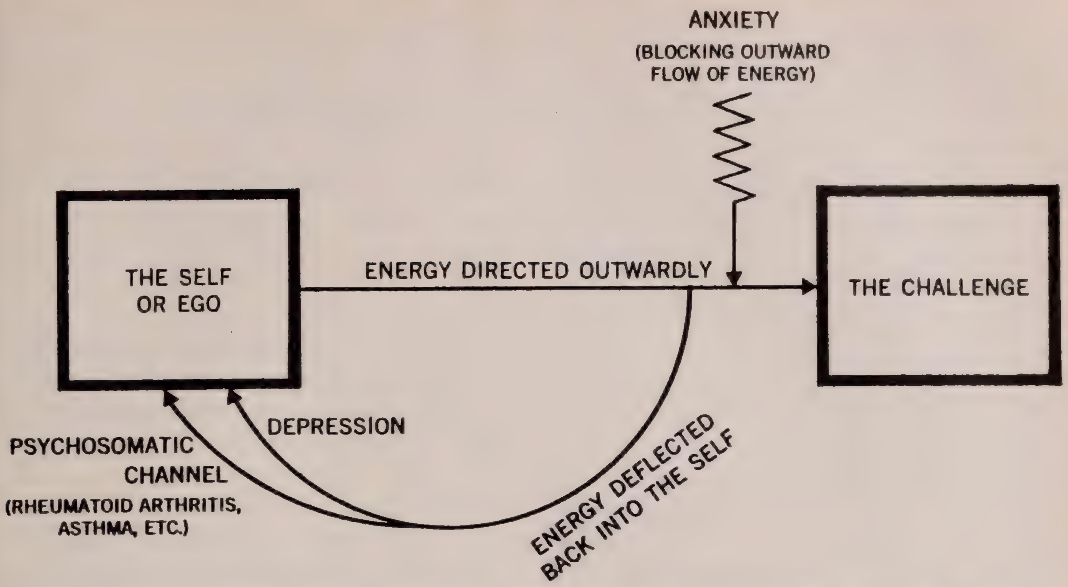
ANXIETY
(BLOCKING OUTWARD FLOW OF ENERGY)
THE SELF OR EGO
ENERGY DIRECTED OUTWARDLY
THE CHALLENGE
DEPRESSION
PSYCHOSOMATIC CHANNEL
(RHEUMATOID ARTHRITIS, ASTHMA, ETC.)
ENERGY DEFLECTED BACK INTO THE SELF

FIG. 1. Schematic representation of relationship between anxiety, depression, and psychomatic disorders.

SIDE-EFFECTS.—Only 1 patient showed any significant collateral effect and this was mild edema of the feet and ankles after two weeks of therapy (45 mg. per day). This condition cleared promptly when the drug was stopped and did not reappear at a dosage level of 15 mg. per day. There was a 5 to 10 mm. fall of mercury in the diastolic blood pressure of 3 patients during a postural change from the supine to standing position, but this was not accompanied by dizziness and no adjustment in dose had to be made. In the 4 patients in whom the thymol turbidity and cephalin flocculation tests were performed before and after three to four weeks of treatment, no significant changes occurred.

Comment

Since the introduction of the Rauwolfia alkaloids and the phenothiazine derivatives in 1954, a host of tranquilizing drugs has appeared, each receiving a mixture of glowing enthusiasm and critical appraisal. In the last five years the importance of anxiety in the various psychophysiologic and psychosomatic states as well as in the "pure" organic illnesses has been spotlighted although any clear lines of division are hard to draw. In general, the element of anxiety as it complicates any illness has certainly been easier to manage with these drugs.

Anxiety, however, does not appear in pure culture but is regularly accompanied by varying degrees of depression, inertia, and discouragement. Whatever nosologic term is used, some drug is needed to catalyze the patient's own ability to mobilize his energies outwardly toward his environment. The passive-aggressive reaction is very common in rheumatoid arthritis, and, in general, this disease has many features of the depressions. Faced with a situation requiring the exhibition of positive aggressive action, the patient is seen to "stall the engine," so to speak, with the appearance of swollen tender joints that prohibit positive action. The element of depression may not be apparent, but, as in depression, the positive aggressive forces are directed inwardly toward the self with paralyzing effect. The patient must then be cared for by his family and physician, and his ability to actively handle the challenging situation remains untested.

Inherent in the psychosomatic concept is the belief that certain individuals seem to have the capacity to channel a conflict into some organ or system, such as the musculoskeletal system, with the result that the biochemical processes producing arthritis, for instance, are thrown into gear and evoke an acute exacerbation. In another individual facing a similar situation depression, asthmatic bronchitis, or angina pectoris might occur. The kind of disorder that is triggered—arthritis, asthma, angina, or another abnormality—depends somehow on the directional pattern of the psychosomatic channels. The psychic forces that appear to underlie these syndromes certainly are as real as such physical forces as infection, exertion, and exposure to cold and rain. The result is the same whether the cause is physical or emotional stress. Figure 1 shows the relationship between anxiety, depression, and psychosomatic disorders.

Normally the ego, or self, is able to exert an effective amount of energy in handling environmental challenges and in satisfying various basic drives. However, a pathologic degree of anxiety, as might arise from an environmental stimulus or an overstrict superego (conscience), is capable of deflecting this aggressive energy back against the self, resulting in depression or a variety of somatic symptoms.

In the treatment of psychosomatic and psychophysiologic disorders, some drug is needed that will allow the patient to "take the wraps off" his capacity for positive aggressive action and direct his energy outwardly rather than into psychosomatic channels. Phenelzine appears to be such a drug. Psychiatrists have found the monoamine oxidase inhibitors very useful in depressive states, apparently because they curb the enzymatic destruction of brain serotonin, norepinephrine, and other amines that may condition an optimistic affect and effective positive action. It seems logical to extend the use of the monoamine oxidase inhibitors to the psychosomatic disorders whereby the outward direction of energy would be expected to decompress the "traffic" in psychosomatic avenues. Scherbel's[1] and Bosworth's[5] work along this line has been very encouraging, and it is possible that the monoamine oxidase inhibitors may one day occupy a fundamental position in the therapeutic armamentarium of psychosomatic disorders. The exact role of serotonin and other amines in psychic function remains a controversial problem that only further biochemical study can resolve.

Summary

1. Phenelzine in therapeutic doses was given to 26 patients with a psychophysiologic or psychosomatic disorder.

2. There was marked improvement in 62 per cent, moderate improvement in 23 per cent, and showed slight or no improvement in 15 per cent.

3. Only 1 patient exhibited any significant side-effect, a transient edema of the feet after two weeks of therapy.

4. An abbreviated rationale for the use of amine oxidase inhibitors in psychophysiologic and psychosomatic disorders is presented.

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We never know the worth of water till the well is dry.—Thomas Fuller

Television as a Tool in Postgraduate and Undergraduate Medical Education

MURRAY C. BROWN, M.D., BETHESDA, MARYLAND

(*From the National Institutes of Health*)

WE FIND ourselves faced with a new development in technology which has become woven into our everyday lives in the short space of little more than a decade. People representing various self-serving forces in our society say this development is good for us and is useful in accomplishing the training of would-be doctors as well as the refurbishing of the dowdy minds of the doctors—like me—who were trained in the dull days that lie behind.

I can be certain of only one fact: Television exists and is with us and will not go away. As an educator I must live with whatever it brings in the way of changing my life and my way of doing business.

I can be excused a certain amount of skepticism concerning claims of those in the television industry that the equipment on their shelves will solve all of my problems in the teaching of doctors, providing I hire the appropriate number and kinds of people and subject myself and my teaching colleagues to their direction. After all, the teaching of doctors is my business and the making and the sale of television is theirs. I like to think that I know my business, and I tend to reject having my problems defined by people who are less intimately concerned with my objectives. Yet, as I look at the means whereby we educate the doctor-in-the-making and re-educate his older colleagues, I must admit that our methods are not beyond improvement and our objectives are not fully attained. Late in the twentieth century we have hardly attained Abraham Flexner's goal for undergraduate medical education as he set it forth in 1911. And the continuing education of graduate physicians remains largely the unassigned responsibility of whoever will essay the task.

When this situation in medical education is viewed against the background of what has been described as the "present crisis in American education"—with its growing numbers of would-be students; shortages of teachers, classrooms, and materials; and the growing need for people of intellectual competence and scholarly discipline—it seems obvious that all of modern technology should be explored in an effort to solve the problems with which education is faced.

It seems certain in any case that television will force this re-examination of much of our educational structure and practice, an evaluation and adjustment that can be most constructive if leadership with a combined understanding of the educational process and this technologic resource can be found.

Unfortunately, there is no assurance that such leadership exists or will come into being. There are a number of factors in the present situation which should be cause for uneasiness if this leadership is not developed.

Control of Teaching Situation

The first of these arises from a paradoxical fact: Television has been shown to be a very effective teaching medium. This has been proved beyond any doubt by studies conducted by Pennsylvania State University, the Navy Training Devices Center, and the Army Signal Corps, among many others.

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The television used for this teaching is a very limited medium, a sort of "model T" technology produced by the early standardization that made possible the broadcast television industry. To use it effectively in its better forms one needs skills in production technics that get around its limitations and skills in operating and maintaining complicated equipment. When it is simplified as it has been to meet the needs of other industries more limitations are built in. The camera that reads the numbers on box cars solves some problems in operation and maintenance at the price of flexibility.

Yet this is the equipment the television industry has engineered. It teaches quite well under certain circumstances, and the industry seeks to sell this equipment wherever it can identify a probable use for it. This salesmanship develops increasing pressure as the industry saturates the market for cameras and associated equipment in broadcast stations.

Education and medicine are large factors in our economy and are obviously tempting markets.

In a sense, we are faced with opportunities and hazards similar to those presented to us when Edison created the motion picture. Like film, television demonstrated its ability to teach early in its development. There is the same tug of war between the teacher and the technologist: the teacher who failed in his use of film because he was an amateur, ungrounded in the simplest fundamentals and bent on "rolling his own" as he explored the alimentary canal with his Brownie movie camera; the skilled producer who made the magnificent teaching film which no teacher would use, not only because it was inaccurate from the teacher's point of view—philosophically abhorrent in its approach—but also finally rejected because it denied the teacher's very personal role as the central person in the instruction.

It is this latter point that seems to me one of the two important issues for our consideration.

As matters now stand the teacher must either be the servant of the medium directed by skilled people who control the teaching situation; or he may do limited and simple things by mastering limited equipment; or, if imaginative, he must learn the technology to some real degree and find the funds to hire operating people to regain his control of the situation.

By extension, the status of the teacher, already none too good, is not improved by the implied threat that he may be reduced to the position of assistant to some central master teacher produced and directed by a competent team from Madison Avenue. In fact, there is experimental evidence that the teacher may be on the way to oblivion. At a recent conference, Dr. Joseph Kanner told us of the chance testing by the Signal Corps of the possible dispensability of the teacher. In the course of some television studies concerning the effectiveness of teaching electronics by this medium, his group found themselves left with three hours of instruction transcribed to the Teleprompter when the experiment ended. A wit suggested that another test be run, this time with two men who had neither taught nor acted before doing the instructing. Two volunteers were found and drilled for an hour or two on each teaching unit. Students were then "instructed" via television by these untrained people. I am sure the results will not surprise you: The group they taught compared favorably with the groups who had received both direct and television instruction in earlier studies. The same wit then suggested that the instructors take the evaluating examination. Both flunked!

Despite the obvious fallacy in this thesis, the issue of who shall control the teaching situation is a real one. I hold with the view that, in medicine at least, the teacher must be in the driver's seat! We are already encountering teachers who have experienced the directed situation of television production who will not participate in further televised activities.

Kind of Television Needed

As important as the teacher's role is the question of what kind of television we shall allow to revolutionize our education system. Here a significant fact is that a narrow spectrum of television technology is embodied in existing commercial equipment. Not only is the equipment not designed for educational purposes from the standpoint of ease of operation and the teacher's control, but also the same standards that made broadcasting possible automatically exclude exciting potentials inherent in the technology from which television as we know it is derived.

From what I have said it must be clear that I am asking for medical education equipment which is not available, although to my mind it can and should be obtainable. I would like the television industry to supply two families of instruments. One would be a tailored group of flexible, all-purpose cameras and equipment, cheap and simple and easily operated, to display the televised image. They would be fool-proof, nurse-proof, and doctor-proof, the dream of every instrumentation man. Preferably they would have a single knob and no place where a screw driver could be inserted, for doctors sometimes carry such tools. They would be exquisitely sensitive to light, featherweight, and without optical doodads. The other would be a family of special instruments, again cheap, simple, and easily operated, such as a television ophthalmoscope and a color microscope.

From medical teachers I would ask the interest, time, and effort to learn how to use these instruments and the specifications for the needed members of these families that would follow.

These families of instruments should not be designed tomorrow but today, and they should be designed to meet the needs of medical education for me, and to meet the needs of general education for my sorely pressed colleagues in that field.

With the equipment now available today's teacher can master the problems of presentation and much of the "gear." When he is in the driver's seat, when the instruments are made to serve him, and when he is supported where necessary by people knowledgeable about television but bent on advancing education, postgraduate and undergraduate medical education can be improved and extended. Even now the teacher of physiology can place gooseneck lamps on the classroom desk and focus a small television camera with a single control, an on-off switch, on a demonstration and it can be seen in all its detail throughout a classroom on multiple television receivers. It can be presented on a large screen by projection, and students miles away can share in the experience. In the laboratory the technic for an experiment can be demonstrated with the student seated with his own materials in front of him and a monitor receiver nearby where he sees and follows the procedures step by step as he makes his own preparations for the experiment.

Indeed the student unit laboratory, projected as an ideal method of teaching more than thirty years ago by Meyer Bodansky, has come into being owing to television. Baylor University has such an installation.* For the first time it is practical to give each group of four students a laboratory of their own where they work as a group and around which their professional lives and training revolve for two years. Television's ability to bring the remote instructor into each laboratory, its ability to magnify the small detail and to amplify light, all of these capabilities can be used in undergraduate teaching. With ingenuity the modern instructor can use today's tools to dramatize this material and give it a sense of immediacy by bringing the live work of the research laboratory into the class. He can also film this as it is presented and preserve it for future classes without losing its informal and effective quality.

The wide spectrum of light to which television tubes are sensitive makes it practical to demonstrate unseen phenomena. Events that can be characterized only with ultraviolet light can be seen on the screen of an ultraviolet television system. The selective absorption of ultraviolet light produced by certain physiologically active materials can be demonstrated. Important events in the life of a cell can be seen as dynamic chemistry: Visible changes appear in the nucleus of the cell as new chemicals are manufactured or destroyed.

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* Geddes, L. A., Hoff, H. E., and Spencer, W. A.: Broadcast demonstration in physiology laboratory, J. M. Educ. **34**: 107 (Feb.) 1959.

Other unseen phenomena can be viewed by infrared light. The behavior of sleeping subjects can be presented without using visible light in the sleeper's room.

The behavior of living vascular structures in man as well as in experimental animals can be presented. For example, we are now having routine viewings by television of the retina of the human sighted eye and are observing the fine structures as tremendously magnified color pictures. These images can be recorded on motion picture film, whereas direct color motion pictures require more light than the eye can tolerate. We make these films for teaching as well as for research. These motion pictures convey exactly the impression one gets in viewing the same retina with the hand-held ophthalmoscope.

It is also possible today to present living physiology on the television screen and, by using the technic of "line selection," to give the student simultaneously a method of estimating visually the changes in the measurements of structures as various stimuli are employed. Standard oscilloscopes can be used to select one line from the several hundred that make up the television image. This line, a visual cross section of the total picture, may then be examined quantitatively. The intensity of the reflected light, which is related to the density of the object, is represented by the magnitude of the downward deflections of the oscilloscope trace, and distances or widths of contrasting structures along the selected line appear as the distance between shoulders of density deflections. This technic can be used with either a black-and-white or with a color system.

While the imaginative teacher has an exciting potential for enriching his teaching capacity with present-day television equipment, much of television's more important potentialities cannot yet be realized. For instance, such a simple and pedestrian application as the use of color television in the operating room remains highly unsatisfactory. At best, the surgeon must tolerate some additional gear over his table, gear that is hard to clean and requires, at one time or another, the entrance into the operating room of persons untrained in surgical asepsis. At worst, he must put up with a horde of technicians and with a monster device. He loses control of his operating room and of his teaching.

In spite of these difficulties, we feel that television, good color television, belongs in the operating room; and we are currently engaged in designing an operating room in which these problems will be minimized. We feel that the surgeon should resume control of his operating room environment that he has in part surrendered in response to his devotion to his role as teacher and mentor.

An age which can mass-produce the incredibly complex electronic devices that are now sold to moron and savant alike, and that perform their expected functions quite well in the hands of either, can produce even more sophisticated devices which do not require engineers to operate—equipment that can be used by the medical teacher. The problem is one of economics rather than of technology. When education becomes a primary market, comparable in some degree to the military, rather than a place to fob off equipment designed for other applications, Dr. Vladimir K. Zworykin's "baby" may come of age in pedagogy.

It will require resourcefulness and foresight to produce suitable, specially designed equipment at a price within reach of traditionally impoverished educational institutions. Yet there is real hope that this can be done. The fact that many of the teaching devices useful in medicine will also have potential uses in research broadens the market for such equipment. Part of the hope lies in the fact that so many venturesome engineers have established companies and are searching for sound if limited markets. These counterparts of companies making research instruments have the advantage of low overhead and nimble feet.

Such small companies may give us the cheap, fool-proof, nurse-proof, and doctor-proof, one-control color microscope which will replace the Scopicon in teaching from specimen slides. True color, high magnifications (oil immersion), complete linearity, and ease of operation are essential for this device, which we are constantly asked about as though it already existed. Currently a standard color camera (which will not meet these specifications) costs from $50,000 to $60,000. The device my pathologist and bacteriologist friends need must sell for not more than from $3,000 to $5,000.

A black-and-white television ophthalmoscope would be of tremendous teaching value. For the first time students and teachers could see the same retina at the same time. We have developed a satisfactory instrument for $20,000 which costs a minimum of $6,000 yearly to maintain and to operate. Yet, on a commercial basis, an improved device might easily be designed to cost $5,000 and require only the local television repairman on infrequent occasions to keep it working. In fact, $1,000 might well be a reasonable price for a better instrument than we now possess.

The list of defined needs can be extended easily. For instance, it is not simple to teach x-ray film interpretation. Today there are devices which make it easy to demonstrate the grosser aspects of pathology shown on x-ray films. However, the fine detail is lost because the existing equipment is crude. Very simple modifications would make this device useful not only in teaching diagnostic radiology but also in extending the radiologist's ability to interpret doubtful films.

The same device would afford the radiologist the opportunity to process rapidly films made in the operating room and to view them directly in his office while transmitting them to a television receiver in the operating room. This procedure would provide a first-hand consultation, group judgment, and a feeling of assurance to all concerned.

Needs in Postgraduate Education

Existing television technics and equipment are more easily adapted to use in postgraduate medical education than in undergraduate teaching. Here the important element is television's ability to transcend both time and space. When this ability is coupled with that of magnifying small details, one has a powerful tool with which to attack a vexing educational problem that has been with us all too long. This problem arises from several facts which characterize the education of the physician during the period following the conclusion of his formal training in the medical school and in the hospital.

Certain physicians are so highly motivated that they can be counted on to continue their professional education throughout their lifetimes. When the opportunity to improve their professional skills presents itself, these men will seek it out. If not, they will create the opportunity through their medical societies or through other devices. These men are literate in the sense that they are avid readers, and one might even venture the thought that it is they who keep the medical publishers in business. This group constitutes about 25 per cent of the graduate physicians in the country and they serve a somewhat larger percentage of the total population because they tend to cluster around medical centers where auxiliary services extend their capacity to handle patients. More important, whether in solo practice in relatively remote places or in the teaching center, they attract more patients than the average physician because their skills are highly developed.

It is obvious that little need be done for the highly motivated practitioner. Traditional methods of education—good journals, refresher courses at medical centers, courses by circuit-riding instructors, and periodic teaching clinics in the community—will suffice if the quality of these instructional experiences is maintained at a high level. In fact, these men will maintain their skills by teaching each other at hospital staff meetings and at meetings of their county medical societies.

Recent studies in North Carolina and elsewhere indicate that the remaining 75 per cent of practitioners lose contact with modern medicine very rapidly after completing their formal training. Despite ubiquitous personal instruction by "detail men" and regular exposure to *Medical Economics*, general practitioners tend to lose touch with recent developments about six years after they complete their last formal training experience. Men trained in the specialties do somewhat better. However, according to these studies, after eleven years in practice the average specialist is in serious need of retraining.

The basic problem in postgraduate medical education has been our inability to reach this second group. Television can and probably will provide a means whereby postgraduate medical education can reach these doctors. This can be accomplished in a variety of ways ranging from broadcasting over commercial channels at hours when these are not in use for amusement purposes to closed-circuit telecasts in the manner of the Upjohn Grand Rounds. Within this range are such variants as "scrambled image" or "private" broadcasts and semiprivate broadcasts using channels for which most receivers are not equipped. Material presented in such television programs can be filmed by kinescope or recorded on magnetic tape and presented as motion pictures or can be rebroadcast via television elsewhere at a later date. Technology presents no problem provided the economic requirements can be met. The potential for improvement in medical care for this country would appear to be great enough to warrant and secure any reasonable amount of financial support.

The teaching methodology used in any serious attempt to employ television for postgraduate medical education will be important and must conform to the principles we have discussed and to others peculiar to the audience involved. We can be sure that these will be developed, tested in the crucible of experience, and forged on the basis of proved values.

The crucial issue is how to motivate the audience we wish to reach so that they will hear and see what we are trying to communicate. The program of the Academy of General Practice, which gives credit for postgraduate educational experiences, is one sort of social pressure that will provide motivation. It is fortunate that television tends to be a social force in and of itself, for it is only through social pressures that the necessary motivation can be achieved. Status, with concomitant economic benefits, should be the reward for the physician who continues his education. There are a host of ways whereby this reward might be made more directly contingent on continuing education. If this can be accomplished, we have all the elements for a major improvement in the health of the American people.

Let not the mistakes of yesterday nor the fear of tomorrow spoil today.—CARLTON EVERETT KNOX

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Some Recent Advances in Cardiovascular Surgery

Part II

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PART I of this article appeared in the March 1, 1960, issue of the NEW YORK STATE JOURNAL OF MEDICINE. In this review we are presenting some recent advances in cardiac surgery, showing wherein surgery can be applied in a great number of cardiovascular diseases.

Transposition of the Great Vessels

Transposition of the great vessels together with tetralogy of Fallot (see Part I) constitute the great majority of cyanotic congenital malformations of the heart. It would appear that a simple surgical solution such as the transposing of the aorta and the pulmonary artery would solve the problem. However, the difficulties that have been encountered are numerous and most recent attempts have been to transpose the venous system, thereby sending unoxygenated blood to the left side of the heart which is supplying the pulmonary artery and sending oxygenated blood to the right side of the heart which is supplying the aorta.[1] The experience in general has been rather dismal. However, dismal as it is, the outlook without surgery is even worse and any attempt to improve the situation is worth the effort. Any operation is in order when the diagnosis of transposition has been made. These children are deeply cyanotic from birth and frequently go into heart failure. There have been operations devised for the correction of transposition in patients.[2] These operations may be divided into two categories. In about one quarter of the transposition cases there is an element of valvular stenosis either at the pulmonary valve area or at the tricuspid area. In those cases, of course, attempts at transposing the pulmonary and the systemic circulations are of little value. These cases should be treated by the ordinary subclavian-pulmonary artery or aortic-pulmonary artery anastomosis originally devised for the tetralogy of Fallot. In those instances in which there is no element of obstruction, transposition of the pulmonary and systemic circulations is in order. Recent reports have given some measure of success to the latter operations, but this is very small.[3,4] The use of angiocardiography in transposition is of little value and only serves to substantiate a diagnosis which is usually made without it.

Aortic Stenosis

From the physician's point of view, it is immaterial whether aortic stenosis is of rheumatic or of congenital origin, or is valvular or subvalvular in position. Operation for aortic stenosis is regarded as necessary or even as imperative in all cases of advanced aortic stenosis. The patient should be studied by a team that is equipped to do various physiologic studies preoperatively. It is the job of the cardiologist to recognize a stenosis, to estimate any degree of aortic incompetence, and to determine the anatomic side of the stenosis. This can be done by various studies including brachial arteriogram, left ventricular puncture electrocardiogram, and so on. One of the recent advances associated with aortic stenosis has been the direct measurement of the pressure gradient across the aortic valve.[5,6] This procedure has much to recommend it in doubtful cases and we have found it of great use in our cases. It can be done easily with or without anesthesia. Aortic commissurotomy is rarely indicated unless the left ventricular aortic systolic gradient exceeds 40 or 50 mm. of mercury in the absence of no mitral stenosis. When severe mitral stenosis coexists the systolic gradient graded in 20 mm. of mercury across the aortic valve may be an indication of severe aortic stenosis.

The main indication for surgery in congenital aortic stenosis is the presence of symptoms. In spite of the presence of the defect, children with normal studies should not be operated on at this time. These cases are operated on by the transaortic route either with hypothermia or with the pump oxygenator.[7,8] There is a marked beneficial result when the valve of congenital aortic stenosis is attacked. We have operated with the use of either hypothermia or a pump oxygenator and have found the latter preferable.[9]

In the acquired form a closed technic via the ventricle[10-12] or the aorta[13] has given good results recently in carefully selected cases. A direct attack with the use of the pump oxygenator is very useful when severe calcification is present. Sculpturing of the calcium must be accomplished for mobility. In the acquired form, just cutting the commissures is not enough. There is no approach other than surgery to aortic stenosis that is symptomatic.

In summary, in the congenital form only a direct approach is possible, and in the acquired form surgery of either the open or the closed variety is indicated depending on the amount of calcium in the valve. The problem of open versus closed technics may be resolved by the perfection of a valvular prosthesis to replace the faulty valve. This has been attempted in experimental animals successfully but is, as yet, only in the developmental stages for the human being. A prosthesis has been used in aortic insufficiency.[14]

Aortic Insufficiency

Renewed interest in aortic insufficiency has led to a revision of our thoughts as far as treatment is concerned. The life cycle is such that it is progressive and terminates in death. It should be noted that when the symptoms are due to an aortic valvular lesion, be it stenosis or insufficiency, the ventricle is severely damaged.

There have been some procedures that have been suggested for aortic insufficiency that have aided this disease entity. The placement of a prosthesis which partially corrects the regurgitation has been useful in a series of instances.[14] We have found the use of this valve very beneficial, especially in those cases of aortic insufficiency associated with angina pectoris. The indication for surgery in these cases is the presence of free aortic insufficiency in a patient first beginning to show definite progression of symptoms or signs from a stable asymptomatic state. Those patients who are operated on only when they are severely incapacitated will suffer a high surgical mortality. Those patients with severe angina will also have an increased mortality. Interest in the use of complete valvular prosthesis at the coronary valve level has continued; however, successful clinical application has not been reported.[14] The ultimate goal is, of course, that the previously mentioned prosthetic valve of Hufnagel be placed distal to the subclavian artery.

More recently, attention has been paid to the excision of the noncoronary cusp of the aortic valve.[14-16] This would bicuspidize the valve in addition to decreasing the size of the aortic ring. Previous attempts at decreasing the size of the aortic ring over a long period of time by plicating it failed. This bicuspidization seems promising and can be accomplished, of course, only with the use of a bypass pump oxygenator. In those instances of aortic regurgitation associated with aortic stenosis, relief and mobilization of the valves may aid the aortic insufficiency greatly and may even correct it.

Mitral Regurgitation

Although various closed technics for the repair of mitral regurgitation have been used, the results have not been ideal.[17-19] The trend is now toward surgical treatment of mitral regurgitation by open heart surgery,[8,20-22] apparently a very logical approach. We have experienced excellent digitalization of the valve from the right side, though left-sided approach through the left atrium has also been used with success. The annulus is sutured and plicated so that the two valves may oppose each other in ventricular systole. The use of cardiac arrest in the repair of mitral regurgitation does not help since the possibility that there is a continuing regurgitant lesion is not visible without the presence of regurgitating blood. It must be mentioned that in some instances repair of these valves is virtually impossible because of the condition of the valve itself. The valve may be completely calcified, in fact absent, as is common, and mobilty cannot be re-established.[23] The only thing that would aid this type of case would be the presence of a prosthetic valve which can be inserted quickly after the excision of the diseased valve. In those instances where the regurgitation is essentially one of cicatricial contraction of the leaflet, usually the mural leaflet, the insertion of a polyvinal Ivalon sponge under the mural cusp and suturing it in place may help. This actually extends the mural leaflet so that it may meet the septal leaflet and, therefore, prevent regurgitation. The mortality in this operation will probably be in the neighborhood of from 15 to 20 per cent, yet if no surgical treatment is given the results are very poor.

More often the diagnosis of mitral regurgitation becomes a difficult problem. We have seen instances in which a severe systolic murmur was present, yet on exploration of the mitral valve, little Grade I or Grade II regurgitation is present, and the predominant lesion is stenosis. In those instances, relief of the stenosis resulted in an excellent result functionally. Electrocardiographic signs of right ventricular hypertrophy are usually present in cases of mitral regurgitation as well as in mitral stenosis.[23,24] It may be possible now to diagnose a degree of mitral regurgitation by percutaneous injection of dye directly into the left ventricle by a left ventricular puncture.[25-27] With the advent of better diagnosis of mitral regurgitation, a better selection of cases will invariably result in a lower mortality for the direct operation in mitral regurgitation.

Mitral Stenosis

The last ten years have shown that mitral commissurotomy is an effective surgical procedure for relief of mitral stenosis. Yet it is with some disappointment that some physicians, when confronted with a patient with mitral stenosis, wait too long. It is to be granted that class I (New York Heart Association Classification) patients who are essentially asymptomatic, are not recommended for operation. However, the burden of declaring a patient asymptomatic rests on the physician. Careful, intensive questioning will disclose symptoms in many instances. Questioning of the mate and/or immediate members of the family is in order. It is extremely important to classify these patients truly as it is our feeling that all patients with mitral stenosis and symptoms should be operated on provided no serious disease of another organ system is present. A much better result can be obtained anatomically on the valve when early surgery is done. Too often a patient is recommended for surgery when he is in the class III or class IV category. Anatomically the valve is usually destroyed, and as good a long-term result is not obtained.

It is evident that mitral stenosis is a progressive disease. If surgery does not intervene, more than 50 per cent of patients with this condition will be dead within five years, whereas only 9 per cent will be dead in the surgical group. None will improve in the nonsurgical group while 70 to 80 per cent will improve in the surgical.[28,29]

A recent report of the Section on Cardiovascular Surgery of the American College of Chest Physicians[30] emphasized the over-all good results obtained with surgery. The over-all mortality in 10,000 collected cases was about 6.8 per cent. The total operative results after five years was good in 70 per cent of the cases, improved in 25 per cent, and poor in 15 per cent. Recurrence of mitral stenosis was 2.8 per cent of 8,000 operated patients. There was a prolonged febrile course in about 8 per cent of cases. Systemic arterial embolization complicated 5 per cent of these operations.

Restenosis of Mitral Valve

Restenosis of the mitral valve is a subject that has come up in the last few years. It would naturally come up at this particular time because of the length of time that has elapsed since some of the early cases of mitral valvulotomy have undergone surgery.[31] It is still not known whether or not there is such a thing as restenosis due to recurrent rheumatic infection. It has been estimated that restenosis occurs in anywhere from 2 to 5 per cent of cases.[32,33] There is even an argument whether restenosis actually occurs or whether it is still a remnant stenosis of the original operation. The most convincing evidence would be obtained if, at the time of operation, the gradient across the mitral valve were measured before and after the commissurotomy. If the gradient disappears and the patient becomes relatively asymptomatic in subsequent years and then a recurrence of the disease, as evidenced by symptoms, takes place, then evidence for restenosis is present. The best objective evidence could be obtained by recatheterizing the left heart with a direct or transbronchial puncture and finding that a gradient is then present.

It is our opinion that many of the so-called cases of restenosis are probably due to an inadequate initial commissurotomy. The reasons for the inadequacy of the commissurotomy are many and criticism is to be avoided, as anyone with experience in the field knows. We have seen a number of cases of inadequate initial openings and also some in which recurrent infection was probably the cause. Another interesting cause of restenosis may be iatrogenic, when the surgeon has not recognized the presence of other lesions. These same lesions may be causing symptomatology which is interpreted as a restenosis of the mitral valve. At any rate, we make every effort to open up the valve adequately, both in the anterior lateral and the posterior medial commissures. It is not enough just to slip a finger in and consider this a commissurotomy. Plastic mobilization of the leaflets must be endeavored. It is evident, of course, that in many cases this is impossible because of the condition of the valve. It is more evident that if this is sought for or tried a more adequate mobilization can be obtained in many cases.

Pregnancy and Surgery of the Heart

Pregnancy aggravates certain cardiac conditions that are relatively asymptomatic otherwise. This is owing to the fact that in the latter half of pregnancy the blood volume is greatly increased and this puts an added load on the heart. In many instances, medical therapy fails to control this heart failure and, on occasion, may result in the death of the patient and the fetus. In many instances surgery must be considered, and it is evident from our own experience[34] and that of others that the presence of a cardiac lesion during pregnancy does not contraindicate surgery. Therefore, surgery has been done in the pregnant female under a wide variety of conditions. The indications are the presence of medically uncontrollable heart failure. If at first an effort is made to control the heart failure or the symptoms medically and this succeeds, a continuation of this form of treatment is in order. If, however, this does not succeed, surgery must intervene. Cases of mitral stenosis, coarctation, patent ductus, and so forth have been operated on successfully in the presence of pregnancy, with little or no increase in mortality or risk.[35,36]

Trauma

Trauma to the heart will constitute a puzzling surgical emergency to most general practitioners. Yet, it should not be that puzzling an entity. Cardiac tamponade is the result of bleeding within the pericardium, and this can be treated with pericardiocentesis alone in a great majority of cases. The indication for pericardiocentesis is the presence of an increased venous pressure, falling blood pressure, and an enlarging cardiac shadow. Pericardiocentesis is easily accomplished and should be within the realm of the general practitioner since he may be, and usually is, the first one to see these patients. Pericardiocentesis used alone is very effective and mortality rates of only 10 per cent have been recorded since the institution of this conservative therapy.[37] Long-range follow-up on cases so treated shows that the great majority of patients are back at work, and there does not seem to be any recognizable sequela.

The aftermath of certain traumas to the heart can be treated successfully surgically. Thus, on occasion, the intraventricular septum has been penetrated and a septal defect created. The use of a pump oxygenator makes the closure of this wound possible. The recognition of the trauma is, of course, the most important portion of the treatment.[38]

Ventricular aneurysms secondary to cardiac stab wounds can result. These aneurysms can be resected and should be, as cerebral infarction due to embolic episodes is very frequent. As a matter of fact, thromboembolism occurs in over 50 per cent of the cases of aneurysms and is a direct result of death in 21 per cent of patients so affected.[39] Resection of the aneurysm appears to be a definitive treatment in controlling this complication.

Coronary Surgery

Coronary surgery still remains a problem, and the exact turn that this field will take is not yet clear. There are several reasons for the disputed and uncertain status of surgical treatment for coronary artery disease: (1) The natural course of the disease may be highly variable in different patients and even in the same patients at different periods and may be greatly influenced by many factors. (2) The objective evaluation of the clinical results is extremely difficult because of the inability to provide a control study. It would appear that after a preliminary period of study of any technic a double-blind study is in order, to ascertain the technical aspects. Those methods that pass these strict criteria should be utilized. It is also important to note that in any coronary surgery, simplicity is the sine qua non of the procedure. The remarkable similarity and results found in varying surgical methods and approaches is particularly striking and perhaps significant. There is one factor common to all surgical procedures proposed and that is irritation and inflammation.

Recently, we have had the opportunity to use radiotherapy in an effort to increase the circulation of the intercoronary portion of the heart.[40–42] The basis for this decision was the fact that in most of the operations that do not attack the vessels directly it has been noted that there is some improvement following the installation of talc or asbestos or some other irritating substances within the pericardium. As a matter of fact, it has been suggested that merely opening the pericardium irritates the epicardium enough to be effective. It was thought that radiotherapy would be an irritating agent that could be instilled without any surgical procedure. Experimentally, we are fully aware that the possibility of initial response due to radiotherapy with a later failure might be the result. This was not verified experimentally, and we have shown that the intercoronary circulation is greatly increased not only initially but also for a continuing period of at least six months.

There is no evidence that we know of to show that the dose of radiation that we use in the experimental animal is harmful or has any deleterious effect on the heart. As a matter of fact, we know of no evidence to show a concise study of this effect on this organ with graded doses of radiotherapy. Provided that all the experimental evidence is in order and that there is a definite increase in the intercoronary circulation, this procedure can and should be extended to the human being. Without an extension onto the human being, it is impossible to tell its effectiveness as a therapeutic agent. Raab[43,44] has suggested the role of catecholamines in providing the good effect of the radiation on the heart. He has made the point that too often postmortem examination of hearts in patients who died of coronary disease show all too little obstruction; spasm would, therefore, have been the cause as a result of sensitized nerve endings.

Various evaluations of operations that instill talc or asbestos in an effort to increase the intercoronary circulation by irritating the heart have been reviewed recently.[45,46] The results of these operations depend, of course, on the reviewer and the area the article is coming from. Usually, most of these operations have an improvement rate of about 50 per cent. Internal mammary artery ligation has been suggested as a possible approach to the coronary problem. Our experience, which is supported by others, is that its effect on a high percentage of these cases is not good: It does not improve the long-term coronary disease patient.

Attempts at endarteriectomizing the coronary artery are perhaps more dramatic and spectacular than beneficial.[47,48] Internal mammary artery ligation has gone through a recent phase of surgical digestion.[49] Our experiences with the procedure, as well as the experiences of others, have not been promising at all. We have given this procedure up entirely. The results of internal mammary artery implantation into the heart have been reviewed recently[50] and show improvement in the status of the patients. However, it is our feeling that the procedure is somewhat complicated. Our experience in the surgical attack on this disease shows that the simplest procedure is the one that should be used. To take a severely damaged heart and subject it to a procedure as traumatic as endarteriectomy or implantation is not a well-conceived idea. These patients are very sensitive to even general anesthesia, let alone intensive work on the coronary arteries. Of course, prophylactic measures to prevent coronary artery disease will be instituted in many programs of dietary control. However, this prophylaxis, though of logical conception, has not been accepted by all physicians or by all patients. Therefore, there is room for therapeutic attacks on the problem. The desire of anyone interested in exploring the possibilities of correcting coronary artery disease should be for simplicity as well as for palliation.

Constrictive Pericarditis

Constrictive pericarditis is still an entity that is seen often enough so that the general practitioner should be well acquainted with it. Too often the patient is seen with calcium completely surrounding the heart, and nothing is done for a number of years. Many reasons are given by the practitioner: The myocardium is too damaged, or it is not possible to remove the calcium, or the patient is too old. Surgery is indicated whenever constrictive pericarditis has been diagnosed. Diagnosis, of course, can be made because calcification is present in the great majority of cases. Even those cases in which there has been a delay in surgery for one reason or another should be operated on. We have had the experience of operating on a patient who had been followed with symptoms for a period of at least six years without surgery, with an excellent result postoperatively. Those series of operated cases that have been reported, showing the end results of surgery after a period of years, have indicated that results are very satisfactory even after an average postoperative follow-up of at least four years.[51]

Cardiac Tumors

All varieties of cardiac tumor, namely teratoma, cyclindroma, mesothelial sarcoma, and cystic lymphangioma, have been attacked more frequently within the last few years. These tumors can be attacked without the use of a pump oxygenator as most of them are external to the ventricular cavity.[52] Intracavitary myxomas of the heart have also been removed surgically with the use of hypothermia and/or a pump oxygenator.[53,54]

Most of the difficulties with intracavitary tumors have been in the diagnosis. Left-sided myxomas very often imitate mitral stenosis and many times are first seen during an exploration for mitral stenosis. It is common practice for an operating surgeon to end the procedure in these cases.

It is pertinent that most intracavitary myxomas not only give obstructive symptoms imitating valvular lesions, but also are peculiar in that the patient may give symptoms of syncope or heart failure related to change in the position of the body. Whenever a patient states that he blacks out when lying down and this same patient gives evidence of obstruction to the mitral or tricuspid valve, a diagnosis of intracavitary tumor should be made. This, of course, can be verified easily by angiocardiography.

It is our feeling that the use of a pump oxygenator is much more logical than the use of hypothermia alone. The combination of pump oxygenator and hypothermia of course is very useful.

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CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

JUNE 24, 1959

Discussed by SEYMORE L. BUKANZ, M.D.

Case History

HENRY H. MURPHY, M.D.: A fifty-four-year-old white man was admitted to Knickerbocker Hospital for evaluation of recurrent midepigastric pain of some two years duration. He first had experienced gastrointestinal difficulties about twenty-five years previously, when he had undergone emergency surgery for a perforated ulcer. He was not aware of the location of this lesion or of the nature and extent of the surgery. He recalled that he had easily regained his preoperative weight and had remained free of digestive disturbances of any kind until the onset of his present illness.

Seventeen years prior to admission he was found to have diabetes mellitus following the onset of polyuria and slight weight loss. Over the intervening years this disease required insulin daily in varying amounts, averaging about 40 to 50 units per day. His attention to diet was slipshod at best, but he never had developed acidosis. He had rather frequent attacks of sweating and dizziness which required the immediate ingestion of sugar.

Five years prior to the onset of the present illness he had developed a progressive infection of the right toe which eventually led to a right lumbar sympathectomy and a midtarsal amputation. The latter operative site did not heal completely, and he was left with a persistent, mildly infected, but painless area of ulceration.

Approximately two years before entry he had noted the gradual onset of mild, intermittent, and burning midepigastric pain. Occasionally the pain was associated with nausea and vomiting, but there never was any blood-stained vomitus or melena. The pain was generally mild, did not radiate, and was readily relieved by antacids or food until several months before he sought medical attention. The pain had then become more severe, increased in frequency, and was associated with a weight loss of several pounds.

On admission the patient was found to be a well-developed and adequately nourished middle-aged male in no apparent distress. The temperature, pulse rate, respiratory rate, and blood pressure were normal. Physical examination of the head, neck, lungs, and heart did not yield remarkable findings. The abdomen was soft and gave no evidence on palpation of masses or organ enlargement. Mild midepigastric tenderness was present without rigidity or rebound. Examination of the genitalia and prostate was unrevealing. There was a 3-cm. ulcerated lesion, erythematous but without suppuration, on the lateral side of the right foot. The peripheral pulses were of good quality, and neither regional nor generalized

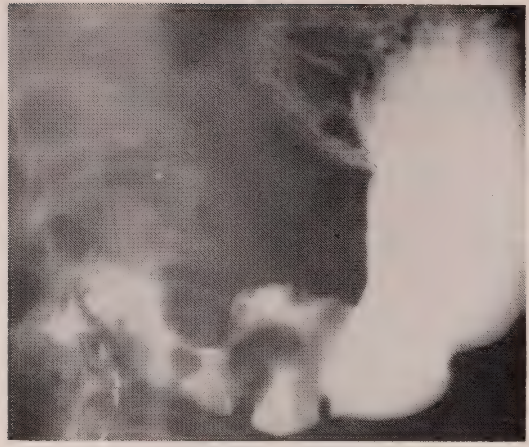

Fig. 1. X-ray film of stomach showing large filling defect in antrum.

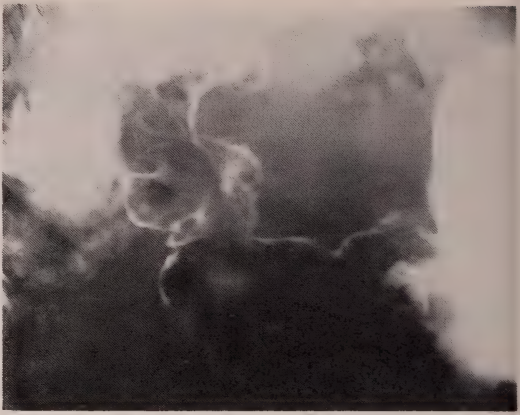

Fig. 2. With compression of epigastrium, x-ray film of stomach shows outline of persistent filling defect and defect in duodenal bulb due to extrinsic pressure.

lymphadenopathy could be demonstrated. There was no evidence of diabetic neuropathy, and no other neurologic disability was apparent.

Laboratory study revealed a urine with a specific gravity of 1.016 and a faint trace of albumin and 1 Gm. per 100 ml. of glucose. There was no acetone, and microscopic examination of the sediment gave unremarkable findings. The admission hemoglobin content of the blood was 11.3 Gm. per 100 ml., and there were 3,460,000 red blood cells per cu. mm. The white blood cell count and differential smear were normal. The serum cholesterol was 212 mg. per 100 ml., and the blood creatinine was 2.05 mg. per 100 ml. The alkaline phosphatase was 5.4 Bodansky units, and the fasting blood sugar was 285 mg. per 100 ml. One stool was negative for occult blood, but several subsequent specimens were 4 plus guaiac positive. Gastric analysis showed the contents to be free of blood and no hydrochloric acid was found.

Shortly after admission the patient began to complain of severe epigastric pain, ate poorly, and vomited his meals several times. This vomiting was sporadic and not noticeably affected by antispasmodics or antiemetics. No "coffee-ground" material was seen. The diabetes presented no special problem in management and was controlled with 40 units of NPH and supplementary regular insulin as necessary.

An upper gastrointestinal series revealed large irregular filling defects in the gastric antrum (Fig. 1). The walls in this area appeared mobile, but no peristaltic waves passed through this region. On the erect film a fluid level was noted in the lesser curvature in the prepyloric region, which was thought to represent a large ulcer or possibly a small walled-off perforation. The duodenal bulb filled well, but there was a persistent defect along its superior proximal aspect, interpreted as an extrinsic pressure defect (Fig. 2).

On the seventh hospital day an operation was performed.

Discussion

Seymour L. Bukanz, M.D.: The protocol isolates the stomach as the cause of this patient's illness. I propose to select for discussion those data which seem most relevant to the establishment of a diagnosis.

The history informs us that this man had had a perforated ulcer at the age of twenty-nine. We are not told whether it was a gastric or duodenal ulcer. We are also told that he had developed diabetes mellitus at the relatively young age of thirty-seven and that his cooperation with the planned medical regimen was so poor that within twelve years he had required a midtarsal amputation and a lumbar sympathectomy. We all know that a person who develops an ulcer at the age of twenty-nine is likely to do so again and to have a fairly constant elevated gastric acidity, conforming to the maxim, "Once an ulcer, always an ulcer." It is more than likely that during the past twenty-five years he had had difficulties with his digestion which he did not complain about. In fact, it may have been these unstated difficulties that impelled him to violate the restrictions of the diabetic diet. As a result, he suffered from attacks which fit the description of hypoglycemia; in a diabetic this implies relative hyperinsulinism, that is, relative to the level necessary for carbohydrate metabolism. Hyperinsulinism increases gastric acidity and would aggravate a peptic ulcer. In addition, the peripheral vascular complications of his poorly managed diabetes led to a certain degree of chronic invalidism, which may have led to a degree of anxiety that could also have abetted recurrence of his ulcer problem. The history points to the probability of either a chronic or recurrent ulcer despite the patient's denial of gastric symptoms during the twenty-five years preceding this admission.

The physical examination findings are not very helpful. The fact that the patient appeared well nourished does not affect the possibility that he had a chronic ulcer in his stomach nor does it rule out a gastric cancer that is not far advanced. The slightest degree of epigastric tenderness is consistent with either possibility. The absence of an epigastric mass merely rules out the presence of a large bulky cancer, but an ulcer or a small or medium-sized cancer cannot be ruled out.

Certain items in the laboratory data are of interest. The mild anemia and guaiac-positive stools corroborate each other and point to an ulcerating lesion in the upper gastrointestinal tract, but they furnish no clue as to its nature. Much to my surprise the patient had achlorhydria, but the test for gastric hydrochloride acid was performed only once. The absence of free hydrochloric acid points most strongly to the presence of a gastric malignancy; one is not likely to find a benign peptic ulcer in the absence of free acid. The slight elevation of alkaline phosphatase might signify that such a lesion had already metastasized to the liver.

The patient's course in the hospital offers little help. His diabetes was not troublesome and was easily controlled. The absence of excessive vomiting merely indicates that pyloric obstruction was not present. It is apparent that the principal aid to the diagnosis must come from the x-ray findings of the stomach.

Before asking the radiologist to interpret these films, I should like to comment on a few features as they appear to me. Please do not feel that I am presumptuous in presenting my impressions. A general surgeon must have some basic knowledge of roentgen diagnosis just as he must have an understanding of gross pathology. The first film shows a large, irregular defect in the prepyloric area, and the barium has different densities in two areas. The total configuration makes one highly suspicious that the lesion is malignant (Fig. 1). The next two films were taken in the prone and upright positions; in these we observe that the lesion is fixed at the level of the third lumbar space, indicating that the organ does not move with gravity. One can infer that the stomach is adherent to an adjacent organ, most likely the pancreas. Another film shows a large penetrating ulceration with a fuzzy collection of barium behind it; this may be a small area of perforation that has been walled off. I think I see the suggestion of a fluid level in the area which I construe as the perforation. In this film there is a well-preserved rugal pattern, and the impression is more consistent with a large benign ulcer which has penetrated into the area of the head of the pancreas and the lesser omental bursa. The remaining film shows that the rugal folds in the area are large, even exaggerated, and that there is a pressure defect in the upper part of the duodenum; this film suggests the possibility of a lymphoma of the stomach (Fig. 2). I will now ask Dr. Moynahan for his expert opinion.

Joseph M. Moynahan, M.D.: As Dr. Bukanz has pointed out, there is a large, irregular filling defect in the gastric antrum (Fig. 1). An ulcerative process is present on the lesser curvature of the antrum. On fluoroscopy the walls of the antrum were rigid and no peristalsis through this region was observed. The defect noted in the proximal duodenal bulb appears to represent an extrinsic pressure defect, presumably secondary to a mass in the adjoining antrum. Carcinoma of the stomach does not usually invade the duodenum; on the other hand, lymphosarcoma frequently does. These findings are typical for a large, ulcerating, fungating neoplasm of the gastric antrum. The possibility of lymphosarcoma cannot be excluded, but the extreme rigidity of the walls is against this diagnosis.

Despite the voluminous literature, there are relatively few major points in the differential diagnosis between benign and malignant ulcerations of the stomach. No single observation can be relied on in itself so that the extent and congruity of the supporting evidence are criteria in establishing the diagnosis. Benign ulcers tend to be deep in relation to width, while malignant ulcerations tend to be relatively flat and shallow. Benign ulcers tend to extend beyond the confines of the gastric wall, while malignant ulcers, since they are frequently ulcerations within an intragastric mass, tend to be at least partially within the confines of the stomach. The mucosal folds tend to radiate to the base of a benign ulcer; in a malignant ulcer the folds are frequently destroyed by the cancer before they reach the ulcerated area. The gastric wall adjacent to a benign ulcer is usually flexible and peristalsis passes through the region normally. With a malignant ulcer, however, the wall adjacent to the ulcer is usually infiltrated and the walls are rigid; peristalsis is absent or abnormal.

One of the most important criteria is the therapeutic test. This should be done on every patient who presents a benign ulcer radiographically, since a malignant ulcer can never be completely excluded on the basis of initial study. If an ulcer heals completely or almost completely in three to four weeks following a trial of strict medical management (optimally in the hospital) and if, on healing, the walls in the area are flexible and show normal peristalsis, the ulcer can be reasonably considered to be benign. A therapeutic test was not done in the case under discussion since the lesion presented malignant characteristics radiographically.

Dr. Bukanz: The differential diagnosis rests between two choices: (1) a chronic peptic ulcer of the antrum, recurrent, with penetration and possibly localized perforation and (2) a pancreatic tumor, the non-insulin-producing islet cell type, which has been known to cause rapidly extensive ulceration of the stomach. The possibility of a gastric ulcer producing pyloric obstruction can be discarded because of the lack of excessive vomiting and the x-ray evidence. A hormonally inactive pancreatic islet cell neoplasm cannot be excluded, but an insulin-secreting neoplasm of this cell can be excluded because hyperinsulinism causes an increase in gastric acidity and this patient had achlorhydria. However, there is no positive evidence for an inert nisidioblastoma, and I shall dismiss it. This leaves us where we began: gastric ulcer vs. gastric cancer.

I cannot make a diagnosis of a benign peptic ulcer in the presence of achlorhydria even though the test was performed only once. The roentgenograms supply more evidence for a malignant lesion than for a benign one. The question now to be decided is the type of malignancy.

Lymphosarcoma of the stomach is rare. A report from the Lahey Clinic, Boston, on 2,014 gastric neoplasms treated over a twenty-seven-year period informs us that 96 per cent of the cases were carcinoma, 3 per cent lymphosarcoma, and 1 per cent other malignancies.[1] These findings can be compared to those in a recent report by Friedman[2] on 2,854 gastric neoplasms seen at Mount Sinai Hospital, New York City, during a twenty-year period. In this series 3.4 per cent of the cases were lymphosarcoma, of which 42 per cent were ulcerated lesions; the other neoplasms were nodular, polypoid, or a combination of the two. It is interesting to observe that 50 per cent of the lymphosarcomas had a high gastric acidity.

There are no specific x-ray findings for lymphosarcoma of the stomach. The diagnosis can be suspected when the mucosal pattern is distorted by large, prominent folds suggesting polypoid masses with occasional areas of ulceration, and there are x-ray films of this patient which show this pattern. Although I am betting against the odds when I make this diagnosis, I do so on the basis of three pertinent facts: (1) achlorhydria, (2) the x-ray picture, and (3) the two-year history of epigastric symptoms. The achlorhydria prevents me from making a diagnosis of a benign lesion, and I doubt whether an ordinary gastric malignancy would be presented at this conference.

Michael S. Bruno, M.D.: What was the preoperative impression?

Peter W. Stone, M.D.: Prior to exploration we were certain that the patient had a carcinoma of the stomach. This conclusion was based on the history, which was relatively vague and included a nonspecific ulcer, and on the radiographic observations, which appeared unequivocally to demonstrate a neoplasm.

The pertinent findings at operation included a mass in the pyloric region of the stomach and a large number of enlarged lymph nodes in the gastrocolic ligament, around the head of the pancreas, and along the course of the left gastric artery and celiac axis. There was no evidence of direct extension of the mass into the adjacent structures (pancreas, duodenum, or colon), and there were no evident metastases in the liver.

In view of the diffuse lymphadenopathy, it was felt that the surgical procedure could only be palliative; accordingly, a liberal subtotal gastrectomy was done. During the removal of the pylorus and first portion of the duodenum the transsected tissues in the region of the antral mass resembled cicatricial rather than neoplastic tissue. A definite plane of cleavage was encountered between the posterior antral and duodenal walls and the head of the pancreas, and there was no direct extension of the mass into the head of the pancreas. In view of these observations, I was no longer certain that this was a carcinoma but felt hopeful that the lesion was a peptic ulcer. Before closing the abdomen, three large lymph nodes situated at the base of the left gastric artery were also removed.

The postoperative course was uncomplicated, and the patient was discharged from the hospital two weeks later.

Diagnosis

Clinical.—*Carcinoma of stomach.*

Dr. Bukanz.—*Lymphosarcoma of stomach.*

Anatomic.—*Peptic ulcer, stomach, prepyloric.*

Pathologic Report

William B. Ober, M.D.: At operation approximately one half to two thirds of the stomach was removed along with a generous portion of node-bearing omentum. The antrum of the stomach was occupied by a large ulcer, 8 by 6 cm., which seemed to have its center on the lesser curvature but which extended along the anterior and posterior aspects of the antrum. In fact, at the level of the ulcer the only intact mucosa was along the greater curvature, forming a strip about 4 cm. in width. Otherwise, the ulcer was flat and did not have sharply punched-out margins; its edges were raised and slightly rolled. The tissue at the base of the ulcer was stony hard and incompressible. The gross appearance of the lesion suggested a localized area of infiltrative carcinoma of the so-called linitis plastica type with extensive desmoplastic reaction. This impression was reinforced by the presence of a number of very hard lymph nodes in the greater and lesser omentum, some about 1.5 cm. in greatest diameter.

No further surgical extirpation was possible; it was felt that if the lesion were carcinoma, the procedure was palliative; if a benign ulcer, definitive. A large number of sections were taken of the ulcer and the lymph nodes. Despite the gross impression, there was no evidence of carcinoma on microscopic examination, much to our gratification and surprise. This was the largest and most indurated peptic ulcer I have ever seen. It is not surprising that peristaltic waves did not pass through the fibrotic base. Although achlorhydria is a useful finding in distinguishing malignant from benign ulcers, I think that the response of the gastric acid to histamine should have been assayed.

Dr. Bruno: Results of tests for the secretory function of the stomach can often delude the clinician. There is such marked variability in the concentration of acid and pepsin in gastric juice that a single gastric analysis or even a series done on successive days may yield results that are confusing, even misleading. The greatest degree of variability occurs in labile, hyperreactive individuals who are easily affected by environmental changes. The stomach seems to concentrate a fairly constant amount of hydrochloric acid at all ages, but the proportion that is neutralized tends to increase with age, due to increasing production of neutralizing soluble mucus. The importance of soluble alkaline mucus and its effect on the total titratable acid cannot be overemphasized if one is to interpret accurately the results of a gastric analysis.

It is also important to select the proper test. The Ewald and Rehfuss tests are not reliable unless secretions are collected for a period of at least two hours. When these tests yield no free acid or only a few units of combined acid, a histamine test should be performed in every instance. Although histamine is considered the most potent stimulant for the acid-producing parietal cells, biologic and pathologic variations in responsiveness are possible. The presence of hydrochloric acid in gastric secretions following histamine stimulation does not exclude a carcinoma, nor should achlorhydria rule out the possibility of a benign peptic ulcer.

This is especially true of gastric ulcers, particularly when they are large and have obviously replaced considerable gastric mucosa by granulation tissue and cicatrization. This was the precise situation in the present case; there was practically no visible remaining antral mucosa, and the portion which was present was severely inflamed.

There are other important factors to be considered in the interpretation of the results of gastric analysis. If during the procedure the tube is placed too low in the stomach (close to or within the pyloric canal), especially when regurgitation of duodenal contents is taking place, strongly alkaline fluid may be admixed with gastric juice, and the obtained values will be artefactitiously low. Also, gastric juice should be titrated immediately after each aliquot is aspirated. One should not perform the titration on all samples at the conclusion of the procedure for the results will be inaccurate if the several fractions are allowed to stand for variable intervals. Likewise, any delay in transporting specimens to the laboratory and in performing the titration once the specimen has reached the laboratory is likely to produce falsely lowered values.

Soluble mucus is strongly alkaline, and if the specimen is allowed to stand, rapid loss of free acid occurs. Since the amount of soluble mucus is proportionate to the degree of irritation and inflammation, in conditions in which gastritis is an important feature, such as peptic ulcer, it is extremely important to titrate the acid immediately after the aspiration of each fraction. For this reason many clinicians prefer that the entire procedure be carried out at the bedside or, facilities permitting, the patient be brought to the laboratory and the procedure done there.

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Postoperative Oliguria

Following the cessation of anesthetic administration, certain medical emergencies may occur to patients in the recovery room. Since the recovery room has become one of the units in the operating suite, such complications will be presented in forthcoming Clinical Anesthesia Conferences. In general, these complications involve derangements of various systemic functions. The following case report, presented by Salvatore Capone, M.D., illustrates some problems in diagnosis and management of postoperative oliguria.

Case Report

A sixty-five-year-old man was brought to the hospital in severe distress. A diagnosis of mesenteric thrombosis was made and immediate emergency surgical intervention was decided on.

The presenting symptoms included a history of severe constipation without bowel movements during two weeks prior to admission to the hospital and sudden severe abdominal pain with distention and vomiting two hours before admission.

Past history revealed that this man had been treated for arterial hypertension for several years. Three years prior to admission he had suffered congestive heart failure and had been treated with digoxin. He was still on a daily maintenance dose of digoxin. This man also was troubled by an angina pectoris syndrome which responded well to nitroglycerin. Other cardiac complications included atrial fibrillation and myocardial infarction. He also had Buerger's disease for which a right lumbar sympathectomy had been performed and, subsequently, a right below-knee amputation.

The preoperative status of this patient was poor. He was awake and coopèrative but he was cyanotic, dyspneic, and appeared to be dehydrated. His respirations were 40 per minute. His

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Discussed at a conference held at Bellevue Hospital, New York City, January 4, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

pulse rate was 100 per minute, and his arterial blood pressure was 110 mm. Hg systolic and 70 diastolic. An emergency hemoglobin was reported to be 14 Gm. per 100 cc. of blood. No urine could be obtained. An electrocardiogram revealed a myocardial infarction of unknown age. The patient's physical status was classified as 7. For preanesthetic medication this patient was given 0.4 mg. of scopolamine and this manifested a good drying effect.

Anesthesia consisted of an awake orotracheal intubation with a number 36 cuffed tube following pharyngeal spray and transtracheal injection of 5 per cent Cyclaine hydrochloride solution for a total of $2^1/_2$ cc. Cyclopropane and oxygen were administered then in a closed-circle system with carbon dioxide absorption.

Surgery consisted of the removal of 3 feet of gangrenous bowel involving the terminal ileum and the ascending colon followed by ileocolic anastomosis. Blood loss was minimal and the patient's circulatory status remained stable. The duration of surgery was one hour and forty minutes; the duration of anesthesia was two hours. During this time the patient was given 500 cc. of 5 per cent dextrose in water by intravenous infusion.

On arrival in the recovery room at 2:00 A.M. the patient was conscious and well oriented. He was fairly comfortable and the color of his skin and mucous membranes was good. His arterial blood pressure which was measured by palpation of a radial artery following decompression of an inflated manometric cuff wrapped around an arm was found to be 96 mm. Hg systolic. The pulse rate was 96 per minute and the respiratory rate was 38 per minute. Administration of a vasopressor to raise the patient's blood pressure to a more "normal" level was considered but deferred for the time being. Between 2:00 A.M. and 8:00 A.M., the patient's arterial blood pressure varied slightly between 100 and 110 mm. Hg systolic. The pulse rate varied between 90 and 70 per minute, and the respiratory rate was 30 per minute. During the ten hours from the start of the operation, the patient received 1,200 cc. of 5 per cent dextrose in water by intravenous drip. During this period the urinary output through an indwelling catheter was 100 cc. The specific gravity of this urine was 1,020. Nasogastric suction through a Levin tube had yielded 300 cc. of fluid. It was suggested that metaraminol (Aramine) be administered to the patient in an effort to elevate further his arterial blood pressure. Accordingly, at 11:45 A.M., 5 mg. of metaraminol were injected intramuscularly. This resulted in a tachycardia to 130 per minute but only a slight elevation in blood pressure to 113/60. An hour later a similar dose of metaraminol again was injected intramuscularly without significant change in the pulse or blood pressure. Urinary output during the last two hours was only 10 cc. per hour. During the next four hours, metaraminol was administered by single intramuscular injections, but there was no improvement in either the blood pressure or the urinary output, the latter staying at 10 cc. per hour. At 5:00 P.M. an intravenous drip of metaraminol in a 0.2 per cent concentration was started, but during the next three hours no rise in the patient's arterial blood pressure nor in his urinary output took place. At this time, which was twenty hours since the start of the operation, the patient had received intravenously 2,800 cc. of fluid. Nasogastric suction had removed 600 cc. of fluid and the urinary output had been 202 cc. The patient now was uncomfortable. He was pale and cyanotic. Oxygen administration by nasal catheter was started. Blood and urine laboratory studies now revealed a hemoglobin of 16.5 Gm. per 100 cc. of blood. The blood urea nitrogen was 60 mg. per 100 cc. Blood electrolytes were 149 mEq. per L. for sodium, 3.8 mEq. per L. for potassium, 109 mEq. per L. for chlorides; and the carbon dioxide combining power was 28 mEq. per L. It was decided then to administer 100 mg. of Solu-Cortef by intravenous drip, but this too caused no change in blood pressure or urinary output. The quantity of intravenous fluid administration then was increased so that between 9:00 P.M. and 7:00 A.M. the patient received 2,000 cc. By the end of this time the urinary output was 20 cc. per hour, the blood pressure was 120/80, the pulse rate was 80 per minute, and the respiratory rate was 22 per minute. During the next twelve hours an additional 1,800 cc. of fluid were given intravenously. The urinary output now increased to 31 cc. per hour. The following day urinary output was 40 cc. per hour, and the patient's hemoglobin content in the blood was 8.5 Gm. per 100 cc.

Comment

This case presented a number of considerations bearing on the choice of anesthesia, fluid therapy, and drug therapy which are of interest in the anesthesiologic management of such a patient.

Problems concerning the choice of anesthesia consisted of a poor-risk patient with cardiovascular disease and intestinal obstruction with vomiting and abdominal distention who required immediate surgery without time to secure important laboratory reports. We had to bear in mind the possibility of aspiration of vomitus; the production of cardiac failure, of shock, and of other thrombotic formations; and the production of acute anuria. The technic selected and used in this case was good but it was fraught with many dangers which needed to be guarded against.

When laryngeal reflexes are depressed during general anesthesia, the insertion of a cuffed endotracheal tube in a conscious patient after adequate topical anesthesia of the pharynx and larynx will protect against the danger of aspiration of vomitus. However, the danger of such aspiration remains possible constantly before the cuffed endotracheal tube is placed in position. Patients in critical condition have been known to aspirate vomitus even while conscious and without topical anesthesia of the larynx. When topical anesthesia is used so that an endotracheal tube may be tolerated while the patient is still conscious, the depressed laryngeal reflexes thus produced may permit aspiration of vomitus prior to the insertion of an endotracheal tube. To avoid such a complication some anesthesiologists prefer to avoid topical anesthesia and to perform endotracheal intubation swiftly after a rapid induction of general anesthesia. Others prefer to insert a cuffed esophageal tube and to inflate the cuff prior to induction of general anesthesia. All methods are acceptable, as long as endotracheal intubation can be accomplished without aspiration of vomitus.

In cases similar to the one presented here, certain anesthesiologists prefer some form of conduction anesthesia such as spinal or epidural analgesia. Such technics give immediate pain relief, produce vasodilatation in the anesthetized area, diminish pulmonary vascular congestion, and do not interfere with kidney function. However, success with such methods depends on the patient's ability to effect satisfactory compensatory circulatory adjustments following production of vasodilatation in a large part of the body; this condition may not be fulfilled in some elderly, debilitated, and arteriosclerotic individuals.

Concerning the main problem of interest, that of postoperative oliguria, one should bear in mind that changes in kidney function occur when the state of general anesthesia is produced by administration of cyclopropane, ether, or thiopental sodium combined with nitrous oxide.[1] The altered effects are characterized by an oliguria with retention of sodium and chloride. Further studies of renal function during anesthesia have shown that renal hemodynamic changes occur.[2,3] These have been interpreted as being caused by intrarenal vasoconstriction of both the afferent and efferent arterioles because of the concomitant reduction of from 20 to 30 per cent in glomerular filtration and a reduction of from 25 to 35 per cent in renal plasma flow. The 50 per cent decrease of urine flow during anesthesia is presumed to be due to decreases in glomerular filtration and renal plasma flow, as well as to an increased reabsorption of water and electrolytes.

In the case presented here the oliguria was more intense and more prolonged than that which is usually observed. Under the emergency conditions which prevailed and the obvious pathologic areas which could be observed, the intense oliguria could have been produced by dehydration with severe depletion of water and electrolytes, by the arterial hypotension of myocardial infarction, or by concomitant thrombosis of renal vessels, as was observed in a previous Clinical Anesthesia Conference.[4] Assistance by more laboratory aids would have been desirable. The figure of 14 Gm. of hemoglobin per 100 cc. of blood just prior to operation was changed to 16.5 Gm. on the first postoperative day. Since the patient had not received any blood transfusion, this would indicate a hemoconcentration. Simultaneous hematocrit determinations would have been helpful in confirming or dissociating this impression. Blood volume determinations would have been of even greater value. The postoperative blood urea nitrogen of 60 mg. per 100 cc. was increased significantly above the normal rate. This tended to confirm the diagnosis of dehydration so as to prompt an increase in fluid therapy despite the knowledge that the patient had hypertensive cardiovascular disease with an easy tendency to develop congestive heart failure. The electrolyte findings in the blood further corroborated this impression by indicating the increased values for sodium and chloride.

Treatment of acute renal failure with all its attendant metabolic disturbances should be left to an internist who specializes in that field. However, the anesthesiologist should know some of the fundamentals regarding its etiologic conditions and treatment. Most important of these is determining the underlying defect rather than administering symptomatic treatment. Treatment of arterial hypotension by means of a vasopressor, as was attempted in this case, may be effective in some cases, but it certainly was not effective in this one. Corticosteroids may be helpful to prevent an inflammatory response in case of renal edema; but in patients with cardiovascular disease one should proceed cautiously, since these steroids cause sodium and water retention. In cases of edema and hypertension, diuretics such as chlorothiazide are effective, but they may cause serious disturbances in potassium metabolism. Serial daily blood chemistry determinations are most useful in evaluating progress and in dictating fluid and electrolyte replacement therapy. One recommended treatment is the slow, intravenous administration of 50 per cent dextrose. This not only may produce diuresis, but also it may cause protein-sparing effects. Fluid and electrolyte therapy should be attempted even in patients with cardiac disease who are prone to congestive failure, but this should be done cautiously with frequent careful lung examinations.

In the case reported here, intravenous fluid therapy was curtailed at first because it was feared that congestive heart failure might develop. However, it was not until intravenous fluid therapy was increased that urinary flow increased. This resulted in a reduction of the patient's hemoglobin content in the blood to 8.5 Gm. per 100 cc., but it probably represented a truer guide than when he had 16.5 Gm. of hemoglobin during his period of hemoconcentration and dehydration.

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(*Number eighty-four in a series of Clinical Anesthesia Conferences*)

To preserve a friend, three things are necessary: to honor him present, praise him absent, and assist him in his necessities.—ITALIAN PROVERB

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Pine Oil and Other Ingestions

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Prochlorperazine	40 years	Female

The patient ingested approximately 314 to 330 mg. of prochlorperazine within a period of eight hours for the relief of a headache. She developed a typical parkinsonian syndrome within five hours after ingestion. A physician was called, and he treated the patient with phenobarbital and caffein and sodium benzoate. The physician called the manufacturer of prochlorperazine, who advised the physician to observe the patient for laryngeal spasms and to keep the airway clear. The physician was informed that caffein and sodium benzoate therapy yields better results in children than in adults. The patient's stomach was lavaged until clear fluid was returned and she was hospitalized for three days, at the end of which time recovery was complete.

The Center is receiving an increasing number of reports of prochlorperazine ingestions associated with Parkinson's syndrome. It is reported in the latest literature issued by the manufacturer of prochlorperazine that, "In rare instances transitory extrapyramidal symptoms have been encountered." In the cases reported to this Center such symptoms were encountered in nearly every instance. It is possible, however, that only the most severe cases are reported. One of the companies which manufactures a similar product emphasizes the fact that extrapyramidal reactions are really an essential property of the drug rather than a side-reaction!

INCIDENT 2

Toxic Agent	*Age*	*Sex*
King Pine	17 years	Female

After quarreling with her husband the patient took one half of a cup of a disinfectant-deodorant preparation containing 80 per cent pine oil. The presenting symptoms were nausea and vomiting. The patient was taken to the hospital emergency room one-half hour following ingestion, where her stomach was lavaged with saline and milk. She was alert throughout, and after four days of hospitalization, which included psychiatric observation, she made a complete recovery.

INCIDENTS 3–8

Other Pine Oil Incidents

Six additional pine oil ingestions were reported:

Age (years)	*Sex*	*Dose (ounces)*	*Duration of Hospital Stay*
1¹/₄	F	2	Three hours
1¹/₂	M	4	Four days
1¹/₂	F	..	Several hours
3¹/₂	M	2	One and one-half days
24	F	..	Several hours
34	M	..	Several hours

Of these patients, 3 were white, 1 was Puerto Rican, and 2 were Negro. Nausea and vomiting were present in all but 2 cases. The only other manifestation was marked drowsiness in the three-and-a-half-year-old child and swelling of both eyelids in the male year-and-a-half-year-old infant.

Gastric lavage was done in all instances. Four patients were treated in the emergency room, and two were hospitalized for one and one-half and four days. The outcome in all cases was favorable and without any reported complications or sequelae.

This type of product is one of the most common household items and is one of the categories frequently reported to the Poison Control Center. Because of the favorable outcomes in the series reported to the Center, we were somewhat surprised to read in the October, 1959, issue of the *Journal of Pediatrics* Tauscher and Polich's report on a case of acute pine oil poisoning caused by an enema, given to a four-year-old white child because of nausea, vomiting, and anorexia. The enema contained a proprietary disinfectant (1 tablespoon to 1 quart of water) which contains 49 per cent pine oil. Pine oil is a natural product which consists essentially of terpene. It is used as a solvent, disinfectant, and deodorant. Since this patient did not respond to supportive treatment, an exchange transfusion was performed. This was followed by rapid improvement and complete recovery. In the light of this experience, the authors suggest further study of this method of therapy for terpene and other volatile-oil poisonings. It is assumed that the absorption from the stomach should be at least equal to that rectally. The oral ingestions in our incidents were full-strength whereas this enema was quite dilute. One, therefore, is puzzled by the alarming clinical course in this case. In the light of our experience and in order to prevent unnecessary overtreatment, we feel that it is important to mention that most pine oil ingestions are not of such a serious nature.

INCIDENT 9

Toxic Agent	*Sex*	*Age*
Chlorothiazide	Female	26 years

The patient took the medication for relief of "nervousness." Since she obtained no relief promptly, she continued taking medication until 15 tablets were ingested. She became drowsy and was taken to the hospital, where her stomach was lavaged with isotonic saline. The only symptom on admission was lethargy, which cleared soon after the lavage. Since chlorothiazide is becoming a very widely used drug, it may be reassuring to report that no sequelae occurred in this case despite such an overdosage. In fact, no serious poisonings involving chlorothiazide have thus far been reported to the Center.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Meperidine and Cortisone	3 years	Male

The mother of the patient kept 100 meperidine tablets locked in a bedroom cabinet drawer. The patient was quite ingenious, obtaining the medication by removing the drawer above the locked one. He ingested some of the tablets. The family physician was called; since there were no symptoms, no treatment was advised.

This incident is related because of its mode of occurrence rather than because of the severity of the poisoning. It illustrates that locking one drawer and leaving the others unlocked will not ensure safety. The ability of children to circumvent the precautions instituted by their parents is a continual source of revelation to us.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Quinacrine	Adult	Male

A physician inquired of the Center about the nature of quinacrine. The skin and sclera of a patient in his office, who was employed in the packaging of quinacrine, were pronouncedly yellow, and the doctor was concerned about jaundice. The Center informed the physician that this might be merely the result of a superficial dyeing, due to the tinctorial properties of the drug, and probably was not a manifestation of jaundice. The physician subsequently reported to the Center that clinical and laboratory tests confirmed the absence of jaundice. However, the patient was being referred to an ophthalmologist for investigation of any possible eye pathology.

The occurrence of jaundice has resulted in frequent calls to the Center whereby the physician seeks incriminating information on the chemicals in the patients environment.

(*Number fifty in a series of Briefs on Accidental Chemical Poisonings*)

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CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

Congenital Cardiac Defects

JERE W. LORD, JR., M.D., NEW YORK CITY

(*From the Department of Surgery, New York University Post-Graduate Medical School*)

IN LIGHT of the far-reaching advances in the anatomic and physiologic diagnosis of defects within and about the heart it is now important for the physician to have a high index of suspicion regarding the possibility of a congenital cardiac defect in the examination of every child and young adult. The obvious reason for this is found in the fact that surgical technics have advanced to the extent that a curative procedure is presently available for the majority of such defects.

Symptoms and signs which point to the need for careful evaluation of the heart include retardation of the anticipated growth rate, cyanosis, intermittent or persistent respiratory infections, syncopal attacks, cold feet and legs and occasional leg aches, dyspnea on exertion, squatting, easy fatigability, a murmur over the heart, unusual or abnormal heart sounds, chest pain especially with exercise, and diminished or absent femoral and pedal pulses.

In many instances a careful physical examination supplemented by electrocardiographic, fluoroscopic, and radiologic examinations of the heart will be sufficient to differentiate between a functional condition and a congenital pathologic cardiac defect. If the latter is suspected then the more elaborate diagnostic studies of angiocardiography and right and left cardiac catherization may be indicated. These studies are relatively safe in experienced hands and are often a necessary prelude to surgical correction of the defect.

A congenital defect such as patent ductus arteriosus carries an operative risk of less than 1 per cent, while correction of coarctation of the aorta is successful in approximately 98 per cent of uncomplicated cases under the age of twenty years.

With the remarkable advent of hypothermia, of the pump oxygenator, and of combinations of the two technics, surgical correction of such lesions as pulmonic stenosis and atrial septal and ventricular septal defects may be performed with hospital mortality rates of under 5 per cent in patients whose lesions are not complicated by a marked rise in pulmonary arterial and right ventricular pressure. Aortic stenosis responds to open cardiac repair in the vast majority of cases. Patients with the diagnosis of tetralogy of Fallot present a problem to the pediatric cardiologist at the present time because in some a shunting procedure of the Blalock-Taussig or Potts types may be more effective, whereas a successful and complete repair on the pump oxygenator is of considerably greater ultimate benefit. Unfortunately mortality figures for the latter procedure are still uncomfortably high in the cyanotic child.

In summary, a useful approach for the general physician is to have a high index of suspicion regarding the possibility of congenital cardiac defects and to refer to the cardiologist or to the pediatrician specializing in cardiology patients who may have organic congenital cardiac defects. If the cardiologist believes further information is necessary following the application of electrocardiography and radiologic studies, then these more elaborate technics should be performed. Finally, if an operative procedure is advised, results at the present time suggest that an optimistic prognosis for a successful outcome can be extended to the patient's family.

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CASE REPORT

Trichobezoar

WILLIAM C. T. GAYNOR, M.D., F.A.C.S., AND WILLIAM C. L. DIEFENBACH, M.D.,
SOUTHAMPTON, NEW YORK

(*From the Medical and Surgical Services of the Southampton Hospital Association*)

FOREIGN bodies of almost every description that are capable of passing via the esophagus have been found in the stomach. When a concretion composed of hair is formed it is called a trichobezoar. This type of foreign body is most interesting because of its great size and tendency to cause symptoms mimicking serious organic disease.

Trichobezoars, though rarely seen, have been recognized since Baudamant[1] reported the first case in 1779. In 1915 Matas[2] reported 73 cases collected from the literature, and in 1938 DeBakey and Ochsner[3] reviewed the literature and presented a case bringing the total number reported to 172 cases. Mullen[4] reviewed the literature through 1954 and added another case to bring the reported number to 212. Since that time sporadic reports of at least 18 cases have appeared in the literature bringing the number to 230.[5–19]

Case Report

A twelve-and-a-half-year-old white girl, was admitted to the Southampton Hospital Association on April 19, 1958. The presenting complaint was intermittent attacks of upper abdominal pain associated with nausea and vomiting. These symptoms subsided spontaneously. Her appetite had been poor for some time. The child's parents mentioned that when she was about three years old she would occasionally put strands of hair in her mouth. More recently the parents had seen the child pull strands of hair from her head and play with them with her fingers and also put hair into her mouth. The child admitted chewing hair when "nervous."

Her birth and development were normal and she had adjusted well in early childhood and in school. Physical examination revealed a thin, muscular child $54^1/_2$ inches tall and weighing $62^1/_2$ pounds. No abnormality was revealed by the examination except for a slightly tender, freely movable mass the size of an orange in the epigastrium. The mass moved with respiration and at times was not palpable.

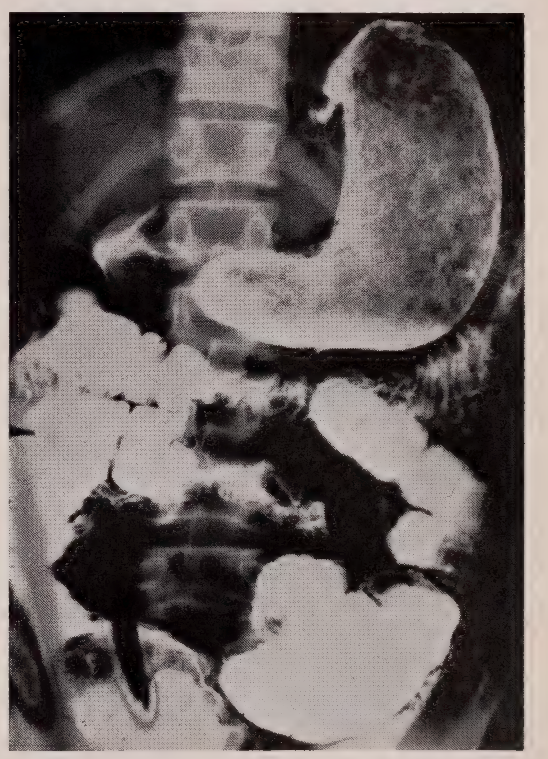

FIG. 1. Flat x-ray plate of abdomen after the administration of barium giving roentgenologic evidence of a trichobezoar filling the lumen of the stomach.

The results of routine laboratory studies and a

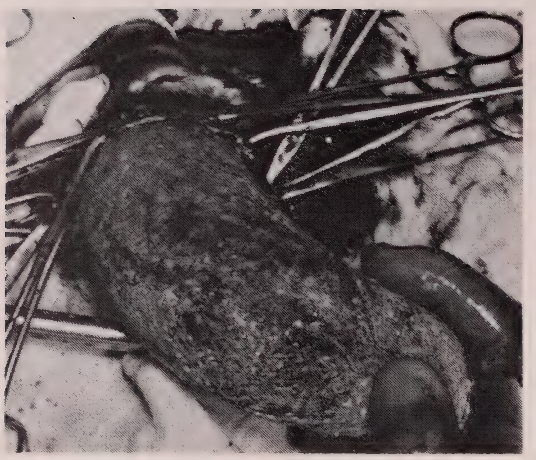

FIG. 2. Opening in the gastric wall with the massive trichobezoar partially removed.

roentgenogram of the thorax were normal. An x-ray examination of the stomach with barium revealed evidence of a large trichobezoar which formed a cast that filled the entire stomach (Fig. 1).

On April 21 a gastrostomy was performed and the hairball, which was loose in the stomach, was removed easily (Figs. 2 and 3). There were no gastric ulcerations and there were no adhesions with the gastric wall. Passage of contents around the mass was not obstructed. Another trichobezoar was palpated in the transverse colon. This was passed along the descending colon, sigmoid, and rectum where it was removed rectally without incising the colon. The patient's postoperative course was uneventful and she was discharged on April 29. The pathologist reported that the trichobezoar measured 19 by $10^1/_2$ by 6 cm. and weighed 540 Gm. It was extremely firm and had formed a cast of the entire stomach. The smaller specimen measured 8 by $2^1/_2$ cm. and weighed 90 Gm. A follow-up examination one year later showed that the child's condition was entirely normal. The incision had healed well, she had no gastrointestinal complaints, and she had gained 10 pounds in weight.

Comment

The symptoms of a trichobezoar will vary depending on the size of the foreign body. Early symptoms are vague gastrointestinal complaints such as anorexia, dyspepsia, and loss of weight. Later, pain with or without nausea and vomiting may occur. A most important clue, though often not elicited, is trichophagy. Occasionally the mass, which moves with respiration, is palpable. The only laboratory study of value is x-ray examination of the stomach with barium. The reason why trichobezoars develop is not entirely clear since all persons who swallow hair do not develop hairballs. The patients are usually female and recurrences do occur.

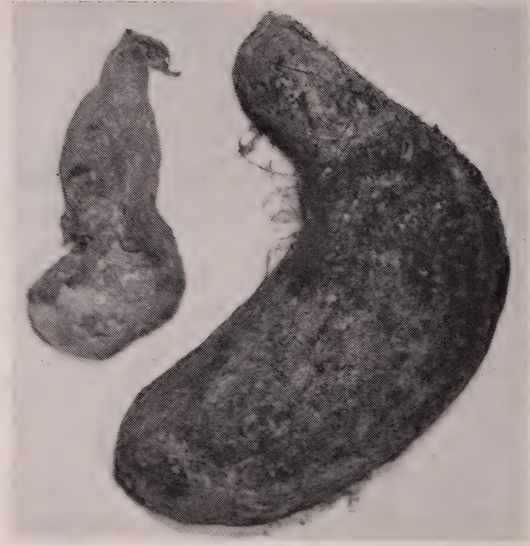

FIG. 3. The larger trichobezoar (*right*), removed from the stomach, measured 19 by $10^1/_2$ by 6 cm. and weighed 540 Gm. The smaller trichobezoar (*left*), removed rectally from the colon, measured 8 by $2^1/_2$ cm. and weighed 90 Gm.

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Medical Society of the State of New York

154th Annual Convention

"HORIZONS OF CLINICAL MEDICINE"

May 9 to 13, 1960

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SPECIAL ARTICLES

Foreign Travel: The Physician's Role

GRANVILLE W. LARIMORE, M.D., AND JULIA L. FREITAG, M.D., ALBANY NEW YORK

(From the State of New York Department of Health)

During 1958, 652,253 passports for foreign travel were issued or renewed in the United States, and several tens of thousands of additional passports were still in effect since they were last issued. Since some passports are issued to cover more than one person, it is calculated that approximately 875,000 individuals obtained passport clearance during 1958. If one adds to this figure the persons who traveled abroad on previously issued passports, it is fairly accurate to say that nearly one million Americans journeyed to foreign lands during 1958. The number of individuals traveling abroad during 1959 was expected to increase by from 5 to 10 per cent as compared with 1958.

New York State contributes the greatest numbers of any state to this mass overseas migration. The New York State Department of Commerce estimates that in excess of one quarter of a million New York State residents traveled abroad in 1958. Close to 200,000 of these sojourners made Europe their first, if not sole, destination. In the neighborhood of 85 per cent of New York State residents traveling abroad go to Europe. A little less than 10 per cent go to Mexico, Central, or South America; about 3 per cent each go to the Middle East and Far East.

The Physician as Counselor and Adviser

The private physician is in a unique position to supply advice and counsel to persons planning a trip abroad. By inquiring into the specific places the traveler will visit, he is able not only to see to it that the individual receives immunizations appropriate to his itinerary, but also to offer specific advice as to do's and don't's regarding activities which may have an effect on the traveler's health and well-being. The advice given will depend not only on the country or countries to be visited, but also on the specific locales within a country to which the person plans to go. Thus, the traveler who plans to visit quaint rural villages while traveling abroad should receive typhoid-paratyphoid immunizations and should be warned against the hazards of drinking local water. On the other hand, if the person is going to spend all of his time in large metropolitan areas with safe municipal water supplies, these precautions are less important.

Also, the physician has frequently been acquainted with the traveler over a period of time and is familiar with his medical history and personal habits. The physician is thus well qualified to give specific advice to the would-be traveler as pertains to his particular health problems and modus vivendi.

The Physician and Specific Recommendations

Immunizations (General).—All immunizations administered by the physician should be entered in the appropriate spaces in the International Certificate of Vaccination (January 1957 Revision). Travelers may obtain copies of the certificate from the clerk of the court processing passport applications, from the local or state health department, or from a travel agency. After the immunization entries are made by the physician and his signature is affixed, the certificate must then be authenticated by the stamp or seal of the city, county, or district health department in the area of the physician's practice or by the seal of the state health department, the U.S. Public Health Service, the Defense Department, or one of the yellow fever vaccination centers.

While the specific immunization required or recommended for foreign travel will vary somewhat depending on the itinerary of the traveler, there are several immunizations which with very few exceptions all persons traveling outside the United States should receive.

Smallpox.—A successful smallpox vaccination within three years is required or recommended for virtually all foreign travel. In some cases where it is not required by the country of destination it is required for re-entry into the United States. Canada is the only notable exception to this requirement. Where the individual plans to travel in areas where smallpox is epidemic or chronically present he should have had a successful vaccination within the previous six months.

Smallpox vaccination by multiple pressure is the method of choice. A primary reaction or "take" to smallpox vaccination and a vaccinoid or accelerated reaction reach their maxima between eight and fourteen days and between four and seven days respectively. These two types of reactions always develop a vesicle at the site of inoculation, and in the instance of a primary take the vesicle progresses through the stages of pustulations and scabbing. The vesicle may progress no further in the instance of an accelerated reaction. The so-called immediate reaction is one where the reaction consists of an area of erythema and papule formation and reaches its height in from one to four days without ever producing a vesicle.

This type of reaction was formerly interpreted as indicating a solid immunity to smallpox. It is now known that this is not true since dead impotent vaccine can produce the same reaction. It is now felt that this type of reaction is most frequently due to the use of impotent vaccine or to faulty technic and that to assure one's self that a take has occurred a vesicle should be observed at the vaccination site. In a series of 15 vaccinations showing only an immediate reaction without vesiculation, 7 failed to show any subsequent increase in antibody titer.[1] A primary take is seen most frequently in persons never having been vaccinated previously, but it is not uncommonly observed in individuals vaccinated a number of years before. A vaccinoid or accelerated response is usually seen in persons being revaccinated after a lapse of months or years since the previous vaccination.

Contraindications to smallpox vaccination must be borne in mind by the physician. Obviously, such medical contraindications as the presence of eczema or dermatitis in the individual to be vaccinated may be regarded as an absolute prohibition. Similarly, should a member of the prospective vaccinee's family have a dermatitis or other skin lesion, vaccination should be considered only if the individual to be vaccinated can be separated physically from his household. This separation must be to another residence, with no contact with his family or household for at least ten days following vaccination. Where the physician feels there are other medical contraindications to smallpox vaccination, he must weigh these contraindications against the relative risk of contracting smallpox under which the individual will be placed by his foreign travels. Consideration may be given by the authorities concerned to a physician's written request for exemption to smallpox vaccination where vaccination is medically contraindicated for a stated reason. If an individual can give satisfactory evidence of having had smallpox, smallpox vaccination is not required.

Diphtheria-Tetanus.—A full course of immunization against diphtheria and tetanus is strongly recommended for all travelers. There is now available a combination of diphtheria and tetanus toxoids for adult use. This product contains the standard amount of tetanus toxoid with a greatly reduced amount of diphtheria toxoid as compared with the toxoid preparations for pediatric use. It is used routinely among military recruits and has now had fairly extensive use among civilian groups with satisfactory results. Adult diphtheria-tetanus toxoid does not produce significant reactions in adult recipients. Pediatric diphtheria toxoid should not be used for routine adult immunization because of the risk of reactions. Several pharmaceutical firms produce adult diphtheria-tetanus toxoid preparations, and a primary course of immunization usually consists of two doses of the toxoid administered intramuscularly from four to six weeks apart. A third dose six to twelve months after the second is sometimes recommended. This product is also suitable for booster doses. The specific recommendations of the company whose product is being used should be followed.

Poliomyelitis.—Immunization against poliomyelitis is strongly recommended for all travelers except perhaps the elderly. A complete primary series of poliomyelitis inoculations with Salk vaccine consists of three doses of vaccine, the first two doses at least a month apart and the third dose seven months after the second. If the individual completed his three-dose primary series a year or more before, or has not had a booster dose in a year or more, one dose of poliomyelitis vaccine is indicated.

Typhoid and Paratyphoid.—Travelers to foreign countries should receive typhoid-paratyphoid immunization. An exception may be justified in the case of a person who will visit only large metropolitan areas, will never eat raw fruits or vegetables purchased from "little shops" and will never drink other than municipal water (or no water at all). In general, it is safer to immunize. Typhoid-paratyphoid vaccine contains killed Salmonella typhosa, Salmonella paraytyphi, and Salmonella schottmülleri organisms, the latter two being the organisms responsible for paratyphoid A and paratyphoid B respectively. A course of immunization with this vaccine consists of three injections of 0.5 to 1 ml. subcutaneously at one- to four-week intervals. A booster dose is indicated if more than a year has elapsed since the primary series or last booster dose.

Immunizations (Specific).—Depending on the specific areas of the world to be visited, other immunizations are required or recommended. Thus, immunization against cholera, typhus, yellow fever, and plague may be indicated. Yellow fever vaccine is available only at certain designated centers* since the vaccine cannot be stored for future use after it is once mixed with its diluent, and practicing physicians have infrequent call for it.

It is beyond the scope of this discussion to give detailed information as to the immunization requirements of all the countries of the world. Furthermore, these requirements are not static but change according to the conditions prevailing at the time. Current information regarding specific immunization requirements and recommendations for foreign travel can be obtained from the nearest health department. The booklet *Immunization Information for International Travel* prepared by the Public Health Service[2] is a valuable source of information about specific immunizations for foreign travel.

General Health Considerations.—The traveler's physician is the only one in a position to give specific advice regarding the handling of individual medical problems. In this connection there is merit for persons who are about to engage in a foreign junket (or an extended trip anywhere, as a matter of fact) to have a physical examination and a few routine laboratory tests, such as urinalysis and blood count, performed before leaving, especially for people over forty years of age. Such procedures should be directed toward finding or re-evaluating medical conditions about which the physician can give advice to the patient or institute a program of therapy to be followed while the person is away from home. Thus, hypertensive, cardiac, diabetic, and asthmatic patients and persons with other chronic conditions, newly recognized or previously known, may require some change in their medical management for the period of time during which they will be away from home and separated from the physician who is familiar with their medical history.

The medical status of a given individual may require that the physician make recommendations regarding such items as method of travel, physical activity, and diet. If the individual plans to fly overseas, the altitude at which the flight will be made, the pressure at which the plane is pressurized, and the duration of the flight may have to be considered in certain types of cardiac or pulmonary disease, anemias, diabetes, and in diseases of a hollow viscus. Any medical condition which may be aggravated by a decreased partial pressure of oxygen or the expansion of gases, both of which occur with increased altitude, may have to be assessed in the light of the patient's proposed mode of travel.[3] Similarly, persons even without some compromising cardiopulmonary condition should be advised that physical activity should be restricted until they have become acclimatized if they are visiting in high altitude areas of the world. Individuals vary in their susceptibility to the more rarefied atmospheres of higher altitudes, but at an elevation of somewhere between 5,000 and 10,000 feet most "sea-level" people will begin to note the effect.

Airsickness or seasickness is merely an unpleasant experience for most people. The resultant vomiting and dehydration can be hazardous for a diabetic patient, however. Such persons should be cautioned about the possibilities of this sequence of events and advised to inform any medical adviser tending them under these circumstances of their diabetic status. There are numerous antimotion sickness preparations on the market which may be of help in preventing the unpleasantness of motion sickness.

It is well to remember that overseas travel can be stressful even on vacation trips. The physician in evaluating a prospective traveler should bear in mind that even though one is enjoying himself, complete disruption of eating and sleeping habits, diet, and patterns of activity constitute stress even for the healthiest person. It is possible that on occasion the physician may have to advise an individual against undertaking such a venture or in curtailing his itinerary in the interest of moderation.

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* Yellow fever vaccination centers in New York State are located in Albany, Buffalo, Ithaca, Jamaica, New York City, Idlewild International Airport, La Guardia Airport, Syracuse, and Rochester. Local health departments in the State can supply the addresses of the centers and the clinic hours.

It is important that persons be informed regarding any drug idiosyncrasy which they might have, such as a hypersensitivity to penicillin or horse serum. In some instances it might be advisable for a person to carry a card specifying this. Similarly, it might be well to supply diabetic and epileptic patients for instance, with some identifying tag or card.

Should a person need medical care while traveling in a foreign country, contacting the American Embassy or the local American Consul and requesting them to recommend or send a physician is probably the best procedure to follow. In large metropolitan areas securing capable medical attention is not a serious problem, but in outlying areas judgment should be exercised in selecting someone to recommend a doctor.

Medications and Medical Supplies.—It is the responsibility of the physician to urge that individuals on specific medication have an adequate supply of the required drugs. Several factors must be considered in determining the amount of a given drug that will be an adequate supply. If it is a medication that the person takes regularly on a fixed dosage it is a relatively simple matter to calculate the amount of the drug that will be needed during any period of time. Whether it is advisable for the person to take a sufficient supply of the drug to last him throughout his entire trip will depend on where the individual is going, the nature of the drug, and the individual himself. If the person is traveling to areas of the world where the drugs readily available are comparable to those in the United States, there may be no reason why additional supplies of the drug cannot be secured as needed. Properly and legibly written prescriptions should be supplied to the traveler, but it should be remembered that trade names which may be universally recognized in the United States may be unknown or not available in foreign countries. It is also wise to supply the person with a prescription for those drugs which can be obtained without prescription in the United States since this may not be the case in other areas of the world. All drug stores abroad will not routinely fill prescriptions written by a "foreign" doctor, but in those areas of the world now accustomed to the mass onslaught of American tourists it is not too difficult to find one that will, if the prescription is legible, complete, and signed.

The type of drug required by the individual may also determine how large a supply it is practical to take. If the drug is perishable or requires refrigeration, it may be impossible for any sizable quantity to be kept on hand and the person's supply will have to be replenished periodically during the trip. In this connection it should be remembered that the stability of a drug may differ depending on the climatic factors, especially of temperature and of humidity, to which it is subjected.

The reliability of the individual for whom the drug is prescribed may sometimes have to be considered in deciding the amounts and types of drugs the person should be allowed to have in his possession at any one time. While this is a factor to be considered for any drug, it is perhaps most decisive if one is considering prescribing drugs to be taken along for use only if needed. Such drugs might be for such illnesses as mild gastrointestinal upsets, upper respiratory infections, headaches, and the like. If the person can be depended on to make proper use of such drugs as paregoric or milk of bismuth for a mild diarrheal illness, an antihistaminic agent for a cold, or an analgesic for a headache, he should probably be advised to take a small supply of such preparations along. There may be other drugs that the physician feels a particular individual should take with him for use if needed. In essence, the types and amounts of drugs a person should take with him depend on his medical status and his ability to use the drugs properly.

It is wise for all travelers to carry a small first aid kit, so that such things as bandages and antiseptics are readily available for minor cuts and abrasions.

Summary

Nearly a million United States citizens traveled abroad during 1958 and almost one quarter of these travelers were New York State residents. Practicing physicians are in a unique position to supply advice and counsel to persons planning a trip abroad.

The recommendations made by the physician should depend not only on the proposed itinerary of the prospective traveler but also on the physician's knowledge of his medical status and personal habits. The physician's role goes beyond the mere furnishing of recommended or required immunizations and not infrequently involves him in giving advice on such items as mode of travel, physical activity, drugs and medications to take along, dietary habits, and how to procure medical assistance abroad.

Most trips abroad are undertaken for pleasure and the physician can help to insure that the anticipated enjoyment is realized.

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Malpractice Prophylaxis

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(*Chairman, Malpractice Committee, Nassau County Medical Society*)

BASED on knowledge gained through the analysis of all legal actions brought against members of the Nassau County Medical Society over the past several years, the Malpractice Committee offers the following suggestions to Society members which it is hoped may in some measure deter the institution of actions by dissatisfied patients.

1. **Do not comment unfavorably on another physician's treatment.**—Ill-advised comments about the "other doctor's treatment" are the most common cause of malpractice actions. To gain questionable personal favor with the patient by inferring superior knowledge and ability is both unethical and immature. Should the patient sue the "other doctor" you will very likely be called as a witness.
2. **Use discretion in delegating responsibility to aides.**—Fully one-half the actions surveyed were initiated because of carelessness on the part of the doctor's aide. (*a*) Hot water bottles are not attended to. (*b*) Unrestrained patients may fall out of bed. (*c*) Casts are not carefully and periodically checked, and so forth.
3. **Keep all equipment in good repair.**—The following have been responsible for malpractice actions: (*a*) broken hypodermic needles, (*b*) frayed and brittle catheters, (*c*) uncalibrated roentgen-ray equipment, and (*d*) rickety examining tables and chairs.
4. **Exercise caution in the use of certain drugs.**—Actions have been instituted after reactions to the use of: (*a*) penicillin, (*b*) certain anesthetics, (*c*) cortisone, and (*d*) tranquilizers.
5. **Use discretion in billing.**—(*a*) When the results of therapy have been less than optimum and the patient is dissatisfied, one should submit a bill but avoid the use of undue pressure or collection agencies. (*b*) When a patient has died, proper timing in submitting a bill may attenuate the understandable but hardly excusable hostility which relatives of the deceased occasionally harbor toward the physician. (*c*) A suit for malpractice must be started within two years but you can sue on your bill within six years.
6. **Be frank in discussion of fees.**—Avoid use of the following phrases. (*a*) "Don't worry about the bill." (*b*) "We'll discuss the bill later," and then fail to do so. (*c*) "Blue Shield will cover it," and neglect to indicate additional hidden financial obligations which may befall the patient.
7. **Offer explanations when complications occur.**—(*a*)Do not ignore or attempt to min-

imize complications. (*b*) Be frank in your appraisal of what has occurred. (*c*) Offer treatment to correct the complication. (*d*) Use discretion in charging (or not charging) for treatment of the complication.

8. **Know the personality of the suit-prone patient.**—Characteristics of suit-prone patients have been publicized in the "Blum Report" (see *Medical Economics*, January 5, 1959). Some features listed are as follows: People who sue (*a*) are apt to visit doctors more frequently, (*b*) visit chiropractors more frequently, (*c*) want much personal attention, (*d*) blame doctors rather than themselves for their illnesses, (*e*) have been involved in other lawsuits, and (*f*) are withdrawn and generally immature dependent persons.
9. **Explain all therapy to the patient.**—(*a*) The patient should know of the risks associated with any treatment he is to be given. (*b*) He should be fully informed of what is planned for him surgically and what after-effects to anticipate. (*c*) Do not act as surgeon and anesthetist unless this is unavoidable.
10. **Answer all the patient's questions.**—(*a*) Avoid use of such phrases as "You need a medical education to understand this." (*b*) A patient who understands his illness usually will not consult another to have his questions answered.
11. **Carry sufficient insurance.**—While sufficient insurance will not deter malpractice actions, physicians must be aware that higher judgments are becoming commonplace. As a defendant in a malpractice action your peace of mind will be much greater if you are sufficiently insured.
12. **Notify the insurance company early.**—Early notification of the insurance company will allow for an early gathering of the facts and a strengthening of the physician's position. The insurance company and the malpractice committee should be notified whenever a physician believes that a patient is dissatisfied or that a suit is imminent. Under such circumstances always provide the patient's name, address, and age. Do not reply to any threatening correspondence without the advice of your committee or legal counsel.
13. **Keep careful medical records.**—The importance of keeping careful medical records hardly needs emphasis. It is easily understood that detailed and chronologic records will assist a physician involved in a malpractice action. Indeed, such records may be used as a yardstick to measure the caliber of a physician's practice when such material is presented in a court of law. Keep particularly accurate records of casual patients. Never give a medical certificate without examining the patient.
14. **Remember the importance of the doctor-patient relationship.**—The old family doctor of several decades ago was rarely, if ever, involved in a malpractice action. It is not that patients have become more avaricious in the interval but, rather, that one just didn't bring legal action against an old friend.

Perhaps it is time that we physicians look unto ourselves for an explanation of the reason for the insidious breakdown of the doctor-patient relationship we once enjoyed. We have replaced it with a cold socioscientific attitude toward our patients which reflects itself in the impersonal type of practice in which many are now engaged.

In spite of the fact that we bring to our patients the utmost in postgraduate experience, use the latest technics and equipment, and expound the most learned philosophies, our patients drift away. They continue to seek the solace so glibly proferred by the faith healers and willingly pay out their hard-earned dollars to anyone who will listen to them. We physicians must accept this personal phase of the art of medicine and, unless we return to it, must stand by and witness the further deterioration of our status.

When a patient brings legal action in medical matters today he feels that he is suing the system, not a doctor. We can only hope that those physicians who are aware of this trend will pioneer in restoring our public relations to the level they once enjoyed. Perhaps such a change, more than any other factor listed, will reflect itself in a decrease in the number of malpractice actions now plaguing our profession.

NECROLOGY

Isidor Apfelberg, M.D., of New York City, died on October 22, 1959, at the age of seventy-one. Dr. Apfelberg graduated in 1909 from New York University and Bellevue Hospital Medical College. He was a member of the American Academy of Dermatology and Syphilology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Martin Braun, M.D., of the Bronx, died on February 7 at the age of sixty. Dr. Braun received his medical degree from the University of Hamburg in 1926. He was an assistant attending physician at Harlem Hospital. Dr. Braun was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Harry M. Cohen, M.D., of Long Island City, died on October 30, 1959, at the age of fifty-two. Dr. Cohen graduated in 1930 from Long Island College Hospital Medical School. He was an assistant in urology at Queens General Hospital and Queens General Hospital Outpatient Department. Dr. Cohen was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Matthew Dobbins, M.D., of Long Island City, died on January 30 at his home at the age of sixty-seven. Dr. Dobbins graduated in 1914 from the University of Buffalo School of Medicine. He was director of pediatrics at St. John's Long Island City Hospital and president of the medical board. Dr. Dobbins, who had set up selective service medical boards in both World Wars I and II, was a member of the American Academy of Pediatrics, a member and past president of the Queens County Medical Society, and a member of the Medical Society of the State of New York and the American Medical Association.

Carl J. Geiger, M.D., of Syracuse, died on December 28, 1959, at his home at the age of seventy-two. Dr. Geiger graduated in 1910 from Syracuse University College of Medicine. Before his retirement in 1948 he had been professor of medicine at Syracuse University College of Medicine, had served as a school physician, and in 1952 was president of the Syracuse Academy of Medicine. Dr. Geiger was a member of the Syracuse Academy of Medicine, the Onondaga County Medical Society (a past president), the Medical Society of the State of New York, and the American Medical Association.

Frederick Monroe Hedgecock, M.D., of Poughkeepsie, died on January 16 at Vassar Brothers Hospital at the age of fifty-seven. Dr. Hedgecock graduated in 1930 from St. Louis University School of Medicine. He was chief of surgery at Vassar Brothers Hospital. Dr. Hedgecock was a Fellow of the American College of Surgeons and a member of the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jerome Milton Jackson, M.D., of New York City, died on November 2, 1959, at the age of seventy-three. Dr. Jackson graduated in 1908 from Long Island College Hospital Medical School.

Marshall Latcher, M.D., of Oneonta, died on January 13 in Fox Memorial Hospital at the age of ninety-one. Dr. Latcher graduated in 1897 from Albany Medical College. He was an honorary surgeon at Fox Memorial Hospital and the last original member of the staff. The Marshall Latcher Laboratory at the Fox Memorial Hospital was financed through public subscription by the people of Oneonta to show their appreciation of Dr. Latcher.

Louis Girard Manzella, M.D., of Buffalo, died on January 14 at Sisters of Charity Hospital of Buffalo at the age of sixty-four. Dr. Manzella graduated in 1921 from the University of Buffalo School of Medicine. He was an attending in surgery at Emergency Hospital. Dr. Manzella was a member of the Baccelli Medical Club, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Albert Marsden, M.D., of Oswego, died on November 15, 1959, at the age of sixty-four.

[Continued on page 910]

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[Continued from page 908]

Dr. Marsden graduated in 1920 from Syracuse University College of Medicine. He was chief of obstetrics at Oswego Hospital. Dr. Marsden was a Fellow of the American College of Surgeons and a member of the Oswego Academy of Medicine, the Oswego County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lester M. Narins, M.D., of New York City, died in his office on January 22 at the age of forty-five. Dr. Narins graduated in 1939 from Long Island College of Medicine and interned at Mount Sinai Hospital. He was an assistant in urology at Mount Sinai Hospital and had also served as a consultant to the Sidney Hillman Health Center and to the Health Insurance Plan of Greater New York. Dr. Narins was a Diplomate of the American Board of Urology, a Fellow of the American College of Surgeons, and a member of the American Urological Association, the New York Academy of Medicine, the New York Society of the American Urological Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank John Rossi, M.D., of Utica, died at his home on January 20 at the age of eighty-five. Dr. Rossi received his medical degree from the University of Naples in 1901. He was an attending in surgery at St. Luke's Memorial Hospital Center and an honorary member of the staff in gynecology at St. Elizabeth's Hospital. Dr. Rossi was a Fellow of the American College of Surgeons and a member of the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Waluk, M.D., of Huntington Station, died on January 18 at the age of eighty-three. Dr. Waluk graduated in 1914 from Albany Medical College. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raphael John Wren, M.D., retired, of Ossining, died at his home on January 25 at the age of seventy. Dr. Wren graduated in 1906 from New York University and Bellevue Hospital Medical College. He was an honorary surgeon at Phelps Memorial Hospital Association, North Tarrytown. Dr. Wren was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Significance of the Serum Amylase Determination

The authors reviewed 1,840 serum amylase determinations carried out in 977 cases. The serum amylase was abnormally high in 494 patients. Of these 494, the elevation was related to pancreatic disease in 379 (76 per cent). In 78 an abnormally low serum amylase was found. From their data, the authors conclude: (1) A clinical diagnosis of acute pancreatitis cannot be convincingly established without a supporting demonstration of hyperamylasemia. (2) Hyperamylasemia should not deter one from accepting the diagnosis of a nonpancreatic condition. (3) Hypoamylasemia is a significant finding that may suggest presence of either extensive destruction of the pancreas or advanced liver damage. In this series, the amylase was elevated in numerous instances where the pancreas was normal. These cases fell into distinct clinical categories that were analyzed.—

J. L. Abruzzo, M.D., M. Homa, M.D., J. C. Houck, Ph.D., and R. J. Coffey, M.D., Annals of Surgery, June, 1958

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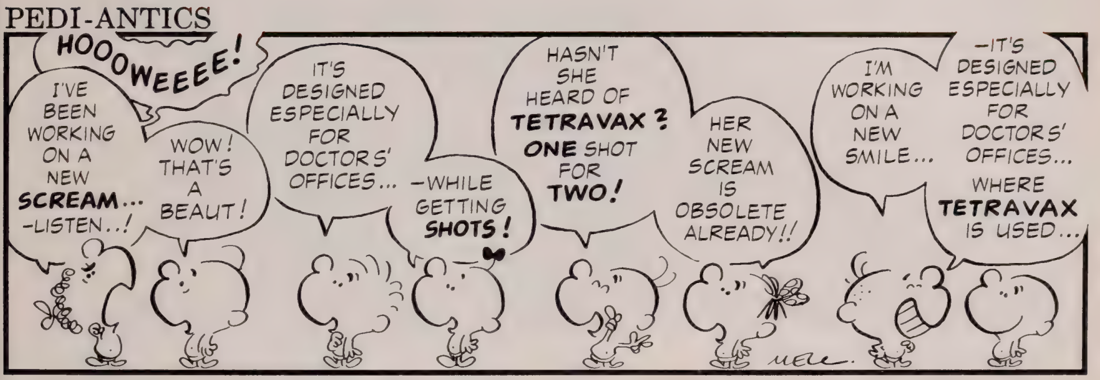
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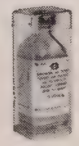

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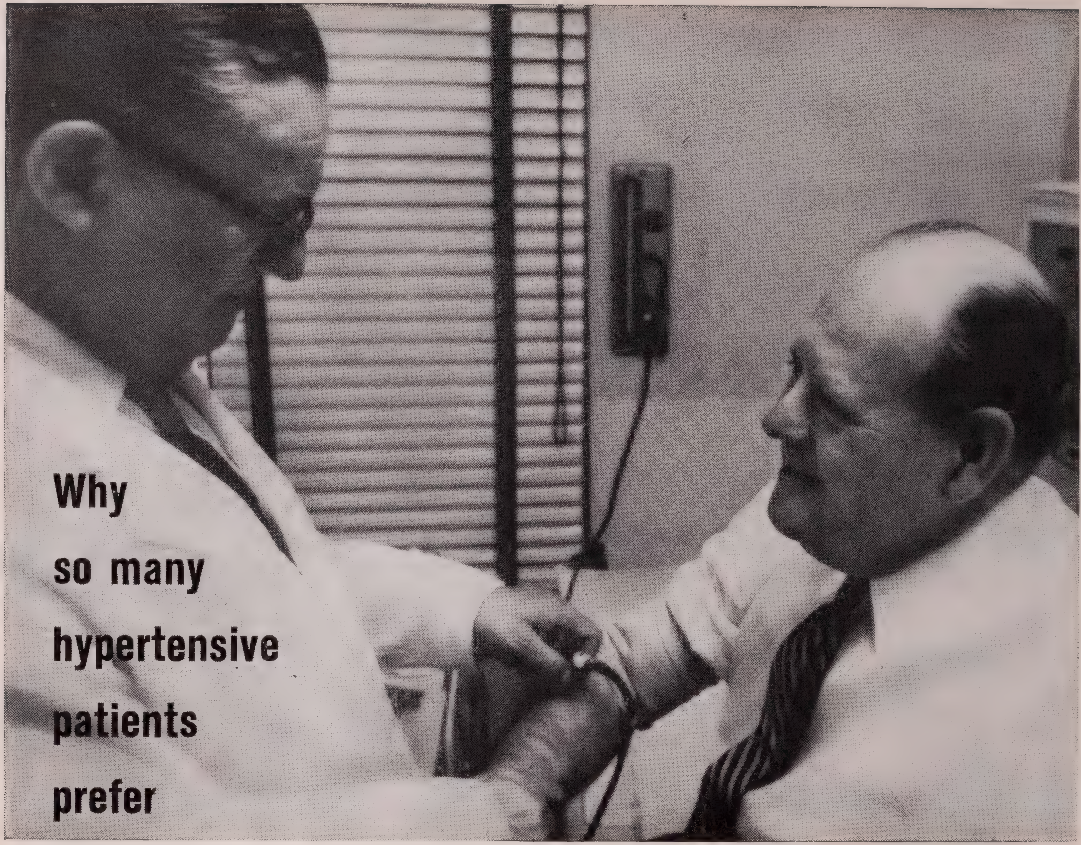

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*Herrmann, G. R., Vogelpohl, E. B., Hejtmancik, M. R., and Wright, J. C.: J.A.M.A. **169**:1609 (April 4) 1959.

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in cardiac disease[23,28,29,38,4]
in dermatitis[24,3]
in peptic ulcer[8,21,3]
in neuroses & psychiatric disorders[25,2]
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in ulcerative colitis[10,14,1]
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MEDICAL NEWS

Central New York Radiological Society Elects—The Central New York Radiological Society elected the following officers at its recent annual meeting: Robert MacCallum, M.D., Utica, president; E. Robert Heitzman, M.D., Syracuse, vice-president; and Joseph A. Head, M.D., Syracuse, secretary-treasurer.

American Medical Education Foundation—The American Medical Education Foundation reports that 2,123 physicians contributed $24,082 to the Foundation during the period December 1, 1958 to December 31, 1959.

Yale University School of Medicine to Celebrate Sesquicentennial—The Yale University School of Medicine will celebrate a century and a half of existence on October 28 and 29. In October, 1810, the Connecticut General Assembly granted a charter for the establishment of the medical institution of what was then known as Yale College. It was the fifth medical school to be established in the United States.

The first medical faculty at Yale contained such notable physicians as Eneas Munson, Nathan Smith, Benjamin Silliman, Eli Ives, and Jonathan Knight.

An extensive program has been planned for the sesquicentennial celebration, details of which will be announced at a later date.

Rochester Roentgen Ray Society Elects Officers—At a meeting on January 25 the following officers of the Rochester Roentgen Ray Society were elected: Charles E. Sherwood, M.D., president; Theodore F. Van Zandt, M.D., vice-president; and Robert H. Greenlaw, M.D., secretary-treasurer.

The Society meets on the last Monday of each month, September through May.

Dr. Masterson Given Testimonial Dinner—John J. Masterson, M.D., Brooklyn, was given a testimonial dinner on February 6 by the Brooklyn Associate Guild of Catholic Physicians in honor of his being chosen "Catholic Physician of the Year" by the National Federation of Catholic Physicians' Guilds. More than 160 persons attended the dinner, among them many distinguished physicians and clergymen.

John F. Raycroft, M.D., was toastmaster for the evening. Addresses were given by the Most Reverend John J. Boardman, D.D., Auxiliary Bishop of Brooklyn, and Eusebius J. Murphy, M.D., president of the National Federation of Catholic Physicians' Guilds. Speaker of the evening was Mr. Frank S. Meyer, a member of the editorial board of *National Review* who spoke on the topic, "The Welfare State Against the Person." Vincent S. Maggio, M.D., president of the Brooklyn Associate Guild of Catholic Physicians, presented the testimonial to Dr. Masterson. The invocation and benediction were given by the Reverends William T. Wood, S.J., and James H. Fitzpatrick, respectively.

Physician Honored on Ninetieth Birthday—Sidney Valentine Haas, M.D., New York City, was honored with a party at the New York Academy of Medicine on the occasion of his ninetieth birthday on February 14.

Dr. Haas, who does not believe in premature retirement, still practices pediatrics four days a week in his office at 114 East Ninetieth Street. Among the many important contributions which Dr. Haas has made in the pediatric field are his reports to the scientific world on the beneficial effects of belladonna, or atropin, in relieving severe colic in infants, and of the curative effects of the banana diet in the treatment of celiac disease.

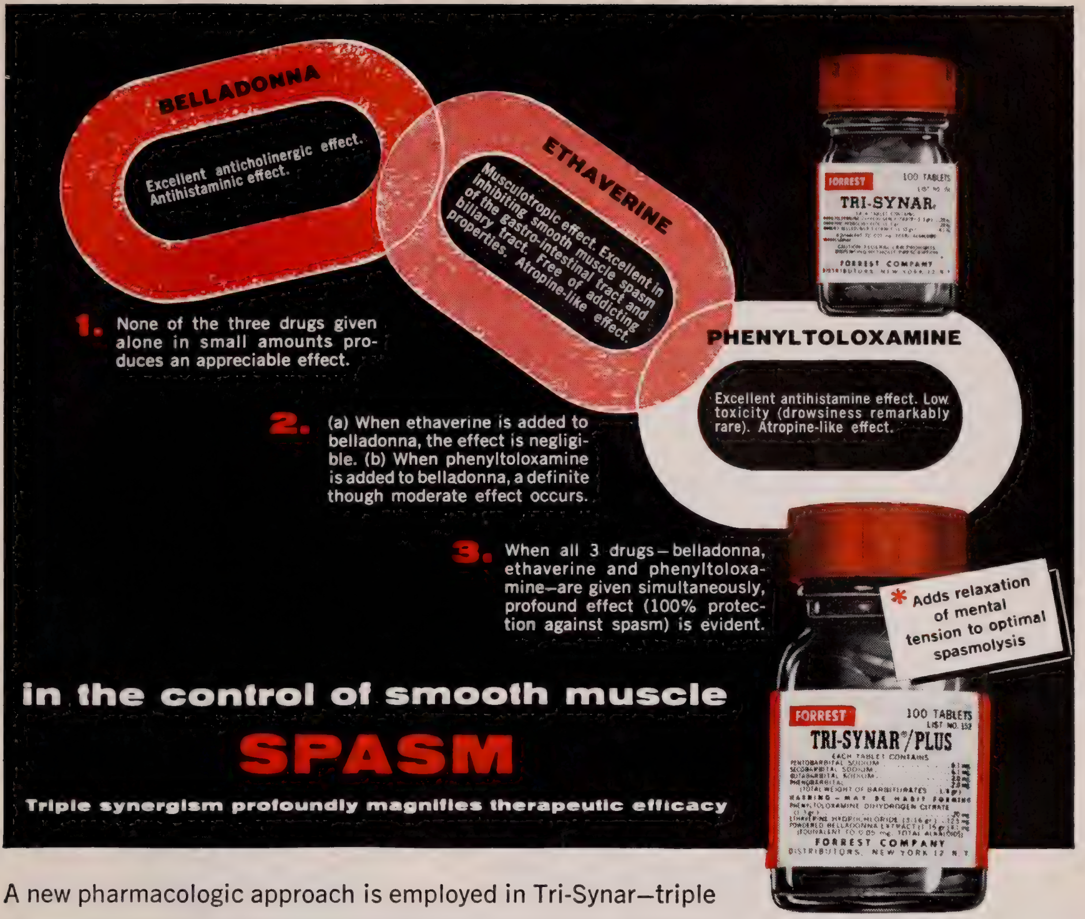
Tuberculosis and Health Association to Open Field Office—The New York Tuberculosis and Health Association will open a field office at 159 East 125th Street in the near future.

The newly-located field office, which will serve as an information and education center, replaces the quarters which the Association has occupied in the Central Harlem Health Center at 2238 Fifth Avenue since 1937.

Opening of the field office will coincide with the redoubled efforts of the Association to curb tuberculosis in the Harlem area, where incidence of the disease is twice as heavy as in other areas of the city.

Brooklyn Physicians Honored at Ball—Seven Brooklyn physicians were honored for their work at Long Island College Hospital on March 5 at a ball

[Continued on page 916]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[Continued from page 914]

celebrating the one hundred and second anniversary of the granting of a state charter to the hospital. They are: Alfred C. Beck, M.D., A. L. Loomis Bell, M.D., E. Jefferson Browder, M.D., J. Hamilton Crawford, M.D., Herbert C. Fett, M.D., Emil Goetsch, M.D., and Fedor L. Senger, M.D.

Postgraduate Course on Evaluation of New Drugs—The University of Buffalo School of Medicine will present a postgraduate course on "Evaluation of the Newer Drugs," Wednesday and Thursday, March 23 and 24.

The course has been planned to assist general physicians in evaluating the large number and variety of therapeutic agents which have become available in recent years. The panel discussions and case presentations are designed to illustrate how the fundamental pharmacologic properties of a drug determine its appropriate clinical use.

In addition to participating in the course, Bernard Lown, M.D., of the Harvard School of Public Health will present a Harrington Lecture on "Digitalis and Electrolytes." All registrants for the course are invited to attend.

For further information contact: Department of Postgraduate Education, University of Buffalo School of Medicine, 3435 Main Street, Buffalo 14, New York.

New Booklet on Rescue Breathing—Rescue breathing is the subject of the State Health Department's newest publication, "Rescue Breathing." The booklet is designed to teach lay audiences the fundamentals of the simple but effective rescue breathing procedure.

Among the organizations now recommending the rescue breathing method are the American Red Cross, the American Medical Association, the American Society of Anesthesiologists, the National Academy of Sciences, the Medical Society of the State of New York, and the Empire State Rescue and First Aid Association.

The publication describes the method and illustrations are used to show each step in the procedure. Copies are available without cost to residents of New York State. Interested persons should write to: Office of Public Health Education, New York State Health Department, 84 Holland Avenue, Albany 8, New York.

American College of Physicians Offers Postgraduate Courses—The following postgraduate courses are being offered by the American College of Physicians:

Course No. 1—"Recent Advances in Pharmacotherapy," March 21 through 25, at the University of Washington School of Medicine, Seattle; Course No. 2—"Current Concepts in Gastroenterology," March 28 through 31, at the Louisiana State University School of Medicine and Tulane University School of Medicine, New Orleans; Course No. 3—"Dermatology for the Internist," April 25 through 29, at the Medical Center, University of Michigan, Ann Arbor; Course No. 4—"Early Detection and Prevention of Disease," May 9 through 13, at the University of Pennsylvania School of Medicine Philadelphia; Course No. 5—"Current Research in Cardiovascular Disease," May 16 through 20, at the National Heart Institute, Bethesda; Course No. 6—"The Hypertensive Diseases: Diagnostic and Therapeutic Procedure in Essential, Adrenal and Renal Hypertension," May 23 through 26, at the Massachusetts Memorial Hospitals, Boston; and Course No. 7—"Internal Medicine," June 20 through 24, at the Indiana University School of Medicine, Indianapolis.

Further information can be obtained from: The American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania.

NYU-Bellevue Receives Grant for Demonstration Project—Announcement has been made of a grant of approximately $40,000 from the Office of Vocational Rehabilitation of the Department of Health, Education, and Welfare to New York University-Bellevue Medical Center for a three-year demonstration project entitled, "Specialized Placement of Quadriplegics and Other Severely Disabled."

The pilot project, which is the first of its kind, is under the direction of Howard A. Rusk, M.D., professor and chairman of the Department of Physical Medicine and Rehabilitation of New York University College of Medicine and director of the Institute of Physical Medicine and Rehabilitation. Its purpose is to demonstrate that with specialized training and the use of special resources many quadriplegics and others who are severely disabled will be able to earn their own livelihood.

Personalities

Appointed

Donald K. Binder, M.D., Schenectady, as consultant ophthalmologist at Ellis Hospital . . . Willard J. Davies, M.D., Rockville Centre, as an expert consultant on dust diseases to the Workmen's Compensation Board . . . Richard Nauen, M.D., Perrysburg, as deputy director for medical services

[Continued on page 920]

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References: 1. Menger, H. C.: Clin. Med. 4:313 (Mar.) 1957. 2. Scal, J. C.: Eye Ear Nose & Throat Month. 38:738 (Sept.) 1959.

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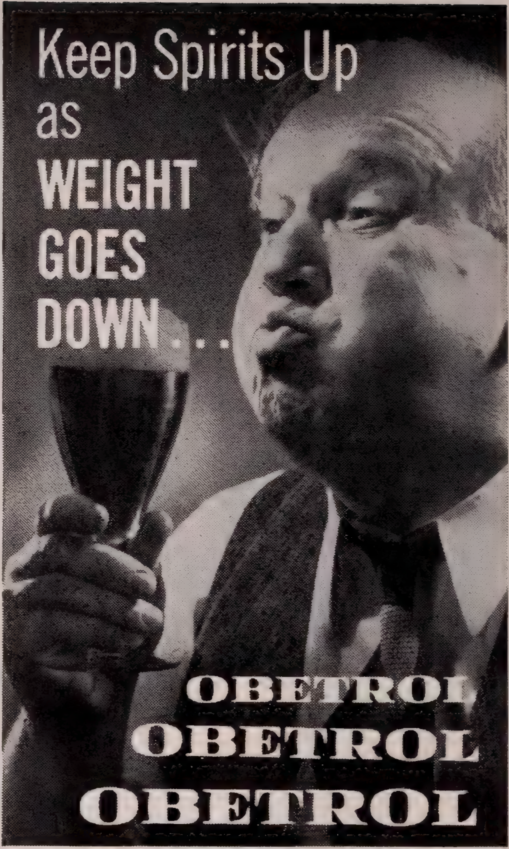

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[Continued from page 916]

of the Monroe County Department of Social Welfare . . . Burton L. Zohman, M.D., Brooklyn, as associate editor covering cardiovascular disease in *Psychosomatics*, the new journal of the Academy of Psychosomatic Medicine.

Awarded

Henry C. Falk, M.D., New York City, a presidential citation in recognition of his work in the field of gynecology, and Emery A. Rovenstine, M.D., New York City, a presidential citation in recognition of his work in the field of anesthesiology, from New York University College of Medicine . . . George Schwartz, M.D., New York City, a special plaque given by Bronx physicians at a United Jewish Appeal breakfast meeting for his "deep concern for the welfare of his fellow-men and his leadership in the United Jewish Appeal."

Elected

J. William Littler, M.D., New York City, as vice-president, and Robert M. McCormack, M.D., Rochester, as historian, of the American Society for Surgery of the Hand . . . . H. Houston Merritt, M.D., Bronxville, re-elected as vice-chairman of the National Multiple Sclerosis Society . . . George H. Ramsey, M.D., Rochester, as a Fellow of the American College of Radiology . . . Burton L. Zohman, M.D., Brooklyn, as a member of the executive council of the Academy of Psychosomatic Medicine.

Speakers

John Abbott, M.D., Rochester, on February 16 before the Jefferson County Medical Society on the topic "Functional Uterine Bleeding" . . . Leona Baumgartner, M.D., Commissioner of Health of the City of New York, on March 1, on the subject "Impressions of Medical and Health Care in the Soviet Union" at a dinner sponsored by The National Vitamin Foundation . . . Judd Bockner, M.D., New Rochelle, on February 3 on the subject "Biliary Tract Surgery" at the Clinical Congress of Abdominal Surgeons in Miami Beach . . . George Couch, M.D., Watertown, as moderator on a panel discussion on "Functional Uterine Bleeding" before the Jefferson County Medical Society on February 16 . . . Milton Elkin, M.D., Scarsdale, on the subject "The Scout Film of the Abdomen as a Diagnostic Aid" at Lebanon Hospital on March 8 . . . Irving J. Farber, M.D., Forest Hills, on the subject "Psychotherapy of a Patient with Narcolepsy" at Hillside Hospital, Glen Oaks, on February 14 . . . George P. Heckel, M.D., Rochester, on the topic "Functional Uterine Bleeding" at a meeting of the Jefferson County Medical Society on February 16.

Frank L. Horsfall, Jr., M.D., New York City, on March 15, the annual Walter M. Brickner lecture at the Hospital for Joint Diseases on the subject "Viral Diseases of the Nervous System and Their Relationship to Musculoskeletal Abnormalities" . . . William S. Langford, M.D., New York City, at a meeting of the Lenten Sewing Class of the Cribside Social Service Committee of the Babies' Hospital . . . Stephen C. Meigher, M.D., Schenectady, on February 3 at the Clinical Congress of Abdominal Surgeons in Miami Beach on the subject "Biliary Tract Surgery" . . . Edward Tolstoi, M.D., New York City, at Lebanon Hospital on March 3 on the topic "Recent Trends in the Treatment of Diabetes Mellitus" . . . Richard C. Troutman, M.D., New York City, on February 22 before the Long Island Ophthalmological Society on the subject "Evaluation of Present Procedures for Enucleation and Evisceration."

Demethylchlortetracycline: Clinical Comparison of a New Antibiotic Compound with Chlortetracycline and Tetracycline

In a comparison of the absorption and excretion of a new antibiotic with tetracycline and chlortetracycline, the authors found the new compound (demethylchlortetracycline) to be more stable than the other tetracyclines now in clinical use. It has a high order of activity against bacterial test organisms, is well absorbed from the human gastrointestinal tract, and produces prolonged concentrations in the blood serum. The persistent concentrations in the serum are perhaps due to the relatively slow excretion by the kidneys. Because of these characteristics, demethylchlortetracycline presents certain advantages which, the authors believe, make it a compound deserving of clinical trials in treating sensitive microbial infections.—*William M. Sweeney, Stanton M. Hardy, A. C. Dornbush, and James M. Guegsegger, Antibiotics and Chemotherapy, January, 1959*

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

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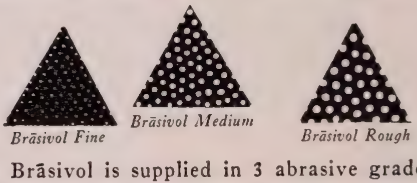

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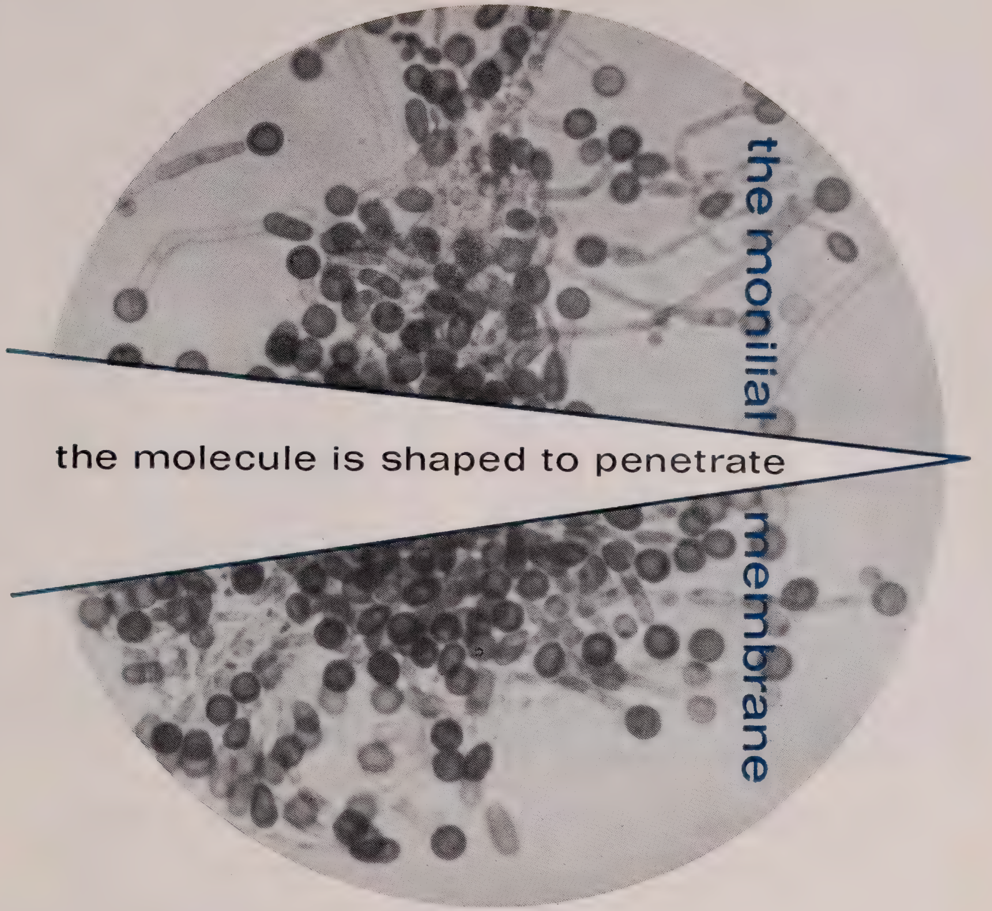
REFERENCES:

SAPERSTEIN, R. B.: Treatment of Acne with Long Term Continuous Abrasion. Presented at 107th Annual Meeting of A.M.A.

REES, R. B.; BENNETT, J. H.; GREENLEE, M. R.: Newer Drug Treatment in Dermatology, Cal. Med.; 91:1, July 1959.

SULZBERGER, M. B. & WITTEN, V. H.: The Management of Acne Today. Med. Clinics of No. America, 43:3, May 1959.



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*Lapan, B.: Am. J. Obst. & Gynec. **78**:1320, 1959.

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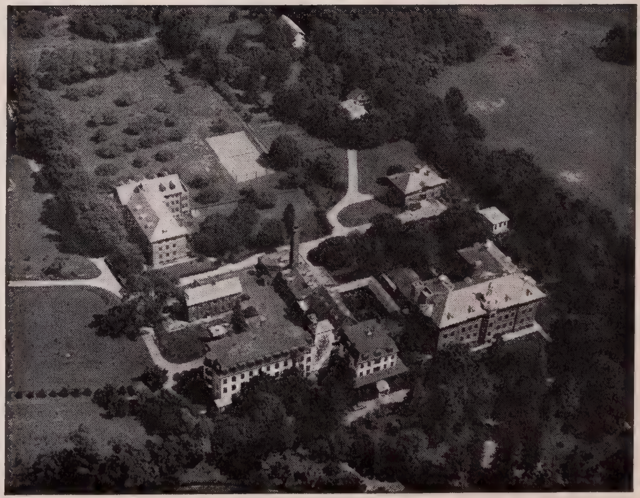

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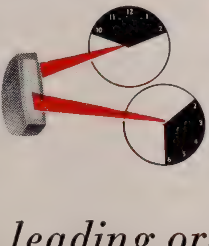

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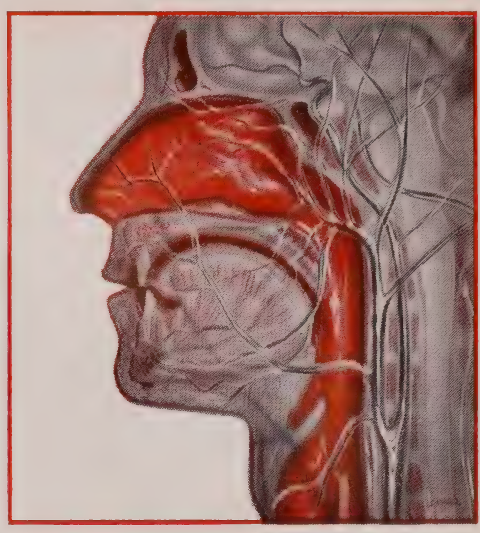

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1. Fabricant, N. D.: E.E.N.T. Monthly *37*:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: *112*:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. *5*:1183 (Sept.) 1958.

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Prigot, A.; Felix, A. J., and Mullins, S.: Paper presented at the Symposium on Antibacterial Therapy, Michigan and Wayne County Academies of General Practice, Detroit, September 12, 1959 (published Nov. 1959)

*Experimental dosage (see dosage recommendations adjacent)

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MEDICAL MEETINGS

Dr. Samuel Losner Lecture

The second in the series of Dr. Samuel Losner Lectures will be presented at the Jewish Chronic Disease Hospital, Brooklyn, on March 17, at 8:30 P.M., in the Masin Pavilion conference room on the lower level of the hospital at Rutland Road and East 49th Street, Brooklyn 3, New York.

The lecture, entitled "Tests Diagnostic of Heart Lesions," will be delivered by William Dock, M.D., professor of medicine, State University of New York Downstate Medical Center, and attending physician, Kings County Hospital.

American College of Obstetricians and Gynecologists

The American College of Obstetricians and Gynecologists will hold its eighth annual meeting at the Netherland Hilton Hotel, Cincinnati, April 3 through 6.

Correlated seminars will be a new feature of the meeting this year. Each seminar will consist of four sessions spread over the three days of the meeting, all devoted to the same subject under the same leader, thus allowing complete development of the material presented. Another innovation will be a "doctor's luncheon." Each table will be hosted by an outstanding Fellow of the College, but the conversation will be only as clinical as each group wishes it to be.

For further details write to: Mr. Donald F. Richardson, Executive Secretary, The American College of Obstetricians and Gynecologists, 79 Monroe Street, Chicago 3, Illinois.

John G. Gibson, II, Lecture

Robert R. Race, Ph.D., M.R.C.P., F.R.S., director of Medical Research Council Blood Group Research Unit, The Listen Institute, London, England, will present the John G. Gibson, II, lecture at Columbia University College of Physicians and Surgeons, 630 West 168th Street, New York 32, New York, on April 28, at 4:30 P.M., in the amphitheatre, floors 8 and 9. His subject will be "Blood Groups and Human Genetics."

All physicians, residents, nurses, medical students, and blood bank staffs are invited to attend.

Annual Meeting of Academy of Psychoanalysis

The scientific sessions of the annual meeting of The Academy of Psychoanalysis will be held on Saturday, May 7, and Sunday, May 8, at the Hotel Claridge, Atlantic City, New Jersey. The theme of the meeting will be "The Nature of the Therapeutic Process."

Physicians from the New York area who will speak at the meeting are as follows: *New York City:* Frances S. Arkin, M.D., Barbara Fish, M.D., Paul Hoch, M.D., Milton Mazer, M.D., John A. P. Millet, M.D., Leon Moses, M.D., Salo Rosenbaum, M.D., Nathan Roth, M.D., and William V. Silverberg, M.D.; *Pomona:* Margaret Morgan Lawrence, M.D.

For further information contact: Milton Mazer, M.D., Chairman, Committee on Public Information, The Academy of Psychoanalysis, 750 Park Avenue, New York 21, New York.

International Conference on Congenital Malformations

The international conference on congenital malformations will be held in London, July 18 through 22, under the sponsorship of the National Foundation. The meetings will take place in Church House and the headquarters hotel will be Grosvenor House.

The program of the conference will deal with the incidence of congenital malformations and their relationship to social and medical conditions, the genetic and environmental factors that may be responsible, the normal mechanisms of embryogenesis and the conditions which result in abnormalities, the relationships between mothers and fetus during pregnancy, and the obstetric problems related to deformity.

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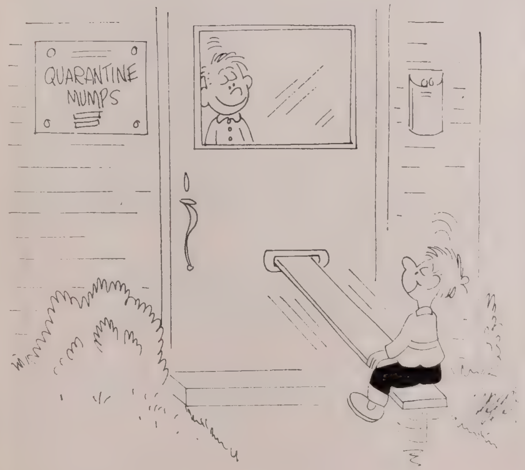

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154th Annual Convention, May 7 to 13, Statler Hilton Hotel, New York City

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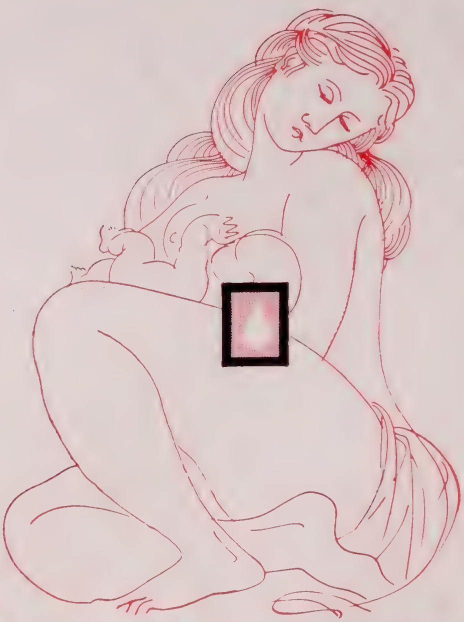

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1. Macy, I. G.; Kelly, H. J., and Sloan, R. E.; with the Consultation of the Committee on Maternal and Child Feeding of the Food and Nutrition Board, National Research Council: The Composition of Milks, National Academy of Sciences, National Research Council, Publication 254, Revised 1953. 2. Research Laboratories, Mead Johnson & Company.

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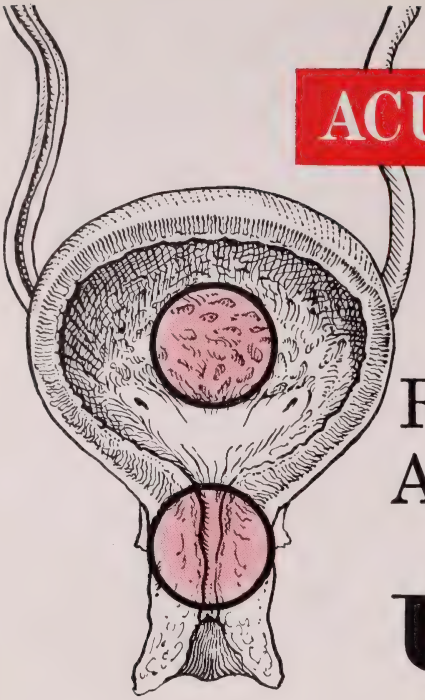

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**Source:* Traisman, H. S.; Boehm, J. J., and Newcomb, A. L.: Diabetes *8*:289, 1959.

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Polydipsia	89	81.0
Weight loss	47	42.7
Polyphagia	28	25.4
Anorexia	16	14.5
Lethargy	14	12.7
Enuresis	7	6.4
Vomiting	5	4.5
Irritability	3	2.7
"Craving for sweets"	3	2.7
"Sticky diaper"	3	2.7
"Strong odor to urine"	2	1.8
Glycosuria	2	1.8
Hypoglycemia	2	1.8
Personality change	1	0.9
Boils	1	0.9
Headache	1	0.9
Abdominal cramps	1	0.9

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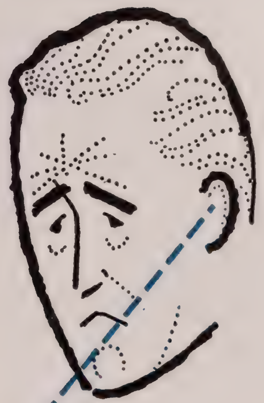

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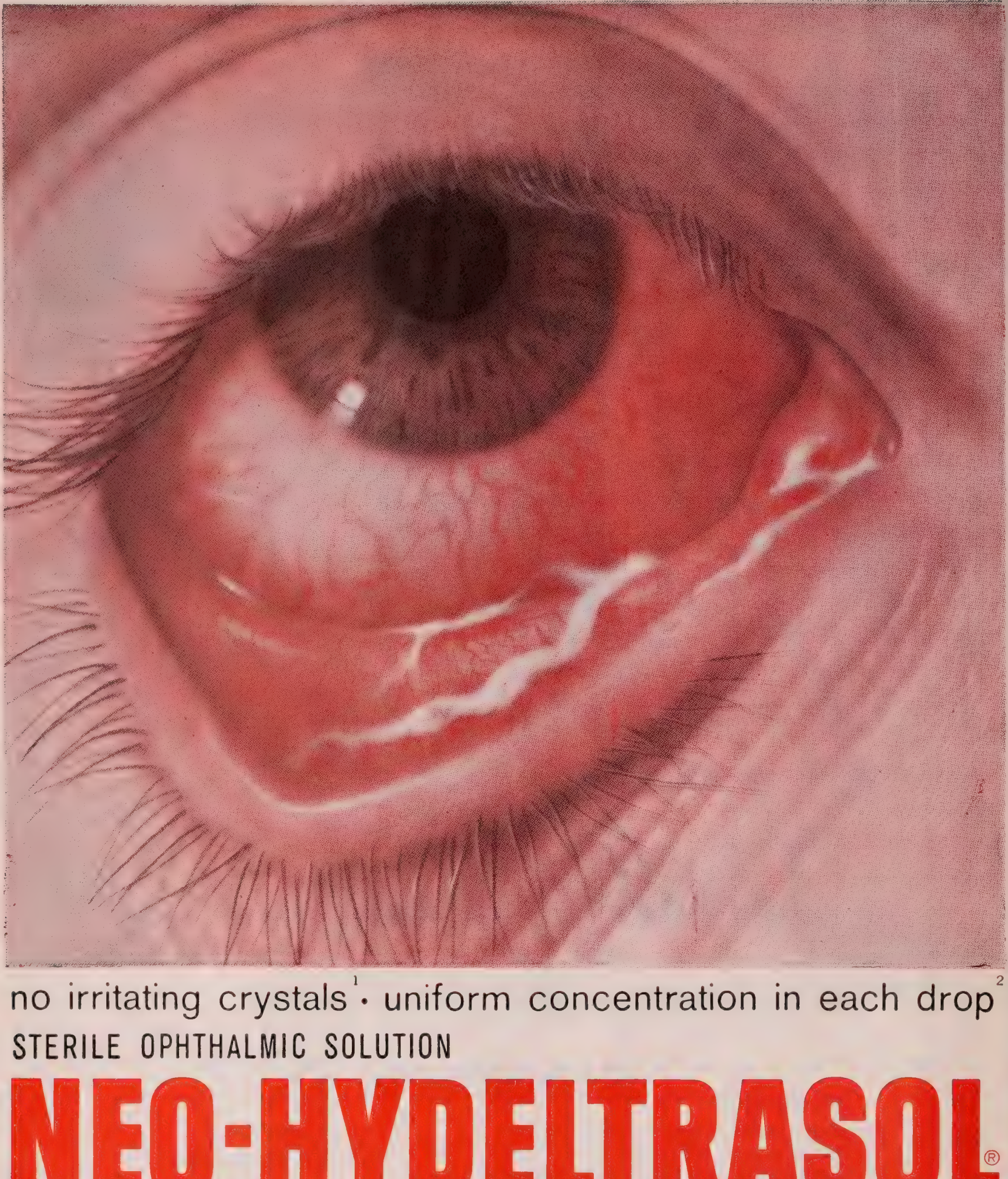

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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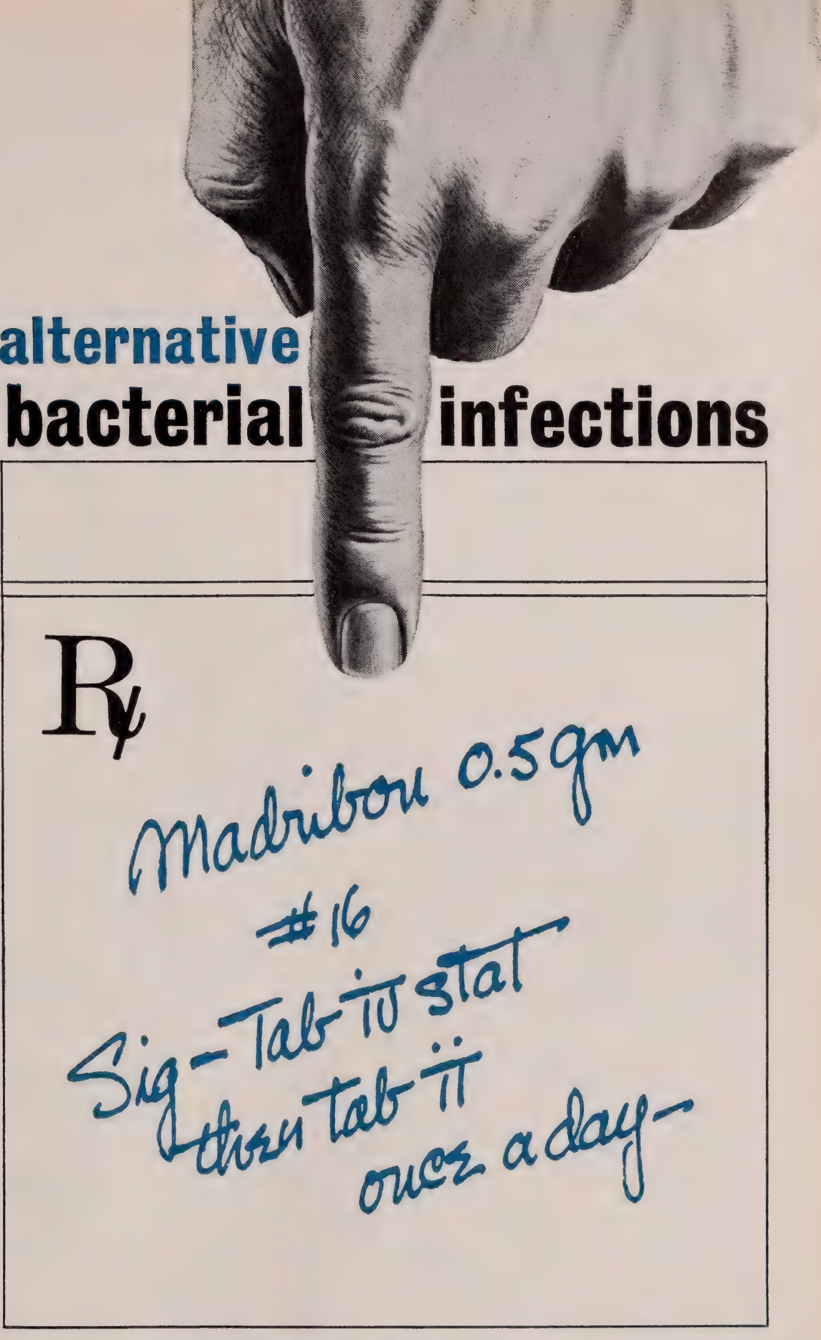

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*Lamphier, T.A.: Paper accepted for publication in The American Surgeon.

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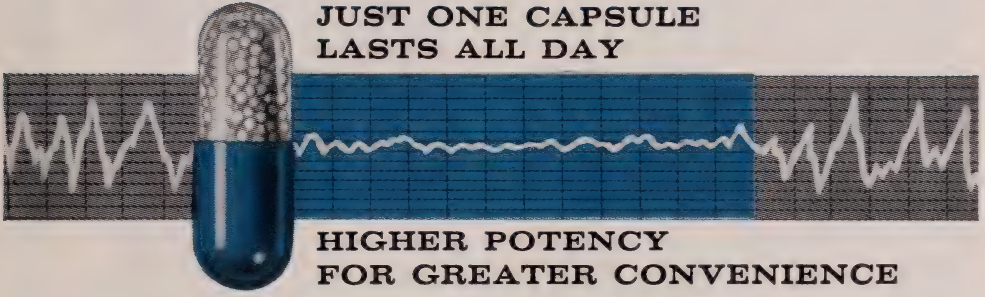

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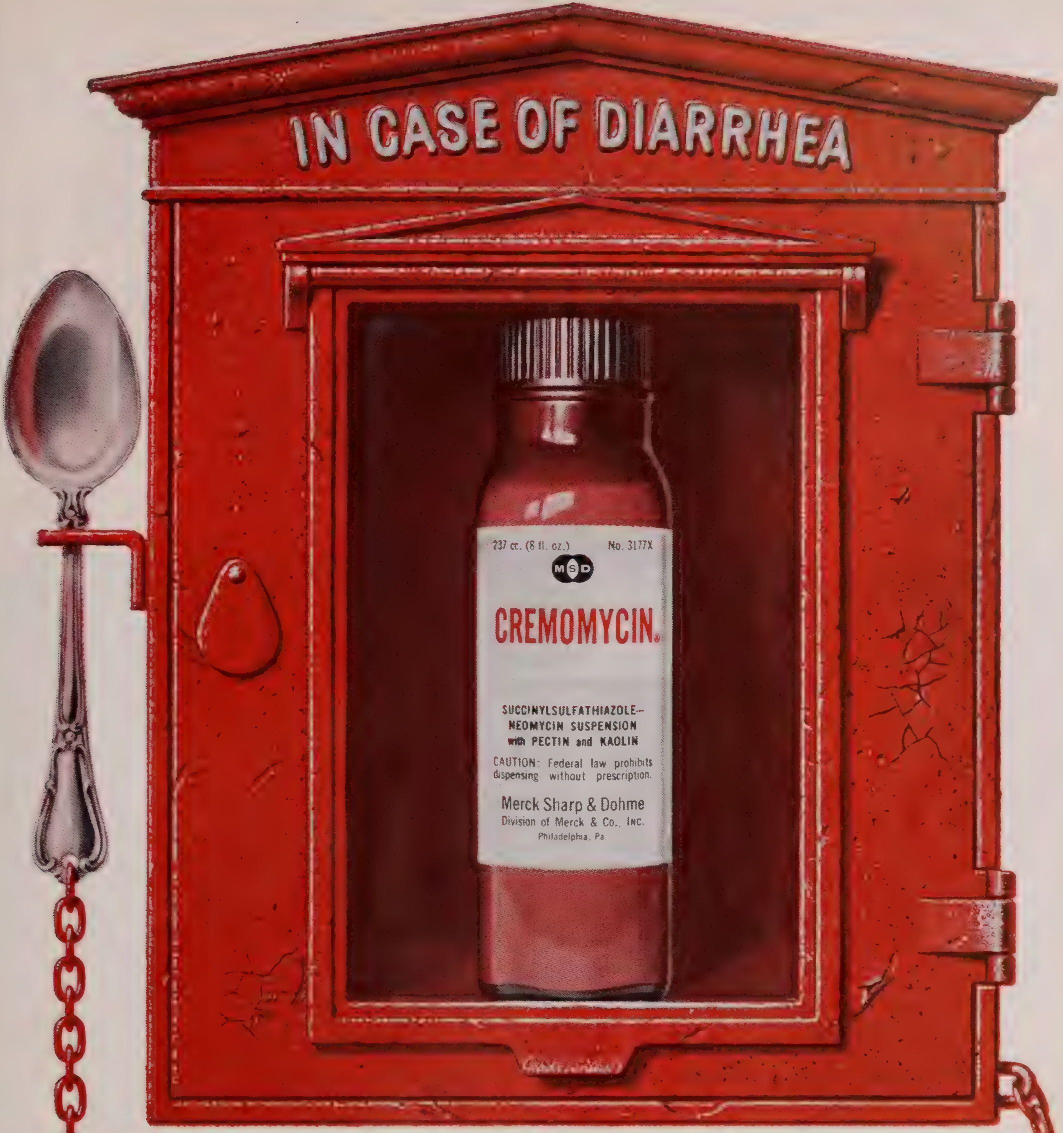
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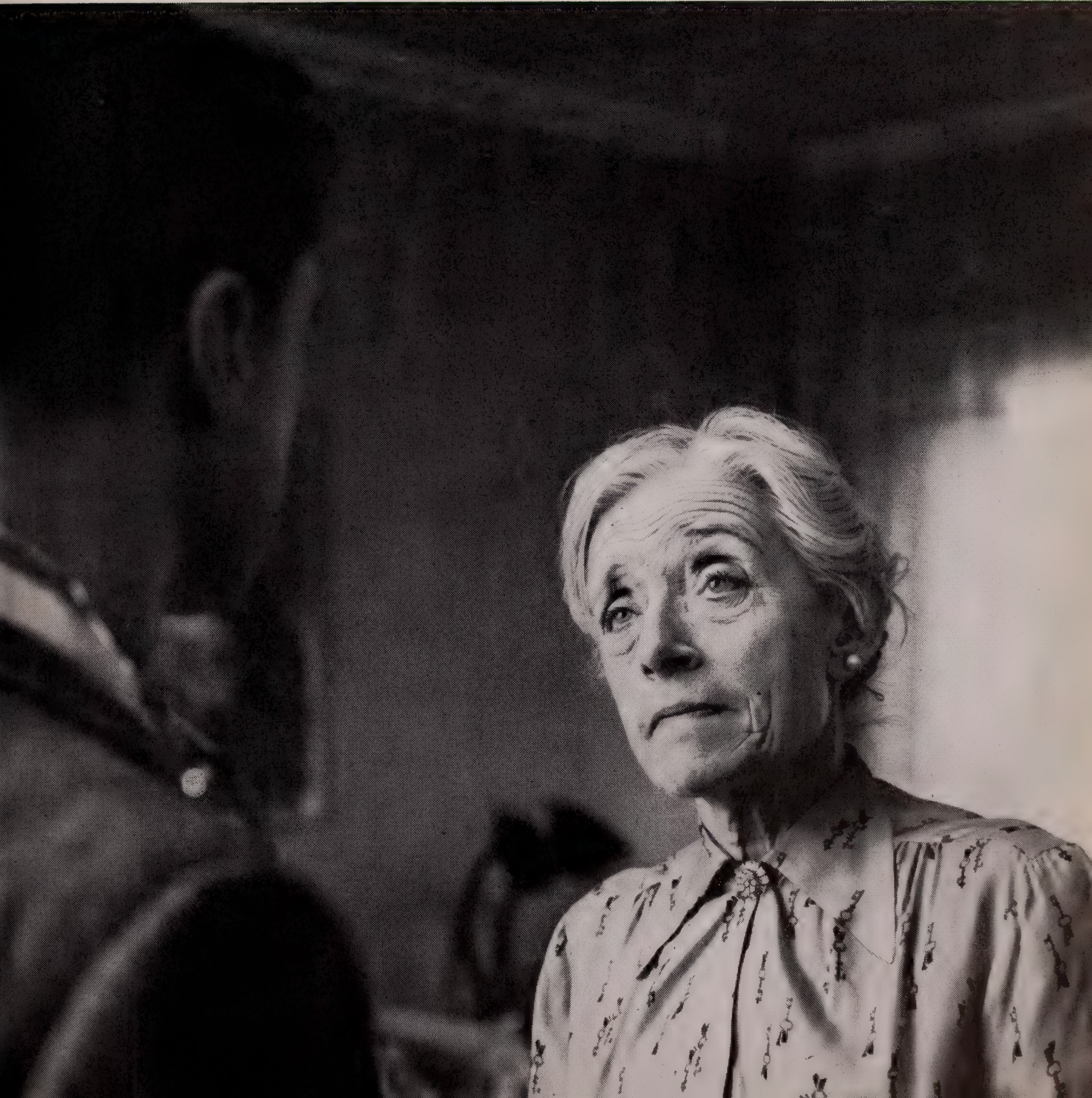

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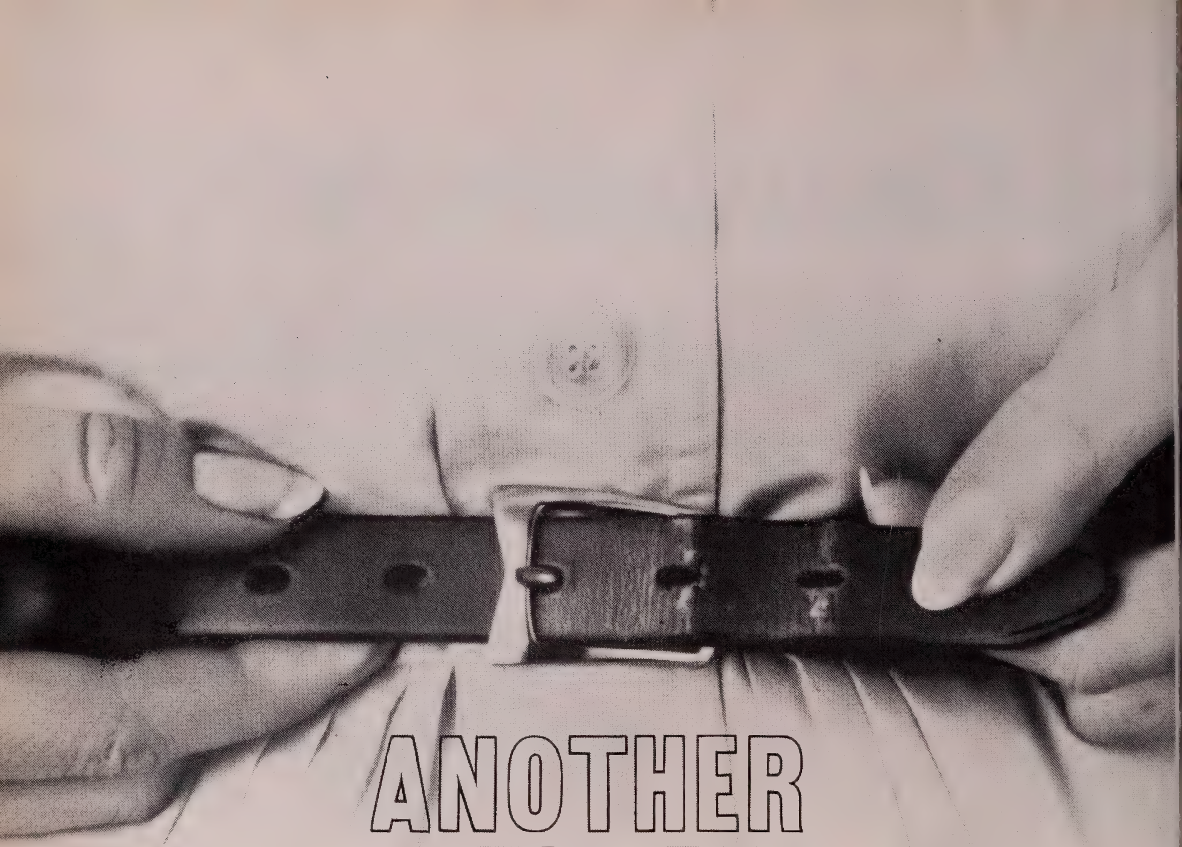

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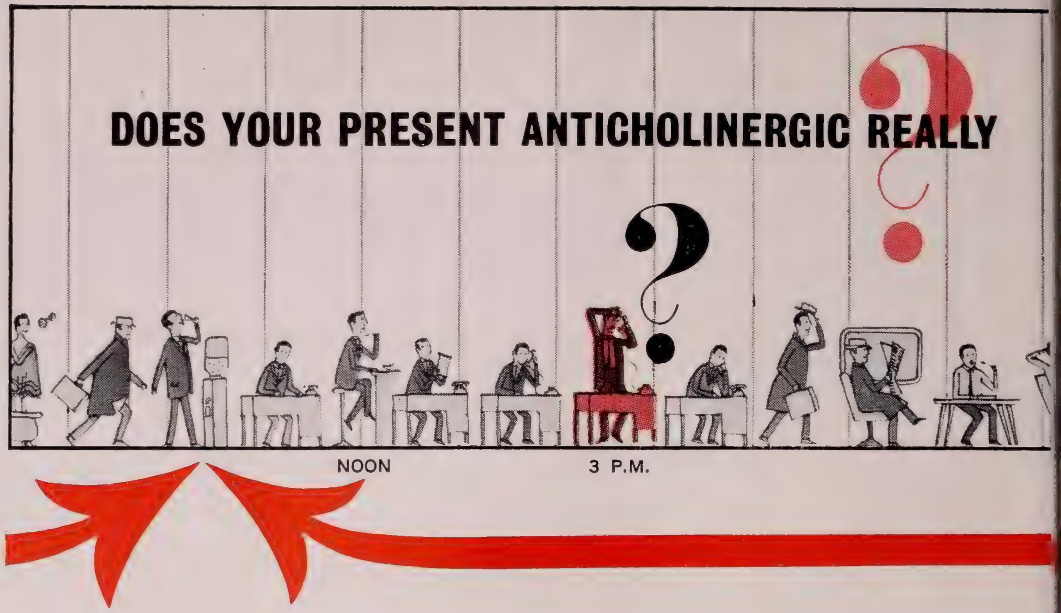
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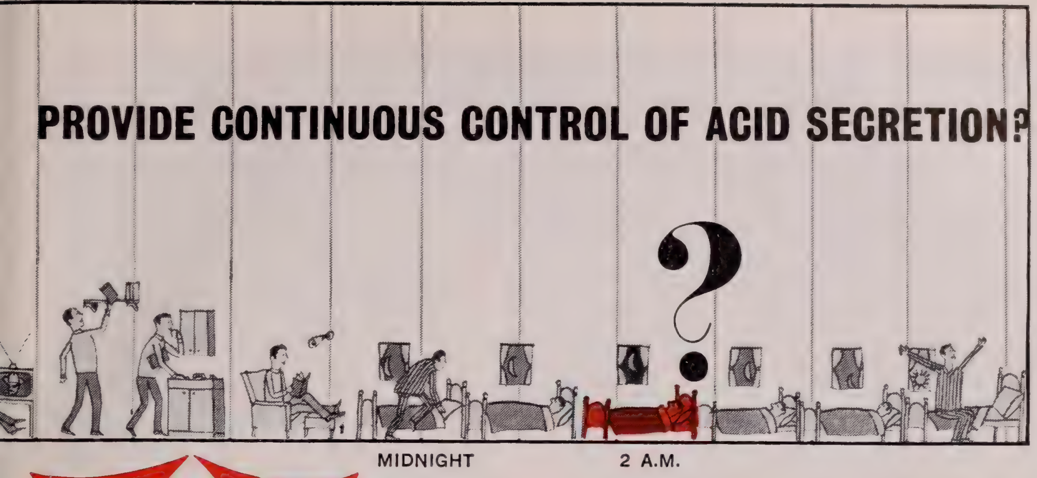

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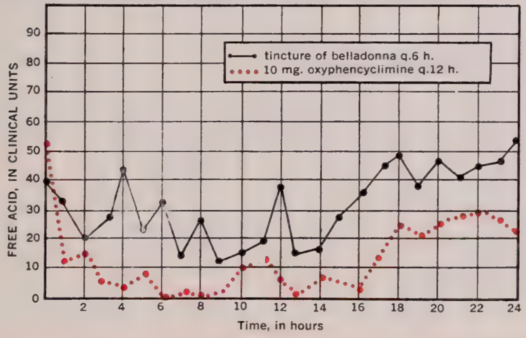

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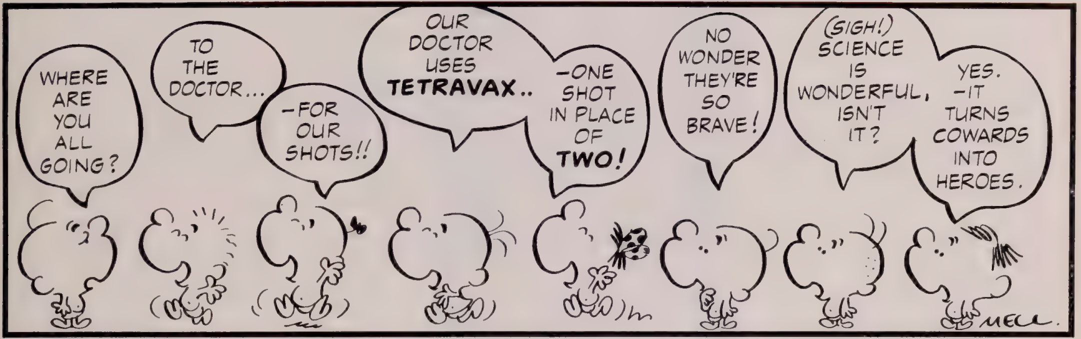
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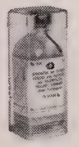

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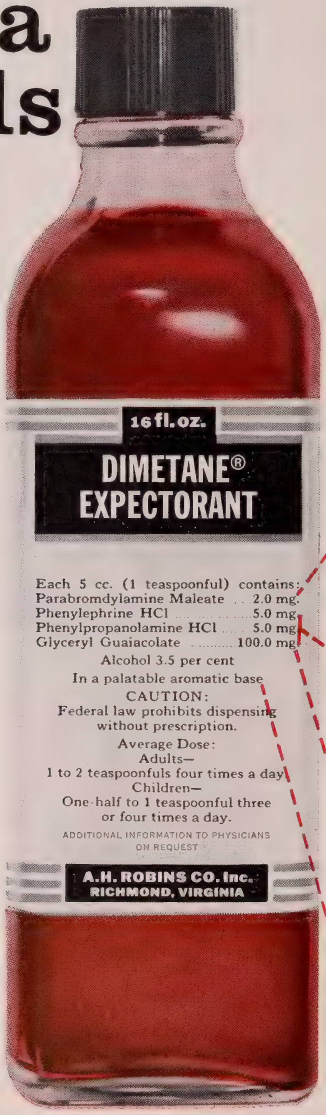
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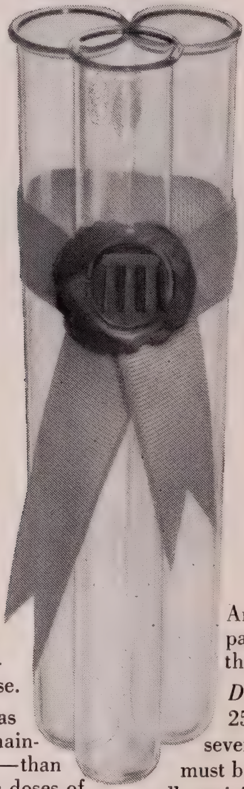
new chemically improved penicillin which provides the highest blood levels that are obtainable with oral penicillin therapy



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*Knudsen, E. T., and Rolinson, G. N.: Lancet 2:1105 (Dec. 19) 1959.

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RELA—SCHERING'S MYOGESIC[x]
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[x] **MYOGESIC:** MUSCLE RELAXANT ANALGESIC

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[1] Kuge, T.: To be published.

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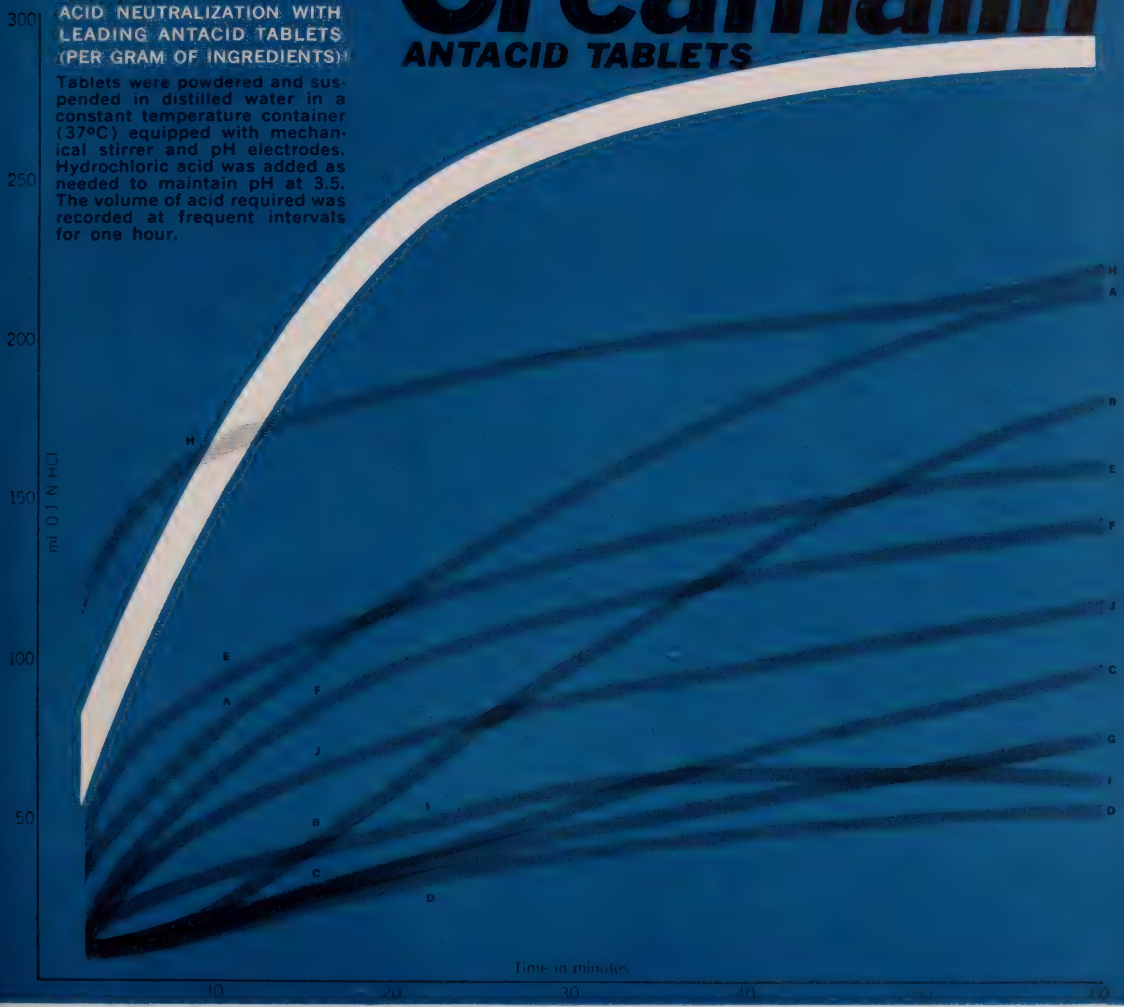

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Tablets were powdered and suspended in distilled water in a constant temperature container (37°C) equipped with mechanical stirrer and pH electrodes. Hydrochloric acid was added as needed to maintain pH at 3.5. The volume of acid required was recorded at frequent intervals for one hour.

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How Supplied: Bottles of 50, 100, 200 and 1000.

1. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:380, July, 1959. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:384, July, 1959.

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½% or 1% hydrocortisone free alcohol and 5 mg. per Gm. neomycin sulfate in exclusive water-miscible ACID MANTLE vehicle. In ½ ounce squeeze bottles, each with special soft plastic ear-applicator.

1. Jones, E. H.: Eye, Ear, Nose & Throat Month. 38:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists 4:2, 1955.

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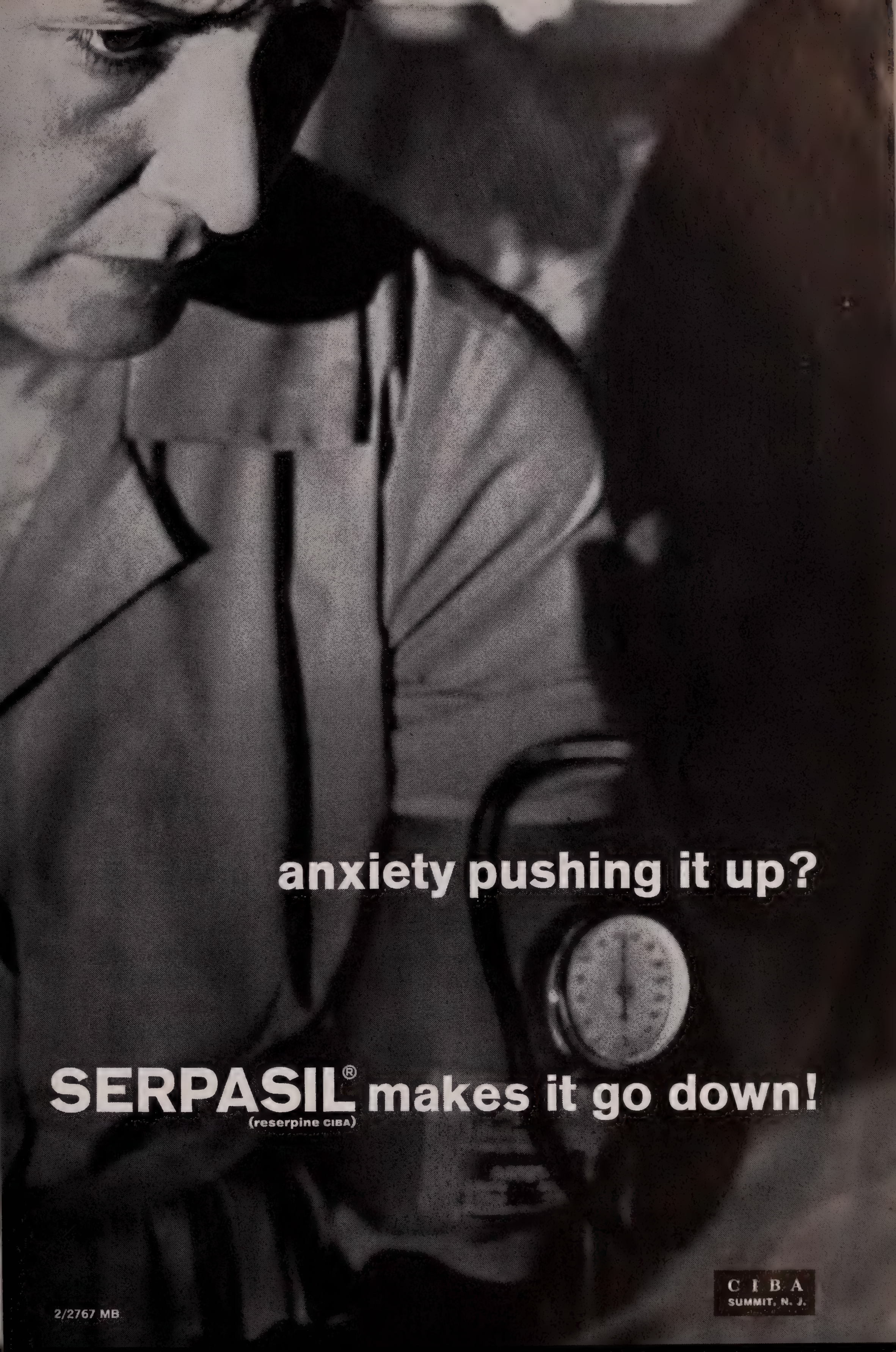
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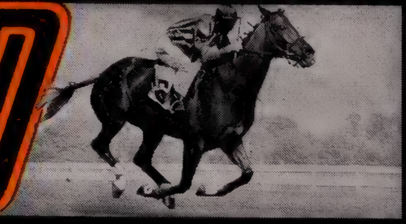

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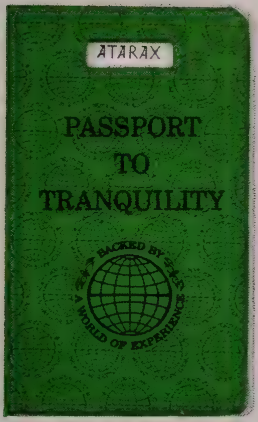

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IN CHILDREN unusually safe; tasty syrup, 10 mg. tablet	"...Atarax appeared to reduce anxiety and restlessness, improve sleep patterns and make the child more amenable to the development of new patterns of behavior...." Freedman, A. M.: Pediat. Clin. North America **5**:573 (Aug.) 1958.	Bayart, J.: Acta paediat. belg. **10**:164, 1956. Ayd, F. J., Jr.: California Med. **87**:75 (Aug.) 1957. Nathan, L. A., and Andelman, M. B.: Illinois M. J. **112**:171 (Oct.) 1957.
IN ELDERLY PATIENTS well tolerated by debilitated patients	"...seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: J. Am. Geriatrics Soc. **7**:61 (Jan.) 1959.	Settel, E.: Am. Pract. & Digest Treat. **8**:1584 (Oct.) 1957. Negri, F.: Minerva med. **48**:607 (Feb. 21) 1957. Shalowitz, M.: Geriatrics **11**:312 (July) 1956.
IN ALLERGIC PATIENTS useful adjunctive therapy for asthma and dermatosis; particularly effective in urticaria	"All [asthmatic] patients reported greater calmness and were able to rest and sleep better...and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medicament." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.	Eisenberg, B. C.: J.A.M.A. **169**:14 (Jan. 3) 1959. Coirault, R., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. Robinson, H. M., Jr., et al.: South. M. J. **50**:1282 (Oct.) 1957.
IN HYPEREMOTIVE ADULTS does not impair mental acuity	"...especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

SUPPLIED: Tablets, 10 mg., 25 mg., 100 mg.; bottles of 100. Syrup (10 mg. per tsp.), pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules.

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DEXAMYL® **Spansule® capsules**
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Acid stable, highly soluble

Maximal Blood Levels

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May be administered without regard to meals. However, highest absorption is achieved when taken just before or between meals.

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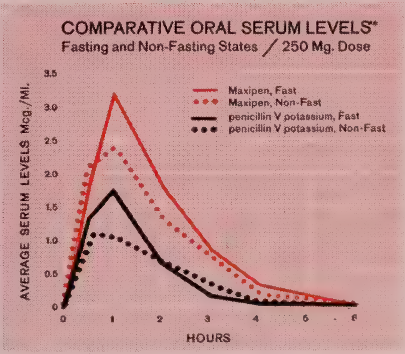
Indicated in infections caused by streptococci, pneumococci, susceptible staphylococci, and gonococci

DOSAGE: For moderately severe conditions, 125 to 250 mg. three times daily. For more severe conditions, 500 mg. as often as every four hours around the clock.

NOTE: To date, MAXIPEN has not shown less allergic reactions than older oral penicillins. Usual precautions regarding penicillin administration should be observed.

SUPPLIED: MAXIPEN TABLETS, scored, 125 mg. (200,000 units), bottles of 36; 250 mg. (400,000 units), bottles of 24 and 100 tablets. MAXIPEN FOR ORAL SOLUTION; reconstituted each 5 cc. contains 125 mg. (200,000 units), in 60 cc. bottles.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Tetracycline Phosphate Complex (TETREX®)
U.S. PAT. NO. 2,791,609
# in the Therapy of PNEUMONIA

Preferably, antibiotic therapy should be based on pretreatment culture of the offending pathogen, but in bacterial pneumonia the problem may well be too pressing to permit the required delay of 24 to 48 hours. A differential diagnosis among bacterial pneumonias, based on such clinical grounds as speed of onset, sepsis and pain may guide the choice of antibiotic for initiation of therapy.

Should clinical judgment dictate that antibiotic therapy be started immediately, at the same time a sputum sample or a subglottic swab can be sent to the laboratory for culture and sensitivity studies. If the response to the first antimicrobial agent proves unsatisfactory, a reasonable basis for changing therapy will then be at hand.

Choosing the Antibiotic

Since therapy must be started at once for bacterial pneumonia, it is advisable to choose a broad-spectrum antibiotic that quickly produces high levels of active agent (e.g., tetracycline phosphate complex, TETREX). Such an antibiotic probably has the best chance of controlling the pathogen, whether it be gram-negative or gram-positive. And if the laboratory report shows that the invading organism is much less sensitive to tetracycline than to other agents, the patient can then be changed to an appropriate antibiotic. If the difference in sensitivity is slight, then the possibility of side effects, sensitization, and toxicity should be evaluated before changing therapy to another antibiotic.

The greatest number of bacterial pneumonias are caused by pneumococci, which respond very well to penicillin, tetracycline, and chloramphenicol. Also, these antibiotics are usually effective against the other gram-positive coccal pneumonias. But penicillin is ineffective against the viral pneumonias and the gram-negative *Hemophilus influenzae* and *Klebsiella pneumoniae*. Although *K. pneumoniae* causes only about 1 to 2 per cent of pneumonia cases on the average,[1] these are apt to be acute and fulminating (Friedländer's pneumonia), with a high mortality rate if not effectively treated. Since pneumococcal pneumonia may be difficult to distinguish clinically from Friedländer's, except by gram-stained sputum smear, it may be wiser to start treatment with an agent also effective against Klebsiella.

Penicillin, however, in addition to having a limited spectrum, also causes many minor and some serious sensitivity reactions. In a recent survey[2] it was found that penicillin produced severe skin reaction. But most important was the observation that anaphylactic shock, with a fatality rate of about 9 per cent, was the most frequent serious reaction. Such severe reactions are almost always associated with parenteral administration.

Tetracycline is also clinically effective in primary atypical pneumonia.[3]

The tetracyclines (e.g., TETREX) have the advantage of a broad range of antimicrobial activity and low toxicity. And in addition, the physician does not have to trouble himself or his patients with repeated blood studies when he prescribes TETREX. Minor reactions such as gastric upsets or mild skin rashes occur occasionally. The most serious side effects are staphylococcal and monilial overgrowth, but these are rare and can be adequately controlled.

No one would deny that appropriate antibiotic therapy has greatly reduced morbidity and saved many lives of patients with bacterial pneumonia. Nevertheless, general supportive measures in the care of patients remain important even today. Especially in the desperately ill patient, antibiotics are not considered as substitutes for the individual evaluation, clinical observation and judgment of the physician.

Some Micro-organisms Susceptible[a] *to Tetracycline* (TETREX)[b]

Streptococcus; Staphylococcus; Pneumococcus; Gonococcus; Meningococcus; *C. diphtheriae; B. anthracis; E. coli;* Proteus; *A. aerogenes; Ps. aeruginosa; K. pneumoniae;* Shigella; Brucella; *P. tularensis; H. influenzae; T. pallidum;* Rickettsiae; Viruses of psittacosis and ornithosis, lymphogranuloma inguinale, primary atypical pneumonia; *E. histolytica; D. granulomatosis.*

[a] Some strains are not susceptible.

[b] Table adapted from Goodman, L. S., and Gilman, A.: The Pharmaceutical Basis of Therapeutics. 2nd edition, New York, The Macmillan Co., 1956, pp. 1322-1323.

References: 1. Wood, W. E., Jr.: In: A Textbook of Medicine. Edited by Cecil, R. L., and Loeb, R. F., 9th edition, Philadelphia, W. B. Saunders Co., 1955, p. 145. 2. Welch, H.; Lewis, C. H.; Weinstein, H. I., and Boeckman, B. B.: Severe reactions to antibiotics. A nationwide survey. Antibiotic Med. & Clin. Ther. 4:800 (Dec.) 1957. 3. Keefer, C. S.: The choice of an anti-infective agent. In: Drugs of Choice, 1958-1959. Edited by Walter Modell, St. Louis, The C. V. Mosby Co., 1958, p. 135.

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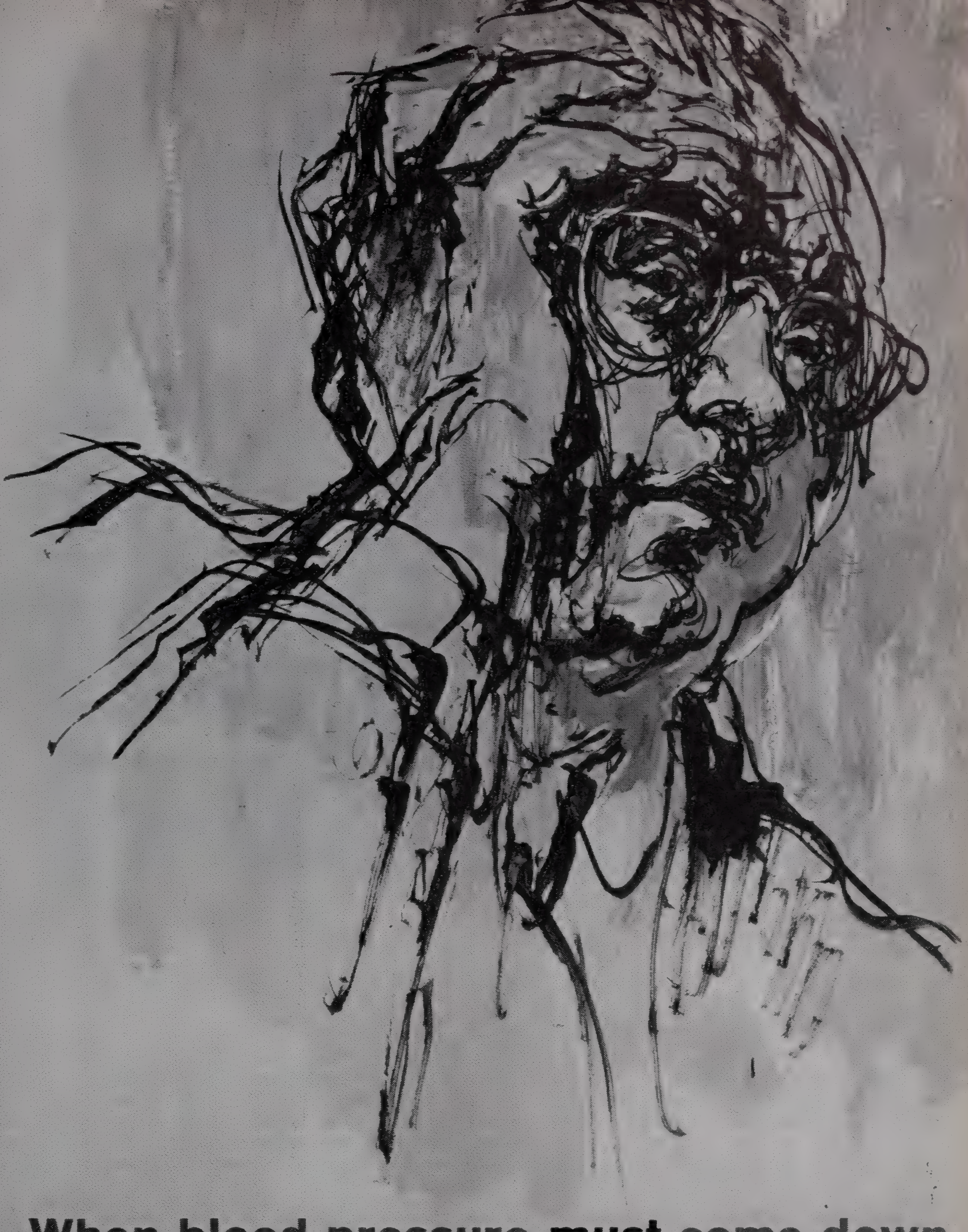

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When you see symptoms of hypertension such as dizziness, headache, and fainting your patient is a candidate for Serpasil-Apresoline. Even when single-drug therapy fails, Serpasil-Apresoline frequently can bring blood pressure down to near-normal levels, reduce rapid heart rate, allay anxiety.

SUPPLIED: Tablets #2 (standard-strength, scored), each containing 0.2 mg. Serpasil and 50 mg. Apresoline hydrochloride; Tablets #1 (half-strength, scored), each containing 0.1 mg. Serpasil and 25 mg. Apresoline hydrochloride.

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hydrochloride (reserpine and hydralazine hydrochloride CIBA)

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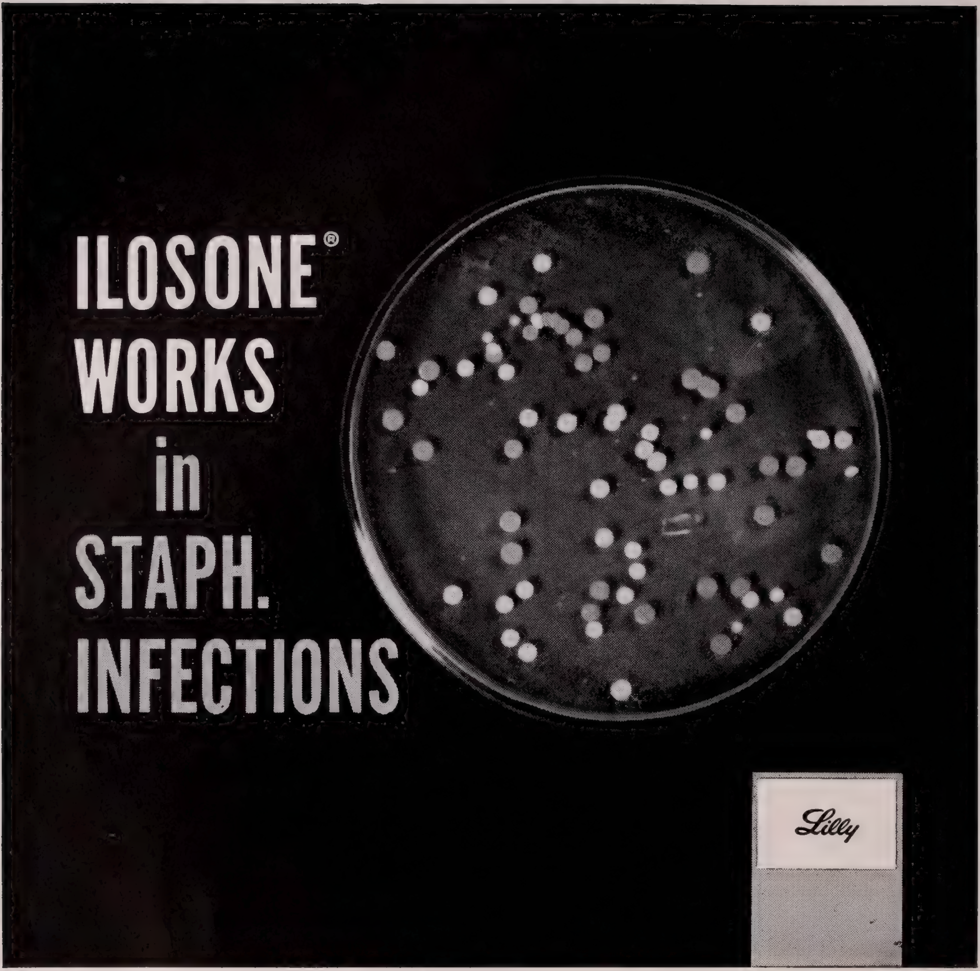

"In our hands it has been particularly helpful in the treatment of staphylococcic disease."[1]

In difficult staph. infections, a decisive response may be obtained with Ilosone in a high percentage of cases.

In a study[1] of 105 patients, sixty-four of whom had *Staphylococcus aureus* infections, good results were obtained with Ilosone in 94 percent. Ten subjects had previously failed to respond to other forms of chemotherapy. The authors concluded that Ilosone "... is useful in treatment of a number of common infections and has been effective in treatment of a number of less common and more serious infections. ... In our hands it has been particularly helpful in the treatment of staphylococcic disease."

Ilosone is available in **Pulvules®**, 125 mg. and 250 mg.; Lauryl Sulfate **125 Suspension,** 125 mg. (base equiv.) per 5-cc. tsp.; and Lauryl Sulfate **Drops,** 5 mg. (base equiv.) per drop. Usual dosage for adults and children over fifty pounds is 250 mg. every six hours.

1. Smith, I. M., and Soderstrom, W. H.: J. A. M. A., *170*:184 (May 9), 1959.

Ilosone® (propionyl erythromycin ester, Lilly)

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GENERAL INFORMATION

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EDITORIALS

The Annual Convention, 1960

The 154th Annual Convention of the Medical Society of the State of New York will be held this year at the Statler Hilton Hotel, New York City, May 7 to 13. Last year the new procedure was initiated at Buffalo of calling the House of Delegates to order on a Saturday instead of a Monday. The scientific portion of the meeting will commence on Monday, May 9, and continue through Friday, May 13. This will be the first time the new schedule will have been in effect in New York City. It is anticipated that it will work at least as well as last year, if not better.

It is hoped that this departure from previous procedure will facilitate the transaction of business of the House and permit delegates who remain to attend the scientific portions of the program. In previous years delegates have had little opportunity to do so since the House was in session the first two and one-half days of the week.

We call attention at this time to the dates of the Convention and urge all members who plan to attend to make their hotel reservations as early as possible. The House of Delegates this year will have some momentous policy decisions to make which will affect the basic structure and future of the Society.

We call attention to the fact that any member of the Society in good standing may attend the sessions of the House of Delegates if he or she desires to do so. We hope that the Convention will be well attended. Mark the dates on the calendar now.

What Does House Confinement Mean?

A decision of the Supreme Court of the State of New York, Nassau County, on January 4, 1960, is in some respects similar to that reported in our editorial on December 15, 1959, entitled "When Is A Physician Disabled From Practicing His Profession?" and we believe of equal interest to the medical practitioner.

The plaintiff petitioned the Court for summary judgment in an action to recover benefits under a disability insurance policy. The plaintiff, a duly licensed physician, was issued a disability policy by the defendant insurance company providing for $100 weekly indemnity for a period not exceeding one hundred four weeks of disability arising from any one illness. The policy further provided that should such sickness cause him to be continuously confined within the house or hospital and prevent him from performing every duty pertaining to his occupation and that if he were regularly attended by a physician, the weekly indemnity would continue to a maximum of one hundred fifty-six weeks.

The plaintiff-physician developed diabetic retinopathy of both eyes resulting in loss of sight. He received from the defendant insurance company $100 per week for each of the one hundred four weeks. At the end of this period he was advised by the insurance company in writing that there would be no further payments. It made the following admission: "although you are, unfortunately, totally disabled, it does not feel you are, necessarily, 'house confined' by the condition involved, as it has been its experience that, even people who are totally blind, they are able to go out of doors. (It further appears the company has, in its records, several precedents for taking this action.)" This occurred in May, 1958. No payments were made after that date.

The plaintiff-physician sought to recover either the sum of $7,400, representing the weekly indemnity to the date of the action, or the full sum of $15,600, representing the weekly indemnity for the entire three years, upon the theory of an anticipatory breach of contract.

The Court held that, although the defendant insurance company denied certain allegations of the plaintiff-physician's complaint, the essential elements of the controversy were undisputed. Coupled with this was the fact that various exhibits affixed to the moving papers included the defendant-insurance company's own admission in its letter of May 7, 1958 (that the plaintiff-physician was totally disabled), the reports of the Veterans Administration and the State of New York relative to medical examinations of the plaintiff-physician, all establishing his blindness and leaving no doubt of his disability.

The Court therefore ruled that there was but one issue of law to decide, to wit: the interpretation of Part 6, Section B of the disability policy. This read as follows: "*Sickness Indemnity for Total Loss of Time. Sec. B—if, immediately following the payment of the Weekly Sickness Indemnity for 104 weeks, such sickness shall necessarily cause the insured to be continuously confined within the house or hospital and prevent him from performing every duty pertaining to any occupation and if the insured be regularly attended by a legally qualified physician or surgeon other than himself, the company will pay the weekly sickness indemnity for the period of such confining total disability but not exceeding 156 weeks. However, such continuing total disability shall not preclude transportation of the insured to or from a hospital or a physician's office for necessary treatment, at the direction of his physician.*"

The defendant-insurance company urged that the above wording should be given its plain meaning and should follow the intention and understanding of the parties: that the clause "*such sickness shall necessarily cause the insured to be continuously confined within the house or hospital*" was not amgibuous. Moreover, since the insured plaintiff-physician was not so confined he could not recover under section B of the indemnity clause.

The plaintiff-physician admitted that he was able to get out of his house for short walks without assistance but was unable to travel any considerable distance without being accompanied by someone.

The Court held that the disability from which he suffered precluded him from conducting the practice of medicine. It went on to say: "I am of the opinion the insured is entitled to recover. True, the policy provides for 'house confinement' and for attendance by a physician. It also provides for the insured's transportation 'to or from a hospital or a physician's office.' Under these circumstances one may not give the term 'house confinement' its narrow, literal interpretation as opposed to its practical construction, nor ignore the real intent of the parties. I do not believe that these parties ever contemplated or intended that the insured under these conditions should be confined to his house literally and precluded from out-of-doors exercise and recreation in order to recover. House confinement does not connote being completely shut in. It admits of reasonable interpretation * * *. Here there is substantial house confinment within the meaning of the contract."

The Court then granted judgment for the plaintiff-physician in the sum of $7,400—the sum due to the date of the action—and ruled that the remainder of the action for the balance due under the contract should be severed and continued on the theory, as alleged, of anticipatory breach of contract. (*Matus v. Met. Cas. Ins. Co. of N.Y.;* N.Y.L.J., January 4, 1960)

MEDICAL SOCIETY
OF THE
STATE OF NEW YORK

154th

ANNUAL CONVENTION

- **House of Delegates**
- **Scientific Program**
- **Scientific Exhibits**
- **Scientific Motion Pictures**
- **Special Events**
- **Technical Exhibits**
- **Woman's Auxiliary**
- **Annual Meeting and Dinner Dance at the Hotel Pierre**

May 7 to 13, 1960

STATLER HILTON HOTEL, NEW YORK CITY

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in morning sickness
with

MORNIDINE®

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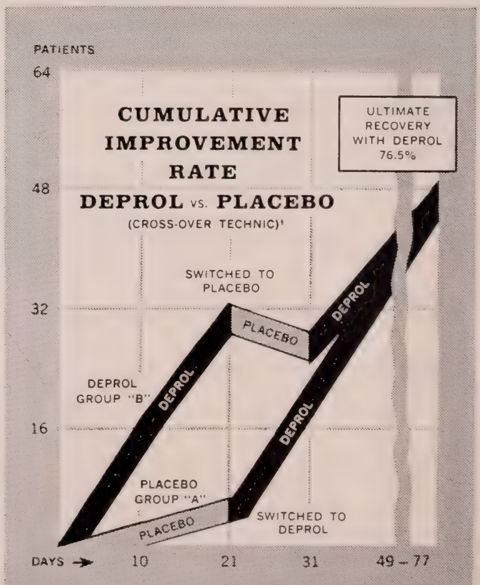

†Ref.: McClure et al. (Am. Pract. & Digest Treat. 10:1525, Sept. 1959)

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154TH ANNUAL CONVENTION

Medical Society of the State of New York

May 7 through 13, 1960

Statler Hilton Hotel, New York City

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House of Delegates

The annual meeting of the House of Delegates of the Medical Society of the State of New York will be called to order at 10:00 A.M. on Saturday, May 7, 1960, in the Penn Top, 18th floor of the Statler Hilton Hotel, New York City.

In accordance with Chapter II, Section 3 of the Bylaws, the House will assemble according to the following schedule:

Saturday, May 7, 1960, 10:00 A.M.
Sunday, May 8, 1960, 2:00 P.M. and 8:00 P.M.
Monday, May 9, 1960, 9:00 A.M. and 2:00 P.M.

At the last adjourned session (2:00 P.M., Monday, May 9) the election of officers, councillors, trustees, and delegates to the American Medical Association will occur in accordance with Chapter II, Section 1 of the Bylaws.

JOSEPH A. LANE, M.D., *Speaker*
WILLIAM L. WHEELER, JR., M.D., *Secretary*

154th Annual Meeting

The 154th Annual Meeting of the Medical Society of the State of New York will be held on Monday, May 9, at 8:00 P.M. in the Grand Ballroom of the Hotel Pierre, 61st Street and Fifth Avenue, New York City.

HENRY I. FINEBERG, M.D., *President*
WILLIAM L. WHEELER, JR., M.D., *Secretary*

Registration

Registration for delegates will be held in the foyer of the Penn Top, 18th floor of the Statler Hilton Hotel, on Monday, May 9, after 9:00 A.M.; for members and guests on the west mezzanine on Monday through Thursday, May 9 through 12, from 8:30 A.M. to 5:30 P.M., and on Friday, May 13, from 8:30 A.M. to 12:00 NOON.

Exhibits

Scientific Exhibits will be located in the new Exhibit Hall on the mezzanine, in the Georgian Room, ballroom floor, and on the ballroom balcony.

Scientific Motion Pictures will be shown in the Dartmouth Room, ballroom floor.

Technical Exhibits will be located in the Georgian Room, ballroom floor, and on the mezzanine.

All exhibits will open at 9:00 A.M. and close at 5:30 P.M. daily, May 9 through 13, except on Friday, when they will close at 12:00 NOON.

Scientific Program

General Sessions will be held every afternoon, Monday, May 9, through Friday, May 13, at 2:00 P.M. in the Gold Ballroom, ballroom balcony.

Section and Session Meetings will be held Tuesday, May 10, through Friday, May 13, at 9:00 A.M.

See page 987 for program of meetings.

Dinner Dance

The Dinner Dance will be held in the Grand Ballroom of the Hotel Pierre, 61st Street and Fifth Avenue, New York City, at 7:00 P.M.

Tickets should be ordered in advance from the State Society offices, 750 Third Avenue, New York 17, New York, or from your county medical society president. There may be tickets available at the registration desk on the west mezzanine and on the 18th floor.

Woman's Auxiliary

See page 1022 for program.

SCIENTIFIC PROGRAM

Chairman

Alfred P. Ingegno, M.D., Kings

Associate Chairmen

William F. Lipp, M.D., Erie
Bernard J. Pisani, M.D., New York

and

Chairmen of Sections and Sessions

GENERAL SESSIONS

Statler Hilton Hotel, New York City
Monday, May 9, 2:00 P.M.
Gold Ballroom, Ballroom Balcony
William F. Lipp, M.D., Presiding

Horizons of Diagnosis and Therapy

1. **Costal Intraosseous Venography in Diagnosis**
   Robert A. Schobinger, M.D., Bronx
   Veterans Administration Hospital

2. **Simplified Membrane Oxygenator**
   Peter C. Hofstra, M.D., Bronx
   Veterans Administration Hospital

3. **Advances in Electrodiagnosis**
   Joseph Moldaver, M.D., New York City
   Neurological Institute

4. **Application of Television to Diagnosis**
   Merrill A. Bender, M.D., Buffalo
   Roswell Park Memorial Institute

5. **Developments in Fluoroscopic Image Intensification, Television, and Cineradiography**
   Herbert M. Stauffer, M.D., Philadelphia, Pennsylvania *(By invitation)*
   Temple University Hospital

6. **Copper—Physiology and Pathology**

I. Herbert Scheinberg, M.D., New York City
Albert Einstein College of Medicine of Yeshiva University

7. **Therapeutic Use of Bone Marrow Infusions**

Audrey Evans, M.D., Boston, Massachusetts (*By invitation*)
Harvard Medical School

8. **Chemotherapeutic Management of Hypotension**

James E. Eckenhoff, M.D., Philadelphia, Pennsylvania (*By invitation*)
Hospital of the University of Pennsylvania

Tuesday, May 10, 2:00 P.M.
Gold Ballroom, Ballroom Balcony
Alfred P. Ingegno, M.D., Presiding

Symposium and Panel Discussion: **Replacement of Organs and Tissues**

A. **Organ and Tissue Transplants**

John Marquis Converse, M.D., New York City, *Moderator*
New York University-Bellevue Medical Center

Reactions of the Body to Homografts: Basic Considerations

John Marquis Converse, M.D., New York City

Current Status of Tissue Banking

Capt. George W. Hyatt, (MC) USN, Washington, D.C. (*By invitation*)
Department of the Navy, Bureau of Medicine and Surgery

Organ Transplantation: Status and a Look into the Future

Joseph E. Murray, M.D., Boston, Massachusetts (*By invitation*)
Peter Bent Brigham Hospital

After each participant has given his introductory presentation, there will be an informal panel discussion and question and answer period.

Tuesday, May 10, 3:30 P.M.
Gold Ballroom, Ballroom Balcony

Symposium and Panel Discussion: **Replacement of Organs and Tissues**

B. **Substitutes for Organs and Tissues**

Samuel W. Moore, M.D., New York City, *Moderator*
New York Hospital-Cornell Medical Center

Prosthetic Replacement of Diseased Heart Valves

James B. Littlefield, M.D., Charlottesville, Virginia (*By invitation*)
University of Virginia School of Medicine

Artificial Substitutes for Major Blood Vessels

Samuel W. Moore, M.D., New York City
New York Hospital-Cornell Medical Center

Organ Replacement in Abdominal Surgery

John M. Beal, M.D., New York City
New York Hospital-Cornell Medical Center

The Transistorized Larynx

H. K. Dunn, Ph.D., Murray Hill, New Jersey (*By invitation*)
Bell Telephone Laboratories, Inc.

After each participant has given his introductory presentation, there will be an informal panel discussion and question and answer period.

Wednesday, May 11, 2:00 P.M.
Gold Ballroom, Ballroom Balcony
Alfred P. Ingegno, M.D., Presiding

Symposium and Panel Discussion: **Medicine in the Space Age**

A. **Astronautical Aspects**

Constantine D. Generales, M.D., New York City, *Moderator*
New York Medical College, Flower and Fifth Avenue Hospitals

The Environment in Space

I. M. Levitt, Ph.D., Philadelphia, Pennsylvania (*By invitation*)
The Fels Planetarium of the Franklin Institute

The Stresses and Problems of Space Flight

Constantine D. Generales, M.D., New York City
New York Medical College, Flower and Fifth Avenue Hospitals

Human Conditioning for Space Flight

Capt. Edw. L. Beckman (MC) USN, Johnsville, Pennsylvania (*By invitation*)
U.S. Naval Air Development Center

After each participant has given his introductory presentation, there will be an informal panel discussion and question and answer period.

Wednesday, May 11, 3:30 P.M.
Gold Ballroom, Ballroom Balcony

Symposium and Panel Discussion: **Medicine in the Space Age**

B. **Terrestrial Aspects**

Alfred P. Ingegno, M.D., Brooklyn, *Moderator*

Progressive Patient Care in the Hospital

Howard J. Lockward, M.D., Manchester, Connecticut (*By invitation*)
The Manchester Memorial Hospital

Economic Environment of Tomorrow's Doctor

William A. Richardson, Emerson, New Jersey (*By invitation*)
Medical Economics

The A. Walter Suiter Lecture—Medicine and Blue Shield Meet the Challenge

Carl R. Ackerman, M.D., New York City
United Medical Service

An Emergency Hospital in Thirty-Seven Minutes

Joseph T. Roberts, M.D., Buffalo
Veterans Administration Hospital

After each participant has given his introductory presentation, there will be an informal panel discussion and question and answer period.

Thursday, May 12, 2:00 P.M.
Gold Ballroom, Ballroom Balcony
Alfred P. Ingegno, M.D., Presiding

Symposium and Panel Discussion: **The Control of Cancer**

Anthony R. Curreri, M.D., Madison, Wisconsin (*By invitation*), *Moderator*
Cancer Research Hospital, University of Wisconsin

Advances in Systemic Chemotherapy of Cancer

Anthony R. Curreri, M.D., Madison, Wisconsin (*By invitation*)
Cancer Research Hospital, University of Wisconsin

Regional Therapy of Cancer by Perfusion Technics

Robert F. Ryan, M.D., New Orleans, Louisiana (*By invitation*)
Tulane University of Louisiana School of Medicine

New Technics in Radiotherapy of Cancer

Ivor Fix, M.D., New York City, (*By invitation*)
Mount Sinai Hospital

Autogenous Vaccines in Cancer Therapy

Luciano Sotto, M.D., Buffalo
Roswell Park Memorial Institute

Studies on Virus Vaccines in Experimentally Induced Cancer

Charlotte Friend, Ph.D., New York City (*By invitation*)
Sloan-Kettering Institute for Cancer Research

After each participant has given his introductory presentation, there will be an informal panel discussion and question and answer period.

Friday, May 13, 2:00 P.M.
Gold Ballroom, Ballroom Balcony
Bernard J. Pisani, M.D., Presiding

Symposium and Panel Discussion: **Clinical Potentialities of Hypothermia**

Juan Negrin, Jr., M.D., New York City, *Moderator*
Lenox Hill Hospital

Hypothermia in General Surgery

Salomon N. Albert, M.D., Washington, D.C. (*By invitation*)
General Hospital

Hypothermia in Open-Heart Surgery

Charles R. Stephen, M.D., Durham, North Carolina (*By invitation*)
Duke University Medical School

Selective Local Hypothermia in Neurosurgery

Juan Negrin, Jr., M.D., New York City
Lenox Hill Hospital

Hypothermia in the Treatment of Asphyxia

James A. Miller, Jr., Ph.D., Atlanta, Georgia (*By invitation*)
Emory University

After each participant has given his introductory presentation, there will be an informal panel discussion and question and answer period.

Friday, May 13, 3:30 P.M.
Gold Ballroom, Ballroom Balcony
Bernard J. Pisani, M.D., Presiding

Symposium and Panel Discussion: **Advances in Cardiovascular Technics**

Edgar P. Mannix, M.D., Manhasset, *Moderator*

St. Francis Hospital

The Heart Valves in Action

Robert P. Glover, M.D., Philadelphia, Pennsylvania (*By invitation*)
The Glover Clinic

Automatic Control of the Heart Beat

Vincent L. Gott, M.D., Minneapolis, Minnesota (*By invitation*)
University of Minnesota School of Medicine

Venoarterial Pump for Circulatory Support

James W. Dow, M.D., Philadelphia, Pennsylvania (*By invitation*)
The Drexel Institute of Technology

After each participant has given his introductory presentation, there will be an informal panel discussion and question and answer period.

SECTIONS

All papers read before the Society by members become the property of the Society. The original copy of each paper shall be left with the Secretary of the Section or Session.

Discussers should have their remarks typed and should hand them to the Secretary.

Time limits: Twenty minutes for each paper, five minutes for individual discussion.

Section and Session meetings shall begin promptly at the hour specified.

Executive Session—The first order of business, election of officers. "*To participate in the election of any section, a member must register with such section.*"—Bylaws, Chapter XII, Section 3.

Section on
Allergy

Chairman. Douglas E. Johnstone, M.D., Monroe
Vice-Chairman. Samuel J. Prigal, M.D., New York
Secretary...... Harry Leibowitz, M.D., Kings

Thursday, May 12—9:00 A.M.
East Room, Ballroom Floor

1. **The Treatment of Allergic Emergencies**

William G. Woodin, M.D., Syracuse, Director, Allergy Clinic and Clinical Associate Professor of Medicine, State University of New York Upstate Medical Center

2. **New Drugs in the Treatment of Allergies**

Robert J. Ehrenreich, M.D., Buffalo, Instructor in Pediatrics, University of Buffalo School of Medicine

Carl Arbesman, M.D., Buffalo, Director, Allergy Research Laboratory and the Allergy Clinic, Buffalo General Hospital, Assistant Clinical Professor of Medicine and Associate in Immunology, University of Buffalo School of Medicine

Discussion: Harry Markow, M.D., Brooklyn, Chief, Department of Allergy and Allergy Clinic, Beth-El Hospital

3. **The Role of Thyroid Function in Allergic Disease**

Joe W. Howland, M.D., Rochester, Chief, Medical Division of the Atomic Energy Project and Professor of Radiation Biology, University of Rochester School of Medicine and Dentistry

Discussion: Murray Dworetzky, M.D., New York City, Assistant Attending Physician, New York Hospital; Assistant Professor of Clinical Medicine and Public Health and Preventive Medicine, Cornell University Medical College

4. **New Frontiers in Allergy**

Samuel J. Prigal, M.D., New York City, Chief, Department of Allergy, Flower and Fifth Avenue Hospitals; Associate Professor of Medicine, New York Medical College, Flower and Fifth Avenue Hospitals

Discussion: William B. Sherman, M.D., New York City, Attending Physician, Roosevelt Hospital; Associate Clinical Professor of Medicine, College of Physicians and Surgeons of Columbia University

5. **The Dangers and Consequences of Steroid Therapy in Children**

Harry L. Mueller, M.D., Boston, Massachusetts (*By invitation*), Chief, Division of Allergy, Children's Medical Center; Clinical Associate in Pediatrics, Harvard Medical School

SYMPOSIUM

6. **Allergic Problems in Children**

A. **The Treatment of Poison Ivy Dermatitis**

Vincent J. Fontana, M.D., New York City, Chief, Pediatric Allergy Clinic and Assistant Clinical Professor of Pediatrics, New York University College of Medicine

B. **The Allergic Index—Its Prognostic Significance**

Howard G. Rapaport, M.D., New York City, Attending in Pediatric Allergy, Mount Sinai Hospital; Associate Professor of Clinical Pediatrics, Albert Einstein College of Medicine of Yeshiva University

C. **The Rehabilitation of the Pediatric Patient with Chronic Pulmonary Disease**

Joseph G. Benton, M.D., New York City, Director, Department of Physical Medicine and Rehabilitation, Kings County Hospital Center; Professor and Chairman, Department of Rehabilitation Medicine, State University of New York Downstate Medical Center

D. **The Value of Skin Testing Atopic Children**

Victor L. Cohen, M.D., Buffalo, Attending Physician in Charge of the Allergy Clinic, Buffalo Children's Hospital; Associate in Pediatrics, University of Buffalo School of Medicine

General Discussion

Section on Anesthesiology

Chairman..Albert M. Betcher, M.D., New York
Vice-Chairman......Richard Ament, M.D., Erie
Secretary...Solomon G. Hershey, M.D., Bronx

Tuesday, May 10—9:00 A.M.
Hartford Room, Mezzanine

1. **Demonstration of the Superior "Specific" Prophylactic Effect of Scopolamine on Postoperative Emesis**

Barnett A. Greene, M.D., Brooklyn, Director, Department of Anesthesiology, Cumberland Hospital; Clinical Associate Professor of Anesthesiology, State University of New York Downstate Medical Center

Samuel Berkowitz, M.D., Brooklyn, Attending Anesthesiologist, Cumberland Hospital; Clinical Assistant Professor of Anesthesiology, State University of New York Downstate Medical Center

Bernard S. Goffen, M.D., Brooklyn, Attending Anesthesiologist, Cumberland Hospital; Clinical Instructor of Anesthesiology, State University of New York Downstate Medical Center

Bryce C. Anthony, M.D., Brooklyn, Associate Attending Anesthesiologist, Cumberland Hospital

Joseph Katz, M.D., Brooklyn, Assistant Attending Anesthesiologist, Cumberland Hospital

Discussion: Louis R. Orkin, M.D., Bronx, Director, Department of Anesthesiology, Jacoby Hospital; Professor of Anesthesiology, Albert Einstein College of Medicine of Yeshiva University

2. **Anesthetic Management During Basal Ganglia Surgery**

Stephen N. Steen, M.D., Bronx, Director, Department of Anesthesiology, St. Barnabas Hospital

Discussion: Vance Lauderdale, Jr., M.D., New York City, Associate Attending Anesthesiologist, Presbyterian Hospital; Assistant Professor of Anesthesiology, College of Physicians and Surgeons of Columbia University

3. **Cardiovascular Effects of Syntocinon, Pitocin, and the Ergot Alkaloids**

Barbara Lipton, M.D., New York City, Associate Attending Anesthesiologist, Beth Israel Hospital

Robert D. Gittler, M.D., New York City, Adjunct Physician, Beth Israel Hospital

Harold A. Slotnik, M.D., New York City (*By invitation*), Resident Anesthesiologist, Beth Israel Hospital

Discussion: Merel H. Harmel, M.D., Brooklyn, Director, Department of Anesthesiology, Kings County Hospital; Professor of Anesthesiology, State University of New York Downstate Medical Center

4. **Comparative Studies of Phenazocine and Dextromoramide—Synthetic Narcotics**

Erwin Lear, M.D., Brooklyn, Associate Anesthesiologist, Jewish Hospital of Brooklyn; Assistant Visiting Anesthesiologist, Queens General Hospital

Remedios Suntay, M.D., Brooklyn (*By invitation*), Research Fellow in Anesthesiology, Jewish Hospital of Brooklyn

Irving M. Pallin, M.D., Brooklyn, Director, Department of Anesthesiology, Jewish Hospital of Brooklyn and Queens General Hospital

Albert E. Chiron, M.D., Brooklyn, Attending Anesthesiologist, Jewish Hospital of Brooklyn

Discussion: Raphael W. Robertazzi, M.D., Brooklyn, Attending Anesthesiologist, University Hospital; Professor of Clinical Anesthesiology, New York University Post-Graduate Medical School

5. **Total Cardiorespiratory Collapse—Cardiac Arrest**

Antonio Boba, M.D., Albany, Assistant Professor of Anesthesiology, Albany Medical College of Union University

Charles M. Landmesser, M.D., Albany,

Attending Anesthesiologist, Albany Hospital; Professor of Anesthesiology, Albany Medical College of Union University

Discussion: CHARLES L. BURSTEIN, M.D., New York City, Director, Department of Anesthesiology, Hospital for Special Surgery; Associate Visiting Anesthesiologist, Bellevue Hospital Center

6. **The Use of the Tecota Chloroform Inhaler in Obstetrics**

FRANK MOYA, M.D., New York City, Attending in Charge, Anesthesiology Service, Sloane Hospital of Columbia-Presbyterian Medical Center; Associate in Anesthesiology, College of Physicians and Surgeons of Columbia University

Discussion: ROSE M. LENAHAN, M.D., Buffalo, Assistant Anesthesiologist, Buffalo General Hospital

7. **Problems Caused by Rauwolfia and Related Compounds During Anesthesia and Surgery**

ANDRE A. SMESSAERT, M.D., New York City, Attending Anesthesiologist, St. Vincent's Hospital

ROBERT G. HICKS, M.D., New York City, Director, Department of Anesthesiology, St. Vincent's Hospital

Discussion: D. JEANNE RICHARDSON, M.D., New York City, Visiting Anesthesiologist, Bellevue Hospital Center

Section on Chest Diseases

Chairman....FRANCIS W. O'DONNELL, M.D., Erie
Vice-Chairman.EMIL A. NACLERIO, M.D., New York
Secretary....HARRY GOLEMBE, M.D., Sullivan

Tuesday, May 10—9:00 A.M.
West Room, Ballroom Floor

1. **Chest Disease and Rural Practice**

HANS S. KRAKAUER, M.D., Boston, Associate Attending Physician, Deaconess Hospital, Buffalo

2. **Pyogenic Lung Abscess**

MURRAY N. ANDERSEN, M.D., Buffalo, Attending Surgeon, Edward J. Meyer Memorial Hospital; Assistant Professor of Surgery, University of Buffalo School of Medicine

KHLAR MCDONALD, M.D., Buffalo (*By invitation*), Resident in Surgery, Edward J. Meyer Memorial Hospital

3. **Tracheobronchial Problems in Infancy and Childhood**

HARVEY W. KAUSEL, M.D., Albany, Assistant Attending Thoracic Surgeon, Albany Hospital; Assistant Professor of Surgery, Albany Medical College of Union University

4. **Surgical Treatment of Diffuse Pulmonary Emphysema**

PAUL A. KENNEDY, M.D., Buffalo, Attending Surgeon, Edward J. Meyer Memorial Hospital; Associate Clinical Professor of Surgery, University of Buffalo School of Medicine

MURRAY N. ANDERSEN, M.D., Buffalo, Attending Surgeon, Edward J. Meyer Memorial Hospital; Assistant Professor of Surgery, University of Buffalo School of Medicine

WILLIAM M. CHARDACK, M.D., Buffalo, Chief of Surgery, Veterans Administration Hospital; Associate Professor of Surgery, University of Buffalo School of Medicine

JEROME MAURIZI, M.D., Buffalo, Associate Attending Physician, Edward J. Meyer Memorial Hospital; Associate in Medicine, University of Buffalo School of Medicine

5. **Treatment of Esophageal Stenosis Secondary to Peptic Esophagitis**

FRANK J. BOLGAN, M.D., Buffalo, Assistant Attending Thoracic Surgeon, Millard Fillmore Hospital; Assistant in Surgery, University of Buffalo School of Medicine

6. **Chest Injuries—Emphasis on Basic Aspects and Emergency Treatment**

EMIL A. NACLERIO, M.D., New York City, Chief, Thoracic Surgery Service, Columbus Hospital and Harlem Hospital

General Discussion

Section on Dermatology and Syphilology

Chairman......DAVID BLOOM, M.D., New York
Vice-Chairman..................................
.........RICHARD L. SAUNDERS, M.D., Niagara
Secretary...
....ROYAL M. MONTGOMERY, M.D., New York

Tuesday, May 10—9:00 A.M.
East Room, Ballroom Floor

1. **Chairman's Address—Acrodermatitis Enteropathica: Another Inborn Error of Metabolism?**

David Bloom, M.D., New York City, Visiting Dermatologist, Bellevue Hospital Center; Professor of Clinical Dermatology and Syphilology, New York University Post-Graduate Medical School

PANEL DISCUSSION

Griseofulvin in the Treatment of Superficial Fungus Infections

Carl T. Nelson, M.D., New York City, *Moderator*, Director, Department of Dermatology, Presbyterian Hospital; Professor and Chairman, Department of Dermatology, College of Physicians and Surgeons of Columbia University

John T. Crissey, M.D., Buffalo, Attending Dermatologist, Edward J. Meyer Memorial Hospital; Assistant Clinical Professor of Dermatology, University of Buffalo School of Medicine

George M. Lewis, M.D., New York City, Attending Physician (Dermatology), New York Hospital; Professor of Clinical Medicine (Dermatology), Cornell University Medical College

Frederick Reiss, M.D., New York City, Chief, Department of Dermatology, Montefiore Hospital; Associate Clinical Professor of Dermatology and Syphilology, New York University Post-Graduate Medical School

Stanley A. Rosenthal, Ph.D., New York City (*By invitation*), Assistant Professor of Experimental Dermatology and Syphilology (Microbiology), New York University Post-Graduate Medical School

SYMPOSIUM AND PANEL DISCUSSION

3. **The Problem of the Resistant Staphylococcus in Infections of the Skin**

Stanley M. Peck, M.D., New York City, *Moderator*, Chief, Department of Dermatology, Mount Sinai Hospital; Associate Clinical Professor of Dermatology, College of Physicians and Surgeons of Columbia University

A. **The Problems Encountered in the Hospital from the Standpoint of the Dermatologist**

Clarence S. Livingood, M.D., Detroit, Michigan (*By invitation*), Physician-in-Charge, Division of Dermatology, Henry Ford Hospital

B. **Incidence of Staphylococcal Infections in the Dermatologic Service of Bellevue Hospital**

Richard Gibbs, M.D., New York City, Robert S. Clark Fellow in Dermatology, New York University Post-Graduate Medical School

C. **Report on Investigation of an Outbreak of Staphylococcal Disease in the Dermatologic Service of Bellevue Hospital**

Laszlo Biro, M.D., New York City (*By invitation*), Charles R. Rein Fellow in Dermatology, New York University Post-Graduate Medical School

D. **Health Agency Assistance in the Control of Staphylococcal Disease on Dermatologic Services**

Leon Buchbinder, Ph.D., New York City (*By invitation*), Assistant Director, Bureau of Laboratories, New York City Department of Health

E. **The Problem of the Resistant Staphylococcus in Routine Office Practice**

Samuel M. Peck, M.D., New York City

Section on Gastroenterology and Proctology

Chairman..
..........Sidney M. Fierst, M.D., Kings
Vice-Chairman....................................
........Michael R. Deddish, M.D., New York
Secretary........Victor W. Logan, M.D., Monroe

Tuesday, May 10—9:00 A.M.
Washington Room, Mezzanine

SYMPOSIUM

1. **Disturbances of Function of Gastrointestina Tract**

A. **Methods of Study**

John T. Farrar, M.D., New York City (*By invitation*), Chief, Gastroenterology Section, Veterans Administration Hospital; Assistant Professor of Clinical Medicine, Cornell University Medical College

B. **Esophagus and Stomach**

Thomas P. Almy, M.D., New York City, Director of Medicine, Bellevue Hospital Center (Cornell Division); Professor of Medicine, Cornell University Medical College

C. **The Small Bowel**

Sidney M. Fierst, M.D., Brooklyn, Associate Attending Physician, Maimonides

Hospital; Associate Clinical Professor of Medicine, State University of New York Downstate Medical Center

D. **The Large Bowel**

William Joseph Grace, M.D., New York City, Director of Medicine, St. Vincent's Hospital; Professor of Clinical Medicine, New York University College of Medicine

General Discussion

SYMPOSIUM

Diseases of the Liver

1. A. **Morphology**

Hans Popper, M.D., New York City, Director of Pathology, Mount Sinai Hospital; Professor of Pathology, College of Physicians and Surgeons of Columbia University

B. **Function**

Irwin M. Arias, M.D., Bronx, Assistant Visiting Physician, Bronx Municipal Hospital Center; Associate Professor of Medicine, Albert Einstein College of Medicine of Yeshiva University

General Discussion

Section on General Practice

Chairman........Arthur Howard, M.D., Fulton
Vice-Chairman................................
Herbert A. Laughlin, M.D., Chautauqua
Secretary......Lawrence Ames, M.D., Kings

Tuesday, May 10—9:00 A.M.

Gold Ballroom, Ballroom Balcony

Joint Meeting with Section on Industrial Medicine and Surgery

SYMPOSIUM AND PANEL DISCUSSION

Medical Problems in Employment Continuity of Senior Citizens

The symposium considers two viewpoints on the subject of retirement of the senior citizen: (1) compulsory retirement at a specified chronologic age and (2) separation from employment at a physiologic age decided by the worker and physician.

After both aspects of the subject have been discussed by the panelists and formal discussers, there will be an informal question and answer period.

Introduction

Norman Plummer, M.D., New York City, Chairman, Section on Industrial Medicine and Surgery

From the Viewpoint of:

1. **The Industrial Physician**

David H. Goldstein, M.D., New York City, Medical Director, the *New York Times;* Professor of Industrial Medicine, New York University College of Medicine

2. **The Cardiologist**

Oglesby Paul, M.D., Chicago, Illinois (*By invitation*), Chief, Department of Cardiology, Presbyterian Hospital; President-Elect, American Heart Association

3. **The Psychiatrist**

Alan A. McLean, M.D., New York City, Psychiatrist, International Business Machines

4. **The Orthopedic Surgeon**

Joseph D. Godfrey, M.D., Buffalo, Chief, Department of Orthopedic Surgery, Mercy Hospital; Attending Orthopedic Surgeon, Buffalo General Hospital

Discussion: Floyd C. Bratt, M.D., Rochester, Attending Physician, Highland Hospital

Gregory A. Galvin, M.D., Ithaca, Chief, General Practice Section, Tompkins County Memorial Hospital

Edward R. Schlesinger, M.D., Albany, Acting Assistant Commissioner, Division of Medical Services, New York State Department of Health

Summary: Arthur Howard, M.D., Johnstown, Chairman, Section on General Practice

Section on Industrial Medicine and Surgery

Chairman...Norman Plummer, M.D., New York
Vice-Chairman..Harry A. Hanson, M.D., Monroe
Secretary....Raymond J. Murray, M.D., Nassau

Tuesday, May 10—9:00 A.M.

Gold Ballroom, Ballroom Balcony

Joint Meeting with Section on General Practice. For program see Section on General Practice Page 996

Section on Legal Medicine

Chairman..George A. Friedman, M.D., New York
Vice-Chairman...Henry Siegel, M.D., Queens
Secretary........Herbert Lansky, M.D., Erie

Friday, May 13—9:00 A.M.

Washington Room, Mezzanine

1. **Status Report on Study into the Legal Basis for Awards in Cardiac Cases**

HAROLD F. MCNIECE, ESQ., Brooklyn (*By invitation*), Associate Dean, St. John's University School of Law

Discussion: JOHN B. THORNTON, ESQ., New York City (*By invitation*), Professor, New York University School of Law

2. **Responsibility of the Forensic Pathologist in Certifying the Cause of Death**

MILTON HELPERN, M.D., New York City, Chief Medical Examiner, City of New York

3. **Don't Call It Legal Medicine**

WILLIAM J. CURRAN, ESQ., Boston, Massachusetts (*By invitation*), Professor of Legal Medicine, Boston University; Director, Law-Medicine Research Institute

Discussion: FREDERICK A. METTLER, M.D., Blairstown, New Jersey (*By invitation*), Professor of Anatomy, College of Physicians and Surgeons of Columbia University

4. **Medicolegal Aspects of Birth Control**

GEORGE A. FRIEDMAN, M.D., New York City

Discussion: ALAN F. GUTTMACHER, M.D., New York City, Director of Obstetrics and Gynecology, Mount Sinai Hospital

Section on Medicine

Chairman....THOMAS F. FRAWLEY, M.D., Albany
Vice-Chairman.ALBERT H. DOUGLAS, M.D., Queens
Secretary.......WALTER T. ZIMDAHL, M.D., Erie

Wednesday, May 11—9:00 A.M.
Washington Room, Mezzanine

1. **The Two-Step Exercise Test—Brought Up to Date**

ARTHUR M. MASTER, M.D., New York City, Consultant Cardiologist, Mount Sinai Hospital

ISADORE ROSENFELD, M.D., New York City, Physician, New York Hospital Outpatient Department

Discussion: ALBERT H. DOUGLAS, M.D., Jamaica, Visiting Physician, Queens Hospital Center

2. **Prolonged Therapy with Adrenocorticosteroids in Allergic Diseases**

EMANUEL SCHWARTZ, M.D., Brooklyn, Chief, Department of Allergy, Long Island College Hospital; Clinical Associate Professor of Medicine, State University of New York Downstate Medical Center

Discussion: CARL E. ARBESMAN, M.D., Buffalo, Director, Allergy Research Laboratory, Buffalo General Hospital

3. **Bizarre Clinical Manifestations of Segmental Colitis**

ALFRED M. YUNICH, M.D., Albany, Consultant Gastroenterologist, Veterans Administration Hospital; Assistant Clinical Professor of Medicine, Albany Medical College of Union University

NATHAN F. FRADKIN, M.D., Albany, Consultant Gastroenterologist, Veterans Administration Hospital; Assistant Clinical Professor of Medicine, Albany Medical College of Union University

Discussion: SIDNEY M. FIERST, M.D., Brooklyn, Chief, Department of Gastroenterology, Kings County Hospital Outpatient Department

4. **The Value of Bone Marrow Examination for Diagnosis of Obscure Malignancy**

WILLIAM B. SCHARFMAN, M.D., Albany, Assistant Professor of Medicine, Albany Medical College of Union University

SIMON PROPP, M.D., Albany, Professor of Medicine, Albany Medical College of Union University

Discussion: ARTHUR SAWITSKY, M.D., Queens, Attending Hematologist, Long Island Jewish Hospital

5. **Changing Concepts of Adrenal Cortical Function**

PAUL J. ROSCH, M.D., Yonkers, Physician-in-Charge, Department of Nuclear Medicine, St. John's Riverside Hospital; Chief, Endocrine Section, New York City Hospital at Elmhurst

Discussion: THOMAS F. FRAWLEY, M.D., Albany, Professor of Medicine, Albany Medical College of Union University

Section on Neurology and Psychiatry

Chairman....HARRY A. KAPLAN, M.D., Kings
Secretary..FREDERICK H. HESSER, M.D., Albany

Friday, May 13—9:00 A.M.
Hartford Room, Mezzanine

SYMPOSIUM AND PANEL DISCUSSION

Cerebral Concussion and its Sequelae

E. JEFFERSON BROWDER, M.D., Brooklyn, *Moderator*, Attending Surgeon, Long Island College Hospital; Professor of Neurosurgery (Emeritus), State University of New York Downstate Medical Center

1. **Historical Review**

   Harry A. Kaplan, M.D., Brooklyn, Associate Attending Neurosurgeon, Kings County Hospital; Associate Professor of Neurosurgery, State University of New York Downstate Medical Center

2. **Pathophysiology**

   Maitland Baldwin, M.D., Bethesda, Maryland (*By invitation*), Neurosurgeon, National Institute of Neurological Diseases and Blindness

3. **Sequelae**

   William F. Caveness, M.D., New York City, Assistant Attending Neurologist, Neurological Institute; Assistant Professor of Neurology, College of Physicians and Surgeons of Columbia University

   Kaye C. Nielsen, M.D., New York City (*By invitation*), Assistant Chief of Staff, Neurosurgical Clinic, University of Lund, Sweden; Research Associate, College of Physicians and Surgeons of Columbia University

4. **Basic Mechanisms of Headache and Associated Symptoms Which May Follow Cerebral Concussion**

   Arnold P. Friedman, M.D., New York City, Physician-in-Charge, Headache Unit, Montefiore Hospital; Associate Professor of Clinical Neurology, College of Physicians and Surgeons of Columbia University

5. **Psychiatric Aspects of Head Injury**

   Edwin A. Weinstein, M.D., Bethesda, Maryland (*By invitation*), Consultant Neuropsychiatrist, Walter Reed Hospital

6. **Diagnostic Value of the Electroencephalogram**

   Hans Strauss, M.D., New York City, Consulting Neurologist, Mount Sinai Hospital; Lecturer in Neurology, College of Physicians and Surgeons of Columbia University

7. **Medicolegal Aspects**

   Richard Grimes, M.D., New York City, Deputy Medical Examiner of the City of New York

   General Discussion

Section on Obstetrics and Gynecology

Chairman....Richard W. Baetz, M.D., Erie
Vice-Chairman............Bernard J. Pisani, M.D., New York
Secretary. Robert E. L. Nesbitt, Jr., M.D., Albany

Friday, May 13—9:00 A.M.
West Room, Ballroom Floor

SYMPOSIUM AND PANEL DISCUSSION

Problems of Complete Obstetric Care for Greater Fetal Salvage

Edwin M. Gold, M.D., Brooklyn, *Moderator*, Assistant Clinical Professor of Obstetrics and Gynecology, State University of New York Downstate Medical Center

1. **Improved Fetal Salvage Through Preconceptional Therapy**

   James N. Capps, M.D., Syracuse, Associate Obstetrician and Gynecologist, Crouse Irving Hospital; Clinical Assistant Professor of Obstetrics and Gynecology, State University of New York Upstate Medical Center

2. **Early Abortion Studies with Special Reference to Ova-fetus Pathology**

   Carl Theodore Javert, M.D., New York City, Director, Department of Obstetrics and Gynecology, Woman's Hospital Division of St. Luke's Hospital

3. **Perinatal Mortality After the Period of Viability**

   Robert E. L. Nesbitt, Jr., M.D., Albany, Professor and Chairman, Department of Obstetrics and Gynecology, Albany Medical College of Union University

4. **Pathologic Studies in Abortion, and Stillborn and Neonatal Deaths with Specific Reference to the Neurologic System**

   George Anderson, M.D., Providence, Rhode Island (*By invitation*), Director of Laboratories, Providence Lying-In Hospital

Section on Ophthalmology

Chairman...Thomas M. d'Angelo, M.D., Queens
Vice-Chairman......Ivan J. Koenig, M.D., Erie
Secretary......................................Bernard Kronenberg, M.D., New York

Thursday, May 12—9:00 A.M.
West Room, Ballroom Floor

1. **Chairman's Address—Malpractice Insurance as it Affects the Ophthalmologist**

   Thomas M. d'Angelo, M.D., Flushing,

Director of Ophthalmology, Queens Hospital Center and Flushing Hospital; Associate Clinical Professor of Ophthalmology, New York Medical College

2. **A. V. Syndromes**

   Goodwin M. Breinin, M.D., New York City, Professor and Chairman, Department of Ophthalmology, New York University College of Medicine

3. **Complications in the Diagnosis and Surgery of Strabismus**

   Edward A. Dunlap, M.D., New York City, Assistant Surgical Ophthalmologist, New York Hospital; Associate Professor of Ophthalmology, Cornell University Medical College

   Discussion: Harold W. Brown, M.D., New York City, Associate Professor of Ophthalmology, New York University College of Medicine

   W. Guernsey Frey, M.D., New York City, Surgical Director of Ophthalmology, Manhattan Eye, Ear and Throat Hospital

   Abraham Schlossman, M.D., New York City, Senior Assistant Professor of Ophthalmology, State University of New York, Downstate Medical Center

4. **Management of Intraocular Foreign Bodies**

   Harvey E. Thorpe, M.D., Pittsburgh, Pennsylvania (*By invitation*), Chief Ophthalmologist, Montefiore Hospital; Member of the Faculty, the Ophthalmological Study Council—Lancaster Courses

   Discussion: John F. Gipner, M.D., Rochester, Clinical Professor of Ophthalmology, University of Rochester School of Medicine and Dentistry

   Richard C. Troutman, M.D., New York City, Professor of Ophthalmology, State University of New York, Downstate Medical Center

Section on Orthopedic Surgery

Chairman........Benjamin Obletz, M.D., Buffalo
Secretary......Carmelo C. Vitale, M.D., Kings

Wednesday, May 11—9:00 A.M.
Gold Ballroom, Ballroom Balcony

Joint Meeting with New York Academy of Medicine Section on Orthopedic Surgery

Chairman........Leroy Lavine, M.D., Nassau
Secretary..J. William Fielding, M.D., New York

1. **A Comparative Study of the Healing of Organic, Anorganic, and Autogenous Bone Grafts**

   James Murray, M.D., New York City (*By invitation*), Intern, Roosevelt Hospital

   Leroy S. Lavine, M.D., Brooklyn, Attending Orthopedic Surgeon, Long Island Jewish Hospital; Assistant Professor of Orthopedic Surgery, State University of New York Downstate Medical Center

   Robert F. Warren, M.D., Brooklyn, Attending Orthopedic Surgeon, Kings County Hospital; Associate Professor of Orthopedic Surgery, State University of New York Downstate Medical Center

   Discussion: John Manly, M.D., Brooklyn, Chief, Orthopedic Section, Veterans Administration Hospital; Assistant Professor of Orthopedic Surgery, State University of New York Downstate Medical Center

2. **Well Differentiated Fibrosarcoma of Os Calcis—Case Report**

   Raphael R. Goldenberg, M.D., Patterson, New Jersey (*By invitation*), Director, Department of Orthopedic Surgery, St. Joseph's Hospital; Associate Clinical Professor of Orthopedic Surgery, New York University College of Medicine

3. **A Mechanism of the Ortolani Sign (Hip Click)—Demonstrated in Newborn Cadaver with Hip Subluxation**

   Jacob F. Katz, M.D., New York City, Assistant Attending Orthopedic Surgeon, Mount Sinai Hospital; Orthopedic Surgeon, Blythedale Hospital, Valhalla

   Arthur Matlas, M.D., New York City (*By invitation*), Assistant Resident in Orthopedic Surgery. Mount Sinai Hospital

   Discussion: Robert K. Lippmann, M.D., New York City, Director, Department of Orthopedic Surgery, Mount Sinai Hospital

4. **The Surgical Treatment of Tuberculosis of Bones and Joints Under an Umbrella of Antituberculous and Antibiotic Drugs**

   Joseph Buchman, M.D., New York City, Attending Orthopedic Surgeon, Hospital for Joint Diseases; Assistant Clinical Professor of Orthopedic Surgery, New York University Post-Graduate Medical School

   Raymond T. Koval, M.D., New York City, Assistant Adjunct Orthopedic Surgeon, Hospital for Joint Diseases

   Discussion: William J. Fielding, M.D., New York City, Assistant Visiting Orthopedic Surgeon, Sea View Hospital; Associate Attending Orthopedic Surgeon, St. Luke's Hospital

5. **Axial Fixation of Forearm Fractures**

FREDERICK M. MAREK, M.D., New York City, Attending Orthopedic Surgeon, Lincoln Hospital

Discussion: FREDERICK H. VOM SAAL, M.D., Yonkers, Orthopedic Surgeon and Chief, Orthopedic Clinic, St. John's Hospital, Riverside

Section on Otolaryngology

Chairman. . DANIEL C. BAKER, JR., M.D., New York
Vice-Chairman. . . . .
. . . . GEORGE M. TRAINOR, M.D., Monroe
Secretary. . . . . . JOHN F. DALY, M.D., New York

Friday, May 13—9:00 A.M.
East Room, Ballroom Floor

1. **The Antibiotic Story—Reappraisal and Reevaluation**

IRVING A. GINSBERG, M.D., Buffalo, Clinical Assistant Otolaryngologist, Buffalo General Hospital

Discussion: JULES G. WALTNER, M.D., New York City, Associate Clinical Professor of Otolaryngology, College of Physicians and Surgeons of Columbia University

2. **Breathing Cripples**

NORMAN E. JOHNSON, M.D., Syracuse, Assistant Clinical Professor of Otolaryngology, State University of New York Upstate Medical Center

General Discussion

3. **The Use of Middle Ear Prostheses in Conductive Type Deafness**

ALAN AUSTIN SCHEER, M.D., New York City, Chief, Department of Otolaryngology, Misericordia Hospital; Associate Surgeon, Manhattan Eye, Ear and Throat Hospital

Discussion: MILOS BASEK, M.D., New York City, Assistant Clinical Professor of Otolaryngology, College of Physicians and Surgeons of Columbia University

4. **The Present Surgical Management of Otosclerosis**

RICHARD J. BELLUCCI, M.D., New York City, Surgeon Director, Manhattan, Eye, Ear and Throat Hospital; Assistant Clinical Professor of Otolaryngology, New York University College of Medicine

Discussion: GREYDON G. BOYD, M.D., New York City, Attending Surgeon, New York Eye and Ear Infirmary

5. **Surgical Treatment of Carcinoma of the Postcricoid Region**

MAX L. SOM, M.D., New York City, Chairman, Head and Neck Service, Montefiore Hospital; Assistant Clinical Professor of Otorhinolaryngology, New York University Post-Graduate Medical School

Discussion: JOHN F. DALY, M.D., New York City, Professor and Chairman, Department of Otolaryngology, New York University College of Medicine

6. **Motion Picture: Hemilaryngectomy for Carcinoma of the Larynx**

DANIEL C. BAKER, JR., M.D., New York City, Attending Otolaryngologist, Presbyterian Hospital; Clinical Professor of Otolaryngology, College of Physicians and Surgeons of Columbia University

Section on Pathology, Clinical Pathology, and Blood Banking

Chairman. . . . LOUIS F. FERRARO, M.D., Nassau
Vice-Chairman. . THEODORE T. BRONK, M.D., Erie
Secretary. . GEORGE K. HIGGINS, M.D., New York

Wednesday, May 11—9:00 A.M.
East Room, Ballroom Floor

1. **Hodgkin's Disease—Pathogenesis and Etiologic Considerations**

ANTONIO ROTTINO, M.D., New York City, Director, Department of Pathology, St. Vincent's Hospital

2. **Amyloidosis of Islets of Langerhans**

JOSEPH C. EHRLICH, M.D., Bronx, Director, Department of Pathology, Lebanon Hospital

IRVING M. RATNER, M.D., Bronx, Assistant Pathologist, Lebanon Hospital

3. **Blood Loss Incident to General Surgery Using Cr_{51} Labelled Erythrocytes**

LEO M. MEYER, M.D., Oceanside, Director, Department of Pathology, South Nassau Communities Hospital

ROBERT W. BERTCHER, M.D., Oceanside, Visiting Physician, South Nassau Communities Hospital

General Discussion

Section on Pediatrics

Chairman. . . . RICHARD A. DOWNEY, M.D., Erie
Vice-Chairman. . . . HUGH F. LEAHY, M.D., Albany
Secretary. . . . HARRY R. LITCHFIELD, M.D., Kings

Thursday, May 12—9:00 A.M.
Hartford Room, Mezzanine

1. **The Ingested Foreign Body**

 GEORGE N. SCATCHARD, M.D., Buffalo, Attending Radiologist, Children's Hospital; Clinical Professor of Radiology, University of Buffalo School of Medicine

 DIANA O. DUSZYNSKI, M.D., Buffalo, Associate Attending Radiologist, Children's Hospital

 RICHARD W. MUNSCHAUER, M.D., Buffalo, Clinical Assistant Radiologist, Children's Hospital

 RAMON PEREZ, M.D., Buffalo, Assistant Attending Radiologist, Children's Hospital

 Discussion: JOHN A. EVANS, M.D., New York City, Chief Radiologist, New York Hospital

2. **Parisitologic Infection in Children**

 THOMAS S. BUMBALO, M.D., Buffalo, Head, Department of Pediatrics, Edward J. Meyer Memorial Hospital; Associate Clinical Professor of Pediatrics, University of Buffalo School of Medicine

 Discussion: DONALD W. S. STIFF, M.D., Buffalo, Attending Radiologist, Edward J. Meyer Memorial Hospital; Assistant Professor of Radiology, University of Buffalo School of Medicine

3. **Acidosis Produced in Small Prematures by Lactic Acid in Formula**

 HERBERT I. GOLDMAN, M.D., New York City, Visiting Pediatrician, Long Island Jewish Hospital

 SAMUEL KARELITZ, M.D., New Hyde Park, Chief, Department of Pediatrics, Long Island Jewish Hospital; Clinical Professor of Pediatrics, State University of New York Downstate Medical Center

 HEDDA ACS, M.D., New York City (*By invitation*), Resident Pediatrician, Long Island Jewish Hospital

 Discussion: JOHN A. MONFORT, M.D., Brooklyn, Director, Lutheran Medical Center, Consultant Pediatrician, Cumberland Hospital

4. **A Follow-up Study of Children with Cleft Palate and/or Cleft Lip**

 MIRIAM LENDING, M.D., New York City, Assistant Attending Pediatrician, Flower and Fifth Avenue Hospitals

 HAROLD JACOBZINER, M.D., New York City, Assistant Commissioner of Health, the City of New York

 MARGARET A. LOSTY, R.N., New York City (*By invitation*), Acting Director for Handicapped Children, New York City Department of Health

 HERBERT RICH, B.S., New York City (*By invitation*)

 Discussion: HOWARD B. RASI, M.D., Brooklyn, Attending Plastic Surgeon, Methodist Hospital of Brooklyn; Associate Surgeon and Chief of Plastic and Reconstruction Surgery, Long Island College Hospital Outpatient Department

Section on Physical Medicine

Chairman....JOSEPH B. ROGOFF, M.D., New York
Vice-Chairman...FREDERICK ZIMAN, M.D., New York
Secretary........WILLIAM H. GEORGI, M.D., Erie

Thursday, May 12—9:00 A.M.
Washington Room, Mezzanine

1. **Improvements in the Art of Lower Extremity Prosthetics**

 LEWIS DICKAR, M.D., Brooklyn, Visiting Physician, Physical Medicine and Rehabilitation, Kings County Hospital Center; Assistant Clinical Professor of Rehabilitation Medicine, State University of New York Downstate Medical Center

2. **Current Concepts in the Physical Treatment of the Arthritides**

 LEON M. ROTHMAN, M.D., Brooklyn, Attending Physician, Physical Medicine and Rehabilitation, Jewish Chronic Disease Hospital; Assistant Professor of Physical Medicine and Rehabilitation, New York Medical College, Flower and Fifth Avenue Hospitals

3. **Rehabilitation of the Patient with Peripheral Vascular Disease**

 VICTOR CUMMINGS, M.D., New York City, Associate Attending Physician and Executive Officer, Department of Physical Medicine and Rehabilitation, Montefiore Hospital; Assistant Clinical Professor of Rehabilitation Medicine, Albert Einstein College of Medicine of Yeshiva University

 Discussion: ALFRED EBEL, M.D., Bronx, Chief, Department of Physical Medicine and Rehabilitation, Veterans Administration Hospital

4. **Recent Advances in the Evaluation and Management of the Hemiplegic**

Milton Lowenthal, M.D., New York City, Associate Professor of Physical Medicine and Rehabilitation, New York Medical College, Flower and Fifth Avenue Hospitals

General Discussion

Section on Preventive Medicine and Public Health

Chairman......William E. Mosher, M.D., Erie
Vice-Chairman....................................
....Edward R. Schlesinger, M.D., Albany
Secretary..Malcolm A. Bouton, M.D., Schenectady

Wednesday, May 11—9:00 A.M.
West Room, Ballroom Floor

1. **Recent Outbreak of Equine Encephalitis in New Jersey**

   Roscoe P. Kandle, M.D., Trenton, New Jersey (*By invitation*), Commissioner, New Jersey State Department of Health

SYMPOSIUM AND PANEL DISCUSSION

2. **Newer Approaches to Screening and Early Detection of Chronic Illness**

   George James, M.D., New York City, *Moderator*, First Deputy Commissioner of Health, the City of New York

   A. **Value of Cytologic Methods in Cancer Screening**

      Abraham Oppenheim, M.D., New York City, Director of Cancer Control, New York City Department of Health

   B. **A Modern Approach to Chronic Kidney Disease**

      S. Edward King, M.D., New York City, Consultant in Renal Disease, New York City Department of Health

   C. **New Technics for Discovering Syphilis in the Population**

      James A. Dolce, M.D., Buffalo, Deputy Commissioner, Erie County Department of Health

      Norbert G. Rausch, M.D., Buffalo, Consultant in Venereal Disease, Erie County Department of Health

   D. **A Community Screening Program for Glaucoma**

      Walter C. Mott, M.D., Albany, Attending Ophthalmologist, Albany Hospital; Associate Clinical Professor and Head, Department of Ophthalmology, Albany Medical College of Union University

Section on Radiology

Chairman....Albert A. Dunn, M.D., New York
Vice-Chairman...................................
..Paul A. Riemenschneider, M.D., Onondaga
Secretary...William B. Seaman, M.D., New York

Thursday, May 12—9:00 A.M.
Gold Ballroom, Ballroom Balcony

SYMPOSIUM AND PANEL DISCUSSION

The Lower Esophagus

Albert A. Dunn, M.D., New York City, *Moderator*, Director, Department of Radiology, Roosevelt Hospital

1. **The Endoscopist's Concept**

   Max Som, M.D., New York City, Attending Endoscopist and Chairman, Head and Neck Division, Montefiore Hospital

2. **The Roentgenologist's Concept**

   Richard Schatzki, M.D., Cambridge, Massachusetts (*By invitation*), Chief, Department of Radiology, Mount Auburn Hospital; Clinical Associate in Radiology, Harvard Medical School

3. **The Surgeon's Concept**

   Frederick H. Amendola, M.D., New York City, Chief, Department of Surgery, Roosevelt Hospital; Director, Department of Surgery, Lincoln Hospital

Section on Surgery

Chairman........Harry W. Hale, Jr., M.D., Erie
Vice-Chairman...................................
.........Vernon Weinstein, M.D., New York
Secretary....Harold G. Barker, M.D., New York

Thursday, May 12—9:00 A.M.
Headquarters Room, 18th Floor

SYMPOSIUM

The Elderly Patient in Surgery

1. **Challenges in Care**

   Harry W. Hale, Jr., M.D., Buffalo, Associate Director, Department of Surgery, Edward J. Meyer Memorial Hospital; Assistant Professor of Surgery, University of Buffalo School of Medicine

2. **Elective Surgery**

CHARLES E. WILES, M.D., Snyder, Attending Surgeon and Educational Director, Sisters of Charity Hospital; Instructor in Surgery, University of Buffalo School of Medicine

3. **The Acute Surgical Abdomen**

JAMES H. COSGRIFF, JR., M.D., Tonawanda, Associate Surgeon, Edward J. Meyer Memorial Hospital; Assistant in Surgery, University of Buffalo School of Medicine

4. **Anesthesia**

JAMES A. CUTTER, M.D., Buffalo, Associate Director, Department of Anesthesiology, Edward J. Meyer Memorial Hospital; Assistant Professor of Anesthesiology, University of Buffalo School of Medicine

5. **Special Technics in Care**

GUY S. ALFANO, M.D., Buffalo, Associate Surgeon, Albert J. Meyer Memorial Hospital; Assistant in Surgery, University of Buffalo School of Medicine

6. **Postoperative Care and Complications**

ROBERT K. WORMAN, M.D., Buffalo (*By invitation*), Chief Resident in Surgery, Edward J. Meyer Memorial Hospital

HARRY W. HALE, JR., M.D., Buffalo, Associate Director, Department of Surgery, Edward J. Meyer Memorial Hospital; Assistant Professor of Surgery, University of Buffalo School of Medicine

Section on Urology

Chairman....E. CRAIG COATS, M.D., New York
Vice-Chairman................................
....HOWARD T. THOMPSON, M.D., Monroe
Secretary......................................
....GUSTAVUS A. HUMPHREYS, M.D., New York

Wednesday, May 11—9:00 A.M.
Headquarters Room, 18th Floor

SYMPOSIUM

1. **New Horizons in Therapy of Bladder Tumors**

A. **Chemotherapy of Urinary Bladder Tumors**

DONALD F. MCDONALD, M.D., Rochester, Chief, Division of Urology, Strong Memorial Hospital; Professor and Chairman, Department of Urologic Surgery, University of Rochester School of Medicine and Dentistry

B. **The Possible Role of Enzymes and Metabolites in the Genisis of Bladder Cancer**

MEYER M. MELICOW, M.D., New York City, Assistant Attending Urologic Surgeon, Presbyterian Hospital; Associate Clinical Professor of Urology, College of Physicians and Surgeons of Columbia University

AURELIO C. USON, M.D., New York City (*By invitation*), Instructor in Urology, College of Physicians and Surgeons of Columbia University

C. **Use of Ileum in Bladder Carcinoma**

WILLIAM J. STAUBITZ, M.D., Buffalo, Chief, Division of Urology, Roswell Park Memorial Institute; Assistant Clinical Professor of Urology, University of Buffalo School of Medicine

OSCAR J. OBERKIRCHER, M.D., Buffalo, Professor of Urology, University of Buffalo School of Medicine

IMRE V. MAGOSS, M.D., Buffalo (*By invitation*), Associate Cancer Research Urologist, Roswell Park Memorial Institute

MELBOURNE H. LENT, M.D., Buffalo, Associate Chief, Division of Urology, Roswell Park Memorial Institute

EUGENE M. SIGMAN, M.D., Buffalo, Senior Cancer Research Urologist, Roswell Park Memorial Institute

Discussion: WILLETT F. WHITMORE, JR., M.D., New York City, Attending Urologic Surgeon, Memorial Center for Cancer and Allied Diseases

EDGAR A. SLOTKIN, M.D., Buffalo, Assistant Clinical Professor of Urology, University of Buffalo School of Medicine

SYMPOSIUM

2. **New Horizons in Pediatric Urology**

A. **Megacystis Syndrome in Children**

VICTOR F. MARSHALL, M.D., New York City, Professor of Clinical Surgery (Urology), Cornell University Medical College

JOHN H. MCGOVERN, M.D., New York City, Assistant Professor of Clinical Surgery (Urology), Cornell University Medical College

ALBERT J. PAQUIN, M.D., Charlottesville, Virginia (*By invitation*), Professor and Chairman, Department of Urology, University of Virginia Department of Medicine

B. **Mechanisms Underlying Dilated Urinary Tracts in Children**

JOHN K. LATTIMER, M.D., New York City, Professor of Urology, College of Physicians and Surgeons of Columbia University

Discussion: Frank C. Hamm, M.D., Brooklyn, Professor of Urology, State University of New York Downstate Medical Center

George R. Nagamatsu, M.D., New York City, Professor and Chairman, Department of Urology, New York Medical College, Flower and Fifth Avenue Hospitals

SESSIONS

Session on History of Medicine

Chairman. . Richard B. Stark, M.D., New York
Secretary. . . John A. Benjamin, Jr., M.D., Monroe

Friday, May 13—9:00 A.M.
Headquarters Room, 18th Floor

1. **Joseph Jones, M.D., (1863–1896), Roving Surgeon Major of the Confederate Army and Postbellum President of the Board of Health of the State of Louisiana**

   Stanhope Bayne-Jones, M.D., Washington, D.C. (*By invitation*), Chairman of the Secretary's Consultants on Medical Research and Education, U.S. Department of Health, Education, and Welfare

2. **Confederate Medical Officer in the Field**

   H. H. Cunningham, Ph.D., Elon College, North Carolina (*By invitation*), Dean, Elon College

3. **Frank Hastings Hamilton, Surgeon Extraordinary of the Union Army**

   Eliot B. Hague, M.D., Buffalo, Chairman, Department of Ophthalmology, Millard Fillmore Hospital

Session on Public Relations

Chairman. . Reid R. Heffner, M.D., Westchester
Secretary. . . . John M. Galbraith, M.D., Nassau

Wednesday, May 11—9:00 A.M.
Hartford Room, Mezzanine

1. **Medicine and Mass Communications**

   Harold E. Fellows, Washington D.C. (*By invitation*), President and Chairman of the Board, National Association of Broadcasters

2. **The State of Public Relations**

   William W. Cook, New York City (*By invitation*), President, New York Chapter, Public Relations Society of America

General discussion

SCIENTIFIC EXHIBITS

Statler Hilton Hotel, New York City
Monday, May 9, through Friday, May 13, 1960

WILLIAM L. WATSON, M.D., NEW YORK, *Chairman*
BEVERLY C. SMITH, M.D., NEW YORK, *Cochairman*
FRED W. BUSH, M.D., MONROE
ALBERT H. DOUGLAS, M.D., QUEENS
PAUL A. KENNEDY, M.D., ERIE
EUGENE L. LOZNER, M.D., ONONDAGA
FREDERICK LEE LIEBOLT, M.D., NEW YORK
ARTHUR R. WILSEY, M.D., FULTON

Mezzanine Exhibit Hall, Georgian Room, Ballroom Balcony

Mezzanine Exhibit Hall
Booths 200 through 241

Adenomas and Cancer of the Colon and Rectum

Robert Turell, M.D.

Mount Sinai Hospital
New York City

The diagnosis; pathology; exceptional familial tendency; malignant potential of solitary and multiple, pedunculate and sessile, smooth and villous adenomas in adults and juveniles are considered. Fractional biopsy is decried; instead, total biopsy or the removal of the entire polyp at its base in one piece or in several large segments is advocated. The criteria for the early diagnosis of cancer in adenomas, particularly that of noninvasive variety, are illustrated. All accepted forms of therapy for adenomas situated within the endoscopic reach and those located above the reach of the sigmoidoscope also are illustrated. (*Booth 200*)

Chemotherapy of Testis Tumors

Willet F. Whitmore, Jr., M.D.
Min-Chiu Li, M.D.
Harry Grabstald, M.D.
Robert Golbey, M.D. (*By invitation*)

Memorial Center for Cancer and Allied Diseases
New York City

Experience in the treatment of patients with testicular tumor, utilizing combined chemotherapy, is reviewed. (*Booth 201*)

Maxillofacial Prosthetics

Andrew J. Ackerman, D.D.S. (*By invitation*)

Memorial Center for Cancer and Allied Diseases
New York City

Various types of prosthetic appliances used to correct defects of the maxilla, mandible, and face following cancer surgery are displayed. (*Booth 202*)

Mouth Cancer

Hollon W. Farr, M.D.

Memorial Center for Cancer and Allied Diseases
New York City

The problem of early diagnosis of mouth cancer, the technic of office biopsy, and the significance of a lump in the neck are presented. The rate of cure and morbidity of treatment are directly related to the stage of disease when first seen. The results of a five-year study are detailed. (*Booth 203*)

Treatment of Cancer by Perfusion

Oscar Creech, Jr., M.D. (*By invitation*)
Edward T. Krementz, M.D. (*By invitation*)
R. F. Ryan, M.D. (*By invitation*)
Keith Reemtsma, M.D. (*By invitation*)

Tulane University School of Medicine

J. L. Elliott, M.D. (*By invitation*)

U.S. Public Health Service Hospital
New Orleans, Louisiana

A new approach to the treatment of cancer that consists of isolating and perfusing the tumor-bearing area with chemotherapeutic agents and utilizing a heart-lung apparatus is described. This method permits the use of high concentrations of cancericidal drugs with minimal systemic toxic effects. It has been used as adjuvant therapy with standard surgical procedures as well as for palliation in patients with regionally confined but nonresectable tumors. The technics, case selection, and results in 110 patients are discussed. *(Booth 204)*

Cancer Detection in the Doctor's Office

John M. Loré, Jr., M.D.
Paul S. Ingrassia, M.D.
Daniel Hyman, M.D.
Alfred S. Moscarella, M.D.

Good Samaritan Hospital
Suffern

Frank E. Ciancimino, M.D.

Nyack Hospital
Nyack

A plan formulated by the Cancer Committee of the Rockland County Medical Society for cancer detection centered in the private doctor's office is described. The plan consists of a detailed history form to be filled out at home and a container with the necessary receptacles for collection of stool and urine specimens by the patient. Blood smear, cytologic smear, and blood specimens are taken by the doctor. The entire examination is performed in the doctor's office. The laboratory material is sent to a participating hospital. All the findings are correlated by the physician, and the patient is advised. The design of this plan facilitates the examination of a large number of people. *(Booth 205)*

The Diagnosis and Management of Malignant Melanoma

Gordon P. McNeer, M.D.
Robert J. Booher, M.D.
Theodore R. Miller, M.D.
Richard D. Brasfield, M.D.
Charles J. McPeak, M.D.
Lemuel Bowden, M.D.
Joseph G. Fortner, M.D.
Walter Lawrence, Jr., M.D.

Memorial Center for Cancer and Allied Diseases
New York City

The differential diagnosis between benign nevi and malignant melanoma is illustrated. Pertinent features in the life history of melanoma, including characteristics of the congenital and de novo varieties of melanoma, are demonstrated. Basic concepts of treatment include methods of biopsy and surgical management of the primary lesion and its anticipated metastatic lymphatic drainage. Perfusion experiments and statistic data on end results of present-day management are shown. *(Booth 206)*

Melanotic Freckle

Maurice J. Costello, M.D.
Charles P. DeFeo, Jr., M.D.

Lenox Hill Hospital
New York City

Stuart B. Fisher, M.D. *(By invitation)*

Western Reserve University Hospitals
Cleveland, Ohio

A melanotic freckle is clinically an easily recognized, pigmented, precancerous macule frequently seen on the face of patients over forty years of age. It usually exhibits a histopathologic picture resembling a premalignant junction nevus which can slowly progress to a tumor stage (superficial melanocarcinoma) showing histopathologic features of malignant melanoma. The histopathologic appearance depends upon the area of the lesion selected for biopsy. Multiple subtotal biopsies or serial examination of the entire excised lesion provide a more accurate interpretation. Individualized treatment consisting of surgical excision or electrode-siccation and curettage will provide good therapeutic, cosmetic, and functional results. Long-term observation of patients with this clinically distinctive lesion is necessary to corroborate the impression that prognosis of a melanotic freckle is more favorable when compared with a classic malignant melanoma. The detailed histories, clinical course, and results of treatment in 10 patients with melanotic freckle are presented. *(Booth 207)*

Treatment of Internal Mammary Nodes with Radioisotopes

Richard D. Brasfield, M.D.
Ulrick K. Henschke, M.D.

Memorial Hospital for Cancer and Allied Diseases
New York City

The high incidence of metastasis to the internal mammary nodes in breast cancer is noted with the exact location of the nodes. A simple and safe method of catheterizing the internal mammary vessels is demonstrated. After the patient has returned to her room a radioactive wire of Ir^{192}, Co^{60}, or Ta^{182} is inserted. Nine thousand roentgens are delivered to the nodes in four to five days. Fifty patients have been treated by this method in the past three years. The theory, technic, and results are recorded. *(Booth 208)*

Bronchogenic Carcinoma in Patients Under Forty

Harry L. Katz, M.D.
Sidney Sbar, M.D. *(By invitation)*

Veterans Administration Hospital
Brooklyn

The clinical features, symptomatology, roentgenographic features, diagnostic criteria, and pathologic findings in a group of 62 cases of bronchogenic carcinoma are analyzed. Therapeutic modalities used, results of treatment, and all factors relating to survival rates are considered, as well as the autopsy findings with respect to pattern of metastases and manner of spread of the disease. The essential differences in the clinical and pathologic findings in these 62 young individuals are compared with a series of cases of bronchogenic carcinoma in the older-age group. The studies indicate significant differences in the clinical and pathologic features of the two groups. *(Booth 209)*

Hospital Dentistry

Edward Stroh, D.D.S. *(By invitation)*
Sydney Rappaport, D.D.S. *(By invitation)*

Metropolitan Hospital
New York City

The histopathology of clinical cases of dentistry and oral surgery serviced in a large city hospital is described. *(Booth 210)*

A New Technic for the Repair of Inguinal and Incisional Hernias

Francis C. Usher, M.D. *(By invitation)*

Baylor University College of Medicine
Houston, Texas

A technic for using a plastic mesh in an intraperitoneal position for the repair of incisional hernias and in a subfascial position for the repair of direct inguinal hernias is illustrated. By implantation of the mesh deep into the musculofascial structures of the abdominal wall, a more secure repair of the defect is obtained. Clinical studies in the past two years have demonstrated many advantages of this technic over the customary "onlay" method of reinforcement with a prosthesis. The steps in the repair of an incisional and of a direct hernia by this technic are illustrated. *(Booth 211)*

Use of A Parallel Flow Hemodialyzer in Surgery

Roland Anthone, M.D.
Sidney Anthone, M.D.
Richard W. Egan, M.D.
Arthur E. MacNeill, M.D. *(By invitation)*
Jose Rodriguez, M.D. *(By invitation)*

Buffalo General Hospital
Buffalo

A parallel flow hemodialyzer which has been used clinically for a number of years in the treatment of patients with renal shutdown has been further adapted for other uses. This dialyzer functions as an efficient heat exchanger for producing profound or regulated hypothermia by internal blood cooling. It has been adapted as an integral part of a screen oxygenator for cardiopulmonary bypass. This helps to maintain a more normal acid base balance and regulate the blood temperature. Experimentally, it has been adapted to restore old "banked" blood to a more normal state by extraction of the excess potassium and citrate. *(Booth 212)*

Repair of Difficult Inguinal Hernias

Alfred H. Iason, M.D.

New York Medical College, Flower and Fifth Avenue Hospitals
New York City

The anatomy of direct, saddlebag, sliding, and bladder hernias of a difficult and recurring nature is exhibited. The method pursued to correct these conditions also is demonstrated, and the utilization of materials to reinforce the hernia defects is shown. A tabulation of the results of the difficulties encountered in correcting the defects is included. A review of comparative values of old and new, natural and artificial reinforcement materials now available is of particular interest. Anatomic, surgical, and mechanical problems are elucidated. *(Booth 213)*

Tamponade Control Apparatus for Bleeding Esophagogastric Varices

George Kulick, M.D.
Louis M. Rousselot, M.D.

St. Vincent's Hospital
New York City

A newly revised and simplified tamponade apparatus for emergency management of bleeding esophagogastric varices is demonstrated. It is used in conjunction with the Sengstaken-Blakemore tube. The headgear regulates in grams the upward traction force on the gastric balloon. A loud horn alarm is sounded should the gastric balloon rupture. Pressure necrosis of the nose is prevented with this unit. The esophageal control mechanism regulates the pressure in centimeters of water accurately and without fluctuation. Both units are of nonbreakable plastic with a simple electrical alarm system. This combined apparatus eliminates many of the hazards of balloon tamponade. (*Booth 214*)

A New Method of Replacing the Entire Esophagus—For Cancer or Benign Obstruction

HENRY J. HEIMLICH, M.D.

Montefiore Hospital

New York Medical College, Flower and Fifth Avenue Hospitals

New York City

An operation in which the entire esophagus can be replaced or by-passed, enabling the patient to swallow all foods, is demonstrated. A thoracotomy need not be performed in patients with benign strictures or inoperable lesions. A tube constructed from the greater curvature of the stomach remains attached at the fundus. It is reversed, brought to the neck subcutaneously, and the antral end is anastomosed to the pharynx or cervical esophagus. Four fifths of the stomach remains in the abdomen and functions normally. The results of three years experience since the operation was first performed successfully are presented. (*Booth 215*)

Phlebography in the Diagnosis of Venous Thrombosis

JAMES A. DEWEESE, JR., M.D.
STANLEY M. ROGOFF, M.D.
CLAY E. PHILLIPS, M.D. (*By invitation*)
WALTER J. PORIES, M.D. (*By invitation*)

University of Rochester Medical Center

Strong Memorial Hospital

Rochester

A technic of long film phlebography of the leg that has proved reliable for objective demonstration of thrombi in patients with deep venous thrombosis of the leg is described. The technic of examination of thrombosis is outlined, and phlebographic findings in a group of approximately 100 patients examined because of suspected or definite venous thrombosis of the leg, or because of signs suggesting pulmonary emboli from an obscure source, are summarized. These phlebographic data are correlated with the more routine clinical findings encountered in the same patients. (*Booth 216*)

Costal Intraosseous Venography in the Diagnosis of Portal Hypertension

ROBERT SCHOBINGER, M.D. (*By invitation*)
PHILIP COOPER, M.D. (*By invitation*)

Albert Einstein College of Medicine of Yeshiva University

Bronx

LOUIS M. ROUSSELOT, M.D.
JOSEPH STEIN, M.D.

New York University School of Medicine

New York City

The intramedullary injection of contrast medium demonstrates certain venous pathways escaping visualization by conventional means. Costal intraosseous venography is a technically convenient method to study the intrathoracic systemic venous circulation in a variety of diseases, such as cardiac failure, constrictive pericarditis, superior vena cava syndrome, mediastinal and pulmonary neoplasm, and portal hypertension. The technical details and venographic findings in normal and abnormal cases are outlined. Costal intraosseous venograms and splenoportograms are compared, as well as the venographic findings before and after portocaval shunts. A pictorial comparison between several intrathoracic disease states also is included. (*Booth 217*)

Maxillofacial Rehabilitation

MICHAEL L. LEWIN, M.D.
EUGENE GOTTLIEB, M.D.

Montefiore Hospital

Bronx

Congenital and acquired deformities of the jaws associated with functional disruption and cosmetic deformities are considered. Various corrective surgical procedures associated with dental restoration are demonstrated. The result proves satisfactory jaw function and restores normal esthetic appearance. (*Booth 218*)

Experimental and Clinical Retrograde Catheter Aortography

EDWARD I. GOLDSMITH, M.D.
NATHANIEL FINBY, M.D.

New York Hospital

New York City

The availability of new surgical technics has emphasized the need for accurate preoperative visualization of the aorta and its branches, including the coronary arteries. The Departments of Surgery and Radiology of New York Hospital initiated a cooperative experimental program to develop a safe and reliable method of aortography and coronary arteriography. As a result of animal experiments designed to evaluate various technics, equipment, and contrast media, five fundamental principles were evolved. The development and clinical use of these principles in the diagnosis of a variety of congenital and acquired abnormalities are demonstrated. (*Booth 219*)

Drawings of New and Original Ideas in 30,000 Hernia Repairs

E. Earle Shouldice, M.D. (*By invitation*)

Shouldice Surgery
Toronto, Canada

Forty-five original anatomic drawings by artists from the University of Toronto illustrate the important points in the repair of abdominal hernia which are the foundation of the reduction of hernia recurrences from 11 per cent in 1945 to 0.25 per cent recurrences in 1,900 herniorrhaphies performed in 1952, a seven-year follow-up of 90 per cent of the cases. In this intensive study and specialization in the surgery of hernia over 30,000 abdominal hernia repairs have been performed on adults under local anesthetic since 1945—over 3,600 during 1959. (*Booth 220*)

Pathology and Physiology of the Thoracic Duct Lymph

Alvin L. Watne, M.D. (*By invitation*)
Imran Hatiboglu, M.D. (*By invitation*)
George E. Moore, M.D.

Roswell Park Memorial Institute
Buffalo

Thoracic duct cannulation has been performed in 60 patients with advanced cancer. Tumor cells were present in the lymph of 22 per cent of these patients. There is correlation between tumor cells in the lymph and scalene node metastases, but not pulmonary metastases. No showering of tumor cells was found in the lymph during palliative surgery. Certain anticancer agents caused a decrease in the number of tumor cells present in the lymph. Radioscopic studies have revealed a rapid transference of tagged proteins from the blood or peritoneal cavity into the lymphatics, and a constant absorption pattern of fats and fatty acids from the gastrointestinal tract. (*Booth 221*)

Development of a Simplified Membrane Oxygenator

Armand A. Crescenzi, M.D. (*By invitation*)
Peter C. Hofstra, M.D. (*By invitation*)
C. Lloyd Claff, Sc.D. (*By invitation*)
Philip Cooper, M.D. (*By invitation*)

Albert Einstein College of Medicine of Yeshiva University
Bronx

A gas exchanger utilizing three-dimensional plastic spacers as oxygenating beds and sealed semipermeable plastic membrane envelopes as capillary beds is described. Specially prepared teflon membrane allows a diffusion rate of oxygen as high as 65 cc. per square meter of exposed membrane envelope. Data is from bank blood and perfusion of mongrel dogs. Arterial saturations above 90 per cent can be obtained with flow rates of 300 to 125 cc. per membrane per meter operating at pressures within physiologic range. This type of membrane system may be used as an artificial kidney, for isolated organ perfusion, and for dialysis in drug or chemical toxicities. (*Booth 222*)

Vaginal Cytology in Pregnancy

Donald W. Hall, M.D.
Paul K. Birtch, M.D.
Clyde L. Randall, M.D.
Richard W. Baetz, M.D.

University of Buffalo School of Medicine
Buffalo

Several hundred cases of pregnancies, just before term, at term, and beyond term, that have not been delivered are analyzed. The changes in cytology when taken from the vaginal wall are shown. Several hundred cases of vaginal cytology taken at the time of delivery, or immediately following delivery also are analyzed. Any change in the vaginal cytology from the normal pregnancy is illustrated. (*Booth 223*)

Placentography with Duo- and Tri-Speed Intensifying Screens

Abraham Geffen, M.D.
George Blinick, M.D.

Beth Israel Hospital
New York City

Single film lateral placentography, as obtained by the use of a combination of portions of intensifying screens of different speeds in one cassette, is described. (*Booth 224*)

Study of Oxytocics

William J. Fitzgerald, M.D.

A. N. Brady Hospital
Albany Medical College of Union University
Albany

A clinical study of oxytocics (ergonovine maleate) over an eight-year period (1950 to 1958) is described. The study includes pulse and blood pressure before administration of drug, the time of reaction of drug and blood pressure readings every five minutes for one hour after injection of drug, loss of blood during the third stage of labor, amount of lochia, and degree of uterine involution. A special study of pressor effects following the administration of the drug is included, as well as a survey of side reactions—nausea, vomiting, headaches, and tachycardias. Observations include the type of anesthesia used and method of delivery—spontaneous and operative. In this investigation of 4,000 cases ergonovine maleate was given intravenously. A supplementary clinical survey on the use of synthetic oxytocin in obstetrics also is presented. *(Booth 225)*

Obstetric Obesity

Richard X. Sands, M.D.

Woman's Hospital
New York City

An original and unique method for evaluating the effectiveness of therapy in obstetric obesity is presented. Because of the normal physiologic increment during pregnancy the usual means of evaluation may be misleading. The method described is used during the third trimester, is based on mass data, introduces the concept of weight benefit, and the final results lend themselves to statistical analysis. The method was tested in a series of 112 gravidas, all over 180 pounds, of whom 69 weighed between 190 and 300 pounds. Treatment consisted of anorectic therapy without dietary restriction. Weight distribution before and after treatment is included and the results suggest that the agent used—semoxydrine and pentobarbital—affects the hypothalamic "appestat." *(Booth 226)*

The Role of Pain in Myocardial Infarction

William Regelson, M.D. *(By invitation)*
Stanley F. Hoffmeister, M.D. *(By invitation)*
Hans Wilkins, D.V.M. *(By invitation)*

Roswell Park Memorial Institute
Buffalo

A study to determine the effect of many different drugs, which alter the perception of painful stimuli, on the fatal ventricular fibrillation following acute coronary occlusion in conscious dogs is described. The protective effect of morphine sulfate, pentobarbital anesthesia, reserpine, iproniazid, and hexamethonium when given prior to acute coronary occlusion in the dog is shown. These agents prevent the onset of ventricular fibrillation following acute coronary occlusion in the dog and thus significantly increase the survival. *(Booth 227)*

The Management of Peripheral Arterial Insufficiency

Saul S. Samuels, M.D.
Herbert E. Shaftel, M.D.

Stuyvesant Polyclinic
New York City

The indications of peripheral arterial disease and an outline for its medical management are presented. A review of site and mechanism of the action of vasodilator drugs and the pharmacology of a new vasodilator drug are given, as well as a tabular record of the diagnosis and treatment of peripheral disease—both diabetic and nondiabetic. Oscillometric and plethysomograph tracings in actual cases before and after oral and parenteral administration are included. *(Booth 228)*

Carotid Artery Occlusion Syndrome

Charles E. Wiles, M.D.
Pedro D. Nartatez, M.D. *(By invitation)*
Jose J. Virata, M.D. *(By invitation)*
John G. Zoll, M.D.

Sisters of Charity Hospital
Buffalo

The results of both basic research in animals and clinical application in a series of 8 patients treated surgically are presented. The clinical syndrome is classified as to type, etiology, signs and symptoms, investigative measures, and surgical therapy employed. The value of carotid arteriograms and the insertion of by-pass carotid artery grafts (Teflon prostheses) is emphasized. *(Booth 229)*

Clinical Applications of Infrared Spectroscopy

Bernard Klein, Ph.D. *(By invitation)*
Milton Weissman, B.S. *(By invitation)*

Veterans Administration Hospital
Bronx

Infrared spectroscopy is a new approach to solid state analysis. Utilization of potassium bromide disk preparations offers the advantages of ease of sample preparation, speed, and precise qualitative identification of both single components and mixtures. This technic has been successfully applied to the identification of renal tract calculi. Absorption spectra of the usually occurring types and mixtures are presented and compared with the infrared spectra of pure compounds and prepared mixtures. Included are calcium oxalate, calcium hydroxy/carbonato apatites, magnesium ammonium phosphate, together with binary mixtures of these substances. The spectra of uric acid and cystine calculi also are presented. With experience and carefully prepared templates, semiquantitative estimations are possible. This technic has been extended to identify prostatic, dental, and biliary tract calculi. The latter are compared with the spectrum of cholesterol, bilirubin, and cholic acid derivatives. Finally, examples of the utilization of infrared spectroscopy for toxicologic identifications commonly encountered in clinical practice are demonstrated. These include barbiturates, alcohols, and salicylates. (*Booth 230*)

Precise Administration of Parenteral Fluids

George Kulick, M.D.
John E. Sullivan, M.D.
Louis M. Rousselot, M.D.

St. Vincent's Hospital
New York City

An apparatus enabling one to administer medications into the blood stream safely and accurately is demonstrated. A microdial measures the flow rate with a range of 0.01 cc. to 4 cc. per minute with a total of 400 different speeds. The infusion is delivered via a collapsible plastic bag with no danger of air embolism. Accuracy of flow is maintained despite any spasm of vessels or malposition of the bevel of the needle. This apparatus is useful particularly in giving fluids or medications to infants and seriously ill patients where accuracy and timing of flow is mandatory. (*Booth 231*)

Management of the Obese Diabetic

Seymour K. Fineberg, M.D.

Harlem Hospital
New York City

Obesity is, as a rule, associated with diabetes, particularly the mild maturity-onset form. There is an unfortunate tendency to neglect dietary measures and treat such patients with oral hypoglycemics because of their convenience. Weight reduction will ameliorate both the obesity and the diabetes. Fifty-four patients completed a double-blind study with phenmetrazine hydrochloride and placebo without knowledge of the purpose of the therapy. Seventy-two per cent of patients on phenmetrazine lost weight significantly, and 50 per cent of diabetics on insulin reduced the dosage by 50 per cent or more or stopped taking it entirely. Treatment with anorexigenic agents plus diet is preferable to indiscriminate use of oral hypoglycemics in obesity-diabetes. (*Booth 232*)

Carotid Artery Insufficiency

Richard W. Egan, M.D.
Irving Hyman, M.D.
Berten C. Bean, M.D. (*By invitation*)
Walter F. Stafford, Jr., M.D.
Paul J. LiBassi, M.D. (*By invitation*)
Charles H. Addington, M.D.

Buffalo General Hospital
Buffalo

The results of a study of 100 patients with symptoms of carotid arterial insufficiency are depicted. The evaluation includes carotid arteriography, ophthalmodynamometry, and an electroencephalogram in most instances. Of this group, approximately 20 per cent revealed evidence of vascular occlusive disease in the cervical portion of the carotid artery. Twenty patients have been operated on for reconstruction of a more normal carotid arterial flow. The criteria for selecting patients for surgical therapy and the results of surgery are given. (*Booth 233*)

Pain and Weakness—Electrodiagnostic Evaluation

Jerome S. Tobis, M.D.
Earl F. Hoerner, M.D. (*By invitation*)
Joseph B. Rogoff, M.D.
Stuart Reiner, M.E.E. (*By invitation*)

New York Medical College, Flower and Fifth Avenue Hospitals
New York City

Normal and pathologic electromyographic findings and conduction time measurement are demonstrated. In the diagnosis of weakness due to lower motor neuron or primary muscle involvement and of pain associated with these conditions, these electrodiagnostic modalities can be of considerable aid in confirming or establishing the diagnosis. Such conditions as nerve injuries, peripheral neuropathies, polymyositis, myotonias, and muscular dystrophy give characteristic patterns on the electromyograph. Conduction time remains normal in myopathic involvement. It is thus possible to distinguish between neuropathy and myopathy and even in many cases between such conditions as poliomyelitis and Guillain-Barré syndrome. (*Booth 234*)

Utilization of Dietary Proteins in Children

Reginald A. Higgons, M.D.
Anthony A. Albanese, Ph.D. (*By invitation*)
Louise A. Orto, B.A. (*By invitation*)

St. Luke's Convalescent Hospital
Greenwich, Connecticut

Reports show that plasma amino nitrogen and amino acid levels attained after test meals are useful criteria of the nutritive balance of amino acid patterns prevailing in the diet. Recently, chromatographic technics have permitted the quantitative comparison of the in vivo availability of amino acids from various animal and grain products. These also provide a measure of the corrective nutritional value of various animal proteins, alone or with some amino acids, in test meals containing both varieties of foods. Graphic comparisons of the findings disclose that the amino acid deficiencies of some cereal products may be corrected in full by egg proteins or specific amino acids but not by milk proteins. (*Booth 235*)

Is Physical Diagnosis a Lost Art?

Maxwell L. Gelfand, M.D.
Theodore Cohen, M.D.
Louis Goodkin, M.D.

New York University Post-Graduate Medical School
New York City

The unusual increase in concentration on laboratory procedures for the diagnosis of various disease states in recent years has resulted in a laxity on the part of the physician in utilizing his God-given senses when confronted with a sick patient. The importance of a carefully detailed history and complete physical examination based on the doctor's own talents—that is, inspection, palpation, percussion and auscultation—is stressed. Several clinical entities instantly diagnosed at the bedside are described and important clues obtained through the organs of perception—eyes, nose, ears, and hands—are listed. A capsule quiz is given. Increased attention to pure physical diagnosis will reduce the astronomic cost of illness and the need for unnecessary hospitalization for diagnostic work-up. (*Booth 236*)

Mechanism and Therapy of Congestive Heart Failure

William Likoff, M.D. (*By invitation*)
Albert Brest, M.D. (*By invitation*)

Hahnemann Medical College and Hospital
Philadelphia, Pennsylvania

The functional, physiologic, and anatomic aspects of congestive heart failure are considered; as well as the therapy, specifically with the use of hydrochlorothiazide. (*Booth 237*)

Early Diagnosis and Management of Phenylketonuria

Willard R. Centerwall, M.D. (*By invitation*)
Siegried A. Centerwall, M.D. (*By invitation*)

The College of Medical Evangelists
Los Angeles, California

Approximately 1 per cent of all institutionalized mentally defective children in the United States are suffering from phenylketonuria, a disease which results from a defect in the metabolism of the amino acid, phenylalanine. Methods of early detection of the disease and the use of a synthetic diet in its management are demonstrated. In the management of several phenylketonuric children a new formula product, consisting of a fortified and reconstituted enzymic hydrolysate from which most of the phenylalanine has been removed, served as the basic diet. Psychometric evaluation of two infants with phenylketonuria, placed on this low phenylalanine product at six and seven weeks of age respectively, shows normal mental development. The method of diet regulation and supplementation is outlined. (*Booth 238*)

The Inflamed Eye

Dan M. Gordon, M.D.

New York Hospital
New York City

The diagnosis and management of commonly occurring conditions of the eye, designed for the nonophthalmologist, are shown. Eye grounds are depicted by a three-dimensional model of the eye. (*Booth 239*)

The Application of Ultrasonic Locating Technics to Ophthalmology

Gilbert Baum, M.D.
Ivan Greenwood, B.S. (*By invitation*)

New York University Post-Graduate Medical School
New York City

The theory and practical operation of ultrasonography as applied to ophthalmology are demonstrated. Clinical application to cases of retinal detachment, orbital lesions, vitreous hemorrhages, lesions posterior to the retina, and the detection and localization of radiolucent foreign bodies are demonstrated. (*Booth 240*)

Surgery for Deafness in 3-D

J. Brown Farrior, M.D. (*By invitation*)

Tampa, Florida

The surgical pathology and surgical technics in variable stapes operations, the vein graft, and tympanoplasties (Types I, II, III, IV, and V) are shown by means of three-dimensional color slides. The pathology, technic, and reasons for success or failure in the surgery are described. (*Booth 241*)

Georgian Room

Booths 300 through 315

Serial Femoral Arteriography in Occlusive Disease: Clinical-Roentgenologic Considerations

Henry Haimovici, M.D.
Jerome H. Shapiro, M.D.
Harold G. Jacobson, M.D.

Montefiore Hospital
Bronx

The results of over 100 serial femoral arteriograms, using a newly designed automatic long-segment serialograph, performed on patients with occlusive arterial disease are evaluated. A working classification with reference to the sites and extent of the occlusive disease process in the femoral-popliteal arterial system is presented. The type of collateral circulation and significance of the "run-offs" are emphasized. The clinical and surgical implications of various occlusive patterns are discussed. (*Booth 300*)

Radiation Hazards in Therapeutic Radiology: A Guide to Safe Practice in Beam Irradiation

Bernard Roswit, M.D.
Sol M. Unger, M.D.
Stanley J. Malsky, M.S. (*By invitation*)
Cyprian B. Reid, B.S. (*By invitation*)

Veterans Administration Hospital
Bronx

A critical analysis of the causes and prevention of unnecessary radiation injury to patients, technicians, and physicians in the clinical practice of radiation therapy for benign and malignant diseases is presented. A guide for safe clinical practice as formulated on experience is described. (*Booth 302*)

Methods for Reducing Radiation Hazard Associated With Photofluorography

Herman E. Hilleboe, M.D., *Commissioner*

New York State Department of Health
Albany

A simulated photoroentgen unit illustrates the effect of patient protective devices in reducing radiation hazards by the use of illuminated fields showing the size of irradiated areas. (*Booth 303*)

Intravenous Cholangiography

Abraham Geffen, M.D.
Martin Floch, M.D. (*By invitation*)

Beth Israel Hospital
New York City

The results of 223 intravenous cholangiograms with a detailed correlation of clinical, laboratory, surgical, and roentgenographic findings are summarized. Surgery was performed in 102 patients with 89 per cent accuracy of diagnosis of common duct calculi. (*Booth 304*)

Radioiodine and the Thyroid

Anthony Kohn, M.D.

Central Islip State Hospital
Central Islip

Sidney Rubenfeld, M.D.
Martin Lowenthal, M.D. (*By invitation*)
Nathan Mitchell, M.D.
S. Steven Brodie, Ph.D. (*By invitation*)

Jewish Memorial Hospital
New York City

The role of radioiodine in both diagnosis and treatment of thyroid disorders is explained. The physiologic production of the thyroid hormone is outlined, and the way in which elements of the "radioiodine thyroid profile" (24-hour uptake; conversion ratio; salivary and urinary radioactivity) pinpoint dysfunction at different levels is shown. The general instrumentation used, and the results obtained in a seven-year follow-up of 294 cases of I^{131}-treated cases of hyperthyroidism are illustrated and discussed, as well as other facets of radioiodine therapy. (*Booth 305*)

Development of Anomalies in Man—Iliopsoatic Syndromes

Arthur A. Michele, M.D.

New York Medical College Flower and Fifth Avenue Hospitals
New York City

U. S. Public Health Service Hospital
Staten Island

When man assumes the unique posture of lumbar lordosis, a necessary adaptive elongation of the iliopsoas is required. When assumption of erect posture is attempted and the necessary coincidental adaptive elongation of the iliopsoas fails, a powerful intrinsic force, expressed as 300 to 600 pounds per square inch, is brought into play. Normal function of the iliopsoas is the formation of the calcar femoral, the anteversion of the femoral neck, and posture of lumbar lordosis and pelvic tilt. Abnormal states of expression through the external rotation force at the hip are: transient synovitis, dislocation of the hip, osteochondrosis femoral capital epiphysis, slipped capital femoral epiphysis, torsion fracture of femoral neck, avulsion fracture of lesser trochanter, and degenerative disease of the hip; and through the traction and rotation force at the spine are: Schmorl's nodes, scoliosis, spondylolysis and/or spondylolisthesis, osteochondrosis deformans, and isolated fracture of the transverse process. (Lumbar, degenerative disease of the spine, and so forth, also occur.) (*Booth 307*)

Multiple Injuries in the Aged

John E. Sullivan, M.D.
John J. Bowe, M.D.
Edgar M. Bick, M.D.
Alexander Garcia, M.D.

American College of Surgeons
New York City
Brooklyn Regional Committee on Trauma

With the increased population of people sixty years of age and older, multiple injuries in the aged have become more frequent. The incidence, cause, and type of injury most commonly incurred in elderly people are described. The broad principles of treatment and the survival rates of patients with these injuries also are outlined. (*Booth 308*)

Intramuscular Methylprednisolone Acetate in Allergy and Dermatology

Earl B. Brown, M.D.
Laurence L. Palitz, M.D.
Thomas Seideman, M.D.
Charles J. Popovitz, M.D.

Montefiore Hospital
Bronx

Statistical information concerning the use of depomethylprednisolone in various allergic and dermatologic diseases is presented, including the results of a double-blind study during the 1959 ragweed season. (*Booth 309*)

Dermatogeriatrics—Skin Diseases Common to the Aged

Alex W. Young, Jr., M.D.

St. Luke's Hospital
New York City

Cutaneous problems found in the aged—benign tumors; precanceroses; malignant epithelial neoplasms; eczematoid dermatoses; pyogenic, viral and mycotic infections, and miscellaneous dermatoses (senile purpura, decubitous ulcer, gluteal erosions, neurotrophic ulcer, and so forth — are illustrated. A definition of dermatogeriatrics and classification of the dermatoses are included, as well as outlines of avenues for further research and current study. (*Booth 310*)

A New Antiseborrheic Agent in Pediatric Practice

George Bialkin, M.D.

Bronx Hospital
Bronx

The clinical picture, etiology, pathogenesis, and a new method for the treatment of seborrheic capitis infantum (cradle cap) are described. The experimental technics developed employ lowering the surface tensions between the lipoprotein of the seborrheic exudate and water. The emulsifying action loosens the crusts and scales identified with this condition and disperses the protein elements. The antiseborrheic agent employed is nonirritating and nonsensitizing. Removal of the scales and crusts is accomplished without abrasion of the underlying skin or irritation of existing skin conditions. Results of a study employing this method with 47 children, aged three weeks to two years, are presented. All patients selected for this study had seborrheic capitis and many had concomitant skin disorders such as facial eczema, intertrigo, diaper rash, and impetigo. (*Booth 311*)

Milk Allergy

Joseph H. Fries, M.D.

Methodist Hospital of Brooklyn
Brooklyn

The newly achieved separations of the antigenic components of cow's milk, as made possible by the modern technics of physical chemistry, are represented. For the practical interpretation of these findings for the practicing physician, suitable replacement of milk in the diet of milk-sensitive individuals is illustrated. Correlated roentgenographic illustrations of allergic gastrointestinal disturbances due to milk also are shown. The potentially allergenic components of human and bovine milk are compared. Criteria for differential diagnosis between milk hypersensitiveness and nonallergic milk intolerance are outlined. (*Booth 312*)

X-Ray Studies of Importance to Anesthesiologists

Frank E. Fierro, M.D.
Dante Bizzarri, M.D.
Albert Schmookler, M.D.
Francis S. Latteri, M.D.
Howard C. Berger, M.D.
Joseph G. Giuffrida, M.D.

New York Medical College, Flower and Fifth Avenue Hospitals
New York City

Representative radiographic studies and case histories are used to indicate to the anesthesiologist that it is important he take an interest in x-ray studies done on the patient he is to anesthetize. Problems commonly encountered by the anesthesiologist that can be prevented by careful presurgical x-ray studies are diagnosed and technics of anesthesia chosen to prevent catastrophes are indicated. (*Booth 313*)

Methohexital Sodium—A New Induction Anesthetic

Irving M. Riffin, M.D., (*By invitation*)
St. Vincent's Hospital
Montclair, New Jersey

The evaluation of methohexital in 500 patients is presented. Electrocardiogram, electrocephalogram, and pneumotachograph studies are shown. The pharmacology of the new drug in relation to thiopental sodium and thiamylal is demonstrated, with emphasis on its rapidity of metabolism in the body and its greater potency—for example, one fifth to one sixth of the mg. dose is used for induction. (*Booth 314*).

History of the Medical Department, U.S. Army in World War II

Historical Unit, U.S. Army Medical Service
Washington, D.C.

The exhibit is to acquaint medical and allied sciences personnel with the volumes already published and those to be published on the history of the Medical Department, U.S. Army, World War II. Forty-five volumes have been proposed for the series; 15 have been completed and are available for examination. The volumes are divided into two series—(1) the administrative or operational and logistic series and (2) the professional or clinical and technical series. They are straightforward accounts of wartime activities of the Medical Department in the fields of administration, dentistry, internal medicine, neuropsychiatry, preventive medicine, surgery, and veterinary medicine. (*Booth 315*)

Ballroom Balcony

Booths 400 through 412

Myasthenia Gravis

Kermit E. Osserman, M.D.
Gabriel Genkins, M.D.
Peter Kornfeld, M.D.
Elliot Cohen, M.D.
Lawrence I. Kaplan, M.D.
Arthur J. L. Strauss, M.D. (*By invitation*)
Harold J. Sobel, M.D. (*By invitation*)
Harvey Mendelow, M.D. (*By invitation*)

Mount Sinai Hospital
New York City

Edrophonium chloride, a diagnostic test and a testing procedure in the management of drug therapy in 325 cases is reported. The distribution by ages and sex, signs and symptoms, progression of symptoms, clinical classification, remission rate, crisis, year of survival, and death are presented. Pathology, with relationship of thymoma, myocardial, and skeletal muscle lesions is considered. Current drug therapy—neostigmine bromide, pyridostigmine, and ambenomium chloride—are analyzed with the preference of patients for each drug. Treatment results by occupational rehabilitation, clinical improvement, and death rate also are analyzed using the clinical classification suggested. (*Booth 400*)

Psychologic Care of the Chronically Ill

Jeanne C. Bateman, M.D. (*By invitation*)
Harry N. Carlton, M.D. (*By invitation*)

George Washington University School of Medicine
Washington, D.C.

The psychologic problems of chronic illness—adjustment to pain, incapacity, social and financial insecurity—and the effects of these on the patient's well-being are outlined. A guide to management of the chronically ill by chemotherapy and limited psychotherapy is offered. Details concerning the psychologic care of a large series of patients with advanced cancer treated in an outpatient clinic are reported, with a statistical summary of the results of chemotherapy. (*Booth 401*)

Reflex Neurovascular Dystrophy of the Extremeties

Otto Steinbrocker, M.D.
Sidney Berkowitz, M.D.
Mortimer E. Ehrlich, M.D.
Thomas G. Argyros, M.D.
Edoardo Guariglia, M.D. (*By invitation*)

Hospital for Joint Diseases
New York City

The clinical characteristics and diagnostic features of the reflex dystrophic disorders of the upper and lower extremities are illustrated. The observations on 146 cases on medical and rheumatology services, analogous to similar surgical and orthopedic cases are presented to emphasize early diagnosis and management, as well as present methods of treatment and prevention. (*Booth 403*)

Geriatrics and the Eye

Commission for the Blind

New York State Department of Social Welfare
New York City

The projected increase in the number of older patients points to the need for concentrated and organized effort to expand programs for eye care in the aged. The causes of blindness associated with the senior citizen are presented. The information was prepared from medical data in eye reports submitted to the Commission for the Blind in accordance with the law requiring the mandatory reporting of blindness, and is directed to the geriatric patient to stimulate an understanding of the diagnosis and treatment of cataract, glaucoma, and general eye care. (*Booth 404*)

Instantaneous Measurement of Blood Loss

Harry H. LeVeen, M.D. (*By invitation*)
Henry I. Lipson, M.D., (*By invitation*)
Robert Klopstock, M.D. (*By invitation*)

Veterans Administration Hospital
Brooklyn

The method for electronic determination of operative blood loss using the conductivity principle is described. Since blood is an electrolyte solution of constant composition, a method has been devised utilizing this as the basis for determination. The amount of current which water will conduct increases with the addition of salt solution. When blood is added to water, the conductivity changes in direct proportion to the amount of blood added. These changes are directly calibrated on a dial which totalizes the extent of blood loss from operative sponges and suction. (*Booth 405*)

Electric Teaching Device for Blood Clotting Mechanism

Elemer R. Gabrieli, M.D.
William C. Sleight, M.D. (*By invitation*)

Millard Fillmore Hospital
Buffalo

An electric teaching device demonstrates the pathways of the blood clotting mechanism and those abnormalities encountered in the various blood clotting disorders, as well as defects brought about by both exogenous and endogenous anticoagulants. Normal and abnormal laboratory tests also are indicated. The newest standard international nomenclature, complete with synonyms, is used throughout. (*Booth 406*)

Single Donor Plasma (Human) Fresh Frozen

Eugene M. Katzin, M.D. (*By invitation*)
Jacob Geiger, M.D.

New York City Blood Transfusion Association
New York City

The preparation of fresh-frozen plasma (human), including the drawing of blood, separation and freezing of plasma, bacterial control, and method of thawing and administration, is depicted. (*Booth 407*)

National Clearing House Program—American Association of Blood Banks

Blood Banks Association of New York State
New York City

The functions and advantages of a clearing house program for exchange of whole blood and whole blood credits between individuals and organizations are described. (*Booth 408*)

Help and Hope for the Dystrophic Patient

Muscular Dystrophy Associations of America, Inc.

New York City

The manifestations of muscular dystrophy and a statistical breakdown of incidence by age group are presented. A pictorial view of the recently opened Institute for Muscle Disease, New York City, an MDAA-sponsored project for research into muscular dystrophy and related neuromuscular diseases is shown, as well as the areas of research sponsored by the MDAA grant-in-aid program in quest of the cause and cure of muscular dystrophy. The concept that muscular dystrophy is not confined to humans, but appears in many species of animals is illustrated. (*Booth 410*)

Medical Procedure in Workmen's Compensation

Irvin Klein, M.D.

New York State Workmen's Compensation Board
New York City

The importance of educating the medical profession in workmen's compensation procedures and thus bringing about better cooperation between the Workmen's Compensation Board and those treating claimants is stressed, as well as the benefits of proper care and the application of rehabilitation. (*Booth 411*)

Facial Pain

Arnold P. Friedman, M.D.
Charles A. Carton, M.D.
Asao Hirano, M.D. (*By invitation*)

Montefiore Hospital
Bronx

A plan for proper orientation and management of patients with facial pain is presented. The classification, mechanism, diagnosis, and treatment of this disorder, with special emphasis on atypical neuralgias, are discussed. (*Booth 412*)

Medical Society Exhibits

Ballroom

1. **New York State Journal of Medicine**
2. **Medical Directory of New York State**
3. **What Goes On**
4. **Bureau of Medical Care Insurance**
5. **Medicare**

SCIENTIFIC MOTION PICTURES

Monday, May 9, through Friday Noon, May 13, 1960

Dartmouth Room, Ballroom Floor

Colgate Phillips, M.D., Westchester, *Chairman*
Walter F. Stafford, M.D., Erie, *Cochairman*
E. Dean Babbage, M.D., Erie
Lester L. Coleman, M.D., New York
William J. Sullivan, M.D., Westchester

High Lights for 1960

1. Twenty-seven films will be shown, including topics on: general surgery, surgical specialties, internal medicine, and physiology.
2. Premieres—seven in this year's program.
3. Medicolegal films: **The Man Who Didn't Walk,** and **No Margin for Error.**
4. Personal narration and discussion:
   Monday morning: Robert Turell, M.D.. New York City, **Repair of Rectal Prolapse**
   Monday afternoon: Alfred Hurwitz, M.D., Brooklyn, **Cholecystectomy**
   Tuesday morning: Howard Patterson, M.D., New York City, **Ulcerative Colitis**
   Tuesday afternoon: Louis Joel Feit, M.D., New York City, **Otoplasty**
   Wednesday morning: Arthur C. DeGraff, M.D., New York City, **Diuretics**
   Wednesday afternoon: Arthur A. Knapp, M.D., New York City, **Tattooing with Iridectomy;** E. E. Rockey, M.D., New York City, **Tracheal Fenestration**
   Thursday morning: Maurice Lenz, M.D., New York City, **Oral Cancer**
   Thursday afternoon: Richard D. Brasfield, M.D., New York City, **Treatment of Melanoma**

Monday, May 9

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. (To be announced)

Medical Society Presentation

10:00 A.M. **Open Heart Repair of Ventricular Septal Defect**

Adrian Kantrowitz, M.D., Brooklyn

10:15 A.M. **A Method of Otoplasty** (Premiere)

Louis Joel Feit, M.D., New York City

10:53 A.M. **The Human Nose—What Makes It Different**

American Rhinological Society, Maurice Cottle, M.D., Chicago, Illinois, Richard Hadley, M.D., Rye, and the Medical Film Guild, Ltd.

11:31 A.M. **A Simple Operation for Spastic Entropion**

MARTIN BODIAN, M.D., Brooklyn

11:42 A.M. **The Thiersch Wiring for Massive Rectal Prolapse**

ROBERT TURELL, M.D., New York City

Personal narration and/or question and answer discussion by Robert Turell, M.D.

INTERMISSION

2:00 P.M. **Resuscitation of the Newborn Infant**

HAROLD ABRAMSON, M.D., New York City

2:28 P.M. **Quadricepsplasty**

T. CAMPBELL THOMPSON, M.D., New York City

2:49 P.M. **Report on Griseofulvin Treatment of Superficial Fungous Infections**

J. WALTER WILSON, M.D., University of Southern California in conjunction with MARION B. SULZBERGER, M.D., New York City, VINCENT J. DERBES, M.D., New Orleans, Louisiana, and JAMES M. FLOOD, M.D.

3:27 P.M. **Cholecystectomy and Common Duct Exploration** (Premiere)

ALFRED HURWITZ, M.D., Brooklyn

Personal narration and/or question and answer discussion by Alfred Hurwitz, M.D.

Presentation by the Medical Film Guild, Ltd.

4:00 P.M. (To be announced)

Tuesday, May 10

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. (To be announced)

Medical Society Presentation

10:00 A.M. **Transmeatal Meniscectomy and Condylectomy**

ROBIN M. RANKOW, M.D., and ALVIN J. NOVACK, M.D., New York City

10:17 A.M. **Tracheal Fenestration: Surgical Technic and Clinical Course** (Premiere)

E. E. ROCKEY, M.D., S. A. THOMPSON, M.D., New York City, and C. F. BLAZSIK, M.D., Woodhaven

10:50 A.M. **The Clinical Indications and Application of Intermittent Positive Pressure Breathing**

THEODORE H. NOEHREN, M.D., Buffalo

11:26 A.M. **Transport of Dyes by Goldfish Renal Tubules**

E. LOVELL BECKER, M.D., and SIDNEY SOLOMON, M.D., NEW York City

11:37 A.M. **Surgical Problems in Ulcerative Colitis**

HOWARD PATTERSON, M.D., and T. SCUDDER WINSLOW, M.D., New York City

Personal narration and/or question and answer discussion by Howard Patterson, M.D.

INTERMISSION

2:00 P.M. **The Faces of Depression**

HANS E. LEHMAN, M.D., Montreal, Canada

2:31 P.M. **Surgical Treatment of Melanoma** (Premiere)

RICHARD D. BRASFIELD, M.D., New York City

2:54 P.M. **Immunization Against Infectious Diseases**

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY

3:21 P.M. **Echinococcus Cysts of the Liver**

EDWARD S. JUDD, M.D., Rochester, Minnesota

3:37 P.M. **A Method of Otoplasty** (Premiere)

LOUIS JOEL FEIT, M.D., New York City

Personal narration and/or question and answer discussion by Louis Joel Feit, M.D.

Presentation by the Medical Film Guild, Ltd.

4:00 P.M. (To be announced)

Wednesday, May 11

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. (To be announced)

Medical Society Presentation

10:00 A.M. **A Method of Cardiofundal Duodenostomy to Remove the Objections to Bilroth I** (Premiere)

William Corriero, M.D., and Irving Bayer, M.D., Brooklyn

10:31 A.M. **The Busy Doctor and the Company Representative**

Medical Film Guild, Ltd.

10:56 A.M. **Double Left Anterior Heart Puncture**

David G. Green, M.D., Buffalo

11:06 A.M. **The Man Who Didn't Walk**

American Medical Association and American Bar Association

11:41 A.M. **Edema and Mercurial Diuresis**

Arthur C. DeGraff, M.D., Herbert S. Kupperman, M.D., Robert A. Lehman, Ph.D., and Alfred Vogl, M.D., New York City

Personal narration and/or question and answer discussion by Arthur C. DeGraff, M.D.

INTERMISSION

2:00 P.M. **Tattooing with Iridectomy** (Premiere)

Arthur A. Knapp, M.D., New York City

Personal narration and/or question and answer discussion by Arthur A. Knapp, M.D.

2:23 P.M. **Removal of Melanoma (Benign) of Ciliary Bodies** (Premiere)

Arthur A. Knapp, M.D., New York City

2:33 P.M. **No Margin for Error**

American Medical Association and American Bar Association

3:06 P.M. **The Clinical Indications and Application of Intermittent Positive Pressure Breathing**

Theodore H. Noehren, M.D., Buffalo

3:42 P.M. **Tracheal Fenestration: Surgical Technic and Clinical Course** (Premiere)

E. E. Rockey, M.D., and S. A. Thompson, M.D., New York City, and C. F. Blazsik, M.D., Woodhaven

Personal narration and/or question and answer discussion by E. E. Rockey, M.D.

Presentation by the Medical Film Guild, Ltd.

4:00 P.M. (To be announced)

Thursday, May 12

Presentation by the Medical Film Guild, Ltd.

9:00 A.M. (To be announced)

Medical Society Presentation

10:00 A.M. **Immunization Against Infectious Diseases**

Lederle Laboratories Division, American Cyanamid Company

10:27 A.M. **The Intraperitoneal Repair of Incisional Hernias With Marlex Mesh**

Francis C. Usher, M.D., Houston, Texas

10:53 A.M. **Echinococcus Cysts of the Liver**

Edward S. Judd, M.D., Rochester, Minnesota

11:09 A.M. **The Thiersch Wiring for Massive Rectal Prolapse**

Robert Turell, M.D., New York City

11:27 A.M. **Cancer of the Oral Cavity**

Maurice Lenz, M.D., New York City

Personal narration and/or question and answer discussion by Maurice Lenz, M.D.

INTERMISSION

2:00 P.M. **Quadricepsplasty**

T. Campbell Thompson, M.D., New York City

2:21 P.M. **The Man Who Didn't Walk**

American Medical Association and American Bar Association

2:56 P.M. **Surgical Problems in Ulcerative Colitis**

Howard Patterson, M.D., and T.

Scudder Winslow, M.D., New York City

3:25 p.m. **Open Heart Repair of Ventricular Septal Defect**

Adrian Kantrowitz, M.D., Brooklyn

3:40 p.m. **Surgical Treatment of Melanoma** (Premiere)

Richard D. Brasfield, M.D., New York City

Personal narration and/or question and answer discussion by Richard D. Brasfield, M.D.

Presentation by the Medical Film Guild, Ltd.

4:00 p.m. (To be announced)

Friday, May 13

Presentation by the Medical Film Guild, Ltd.

9:00 a.m. (To be announced)

Medical Society Presentation

10:00 a.m. **Cholecystectomy and Common Duct Exploration** (Premiere)

Alfred Hurwitz, M.D., Brooklyn

10:36 a.m. **No Margin for Error**

American Medical Association and American Bar Association

11:09 a.m. **The Human Nose—What Makes It Different**

American Rhinological Society, Maurice Cottle, M.D., Chicago, Illinois, Richard Hadley, M.D., Rye, and the Medical Film Guild, Ltd.

11:47 a.m. **Double Left Anterior Heart Puncture**

David G. Green, M.D., Buffalo

The committee is most grateful for the cooperation of the Medical Film Guild, Ltd., and of its president, Mr. Joseph P. Hackel, who will handle all our films on the convention program.

Mr. Hackel will present his own films before 10:00 a.m. and after 4:00 p.m. The State Society program will be scheduled from 10:00 a.m. to 4:00 p.m.

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

24th Annual State Convention

Statler Hilton Hotel, New York City, May 8 through 11, 1960

The twenty-fourth annual convention of the Woman's Auxiliary to the Medical Society of the State of New York will be held in New York City, from May 8 through 11, at the Statler Hilton Hotel. Our president, Mrs. James L. McCartney, officers of the State Auxiliary, and the Convention Committee extend a cordial invitation not only to Auxiliary members but to all doctors' wives to register and attend our meetings and social functions.

Program

Sunday, May 8

4:30 P.M.—6:30 P.M.	Registration—*Skytop Foyer*—all Auxiliary members and guests
3:00 P.M.	Board of Directors Meeting, President's suite
7:00 P.M.—9:00 P.M.	Reception honoring past presidents of the Auxiliary. Doctors and their wives cordially invited—*Skytop*

Monday, May 9

8:30 A.M.—4:30 P.M.	Registration—*Skytop Foyer*
9:00 A.M.—12:30 P.M.	House of Delegates—*Skytop*
1:30 P.M.—5:00 P.M.	House of Delegates—*Skytop*
7:00 P.M.	Medical Society of the State of New York, President's Reception, *Hotel Pierre*
8:00 P.M.	Annual Dinner, Medical Society of the State of New York, *Hotel Pierre*

Tuesday, May 10

8:30 A.M.—12:00 NOON	Registration—*Skytop Foyer*
9:00 A.M.—12:00 NOON	House of Delegates—*Skytop*
12:30 P.M.—3:00 P.M.	Luncheon honoring Mrs. James L. McCartney, President, Woman's Auxiliary to the Medical Society of the State of New York, *Astor Hotel—North Ball Room*
3:00 P.M.	Free Time: Shopping/Sightseeing

Wednesday, May 11

9:00 A.M.—10:30 A.M.	Registration—*Skytop Foyer*
9:00 A.M.—11:30 A.M.	House of Delegates—*Skytop*
11:30 A.M.	Postconvention meeting of State officers, chairmen, county presidents, and presidents-elect—*Skytop*
2:00 P.M.	Board of Directors meeting, President's suite

Officers

President	MRS. JAMES L. MCCARTNEY, Garden City
President-Elect	MRS. MILTON W. KOGAN, Oswego
First Vice-President	MRS. EUGENE F. WOLFF, Newburgh

Second Vice-President	Mrs. H. D. Vickers, Little Falls
Recording Secretary	Mrs. Ezra A. Wolff, Forest Hills
Corresponding Secretary	Mrs. E. van Brunt Vurgason, Baldwin
Treasurer	Mrs. Irwin Alper, Utica

Convention Committee

Chairman	Mrs. Joseph H. Kinnaman, Hempstead
Cochairman	Mrs. Julius P. Gale, Lindenhurst

WOMEN'S MEDICAL SOCIETY OF NEW YORK STATE

Annual Meeting

Statler Hilton Hotel, New York City
Sunday, May 8
Hartford Room, Mezzanine

10:00 A.M.—Business Meeting
1:00 P.M.—Luncheon
2:00 P.M.—Scientific Meeting

Presentation of award to Ruth Berger, M.D., New York City, Research Fellow in Pediatrics, Mount Sinai Hospital, for research in the

Study of Radioactivity of Poliomyelitis Virus

Scientific Program

1. **Recent Advances in Chemotherapy Treatment of Cancer**

Ezra M. Greenspan, M.D., New York City, Assistant Attending Physician, Mount Sinai Hospital

Discussion: Jane C. Wright, M.D. New York, City, Assistant Attending Surgeon, University Hospital

2. **Radiotherapy Treatment in Cancer**

Florence C. H. Chu, M.D., New York City, Assistant Radiation Therapist, Memorial Center for Cancer and Allied Diseases

Discussion: Lucile E. Loseke, M.D., New York City, Director of Surgery, New York Infirmary

Officers

President	Gertrude Felshin, M.D., New York City
President-Elect	Lois J. Plummer, M.D., Buffalo
Vice-President	Helen L. Miller, M.D., New York City
Secretary	Mabel G. Silverberg, M.D., New York City
Treasurer	S. Elizabeth Vuornos, M.D., Liberty

TECHNICAL EXHIBITS

The largest number of technical exhibitors ever assembled at a convention of the Medical Society of the State of New York will this year welcome physicians to their attractive displays of drugs, instruments, books, office equipment, hospital supplies, foods, special services, and others. Exhibits never before shown in the New York area will be on view among those to be seen in the Mezzanine, Grand Ballroom, Georgian Room, and adjacent foyers of the Statler Hilton Hotel. Most of the scientific activities of the meeting surround the technical exhibit area conveniently.

A new addition to the meeting this year is a coffee hospitality area to which all doctors are welcome.

Abbott Laboratories, North Chicago, Illinois (Booths 107 and 108). Of particular interest to physicians at the Abbott booth will be the presentation of Desoxyn Gradumets, the new long-acting dosage form now being used in obesity cases. Abbott will also display antibiotics, hospital solutions, and equipment. Our representatives will be on hand to assist you in every way possible.

The Alkaolol Company, Taunton, Massachusetts (Booth 47), will feature Alkalol, the balanced, alkaline, saline solution for the treatment of mucous membranes and irritated tissues. It is bland, nontoxic, and effective, and has been a favorite since 1896. We are also showing Irrigol, a powder which in solution makes an aseptic, slightly astringent vaginal douche. It is used widely also for colonic irrigations and as an effective rectal enema.

American Sterilizer Company, Erie, Pennsylvania (Booth 145), will show a variety of sterilizers including the revolutionary 613-R Dynaclave and a larger model designed for clinical use. Also exhibited will be a new dry heat sterilizer for processing moisture-sensitive goods as well as a small electric 1-gallon-per-hour water still for laboratory and clinical use. Representatives will be available to answer all of your questions concerning sterilization and disinfection.

Ames Company, Inc., Elkhart, Indiana (Booth 144). Featured will be the latest developments in new, simplified diagnostic products which are adaptable to routine examination and patient management. The many advantages of the new diagnostic products are quickly demonstrable, and you are cordially invited to stop at the Ames booth to see them.

Amfre-Grant, Inc., Brooklyn, New York (Booth 110), will display Corovas Tymcaps, Neo-Corovas Tymcaps, Nitrovas timed-disintegration Tablets, Perivas Tablets, and Diurbital Tablets for use in the heart and peripheral vascular field. Also there will be Causalin for arthritis; Baculin Vaginal Tablets for vaginal infestations; Banausea for prevention of nausea and vomiting in pregnancy; desPlex, an antiabortive; Dicorvin Tablets for palliation in prostatic carcinoma; and Amril Tablets, a calmative.

Appleton-Century-Crofts, Inc., New York City (Booth 78), is featuring their newer titles which include Gallaher's *Medical Care of the Adolescent*, Foley & Wright's *Color Atlas and Management of Vascular Disease*, the 1960 edition of Warren Cole's *First Aid: Diagnosis and Management*, the 1960 edition of John Kolmer's *Clinical Diagnosis by Laboratory Examinations*, the 1960 edition of Wallace Yater's *Symptom Diagnosis*, and Howard Hopps' new *Princples of Pathology*. Examine them at your leisure.

Armour Pharmaceutical Company, Chicago, Illinois (Booth 130), will feature products of the Chymar family: Chymar Aqueous and in oil, systemic anti-inflammatory agents; Chymar Ointment for use in the management of major and minor dermatologic conditions; Chymar Buccal and Chymoral, our recently released anti-inflammatory enzyme tablet, designed for intestinal absorption.

Astra Pharmaceutical Products, Inc., Worcester, Massachusetts (Booth 48). Descriptive literature pertaining to preparations of Xylocaine Hydrochloride (Astra) for infiltration, regional block, peridural, spinal, and topical anesthesia; Xylocaine Ointment, Xylocaine Jelly, and Xylocaine Viscous for topical application; as well as Astrafer I.V. for iron-deficiency states will be available at the Astra booth presided over by Arnold G. Everson.

Audio-Digest Foundation, Glendale, California (Booth 28), a nonprofit subsidiary of the California Medical Association, gives the busy physician a time-saving tour through the best of some 600 current medical journals, plus the high lights of scores of national meetings. Time proved but still unique, these medical tape-recorded services are now offered in six series: General Practice (issued weekly and biweekly) and Pediatrics, Internal Medicine, Surgery, Obstetrics and Gynecology, and Anesthesiology (all issued semimonthly). The one-hour-long tapes are selected and reviewed by a professional board of editors. Digest subscribers listen in their car, home, or office. The Foundation also offers medical lectures by nationally recognized authorities.

Aveeno Corporation, New York City (Booth G-6). Two new preparations of widespread value in many dermatoses are featured. Aveeno-Bar is a richly lathering, soap-free cleansing bar made with over 25 per cent soothing colloidal oatmeal. Bitupal, a unique distilled bituminous asphaltite from the Dead Sea, has the therapeutic effectiveness of coal tar without the drawbacks of coal tar therapy.

Ayerst Laboratories, New York City (Booth 125). A most cordial invitation is extended to all physicians to visit the Ayerst Laboratories booth where we will be featuring Premarin, our preparation of conjugated estrogens. Our representatives will be on hand to discuss this product with you and give any information you might desire on our other products.

Barrows Biochemical Products Corporation, New York (Booth 12). Physicians are cordially invited to visit this booth where the Barrows representatives will be on hand to welcome them and to discuss our product, Coenzyme-B. Coenzyme-B (cocarboxylase) is the key coenzyme in biochemical decarboxylation. Information concerning the use of Coenzyme-B in diabetes, herpes zoster, multiple sclerosis, cardiac conditions, malnutrition, and so forth, is available.

Baxter Laboratories, Inc., Morton Grove, Illinois (Booth 10), cordially invites you to view its latest developments in parenteral fluid therapy. The Travenol Division will feature Cozyme for the physiologic correction and prevention of intestinal atony and abdominal distention, which safely and effectively restores normal peristaltic activity; and Travad, a ready-to-use disposable enema unit featuring a prelubricated tip, 18 inches of flexible tubing, and finger-tip volume control.

Beech-Nut Baby Foods, Beech-Nut Life Savers, Inc., New York City (Booth 33). Welcome to Beech-Nut Babyland! Beech-Nut Baby Foods is pleased to announce their new Multi-Source Protein Dinners, the first baby dinners to combine, as major ingredients, three basic protein foods: meat, egg yolk, and milk. For information on the protein dinners, visit the Babyland hospitality center, located outside the Gold Ballroom, or the Babyland booth, located on the Mezzanine. Technical data on the dinners are available. The Beech-Nut nutritionists cordially invite doctors and their guests to join them for coffee at the Babyland hospitality center and to visit the Babyland booth to discuss the complete line of Beech-Nut baby foods.

Beltone Hearing Aid and Hearing Test Equipment, New York (Booth G-9), will feature a complete line of diagnostic and clinical hearing test equipment for the medical profession. Beltone's experience in producing fine quality hearing instruments enables our laboratories to bring you the very finest in audiometers. Beltone's vast precision production facilities insure you accuracy, excellence, and service.

Birtcher Medical Distributors of New York, Brooklyn, New York (Booth 32), manufactures physiotherapy, cardiac, ultrasonic, hyfrecator, defibrillator, heart pacer, and surgical equipment.

Blakiston Division, McGraw-Hill Book Company, New York City (Booth 83), will exhibit the following new books: Rodahl's *Bone As a Tissue;* Prigal's *Fundamentals of Modern Allergy;* Novak's *Gynecological Therapy;* Hoffman and Cranefield's *Electrophysiology of the Heart;* Kassay's *Clinical Bronchology;* Luisada's *Cardiology;* Luisada and Rosa's *Treatment of Cardiovascular Emergencies;* Feifel's *The Meaning of Death;* and the Armed Forces Institute of Pathology's *Manual of Histologic and Special Staining Techniques, 2/e.*

Borcherdt Company, Chicago, Illinois (Booth 96). Two time-tested products are being shown at this meeting: Malt Soup Extract, for constipation and intractable pruritus ani. This dietary product acts on the intestinal flora to produce a predominantly aciduric flora. Urolitia is a mild, soothing urinary antiseptic for geriatric patients. Register for samples and information on these products.

The Borden Company, New York City (Booth 29). The most important new item at the Borden Pharmaceutical Division's booth is Liquid Bremil which adds all the convenience of a liquid to the significant advantages already established by Bremil Powdered. Borden's full line of formula products is on display including Mull-Soy, the original hypoallergenic formula. Other new additions are Dermabase and Junitar, the nonstaining tar bath, and Marcelle hypoallergenic cosmetics, pure beauty aids for delicate skins.

George A. Breon & Company, New York (Booth G-10). At the Breon booth professional representatives will present two leading antiasthmatic specialties, Bronkephrine and Bronkotabs. Broxolin Vaginal Cream for the treatment of trichomonal, monilial, or vaginitis of mixed etiology and the complete line of Lanesta diaphragm set for conception control will also be detailed to interested physicians.

Brewer & Company, Inc., Worcester, Massachusetts (Booth 21).

Bristol Laboratories, New York City (Booth 131), will feature Syncillin, the first commercially available synthetic penicillin. The exhibit will communicate dramatically the significant laboratory and clinical advantages of Syncillin with special emphasis on the high blood levels achieved with oral dosage. Representatives will be available to discuss the details of this new superior penicillin.

Burdick Equipment Company, Inc., New York City (Booth 13). The new model EK-3 two-speed electrocardiograph, a photomograph for achilles tendon reflex measurements, as well as the latest in ultrasonic and muscle stimulation equipment will be on display. Qualified representatives will be glad to demonstrate any item of Burdick equipment.

Burroughs Wellcome & Co. (U.S.A.) Inc., Tuckahoe, New York (Booth 59). The extensive research facilities of Burroughs Wellcome & Co., both here and in other countries, are directed to the development of improved therapeutic agents and technics. Through such research Burroughs Wellcome & Co. has made notable advances related to leukemia, malaria, diabetes, and diseases of the autonomic nervous system; and to antibiotic, muscle-relaxant, antihistaminic, and antinauseant drugs. An informed staff at our booth will welcome the opportunity to discuss our products and latest developments with you.

Cambridge Instrument Company, New York City (Booths 141 and 142). The Cambridge Versa-Scribe, the versatile portable electrocardiograph; the well-known Cambridge Simpli-Scribe, model direct-writing portable electrocardiograph; and the Cambridge Standard String galvanometer-type electrocardiograph will be displayed at this booth. Other important Cambridge instruments include also the audio-visual heart sound recorder, operating room cardioscope, educational cardioscope, multichannel physiologic recorder, electrokymograph, plethysmograph, pH meters, and pulmonary function tester.

S. H. Camp & Company, Jackson, Michigan (Booth 123). Exciting new products and late developments in Camp appliances and supports, designed to achieve better function when indicated in your practice, are on display. Stop and let the Camp representative explain these benefits, low cost, high quality, and immediate availability through your local authorized Camp dealer.

Carnation Company, Los Angeles 36, California (Booth 140), cordially invites you to visit their booth where medical specialist representatives will be pleased to welcome old and new friends of the Medical Society of the State of New York. Recent literature and information regarding Carnation Evaporated, Carnation Instant Non-Fat, and our newest product, Carnalac, are available. Any questions pertaining to our physician-researched material for use in your practice or hospital will be cheerfully discussed.

G. W. Carnrick Company, Newark, New Jersey (Booth 52), will feature the following promoted products: Bontril Tablets for appetite control in conjunction with the 1,000-calorie diet; Nolamine Tablets and Elixir, the oral nasal decongestant with a mood-normalizing effect; Nolamine Expectorant, the newest of the Nolamine family, for control of coughs due to colds, sinusitis, and allergy; and Penite, the effective coronary vasodilator for prevention of anginal attacks.

Chicago Pharmacal Company, Chicago, Illinois (Booth 27), will feature the following products: Ger-Amino, a nutritional hormonal supplement with amino acids for prevention of aging effects; Urised, clinically proved tablet for both comfortable sedation and thorough antisepsis in genitourinary affections; Juniplex, a pleasant-tasting liquid tonic containing essential minerals, B complex, plus 30 micrograms of vitamin B_{12} per teaspoonful; and Estrosed, a tablet combining reserpine and ethinyl estradiol for treatment of the menopausal syndrome.

Ciba Pharmaceutical Products, Inc., Summit, New Jersey (Booth 105). Esidrix is hydrochlorothiazide, an improved analog of chlorothiazide. Milligram-for-milligram, it is the most effective oral diuretic antihypertensive known. Therapeutically, Esidrix is 10 to 15 times more potent than chlorothiazide. Weight losses up to 56 pounds have been reported. In many cases Esidrix caused copious diuresis in patients unresponsive to other oral and/or parenteral diuretics. Side-effects are usually mild, infrequent, and readily controlled.

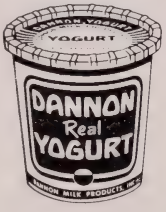
The Coca-Cola Company, Atlanta, Georgia (Booth 134). Ice cold Coca-Cola will be served through the courtesy and cooperation of The Coca-Cola Bottling Company of New York, Inc., and The Coca-Cola Company.

Conco Surgical Products, Inc., Bridgeport, Connecticut (Booth 138). Conco representatives will demonstrate the advantages of Conco rubber elastic bandages, our unique Elasticfoam foam rubber pressure bandage, Foamtrac traction bandage and kits, Alumafoam formable finger and fence splints, and their new disposable products.

Condit & Berger Associates, Inc. (Formerly Medical Business Bureau), New York City (Booths 35 and 36). George W. Condit, President, and Joseph J. Berger, Vice-President and Treasurer. Consideration is being given at the present time by *Medical Economics* magazine, *AMA News*, and other publications to services being provided by specialists in medical administration and management. Nationally recognized in this field, we will be glad to discuss with you how you can organize your activities to realize a greater income from medicine, avoid confusion, and plan for the future. Authoritative assistance is provided in practice surveys, partnership formations, life and estate planning, pension and other fringe benefits brought about by formation of associations for multiple partnerships, accounting, tax administration, and improvement in office procedures. With the aid of Gordon J. Wiedenkeller and Associates, architects, we enlarge and remodel existing quarters, decorate and design office suites, construct professional buildings, and assist in financing, planning, and creating such projects. Diagrams, photographs, and scale drawings of buildings constructed, or in process of being built at the present time are on display, as well as some newer concepts of medical floor plans to reduce confusion and save steps.

Coreco Research Corporation, New York City (Booth G-8). The Coret camera embodies the principle of electronic flash and constant automatic control of such factors as distance, aperture, field, and exposure. Now for the first time, Coreco offers a completely automatic professional clinical camera purposely designed to achieve the ultimate in surface, intraoral, and intratubular photography. Because of the simplicity of operation, even an inexperienced doctor or nurse can achieve consistently perfect color transparencies.

Crookes-Barnes Laboratories, Inc., Wayne, New Jersey (Booth G-3), will feature these important and unique preparations: the new Lenic high-potency capsules, a complex of all five essential polyunsaturated fatty acids for lowering elevated blood cholesterol levels; L-Glutavite, a biochemical cerebral tonic, to improve brain function for the patient with cerebral arteriosclerosis; and Neo-Corphos, a true solution of the natural hormone, hydrocortisone-21-phosphate, combined with neomycin for ophthalmic inflammation and infection.



Dannon Milk Products, Long Island City, New York (Booth 98), will feature information on Dannon yogurt in various applications to daily practice, including gastrointestinal dysfunction, obesity, and autointoxidation. Of particular interest is literature on a study of the effectiveness of prune whip yogurt in chronic constipation. Cool, refreshing samples of Dannon yogurt, plain and in five appealing flavors, will be served.

Darwin Laboratories, Los Angeles, California (Booth 37). Lipo-Hepinettes, the first truly disposable single injection unit of heparin sodium U.S.P., will be demonstrated. The unique features of this product include precise heparin dosage always, greater ease of administration and control, and economic feasibility for patients on self-administration regimens. LH 400 (Lipo-Hepin, 40,000 units per cubic centimeter) will also be featured. The anticoagulant and lipoprotein lipase release advantages of LH 400 will be discussed, especially in comparison with the use of other concentrations of heparin sodium U.S.P. A medical representative will be present to answer questions relative to anticoagulant and lipoprotein lipase (postheparin) enzyme therapy.

Davies, Rose & Company, Limited, Boston, Massachusetts (Booth 137). We cordially invite the members of the Medical Society of the State of New York to visit our booth. Although most physicians need no introduction to our outstanding cardiac therapies, Pil. Digitalis and Tablets Quinidine Sulfate (natural), our representatives will be on hand to greet you and to explain the dependability of our laboratory products.

DeJur-Amsco Corporation, Long Island City, New York (Booth 17), are marketers of the DeJur-Grundig Stenorette dictating-transcribing systems, employing the Stenorette-T standard office unit and the compatible battery-powered Stenorette-Companion. Stenorette-T is the most versatile dictating machine a doctor can own today. Dictate, transcribe, erase, and correct errors directly on modern, reusable, magnetic tape with flick-of-the-thumb microphone control. Use the same tape on a battery-powered transistorized portable for daily rounds, lectures, and conferences. Rechargeable lifetime batteries, handy microphone controls, and a handy carrying case are included. Weight, 6 pounds.

Desitin Chemical Company, Providence, Rhode Island (Booth 127). Desitin Ointment is for treatment of burns, ulcers, diaper rash, abrasions, and so forth. Desitin Powder relieves chafing, sunburn, diaper rash, and so forth. Desitin Suppositories and Rectal Ointment relieve pain and itching in uncomplicated hemorrhoids and fissures. Desitin Baby Lotion is protective and antiseptic. Desitin Acne Cream is a nonstaining, flesh-tinted "Medicream" for the treatment of acne vulgaris. Desitin Cosmetic and Nursery Soap is supermild. Desitin Suppositories with Hydrocortisone give prompt response to inflammatory conditions in proctitis, severe pruritis, and edema.

The Dietene Company, Minneapolis, Minnesota (Booth 126). Have you tasted Meritene, the protein vitamin mineral supplement that does taste good? Visit our booth; enjoy a Meritene milk shake with its multiple nutritive values. While you're there, review the Dietene diet based on Dietene reducing supplement. It provides the rare combination of low calories (1,000) with high intake of protein and all the essential vitamins and minerals in an interesting, effective, safe weight-reducing diet.

Doak Pharmacal Company, Inc., New York City (Booth 71). Scheduled to be released at this meeting, if official formalities can be completed in time, is the new Doak topical steroid-type anti-inflammatory and antipruritic agent, which is decidedly more economical than similar products now available. Also being introduced to the Society is the newly acquired Petro-Phylic Soap, both cake and liquid form, for cleansing without drying hair, scalp, and skin. Visit our booth for full information, literature, and samples.

Doho Chemical Corporation, New York City (Booths 117 and 118), is pleased to exhibit: Auralgan, ear medication in otitis media and removal of cerumen; Otosmosan, fungicidal and bactericidal in the suppurative and aural dermatomycotic ears; Rhinalgan, nasal decongestant, free from systemic or circulatory effect; and Larylgan, throat spray and gargle for infectious and noninfectious sore throat involvements. Mallon Chemical Corporation, Division of Doho, will feature Rectalgan, for relief of pain and discomfiture in hemorrhoids, pruritis, and perineal suturing and Dermoplast, an aerosol spray for surface pain, burns, and abrasions, and also for obstetric and gynecologic use.

Dome Chemicals, Inc., New York City (Booth 97), will introduce the new potentiated prednisone, Prednamin Tablets, the safer steroid compound for systemic therapy of allergic skin conditions, bronchial asthma, and upper respiratory disturbances. A new high-potency hydrocortisone rectal suppository, Cort-Dome Suppositories, containing 25 mg. of hydrocortisone alcohol, will be demonstrated for factitial proctitis and other inflammatory conditions of the anorectum.

Dutchess Bureau of Medical Economics, Poughkeepsie, N. Y., and **Long Island Professional Bureau,** Manhasset, N. Y. (Booth 56). ARM, accounts receivable management, offers a reduction in outstanding bills; a better collection ratio; increased cash recovery; continuity in bookkeeping without regard to personnel turnover, peaks, emergencies, or growth; and advice and consultation regarding office management. At the same time it allows the physician to practice medicine.

Eaton Laboratories, Norwich, New York (Booth 76), will feature Altafur (brand of furaltadone), the first nitrofuran effective orally in systemic bacterial infections, has high clinical efficacy in pneumonias, bronchiolitis, bronchitis, tonsillitis, and otitis media; also in soft tissue infections, cellulitis and abscess, surgical wound infections, and infected lacerations.

Endo Laboratories, Inc., Richmond Hill, New York (Booth 116), will present these therapeutic preparations which merit your interest: Coumadin Sodium, the more nearly ideal anticoagulant, may be administered parenterally as well as orally, and provides predictable therapeutic cover with fewer escapes. In addition to this versatility, Coumadin permits both acute and long-term anticoagulation with less frequent prothrombin time determinations; Numorphan is an analgesic capable of replacing morphine and morphine-like synthetic agents in the widest range of clinical applications.

Flint, Eaton & Company, Decatur, Illinois (Booth 11). Featured products are Ferrolip, Synthroid, and Piromen. Ferrolip is a chelate complex of iron which is clinically effective and well tolerated. Ferrolip also provides a maximal factor of safety against the possibility of iron poisoning in case of accidental overdosage. Synthroid tablets contain sodium levothyroxine, the active principle of the thyroid gland, prepared synthetically in pure crystalline form. Piromen is an endocrine stimulant which acts primarily, but not exclusively, through the pituitary-adrenal system. It also initiates generalized activation of the reticuloendothelial system.

E. Fougera & Company, Inc., Hicksville, New York (Booth G-1). A visit to Fougera's booth will prove interesting and helpful. Well-informed attendants are prepared to discuss new and significant advances in therapy and diagnosis in the specialty areas of general practice. Product information and clinical literature in cardiology, internal medicine, dermatology, radiology, pediatrics, obstetrics, and gynecology, as seen and treated in general practice, are available together with complimentary office aids to lighten your work load.

Geigy Pharmaceuticals, Division of Geigy Chemical Corporation, Ardsley, New York (Booth 8), cordially invites members and guests of the Medical Society of the State of New York to visit its technical display. Tofranil, a new agent specifically for depression, will be featured. Information on other products valuable in the therapy of rheumatic, metabolic, dermatologic, and cardiovascular diseases will be presented by personnel in attendance.

Geriatric Pharmaceutical Corporation, Bellerose, New York (Booth 79), pioneers in geriatric research, will exhibit Ger-O-Foam, an anesthetic analgesic agent which when massaged into muscular skeletal involvements will relieve pain in minutes and last for hours. It is indicated in conditions such as rheumatoid and osteoarthritis, low back pain, and painful healed fractures. Ger-O-Foam was developed in cooperation with leading hospitals in the country.

Great Books of the Western World, Grand Rapids, Michigan (Booth G-12). The Great Ideas Program features the master key to the Great Books, the Syntopicon. The Great Ideas Program, a new advancement in liberal education, is built around the revolutionary Syntopicon. This master key "idea-indexes" all the Great Books, making it possible to find what the great writers and thinkers said about any ideas in minutes. The Program will help business and professional people, students, graduates, or anyone interested in exploring the fascinating world of great ideas.

Grune & Stratton, Inc., New York City (Booth 23). Our Mr. Kurzer will be on hand to show you some of our new volumes in current medicine. Included will be such books as Saphir's two-volume work, *A Text on Systemic Pathology;* Tocantin's *Progress in Hematology, Volume II;* Guibor's *Squint and Allied Conditions;* Goldberg's *Medical Management of the Menopause;* Hardy's *Total Surgical Management;* Hampton-Fitts' *Open Reduction of Common Fractures;* Boyles' *Antithrombotic Therapy;* Spodick's *Acute Pericarditis;* Spain's *Diagnosis and Treatment of Tumors of the Chest;* Butterworth's *Cardiac Auscultation, Second Edition;* Astwood's *Clinical Endocrinology, I,* as well as many other important new books which you are invited to inspect.

Guardian Chemical Corporation, Long Island City (Booth 26), will exhibit its various grades of Chlorpactin, including Clorpactin WCS-90 for the topical treatment of antibiotic resistant infections, Chlorpactin XCB to destroy viable tumor cells in cancer surgery, and Warexin for cold sterilization of medical and surgical instruments and equipment. (Warexin is distributed by the Davol Rubber Company.)

The G. F. Harvey Company, Inc., New York City (Booth 15), will welcome members of the medical profession at our exhibition of leading specialties and new products. Featured will be Paremycin Elixir, Harvey's new duoclassic antidiarrheal. Paremycin Elixir combines for the first time the two most effective antidiarrheal agents, tincture opium and neomycin sulfate, in a convenient dosage form. Paremycin is a palatable, banana-flavored elixir, not a bulky, chalky suspension. Of particular interest to physicians at the Harvey booth will be the presentation of Palfium, the new analgesic specifically indicated for pain of cancer. Palfium is as effective orally as it is parenterally with minimal side-effects. Its administration is free from the development of tolerance.

Health Insurance Council, New York City (Booth 44). This exhibit is designed to provide general information on health insurance as underwritten by insurance companies. In addition, it also makes available information on uniform claim forms for use by doctors and hospitals in support of health insurance claims.

H. J. Heinz Company, Pittsburgh, Pennsylvania (Booth 90). Heinz Baby Foods announces new varieties: strained pineapple juice with vitamin C added; strained and junior tutti-frutti dessert; and both strained and junior high meat dinner, chicken à la king, and chicken with rice. Convenient screw-on caps are now on almost all Heinz Baby Foods. Literature includes ABC's for Baby's Mealtime and lists of Heinz Baby Foods, with separate listings of hypoallergenic varieties.

Heublein, Inc., Food Division, Hartford, Connecticut (Booth 87). You are invited to stop for a snack and register for complimentary packages of Maltex and Maypo Oat Cereal, weight-control leaflets, and basic four daily diet records. You'll be interested in the easy digestibility and low sodium content of both Maltex and Maypo.

Hiss Pharmacal Company, Utica, New York (Booth 57), will feature Vasotrate Unicelles 30 mg., No. 1 and No. 2, for the prevention of recurrent angina attacks. Liparin Injection, used in diseases associated with impaired lipid metabolism, and other injectables will be displayed. Representatives will be at the booth to service the physicians.

Holland-Rantos Company, Inc., New York (Booth 19), will feature specific antimycotic, nonmessy Hyva Gentian Violet Vaginal Tablets; trichomonicidal, fungicidal, and bactericidal improved Nylmerate Antiseptic Solution Concentrate for vaginal trichomoniasis and mixed infections; Hollandex Silicone Ointment with Natural Vitamins A & D, a medication for neuro- and contact dermatitis, decubitus ulcers, diaper rash, skin dryness, chafing, and so forth; special Koromex/A for use when jelly alone is indicated for conception control; also contouring Koroflex diaphragms (facilitate correct placement) along with standard Koromex Jelly, Cream, diaphragms, and sets.

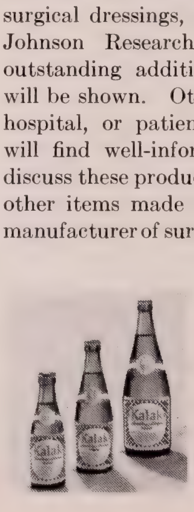
Hyland Laboratories, Los Angeles, California (Booth 73). Four new diagnostic tests of special interest to physicians are featured. These are all simple to perform, rapid, slide screening tests: the RA-Test for the detection of rheumatoid factor, the GG-Test for simple estimation of gamma globulin levels, the CR-Test for C-Reactive protein, and the FI-Test for hypofibrinogenemia.

The International Medical Research Corporation, New York City (Booth 49). Shown will be the new Bucky combination therapy unit which represents the following units: intermediary therapy, superficial therapy with a beryllium window tube, contact therapy, and Grenz ray therapy. Also shown will be the latest Grenz ray therapy units for treatment in ophthalmology, dentistry, and dermatology.

Irwin, Neisler & Company, Decatur, Illinois (Booth 101). Analexin (the first analgomylaxant), a single chemical, that is both a general non-narcotic analgesic and an effective muscle relaxant, is featured at the Neisler booth. The action of Analexin is twofold: (1) general analgesia by raising the pain threshold centrally, and (2) muscle relaxation by selective interneuronal blockade. Thus, Analexin abolishes both pain and tension simultaneously to abate more effectively the total pain experience. A Neisler technical representative is in attendance to discuss Analexin, a new class of drug.

Jackson-Mitchell Pharmaceuticals, Inc., Culver City, California (Booth 50), will exhibit both Meyenberg Powdered and Evaporated Goat Milk as well as Hi-Pro, our high protein, low fat, powdered cow's milk. We will be featuring powdered goat milk which is palatable as well as portable. Meyenberg powder is extra convenient for traveling and costs the patient less. Like Meyenberg Evaporated Goat Milk, Meyenberg Powdered Goat Milk is a medication of choice for cow's milk allergy. Because Meyenberg powder tastes just like dairy-fresh milk, the transition from cow's milk to goat's milk is a naturally simple one. Powdered or evaporated, Meyenberg Goat Milk is nutritionally equal to cow's milk in protein, fat, carbohydrate, and minerals.

Johnson & Johnson, New Brunswick, New Jersey (Booth 60), will display the latest improvements in surgical dressings, as developed by the Johnson & Johnson Research Laboratories. Several recent outstanding additions to the baby products line will be shown. Other products, designed for office, hospital, or patient use, will be displayed. You will find well-informed representatives pleased to discuss these products or provide information on any other items made available by the world's largest manufacturer of surgical dressings and baby products.



Kalak Water Company, Inc., New York City (Booth G-7), will present montages relating Kalak, America's leading name among sparkling alkaline waters for nearly half a century, to a role of mineral waters in aiding well-being throughout history and literature describing Kalak's many uses as an antacid, diuretic, nonlaxative adjunct toward maintaining electrolyte balance and supplementing many types of therapy.

Kastoff, Inc., Dallas, Texas (Booth 84). Kastoff is a method using two special wires placed on the wadding before the cast is made. The cast is removed by rolling up the wire on the Kastoff tool completely cutting through the plaster. All the disadvantages of other cast removal methods are avoided and with a considerable saving of time.

Kenwood Laboratories, Brooklyn, New York (Booth 135). Featured in our display will be Papavatral L.A. Capsules, the continuous controlled release combination of a vasodilator and smooth muscle relaxant for the treatment of angina pectoris and peripherovascular diseases. Also, Pansteroid Ointment, the triple steroid ointment is a topical therapy in the treatment of various forms of allergic dermatitis and other inflammatory skin diseases.

Kirsch Beverages, Inc., Brooklyn, New York (Booth 69). No-Cal is the original and leading nonfattening soft drink. It contains no sugar, salt, fats, carbohydrates, or proteins, with no available calories to be derived therefrom. No-Cal comes in eight flavors, plus salt-free Club Soda. No-Cal is safe for diabetics and those on salt-free, sugar-free, and other reducing diets. A giveaway item is to be distributed to doctors at the No-Cal booth.

Knoll Pharmaceutical Company, Orange, New Jersey (Booth 124). Dilaudid Cough Syrup is available for coughs that must be controlled. This preparation combines the antitussive Dilaudid with the expectorant glyceryl guaiacolate. Vita-Metrazol Elixir and Tablets are indicated for hastening postoperative recovery and convalescence as well as for fatigue and senility. Information concerning Dilaudid Cough Syrup, Vita-Metrazol, Nico-Met, as well as Quadrinal tablets, Quadrinal Suspension, and the new antiparkinsonism agent, Akineton, is available for your review.

Fred Landauer Company, Rockville Centre, New York (Booth G-14), is showing the latest developments in electromyography and electroencephalography. Teca electromyographs, standard and portable, incorporate the latest electronic technics, satisfying all requirements. The Teca Chronaxie Meter and low volt generators will be demonstrated. Also shown is the Offner electroencephalogram, model T, which is the most advanced instrument available today. It is completely transistorized and portable.

Lea & Febiger, Philadelphia, Pennsylvania (Booth 22). Be sure to see these 1959–1960 books: Wohl and Goodhart, *Modern Nutrition in Health and Disease;* Gray's *Anatomy;* Goldberger, *Water, Electrolyte and Acid-Base Syndromes;* Lewin, *The Foot and Ankle;* Joslin, *Treatment of Diabetes Mellitus;* Cozen, *Office Orthopedics;* Grollman, *Pharmacology and Therapeutics;* Dornette and Brechner, *Instrumentation in Anesthesiology;* Quiring and Warfel, *The Extremities;* and other works useful in your practice.

Lederle Laboratories, Division of American Cyanamid Company, Pearl River, New York (Booth 113), will exhibit Declomycin demethylchlortetracycline, the most recent contribution to broad-spectrum antibiotic therapy; Aristocort triamcinolone, the highly effective, well-tolerated corticosteroid; and the nutritional supplements, Stresscaps and Incremin with iron.

Thos. Leeming & Company, Inc., New York City (Booth 92). Latest information on the clinical use of sublingual heparin (Clarin) in the management of the pre- and postcoronary patient will be available. Physicians unfamiliar with the most recent reports on this new preparation are urged to visit the Leeming exhibit, which will also feature Metamin (trolnitrate phosphate) Sustained, the potent coronary vasodilator.

Eli Lilly and Company, Indianapolis, Indiana (Booths 66 and 67), cordially invites you to visit their booth. The Lilly sales people in attendance welcome your questions about Lilly products and recent therapeutic developments.

J. B. Lippincott Company, Philadelphia, Pennsylvania (Booth 20), presents for your approval a display of professional books and journals geared to the latest and most important trends in current medicine and surgery. These publications, written and edited by men active in clinical fields and teaching, are a continuation of more than one hundred years of traditionally significant publishing.

Loma Linda Food Company, Arlington, California (Booth 119). With the background of years of experience in perfecting a hypoallergenic milk powder, and also a newly developed concentrated liquid milk, the protein of which is fully derived from the soy bean and formulated with other essential additives to care for the needs of babies, growing children, and adults, the Loma Linda Food Company will be happy to welcome you to their exhibit. Attendants will be pleased to discuss the values of Soyalac powder and concentrated liquid. Samples of this flavorful product will be served at the exhibit.

CLINICALLY TESTED
PHENYL-
DRāNE™
drains the SINUSES

Thomas J. Mahon, Inc., Englewood Cliffs, New Jersey (Booth 2), will feature Phenyl-Drane. Register at this booth to learn how to prescribe self-induced intranasal suction (60 mm. Hg) using but one squeeze bottle of decongestant, antibiotic, penetrant nasal spray in the treatment of acute and chronic rhinitis; allergic rhinitis, including pollinosis; polyposis associated with nasal allergy; sinusitis; and nasopharyngitis. Nebu-Prel and Nebu-Halent will also be presented.

Maico Electronics, Inc., Minneapolis, Minnesota (Booth 30). Local representatives of this pioneer hearing research firm will be pleased to discuss latest advances in audiometric technics, and will show the new Maico hand-held 2-frequency hearing checker, as well as their complete line of audiometers and the well-known Maico amplified stethoscope, the Stethetron.

Mallon Chemical Corporation, Division of Doho Chemical Corporation, New York City (Booths 117 and 118), makers of Auralgan, Otosmosan, Rhinalgan, and Larylgan, are pleased to exhibit Rectalgan for relief of pain and discomfiture in hemorrhoids, pruritis, and perineal suturing; also Dermoplast, an aerosol spray for surface pain, burns, and abrasions, and also for obstetric and gynecologic use.

Maltbie Laboratories Division, Wallace & Tiernan, Inc., Belleville, N. J. (Booth 7), features the new dermatologic ointment, Caldecort, containing calcium undecylenate, hydrocortisone, and neomycin for a comprehensive therapy of skin conditions caused by fungi, bacteria, or allergy. Also exhibited will be Desenex, most widely prescribed for athlete's foot; Nesacaine, a safe, potent and rapid-acting local anesthetic; Bifran, for the management of the overweight patient; and Cholans, for the treatment of hepatobiliary dysfunction.

The S. E. Massengill Company, Inc., New York City (Booth 3). Best wishes from Massengill to the members of the Medical Society of the State of New York for a most successful and informative meeting. Capable Massengill representatives will be pleased to discuss with you any Massengill products which interest you. We are featuring Adrenosem (the unique systemic hemostat); Homagenets (the only solid homogenized vitamins); Obedrin (superior weight control aid); the Salcort family (the complete range in arthritic therapy); and Massengill Powder (the douche preparation of choice). Literature and samples are available if you desire.

Mayflower Surgical Supply Company, Brooklyn, New York (Booth 34), is the distributor of electrocardiographs, sterilizers, autoclaves, medical furniture, and reception room and consultation room furniture. It is the distributor for Birtcher Corporation, Ritter Corporation, Liebel-Flarsheim, American Sterilizer Company, and Allison Company.

McNeil Laboratories, Inc., Philadelphia, Pennsylvania (Booth 45). Members of the Medical Society of the State of New York are cordially invited to visit our booth. Mr. H. T. Kramer will be in charge. Products to be featured are: Butiserpine, Butisol Sodium, Flexin, Grifulvin, Paraflex, and Parafon.

Mead Johnson & Company, Evansville, Indiana (Booth 129). The Mead Johnson exhibit has been arranged to give you the optimum in quick service and product information. To make your visit productive, specially trained representatives will be on duty to tell you about their products.

Medcolator New York, Forest Hills, New York (Booth 42). Otto L. Schonwalder, distributor of Medco products, presents the Medco-Sonlator, providing a new concept in therapy by combining muscle, stimulation, and ultrasound simultaneously through a single three-way sound applicator. The Medco-Sonlator is a distinct advance in the effectiveness of physical therapy in your office or hospital. A few minutes spent in our booth should prove of value to your practice.

Medical Credits Division, Associated Credit Bureaus of New York State, Inc., New York City (Booth G-4), has 67 member offices throughout New York State, 3,300 throughout the United States. Today more than ever before there are tremendous pressures on the public for their credit dollars and frequently your patient, when clearing his obligations, considers his medical bill last. You can correct this situation. A five-minute visit to our booth will acquaint you with latest collection and credit office control, as developed by the Associated Credit Bureaus of America, in accordance with recommendations of the American Medical Association, and can result in saving you hundreds of dollars annually in credit account losses.

Medical Film Guild, Ltd., New York City (Booth 80), is again happy to extend an invitation to all members and guests of the Medical Society of the State of New York to visit our exhibit. We are also pleased to announce that we have expanded our services not only to include film production, preparation of slides, and programming for your local society meetings or hospital staff conferences but also we can now offer all types of audio-visual and photographic equipment and supplies for purchase or rental. Our "Medical Film of the Month" plan, international in scope, is ever increasing in popularity as is our "Medical Films for the Laity" program. A novel subscription arrangement with 60 subjects to choose from allows interchange of professional and lay films as lecture demands vary. A nurses' training program is also available with 12 subjects. Seeing our "Humor in Medicine" display alone will be worth your while. Each caricature, whether painted on a wall plaque or a hand carved figure, will give you a chuckle and bring to mind someone you have met.

Menlo Park Laboratories, Inc., Edison, New Jersey (Booth 51). The product to be exhibited is Vagaspray, a replacement for the vaginal douche. We will have an illuminated self-contained booth with colored transparencies. These will depict vaginal instillation of Vagaspray showing penetration of the solution between the vaginal rugae, the aerosol solution in a shatter-proof bottle, and the short applicator which can be sterilized by autoclaving or boiling as well as by chemical antiseptics.

Merck Sharp & Dohme, Philadelphia, Pennsylvania (Booth 65), will feature a new adrenocortical steroid. Decadron dexamethasone possesses all the basic actions and effects of other glucocorticoids but in different degree. Its anti-inflammatory activity is more potent on a weight basis than any other known glucocorticoid. Electrolyte imbalance is not ordinarily a therapeutic problem. HydroDiuril, a new orally effective, nonmercurial diuretic-antihypertensive agent is also of interest. This compound is the most potent diuretic agent presently available, equaling or exceeding even the most potent parenteral organomercurials in diuretic activity. Technically trained personnel will be present to discuss these and other subjects of clinical interest.

The Wm. S. Merrell Company, Cincinnati, Ohio (Booths 93 and 94). For the first time, an effective anorexic agent is recommended for cardiac, hypertensive, and diabetic patients. New Tenuate is a hunger control agent so free of central nervous system stimulation it is used for nighttime hunger. Tenuate and other Merrell drugs will be discussed, gladly by Merrell men.

Milex of New York, Long Island City, New York (Booth 61). Cancer detection developments will be featured. Trimo-San for trichomonas, monilia, and mixed leukorrheas will be attractively displayed. The Milex Folding Pessaries and Amino-Cerv Gel will be introduced to new friends. Samples of "A Doctor Discusses the Menopause" and "A Doctor's Marital Guide for Patients" are available on request.

Mooradian High Frequency Laboratories, Bogota, New Jersey (Booth 24), shows the well-known Model "R" self-stabilized short-wave diathermy apparatus, a modulated current low-volt generator; the Castroviejo Electric Surgical Ophthalmic Unit for retinal detachment and cyclodiathermy; and an improved cardiac defibrillator of special design and simple operation, Columbia-Presbyterian model.

The C. V. Mosby Company, St. Louis, Missouri (Booth 54). New knowledge, new ideas, new research, and technic, all are waiting for you in the newest Mosby books for 1959 and 1960. Come in. Look over these books at your leisure and convenience. If you wish his assistance, our experienced representative will be happy to discuss any book with you.

The National Drug Company, Philadelphia, Pennsylvania (Booth 14). Tepanil, Orenzyme, and AVC Suppositories are being featured at our exhibit. Tepanil is for weight control, a completely new compound that curbs appetite without central nervous system stimulation. Tepanil is safe, well tolerated, and suitable for evening use on patients of all ages. Orenzyme, the first oral anti-inflammatory enzyme tablet on the market, is swallowed just like an aspirin tablet. Orenzyme is indicated for treatment of any acute inflammatory process when swelling slows recovery. AVC Suppositories, a completely new vaginal suppository, provides all the proved effectiveness of AVC Improved Cream. AVC Suppositories are highly effective in controlling all the common types of vaginal infections, trichomonal, bacterial, and fungal. Please stop by.

The New York Medical Exchange Agency, New York City (Booth 1). Be sure to stop at this booth where you may consult with Patricia Edgerly, owner and director, concerning the trained medical and pharmaceutical personnel you may be seeking for your practice, your office, your hospital, or medical department. Established in 1926.

Nordson Pharmaceutical Laboratories, Inc., Irvington, New Jersey (Booth 74). Ergomar is a new form of specially processed ergotamine tartrate specifically for sublingual administration in the treatment of recurrent and throbbing-type vascular and migraine headache. Bypassing the gastric and hepatic enzymatic barriers, Ergomar insures more rapid relief and avoids gastric upset. Also featured is Levonor, the nonstimulating appetite suppressant. Levonor's smooth action permits its use even during the late evening hours without disturbing sleep. Latest reprints are available on Ferronord Liquid and tablets, a chelate hematinic providing rapid hemoglobin response without side-effects.

Hermien Nusbaum and Associates, Chicago, Illinois (Booth G-20), will feature the following: Infant and geriatric feeding equipment for home, hospital, and institutional use; Squeeze-n-Feed Fountain Spoon, a major development in spoon feeding for people of all ages, where diet consists of liquefied or fluid foods; Diaprex-Carbax ointments to prevent diaper rash and relieve diaper rash and other skin irritations; and Uri-Cup, an appliance for females who suffer from involuntary urination, whether ambulatory or bed patients.

OBETROL

Obetrol Pharmaceuticals, Brooklyn, New York (Booth 4). Obetrol for obesity control, an exclusive, safer combination of 4 amphetamine salts, is indicated even in many cases of hypertension, hyperthyroidism, coronary artery, and other cardiovascular diseases. Low toxicity, minimized side-effects, greater anorexia, and low dosage range make Obetrol the unique amphetamine formula of choice.

Organon, Inc., Orange, New Jersey (Booth 139). Physicians are cordially invited to visit the Organon booth for information on useful therapeutic specialties. Included among these will be: Durabolin, a new, safe, potent, long-acting biologic stimulant indicated in all conditions where a tissue-building action is desired. Durabolin provides its potent tissue-building effects without the drawbacks and dangers characteristic of tissue-building steroids. No masculinization occurs in recommended dosages. No progestational effects can occur. Cortrophin-Zinc is the long-acting aqueous ACTH indicated for the relief of allergic and inflammatory disorders. Organon representatives will gladly discuss these specialties with all interested physicians.

Ortho Pharmaceutical Corporation, Raritan, New Jersey (Booth 122), is proud to present its new blood clot dissolving agent, Actase Gibrinolysin (human). Indicated specifically in thrombophlebitis and pulmonary embolism, Actase is a naturally derived blood fraction. Ortho representatives on hand will be happy to discuss this important new development as well as our other well-known products.

Oxy Swig, Inc., San Francisco, California (Booth G-2). The exhibit displays a constant regulated flow of the portable 56 L. Oxy Swig unit and the 305 L. Metrox unit. A supply of both will be available for use by physicians.

Parke, Davis & Company, Detroit, Michigan (Booth 132). Medical service members of our staff will be in attendance at our booth to discuss important Parke-Davis specialties which will be on display.

Personal Products Corporation, Milltown, New Jersey (Booth 143). Modess Tampons, flexible, will be featured by medical services members of our staff. The flexibility of our new Modess Tampon will assure your patient of more comfort, more protection, and more freedom. We will be glad to mail you samples.

Pet Milk Company, St. Louis, Missouri (Booth G-11). We will be pleased to have you stop and discuss the variety of time-saving material available to busy physicians. Our representatives will be on hand to discuss the merits of Pet Evaporated Milk for infant feeding and Instant Pet Nonfat Dry Milk for special diets.

Pfizer Laboratories, Division, Chas. Pfizer & Company, Inc., Brooklyn, New York (Booth 41). The Pfizer Laboratories' display has been arranged specifically for your convenience and to give you the maximum in quick service and product information. To make your visit worthwhile, technically trained medical service representatives will be on hand to inform you of the latest developments in Pfizer research.

Pharmacia Laboratories, Inc., New York City (Booth 99), will exhibit its product, Azulfidine, a new sulfa compound for the treatment of ulcerative colitis and regional enteritis. Also, Pharmacia will exhibit Pharmalax, the suppository with enema-like action. The quick action of Pharmalax causes defecation through mechanical stimulation of the intestinal musculature by carbon dioxide released from the suppository. Skopyl, a new concept in the medical treatment of infant colic, will also be displayed. Literature and important reprints will be available on request.

Personal Size
IVORY

Procter & Gamble Company, Cincinnati, Ohio (Booth 95). Ivory soap offers a series of time-saving leaflet pads for doctors, each pad containing 50 identical tear-out sheets. These sheets, which may be given to patients, contain routine instructions covering six different topics.

There are also samples of other free, helpful material prepared especially for physicians. Mrs. Christyne Schwab is in charge.

The Purdue Frederick Company, New York City (Booth 43), will present Pharycidin, the first triple-action throat medication for gargling, swallowing, and by systemic absorption; Arthropan, a new rapidly absorbed choline salicylate, producing anti-inflammatory, analgesic, antipyretic effects in a short time without gastric irritation; Cerumenex, a cerumenolytic for the quick removal of excessive cerumen, which contains cerapon, a new surfactant, with propylene glycol and chlorbutanol; and Senokot, a constipation corrective, with concentrated total senna glycosides which activate Auerbach's plexus, initiate normal neuroperistalsis.

Reed & Carnrick, Kenilworth, New Jersey (Booth 25). Sycotrol, the new psychotropic agent with antiphobic properties; Modutrol, used in total treatment of peptic ulcers; Alphosyl, a well-recognized topical lotion for the treatment of psoriasis; Tarcortin, Tarcortin in Aerosol, and Neo-Tarcortin, the tar steroid therapy for comprehensive management of various dermatosis are among the well-known products of Reed & Carnrick shown. New products introduced this year are Analeptone-Anabolic for revitalization of mental and physical debilities of the aging patient, and Sebical, topical therapy for seborrhea capitis and common dandruff. Our representatives look forward to this opportunity to meet with you and discuss our latest products.

L. & B. Reiner, Inc., New York City (Booth G-15), will exhibit the Jones Air Basal. This unit will produce a standard tracing on all regular and irregular breathers, regardless of weight or pathology, without calculations. Room air at prevailing atmospheric conditions is utilized instead of oxygen tanks and capsules. Records of all pulmonary function tests, including timed vital capacity, are easily recorded. The Westinghouse 200 MA X-Ray unit will also be featured.

Research Supplies, Albany, New York (Booth 91), will feature the following products at their booth: Glukor, Glutest, Wandex, Crionil Lozenges, Gould's Stethoscope, A-3 Foot Powder, and Contra Creme.

Rich Therapedic Shoe Laboratories, Inc., New York City (Booth 82). Moulded shoes for easier living are individually custom made by an exclusive direct-casting process for perfect fit at all times. Models will be exhibited showing modern designs for men and women and style selection in all leathers and colors. Imprints are created by Jack C. Rich, noted sculptor and orthopedic shoe specialist. Casts taken directly at booth.

Ritter Company, Inc., Rochester, New York (Booth 58). The Ritter Medical Division will exhibit the automatic self-calculating L-F BasalMeteR, the Ritter Universal Table with exclusive hydraulic lift, and the Castle Office Sterilizers and Examining Lights. Capable factory-trained representatives will be on hand to demonstrate these products and answer your questions. It will be a pleasure to have you visit our exhibit.

A. H. Robins Company, Inc., Richmond, Virginia (Booth 120). Growing evidence in the literature attests the efficacy and safety of Dimetane and Robaxin, which are featured at the Robins exhibit. Dimetane (tablets, elixir, Extentabs, Injectable) has been demonstrated as providing effective antihistaminic action with side-effects no greater than a placebo. Robaxin (tablets and the dramatically quick-acting Injectable) relaxes skeletal muscle spasm without concomitant sedation. Other Robins products shown include Donnazyme and Allbee with C.

Roche Laboratories, Division of Hoffmann-La Roche Inc., Nutley, New Jersey (Booth 114). You are cordially invited to visit the Roche booth where our medical representatives will provide you with the latest information and literature on our products. Featured will be Madribon and Tigan.

J. B. Roerig & Company, New York City (Booth 128), will welcome members of the medical profession at the company's exhibit of leading specialties and new products. Representatives will be in attendance to answer any questions you may have. Roerig recently introduced a number of new products which representatives at the exhibit will describe and they will give information on the results of clinical reports.

William H. Rorer, Inc., Philadelphia, Pennsylvania (Booth 77), features Maalox, the nonconstipating, pleasant-tasting antacid, and the new double strength Tablet Maalox No. 2. Other product high lights are Fermalox, a buffered iron tablet; Ascriptin, a rapid-acting professional salicylate; and Parepectolin, a stable, pleasant-tasting anti-diarrheal preparation for patients of all ages. Representatives will be on hand to answer questions about these and other Rorer products.

Ross Laboratories, Columbus, Ohio (Booth 18), who also manufactures Similac, features Similac with iron, a new prepared infant formula supplying 12 mg.

of ferrous iron per quart of formula. Similac with iron is designed for use when iron is indicated in infancy, for maintenance of iron stores, to provide prophylaxis against iron deficiency anemia, and to support the normal diet. Some special indications for use are following placental or traumatic blood loss, for prematures and twins, for the pallid irritable, for the anorectic infant with an unsatisfactory blood picture, and following prolonged infection or diarrhea.

Rystan Company, Mount Vernon, New York (Booth 85). Twenty years of research in topical therapy of wounds, ulcers, and skin disorders are represented in these versatile preparations exhibited by Rystan: Chloresium Ointment and Solution, a nonsensitizing healing and deodorizing agent; Panafil Ointment, an economical, practical enzyme product for wound debridement and healing; and Prophyllin Powder, a fungistatic, bacteriostatic wet dressing.

Sanborn Company, Waltham, Massachusetts (Booth 106). New electrocardiographs of advanced design and function, as well as the latest models of other instruments for diagnostic use, will be displayed and demonstrated at the Sanborn Company booth. Demonstrations and/or data will also be available on Sanborn instruments for biophysical research, single and multichannel recording systems, monitoring oscilloscopes, and physiologic transducers. Qualified Sanborn representatives will be pleased to answer questions and assist you with technical problems.

Sandoz Pharmaceuticals, Division of Sandoz, Inc., Hanover, New Jersey (Booth 115), cordially invites you to visit their booth where the following products will be featured: Mellaril, the first potent tranquilizer with a selective action (that is, no action on vomiting centers). This unique action gives specific psychic relaxation with safety at all dosage levels. Cafergot PB is the most effective oral medication for the relief of migraine headache with gastrointestinal disturbance accompanied by tension. Plexonal, a new hypnotic, autonomic, and central action drug potentiates the action of subthreshold doses of classic sedative agents. Any of their representatives in attendance will gladly answer questions about these and other Sandoz products.

Saratoga Springs Authority, Saratoga Springs, New York (Booth 89). The exhibit portrays the many physical attractions and the natural beauty of the Saratoga Springs Reservation, home of The Saratoga Spa; the naturally carbonated and mineralized bottled waters; the Simon Baruch Research Laboratories, the luxurious Gideon Putnam Hotel, plus golfing, swimming, picnicking, cycling, and various other forms of recreation. Sketches depict the more common physical medicine procedures constituting the Spa "cure." As part of the public health program of The State of New York, the Reservation is directed by a doctor of medicine and is under medical supervision throughout.

W. B. Saunders Company, Philadelphia, Pennsylvania (Booth 100). New Saunders books of special interest published since last year's meeting include: *Current Therapy 1960;* Ochsner & DeBakey: *Christopher's Minor Surgery;* Bakwin & Bakwin: *Behavior Disorders;* Moore: *Metabolic Care of the Surgical Patient;* and Davis: *Christopher's Textbook of Surgery.*

SchenLabs Pharmaceuticals, Inc., New York City (Booths 102 and 103), cordially invites you to discuss with our representatives the important discovery Neutrapen, the only specific for penicillin reactions which successfully eliminates more than 93 per cent of allergic reactions to penicillin. Also featured will be Titralac, the unique tasty antacid with milk-like action, and the Dorbane family of evacuants.

Schering Corporation, Bloomfield, New Jersey (Booth 55), cordially invites members of the Medical Society of the State of New York to visit the Schering technical exhibit. Featured products include Fulvicin, the first oral antifungal antibiotic for ringworm; Deronil, the corticosteroid of choice; Polaramine, the lowest dosage antihistamine; and Trilafon, the tranquilizer and antiemetic of unexcelled efficacy.

Schieffelin & Company, New York City (Booth 9), is exhibiting several new products of importance and interest. Neo-Resulin-F offers four-pronged action for acne therapy; Hydro-Tar affords the patient a therapeutic combination of crude coal tar and hydrocortisone. Cyclogyl and Cyclomydril for fast-acting cycloplegia and mydriatic results are now available to the physician for routine office use. Also of interest to the attending physician is Estivin. Estivin is the ophthalmic preparation suggested for hay fever and other minor ocular irritations. Professional representatives from Schieffelin & Company will be at your service to discuss the above-mentioned products, as well as other products under clinical evaluation and research.

Julius Schmid, Inc., New York City (Booths 39 and 40), presents an interesting and informative exhibit featuring Immolin Cream-Jel for use without a diaphragm, Ramses Flexible Cushioned Diaphragm, Ramses Vaginal Jelly, Vagisec Jelly and Liquid for vaginal trichomoniasis therapy, XXXX (Fourex) Skin Condoms, and Ramses and Sheik Rubber Condoms for the control of trichomonal reinfection.

Sealy Mattress Company, Brooklyn, New York (Booth G-19), features the Posturepedic mattress and foundation. Technical data are available from scientific studies on the effect of bedding on posture, health, and sleeping comfort. Representatives tell us the Posturepedic has won wide acceptance and is frequently recommended to patients who require firm bedding. Sealy again renews its offer of a professional discount to a physician.

G. D. Searle & Company, Chicago, Illinois (Booth 121). You are cordially invited to visit the Searle booth where our representatives will be happy to answer any questions regarding Searle products of research. Featured will be Mornidine, the new synthetic recommended to prevent or stop nausea and vomiting associated with pregnancy, anesthesia, radiotherapy, and gastroenteritis; Dartal, the new tranquilizing agent which controls activities associated with anxiety states and other neuroses; Evovid, the new synthetic steroid for treatment of various menstrual disorders; and Nilevar, the new anabolic agent. Also featured will be Vallestril, the new synthetic estrogen with extremely low incidence of side-reactions; Pro-Banthine and Pro-Banthine with Dartal, the standards in anticholinergic therapy; and Dramamine with Dramamine-D, for the prevention and treatment of motion sickness and other nauseas.

7-Up Bottling Companies of New York State, New York City (Booth 86), will provide chilled 7-Up for all booth visitors. Each booth visitor will be eligible to win a beautiful aluminum picnic cooler. 7-Up recipe booklets will be available.

Sherman Laboratories, Detroit, Michigan (Booth 111), will feature the following products: Elixophyllin; severe asthmatic attacks are not merely relieved, but also are terminated in ten to twenty minutes by Elixophyllin, given orally. In milder attacks its speed has been described as instantaneous. Protamide, a sterile colloidal solution; published clinical studies have established convincingly Protamide's value in neuritis, herpes zoster, and other nerve root pains.

Smith Kline & French Laboratories, Philadelphia, Pennsylvania (Booth 62), features Fortespan, a high-potency, therapeutic multivitamin formula in Spansule sustained-release capsules; Eskatrol Spansule capsules, a new unique tranquilizer-anorexigenic preparation for use in psychogenic overweight, to curb appetite, relieve the basic emotional stress, and impart a sense of well-being; and Stelazine tablets, twice-a-day control of anxiety, particularly when expressed as apathy, listlessness, and emotional fatigue.

Spirt & Company, Waterbury, Connecticut (Booth G-17), will feature Lipan, Tridenol, and Epidol, medications for treatment of psoriasis and other dermatoses. Lipan therapy is based on the hypothesis that psoriasis is due principally to disturbance of fat metabolism. Epidol is an improved Wright's liquor carbonis detergens plus salicylic acid. Tridenol is a dispersible olive oil bath additive useful in many dermatoses.

E. R. Squibb & Sons, New York City (Booth 88), has long been a leader in the development of new therapeutic agents for prevention and treatment of disease. The results of our diligent research are available to the medical profession in new products or improvements in products already marketed. We are pleased to present up-to-date information on these advances for your consideration.

Stiefel Laboratories, Inc., Oak Hill, New York (Booth 133). New Brasivol Base rounds out the family of Brasivol cleansers for acne, making it possible for you to start Brasivol therapy with virtually every case of acne entering your office. The domedo type do best when started on Brasivol Fine, while the more acute or inflammatory types should have a preliminary course on Brasivol Base before advancing to Brasivol Fine.

Strasenburgh Laboratories, Rochester, New York (Booth G-5). Strasionic release products: Biphetamine, Ionamin, and Tussionex, will be featured at the Strasenburgh exhibit. Both Biphetamine and the nonamphetamine Ionamin comfortably limit the appetite for ten to fourteen hours with a single capsule dose. In addition, Biphetamine provides a ten-to-fourteen-hour mildly invigorating effect. Tussionex is an antitussive which controls useless cough eight to twelve hours with a single dose.

The Stuart Company, Pasadena, California (Booth G-18). The Stuart representatives extend a cordial invitation to physicians attending this meeting to discuss with them the latest pharmaceutical developments of the Stuart Company. Especially featured will be Effersyllium, Effergel, and Effersyl, the first effervescent bulk laxatives. Also featured will be Mulvidren, the Softab vitamin for all age groups.

Swift & Company, Chicago, Illinois (Booth 53). Swift's Baby Foods, the most complete variety of meat and egg yolk products, plus high meat dinners for your infant patients, are being featured at the Swift exhibit. Reprints of Swift-sponsored clinical studies including the results of research on meats and their effect on infant iron metabolism are available. Also obtainable is our Mother Booklet attractively illustrated in color.

Tailby-Nason Company, Inc., New York City (Booth G-16). Betadine Antiseptic, a new pathogenicide for topical use, containing povidone-iodine N.N.D., retains all of the nonselective microbicidal action of iodine without any of the undesirable side-reactions heretofore associated with iodine. Betadine kills on contact bacteria (including antibiotic resistant organisms), fungi, viruses, protozoa, and yeasts, yet does not irritate skin or mucosa, nor does it sensitize. Its action is prolonged and unimpaired by blood, pus, or serum. The dosage forms are Betadine Antiseptic Solution, Betadine Aerosol Spray (nitrogen propelled), Betadine Ointment, Betadine Shampoo, Betadine Douche, and Betadine Vaginal Gel. Supertah Ointments, the original white coal tar, are available in three forms: plain, with sulfur and salicyclic acid, and with hydrocortisone. Supertah Ointments are cosmetically elegant, stainless, and therapeutically effective for such dermatologic conditions as psoriasis, dermatophytosis, pruritus, and infantile eczema.

M. R. Thompson, Inc., Cranford, New Jersey (Booth 5), will exhibit cardiovascular products: Rauwistan-MRT, the most highly standardized whole root Rauwolfia product containing all fractions, alkaloidal as well as nonalkaloidal, in blended proportions for maximum effectiveness. The unique and complex assay method gives assurance of uniformity and predictable antihypertensive sedation action. Rauwolfia-MRT, a balanced preparation containing both veratrum viride and Rauwolfia alkaloids standardized by the M.R.T. process, for use in hypertensive therapy, and Quinidate-MRT, both parenteral and oral for use in cardiac arrhythmias, will also be featured.

United Medical Service, Inc., New York City (Booth 72). The display emphasizes the principles of community service to which Blue Shield adheres. It is a three-panel screen. The center panel lists some major advantages of the nonprofit, liberally underwritten Plan. The wings, both of which are illustrated, stress the large number of employe groups and physicians who participate in U.M.S.

The Upjohn Company, Kalamazoo, Michigan (Booth 104). Professional representatives of The Upjohn Company are eager to contribute to the success of your meeting. We are here to discuss with you products of Upjohn research that are designed to assist you in the practice of your profession. We solicit your inquiries and comments.

U. S. Hospital Supply Corporation, New York City (Booth 81), will exhibit the latest type of electrocardiographs, direct writers, some modular office equipment manufactured by Hamilton, radar microwave, and x-ray apparatus. Be sure to visit our booth for the latest in microscopes which will feature student-type to research models.

U. S. Vitamin & Pharmaceutical Corporation, New York City (Booth 68). Now available and on display is DBI, the new broad-range oral hypoglycemic agent. DBI, a brand of phenformin (N1-B-phenethylbiguanide HCl) is distinctly different in chemical structure and physiologic action from the oral hypoglycemic sulfonylureas. It lowers blood sugar and eliminates glycosuria effectively in mild, moderate, and severe diabetes. DBI, in combination with insulin, improves the regulation of brittle adult and juvenile diabetes. In juvenile diabetes, DBI often permits up to 50 per cent reduction in insulin requirement. It is also effective in insulin resistance and in primary and secondary tolbutamide and chlorpropamide failures. Full details are available on dosage, indications, possible side-effects, safety, precaution, and contraindications.

Walker Laboratories, Inc., Mount Vernon, New York (Booth 46). Vad will receive feature promotional attention at the Walker booth. Vad represents a combination of Vitamins A and D with an antibiotic in a sofcream base for topical use. Vad is refreshingly scented and absolutely free from offensive fish liver odor. Mildness and cooling qualities make it ideal for use on a baby's tender skin, especially in the treatment of diaper rash. Vad contains neomycin to prevent infection by fighting bacterial growth usually found on the skin. Vad also contains allantoin which stimulates the process of healing. Vad is uniquely packaged in a push-button container. Just press—it flows. Bacimycin products, Viacets, Peptolin, and the Precalcins will also be on display.

Wallace Laboratories, New Brunswick, New Jersey (Booths 63 and 64). The representatives of Wallace Laboratories look forward to discussing Meprospan with the doctors in attendance. Meprospan is a meprobamate, well known as Miltown, in a prolonged-release capsule form. In maintaining continuous drug levels, this form often reduces the quantity of meprobamate necessary to maintain tranquility.

Wampole Laboratories, Stamford, Connecticut (Booth G-13). The following products will be exhibited: Organidin, the unique organically bound iodine useful as a mucolytic and expectorant without the side-effects normally seen in conjunction with iodide therapy; Vastran Forte, an effective serum cholesterol reducer used in the treatment of hypercholesteremia; and Huptran, the new, dual release hypnotic-tranquilizer designed to insure a full night's restful sleep without loss of mental acuity the following morning.

The Warren-Teed Products Company, Columbus, Ohio (Booth 16), is featuring four pharmaceutical specialties: Ilopan, an injectable d-pantothenyl alcohol for treatment of gastrointestinal distention; Ilopan-Choline Tablets, an oral therapy for gastrointestinal gas retention in ambulatory patients; Kaon, an extremely palatable oral potassium; and Modane, a nutritional deconstipant. Warren-Teed representatives welcome all registrants to visit their display.

Warner-Chilcott Laboratories, Morris Plains, New Jersey (Booth 70), will feature the following products: Nardil, a safe, new, rapidly effective treatment for true (endogenous) depression, restores depressed and despondent patients to reality with no toxic effect on blood, liver, or kidneys; and Gelusil, the physician's antacid, for the relief of gastric hyperacidity and management of peptic ulcer, which is clinically superior because it is nonconstipating and is ideally suited for the peptic ulcer patient because it contains no laxative which might cause irritation and hypermotility.

Westwood Pharmaceuticals, Division of Foster-Milburn Company, Buffalo, New York (Booth 112), invites physicians to stop by their booth to discuss their unique dermatologic products: Fostex Cream, Sebulex, Lowila Emollient, Fostex Cake, and Lowila Cake. These products are particularly suitable for personal use by physicians and their families, who may be plagued with dandruff, acne, dry itchy skin, and sensitivities to soap. Register, so that we may send prescription units to your home.

White Laboratories, Inc., Kenilworth, New Jersey (Booth 75), will feature Permitil, a new anxiety agent which promises, in everyday office practice, the control of a significantly wider spectrum of the "target symptoms" of emotional stress with the smallest safe dosage (0.25 mg. twice a day) of any neuroleptic agent. Permitil alleviates symptoms of anxiety and agitation without depressant effect or impaired alertness. Permitil has an inherently long duration of effectiveness making it a convenient morning and evening dosage schedule. Also featured is a new scientific contribution in the treatment of allergic disorders, Disomer. Our representatives will be glad to discuss this new product with you.

Winthrop Laboratories, New York City (Booth 109), cordially invites you to visit their booth where the following is being featured: Trancopal, the first true tranquilaxant, potent muscle relaxant, and effective tranquilizer. Trancopal is used for low back pain and other musculoskeletal disorders, anxiety and tension states, dysmenorrhea, premenstrual tension, and so forth. It combines an unusually high rate of clinical effectiveness with low toxicity; side-effects are less than 3 per cent. Available in two strengths: 100 mg. caplets (peach) and 200 mg. caplets (green). Average adult dose, 100 or 200 mg. three or four times daily.

Wynn Pharmacal Corporation, Philadelphia Pennsylvania (Booth 38). Information, samples and reprints will be available on Quinaglute Dura-Tab S.M., the only oral sustained-medication quinidine gluconate. Because of greater solubility, quinidine gluconate has been found to be better absorbed and tolerated than quinidine sulfate. In its sustained-medication dosage, each dose of Quinaglute maintains uniform plasma levels up to twelve hours and thus eliminates the valleys in plasma concentration during which arrhythmias tend to recur. The twice-a-day maintenance dosage schedule insures patient cooperation and convenience. Indicated in cardiac arrhythmias, such as premature contractions, auricular tachycardia, flutter, and fibrillation.

The Yorke Publishing Company, Inc., New York City (Booth 136), cordially invites you to visit their booth where *The American Journal of Medicine* will be on display. Other publications of the Yorke Group, *The American Journal of Surgery, The American Journal of Cardiology, The American Journal of Clinical Nutrition, Modern Drugs,* and the *Modern Drug Encyclopedia,* may also be reviewed.

F. E. Young & Company, Chicago, Illinois (Booth 31), will exhibit Young's Dilators, PSP Test Set, Young's Albumin Test, and Jen-i-sol. Young's Dilators are used in the treatment and prevention of contracted anus, particularly following hemorrhoidectomy, constipation, congenital stricture, prolapse, dysmenorrhea, dyspareunia, perineal dissection, and repair following delivery.

Zenith Radio Corporation, New York City (Booth

6), will have on display their newly developed Audio Analyzer. This hearing testing equipment was the result of recommendations by professional personnel such as doctors, nurses, and clinical audiologists. It is a single-channel, 6-tube audiometer with record playback unit and desk speaker which will permit the operator to make 13 major pure tone and speech tests.

VIDEO PAGING SERVICE FOR CONVENTION

To facilitate the paging of physicians attending the 154th Annual Convention of the Medical Society of the State of New York, a new closed-circuit television paging system will be used, through the courtesy of Sherman Laboratories, Detroit, Michigan.

Called SherPage, the system provides for television receivers set up in meeting rooms, exhibit areas, registration areas, House of Delegates, and other places where physicians attending the meeting may assemble. A private telephone system connects the television receivers, the message center, and the switchboard. When a doctor sees his name on the screen he may pick up the telephone, identify himself, and receive his message. All paging is silent and does not interfere with meeting programs.

In addition to messages, SherPage will be used for important announcements, convention news, lost and found information, and other pertinent data.

Do You Have Your Hotel Reservation for the Annual Convention?

If you do not now have a confirmed hotel reservation in New York City for the Annual Convention of the Medical Society of the State of New York, May 7 to May 13, 1960, at the Statler Hilton Hotel, please fill out and mail the form at the bottom of this page, and send it directly to the Statler Hilton.

Should your request be received after the five hundred rooms set aside for the Society at the Statler Hilton have been assigned, your reservation will be turned over to one of the hotels in the neighborhood. Confirmation will come to you direct from the hotel making the accommodation.

If you do not use the form below, please be sure to identify yourself as a physician when writing regarding reservations. This will insure proper attention to your request.

William L. Wheeler, Jr., M.D., *Secretary*

All Reservations Must Be Received by April 25

154th Annual Convention of the Medical Society of the State of New York,
May 7 to May 13, 1960

- -

Front Office Manager
Statler Hilton, New York 1, New York

Please reserve accommodations as checked (√) below:

Name (*Please Print*)..

Address..

City....................................Zone........State.............

(Unless requested otherwise, we will hold your reservation only until 6 p.m. of the day of your arrival.)

Date arriving..........................Hour............a.m.......p.m.......

Room and Bath for one— per day	$8.00☐	$ 9.00☐	$10.00☐	$11.00☐
		12.00☐	13.00☐	14.00☐
Double-Bed Room with Bath for two— per day		11.00☐	13.00☐	16.00☐
		12.00☐	14.00☐	17.00☐
			15.00☐	18.00☐
Twin-Bed Room with Bath for two— per day			17.00☐	20.00☐
		15.00☐	18.00☐	21.00☐
		16.00☐	19.00☐	22.00☐
Suite—Living Room, Bed Room and Bath			36.00☐	37.00☐

More Than Two Persons in One Room: For each additional person in Double- or Twin-Bed Room, the extra charge is $3.00 per day.

If a room at the rate requested is unavailable, reservation will be made at the next available rate.

Medical Society of the State of New York

ANNUAL DINNER DANCE

in honor of

HENRY I. FINEBERG, M.D., PRESIDENT

Monday, May 9, 1960

GRAND BALLROOM HOTEL PIERRE

61ST STREET AND FIFTH AVENUE, NEW YORK CITY

Cocktails at 7 p.m. ***Gourmet Dinner***

Music by Ben Cutler ***Dress Optional***

Subscription $15

RESERVATION BLANK

Medical Society of the State of New York (*Make checks payable to*)
750 Third Avenue
New York 17, New York

Please send me —— tickets for the Annual Dinner Dance on May 9.

Enclosed please find my check for ———.

NAME ________________________________

ADDRESS________________________________

Please attach guest list.

Medical Society of the State of New York

HOUSE OF DELEGATES

May 7 through 9, 1960

Statler Hilton Hotel, New York City

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SCHEDULE OF SESSIONS

Saturday, May 7, 1960

Opening Session	10:00 A.M.
Reference Committees	2:00 P.M.

Sunday, May 8, 1960

Reference Committees	10:00 A.M.
Second Session	2:00 P.M.
Third Session	8:00 P.M.

Monday, May 9, 1960

Fourth Session	9:00 A.M.
Fifth Session (Elections)	2:00 P.M.

ORDER OF BUSINESS

According to the Bylaws, Chapter II, Section 7. The following shall be the order of business at the sessions of the House of Delegates:

1. Calling the meeting to order.
2. Invocation.
3. National Anthem.
4. Report of Reference Committee on Credentials.
5. Report by the secretary as to the presence or absence of a quorum.
6. Remarks by the speaker.
7. Reading the minutes of the previous meeting by title.
8. Report of the president.
9. Address by the president-elect.
10. Report of the Judicial Council.
11. Report of the Council.
12. Report of the secretary.
13. Report of the treasurer.
14. Report of the Board of Trustees.
15. Reports of district branches by district delegates.
16. Reports of special committees.
17. Reports of reference committees.
18. Unfinished business.
19. New business.
20. Adjournment.

HOUSE OF DELEGATES, 1960

Medical Society of the State of New York

Officers, 1959–1960

President	Henry I. Fineberg, Queens
President-Elect	Norman S. Moore, Tompkins
Vice-President	John L. Sengstack, Suffolk
Secretary	William L. Wheeler, Jr., New York
Assistant Secretary	Ezra A. Wolff, Queens
Treasurer	Maurice J. Dattelbaum, Kings
Assistant Treasurer	Samuel Z. Freedman, New York
Speaker	Joseph A. Lane, Monroe
Vice-Speaker	Frederick A. Wurzbach, Jr., Bronx

Councillors

Term Expires 1960
Gerald D. Dorman, New York
Edward C. Hughes, Onondaga
Alfred P. Ingegno, Kings
Raymond S. McKeeby, Broome

Term Expires 1961
Harold F. Brown, Erie
John M. Galbraith, Nassau
John C. McClintock, Albany
George A. Burgin, Herkimer

Term Expires 1962
James M. Blake, Schenectady
Peter J. Di Natale, Genesee
George J. Lawrence, Jr., Queens
Waring Willis, Westchester

Trustees

Herbert H. Bauckus, *Chairman*, Erie
Renato J. Azzari, Bronx
John J. Masterson, Kings
Frederic W. Holcomb, Ulster
J. Stanley Kenney, New York
Leo E. Gibson, Onondaga
James Greenough, Otsego

Ex-Presidents

1923–1924—Orrin Sage Wightman, New York
1932–1933—Chas. Gordon Heyd, New York
1934–1935—Arthur J. Bedell, Albany
1944–1945—Herbert H. Bauckus, Erie
1947–1948—Louis H. Bauer, Nassau
1949–1950—John J. Masterson, Kings
1950–1951—Carlton E. Wertz, Erie
1951–1952—J. Stanley Kenney, New York
1952–1953—Edward T. Wentworth, Monroe
1953–1954—Andrew A. Eggston, Westchester
1955–1956—Renato J. Azzari, Bronx
1956–1957—James Greenough, Otsego
1957–1958—Thurman B. Givan, Kings
1958–1959—Leo E. Gibson, Onondaga

Commissioner, New York State Department of Health

Herman E. Hilleboe, Albany

District Delegates

(*Elected Delegates of District Branches*)

First—George W. McCormick, Richmond
Second—Charles W. Shlimbaum, Suffolk
Third—Edwin J. Mulbury, Greene
Fourth—Roman R. Violyn, Montgomery
Fifth—(to be elected in April)
Sixth—Norman C. Lyster, Chenango
Seventh—Eldred J. Stevens, Steuben
Eighth—Wilfrid M. Anna, Niagara
Ninth—Reid R. Heffner, Westchester

Section Delegates

(*Delegates from Scientific Sections*)

Allergy	Hyman Sherman, Kings
Anesthesiology	Vincent J. Collins, New York
Chest Diseases	Arthur Q. Penta, Schenectady
Dermatology and Syphilology	Herbert L. Traenkle, Erie
Gastroenterology and Proctology	M. Luther Musselman, Erie
General Practice	Royal S. Davis, Westchester
Industrial Medicine and Surgery	James H. McDonough, Oneida
Legal Medicine	Milton Helpern, New York
Medicine	Victor L. Pellicano, Niagara
Neurology and Psychiatry	Isaac Shapiro, Schenectady

Obstetrics and Gynecology	Michael J. Jordan, New York
Ophthalmology	James I. Farrell, Oneida
Orthopedic Surgery	Frederick Lee Liebolt, New York
Otolaryngology	Alfred W. Doust, Onondaga
Pathology, Clinical Pathology, and Blood Banking	Harry P. Smith, New York
Pediatrics	John A. Monfort, Kings
Physical Medicine	Henry Fleck, Bronx
Preventive Medicine and Public Health	Ralph M. Vincent, Albany
Radiology	Frank J. Borrelli, New York
Surgery	Edmund N. Goodman, New York
Urology	E. Craig Coats, New York

Delegates from Component County Societies

Albany (4)
James A. Moore, Albany
John F. Roach, Loudonville
Joseph J. Russo, Albany
Francis A. Stephens, Albany

Allegany (1)
Irwin Felsen, Wellsville

Bronx (12)
Carl R. Ackerman, Bronx
Joseph P. Alvich, Bronx
Henry J. Barrow, Bronx
Herbert G. Cohen, Bronx
Walter Einhorn, Bronx
Jerome B. Flynn, Bronx
Leonard L. Heimoff, Bronx
Moses H. Krakow, Bronx
Frank LaGattuta, Bronx
Samuel Leo, Bronx
Thomas F. McCarthy, Bronx
Samuel Wagreich, Bronx

Broome (3)
Elton R. Dickson, Binghamton
Jason K. Moyer, Binghamton
James L. Palmer, Binghamton

Cattaraugus (2)
Joseph A. Wintermantel, Olean

Cayuga (1)
Bernard J. Hartnett, Auburn

Chautauqua (2)
Garra L. Lester, Chautauqua
Herbert A. Laughlin, Westfield

Chemung (2)
William T. Boland, Elmira
Swen L. Larson, Elmira

Chenango (1)
Thomas M. Flanagan, Norwich

Clinton (1)
Edward Siegel, Plattsburgh

Columbia (1)
Carl G. Whitbeck, Hudson

Cortland (1)
George F. Nevin, Cortland

Delaware (1)
Philip J. Hust, Sidney

Dutchess (3)
Frank A. Gagan, Poughkeepsie
John F. Rogers, Poughkeepsie
Lawrence Sweeney, Poughkeepsie

Erie (8)
E. Dean Babbage, Buffalo
Antonio F. Bellanca, Buffalo
John C. Brady, Buffalo
Thomas S. Bumbalo, Buffalo
Max Cheplove, Buffalo
Martin L. Gerstner, Buffalo
John D. Naples, Buffalo
Samuel Sanes, Eggertsville

Essex (1)
James E. Glavin, Port Henry

Franklin (1)
Alfred A. Hartmann, Malone

Fulton (1)
Joseph J. Thompson, Gloversville

Genesee (1)
Alfred L. George, Batavia

Greene (1)
Kenneth F. Bott, Greenville

Herkimer (1)
Harold T. Golden, Herkimer

Jefferson (1)
Charles A. Prudhon, Watertown

Kings (22)
George E. Anderson, Brooklyn
Louis Berger, Brooklyn
Leo S. Drexler, Brooklyn
John J. Flynn, Brooklyn
Arthur P. Kane, Brooklyn
David Kershner, Brooklyn
Aaron Kottler, Brooklyn
Arthur E. Lamb, Brooklyn
Warren A. Lapp, Brooklyn
Isaac Levine, Brooklyn
Charles H. Loughran, Brooklyn
Harry A. Mackler, Brooklyn
A. W. Martin Marino, Brooklyn
John G. Masterson, Brooklyn
Charles F. McCarty, Brooklyn

David B. Monheit, Brooklyn
Irving M. Pallin, Brooklyn
Solomon Schussheim, Brooklyn
Abraham D. Segal, Brooklyn
Milton B. Spiegel, Brooklyn
Leslie H. Tisdall, Brooklyn
Robert F. Warren, Brooklyn

LEWIS (1)
Edgar O. Boggs, Lowville

LIVINGSTON (1)
Melville A. Hare, Caledonia

MADISON (1)
Felix Ottaviano, Oneida

MONROE (6)
Michael J. Crino, Rochester
Merle D. Evans, Rochester
Maurice M. Maltinsky, Rochester
Charles R. Mathews, Rochester
Lynn Rumbold, Rochester
Arthur H. Walker, Rochester

MONTGOMERY (1)
Michael Kizun, Fonda

NASSAU (8)
C. Dean Bohrer, Westbury
Ralph S. Emerson, Roslyn Heights
Gerard V. Farinola, Roosevelt
Leo T. Flood, Hempstead
Abraham W. Freireich, Malverne
Edward K. Horton, Rockville Centre
Paul H. Sullivan, Great Neck
Joseph G. Zimring, Long Beach

NEW YORK (25)
Philip D. Allen, New York City
Michael C. Armao, New York City
Norton S. Brown, New York City
Samuel B. Burk, New York City
William A. Cooper, New York City
C. Joseph Delaney, New York City
James H. Ewing, New York City
George W. Fish, New York City
Samuel Frant, New York City
Carl Goldmark, Jr., New York City
George Himler, New York City
John J. H. Keating, New York City
Ely Elliott Lazarus, New York City
William Hall Lewis, Jr., New York City
Julia V. Lichtenstein, New York City
Ira A. McCown, New York City
Frank J. McGowan, New York City
George W. Melcher, Jr., New York City
Peter M. Murray, New York City
Herbert S. Ogden, New York City
Bernard J. Pisani, New York City
Henry T. Randall, New York City
William B. Rawls, New York City
Adelaide Romaine, New York City
George N. Wise, New York City

NIAGARA (3)
Joseph A. D'Errico, Niagara Falls
Harvey Braden Fitz-Gerald, Lockport
John Kinzly, North Tonawanda

ONEIDA (3)
Irwin Alper, Utica
Anthony G. Jarosewicz, Utica
John F. Kelley, Utica

ONONDAGA (5)
Irving L. Ershler, Syracuse
A. Carl Hofmann, Syracuse
Robert F. McMahon, Syracuse
William E. Pelow, Syracuse
W. Walter Street, Syracuse

ONTARIO (2)
Robert E. Doran, Geneva
Philip M. Standish, Canandaigua

ORANGE (3)
Robert J. Hewson, Monroe
Theodore R. Proper, Newburgh
Irving Weiner, Newburgh

ORLEANS (1)

OSWEGO (1)
Kent W. Jarvis, Oswego

OTSEGO (1)
John W. Latcher, Oneonta

PUTNAM (1)
Robert S. Cleaver, Brewster

QUEENS (13)
Alfred A. Angrist, Beechhurst
Sol Axelrad, Woodhaven
William Benenson, Flushing
Monroe M. Broad, Jamaica
Thomas M. d'Angelo, Flushing
Albert H. Douglas, Jamaica
Harry H. Epstein, Jamaica
Frank W. Farrell, Flushing
John L. Finnegan, Flushing
Jerome L. Leon, Forest Hills
John Edward Lowry, Flushing
Charles C. Mangi, Woodhaven
Louis J. Morse, Kew Gardens

RENSSELAER (2)
Gilbert A. Clark, Troy
Joseph A. Padalino, Troy

RICHMOND (3)
Herbert Berger, Staten Island
Walter T. Heldmann, Staten Island
Cyril M. Levin, Staten Island

ROCKLAND (2)
Harold W. Grosselfinger, Suffern
G. Gordon Knight, Piermont

ST. LAWRENCE (1)
Henry Vinicor, Norwood

SARATOGA (1)

SCHENECTADY (3)
Raymond J. Byron, Schenectady
John L. Clowe, Schenectady
Philip Parillo, Schenectady

SCHOHARIE (1)

SCHUYLER (1)
Fritz Landsberg, Watkins Glen

SENECA (1)

STEUBEN (2)
Thomas S. Cotten, Hornell
Maynard W. Gurnsey, Corning

SUFFOLK (5)
L. Barrett Davis, Westhampton Beach
Earl W. Douglas, West Islip
David Evancie, East Northport
Anthony Kohn, Bay Shore
Sol Shlimbaum, Bay Shore

SULLIVAN (1)

TIOGA (1)
John H. Jakes, Candor

TOMPKINS (1)
C. Stewart Wallace, Ithaca

ULSTER (2)
Eugene F. Galvin, Rosendale
Edward F. Shea, Kingston

WARREN (1)
Morris Maslon, Glens Falls

WASHINGTON (1)
Walter S. Bennett, Granville

WAYNE (1)
James H. Arseneau, Lyons

WESTCHESTER (8)
Charles M. Brane, Yonkers
Arthur H. Diedrick, Port Chester
John N. Dill, Yonkers
Harold J. Dunlap, New Rochelle
James B. Haralambie, Larchmont
James M. Jones, Bronxville
Donald R. Reed, Irvington
Wallace M. Sheridan, White Plains

WYOMING (1)

YATES (1)
John A. Hatch, Penn Yan

REFERENCE COMMITTEES

Credentials

Frank A. Gagan, Dutchess, *Chairman*
George W. McCormick, Richmond, First District Branch
Carl Goldmark, Jr., New York
John Kinzly, Niagara
Michael Kizun, Montgomery
Charles F. McCarty, Kings, *Adviser*

Reports of Officers

PRESIDENT
PRESIDENT-ELECT
SECRETARY
TREASURER
BOARD OF TRUSTEES
WAR MEMORIAL
BUDGET
BELATED BILLS
EXECUTIVE DIRECTOR

Paul H. Sullivan, Nassau, *Chairman*
Thomas F. McCarthy, Bronx
Thomas M. Flanagan, Chenango
Irwin Felsen, Allegany
Carl G. Whitbeck, Columbia

Commission on Medical Services—A

ECONOMICS
LIAISON WITH U.S. VETERANS ADMINISTRATION
PUBLIC MEDICAL CARE
MEDICAL CARE INSURANCE
RURAL MEDICAL SERVICE
MEDICARE

Irving L. Ershler, Onondaga, *Chairman*
Alfred L. George, Genesee
Harold J. Dunlap, Westchester
Vincent J. Collins, New York, Section on Anesthesiology
William T. Boland, Chemung

Commission on Medical Services—B

WORKMEN'S COMPENSATION
INDUSTRIAL HEALTH
HOSPITAL AND PROFESSIONAL RELATIONS
QUESTIONS OF ETHICS

Henry T. Randall, New York, *Chairman*
Henry Vinicor, St. Lawrence
Arthur H. Diedrick, Westchester
Alfred A. Hartmann, Franklin
Michael J. Crino, Monroe

Public Health and Education

PUBLIC HEALTH AND EDUCATION
ACCIDENT PREVENTION
ADDICTION TO ALCOHOL AND NARCOTICS
AGING AND NURSING HOMES
CANCER
CHILD ACCIDENTS
DIABETES
GENERAL PRACTICE
GLAUCOMA
HARD OF HEARING AND DEAF
HEART DISEASE
MATERNAL AND CHILD WELFARE
MEDICAL FILM REVIEW
MENTAL HYGIENE
OPERATING ROOM DEATHS
PHYSICAL MEDICINE AND REHABILITATION
SCHOOL HEALTH
STATE REHABILITATIVE SERVICES

Samuel Frant, New York, *Chairman*
Thomas Bumbalo, Erie
Leonard L. Heimoff, Bronx
Royal S. Davis, Westchester, Section on General Practice
G. Gordon Knight, Rockland

Legislation and Legal Matters

MALPRACTICE INSURANCE AND DEFENSE BOARD
LEGAL COUNSEL
LEGISLATION
LICENSURE OF CLINICAL LABORATORIES
FEDERAL LEGISLATION
AUTOPSY AND THE DEAD HUMAN BODY
CULTS
JUDICIAL COUNCIL

Charles R. Mathews, Monroe, *Chairman*
Irwin Alper, Oneida
Herbert A. Laughlin, Chautauqua
Irving M. Pallin, Kings
E. Kenneth Horton, Nassau

Medical Communication

PUBLICATION
PUBLIC RELATIONS
COOPERATION WITH MEDIA OF INFORMATION
AMERICAN MEDICAL EDUCATION FOUNDATION
CONVENTION

Dean Babbage, Erie, *Chairman*
C. Stewart Wallace, Tompkins

Monroe M. Broad, Queens
Robert F. McMahon, Onondaga
Theodore R. Proper, Orange

Organization and Policies

PLANNING
DISTRICT BRANCHES
OFFICE ADMINISTRATION AND POLICIES
1958 MANAGEMENT SURVEY REPORT
CONSTITUTION AND BYLAWS

Samuel Wagreich, Bronx, *Chairman*
Solomon Schussheim, Kings
George W. Fish, New York
Philip M. Standish, Ontario
Edward F. Shea, Ulster

Medical Care

CIVIL DEFENSE AND CATASTROPHE
DISABILITY DETERMINATIONS, ADVISORY
RESOLUTION 58–49
COLUMBIA UNIVERSITY STUDY, ADVISORY
STAPHYLOCOCCAL INFECTIONS

Warren A. Lapp, Kings, *Chairman*
Francis A. Stephens, Albany
John L. Finnegan, Queens
Thomas S. Cotten, Steuben
Robert S. Cleaver, Putnam

Ancillary Groups

WOMAN'S AUXILIARY, ADVISORY
NURSING EDUCATION
DENTAL HEALTH
PHARMACEUTICAL ASSOCIATION
BLOOD BANKS COMMISSION
INTERPROFESSIONAL ASSOCIATION

Sol Axelrad, Queens, *Chairman*
James L. Palmer, Broome
Julia Lichtenstein, New York
Philip J. Hust, Delaware
John W. Latcher, Otsego

Miscellaneous Business

AMERICAN MEDICAL ASSOCIATION

Raymond J. Byron, Schenectady, *Chairman*
Earl W. Douglas, Suffolk
Gilbert A. Clark, Rensselaer
Michael C. Armao, New York
Walter T. Heldmann, Richmond

Résumé of Instructions of the 1959 House of Delegates and Actions Thereon by the Council, Board of Trustees, and Officers

District Branch Structure (Section 129).—The House of Delegates instructed the Council to conduct a study to determine whether there is a need for revising the present district branch structure and suggested the possibility of conducting a referendum to ascertain the wishes of the membership. The Council referred this to the Planning Committee for Medical Policies. (*See Annual Reports in April 1 issue, Special Committee on Planning for Medical Policies, page 1122.*)

Staphylococcal Infections (Section 197).—The House voted that this Society should encourage all county medical societies to set up (as some had done) special committees to study staphylococcal infections in hospitals and to be guided by the results reported by these special committees. The Council authorized the secretary to send a letter to this effect to the county societies, and on June 22, 1959, the secretary wrote to all presidents and secretaries of county medical societies quoting the action taken by the House of Delegates.

Scientific and Educational Trust (Section 229).—The House voted that the blueprint, then being prepared by the Committee on Public Health and Education, for establishment of a scientific and educational trust should be submitted to legal counsel for approval and should then be returned to the Council for final implementation. This was received as information by the Council at its June, 1959, meeting. (*See Annual Reports in April 1 issue, Report of the Council Committee on Public Health and Education, page 1084.*)

Medical Stockpiles for Civil Defense (Section 201).—The House adopted resolution 59–28 directing that an appropriate committee of the Council be instructed to insure that the appropriate committee of each county medical society be apprised without delay of the location and inventory of the medical stockpiles in their vicinity so that we will be properly prepared to fill our role in civil defense. This was referred to the Special Committee on Civil Defense and Catastrophe. (*See Annual Reports in April 1 issue, Report of the Special Committee on Civil Defense and Catastrophe, page 1132.*)

Transfer of Fees to Hospitals (Section 204).—The House adopted resolution 59–59 that the practice of collection of fees from service cases by members of hospital visiting staffs and their subsequent return to the hospital should be considered a form of fee-splitting and hence unethical and that hospitals making it mandatory for doctors to return such fees should be reported to the Joint Committee on Hospital Accreditation for censure. The Council referred this action to the Committee on Hospital and Professional Relations. (*See Annual Reports in April 15 issue, Report of the Council Committee on Hospital and Professional Relations.*)

Cancer Detection Program (Section 98).—The House adopted resolution 59–47 approving (*a*) development by the Cancer Subcommittee of a State-wide program to promote wider routine use of cytology and other methods of cancer diagnosis and (*b*) solicitation of the support of State and New York City health departments and of local and State cancer societies and hospital organizations. This was referred by the Council to the Subcommittee on Cancer. (*See Annual Reports in April 1 issue, Report of the Council Committee on Public Health and Education, Subcommittee on Cancer, page 1088.*)

Blue Cross Reports on Causes of Hospitalization (Section 177).—With respect to contracts which permit Blue Cross plans to review hospital records of subscribers and to obtain additional information by sending questionnaires to hospital record rooms, the House voted (*a*) to request review of such contracts by its appropriate committee and with its legal counsel and (*b*) to take measures to clarify for the patient, the profession, and the attending doctor the responsibilities of the doctor in these matters (resolution 59–51). This was referred to the Medical Care Insurance Committee and to legal counsel. ((*See Annual Reports in April 15 issue, Report of the Council Committee on Medical Care Insurance and in April 1 issue, Report of Legal Counsel, page 1100.*)

Blue Shield Payments of Interns and Residents (Section 174).—The House referred to the Council for further study resolution 59–36 that this Society oppose payment of fees or benefits to residents or interns by any Blue Shield plan in the State of New

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Sections referred to are from the Minutes of the House of Delegates of the 1959 Annual Meeting, as published in the NEW YORK STATE JOURNAL OF MEDICINE, September 1, 1959, Part II.

York. This was referred to the Medical Care Insurance Committee and to the Hospital and Professional Relations Committee. (*See Annual Reports in April 15 issue, Report of the Council Committee on Medical Care Insurance and Report of the Council Committee on Hospital and Professional Relations.*)

Blue Shield Insurance for Persons Over Sixty-Five (Section 169).—The instruction of the House of Delegates that the Blue Shield plans of the State be urged to develop a program of medical care insurance coverage, consistent with the proposal of the American Medical Association, for persons over sixty-five who, after adequate income investigation, are found to be with modest resources or low family income was referred by the Council to the Committee on Medical Care Insurance. (*See Annual Reports in April 15 issue, Report of the Council Committee on Medical Care Insurance.*)

Podiatrists: Designation (Section 104).—The House referred to the Council for action resolution 59–7 that the Board of Regents of the University of the State of New York be requested to rescind the action whereby podiatrists are permitted to use the designation "foot specialist." Following the instructions of the Council, the secretary wrote on June 18, 1959, transmitting this request to Chancellor John F. Brosnan of the Board of Regents. Dr. Brosnan replied on June 24 that he had referred the request to the Board's Committee on Higher and Professional Education.

Education Law Amendment: Contact Lenses (Section 106).—The House adopted resolution 59–13 that the Council request the introduction of legislation in the 1960 New York State Legislature whereby Section 7101 of Article 143 of the Education Law would be amended to provide that a licensed optometrist may fit contact lenses only under the personal supervision of a physician. This was referred by the Council to the Committee on Legislation. (*See Annual Reports in April 1 issue, Report of the Council Committee on Legislation, page 1104.*)

Legislation Program: County Medical Society Cooperation (Section 107).—With respect to resolution 59–18 that "every component county medical society be urged not to make public a stand or an opinion contrary to that of the State Society unless such action has been discussed with the appropriate officer or committee of the Medical Society of the State of New York," the House of Delegates expressed agreement in principle and the hope that such sentiments would be expressed in appropriate literature for distribution. The Council voted that a letter be sent to each county society and to the district branches by the secretary. This was done on June 22, 1959.

Malpractice Liability: Exemptions (Section 108).—The House of Delegates referred to the Council resolution 59–20 calling for legislation to relieve from liability, for damages for personal injuries due to alleged malpractice, physicians who are employed by county and State boards of control and also physicians who work without compensation under the auspices of charitable, educational, and eleemosynary institutions. The Council referred this to the Legislation Committee and to legal counsel. (*See Annual Reports in April 1 issue, Report of the Council Committee on Legislation, page 1104, and Report of Legal Counsel, page 1100.*)

Lien Law (Sections 109, 110, and 112).—(*a*) Resolution 59–21 to seek legislation that would provide a lien in favor of physicians similar to the attorney's lien and to seek the Bar Association's endorsement of this proposed legislation was referred by the House of Delegates to the Council and by the Council to the Committee on Legislation. (*b*) The House adopted resolution 59–22 instructing the Council to seek a legal means of providing for a lien in favor of physicians whose patients receive awards, verdicts, or settlements through the courts or from the Workmen's Compensation Board and to seek the endorsement of this proposal by the Bar Association. The Council referred this to the Legislation Committee and to legal counsel. (*c*) Resolution 59–43 that the Committee on Legislation seek enactment of a lien law for doctors of medicine similar to that currently in effect for hospitals, based on the principle that, in order for the lien to become valid, the fee be reasonable and proper for the service rendered was adopted by the House of Delegates. The Council referred it to the Legislation Committee.

(*See Annual Reports in April 1 issue, Report of the Council Committee on Legislation, page 1104, and Report of Legal Counsel, page 1100.*)

Legislation Program: Improved Communications (Section 113).—House of Delegate's resolution 59–48 requested that there be devised and established a better means of communication between our representatives in Albany, the headquarters staff, and the legislation committees of the county medical societies. This was referred to the Committee on Legislation and to the administration for implementation. At the June meeting of the Council the chairman of the Legislation Committee reported the closing of the Legislation Bureau office in Albany. He stated "the continued arrangement of operation between the Bureau and the administration or the executive director is in the process of being organized." (*See Annual Reports in April 1 issue, Report of the Council Committee on Legislation,* *page 1104, and Report of the Executive Direcor, page 1073.)*

Psychotherapy Under the Medical Practice Act (Section 205).—The House referred to legal counsel and to the Council resolution 59–50 to oppose any rule, regulation, opinion, or attempt to amend the present Medical Practice Act that might exclude psychotherapy from the present Medical Practice Act. The Council was informed in June that, with the consent of its proponent, the resolution had been transmitted to legal counsel for study and for his further recommendation to the Council for action. (*See Annual Reports in April 1 issue, Report of Legal Counsel, page 1100.*)

Education Law Amendment: Physiotherapy (Section 117).—The House approved in principle and referred to the Council for action resolution 59–57 that this Society take whatever steps are necessary so that the present law covering the practice of physical therapy (Paragraph 6512, Article 4a, Number 2) be amended to read as follows:

> "(2) The administration of physiotherapy by a duly licensed and registered physiotherapist upon the *written* prescription of a duly licensed and registered physician."

The Council referred this to the Committee on Legislation. (*See Annual Reports in April 1 issue, Report of the Council Committee on Legislation, page 1104.*)

Public Statements Inimical to the Medical Profession (Section 159).—By resolution 59–52 the House of Delegates instructed its appropriate committee to exert proper protest against public announcements by individuals or groups in governmental agencies or bureaus or by other media which make particular mention of the medical profession in special and possibly unfavorable manner. The Council referred this matter to our delegates to the A.M.A. for action and also instructed the executive director, in consultation with the chairman of the Public Relations Committee, to write a letter of protest to the president of the American College of Surgeons and to send a copy to Dr. Hawley.

Convention: Places and Days of Meeting (Section 119).—The House voted (*a*) to hold the annual convention of the Society in New York City unless otherwise specified by the House of Delegates two years in advance and (*b*) in support of the opinion that the House of Delegates should continue to meet on Saturday and Sunday and that, if possible, the scientific sessions should begin on Monday and end on Wednesday. With the concurrence of the Council, both of these actions were referred to the Convention Committee. (*See Annual Reports in April 1 issue, Report of the Council Committee on Convention, page 1118.*)

Doctors' Degrees (Section 155).—The Public Relations Committee was informed of the instructions of the House of Delegates that that committee attempt to clarify to the public the distinction between doctors of medicine and nonmedical men who use the title of doctor. (*See Annual Reports in April 1 issue, Report of the Council Committee on Public Relations, page 1114.*)

Workmen's Compensation Fees for Osteopaths (Section 186).—House of Delegates resolution 59–33 requesting adjustment of fees paid to physicians and osteopaths to remove the inequity of paying lower fees to doctors of medicine in general practice than those paid to osteopaths was transmitted to Colonel Senior in July.

Saratoga Spa Commission (Section 131).—House of Delegates resolution 59–38 requesting appointment of at least two doctors of medicine to the Saratoga Spa Commission was transmitted to the Governor in June.

New York Medical College (Section 69).—Resolution 59–37 extending the congratulations of this Society to the New York Medical College on the celebration of its one hundredth anniversary was transmitted to Dean Ralph E. Snyder in May.

New York State's Year of History (Section 125).—Resolution 59–62 on this subject was transmitted to Senator Ernest I. Hatfield, chairman of the State Commission on Historic Observances.

Ionizing Radiation (Section 200).—Resolution 59–15 calling for strict enforcement of Regulation 19, Chapter 16 of the New York State Sanitary Code was transmitted to Dr. Hilleboe and Dr. Baumgartner.

A.M.A. Resolutions.—The House of Delegates adopted five resolutions which provided that similar resolutions be presented in the House of Delegates of the American Medical Association. They are listed below by title, with identifying references to the minutes of our House of Delegates.

1. *Public Relations and Information, resolution 59–52, Sections 85 and 159;*
2. *Study and Recodification of the Laws Dealing with the Dead Human Body, resolution 59–8, Sections 40 and 105;*
3. *Modernization of the Law Dealing with the Dead Human Body, resolution 59–11, Sections 43 and 105;*
4. *Social Security for Self-Employed Doctors of Medicine, resolutions 59–9 and 59–16, Sections 41, 48, and 170;*

5. *Reaffirmation of the Concept of Free Choice of Physician, resolution 59–10, Sections 42 and 173.*

These resolutions were introduced in June by the New York State delegation. Information as to the disposition made of individual resolutions has not been published by the American Medical Association. The A.M.A. House of Delegates did, however, reaffirm the concept of freedom of choice of physician and did disapprove three resolutions in favor of compulsory Social Security coverage for self-employed physicians, as reported in the June 27, 1959, issue of the *Journal of the American Medical Association,* pages 1075 and 1076.

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

DINNER DANCE

- Monday evening, May 9
- New Hotel Pierre Ballroom
- Cocktails preceding dinner
- Gourmet menu
- Famous name band

Set aside the date
Bring your family and friends

Special Committee on Constitution and Bylaws

To the House of Delegates, Gentlemen:

Your Special Committee on Constitution and Bylaws consists of the following:

George A. Burgin, M.D., *Chairman*...Herkimer
Alfred A. Hartmann, M.D............Franklin
Ezra A. Wolff, M.D....................Queens

Proposed Amendment to Regulations Governing Malpractice Iusurance and Defense

The 1959 annual report of the Malpractice Insurance and Defense Board recommended an amendment to the regulations governing malpractice insurance and defense, regarding clarification of the rights of members who are insured for malpractice by companies other than the Group Plan carrier. This proposal was referred to your committee by the reference committee "so that any possible differences may be reconciled," presumably the question of whether or not amendments to the Constitution and Bylaws might be involved.

Liaison with legal counsel and with the Malpractice Insurance and Defense Board has resolved this problem, since it is the opinion of legal counsel that no amendment to the Bylaws is necessary and that the Board itself has authority to amend its regulations.

It is unnecessary, therefore, for your committee to recommend any action to this House.

Reimbursement for Expenses of Section Delegates and Others

Resolution 59–56 would provide reimbursement of section delegates sitting in the House of Delegates; it reads as follows:

> *Resolved,* that the Bylaws of the Medical Society of the State of New York, Chapter IX, Section 1, page 32, line 17, be amended by inserting "and sections" so that the full sentence will then read: "Delegates of the district branches and sections sitting in the House of Delegates shall be allowed necessary expenses by the Medical Society of the State of New York."

This resolution favorably impressed the committee but is covered by resolution 59–68 which is even more comprehensive. It is therefore combined with the report on that resolution, which follows.

Resolution 59–68, introduced by George J. Lawrence, Jr., M.D., as councillor, would amend Chapter IX, Section 1 of the Bylaws to provide:

(1) Expenses for "employes of the Society" and "commissions." This has already been incorporated in this chapter of the Bylaws.
(2) Per diem allowance and expenses for president-elect when engaged on official business.
(3) Expenses for section delegates when sitting in the House of Delegates.
(4) Clarification of traveling expenses for delegates to the American Medical Association. The resolution is as follows:

Resolved, that Chapter IX, Section 1, of the Bylaws be amended so as to add the words "commissions and" before the word "committees" in the fourth and fifth lines of Chapter IX, Section 1; add the words "employes of the Society" following the word "committees" in the fifth line of said section; and add the words "commissions and" in the fourteenth line of the said section before the word "committees"; and delete the word "and" in line 15 and add a comma following the word "Council" and add the words "and employes" in the fifteenth line of said section following the word "committees"; and be it further

Resolved, that the words "and president-elect" be added after the word "president" in line 8; and be it further

Resolved, that the words "and section delegates" be added following the words "delegates of the district branches" in line 17; and be it further

Resolved, that the sentence, "The delegates to the American Medical Association who have attended each session of the House of Delegates of that association, as certified by the secretary of the American Medical Association to the secretary of the Medical Society of the State of New York, shall be allowed traveling expenses," be deleted and the following sentence substituted for it:

"A member of this Society who acts as a delegate to the House of Delegates of the American Medical Association, or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association shall be allowed traveling expenses"; and be it further

Resolved, that the following sentence be inserted to follow the word "expenses" in line 17: "Members of the Society appointed by the president or Council to carry out special assignments for the Society also shall be allowed traveling expenses," so that Section 1 will then read as follows: "Allowances for expenses incurred in the actual performance of official duties by officers, members of the Council, the Board of Trustees, of the Judicial Council, and commissions and committees and employes of the Society, and delegates to the American Medical Association shall be made in conformity with the following conditions. The president and president-elect shall be allowed a per diem and expenses when engaged upon official business. All other officers shall be allowed traveling expenses when engaged upon official business. Members of the Council, of the Board of Trustees, and of the Judicial Council shall be allowed traveling expenses. Members of commissions and committees of the Council, all special committees and employes of the Society shall be allowed traveling expenses. Members of the Society appointed by the president or Council to carry out special assignments for the Society also shall be allowed traveling expenses. Delegates of the district branches and section delegates sitting in the House of Delegates shall be allowed necessary expenses by the Medical Society of the State of New York. There shall be no allowance made for the expenses, traveling or otherwise, for any committee appointed pursuant to Chapter X of these Bylaws. Proper vouchers must be filed with the secretary before any of above allowances are made. A member of this Society who acts as a delegate to the House of Delegates of the American Medical Association, or an alternate delegate who, at the direction of the Council, attends a meeting of the House of Delegates of the American Medical Association, shall be allowed traveling expenses. Each district branch shall be entitled to receive a sum not to exceeded $400, exclusive of the work done by the secretary regarding notices, programs, etc., to defray the expenses of such district branch, provided a proper statement of such expenses shall have been presented to the secretary. All bills, claims, or vouchers herein provided for shall be filed within thirty days after the date of the incurring of such expense. This time may be extended for any cause by the Board of Trustees and such extension shall not exceed ninety days. Payment of all these expenses shall be made under directions of the Board of Trustees."

We recommend the approval of this resolution.

Annual Reports from Section Delegates

Resolution 59–65 would amend CHAPTER XII of the Bylaws to allow "the delegate of each section to present an annual report to the House of Delegates concerning the status of his specialty." The resolution reads as follows:

> *Resolved,* that the scientific sections report to the House of Delegates concerning their status; and be it further
>
> *Resolved,* that CHAPTER XII of the Bylaws, "Sections," be amended by the addition of Section 6, which would read as follows:
>
> "SECTION 6. The delegate of each section may present an annual report to the House of Delegates concerning the status of his specialty."

Your committee feels that this resolution simply asks permission for the section delegates to present an annual report, which may be done, if they so desire, without amending the Bylaws.

Therefore we recommend no action.

District Branches Handling Disciplinary Problems for County Societies

Resolution 59–63 would authorize the district branches to handle disciplinary problems when the local county society found itself unable to do so. The resolution is as follows:

> *Resolved,* that the following amendments are hereby introduced in the 1959 House of Delegates pursuant to CHAPTER XVII of the Bylaws of this Society:
>
> A. Amend SECTION 2 of CHAPTER VI of the Bylaws to add the words "or district branches" following the words "component county medical societies" in the fourth line of said section; following the word "societies" in the fifth line of said section; following the words "county medical societies" in the twelfth line of said section; following the words "county medical society" in the fourteenth line; following the word "society" in the fifteenth line; following the words "component medical society" in the seventeenth line; following the words "component medical society" in the nineteenth line; and following the words "component medical society" in the last line of said section.
>
> B. Amend SECTION 4 of CHAPTER VI of the Bylaws to add the words "or district branch" in the fourth line of said section.
>
> C. Amend SECTION 5 of CHAPTER VI of the Bylaws to add the words "or district branch" to the third line of said section; and be it further
>
> *Resolved,* that the district branches and component county medical societies be directed to amend their respective constitutions and bylaws to provide the necessary procedural machinery to implement the foregoing.

The committee feels that at present the district branches have no organization to handle this problem, that the Planning Committee is studying the entire structure and function of the district branches, and that the Judicial Council of the State Society would be available if needed in these cases.

We recommend disapproval of this resolution.

Reports of Committees Directly to House of Delegates

Resolution 59–66 would amend CHAPTER X, SECTION 2 of the Bylaws to allow reports of committees of the House of Delegates, in the discretion of the House, to be presented directly to the House without referral to the reference committees. The resolution is as follows:

> *Resolved,* that CHAPTER X, SECTION 2, of the Bylaws be amended so as to add the following to the final sentence: "except that reports of committees of the House of Delegates may, in the discretion of the House, be presented directly to the House without referral to the reference committees."

We recommend the adoption of this resolution.

Addition to Nominating Committee Membership

Resolution 59–64 would add another member-at-large to the Nominating Committee to give the counties of greater New York plus Westchester, Nassau, and Suffolk increased representation. The resolution reads as follows:

> *Resolved,* that the following amendment is hereby introduced in the 1959 House of Delegates.
>
> Amend SECTION 4 of CHAPTER XI of the Bylaws as follows:
>
> SECTION 4. The Nominating Committee shall comprise twelve members, one member to be chosen from each district branch and three additional members-at-large to be appointed to this committee by the president in conformity with CHAPTER VII, SECTION 1, of these Bylaws and chosen from among the counties of New York, Bronx, Suffolk, Kings, Richmond, Westchester, Queens, and Nassau. It will be the duty of this committee to propose and nominate members of the Society for all vacancies to be filled at the annual meeting of the House of Delegates succeeding their appointment. In the event of a tie vote in the Nominating Committee, the president shall cast the deciding vote. The recommendations of the committee shall be made to the House of Delegates in the same manner as prescribed in CHAPTER X, SECTION 2 of the Bylaws."

Your committee has discussed this resolution with several representatives of the downstate counties. We feel that there has been no injustice done as the Nominating Committee is now set up.

We recommend disapproval of this resolution.

Remission of Dues During Residency Training

Resolution 59–4 would provide remission of dues during residency training. The resolution reads as follows:

> *Resolved,* that CHAPTER XIV, SECTION 2, paragraph 3 of the Bylaws be amended by the addition of the following: "or when the member is engaged in a residency training program approved by the Council on Medical Education of the American Medical Association," so that CHAPTER XIV, SECTION 2, paragraph 3 of the Bylaws will then read:
>
> "The dues of any active or junior member of the Medical Society of the State of New York may be remitted for the current year on account of illness, financial hardship, temporary service in the armed forces or in the United States Public Health Service, or when the member is engaged in a residency training program approved by the Council on Medical Education of the American Medical Association, when the request is made by the member's component county medical society."

Your committee feels that, if such training constitutes a "financial hardship," it is provided for in CHAPTER XIV, SECTION 2 of the Bylaws and can be invoked at the request of the individual county society.

We recommend disapproval of this resolution.

Amendments to Implement Management Survey Report

Resolution 59–67 reintroduced proposed changes in the Constitution and Bylaws "as printed in the Annual Report for the House of Delegates 1959, Pages 1652 to 1659, Constitution (2), (3), (4), (5), (6), (8), (9); Bylaws (1), (2), (3), (4), (5), (6), (8), (9), (10), (11), (12), (13–1, 2, 3, 4, 5, 7, 8, 9, 10, 11), (14), (15–1), (16), (17), (18), (19), (20), (21), (22–1, 2).

The sections of the report referred to in resolution 59–67 are reprinted below:

> A. CONSTITUTION
>
> (2) Amend ARTICLE III to substitute words "Board of Trustees" for word "Council."
>
> (3) Amend ARTICLE IV to change title to "Board of Trustees."
>
> (4) Amend language of ARTICLE IV to read as follows: "There shall be a Board of Trustees composed of twelve members elected by the House of Delegates in accordance with the Bylaws, and the president, the president-elect, the secretary, the treasurer, and the Speaker of the House of Delegates."
>
> (5) Amend ARTICLE VI (TRUSTEES) so as to completely omit.
>
> (6) Amend ARTICLE IX (FUNDS) second sentence to change word "Council" to "Board of Trustees" and to change second paragraph by eliminating word "Council."
>
> (8) Amend ARTICLE X (REFERENDUM) last sentence so as to substitute words "Board of Trustees" for word "Council."
>
> (9) Amend ARTICLE XIII (AMENDMENTS) first

paragraph by substituting the words "to the Board of Trustees" for the words "at a previous annual meeting" and amend last sentence of last paragraph to substitute words "Board of Trustees" for the word "Council."

B. BYLAWS

(1) Amend CHAPTER II (HOUSE OF DELEGATES) to eliminate word "Council" whenever it appears.

(2) Amend SECTION 7 of CHAPTER II so as to eliminate subdivision 11 (Report of Council) and renumber remaining sections consecutively accordingly.

(3) Amend CHAPTER III (ELECTION OF OFFICERS, COUNCILLORS, TRUSTEES, AND DELEGATES) so as to eliminate word "Councillors" from title.

(4) Amend SECTION 1 of CHAPTER III so as to eliminate words "of the Council" in the first sentence.

(5) Amend SECTION 1 of CHAPTER III so as to eliminate words "member of the Council" in the second sentence.

(6) Amend SECTION 2 of CHAPTER III so as to completely eliminate the second paragraph beginning with the words "Four members of the Council, etc."

(8) Amend SECTION 3 of CHAPTER III so as to eliminate completely the present language and substitute the following new language: "Four trustees shall be elected annually for a term of three years. In the event of a vacancy, a trustee shall be elected for the unexpired term. A person to be eligible for election as trustee shall have served at least two years as an officer, or at least five years as a member of the House of Delegates. In the year 1959, the House of Delegates shall elect twelve members to the Board of Trustees: four for a period of three years, four for a period of two years, and four for a period of one year. Thereafter, the House of Delegates shall elect four members as provided for."

(9) Amend title of CHAPTER IV (COUNCIL) to substitute words "Board of Trustees" for word "Council."

(10) Amend SECTION 1 (a) of CHAPTER IV to substitute following new language:

> SECTION 1. (a) The Board of Trustees shall be the executive and administrative body of the Society while the House of Delegates is not in session and shall control all arrangements for the annual meeting. Its resolutions and actions shall be decisive and final except that all resolutions and actions of the Board of Trustees are subject to review, reconsideration, and action by the House of Delegates. Its actions shall be governed by the Constitution and Bylaws of the Society and the rules and regulations of the House of Delegates. The Board of Trustees shall have power and authority to employ, discharge, and arrange duties and fix compensation for any employe whom it may find necessary for conducting the affairs of the Society, and may delegate the foregoing to such person or persons as it sees fit in the exercise of its discretion.

(b) The Board of Trustees shall meet at the close of the annual meeting of the House of Delegates. The members of the Board of Trustees shall hold office until their successors are duly elected and qualified.

(c) At the first meeting of the Board of Trustees immediately upon the close of the annual meeting of the House of Delegates, it shall organize under the chairmanship of the president and fix the time and place of its regular meetings. The Board of Trustees shall meet at least quarterly, at times and places that shall be fixed by the chairman. Any four members of the Board of Trustees may require the chairman to call a special meeting at the office of the State Society for such time as shall be designated by them in writing and of which the members of the Board shall have at least five days notice.

(d) A quorum shall consist of nine members of the Board of Trustees.

SECTION 2. (a) The Board of Trustees shall have charge of all property including trust funds and shall supervise the financial affairs of the Society and shall invest the surplus from time to time. It shall establish a Finance Committee which shall prepare an annual budget for submission to the Board of Trustees for approval, and which shall perform such other fiscal duties as are assigned to it from time to time. All resolutions or recommendations of the House of Delegates pertaining to expenditures of money must be approved by the Board of Trustees before the same shall become effective. The Board of Trustees shall make and execute all contracts for the Society, but nothing herein contained shall limit the authority to such person or persons as it sees fit in the exercise of its discretion.

(b) All moneys of the Society received by the Board of Trustees, or any member or agent thereof, shall be paid to the treasurer of the Society. The Board of Trustees shall approve the bond of the treasurer and the assistant treasurer, and such other person or persons as it sees fit, as to amount, form, and surety, and shall employ a certified public accountant licensed by the State of New York to audit the accounts of the treasurer and secretary and other agents of the Society and present a statement of the same in its annual report to the House of Delegates. The chairman of the Board of Trustees shall make a report to the House of Delegates of its transactions for the year and of the amount of money belonging to the Society under its control.

Section 3. The Board of Trustees shall establish an executive committee to be composed of the president, the president-elect, the secretary, the treasurer, and five additional members of the Board of Trustees appointed by the president with the approval of the board. This committee shall be appointed by the president immediately upon his assumption of the office of president and to serve during his term as president only. The executive committee shall have the authority to take action in case of emergency arising in the interim between the meetings of the Board of Trustees in order to protect the interests and purposes of the Medical Society of the State of New York. In times of such emergency, the executive committee shall have all the powers and duties which are conferred upon the Board of Trustees, and it shall at all times assist the Board of Trustees. Any action taken by the executive committee shall be reported in full to the Board of Trustees at its next meeting.

Section 4. The Board of Trustees shall take such action as is necessary to carry out the Constitution and Bylaws and to give full effect to any resolution or vote of the House of Delegates, when the latter is not in session in all matters consistent with the Constitution and Bylaws.

Section 5. The Board of Trustees shall have power to fill any vacancy which may occur in any elective office not otherwise provided for, until the next meeting of the House of Delegates.

Section 6. The Board of Trustees shall have responsibility for all publications of the Society and their distribution. Any special committee of the Society shall report to the Board of Trustees and shall be subject in all ways to the Board of Trustees unless otherwise instructed by the House of Delegates. The Board of Trustees shall advise the legal counsel in actions brought against members for alleged malpractice. With the aid of legal counsel, it shall examine the constitution and bylaws of component county societies and district branches and all amendments thereto which may be submitted to the Board of Trustees for approval and shall approve or disapprove of said amendments.

Section 7. No officer or employe, board, commission, or committee shall inaugurate or initiate any policy or commit the Society to any policy unless the same has been expressly approved by the House of Delegates or by the Board of Trustees.

Section 8. The duties of the Board of Trustees shall also include the study and supervision of the following activities:

(a) All scientific work presented at each annual meeting.
(b) Scientific exhibits.
(c) Medical education.
(d) Journal management and publication.
(e) Medical and related research.
(f) Arrangements for annual meeting.
(g) Preventive medicine.
(h) Public health.
(i) Legislation.
(j) Economics.
(k) Workmen's compensation.
(l) Public relations.
(m) Cooperative relationships with Federal and State governments, foundations, and other lay groups.
(n) Medical care insurance.
(o) Malpractice defense and insurance.
(p) Any activities not otherwise provided for.
(q) The Board of Trustees shall also keep constantly advised of the activities of and collaborate with, the health and welfare departments of the State and with hospitals, clinics, and welfare agencies in furthering the health of the community.

Section 9. Amend Section 9 so to omit present section completely and substitute the following language: "Commissions and committees of the Board of Trustees shall be appointed by the president subject to the approval of the Board, in order to implement the intent of Section 8 of this chapter."

Section 10. The following shall be the order of business at meetings of the Board of Trustees:

1. Calling the meeting to order
2. Roll call
3. Reading of minutes
4. Communications
5. Report of the secretary
6. Report of the treasurer
7. Reports of commissions and committees
8. Unfinished business
9. New business
10. Adjournment

(11) Chapter V. (Board of Trustees) Amend Chapter V to omit completely.

(12) Chapter VI. (Judicial Council)

(1) Amend Section 1 and 7 to substitute words "Board of Trustees" for word "Council" wherever it appears.

(13) Chapter VII (Duties of Officers)

(1) Amend Section 1 to eliminate words "and of the Council" and substitute words "and of Board of Trustees" in the first sentence.

(2) Amend Section 1 to substitute words "Board of Trustees" for word "Council" wherever it appears.

(3) Amend Section 3 to omit completely from Bylaws.

(4) Amend Section 6 to omit word "Council" in first sentence and to substitute words "Board of Trustees" for word "Council" wherever it appears.

(5) Amend Section 7 to replace the present language with the following: "The secretary shall be the custodian of the Seal of the Society, and of all books of records and papers belonging to the Society, except such as properly belong to the treasurer, and shall keep an account of and promptly turn over to the treasurer all funds of the Society which come into his hands. He shall provide for the registration of the members at all sessions of the Society. With the aid and cooperation of the secretaries of the county societies, he shall keep a proper register of all the registered physicians of the State by counties. He shall aid the officers of the district branches in the organization and improvement of the county societies and the extension of the power and influence of the Society. He shall conduct the official correspondence, notifying members of meetings; officers, trustees, and board members of their election, and commissions and committees of their appointments and duties. He shall affix the Seal of the Society to all credentials issued to members of the Society elected by the House of Delegates and to such other papers and documents as may require the same. He shall make an annual report to the House of Delegates. Acting in cooperation with the Board of Trustees, he shall prepare and issue all programs. He shall be a member of the Board of Trustees. He shall be ex officio a member of all boards, commissions, and committees with voice but without vote. He shall record the name and date of admission of each member of the Society. He shall be in complete charge of the administration of the headquarters of the State Society. He will at the direction of the Board of Trustees delegate to such person or persons as the Board of Trustees may designate, such of his powers and obligations as are consonant with the best interests and efficient conduct of the business of the Society."

(7) Amend Section 9 to add the following phrase after the word "authorized" in the first sentence of said section: "except those disbursed in accordance with Article IX of the Constitution."

(8) Amend Section 9 to substitute the words "Board of Trustees" for the word "Council" in sentences 3 and 4 of said section.

(9) Amend Section 9 to substitute the words "Board of Trustees" for word "Council."

(10) Amend Section 10 to substitute words "Board of Trustees" for word "Council" in said section.

(11) Amend Section 13 to substitute words "Board of Trustees" for word "Council" wherever it appears in said section.

(14) Chapter VIII (Meetings)

(1) Amend Section 1 to omit word "Council" from said section.

(2) Amend Section 6 to substitute words "Board of Trustees" for word "Council" in said section.

(15) Chapter IX (Expenses)

(1) Amend Section 1 to omit the words "the Council," wherever they appear in said section.

(16) Chapter X (Reference Committees)

(1) Amend Section 2 to omit word "Council" in said section.

(17) Chapter XI (Special Committees)

(1) Amend Sections 1, 2, 3 to substitute words "Board of Trustees" for word "Council" in these sections.

(18) Chapter XII (Sections)

(1) Amend Sections 2, 4, and 5 to substitute words "Board of Trustees" for word "Council" in these sections.

(19) Chapter XIII (District Branches)

(1) Amend Section 4 to substitute words "Board of Trustees" for word "Council" in this section.

(20) Chapter XIV (Component County Medical Societies)

(1) Amend Sections 1 and 6 to substitute the words "Board of Trustees" for word "Council" in these sections.

(21) Chapter XV (Miscellaneous)

(1) Amend Section 5 to omit word "councillors" in this section.

(2) Amend Section 5 to substitute words "Board of Trustees" for word "Council" in this section.

(22) Chapter XVII (Amendments)

(1) Amend Section 1 to change words "at a previous annual meeting" to the following: "to the Board of Trustees."

(2) Amend Section 3 to substitute words "Board of Trustees" for word "Council."

Committee's Recommendations on 59–67

Your committee has given a great deal of thought and study to this problem. As stated before, we met with Dr. Azzari's committee and were impressed by the return of only nine of the 61 questionnaires sent to the county societies. This certainly indicates no strong general interest or feeling in a basic change in the governing of the State Society. Several of the suggestions in the Management Survey Report have been implemented. All of these have not yet completely produced the desired result. We are convinced they will, given time. To add to this situation at this time a fundamental change in the governing bodies of the State Society seems definitely undesirable.

Since Dr. Azzari's Ad Hoc Committee to Study the 1958 Management Survey Report has recommended that no change be made in the present status of the Council and Board of Trustees and since your committee concurs in this decision for the reasons stated above, **we recommend that all portions of this resolution be disapproved for the present.**

Disapproval would mean that the following parts of resolution 59–67 would not be adopted: Constitution (2), (3), (4), (5), (6), (8); Bylaws (1), (2), (3), (4), (5), (6), (8), (9), (10), (11), (12), (13–1, 2, 3 4, 5, 7, 8, 9, 10, 11), (14), (15–1), (16), (17), (18), (19), (20), (21), (22–2).

Resolution 59–67 also included an amendment to make easier a change in the Constitution. Commenting on suggestion (9) under "Constitution" and suggestion (22–1) under "Bylaws," which are:

(9) Amend ARTICLE XIII (AMENDMENTS) first paragraph by substituting the words "to the Board of Trustees" for the words "at a previous annual meeting" and amend last sentence of last paragraph to substitute words "Board of Trustees" for the word "Council"

and

(22) CHAPTER XVII (AMENDMENTS)

(1) Amend SECTION 1 to change words "at a previous annual meeting" to the following: "to the Board of Trustees."

The Special Committee on Constitution and Bylaws, reporting to the 1959 House of Delegates, stated: "This proposed amendment would make it easier to amend the Constitution. Your committee feels strongly that the Constitution should be a stable document and not subject to hasty amendment."

The present committee concurs in this opinion and **recommends that the House of Delegates reaffirm the action taken in 1959 disapproving these proposed amendments.**

Disapproval would mean that the following parts of resolution 59–67 would not be adopted: Constitution (9) and Bylaws (22–1).

Respectfully submitted,
GEORGE A. BURGIN, M.D., *Chairman*

Nominating Committee

To the House of Delegates, Gentlemen:

In accordance with Chapter XI, Section 4, of the Bylaws of the Medical Society of the State of New York, your Nominating Committee met at the Cornell Club, 107 East 48th Street, New York City, on Thursday night, January 28, 1960, at 7:00 P.M.

Present were the following:

First District	Robert F. Warren, M.D., *Chairman*	Kings
Second District	Joseph G. Zimring, M.D.	Nassau
Third District	Edward F. Shea, M.D.	Ulster
Fourth District	Donald C. Walker, M.D.	Schenectady
Fifth District	John F. Kelley, M.D.	Oneida
Sixth District	James Greenough, M.D.	Otsego
Seventh District	Joseph A. Lane, M.D.	Monroe
Eighth District	Walter S. Walls, M.D.*	Erie
Ninth District	Waring Willis, M.D.	Westchester
Member-at-Large	John L. Finnegan, M.D.	Queens
Member-at-Large	W. P. Anderton, M.D.	New York
Ex officio	Henry I. Fineberg, M.D., *President*	Queens
Ex officio	Norman S. Moore, M.D., *President-Elect*	Tompkins
By invitation	Herbert T. Wagner, M.D., *Executive Director*	New York

Your committee reviewed suggestions of names for those to be nominated as received from county medical societies, district branches, and others in response to memorandum of November 20, 1959.

Your Nominating Committee submits the following nominations for vacancies for the Society year commencing May 9, 1960:

President	Norman S. Moore, M.D., Tompkins
President-Elect	John M. Galbraith, M.D., Nassau
Vice-President	W. Walter Street, M.D., Onondaga
Secretary	William L. Wheeler, Jr., M.D., New York
Assistant Secretary	Ezra A. Wolff, M.D., Queens
Treasurer	Maurice J. Dattelbaum, M.D., Kings
Assistant Treasurer	Samuel Z. Freedman, M.D., New York
Speaker	Joseph A. Lane, M.D., Monroe
Vice-Speaker	Frederick A. Wurzbach, Jr., M.D., Bronx

Councillors (*three years*)

Gerald D. Dorman, M.D., New York
Edward C. Hughes, M.D., Onondaga
Alfred P. Ingegno, M.D., Kings
Raymond S. McKeeby, M.D., Broome

Councillor (*one year, unexpired term*)

George A. Burgin, M.D., Herkimer

Trustee (*five years*)

Henry I. Fineberg, M.D., Queens

Delegates to the American Medical Association (*two years, commencing January 1, 1961*)

Philip D. Allen, M.D., New York
W. P. Anderton, M.D., New York
Gerald D. Dorman, M.D., New York
Henry I. Fineberg, M.D., Queens
John M. Galbraith, M.D., Nassau
Thurman B. Givan, M.D., Kings
Carl Goldmark, M.D., New York
John F. Kelley, M.D., Oneida
Joseph A. Lane, M.D., Monroe
Charles H. Loughran, M.D., Kings
John C. McClintock, M.D., Albany
Edward H. Robitzek, M.D., Richmond
Edward F. Shea, M.D., Ulster
Robert F. Warren, M.D., Kings
Carlton E. Wertz, M.D., Erie
William L. Wheeler, Jr., M.D., New York
Waring Willis, M.D., Westchester
Frederick A. Wurzbach, Jr., M.D., Bronx

The nine receiving the highest number of votes will be delegates, and the second nine will be alternates. We are allowed one delegate per each thousand A.M.A. members, or part thereof.

Respectfully submitted,
Robert F. Warren, M.D., *Chairman*

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* Arrived at conclusion of meeting due to flight delay.

REPORTS OF OFFICERS

Reports in this section are referred to the Reference Committee on Reports of Officers, consisting of the following:

Paul Sullivan, M.D., Nassau, *Chairman*
Thomas F. McCarthy, M.D., Bronx
Thomas Flanagan, M.D., Chenango
Irwin Felsen, M.D., Allegany
Carl G. Whitbeck, M.D., Columbia

President

To The House of Delegates, Gentlemen:

HENRY I. FINEBERG, M.D.

Since this communication is being compiled during the early part of February it can be one only of progress—a preliminary account of some of the major activities of our Society this past year. There is still important work going on, and in my supplementary report, to be presented to the House of Delegates in May, I will complete my observations on what has taken place.

When I delivered the president-elect's address only nine months ago I expressed my gratitude for the honor of being elected to the highest position in our Society, and I accepted the charge with a sense of deep humility. As my term draws to a close, I feel more humble than ever. The presidency demands much time and requires a zeal, a dedication, a determination, and a patience which, at times, can be both a tremendous challenge and a trial.

However, despite the problems encountered—many of them difficult to solve—this has been one of the finest and most rewarding years of my life, and I know that I will be unable to duplicate it in the days that lie ahead. My contacts all over New York State have been most gratifying—renewing old friendships and establishing new ones. I will always remember the warm hospitality and the kindnesses with which my wife and I have been received everywhere. I thank you for affording me this privilege.

Committees.—At this time it is not my intention to discuss the work of our committees in great detail. What they have done during the year is adequately outlined in their individual reports appearing in this issue of the JOURNAL. I hope that you will read and digest each carefully. My statements will be limited to certain important high lights and to other phases of our vast operations not covered in their reports.

In general, our committees have been discussing many problems and fulfilling their missions satisfactorily. There has been considerable action. However, we are not content with some of our present routines. When I assumed the office of president, I felt very strongly that we must streamline our procedures in order to expedite the work and increase the efficiency of the Council meetings. I proposed that, since Council meetings were to be held on the fourth Thursday of each month, it would be wise to schedule committee conferences by the second week of that month. In this way, reports of committees could be submitted to members of the Council ahead of time, so that they could be read, studied, and analyzed properly before definitive steps were taken. This pattern was accepted by the Council and later reaffirmed.

However, this plan has not been carried out to "the letter of the law," with the result that our Council meetings have been prolonged much beyond our expectations.

No one realizes more than I do that there are extenuating circumstances which stand in our way of reaching certain goals. Time is valuable to those in the private practice of medicine and this prevents committees from meeting at frequent intervals. However, we must find the answer to the distressing problem of late reporting. There is now under consideration a number of avenues that we can follow in order to effect more expeditious deliberations. I know that we will come up with an equitable solution soon. I bring this to your attention merely to show that all is not "milk and honey" in the work we do. There are frustrations and puzzling situations.

However, let no one think that we are standing still—that we maintain a status quo! As we go along, I am confident that what we are doing will bear fruit—for the greater benefit of the medical profession and people everywhere.

Be that as it may, our committees must remain active. If they do not function, there is no need for their existence—or they should be reorganized. This has been done in at least one instance during the last few months.

Commission on Medical Services.—In accordance with the provisions of the Management Survey of the Medical Society of the State of New York, conducted by Mr. Roscoe C. Edlund in 1958, and with the approval of the House of Delegates, your president appointed a Commission on Medical Services. This was to be a pilot project.

The Commission consists of the chairman of seven Council committees, with a general chairman at its head to bring under one man those committees whose activities may require correlative planning.

It should be remembered that the Management Survey Report states that the aim of such a commission is to "study, investigate, and from time to time submit recommendations concerning methods under which medical services are furnished or organized, and the social and economic problems which arise in giving adequate medical care."

The Commission is under close scrutiny, and we are not ready at this time to decide whether the commission idea should be extended to other areas, such as scientific advancement, public policy, and others. We believe that more inquiry and research are necessary before we take definite steps in one direction or another.

Public Health and Education.—As usual, the Committee on Public Health and Education has done an intensive and excellent job. In our opinion this committee in reality is a commission, consisting of a parent committee and 16 subcommittees. All these subcommittees are closely supervised, although it has been the chairman's policy to concentrate on those which are concerned with the most urgent business. The work of this committee and its units is of such great proportion that I will not dwell on any particular facet of its accomplishments. Its reports published in this issue of the JOURNAL should be read in toto.

We know that a very wholesome and welcome liaison has been effected with the State Department of Health and other governmental and voluntary groups. This is always a step in the right direction.

Over a year ago, the chairman of this committee developed the idea of setting up an educational and scientific foundation in the State of New York—similar to the one now in existence in the State of Pennsylvania. Your then president-elect was appointed chairman of a committee to study its possible establishment. Dr. Moore's enthusiasm about this type of service was contagious and "infected" many of us. We studied all the aspects very carefully and arrived at the conclusion that such a foundation could "result in the upgrading of postgraduate medical education, improvement in the practice of rural medicine, the furtherance of research, and the fulfillment of other hopes and dreams of a similar nature. The medical profession would be able to present positive programs for better public health and medicine—something tangible and not nebulous." There might be established scholarship funds for qualified young men and women to enter the field of medicine. The House of Delegates last year approved the foundation in principle and recommended that the details be worked out by the Committee on Public Health and Education and the Council after the "blueprint" had been submitted to our legal counsel for evaluation.

Much to the chagrin of the chairman of the committee and your president, the progress of the formation of such a foundation has been prolonged. It is our sincere hope that this will be forthcoming, possibly before the House meets.

State Legislation.—As we go to press, the State Legislature is in session. It opened on January 6. A great deal is taking place in Albany but it is still too early to make a prognosis. The chairman of our Committee on Legislation, our counsels, and our legislative analyst are ever on the alert. There is no doubt that legislation is and should be an important part of the work of our State Society.

I am happy to announce that we are adhering to our philosophy of previous years—that our program shall not be too elaborate. We are concentrating on those proposals that have a chance of passing, and we are not flooding the Assembly and Senate with too many bills, most of which, we know from experience, will fail to get anywhere. In this way we do not dilute our efforts.

One important point has been emphasized—something that we have been talking about for many years—that our colleagues, and especially county medical society officers and legislation chairmen, must make personal contacts with legislators.

Congressmen, state senators, and assemblymen always advise us to keep in close communication with them so that they may become acquainted with our problems in the proper light. Therefore the main theme this year has been "know and talk to your legislators."

In December we met with representatives of the New York Academy of Medicine to consider the advisability of the appointment of a commission to study the Medical Practice Act, with a view to its revision.

The entire subject was carefully evaluated, including a review of other efforts in this direction. After much deliberation a motion was adopted that we "approve the introduction of a bill in the Legislature calling for the establishment of a temporary State Commission to study the 'healing arts.'" It should be emphasized that this proposal is more inclusive than those broached on previous occasions because it demands an investigation of all the "healing arts" and is not confined to the Medical Practice Act.

Sometime ago, the Academy of Medicine indicated that a commission might consider the following factors:

1. The increasing growth of cults and their efforts to secure official recognition. This includes chiropractic, naturopathy, and others.
2. The efforts of physiotherapists to achieve independent private practice status.
3. The difficulty in establishing the border line between the practice of psychiatry and the independent practice of psychology.
4. The undefined relationship of dentistry to surgery of the head and neck.
5. The relationship of optometry to ophthalmology.
6. The need for assigning technical medical responsibilities among related medical personnel (registered nurses, hospital aides, medical technicians, and others) on the basis of recognized training under proper medical supervision.
7. Problems posed by commercial enterprises in the field of auditory aids and prosthetic devices.
8. The need for controlling the illegal practice of medicine by injunctive restraint.

It was felt that a "commission bill" should be sponsored and supported not only by the Medical Society and the New York Academy of Medicine but also by the State Charities Aid Association, which for quite some time has been interested in matters of this type.

The conclusions reached at this conference were approved by our Council Committee on Legislation and our Council and by the Public Health Committee of the New York Academy of Medicine, the latter action being a very unusual one.

As of this date, one chiropractic licensing bill has been introduced, similar to that of yesteryears. Our position in this matter is clear. The threat of chiropractic licensure is always with us, and we must fight this menace at all times. It requires constant vigilance.

The proponents of chiropractic charlatanism are on the warpath again, using their same old propaganda and tactics. Despite the feeling of some "appeasers" we cannot be a party to any program that will license the chiropractors and give them the stature and dignity to which they have no claim whatsoever. There must be no compromise with this type of practice.

Federal Legislature.—Through our Subcommittee on Federal Legislation, we have been carrying on an active campaign against the Forand Bill. I do not think it necessary to say too much here about its implications and the threat it represents to the private practice of medicine. All our county medical societies and most of our physicians have been made aware of the facts. The actions of Congress in this respect are under close observation. The American Medical Association and the state and county medical societies have been alerted, and we are sure that the men and women in Congress know our views. The bill must be bottled up in committee. As of now the result is still in doubt.

During the month of July, there was considerable activity concerned with the Forand Bill. New York was chosen as one of the states to send a representative to the open hearings of the Ways and Means Committee of the House of Representatives, held in Washington. We were one of seven or eight states selected for this purpose. We requested Renato J. Azzari, M.D., to testify in our behalf. Dr. Azzari did so on Thursday, July 16. Due to some unforeseen circumstances, our representative's time was curtailed to a mere few minutes. However, Dr. Azzari did present a typewritten brief to the member of the Ways and Means Committee describing in considerable detail our stand against the Forand Bill. In addition your president sent letters, emphasizing our position, to the chairman of the Ways and Means Committee and to the congressmen of New York State. Copies of Dr. Azzari's testimony were also transmitted. Members of our Society and the Woman's Auxiliary were notified of what action they should take. It is our feeling that we played an important and satisfactory role in this fight against the Forand Bill. The battle is still going on.

Relative Value Studies.—On July 18 of last year a number of us attended an American Medical Association Regional Conference on Relative Value Studies in Boston. Some of you will remember that the A.M.A. Committee on Medical Practices has given its answer to the question, "What are relative values?" It should be of interest to all of us: "They are an attempt to provide a comparison and a ranking of the experience, knowledge, and time required for various medical services. They are not an attempt to set a fee schedule for physicians."

Proponents of relative values claim they give the doctor a scale of values by which he can properly judge his services and that they help patients understand the basis of physicians' charges. Opponents charge it is or will become a means of establishing fees for physicians.

The first relative value system was worked out and adopted by the California Medical Association in 1954. Kansas, Iowa, and Michigan since have adopted relative values. Utah has adopted a form of the system. Several other states are conducting surveys.

There are three parts to a relative value study:

First is the nomenclature, or listing and description of professional procedures and services.

Second is the assignment of the relative values in terms of units.

Third is the application of a coefficient or dollar value to the relative values to transform them into a schedule of fees.

The A.M.A. committee points out there is nothing "fixed" or permanent about any of the assigned relative values. California found that the values must be reviewed and revised periodically. The same is true of the coefficient applied to the relative values. The coefficient is applied by each physician to determine his own fees. The exception is where the scale is used by agreement under an insurance contract.

As part of the first step, physicians are asked to check a list of medical services, indicating their customary fee for each service. The California survey had 1,900 separate items.

The A.M.A. committee suggests that returns be analyzed by county, by specialty affiliation, and by the completeness of information. Physicians attending the San Francisco meeting were told that relative values have proved useful in California in negotiating public assistance agreements, in preventing the formation of closed panels, in negotiating with the government on Medicare, and in discussions with unions on health care plans.

In addition, relative values help insurance companies, are considered a good public relations project since the public finds it easier to understand the basis for fees, and allow a physician to apply some scientific reasoning to fees for his medical services.

"Union officials were reported as seeing fairness in the relative value approach. Relative values also have been used by some county society fee committees in adjudicating grievances over fees. Perhaps the most successful use of relative values has been found in San Joaquin County, California, where 98 per cent of the county society's members voluntarily have joined the San Joaquin Medical Foundation. The Foundation uses the California relative value study to offer a medical program to insurance companies. Coverage includes hospital, surgical, in-hospital medical, home and office calls."

With the approval of the Council, the chairman of the Committee on Economics has announced that his group will undertake the project of a relative value study for the State of New York. Using the reports of other states which have completed these studies and the questionnaire developed by the American Medical Association, our investigation can be done economically. The Blue Shield plans have offered to help.

Resolution 58–49: Medical Care, the Job of the Medical Profession.—Members of the House of Delegates will recall that, at its 1958 meeting, resolution 58–49: Medical Care, the job of the Medical Profession, was introduced by Carlton E. Wertz, M.D., of Erie County. In effect, this resolution expressed the idea that the Medical Society of the State of New York must be determined to take care of all the people; that we should study the medical needs of everyone in New York State, with the aid of the county medical societies; that the investigation should be carried out "with due regard to the factors of adequacy of coverage, economic freedom of the patient, freedom of medicine, and the individual's responsibility for the welfare of himself and his family." This was approved; and at the Council meeting in June a committee was appointed to take over this prodigious task, extensive enough to tax the energies and ingenuity of any group.

Although the study is a long-range process and is still very much in progress, the committee has come a long way. There have been meetings, and some time ago a questionnaire was submitted to each county medical society.

The committee felt that the question of publicizing the problems facing the medical profession could best be solved by personal contacts through regional meetings—set up according to district branches—similar to those which have been held in various parts of the country by the American Medical Association. This idea, a new one as far as State Society matters are concerned, was approved by the Council.

The first conference was held in Buffalo during the middle of January and lasted a day and a half. There were representatives from 15 county medical societies, comprising the Seventh and Eighth District Branches. This pilot project was a huge success, much better than we anticipated. An opportunity was presented for open discussion of many problems. The panel consisted of experts in various fields, and we listened to the grass roots area folks talk about their local difficulties.

The proceedings were planned skillfully. The following subjects were reviewed; committee activities, purposes of resolution 58-49, the Trussell Report (the Columbia University study of nonprofit medical care insurance plans in New York State), the Forand Bill, the Blue Shield Association—what it proposes to do regarding medical coverage for the people of New York State, medical economics applied to the practice of medicine, labor's attitude toward health insurance, proposed legislation under consideration by the advisory committee to the Governor's Special Task Force on Catastrophic Expense Health Insurance, the role of commercial health insurance plans.

This was a grand program and we are indebted to the committee for making it possible. As this report is being dictated, plans have been promulgated for a similar meeting in Syracuse for the middle of March. Conferences in other portions of the State will be held at later dates. We hope that they will be well attended.

I have discussed this matter at length because as far as I am concerned it represents one of our most important activities.

Autopsy and the Dead Human Body.—Last May the House of Delegates passed a resolution (59-8) that "the president of the Medical Society of the State of New York explore the possibility of obtaining the support of a foundation or foundations to make possible a study by local and state bar associations, in cooperation with academies of medicine and other interested agencies . . . of the entire body of law dealing with the dead human body, including administrative and legal procedures dealing with the autopsy, the cadaver, disposal, definition of death, definition of cause of death, authority of coroners and medical examiners, legalizing of tissue banks and transplantation, cemetery laws, etc. . . ."

Thus far, two meetings for this purpose have been held: one with the chairman of our Committee on Autopsy and the Dead Human Body, Willard C. Rappleye, M.D., president of the Josiah Macy, Jr. Foundation, and our executive director; and the other with Dr. Rappleye; Hayden C. Nicholson, M.D., executive director of the Hospital Council of Greater New York; Jonathan Hayt, legal representative of the Hospital Association of New York State; Harry Smith, M.D., professor of pathology at the Columbia University College of Physicians and Surgeons, John V. Connorton, Ph.D., executive director of the Greater New York Hospital Association; the chairman of our Committee on Autopsy and the Dead Human Body, and our executive director.

At the first meeting we decided that before approaching foundations we would set up a pattern or blueprint in order to "spell out" our aims. It was agreed we should confer with a small group of experts from all walks of life, men of stature, and determine definitely what we really would like to do. We thought that included in this group there should be a medical educator, a public health officer, a pathologist, a hospital administrator, a legal expert, and perhaps members of the clergy. It should be remembered that all our autopsy proposals have failed because one of the major religious persuasions is opposed to the idea of amending the autopsy law in any way.

At the second meeting we concluded that we must confer with more hospital people and that we must include in our deliberations representatives of the religion which has been antagonistic to our previous legislative proposals concerned with autopsies. This type of conference will be held in the not too distant future. There is still a great deal of work to be done in this area.

Management Survey Report.—The Management Survey report is still under consideration by the Committee to Study the 1958 Management Survey Report. Certain of Mr. Edlund's suggestions and recommendations—those which appear to be equitable—have been implemented.

Other definite suggestions contained in this report have been given special attention. They are concerned with the change of the Council and Board of Trustees into a unicameral body, with a resultant reduction in its composition from the present 29 officers, councillors, and trustees to 17. A questionnaire submitted to the county medical societies revealed no conclusive expressions of opinion, although the majority appeared to be in opposition to this idea. I personally concur with the latter. I have been informed by many of our colleagues that they would prefer not to reduce the representation from any areas of our State. In fact, the policy-making body of a society of this magnitude could well be increased, and, if properly supervised, it could be convened without any unwieldiness.

Some of our fellow doctors of medicine appear to be under the impression that since we paid for a management consultant outfit to study our Society all its recommendations and suggestions should be adopted without question. I feel that an occasional survey by experts is in order, but we should not necessarily be compelled to accept all their ideas as gospel. We should adopt only those which fit properly into the individual framework of our organization.

I have watched the Council and the Board of Trustees in action, and I am now convinced more than ever that the latter body is very efficient and useful. The Council should stay as it is, or be increased in size. Streamlining of reports and procedures can be improved by administrative and executive action.

Physicians Not in Private Practice.—Last year I had this to say about the doctor not in private practice: "I do not know how many of these doctors are members of their local medical societies, but I believe that their participation in organizations of this type is quite important. The American Medical Association has declared that medical policies concerning patient care, as well as the 'politics' of health, begin at county society levels, and if all the physicians, be they private practitioners or part- or full-time paid doctors, could participate in such activities, there would be a great deal less misunderstanding and more cooperation, which would redound to the benefit of all. . . .Both local and state medical societies should invite the participation of the nonpracticing physician. There must be unity in all branches of medicine. . . . The entire medical profession must work together."

A committee on medical facilities of the Council on Medical Service of the American Medical Association has been studying the "organizational and professional relationships between physicians in private practice and those not in private practice." This committee met with our Society representatives at our headquarters in New York City on September 19, 1959. The discussions were extremely interesting and quite illuminating. Among many other things we learned, much to our distress, that there are county and state medical societies in this country which admit to membership only those in the private practice of medicine. This problem is evidently of great concern to the A.M.A. It represents a very unhealthy situation which can serve only to increase the "splits" that already exist to some degree in our profession. It merits intensive investigation and remedial action.

Of course the nonpracticing doctor of medicine must be willing to become an active member of his local and state societies and the American Medical Association if he wishes to have a voice in organized medicine.

In order to interest our nonpracticing physicians in Society matters we have begun, with the approval of the Council, the procedure of inviting doctors in this category as guests to the meetings of the Council, on a rotation basis. The Commissioner of Health of the State of New York has taken advantage of this invitation. At the last meeting of the Council, the dean of one of our medical schools was present. At our next conference, we will have another dean and the Commissioner of Hospitals of the City of New York. It is our hope that this routine will be continued. It bespeaks better integration with our colleagues in medical schools, health departments, and other fields.

American Medical Association.—For years I have discussed the important role that the American Medical Association should play in the life of the doctor of medicine and what a grand effect it can have on the entire medical profession. Before the House of Delegates in 1959 and at various conferences and meetings throughout the State and in at least one of my "President's Pages," I have espoused the idea of mandatory membership in the American Medical Association.

This stand of mine has had its repercussions. I have been "attacked" verbally and by letter; I have been called a "politician." The American Medical Association has been accused of being too reactionary, ultraconservative, without vision, a clique, a bureaucracy, not at all interested in the "little fellows."

There is little doubt that in some places my preaching has been vain. At the risk of being repetitious and because I believe wholeheartedly in the A.M.A. and what it represents, I must reiterate that it is my strong belief that every doctor of medicine should join his local, state, and national medical associations.

If we accept the edict that every member of our county medical society must be a member of our State Society, why do we question the philosophy of mandatory membership in the A.M.A. for every member of our State Society?

Again and again I have insisted that I can see many advantages in belonging to the A.M.A. and I know of no disadvantages whatever. Truly it cannot be the paltry fee of $25 that keeps too many of our colleagues from joining. Is it necessary for me to stress the fact that the A.M.A. has made its mark in the field of medical education? It has sponsored and supported scientific advancements and it has engaged in many other activities of tremendous importance to our well-being and to the welfare of our people—too numerous to mention.

Recently I appointed an ad hoc committee to help us in a campaign to increase the membership in county medical societies and the A.M.A. We look forward to this drive being successful.

The term "politician" does not frighten me at all. I have never resented or made any excuses for being a member of organized medicine. I have been in the house of delegates of the A.M.A. only for a short time, but it has been a valuable education. The years that I have spent in county and State Medical Society "politics" have been grand. These affiliations represent a great experience to which all of us should be exposed.

It is strange that in our country the word "politician" has come to mean something evil, despicable, contrary to the public good. In my lifetime I have met very few physicians who in one way or another were not politicians, whether they were involved in medical society activities, medical boards, hospital business, or "extracurricular" affairs—civic or governmental movements, be they local, state, or national. Of course, this is true of persons in all walks of life. In my estimation the important point is that the politician be a good one, genuinely interested in what is best for his community and its people.

Some of you will remember that at an A.M.A. medical legislative conference held in St. Louis last October, a governor and two congressmen, one of them a doctor of medicine, called on us to become better citizens and be interested in politics. We must take our place and leadership in the cultural, civic, and political affairs of our towns, cities, states, and nation in the same manner in which we are devoted to health matters. We were reminded that we should not shun the politician. Our entire form of free government is built on the foundation conceived and developed by political leaders—known to anyone who has studied history. They were the men who shaped and determined the destiny of our country.

Relations with Other Professions.—Those of you who have heard me speak know that I always like to talk about a closer professional relationship with our brother and sister professions. Time after time we have announced that it would be wise to cooperate with the dentists, the veterinarians, the pharmacists, the nurses, and others in allied fields. Many of the problems that confront us are similar. In order to reach some of our goals we should enlist the assistance of these groups. Offers of help have come to us. The A.M.A. has heartily endorsed programs of this type.

For a number of years we have been a part of an interprofessional association consisting of the dental, veterinary, and medical societies. Meetings have been held at irregular intervals. However, our full potential has not been realized.

The Council has authorized a more intense exploration of the idea of better relations with other professions, such as the bar, health, hospitals, medical assistants, nurses, pharmacists, dentists, and veterinarians. The Woman's Auxiliary will be consulted. The purpose is to bring the professions closer together, especially in matters of legislation.

A short time ago, we heard from the New York State Society of Professional Engineers. They are anxious to discuss the possibilities of an association of the professions. In Michigan they have formed an organization of this kind, known as the Michigan Association of the Professions. They have recognized the power and influence of organized groups.

The Michigan Association of the Professions (MAP) was set up in 1958. The professions represented are: architecture, professional engineering, dentistry, medicine, law. Here we have food for thought.

Other State Medical Societies.—As your president I have been invited to the annual meetings of other state medical societies. Fortunately I have been able to accept some of these invitations and I have met wonderful people—men and women of our profession of whom we can be justly proud. Their hospitality has been outstanding and I believe that by getting together we have established a wholesome liaison with the states concerned.

It has been the custom to exchange delegates with the states that border on New York. In view of the fact that we believe that these interchanges breed good will and better understanding, we are inviting to our meeting in May not only representatives from New Jersey, Pennsylvania, Connecticut, and Vermont, but also those from the rest of the New England area—Rhode Island, Massachusetts, New Hampshire, and Maine. This plan was approved by the Council and Board of Trustees. Most of our bids have already been accepted with expressions of thanks. I might point out that recently the A.M.A. has included New York in the New England regional conferences.

Another good effect of meeting with our friends in these sections is that they will get to know us better. In this way we can re-establish the prestige of the Medical Society of the State of New York. This must be one of our main aims—we must take our rightful place among the leaders in American medicine.

State Health Department.—Your president attended the 55th Annual Health Conference at Lake Placid on May 25, 1959, and in accordance with the custom established some time ago participated in the opening general session. The subject of my address was "Public Health and Medicine—How They Work Together." We stated that no branch of medicine can stand alone to meet the challenges of the exciting medical era that lies before us. The tasks of the future will require a constantly balanced effort, involving every medical discipline and with a flexibility that surmounts dogmatic thinking. Both the prevention of disease and its amelioration are the joint responsibilities of everyone in the medical profession.

Among other matters, we discussed the fact that in New York State the health officers and the practitioners of medicine have shown that they can be one happy family. The Committee on Public Health and Education has been in close contact with the State Health Department. The advisers to most of its subcommittees are members of the Health Department's staff. There have been joint programs in various fields—fluoridation, polio vaccination, Asian influenza, diabetes, refresher courses in medical schools, evaluations of the natural study of disease particularly where chronic illness is concerned, and staphylococcal infections.

Wherever possible and feasible, the assistance and good will of private physicians have been enlisted by the State Health Department. Some years ago an innovation was presented whereby joint letters concerning health matters are signed by the State

Commissioner of Health and the president of the State Medical Society.

There are other areas where we can work together for the common good of all, especially in problems of the aging and mental illness, cardiovascular disease, and cancer and periodic health examinations.

We are very grateful to the Health Conference for inviting the Medical Society, through its president, to play an active part in what is rated to be one of the largest public health meetings held in the United States each year. We know that this fine tradition will be continued without a break.

Miscellaneous.—As this is being printed we have brought the problem of adoptions to the attention of the Subcommittee on Maternal and Child Welfare. At a meeting with representatives of the committee on adoptions of the Community Council, held recently at the New York Academy of Medicine, it was decided that the issue is an important one and should be considered and evaluated by doctors of medicine, who should promulgate rules and regulations.

In accordance with the wishes of the Council I am appointing an ad hoc committee to study the organization and functions of the scientific sections.

The Bar Association of New York has requested that we select a committee of three to confer with a similar committee of the State Bar in order to discuss and study problems of medical testimony and the question of congestion in the courts and to investigate the functions of the physician in the court room. With the approval of the Council, three of our members from different areas of the State have been chosen to represent us. The two groups will meet soon.

Comment.—I have attended numerous meetings of district branches, county medical societies, the Council and Trustees, and the Woman's Auxiliary, other conclaves in many areas of the State, and American Medical Association regional conferences. Although I have found differences of opinion among us and realize that schisms exist, I still have great faith in the practice of medicine. Our profession is definitely dedicated to the welfare of the people, and we do not merit most of the criticisms heaped on us. Too often the blame for inadequacies not of our making is placed at our doorstep. I will admit that we have not reached perfection and that there is still much to be done, but we can go forward with the feeling that our calling—with its great heritage and tradition—has served with distinction. Although "sinners" do appear from time to time there has been progress in many directions.

However, we have an important task before us. If we are to realize our ideals there must be better cooperation among the men of medicine. I have said this so often and in so many places that this sentiment may sound trite and stereotyped but I believe in it so wholeheartedly that I must repeat what I have said before. We must have a greater unity—or what one of our friends likes to call a "togetherness"—at all levels, local, State, and national. We must work diligently for general good will, mutual understanding, and a singleness of purpose if we are to survive and maintain free enterprise and be unhampered by the control of bureaucratic governmental agencies.

Acknowledgments.—Mere words are inadequate to describe the gratitude that I feel towards those who have contributed much to make the last nine months so stimulating and enjoyable. Without their devotion and help nothing could have been accomplished. I am indebted to our president-elect and the other officers, the Board of Trustees, the councillors, the chairmen and members of committees, and folks throughout the State. I will always be grateful to our executive director and our able staff, many of whom I now know intimately. Our relationship has been heartwarming. Having been an administrator, I fully realize the value of a good staff.

I must reserve a word of special mention for the Woman's Auxiliary. My associations with Mrs. James L. McCartney, president, and Mrs. Milton W. Kogan, president-elect, have been most cordial and heartening. The meetings and conferences that we have attended jointly have been all the more delightful because of their presence. I thank them and the members of their organization for all that they have done for medicine in New York State.

Again, may I tell all of you how grateful I am for permitting me to serve with you. I will have more to say later at the meeting of the House of Delegates.

Respectfully submitted,

Henry I. Fineberg

HENRY I. FINEBERG, M.D., President

Secretary

To the House of Delegates, Gentlemen:

This year for the first time since 1945 a different name will appear at the end of the report of the secretary. Following the many years of service by W. P. Anderton, M.D., as secretary has been a challenging task. However, under the new organization plan of the State Medical Society, as recommended by the Management Survey Committee and put into effect by the House of Delegates and the Council, the work of the office of secretary has been considerably lightened. Many of the activities of the Society formerly reported on by the secretary will this year be included in the report of the executive director and will therefore not be detailed here, to avoid unnecessary duplication.

Routinely, the office of the secretary has dealt with Society correspondence, telephone inquiries, meetings, and the Physicians' Placement Bureau.

Headquarters.—The State Medical Society has now completed almost two years at its new headquarters and finds them most satisfactory, with the exception that the need for additional space is already evident. The Society and the office staff extend a cordial invitation to all members to visit us.

Representatives.—Various officers of the Society have served this past year as representatives from the Medical Society of the State of New York to neighboring state medical societies. They are as follows:

Connecticut—Henry I. Fineberg, M.D., and Herbert T. Wagner, M.D.
New Jersey—John L. Sengstack, M.D., and John J. Masterson, M.D.
Pennsylvania—Norman S. Moore, M.D., and Leo E. Gibson, M.D.
Vermont—Henry I. Fineberg, M.D., and Renato J. Azzari, M.D.

Placement Bureau.—The Physicians' Placement Bureau continues as the New York center for exchange of information between physicians and communities. Physicians desiring to practice in New York State are supplied with descriptive lists of areas suitable for establishment of a practice. No area is placed on the list until permission has been obtained from the medical society of the county in which the town or village is located. Names of physicians who have expressed an interest in locating in certain areas are made available to practicing physicians in need of assistants or associates and to industries interested in obtaining medical personnel.

The majority of referrals have come to our office through the American Medical Association; the minority have contacted us by mail, telephone, or visit to the headquarters office.

Inquiries received during 1959 from physicians interested in establishing a practice in New York State were as follows: general practice 62 and specialties 130.

During the year 1959 there were 21 communities, who were seeking the services of physicians, added to our list of opportunities, making a total of 71.

As far as we can ascertain, there were 9 communities who had secured the services of physicians.

It is unfortunate that we have no accurate means of determining the number of physicians who have been helped by our service, and the same can be said of the different areas. This is due to the fact that we are seldom notified by either the physicians or the locality when a physician has finally settled.

We are, as always, grateful to Miss Dorris Webb of the American Medical Association for her continued interest and cooperation.

Miss Doris K. Dougherty, with the assistance of Mrs. Beatrice Moosa, has conducted this bureau for the past year with untiring effort.

Meetings.—The secretary attended the annual meeting of the American Medical Association in Atlantic City and the midwinter meeting in Dallas, as well as meetings of the Executive Committee, the Council, and the Board of Trustees. He took part in the Conference of County Medical Society Officers and Committee Chairmen at the Manger-Vanderbilt Hotel on September 12.

Membership.—

1958—Membership	24,370	
1959—Reinstated members	378	
1959—New members	912	
		25,660
1959—Deaths	348	
1959—Resignations	273	
1959—License suspended	1	
1959—License revoked	1	
1959—Expelled from membership	1	
		624
		25,036
1959—Delinquent members		347
1959—Total membership		24,689

Honor counties, those having no 1959 delinquents, are: Allegany, Broome, Cattaraugus, Cayuga, Chautauqua, Chemung, Chenango, Clinton, Delaware, Dutchess, Essex, Franklin, Genesee, Greene, Herkimer, Jefferson, Lewis, Livingston, Madison, Montgomery, Niagara, Oneida, Onondaga, Ontario, Orleans, Oswego, Putnam, Richmond, St. Lawrence, Schenectady, Schoharie, Schuyler, Steuben, Sullivan, Tioga, Tompkins, Washington, Wayne, Wyoming, Yates.

Comparative totals of membership since 1948 follows:

1948	21,171	1954	23,545
1949	21,489	1955	23,838
1950	21,861	1956	24,031
1951	22,124	1957	24,182
1952	22,637	1958	24,370
1953	23,145	1959	24,689

Remissions of 1959 dues were voted for 160 members as follows:

Illness	107
Temporary Service in the Armed Forces or United States Public Health Service	46
Financial hardship	7
	160

Comment.—Our gratitude to the officers, Councillors, and Trustees is rivaled only by similar sentiments toward members of your staff. President Fineberg was so conscientious and tireless as to be a memorable example for all of us. Herbert Bauckus, M.D., chairman of the Board of Trustees, and Maurice J. Dattelbaum, M.D., treasurer, have been ever mindful of the best financial interests of the Society. Particularly to Herbert T. Wagner, M.D., executive director, Miss Doris K. Dougherty, executive assistant, and Mr. Thomas E. Alexander, controller, go my thanks for willing, accurate help.

Respectfully submitted,
William L. Wheeler, Jr., M.D., *Secretary*

Belated Bills

To the House of Delegates, Gentlemen:

Two vouchers from Stephen A. Graczyk, M.D., of Buffalo were received on June 11, 1959. One was for $87.09, expense of attending a program planning meeting of the Geriatrics Subcommittee in New York City on January 26, 1959; the other, amounting to $33.57, was for expense of attending the State-wide Conference on the Aging at Utica on March 7, 1959.

A voucher, in amount of $44.63, for expense of attending a meeting of the Heart Disease Subcommittee in New York City, March 12 and 13, 1959, was received from J. C. Zillhardt, M.D., of Binghamton, on July 7, 1959.

On November 24, 1959, a voucher for $66.61, expense of attending a Planning Committee meeting in New York City on August 14, 1959, was received from Donovan M. Jenkins, M.D., of Webster.

Authorization to pay these vouchers is requested of the House of Delegates because they were received more than ninety days after the expenses were incurred.

Respectfully submitted,
Maurice J. Dattelbaum, M.D., *Treasurer*

Executive Director

To the House of Delegates, Gentlemen:

This presentation of the first annual report of an executive director of the Medical Society of the State of New York to the House of Delegates is most pleasantly anticipated by the writer. At the time of writing, I have had as your administrative officer a brief fourteen months for initial orientation, study, consultation, and administration.

Much more time is required to identify all areas of desirable or necessary administrative development. Identification will promote study, conference, planning, and recommendation to committees, Council, Trustees, and to this House.

Many activities in which I have joined are properly reported to the House by officers and committees. All other participations are completely reportable but exceed the allowances here. I wish to bring to your attention a number of items of administrative policy and function in the following relations:

1. To staff function,
2. To personnel management,
3. To Society function and influence.

There is no reservation or equivocation in understanding that policy of this Society is decided by the Council and the House of Delegates. Your administrative staff is to implement these decisions. Administrative experience and judgment, as requested or offered, are intended only as constructive contributions in your deliberations toward policy decisions. It is in this concept that the executive director and staff participate with you in reports, conferences, and function.

Staff Function.—A new administrative procedure was instituted in which each department or division head was requested to submit a written report on administrative changes and problems which he noted in his area. I shall quote from some of these as "Staff Comment."

There have been assignments in past years of staff to carry out some routine program operations. As examples, staff is functional in economics, publications, fiscal control, and communications. As work load, staff availability, and capability permit, it is hoped that an able staff member can be assigned to assist each committee and program. Several such assignments were made in the past year. We have instituted regular use of the conference technic for the staff.

> STAFF COMMENT NUMBER 1: "Most noteworthy of these innovations is the formation of the staff committee, meeting once a week. It is believed that we are now getting at the core of our internal problems. Prior to the formation of this committee, there actually was no place where problems and grievances could be resolved. Every department head had to fight his own problems as best he could. This often led to frustrations and recurring problems. With the birth of the staff meetings, each departmental and divisional head could voice these problems, hold them open for discussion, and arrive at some conclusion. It is believed that this creation has a healthy air about it and will prove of even greater value, both to staff and top management, in the future."
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> STAFF COMMENT NUMBER 2: "It is a real privilege that each department is represented at the staff meetings and that we are encouraged to express our opinions. This is most helpful to all of us. It also serves to draw the departments closer together and make them feel more a part of the organization as a whole."
>
> STAFF COMMENT NUMBER 3: "The development of the staff meeting is a giant step forward. It makes for better understanding of the problems of everyone... It acquaints all employes with information first hand."

The entire staff has appreciated attendance by the president and other officers at some of our conferences. We would welcome any member of the Society to our offices or at staff meetings. The staff is particularly grateful to the president for the buffet supper party which he provided in October.

A number of the staff routinely attend meetings of the Council at the invitation of that body. Upon the Council's invitation in September, the staff, at executive level, have since joined the Council luncheon. I have noted sincere appreciation and benefit by this.

As a result of staff study, conference, and recommendation, the Council approved major changes in the preparation, forms, and transmission of minutes of the Council. "Rush" minutes are now mailed within twenty-four hours of a meeting and occasionally within six hours. A schematic diagram will be presented to the House.

In regard to staff assistance to committees, Council, and Trustees, we do face a serious problem. It has not been accomplished that meetings of all of these groups are on a reasonable time schedule. With few exceptions, these meetings are held each month within two-day periods. The president is currently making further effort to resolve these problems so as to expedite meetings and staff assistance and to improve the deliberations of the Council.

> Staff Comment Number 4: "It has been both helpful and encouraging to be able to sit in and participate at committee meetings when a matter relating to —— is being considered. In this contact with committees, we are better informed as to what the members who make policy suggestions want for their fellow members."

In this year, with Council approval, we have initiated forms upon which committee chairmen report administrative details of committee meetings. A new voucher form is being developed. These will provide greater efficiency in records and in fiscal controls.

In 1958, the Society purchased over 100 different printed stationery forms. Upon committee and Council approval, a policy was established to modernize our letterhead, delete most personal name listings, and curtail the number of stationery items to an efficient and economical number. Most stationery is now printed in our own office which is a material economic move. In 1958 we had 43 different letterheads and 7 memos; now we have 14 letterheads and 1 memo.

To replace a many-paged mimeographed listing of officers, Council, Trustees, committees, and staff, we produced a new plastic pocket guide. We were gratified at comments of many members. Our pleasure was further increased by indications that several state medical societies intend to use the same device. The A.M.A. requested and received approval to describe this item in their monthly kit, "PR Doctor," which is very widely distributed across the country.

We are particularly indebted to the treasurer for much assistance in studies and functions in administrative improvements in fiscal affairs. Clarification and simplification have been accomplished in a few instances in our code of accounts. We have worked toward simplification of fiscal reports.

The subject of physician memberships in component societies and administrative membership controls are of major concern. We are presently entering our membership records on an IBM system. Primarily, this plan will be the means toward greater efficiency, accuracy, immediate availability of data, and a basis of providing assistance to county societies. We will not be dependent upon either the A.M.A. or commercial mailing houses for listing information about ourselves.

It is estimated that by the above plan we will effect an annual saving of between $6,000 and $8,000. This is strictly dependent upon cooperation by county societies. On initial presentation of the plan a few counties indicated their cooperation. A majority of those who responded objected. With our staff doing all of the procedure in 1960, it is hoped that we will exhibit such advantages and economies that all county societies will assist in the future. We do not expect any county society to assume any responsibility, cost, or task of the State Society. We hope that the county societies will participate with us in a modern, efficient, and economical system. The president has appointed a special committee to study membership problems. The Council and Board of Trustees have indicated a desire for promotion of membership in county, State, and national societies.

We brought to the attention of the Council and committee the urgent need for study and action to clarify and correct details in the Bylaws related to membership status. This area includes time schedules of dues payments and "good standing" and delinquency. It is sincerely hoped that committee recommendations will have been made and that this House will find solutions for these problems.

Preliminary conferences have been held in regard to the staff, its functions, and future administrative activity concerning our Journal. The first area of study is the commercial and fiscal operation. There are preliminary bases for anticipation that we may effect better fiscal operation and return. This is realistic in spite of the excellent advertising in 1959.

During 1959 the Journal published the largest volume of material in its history. All former records were broken. This fact illustrates the need for studies now in process regarding work loads, scheduling, number of employes, office space, and so forth.

With the cooperation of the Kings County Medical Society Library, the official library for the Medical Society of the State of New York, we obtained on permanent loan a set of the *Current List of Medical Literature*, an up-to-date index necessary for verification of references for articles published.

In April, the Albany office was terminated. Only by improved results through personnel assignments and technics will wisdom of this be proved. Our collective judgments advised need for improving our influence by increasing our legislative communications, promoting persuasive action by our colleagues and others, by education, and to effect material economic savings. The legislative bulletin is now produced in our office and its delivery has been materially speeded. By another session, its format, content, and distribution will have been improved.

Special mention is fully justified concerning the staff operation of Medicare. Government surveyors recently were unusually generous in their compliments. During 1958 there were 20,772 claims processed for $1,558,157. As of October 1, 1958, many reductions were made in the program; therefore, during 1959, 11,900 claims were processed for $949,385 and our staff was reduced proportionately. As of January 1, 1960, practically all benefits were restored, and it now has become necessary to rebuild our staff to take care of the increase in claims. Unfortunately at the end of one month we have been unable to recruit any new help and if in the near future we are unable to do so, it will result in the following: (1) overtime and (2) delayed payments to the doctors. We shall make every effort to avoid these conditions.

In regard to our financial structure, it is my premise that membership dues are intended to finance necessary and decided programs. I do not hesitate to request or recommend expenditures toward these purposes. Our fiscal operation must be in accord with our means, must provide for specific dedications, must retain reasonable reserves, and must reflect thrift. Some new technics were effected this year in budget planning. Far more is needed in early program planning and departmental budgeting. I hope to see developments here in the coming year. There are serious administrative and functional conflicts between our operating year, May to May, and our fiscal year, January through December.

Personnel Management.—One area of greatest administrative concern is staff personnel management. This subject is one deserving of the most studious attention. A new administration must adequately learn the objective and subjective components of the staff, and what, if any, policies and procedures govern and control personnel management. At the same time, the personnel judge the new administration. As recorded in the Management Survey Report, there were immediate needs in the matters of personnel management. My approach to the subject and my methods were a radical departure from the then existing pattern. I requested and received the first complete personnel listing by department, by name and position. Each department and division head prepared an organizational chart of his unit. Each employe prepared a concise description of his assignments. With qualified assistance, I intend to establish definitive job specifications and matching qualifications for personnel. I am presently working on plans within which each member of the staff will be evaluated annually. With this procedure, we shall be more firmly based in preparation of salary schedules. Such studies will also indicate improvements in position titles as dignified designations of responsibility and echelon of authority. I have high anticipation for new personnel now added to the staff. I look for major contributions from the new assistant director, the new director of the Department of Communications, and from others.

> Staff Comment Number 5: "We realize that the ———— department has been given more responsibility. People like responsibility and, consequently, take more interest in their work. This is beneficial for both the work and the individuals."

> Staff Comment Number 6: "The department is able to function more efficiently because of the increased responsibility delegated to the department head who passes on more responsibility to other employes in the department. A fair share of responsibility promotes interest in any job."

We are presently engaged in studies of personnel operation. For years we have used gross amounts of staff overtime and of extra or temporary help. On the basis of 1959 expenditures of $24,105.33 and $4,690.98, respectively, for these items, it is imperative that we examine assignment loads, production levels, adequacy of staff, inadequacy of planning of work schedules, supervision, and other factors. We are consulting among executive staff now in regard to such office practices as punctuality, "coffee breaks," and other similar matters. We have instituted advance decision and notice to all concerned on annual schedule of holiday observance and allowance for absence on personal privilege for such as observance of religious days or for necessary personal business. We are writing administrative policy and procedure for pre-employment and periodic physical examinations and sick leave. We have improved our very heavy working schedule in August for some of the staff and have met other personal problems by extending the calendar time in which earned vacation may be taken.

> Staff Comment Number 7: "The change in vacation schedule was very good. Often it is better for this department if the individuals do not take all of their vacation in the summer months because of the work load. In this regard, the advance announcement of the holiday schedule also is very much appreciated. Not only can the personnel plan for their holidays ahead, but the work may also be plotted accordingly. The allotment of 'special privilege' days that resulted is greatly beneficial, since it allows time off for legitimate personal business without making the individual feel guilty for the time lost."

> Staff Comment Number 8: "*Problems*—If the work load continues at its present pace, and if we are to maintain our standards of proficiency, there are two problems which are constant: (1) Vacations and holidays—The absence of any member of the staff spreads the work load on others, occasionally necessitating overtime work. . . . (2) Space—The crowded conditions in the ———— office increase the difficulty of efficient functioning, particularly at those duties which require concentration. Also there is no

space for conferences without disturbing all other members of the staff."

We have provided Blue Cross coverage for each employe and increased voucherable items of expense on business travel. We have required staff to report in advance on travel schedules, and all staff who have assignments outside of the office are to prepare and submit written reports on such assignments. We have provided death or dismemberment insurance on travel. We are reviewing payment of dues for staff in terms of benefit to the Society. We now include spouses of employes at Christmas parties.

We wish to be reasonably generous and to have personnel benefits which permit us a competitive basis for obtaining and holding personnel in the difficult labor market. However, we must have completely satisfactory production and an equitable return on our dollar investment. Esprit de corps and good morale are dependent upon understanding, intent, and practices by many.

As of this writing we have been unable to fill a number of budgeted positions. The New York City labor market is extremely competitive. Our basic salary scales are below those of many businesses. Consequently, we do not attract the numbers of people needed who possess qualifications necessary for our work. Our "fringe benefits" are good but do not match those of other health agencies or of many business houses. A number of other employers have just now given substantial increases to all employes and job classifications.

In the past year, two pensioners have been added to our list, payment to another was transferred from operating accounts to the Beneficiary Fund, and one pensioner has died.

Society Function.—It is my impression that this Society has several different types of relationships. Our functions as representative of the interests of physicians throughout the State must be decided on the conditions and needs across the State. Serving in an advisory or consultative capacity to officers, Council, Trustees, and committees, I and the staff must have direct and intimate knowledge of medical affairs outside of headquarters. I have therefore taken advantage of every schedule allowance to meet with our component county societies. Such meetings permit me to listen to those who wish to express needs, conditions, satisfaction, or disapproval. I am given the opportunity to discuss official decisions and programs, to convey data from the State or from other local levels, and to explain State Society administrative procedures. The greatest benefit has been improved knowledge for my administrative function.

During the year, I have accepted invitations and have met with county society officers or with the county society in Albany, Broome, Cayuga, Erie, Greene, Herkimer, Kings, Monroe, Nassau, Oneida, Onondaga, Rockland, and Westchester. It has been my pleasure to address the Woman's Auxiliary to the Medical Society of the County of Albany and the Auxiliaries of the First District Branch.

I believe that in general, I have noted an increase and an improvement in communications with some county societies. Unfortunately, we hear very little from others. It is essential that we have freely moving communications with county society officers and good administrative contacts where there are executive secretaries.

Special attention should be called to the conferences in September of 1959 between State Society officers and those of counties. It is hoped that in 1960 all county societies will participate in this new technic toward improved planning and program operations.

The first regional conference on Resolution 58–49 of this House was a remarkable success. Similar meetings are scheduled for other areas of the State. This type of conference communication can produce beneficial results by sound planning, careful timing, and good county society representation.

It is with considerable interest that I await the recommendation of the Planning Committee on Medical Policies in regard to district branches. The first round of meetings with executive committees and the annual meetings of most branches, where meetings are held, leave my official and personal reactions much confused.

I call attention to the dearth of constructive contacts with medical specialty groups. The very few contacts in the year were essentially in regard to some difficulty or undesirable situation for one or both parties. There is much opportunity to develop policy, planning, and administrative liaison.

I have truly enjoyed initial contacts with the Blue Shield plans. It was a sincere pleasure to participate in the initial development of the Blue Shield Association of New York State. There is a vital need for more effort in this direction. Much has been done by staff in the past, but I look forward to more intimate personal administrative working relationship to support and promote this important socioeconomic responsibility of medicine. I enjoyed and benefited by attending two national Professional Relations Conferences and the 1959 meetings of Blue Shield and Blue Cross Commissions.

I regret my inability to attend the fall conference of the State Woman's Auxiliary. I have appreciated the rapport and the invitation to assist the organization. I am impressed by the number of counties in which there have not been developed fully affiliated county auxiliaries, and by the failure of organized medicine to utilize fully this potentially valuable ally.

We have participated in the organization of the office assistants state group. Our continued help in organization and our expanded personal and collective aid in the educational program should return benefits to our patients, to our personal business interests, and to our county and State medical structures.

During the year we participated in the organization of the New York State Joint Council to Improve Health Care of the Aged. A currently popular subject, this area of medical, social, and economic change bids high to be one of the greatest challenges to face organized medicine. As a professional organization, we must be alert to and decisively active in progress with the balance of society. Such progress is most effective in the defeat of legislation to put medicine under social and economic compulsion.

We have participated in the Joint Commission in New York State for Improvement of Care of the Patient. The history of this group is no stimulus for much future interest. Except for one recently considered problem, there seems questionable value to be derived from the time and talents of busy medical men in generally inert discussions.

Our Society has been party to the initiation of the Interprofessional Association. We do have much in common with dentists and veterinarians. The Association is not yet even fully organized, but, administratively, I believe that this nucleus can serve many purposes in our interests. Appropriate expansion might better achieve the intended purposes of the Joint Commission mentioned above.

I call special attention to the frequent and constructive contacts in the past year with the Hospital Association of New York State. We have reason to appreciate the sincere efforts of the administrative staff of that organization to work in constructive concert with us on problems of mutual interest. Of special significance is our mutual effort to have the State of New York represented on the Joint Commission on Accreditation of Hospitals. It is beyond my understanding that states with fewer beds, fewer hospitals, less hospital-environment education, and with medical and hospital authorities of no greater capacity than New York boasts, nevertheless, to have multiple representation on this commission. New York should participate in resolution of our own hospital problems and can well afford to share our influences and help for the benefit of others.

In this year, I have been privileged to attend a number of conferences on subjects of direct concern to our Society. These include the Annual Public Health Conference of New York State, a State conference on rehabilitation of narcotic patients, and the Empire State Health Council. It appears that our financial and medical participation in such groups, and others previously mentioned, enhances medical guidance of medical interests and draws support by others to our needs.

I am particularly grateful to the executives' staffs, and elected officers of a number of state medical societies for their generous and friendly cooperation with me and our staff. My special indebtedness is to the Pennsylvania Medical Society for their hospitality in my study of their Educational Trust. I was honored to accept the invitation of the Indiana Medical Association to be the keynote speaker at the annual Postgraduate Workshop on Community and School Health at Indiana University. I am indebted for many courtesies by California, the Texas, and Massachusetts Medical Associations.

There are perhaps few who are familiar with the community health interests of the Sears-Roebuck Foundation and their assistance to rural communities in provision of physical facilities to assist in good medical care. I have been pleased that the staff of that foundation has increased their administrative contacts with us on their potential interests and projects in the State.

It has been indicated to me that it is a matter of major importance to enhance the influence on national issues by New York physicians and by New York medical thinking. Many, if not most, of these issues are decided in or are influenced by the A.M.A. Our prestige and influence in this Association has been below our potential because of many factors. Our functional representation by numbers of individual physicians has been minimal. Of our 25,000 members, only 17,000 belong to our national professional society. This situation has not restrained the many administrative services by the A.M.A. to us in the past year.

It has been said that your executive director is "A.M.A.-oriented." This is an erroneous observation and false conclusion in its intended implication. My only professional society dedication is to so participate and to so administer the programs of the Medical Society of the State of New York that the voice of the New York physician may be properly and adequately heard and, in equality with, or superior to, all others, play its part in the determination of decisions which affect the health of the people of this State, this nation, and this world.

Toward this purpose *alone* I have encouraged the Council and members to be more participant in A.M.A. affairs.

We have increased the attendance by New York physicians and related groups from one or two to ten or twenty at regional conferences. We have attended such A.M.A. meetings on insurance and prepayment plans, on aging, on relative value studies, on legislation, and the public relations institute. I was instrumental in selection of one of our members as chairman of a session of one important regional meeting. I was proud to be a speaker at another. I also participated in an A.M.A. joint conference with the National Better Business Bureau to develop a program for truth and decency in over-the-counter food, drug, and cosmetic advertising.

I considered it a compliment to the Medical Society of the State of New York that the chairman and staff of an A.M.A. committee consulted me in regard to a then very confidential study and report. The invitation of our president was accepted that that committee meet in our headquarters to consult with a group of our members. Our group consultation was the influential factor in determination that similar conferences should be held elsewhere. It is incidental that so far as we can learn this was the first formal A.M.A. committee meeting in a state society office.

During the summer I requested and gained A.M.A. waiver of all dues delinquencies for New York physicians for 1954 through 1958. We contacted all county societies and promoted efforts to have these 938 previously delinquent members reactivate their A.M.A. membership by paying the then allowable half of annual dues. No penalties for prior delinquencies were assessable. There were 202 memberships reactivated by this effort. With Council approval late in the year we requested and gained A.M.A. waiver on all 1959 delinquencies. With no arrears charged, we hope that county societies have in 1960 increased A.M.A. memberships so as to increase the number of our delegates to the A.M.A.

Another administrative problem with the A.M.A. had to do with dues collections. The Council and Trustees have now acted to resolve this problem in part. I am continuing negotiation with A.M.A. administration with hope that we may satisfactorily resolve the matter of dollar costs and reimbursement for dues collections.

Conclusion.—I have reported at great length. These are some of the matters which I wished to bring to the attention of the House of Delegates and through you to our membership. I have reported in some detail on relations with friendly interests and associations. I emphasize to you, however, that enemies and false friends and self-aggrandizing acquaintances are constantly probing our foundation and structure. They would destroy the safeguards which first protect the welfare of the health of the people and secondly safeguard our own personal and collective interests. Ours must be an ever stronger program and an effective administration of our interests if we are to retain the concepts, the ideals, and the existence of freedom in the practice of medicine.

I would like to express official and personal gratitude to many members of the staff. To avoid error of omission or commission, I mention no names. I am indebted to those who have helped in this year by thoughtful and skillful accomplishment of their assignments and to those who have extended their loyalty to my administrative leadership.

There are many others to whom I am indebted for guidance, help, and understanding. It has been, nevertheless, a most difficult year. Officers, councillors, trustees, and committees have supported me and have done much for improved administration. As I predicted before the House a year ago, there has not been, nor do I ever expect, complete and unanimous agreement on all issues. However, we have resolved problems. The Council and Trustees have made the decisions as they saw best in the interests of this Society. I am grateful to those who frankly and directly advised or counseled with me when they differed or warned against errors. I wish that I could adequately thank those among officials of the State and county societies, and the rank and file of our membership who have encouraged me with words of advice, approval, or thanks as I have sought the means of greatest service to my Society.

It is a reasonable doubt that anyone knows the time, the study, the effort, the sacrifice, or the contribution to our interests and to our Society which have been given by our president, Henry I. Fineberg. His willingness to listen, his comprehension of detail and scope, his dedication to us, his sympathetic understanding, his fair evaluation and application of variant attitudes and opinions, his unselfishness, his honesty, and his candor have done more for you and for me today and tomorrow than we can objectively measure. I am by far a richer man and we are a better Society by reason of his leadership and friendship. My affectionate respect is Henry Fineberg's.

I dedicate my talents and my efforts, without reservation to the implementation of the policies and purposes of this Society. I shall welcome the officers of next year with the promise of every personal and staff assistance, that it and each succeeding year will be worthy of them and their leadership and will find the Medical Society of the State of New York an ever-serving guardian of the health of the public and an impressive participant in the affairs of organized medicine.

Respectfully submitted,
Herbert T. Wagner, M.D.,
Executive Director

COMMISSION ON MEDICAL SERVICES—B

Reports in this section are referred to the Reference Committee on Commission on Medical Services—B, consisting of the following:

Henry T. Randall, M.D., New York, *Chairman*
Henry Vinicor, M.D., St. Lawrence
Arthur H. Diedrick, M.D., Westchester
Alfred A. Hartmann, M.D., Franklin
Michael J. Crino, M. D., Monroe

Workmen's Compensation

To the House of Delegates, Gentlemen:

The following is the report of the Committee on Workmen's Compensation and of the Bureau on Workmen's Compensation. The committee consists of the following:

William E. Pelow, M.D., *Chairman*	Onondaga
Stanley E. Alderson, M.D.	Albany
Herbert M. Bergamini, M.D.	Franklin
Monroe M. Broad, M.D.	Queens
Arthur E. Corwith, M.D.	Suffolk
Harold W. Grosselfinger, M.D.	Rockland
Joseph P. Henry, M.D.	Monroe
David Kershner, M.D.	Kings
Charles D. Squires, M.D.	Broome
Joseph A. Wintermantel, M.D.	Cattaraugus
Anthony A. Mira, M.D., *Director*	Queens

The Council Committee on Workmen's Compensation held one meeting during the year 1959 which was poorly attended. The chairman of the committee, however, was extremely active in attempting to accomplish the chores that were laid before him.

Medical Fee Schedule.—The Chairman of the Workmen's Compensation Board, Colonel Solomon E. Senior, appointed a special committee which he called "The Advisory Committee on the Medical Fee Schedule and Allied Problems," which had representatives from an insurance carrier, self-insurer, and State Medical Society, the primary purpose of which was to review the medical fee schedule in an effort to iron out some of the difficulties and clarify some of the confusion. Two portions of this schedule were particularly challenging; namely, that section dealing with ophthalmology, the other dealing with radiology.

William E. Pelow, M.D., chairman of the Workmen's Compensation Committee, called a meeting of a representative group of ophthalmologists selected from every district in the State of New York who met in Syracuse and reviewed each item concerning ophthalmology and made certain recommendations which were transmitted to the Chairman of the Workmen's Compensation Board through this Advisory Committee. Similarly representative radiologists from every district in the State were called to a meeting in Syracuse by Dr. Pelow for the sole purpose of reviewing that section of the schedule that pertained to radiology. Each item was reviewed and the recommendations of this group were transmitted through the Advisory Committee to the Chairman of the Workmen's Compensation Board.

The Advisory Committee on the Medical Fee Schedule and Allied Problems met seven times during the course of the past year, and it is anticipated that a revision of the medical fee schedule will be made that will be more comprehensive, certainly more equitable and less confusing.

Podiatry.—The podiatrists are asking for additions to their scope of practice. Some of their requests in a proposed revision of the podiatry fee schedule are definitely beyond the scope of their practice. The Medical Society has attempted to demonstrate to the Chairman of the Workmen's Compensation Board that the inclusion of some of these items in the podiatry fee schedule would be hazardous to the workers of this State and would be considered illegal under the practice of podiatry. The podiatrists apparently are pressing their request for added scope of an interpretation of the podiatry law that was made to them by Mr. Charles Brind, Jr., counsel for the State Education Department. It is possible that the interpretation by Mr. Brind may be questioned by the State Medical Society in an effort to determine whether or not it is correct.

Rehabilitation.—(1) During the past year, Colonel Solomon E. Senior, Chairman of the Workmen's Compensation Board, introduced form "R." This form is a request to have the insurance carrier's or self-insurer's report on the status of rehabilitation for a claimant to the Chairman of the Workmen's Compensation Board. The intent behind the issuance of this form is to promote early rehabilitation in occupational injuries or diseases.

(2) Study group conducting an evaluation of rehabilitative methods for occupational disabled patients. This study group was appointed by Colonel Solomon E. Senior subsequent to an act of the Legislature that created such a group. The director of the Institute of Physical Medicine and Rehabilitation, Howard A. Rusk, M.D., is the head of the group, and they are completing their study of rehabilitation and rehabilitative methods in New York State, and it is anticipated that their recommendations will be available to the Chairman of the Workmen's Compensation Board in February, 1960.

A series of public hearings were conducted by the study group in various parts of the State in an effort to determine what the wishes and procedures were in these various localities. It is possible that one of the recommendations will be to limit the free choice principle where rehabilitation processes are concerned and that all rehabilitation will be made available to the patient through "centers."

Occupational Loss of Hearing.—The amendment to the Workmen's Compensation Law, Section 49–gg permits claims for occupational loss of hearing to be filed by disabled employes. The law is rather vague and loosely written so that considerable confusion has resulted. Employers and insurance carriers are vitally concerned with the poorly defined conditions of this law and have asked the Workmen's Compensation Board to re-evaluate the entire problem of occupational loss of hearing with a view in mind of amending this portion of the law to make it more equitable. As a result Colonel Senior appointed a special committee on Occupational Loss of Hearing of the Workmen's Compensation Board who were concerned with the legal phases of Article 3–A, Section 49–gg of the Workmen's Compensation Law.

In addition the Committee of Expert Consultants on the Problem of Industrial Noise and Occupational Loss of Hearing has also studied the scientific aspects of the problem. This latter committee had a public hearing in an effort to determine the opinions of all interested parties with reference to such phases of occupational loss of hearing as

(1) Industrial noise levels which may cause occupational loss of hearing.

(2) Frequencies to be used in measuring industrial hearing loss.

(3) The level below which there is no hearing disability and the level above which the inability to hear shall be deemed total.

(4) The use of a monaural or binaural method of computing the percentage loss of hearing.

(5) Proper deductions for presbycusis and other nonindustrial causes of hearing impairment.

(6) The number of examinations needed to evaluate industrial hearing loss and the fairest method of determining the loss from the results of successive examinations.

(7) Other subjects deemed pertinent to establishing the most reliable and acceptable damage risk criteria and standards for the measurement and determination of occupational loss of hearing.

(8) Respects in which the committee's 1953 report was not clear or has proved to be unsatisfactory.

It has been requested through the Council Committee that this matter be referred to the Subcommittee on Hard of Hearing and the Deaf of the Public Health and Education Committee of the Council and that "This subcommittee establish or recommend minimum standards for otologic examinations, the establishment of a method for proper certification of the accuracy of audiometers, and to set up minimum standards for occupational loss of hearing."

It was further recommended that this subcommittee should make some recommendations for adequate standards of audiometric examinations; that is, of the type of calibration of the physical equipment, study of the type of room suitably utilized in conducting these audiometric examinations, and so forth.

Legislation.—(1) It has been proposed to raise the limits for charges for medical services (Section 13–a[5]) from $25 to $40 where consultations, surgical operations, or physical therapy are involved, from $10 to $20 for x-ray examinations, and from $10 to $15 for laboratory tests before prior authorization is required.

(2) MEDICAL PRACTICE COMMITTEE—It is hoped that by May 1 the Medical Practice Committee of the Workmen's Compensation Board shall have been abolished.

General.—During the year 1959, arbitrations were held in the following cities: Purchase, Staten Island, Newburgh, Albany, Syracuse, Buffalo, and Bay Shore. Three hundred and thirty cases were scheduled for arbitration. Eighty-one of these cases were arbitrated and 249 were either settled without an arbitration hearing or withdrawn from the calendar. The total amount in dispute was $16,759, and the amount awarded was $7,262.63 (43.3 per cent). The Workmen's Compensation Bureau settled bills for physicians, the total amount in dispute being $15,734.78. The final settlement in these cases amounted to $9,968.95.

The director of the Bureau spoke before four meetings of medical assistants in four counties and on April 1, 1959, before the Claim-men of Westchester County.

The director of the Bureau also attended the following meetings: May 9 to 15, Annual Convention of the Medical Society of the State of New York at the Statler-Hilton Hotel, Buffalo; May 25, June 23, July 30, September 22, November 20, and December 10, meetings of the Advisory Committee on the Medical Fee Schedule and Allied Problems; June 8 to 12, American Medical Association annual convention, Atlantic City, New Jersey; July 9, Ophthalmology meeting, Syracuse; July 23, Radiology meeting, Syracuse; September 12, meeting of county society officers, Manger-Vanderbilt Hotel, New York City; September 18, New York University Study on Workmen's Compensation, New York University-Bellevue Medical Center, New York City; October 9, Governor's Committee of the Physically Handicapped; October 14, 15, Third and Fourth District Branch meetings; October 22, Hearing on Occupational Loss of Hearing, New York City; November 10, Public Hearing on Industrial Noise and Occupational Loss of Hearing, Vanderbilt Hall, New York University; December 1, Joint Legislative Committee on Industrial and Labor Conditions, New York City.

On July 21 and November 11, 1959, examinations in diagnostic radiology were given for two applicants by the special radiology examining committee.

Your committee regrets the resignation of Anthony A. Mira, M.D., as director of the Bureau of Workmen's Compensation and Industrial Health. He was personable, cooperative, industrious, ambitious, and an untiring worker. It is lamentable that he felt that he had to sever his connections with the Medical Society of the State of New York. Your chairman, especially, will miss his valuable help and attention to details. We all wish "Tony" success and happiness in his new endeavor.

Respectfully submitted,

WILLIAM E. PELOW, M.D., *Chairman*

Industrial Health

To the House of Delegates, Gentlemen:

The following is the report of the Committee on Industrial Health and of the Bureau on Industrial Health. The committee consists of the following:

Peter J. Di Natale, M.D., *Chairman*	Genesee
Joseph P. Alvich, M.D.	Bronx
G. Rehmi Denton, M.D.	Albany
Ira Fink, M.D.	New York
Fred W. Holcomb, Jr., M.D.	Ulster
Joseph A. Lane, M.D.	Monroe
John C. McClintock, M.D.	Albany
Raymond J. Murray, M.D.	Nassau
Harry E. Tebrock, M.D.	Queens
Anthony A. Mira, M.D., *Director*	Queens
Melvin N. Newquist, M.D., *Adviser*	New York
William P. Shepard, M.D., *Adviser*	New York

During 1959 the Council Committee on Industrial Health with the cooperation of the Bureau of Industrial Health and Workmen's Compensation accomplished the following:

Award.—Recommended the presentation of the 1959 award for distinguished service in the field of occupational medicine to the Medical Department of the Eastman Kodak Company of Rochester, New York.

13th International Congress on Occupational Health, New York City, July, 1960.—The Medical Society of the State of New York will participate in this Congress by having an official designee, Peter J. Di Natale, M.D., chairman of the Council Committee on Industrial Health, present a paper and a scientific exhibit. In addition, the State Medical Society will contribute a certain sum of money to help defray the cost of entertaining the many visiting foreign dignitaries and physicians.

Education.—The one-afternoon-a-week course that was started at New York University-Bellevue Medical Center Institute of Industrial Medicine and was so successful during its first year had to be discontinued this year because of an insufficient number of registrants. The course will be offered again, provided enough interested physicians register.

Employment of Physically Handicapped.—The Council Committee on Industrial Health suggested the names of several physicians to be considered to receive the citation of the Governor's Committee on Employ the Physically Handicapped, awarded in New York State to the physician who made the greatest contribution in 1959 in furnishing the employment opportunities of the physically handicapped. The recipient of the Governor's award will also be submitted to the President's Committee on the Employment of the Physically Handicapped, for consideration to receive a similar award from the President.

Occupational Loss of Hearing.—Considerable interest has been demonstrated this year by management groups and organized societies devoting themselves to otology in defining the problem of occupational loss of hearing. The Workmen's Compensation Board in fact has a committee of experts now studying this problem and open hearings have been held to give all interested parties the opportunity to express their opinions. The amendment to the Workmen's Compensation Law, Article 3–A Section 49–g, apparently has caused considerable confusion among employers since it requires that if an individual making an application for employment is found to be deficient in hearing and, in the opinion of the examining physician, the hearing loss could be attributed to a previous occupation, it is required by this amendment that the prior employers be put on notice of the potential claim that might be made by the former employe. As the amendment is now written, there is a poor definition of what is meant by hearing loss, the method of taking the measurements are vague, and other questions concerning this problem are left unanswered. It is therefore probable that the Workmen's Compensation Law will again be amended to clarify and better define its application.

Union Health Centers.—There is no doubt that labor unions plan on establishing bigger and better health centers. In fact, a special group of union representatives has been formed to study the possibilities of establishing union hospitals and union medical schools. The Council Committee on Industrial Health again urges that there be continuing discussions on an informal plane with representatives of both organized unions and management.

Meetings.—During the year the Council Committee on Industrial Health had three meetings.

The director of the Bureau attended the following meetings pertaining to occupational medicine: April 29 and 30, 1959, annual meeting of the Industrial Medical Association; May 18 and 19, 1959, Mid-Atlantic States regional meeting, President's Committee on Employment of the Physically Handicapped; June 7 to 10, 1959, American Medical Association meeting, Atlantic City, New Jersey; November 10, 1959, Public Hearing on Industrial Noise and Occupational Loss of Hearing, Vanderbilt Hall, New York University.

The director also attented meetings of the New York State Society of Industrial Medicine and served as program chairman for each of these meetings: "Symposium on Pain," and "Malpractice Litigation and Workmen's Compensation as It Affects the Industrial Physician."

Your committee wishes to commend the services of Anthony A. Mira, M.D., since assuming the directorship of the Bureau of Industrial Health and Workmen's Compensation. We accept his resignation with regret and wish him well in his new position.

Respectfully submitted,
PETER J. DI NATALE, M.D., *Chairman*

Questions of Ethics

To the House of Delegates, Gentlemen:

The Committee on the Questions of Ethics has the following members:

Harold F. Brown, M.D., *Chairman*	Erie
Frank LaGattuta, M.D.	Bronx
Ezra A. Wolff, M.D.	Queens

Since the 1959 House of Delegates the Council Committee on Questions of Ethics met once, on September 23, 1959.

The following matters were considered:

(1) In Nassau County one of the school physicians was replaced, by a properly constituted governmental agency, by an osteopathic physician. The question arose whether or not it was ethical for the four remaining physicians to serve with the new appointee. According to Chapter 2, Section 1 of the Principles of Professional Conduct of the Medical Society of the State of New York, "All voluntary associated activities with cultists are unethical." Whether or not it is a voluntary association should be determined by the local medical society.

(2) A complaint was made concerning the propriety of an article written for a lay magazine by a member of the Westchester County Medical Society, entitled, "What You Should Know About Your Glands and Allergies." In it the writer expressed his own theory in which he stated that "all allergy is due to adrenal exhaustion." His therapy was based on this assumption. This point of view is not in accord with the generally accepted opinions of leading allergists and endocrinologists. Inquiry into the matter disclosed that the local county medical society had already taken satisfactory action.

(3) The Onondaga County Medical Society sought information as to the ethics of a physician subscribing to a commercial laboratory. The particular laboratory concerned offers practically all the usual laboratory procedures, without limitation, for $75 per month. The committee did not find the plan per se unethical. However, the possibility that unethical practices might develop from such an arrangement must be seriously considered. For example, if it could be shown that the quality of the work being done is substandard, or if a physician using it exploits his patient, or if the advertising put out by such an organization is objectionable, it might conceivably involve the ethical status of the physician connected with it.

(4) The A.M.A. requested information concerning a survey being made by its disciplinary committee. Initially they would like to know:

(*a*) Whether or not there is a need in our area for more effective procedures of professional discipline;

(*b*) The major disciplinary problems with which we are now confronted;

(*c*) Whether or not in our opinion there has been improvement or deterioration in recent years in the role of professional discipline on the part of medical societies and if so why?;

(*d*) What do we believe are the types of improper or illegal conduct on the part of physicians, with which a committee of this nature should be concerned.

They also requested a copy of our Constitution and Bylaws.

We complied with their request. We stated that it was our opinion that we do not need, at the present time, more effective procedures of professional discipline. Apparently the local county medical societies are operating effectively.

There seems to be some differences of opinion among the members of our Society as to what are the proper functions of the Committee on Questions of Ethics. Our committee believes it is primarily a reference committee. We act on matters referred to us by the county societies, or from other sources channeled through our State office. We believe that all ethical matters preferably should be resolved on the county society level. If there are differences of opinion at this level concerning the interpretation of ethics as applied to a given set of circumstances, the matter should be referred to the State Society. While our Committee on Questions of Ethics investigates the matters which are referred to it through proper channels, its function is not to go through the State to ascertain that every physician is adhering to our code of ethics.

Since the establishment of the Judicial Council of the State Medical Society, appeals from a county society in matters of discipline are now referred to the Judicial Council rather than to the Committee on Questions of Ethics.

All recommendations of the Committee on Questions of Ethics must be approved by the Council of the State Society before they become official.

Respectfully submitted,
HAROLD F. BROWN, M.D., *Chairman*

PUBLIC HEALTH AND EDUCATION

Reports in this section are referred to the Reference Committee on Public Health and Education, consisting of the following:

Samuel Frant, M.D., New York, *Chairman*
Thomas Bumbalo, M.D., Erie
Leonard L. Heimoff, M.D., Bronx
Royal S. Davis, M.D., Section on General Practice
G. Gordon Knight, M.D., Rockland

Public Health and Education

To the House of Delegates, Gentlemen:

The Council Committee on Public Health and Education has as its members the following:

Norman S. Moore, M.D., *Chairman*	Tompkins
A. H. Aaron, M.D.	Erie
Irving L. Ershler, M.D.	Onondaga
Joe W. Howland, M.D.	Monroe
Philip J. Rafle, M.D.*	Suffolk
Herman E. Hilleboe, M.D., Commissioner, New York State Department of Health, *Adviser*	Albany
Leona Baumgartner, M.D., Commissioner of Health, City of New York, *Adviser*	New York

In the first report (1957–1958) of the Committee on Public Health and Education under its new chairman it was explained that all the subcommittees do not necessarily have urgent business every year, and it would be the policy of the committee to concentrate on the subcommittees having the most important business. This policy has been in effect for the last three years.

At the last House of Delegates meeting the committee was enlarged to permit an increase in the scope of its work. By enlarging the committee it was possible to give assignments to members who were especially qualified to make a valuable contribution on a particular subject.

One of the members of the enlarged committee, Philip J. Rafle, M.D., was unfortunately lost to the committee early in the year. Dr. Rafle was a potential source of great strength to the committee and we record his sudden death with sadness and regret. He will be difficult to replace.

In these fast changing times medicine has a unique chance to lead the way in influencing public attitude. Both the Subcommittees on Accident Prevention and on Aging and Nursing Homes have had such an opportunity during the past year. For instance, there has been great reluctance on the part of physicians to cooperate with the commissioner of Motor Vehicles and the State Police in their attempt to ascertain the true correlation between alcoholic content of the driver's blood and accidents. At the beginning of the year there was outright hostility toward the medical profession by the administrators of the State Police; following an informative program for the doctors of the State, jointly sponsored by the committee and the Society's legal counsel, most hostility has disappeared, and the new administration of the State Police is convinced that the Medical Society is taking leadership in destroying apathy on the part of the medical profession and the public. The fact that medicine has taken the leadership in this area, together with public health authorities, seems to have imbued the Governor, as judged by his message to the Legislature, with the idea that New York State could be a leader in eliminating alcohol as a cause of accidents and thereby lead the rest of the nation in public attitude similar to that which now exists among the people of Northern Europe. It is obvious that until the public accepts a change in mores regarding drinking and driving, the police will be ineffective in coping with the problem.

At the beginning of the year far more physicians were reluctant to cooperate than at the end of the year, but the committee is still confronted with a few die-hards and it will be the committee's responsibility to continue the educational effort among the profession.

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* Deceased.

The Subcommittee on Accident Prevention has been successful in gaining Medical Society approval for the concept that the Commissioner of Motor Vehicles be given broad powers to improve technics of licensure and to study relationships between physical handicaps and accidents.

We wish to call special attention to the activities of the Subcommittee on Aging and Nursing Homes, which will prepare the material for presenting the Medical Society's point of view at the White House Conference on the Aging in 1961. Among its many accomplishments it has brought to the attention of the public in many counties this pressing social and economic problem. It has stimulated the proprietors of nursing homes to improve their facilities for the aged. It has stimulated the medical profession at the local level to cooperate with public health departments and nursing home personnel in educational programs. It has taken the initiative in the formation of a State Joint Council to Improve the Health Care of the Aged, which represents medicine, dentistry, hospitals, and nursing homes. It has stimulated, with considerable success, the State Departments of Health and Mental Hygiene regarding the need for emphasis on the mental health of the aged.

The Subcommittee on Operating Room Deaths has begun its campaign to make the operating room safe from infrequent, but nevertheless tragic, events in the State of New York.

The Subcommittee on the Hard of Hearing and the Deaf has been given one of the most important assignments of modern years in industrial medicine—that of determining minimum standards of otologic examinations, the certification of the accuracy of audiometers, and determining the occupational loss of hearing as a result of employment in noisy aircraft plants.

The Subcommittee on Addiction to Alcohol and Narcotics has learned during the year the frustration of those who have attempted to study the care of the narcotic addict and has made recommendations for a new fact-finding approach. The committee has also had to take the position that a change in the State narcotic law which would eliminate written prescriptions for some narcotics is not warranted at this time even though to do so would make the New York State narcotic law in harmony with the Federal act.

The Subcommittee on Heart Disease has completed plans for a coordinated public information program for the coming year in cooperation with the State and City Health Departments, the New York Heart Assembly (State) and the New York Heart Association (City).

In conjunction with the State Department of Health and the Department of Communications of the State Medical Society the committee has set up an Empire State Award for Excellence in Medical Reporting to be given in alternate years at the annual meeting of the Medical Society and at the Annual Health Conference.

We have spoken of the enlarged Public Health and Education Committee and the special assignments given to some of its members. One of these is the special study on rehabilitation services in the government of the State of New York. We hope that everyone will read the report of this special subcommittee. It is the result of months of review and survey and is at present the most factual presentation of the subject to date. Its significance is reflected in the fact that requests for copies have already commenced to come to the committee, notably from the American Public Health Association, Inc., the W. K. Kellogg Foundation, and the Department of Health of the Commonwealth of Pennsylvania.

Many of the subcommittees have had routine meetings with no special problems; others have had no meetings at all. By following the pattern of the past two years, emphasis has been placed where emphasis was needed.

The committee wishes to call attention to the success of the *What Goes On* bulletin. It is now in its second year, and beginning with the February 15, 1960, issue, the Committee on Public Health and Education will take the responsibility for a New Jersey bulletin, which will include features of the metropolitan area of New York City.

The committee is disappointed in the slow progress of its recommendation for the creation of an educational and scientific foundation. Because it is illegal for a membership corporation to accept funds other than dues, the committee believes that provision for soliciting funds must be made if an adequate medical educational program for the profession and the public is to be implemented. The doctors of this State cannot, through dues, provide funds for an informative program commensurate with the needs of this great State. A foundation, with a committee on grants composed of physicians, could contract with any agency capable of doing the task.

The committee wishes to extend its appreciation to Herman E. Hilleboe, M.D., and his staff of the New York State Department of Health and to Leona Baumgartner, M.D., and her staff of the Health Department of the City of New York for excellent cooperation and assistance. To Deputy Commissioner Granville W. Larimore, M.D., especially go the committee's sincere appreciation and thanks for his cooperation and aid in programming and implementing many of the important accomplishments of this committee.

We express our sincere appreciation to Henry I. Fineberg, M.D., president, and to Herbert T. Wagner, M.D., executive director of the State Medical Society, and to his executive assistant, Miss Doris K. Dougherty, for their assistance, support, and encouragement. Also, the committee is indebted to all the staff of the State Society who have assisted the committee in carrying out its tasks and assignments.

The committee's special thanks go to Miss Susan V. Baker, executive assistant to the committee, whose knowledgeable ability and intelligent handling of committee affairs is appreciated.

Since submitting its annual report for 1958–1959, the committee has arranged, as of February, 1960, postgraduate instruction for 31 groups, presented as lecture series, symposia, single lectures, or teaching days. A total of 141 speakers have already participated or will participate in these meetings. We express our thanks to the New York State Department of Health for the continued assistance they give us by providing a $25 honorarium for these speakers, to the Society's Department of Communications for sending releases to local newspapers, and to the editorial staff for inserting notices in the NEW YORK STATE JOURNAL OF MEDICINE. It might be noted here that a large proportion of these meetings would appear in the monthly bulletin, *What Goes On*, if program chairmen made it a point to submit their requests for speakers to this committee as far in advance as possible.

Of the following list of postgraduate sessions, eight were arranged by the Postgraduate Education Department of the State University of New York College of Medicine at Syracuse in cooperation with our committee.

COUNTY	ORGANIZATION	NUMBER OF LECTURES
Albany	Medical Society	2
Broome	Medical Society	2
	Binghamton Academy of Medicine	4
Cayuga	Medical Society	3
Chenango	Medical Society (arranged by Syracuse)	4
Cortland	Medical Society	5
Erie	Buffalo Academy of Medicine	1
Fulton	Medical Society	5
Herkimer	Medical Society	1
Jefferson	Medical Society	6
Livingston	Medical Society	1
Madison	Medical Society	1
Oneida	Utica Academy of Medicine	12
Onondaga	Syracuse Academy of Medicine	1
Ontario	Medical Society	6
	Geneva Academy of Medicine	6
Putnam	Medical Society	2
Rensselaer	Medical Society	5
Rockland	Medical Society	1
St. Lawrence	Medical Society (arranged by Syracuse)	4
Schenectady	Medical Society	4
Steuben	Medical Society	4
Suffolk	Medical Society	25
	Medical Society and Bar Association	2
	South Side Clinical Society	5
Sullivan	Medical Society	8
Tompkins	Medical Society	1
Ulster	Medical Society	3
Wayne	Medical Society	4

Regional Meetings and Teaching Days.—For regional meetings and regional teaching days, invitations are sent to the members of the medical societies in counties adjacent to that in which the instruction is given. The committee usually arranges for the speakers, has stamped envelopes addressed for the memberships of the county societies, and reimburses the sponsoring county medical society for the cost of printing the programs.

This year the following such meetings have been held:

COUNTY	REGION	SUBJECT	NUMBER OF LECTURES
Broome Our Lady of Lourdes Hospital	Chemung, Chenango, Cortland, Tioga, Tompkins	Vascular Disease	2
Oneida Medical Society and Utica Academy of Medicine	Chenango, Herkimer, Jefferson, Lewis, Madison, Onondaga, Oswego, Otsego, St. Lawrence	Cancer Heart	4 4
Oneida County Medical Society	Same as above	Diabetes	3

This is the last report of the Committee on Public Health and Education under its present chairman, who wishes here to acknowledge with gratitude the cooperation and assistance of physicians, health department personnel, and public officials all over the State of New York. The rapid changes in the practice of medicine during the last decade have seen different but just as rapid changes in methods of medical education, both undergraduate and graduate, and public health practices. We hope the committee this year has set the stage for even greater successes by those who follow.

Respectfully submitted,

NORMAN S. MOORE, M.D., *Chairman*

Reports of the subcommittees follow:

Accident Prevention

The Subcommittee on Accident Prevention has the following membership:

S. Bernard Wortis, M.D., *Chairman*	New York
Arthur S. Abramson, M.D.	Bronx
Conrad Berens, M.D.	New York
Harold Brandaleone, M.D.	New York
Goodwin M. Breinin, M.D.	New York
Edmund P. Fowler, Sr., M.D.	New York
Richard H. Freyberg, M.D.	New York
Milton Helpern, M.D.	New York
Walter D. Ludlum, M.D.	New York
Norman S. Plummer, M.D.	New York
John H. Powers, M.D.	Otsego
H. Houston Merritt, M.D., *Adviser*	New York
Abraham M. Rabiner, M.D., *Adviser*	Kings

In former reports the Subcommittee on Accident Prevention has given in detail the procedure which it has recommended to the Commissioner of Motor Vehicles in considering requests for renewal of licenses or issuing of new licenses when the applicant has reported one of the various forms of the convulsive state. The procedure has been closely followed by the Bureau of Motor Vehicles and this year the chairman and the advisers to the committee have acted as an appeal body for two cases with single convulsive seizures. After thorough and fair investigation they stood firm on their original recommendations. So far there has been no report of trouble from those who have been licensed upon the recommendation of the advisory group.

This year the subcommittee's main function was to unsnarl the confusion regarding liability of the physician taking a blood sample from a driver suspected of being under the influence of alcohol, on request of the State Police. Following a meeting on June 19 with the State Police the subcommittee asked the Committee on Public Health and Education that an all-out effort be made to inform the physicians of the State regarding their liability. Consequently there was a notice in the July *Newsletter*, followed by a communication to the county medical societies from the parent committee informing them of the true facts regarding liability for drawing blood at the request of the State Police. In the packet was a copy of a memorandum from Deputy Superintendent George M. Searle to the State Police asking for special reports on refusals and warning the police that no pressure should be put on a doctor; also a copy of a letter from the firm of Martin, Clearwater, and Bell regarding their interpretation of the physician's protection under the Schultz Act; and a memorandum from the chairman of the Committee on Public Health and Education covering details of the arrangements that had been made.

About a dozen cases have been reported to the chairman, who has immediately corresponded with the individual and has endeavored to reassure him that his refusal on grounds of liability was unfounded. The letter always included the original packet in the hope that we might obtain uniform cooperation throughout the State.

In October the general question on application blanks to satisfy the health interrogation requirement was reviewed by the subcommittee. It recommended and the Council accepted the following question:

> "Have you had, been treated for, or been told by your physician that you have any mental or physical condition which might impair your ability to drive a motor vehicle?"

This wording was approved by legal counsel as not compromising the physician in any way.

The subcommittee also recommended to the Council that broad, nonspecific powers be given to the Commissioner of Motor Vehicles to enable him to set standards for operators on renewal as well as on original issuance, with the advice and counsel of the State Health Department. This the Council approved and the Governor was so informed.

Aging and Nursing Homes

The Subcommittee on Aging and Nursing Homes has the following membership:

Joseph J. Witt, M.D., *Chairman*	Oneida
Stephen A. Graczyk, M.D.	Erie
Marcelle T. Bernard, M.D.	Bronx
Ben Albert Borkow, M.D.	Kings
Elton R. Dickson, M.D.	Broome
Maxwell L. Gelfand, M.D.	New York
Harry Golembe, M.D.	Sullivan
Lawrence S. Kryle, M.D.	Nassau
Gerald B. Manley, M.D.	Livingston
Samuel R. Powers, Jr., M.D.	Albany
Charles Steyaart, M.D.	Wayne
Edward R. Schlesinger, M.D., Division of Medical Services, State Department of Health, *Adviser*	Albany

There have been three meetings of the Subcommittee on Aging and Nursing Homes during the past year since the 1959 House of Delegates meeting. Interest in the aging and problems of the aging continues to run high throughout the nation. Much emotionalism is involved in discussions of the problems and needs of the aging, and these problems and needs seem to be magnified by the amount of attention given them. These needs vary from individual to individual; for one it is housing, for another it is recreation, for another it is the right to work, for another it is retirement, for still another it is health care. Great efforts are being made on the local community and State levels to meet these needs and much progress is being made. There are those in the Federal government who would intervene to help meet the health needs of the aged. We are among those who believe such intervention undesirable and unnecessary.

A. The subcommittee has endeavored to keep abreast of current thinking regarding the aging, and to guide the physicians in the State as they seek to help meet the medical requirements of this group of people. To this end "Health Maintenance and Disease Prevention in Old Age" was the program cosponsored through the year with the Bureau of Chronic Disease and Geriatrics of the New York State Department of Health. The following steps were taken in addition to those reported last spring to the House of Delegates:

1. Physicians were urged to do as many periodic health examinations as possible in the fifty- to sixty-year age group and to include preretirement health counselling as part of this examination.

2. The Schenectady County "Community Health Check Up" program was sent to all county medical societies with recommendation that it or some part of it be utilized if feasible in the local county.

B. Nursing homes of the State were studied by the committee, resulting in the following actions:

1. The Erie County plan of accreditation of nursing homes was sent to the county societies with the recommendation that they consider the feasibility of adopting similar plans in their local areas.

2. County societies were asked (*a*) to initiate meetings with nursing home operators to discuss mutual problems and (*b*) to cooperate with local health departments and social welfare departments in offering instruction to nursing home operators and their personnel.

3. A joint statement on nursing homes is being prepared with the New York State Departments of Social Welfare and of Health for publication in the New York State Journal of Medicine. This will point up the doctors' responsibility for good nursing home care and will direct attention to the "Rules and Regulations for Private Nursing Homes."

4. A letter was sent to the executive director of the New York State Joint Hospital Survey and Planning Commission recommending provision for care of the chronically ill in future planning for hospitals.

C. The Subcommittee on Aging and Nursing Homes was represented at the First National Conference of the Joint Council to Improve the Health Care of the Aged, at Washington, D.C., in June, 1959.

Subsequently the subcommittee initiated formation of the New York State Joint Council with the New York State Dental Society, the Hospital Association of New York State, and the New York State Nursing Homes Association. The chairman of your subcommittee was elected chairman of the New York State Joint Council.

D. The chairman of the subcommittee presided at a session of the Regional Conference on Aging at Boston in September, 1959, sponsored by the American Medical Association, the medical societies of the New England states, and of New York State.

E. Your chairman participated in the first New York State regional meeting at Syracuse in December, 1959, in preparation for the White House Conference on Aging in January, 1961.

F. "Mental Health of the Aging" has been chosen as the joint program for the coming year, with the cooperation of the State Health Department and the State Mental Hygiene Department.

Cancer

The Subcommittee on Cancer has the following membership:

John G. Masterson, M.D., *Chairman*	Kings
George E. Moore, M.D., *Vice-Chairman*	Erie
Daniel Burdick, M.D.	Onondaga
William R. Carson, M.D.	St. Lawrence
Emerson Day, M.D.	New York
Leonard B. Goldman, M.D.	Queens
Samuel Leo, M.D.	Bronx
Roald N. Grant, M.D.	New York
Paul R. Gerhardt, M.D., Bureau of Cancer Control, New York State Department of Health, *Adviser*	Albany
Theodore Rosenthal, M.D., Department of Health of the City of New York. *Adviser*	New York

During the current year the Subcommittee on Cancer held meetings to discuss means of implementing the resolution passed at the Annual Meeting of the State Medical Society in May of 1959 calling for the development of a "Cancer Detection Week" in hospitals throughout the State. After considerable deliberation the subcommittee decided that such a cancer detection week should be preceded by an intensive educational program at the local level on the diagnosis and methods of cytology available to practicing physicians. The subcommittee resolved to implement this by promoting and encouraging the local county medical societies to develop in conjunction with the local divisions of the American Cancer Society, as well as the cancer control units of the Health Department's educational sessions in their own communities. Following this period of indoctrination the subcommittee thought that in April of 1961 the so-called "Cancer Detection Week" could be brought to fruition. In the interim areas for possible additional financial support would be investigated.

Following a request of the editor of the New York State Journal of Medicine the subcommittee authorized its chairman to prepare a suitable editorial for publication in the Journal regarding current concepts of cancer research and therapy with particular reference to the facilities available in the State for early diagnosis. The subcommittee looked with favor upon the program being sponsored by the New York City Department of Health for the wider use of cytology in municipal hospitals for the early diagnosis of gynecologic malignancy. In addition the subcommittee endorsed the activities of the New York State Department of Health's Bureau of Cancer Control for their effort in the field of postgraduate education, as well as the sponsorship of pilot cancer control projects throughout the State.

At the most recent meeting of the subcommittee the representatives of the Cancer Control Bureaus of both the New York State and the New York City Health Departments were encouraged to prepare a report for publication on the diagnostic facilities available in our State for the early diagnosis of cancer. The subcommittee thought that such a report would be of value and assistance to the members of the society if suitably presented in the NEW YORK STATE JOURNAL OF MEDICINE.

Child Accidents

The Subcommittee on Child Accidents has the following membership:

Tyree C. Wyatt, M.D., *Chairman*	Onondaga
Thurman B. Givan, M.D.	Kings
Charles W. Neuhardt, M.D.	Westchester

There have been no meetings of the subcommittee during the past year. The program of public education and physician leadership, originally outlined in a letter to all physicians of the State a year ago, is progressing as rapidly as could be expected. Commissioner Hilleboe has given us very strong support.

The chairman has approached *Life* magazine in reference to the possibility of a hard-hitting article on child accident prevention.

It might be mentioned that your chairman is now chairman of District II (New York State) of the American Academy of Pediatrics and Dr. Neuhardt is chairman of the Academy's Accident Prevention Committee.

Diabetes

The Subcommittee on Diabetes has the following membership:

Charles B. F. Gibbs, M.D., *Chairman*	Monroe
George E. Anderson, M.D.	Kings
Joseph B. Cortesi, M.D.	Schenectady
Maynard E. Holmes, M.D.	Onondaga
Herbert Pollack, M.D.	New York

The subcommittee has not yet met this year, although a meeting is scheduled for March 11. The committee's activities have been directed along the following lines:

A. A letter to the county chairmen of diabetes committees urging participation in efforts to (1) increase general interest in the subject among lay groups; (2) further education and understanding among both doctors and laity; (3) promote detection along the lines laid down by the American Diabetes Association; (4) clarify more exact diagnosis of diabetes when suspected, by emphasis on postprandial blood sugar tests rather than on fasting samples and by sugar tolerance test when the diagnosis is not sure.

County chairmen were asked to avail themselves of material and suggestions from the American Diabetes Association and from the Bureau of Chronic Diseases and Geriatrics of the State Health Department, which has available a Clinitron for mass blood sugar testing.

It will be seen from this that attempts have been made to coordinate and advance the combined efforts of the American Diabetes Association, the State's Bureau of Chronic Diseases, and your subcommittee toward the common goal of detection and education in the field of diabetes.

B. A letter was sent to each hospital in the State suggesting that all admissions to hospitals be screened for diabetes by postprandial urine and blood sugar tests. An outline of the "Diagnosis of Diabetes" with ways and means to accomplish this was included with the letter.

Since each person has a hospital experience on the average of once in ten years, this seems like an admirable way to screen a very large segment of the State population on a *continuing* basis.

The replies from a considerable number of hospitals bring up a variety of problems as expected; namely, the cost to the patient or hospital with "no consideration at State level for a subsidy for this program," as well as the ciriticism that "this tends to put the hospital in a position of practicing medicine which trespasses on the right of the individual practitioner."

It is anticipated that these questions will be pursued at the next meeting of the subcommittee. Constructive criticism or suggestions will be greatly appreciated.

General Practice

The membership of the Subcommittee on General Practice is as follows:

Gregory A. Galvin, M.D., *Chairman*	Tompkins
Samuel Wagreich, M.D.	Bronx
Jeff J. Coletti, M.D.	Nassau
William G. Richtmyer, M.D.	Albany
Arthur Howard, M.D.	Fulton
Carl B. Alden, M.D.	Erie
Floyd C. Bratt, M.D.	Monroe
Garra L. Lester, M.D.	Chautauqua
C. J. F. Parsons, M.D.	Westchester

There have been no meetings thus far this year. The proceedings of a meeting called for February 26 will be summarized in a supplementary annual report.

Glaucoma

The membership of the Subcommittee on Glaucoma is as follows:

David F. Gillette, M.D., *Chairman*	Onondaga
Conrad Berens, M.D.	New York
John F. Gipner, M.D.	Monroe
Arthur Alexander Knapp, M.D.	New York
Robert F. Korns, M.D., New York State Department of Health, *Adviser*	Albany

The Subcommittee on Glaucoma reports progress. Those of the group who were able met in Buffalo during the annual convention of the State Medical Society in May, 1959. The "Glaucoma Program Guide" drafted by Frank W. Reynolds, M.D., of the State Health Department was discussed and approved, with minor changes.

Drs. Berens and Gipner and your chairman met during the American Ophthalmological Society meeting. The Berens-Tolman "compressor" instrument was discussed and it was suggested that a slight change in reading be made. The instrument was considered excellent both for screening and use by general practitioners. It was thought that the screening for glaucoma should be done through the local health departments and when possible in an established eye clinic where the physical conditions as well as personnel are most likely to be ideal. Other screenings could be made at the time of established health clinics such as heart, tuberculosis, and others—clinics already functioning periodically in many of the smaller communities.

Dr. Berens has developed a rather extensive plan for screening in the metropolitan area and Dr. Gipner has had a glaucoma clinic in conjunction with the ophthalmic clinic in Rochester. Screening was conducted at the State Fair in Syracuse and routinely in the Syracuse Dispensary eye clinic. The findings from these have not been correlated since they were conducted independently under various auspices with no attempt at uniformity.

The subcommittee feels that tonometry alone does not suffice; that an ophthalmoscopic examination and, when indicated, fields are necessary to arrive at a positive diagnosis for proper treatment. Careful tonometry will screen out the normal, and the higher readings will determine the necessity of further examinations.

It is hoped that a mass screening program may be started in Syracuse very soon with volunteer ophthalmologists in attendance. The upstate ophthalmologists will be asked for their cooperation for local screenings. Their services will be sought before any attempt is made to screen their locale with a mobile unit. The positive and preglaucoma patients will be referred to their ophthalmologists or a clinic where they can get the necessary treatment and guidance.

Hard of Hearing and the Deaf

The Subcommittee on Hard of Hearing and the Deaf has the following membership:

Edmund Prince Fowler, Sr., M.D., *Chairman*	New York
Greydon G. Boyd, M.D.	New York
Frank W. Farrel, M.D.	Queens
Karl W. Gruppe, M.D.	Oneida
Gordon D. Hoople, M.D.	Onondaga
Harrison M. Karp, M.D.	Schenectady
C. Stewart Nash, M.D.	Monroe
Samuel Zwerling, M.D.	Kings
William R. Updegraff, M.D.	Dutchess
Clarence D. O'Connor, Ph.D., Lexington School for the Deaf, *Adviser*	New York
Mrs. Eleanor C. Ronnei, New York League for the Hard of Hearing, *Adviser*	New York

Because the next meeting of the Subcommittee on Hard of Hearing and the Deaf will not be held until the time of the annual meeting of the Medical Society of the State of New York, the chairman has obtained from the various members a summation of the situation in their respective neighborhoods.

It would seem at the moment that there are no significant hearing and speech problems in most areas of the State. The otologists, the physicians, the teachers, and the public at large are gradually becoming more hearing and speech conscious, and hearing losses are being detected much earlier than in former years. The hearing and speech centers have contributed markedly to "spreading the gospel" and educating the population in taking care of the children with hearing and speech defects. These centers seem to be operating with a continuing increment of load.

In many counties periodic screening tests are now carried out, in some instances twice a year. This activity alone serves to educate the populace.

In several locations members of the subcommittee have published alerts in pediatric journals and elsewhere and this, it is believed, should be done at least twice a year.

Mrs. Ronnei and Mr. O'Connor have participated in Congressional hearings on Bills HR 3465 (Independent Living) and HR 494 and 316 (Scholarships for Training of Teachers of the Deaf, Speech Pathologists and Audiologists), and several members of the subcommittee are contemplating attending a conference preliminary to the White House Conference of the National Retail Merchants Association.

Mr. O'Connor reports that the Lexington School for the Deaf is opening a senior high school for the deaf in September, 1960.

The interest in having Federal legislation passed which would provide scholarship assistance for those who wish to become trained as teachers of the deaf, speech correctionists, or audiologists is significant because it will have a favorable effect upon the educational provisions for the hard of hearing and the deaf.

Dr. Karp reports that he had a conference with Dr. Leo Feichtner, chief of the Bureau of Health Services of the State Education Department, and that they considered the advisability of setting up a zoning plan for school physicians and school nurse-teachers in rural areas to supply better consultation services. Dr. Feichtner felt that the greatest stumbling block was to enlist the help of otologists. He also thought that such a program should be initiated by the Medical Society through the Subcommittee on the Hard of Hearing and the Deaf. This and correlated matters will be taken up at the meeting of the subcommittee in May.

There are now about two dozen approved hearing and speech centers in New York State and several more in the offing. This is quite a different picture from that existing in even the recent past.

A few days prior to the writing of this report your chairman was informed by the chairman of the parent committee that the Council had approved a recommendation from the Committee on Industrial Health "that the Subcommittee on Hard of Hearing and the Deaf of the Public Health and Education Committee be requested to recommend minimum standards for otologic examinations, the certification of the accuracy of audiometers, and minimum standards of occupational loss of hearing."

The subcommittee's answer is, of course, that we will be glad to attempt to comply but we are fully cognizant of the difficulties involved because some of these matters have been discussed for years with little progress. We hope to have a supplemental report on this for the House of Delegates in May.

Your chairman was happy to represent the subcommittee as guest speaker at the National Working Conference concerned with health aspects of hearing conversation in Washington, D.C., at which conference much useful material was compiled.

Heart Disease

The Subcommittee on Heart Disease has the following membership:

J. G. Fred Hiss, M.D., *Chairman*	Onondaga
Maurice A. Donovan, M.D.	Schenectady
A. Wilbur Duryee, M.D.	New York
John J. Finigan, M.D.	Monroe
David G. Greene, M.D.	Erie
Harry Gross, M.D.	New York
Arthur E. Lamb, M.D.	Kings
Norman Plummer, M.D.	New York
Karl D. Rundell, M.D.	Broome
Leo M. Taran, M.D.*	Nassau
Willard H. Willis, M.D.	Oneida
J. C. Zillhardt, M.D.	Broome

There has been one meeting of the Subcommittee on Heart Disease, which took place on September 17, 1959.

The amended version of the resolution 59-57 recommended to the House of Delegates relative to employment of the cardiac was discussed. The subcommittee felt that the original had been greatly watered down and that it should be resubmitted to the House of Delegates, possibly in 1960. It was recognized that probably the only way to break down the resistance of employers to hiring heart patients is by education of both industry and labor and the physicians themselves. Ultimately a change in the law will be the goal. It was pointed out, however, that the profession itself knows so little about atherosclerosis that the job of education will be difficult.

Final arrangements were discussed for the presentation of a series of "Cardiovascular Spotlights" in the NEW YORK STATE JOURNAL OF MEDICINE. As this report is written three such articles have already appeared. The State Department of Health, the City Department of Health, the New York Heart Assembly, and the New York Heart Association have agreed to cooperate by coordinating their individual efforts on the same topic at the same time, month by month. It was emphasized that the proper type of public education must be carefully prepared by each group and checked with the others so that no conflicting statements are made. On January 4, 1960, a letter was sent to the presidents, secretaries, and chairmen of heart committees of all county medical societies informing them of this coordinated effort. The schedule of topics is as follows:

February—Rheumatic fever and rheumatic heart disease
April —Congenital cardiovascular defects
June —Atherosclerosis and atherosclerotic heart disease
August —Hypertension and hypertensive heart disease
October —Strokes
December—Cardiovascular rehabilitation of cardiovascular disease patients

The county societies were urged to inform their members and the lay public about some of the salient points of each problem during the designated

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* Deceased.

TABLE I.—Puerperal Deaths in New York During 1956–1958

	Puerperal Deaths			
	New York City		Rest of New York	
Year	Number	Rate (per 10,000 Births)	Number	Rate (per 10,000 Births)
1956	86	5.3	35	1.8
1957	93	5.7	69	3.4
1958	93	5.6	52	2.5

TABLE II.—Highest and Lowest Rates of Infant and Maternal Mortality in New York Exclusive of New York City from 1900–1958

Mortality Status	Rate (per 1,000 Births) Highest	Lowest	1958
Births (per population)	24.2 (1900)	14.4 (1936)	21.7
Stillbirths	37.7 (1924)	14.6 (1958)	14.6
Infant mortality under 28 days	48.4 (1913)	17.1 (1958)	17.1
Infant mortality 28 days and over	60.6 (1913)	5 (1957)	...
Maternal mortality*	82.7 (1918)†	2.1 (1956)	2.5

* Per 10,000.

† There were 550 maternal deaths in upstate New York twenty-eight years ago; in 1957, 75. Had the same rate existed in 1957 as in 1918, there would have been 1,180 deaths; thus, 1,100 mothers were "saved" in 1957.

month, and some specific examples were proposed to them as to how carry out this plan.

Maternal and Child Welfare

The Subcommittee on Maternal and Child Welfare has the following membership:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Samuel Karelitz, M.D., *Vice-Chairman*	Nassau
Meyeron Coe, M.D.	Queens
Frank A. Disney, M.D.	Monroe
Eugene R. Duggan, M.D.	Monroe
Harold Jacobziner, M.D.	New York
William Mallia, M.D.	Schenectady
William J. Orr, M.D.	Erie
Abraham C. Posner, M.D.	New York
Clyde L. Randall, M.D.	Erie
George T. C. Way, M.D.	Dutchess
Frederick H. Wilke, M.D.	New York
Abraham B. Tamis, M.D.	Bronx

The Subcommittee on Maternal and Child Welfare had its first meeting in November, 1959, to decide the function of this committee. It was decided at that time that it should function as follows:

1. Continue to survey and analyze all of the maternal deaths that occur in the State of New York each year. It was further decided that a report concerning the findings of these maternal deaths should be made at the end of each year, either to be reported in the New York State Journal of Medicine or to be given in brief form at the annual meeting of the Section on Obstetrics and Gynecology. The chairman of the subcommittee, together with some of its members, has completed the analysis of the maternal deaths and it is hoped that by the May meeting a short résumé may be forthcoming. A table of comparative rates of mortality is given (Tables I and II).

The subcommittee has attempted to create a standard method of recording these deaths so that at the end of each year the analyses of the causes of death can be easily and quickly determined. After the subcommittee has set up this system and it is in full working order it is the hope of the subcommittee that any member of the Medical Society of the State of New York can use this system for referral. There will be no patient, hospital, or doctor identification on these cards as they will be done strictly in code.

2. The subcommittee also felt that it was essential because of the considerable rise in the perinatal mortality rates in our State and country that the subcommittee set up a method of study and survey of the perinatal deaths that occur in the State of New York each year. To this end, the chairman has sent letters to all hospitals having bassinets to determine whether or not a perinatal mortality committee has been or will be set up in their hospital, and if so what type of records have been kept. The chairman wishes to express his appreciation to all of the hospital superintendents and chiefs of the obstetrics services who have replied to this request. The subcommittee also thought that in order correctly and adequately to analyze the causes of these deaths a standard nomenclature using standard history, labor, and postpartum records in each hospital should be established. It is realized that this is a monumental effort and it will take some time before the whole State can be set up in such a manner. It is hoped that eventually this will actually occur in our State. The subcommittee hopes to cooperate with the American Medical Association, which is attempting to carry out the same procedure and has adopted uniform records. The subcommittee wishes to stress that this is not a policing action of any sort and it is the desire that each hospital will set up a perinatal mortality committee or a committee of this type to study monthly the deaths that occur up to twenty-eight days of life. It is hoped that the subcommittee may have the cooperation of the American College of Obstetrics and Gynecology, the American Society of Pathologists, and the American Academy of General Practice and other interested groups who will help

to complete this tremendous program. The committee is also devising a uniform method of death recording, and it is hoped that in the near future such a system will be set up in this State.

Medical Film Review

The Subcommittee on Medical Film Review has the following membership:

Kenneth B. Olson, M.D., *Chairman*	Albany
Joseph P. Arcomano, M.D.	Kings
Jean D. Watkeys, M.D.	Monroe
James J. Quinlivan, M.D., Director, Office of Public Health Education, State Health Department, *Adviser*	Albany

A number of films were reviewed during the year and suitable films were added to the New York State Department of Health Film Library. Also, a few outdated films were removed.

The following figures indicate the circulation of films during 1959:

Category	Individual Shipments	Films Used
Private physicians	220	306
Pharmacy college	12	15
Nursing schools and postgraduate nursing courses	4,346	4,489
Voluntary health agencies	626	1,065
Colleges (biology, sciences)	1,088	1,677
Medical staff of hospitals	178	271
Medical schools	42	53
Public health staffs	947	1,434

The following new films have been added to the Medical Section: "Someone Is Watching" (Narcotics), "Routine Pelvic Examinations and The Cytologic Method," and "Epidemiology of Staphylococcal Infections."

Eight new films were added to the Nursing Section, as follows: "Sick Abed," "Student Nurse," "Psychiatric Nursing," "Deadline: 53 Minutes," "Journey Back," "Nurse Please," "What is Cerebral Palsy?" and "Where There's a Will."

The subcommittee is particularly interested in increasing the circulation of these films to hospitals, medical schools, and medical societies or groups. There is no charge for use by responsible groups and a catalogue and films can be obtained upon request to James Quinlivan, M.D., of the New York State Health Department. The subcommittee will welcome any suggestions for new films or valuable old films which are not in the library and might be included. Film reviews are published periodically in the New York State Journal of Medicine.

Mental Hygiene

The Subcommittee on Mental Hygiene has the following membership:

William A. Horwitz, M.D., *Chairman*	New York
C. Douglas Darling, M.D.	Tompkins
Ulysses Schutzer, M.D.	Broome
Edward F. Shea, M.D.	Ulster
Marvin Stern, M.D.	Kings
Duncan Whitehead, M.D.	Erie
Paul H. Hoch, M.D., Commissioner of Mental Hygiene, *Adviser*	Albany

The chairman of the subcommittee again participated in the annual (sixth) conference of Mental Health Representatives of State Medical Associations sponsored by the American Medical Association in Chicago on November 21 and 22, 1959. The topic this year was "Organized Medicine and Its Relationship to the Hospitalized Psychiatric Patient." For the first time, the Commissioners of Mental Hygiene were invited to participate. The specific areas covered by the six discussion groups were (1) the state hospital and other public mental hospitals; (2) the private hospital; (3) the general hospital; (4) the outpatient psychiatric clinic; (5) general rehabilitation services; (6) medicolegal aspects of commitment, discharge, and other court proceedings relating to the mentally ill.

Conclusions arrived at in each of the groups respectively, were:

(1) Public psychiatric hospitals are too large, isolated from the communities they serve, and are overcrowded and understaffed. The great expenditure per patient per year represents care at a standard felt to be still inadequate. Adequate care could double the cost. There is need for increasing participation of community physicians in the work of these hospitals.

(2) Two fifths of all acute, potentially recoverable first admissions are treated in private hospitals. The staffs of many of these hospitals maintain outpatient facilities; in some they act in consultative and educational capacities with nearby general hospitals.

(3) In the past twenty-five years there has been a steady growth in the establishment of psychiatric services in general hospitals. Over 600 hospitals in the country have functioning psychiatric units. There is a recent trend toward removing excessive, obtrusive, and anxiety-provoking features whenever possible. It was felt that the resulting improvement in the therapeutic atmosphere of the unit would far outweigh the potential hazards.

(4) There has been a rapid growth of outpatient psychiatric clinics. A report from a large New York State after-care clinic operating in New York City and servicing 6 State hospitals indicates the need for early and frequent contacts with discharged patients, who are most vulnerable within the first few weeks after leaving the hospital. Our clinics are not up to the level of some European clinics which provide evening and week-end services. Out-

patient clinics should have a continuing relationship with other community physicians and especially the referring physician.

(5) Discussion in this area revolved about the importance of rehabilitation of the mentally ill in the family, community, and industry. The best tool for implementation of the program in rehabilitation is the general practitioner, it was felt. There is, however, too frequent lack of communication between the psychiatrist in the mental hospital and the psychiatrist in private practice with the family physician.

(6) Medicolegal aspects relating to the mentally ill vary considerably in different states. The following recommendations were made:

(*a*) All state laws should contain provisions for voluntary admission and discharge from a state hospital.

(*b*) Provision for emergency admission to mental hospitals should exist.

(*c*) The use of policemen and jails in connection with the certification of mentally ill patients was disapproved.

(*d*) There should be a distinct separation between proceedings for certification and proceedings for declaring a patient to be incompetent.

(*e*) Periodic examination of physical restraint orders should be required in order to avoid the use of excessive restraints.

The subcommittee on Mental Hygiene has been represented together with the New York State district branches of the American Psychiatric Association at hearings in Albany on matters affecting the welfare and practice of physicians in New York State. The major issues concerned were the practice of psychotherapy by psychologists independent of medicine and legislation affecting the physician's right to practice medicine because of mental illness.

These above issues have pointed up the increasing necessity for cooperation of the Subcommittee on Mental Hygiene of the Medical Society of the State of New York and the New York State district branches of the American Psychiatric Association. To further this, a meeting of members of the Subcommittee on Mental Hygiene who are also members of the district branches was held on November 29, 1959, together with the committee of delegates of the district branches. A resolution was adopted that in order to bring about a closer cooperation of these two societies the district branch organization would submit a list of members who are also members of the State Medical Society so that the Medical Society may choose one or more from this list to be appointed to the Subcommittee on Mental Hygiene. This resolution will be forwarded to the State Society for approval in the near future.

It would also seem desirable for one member of the Subcommittee on Mental Hygiene to be a resident of Albany or the capital district. This would allow for more ready representation in Albany on legislative matters that often are called on short notice. It is the chairman's opinion that this closer relationship between the two organizations would be a healthy step and allow for more effective action in matters of interest to both societies.

Operating Room Deaths

The Subcommittee on Operating Room Deaths has the following membership:

Richard Ament, M.D., *Chairman*	Erie
Milton Helpern, M.D.	New York
Martin E. Melamed, M.D.	Onondaga
Henry T. Randall, M.D.	New York
W. Walter Street, M.D.	Onondaga

The subcommittee met on May 11, 1959, with Huberta Livingston, M.D., chairman of the American Medical Association's Special Committee on Operating Room Mortality, and representatives of the New York State Health Department. Recommendations were made to Dr. Livingston in regard to a standard nomenclature and methods of collection. The A.M.A. committee is still in the process of developing a uniform national standard of classification at this time.

Throughout the year the subcommittee's principal effort has been to encourage the formation of study committees in the urban areas of New York State where these committees have not been in existence, namely, Albany, Syracuse, and the southern tier. While we continue to await the issuance of a standard classification, efforts will be made toward uniformity of the deliberations of existing anesthesia study committees. During the year the American Society of Anesthesiologists has published a survey on the operation of mortality study committees and this information has been incorporated into plans for more uniform operations.

It is suggested that the descriptive term "cardiac arrest" be abandoned in medical literature, as its meaning has become obscure through misusage. In addition the term "immediate anesthetic-operative mortality" has been suggested as a more descriptive term to cover the scope of our inquiries than "operating room mortality."

Physical Medicine and Rehabilitation

The Subcommittee on Physical Medicine and Rehabilitation has the following membership:

George M. Raus, M.D., *Chairman*	Onondaga
Alvin R. Carpenter, M.D.	Broome
Morton Hoberman, M.D.	New York
Alfred L. Lane, M.D.	Monroe
Edward J. Lorenz, M.D.	Westchester

Leonard D. Policoff, M.D.	Albany
Jerome S. Tobis, M.D.	New York
Edward W. Lowman, M.D., Institute of Physical Medicine and Rehabilitation, *Adviser*	New York

The Subcommittee on Physical Medicine and Rehabilitation has not met during the past year as there appeared to be no valid reason to do so.

Following a mail poll, the subcommittee unanimously recommended the selection of I. Jay Brightman, M.D., as nominee of the Medical Society of the State of New York for the 1959 Physician's Award from the President's Committee on Employment of the Physically Handicapped. Notification has just been received that a Citation for Meritorious Service has been awarded to Dr. Brightman as outstanding physician in this field in the State of New York. He becomes thereby the candidate from this State for national recognition.

School Health

The Subcommittee on School Health has the following membership:

William E. Ayling, M.D., *Chairman*	Onondaga
Thomas S. Bumbalo, M.D.	Erie
Frederick A. Groff, Jr., M.D.	Schenectady
Rocco J. Martoccio, M.D.	Oneida
Edward L. Schwabe, M.D.	Chautauqua
Joseph A. Geis, M.D., *Adviser*	Albany
Anne M. Drislane, M.D., New York State Department of Health, *Adviser*	Albany

Two meetings were held during this period, one at Lake Placid on May 27, 1959, and one at Syracuse, January 22, 1960.

At the Lake Placid meeting the following topics were discussed:

1. Revision of Manual on Administration and Supervision of School Health Services of the State Education Department. This subcommittee has suggested several changes but the revision has not yet been printed.
2. As a result of the successful Teaching Day on School Health, held in Syracuse, it was recommended that similar programs be set up in large teaching centers. This was approved by the Council.
3. It was recommended that local medical societies be advised to urge pre-employment physical examinations, including a chest x-ray, of school personnel and that they be re-examined and have chest x-rays every two years thereafter. This also was approved by the Council.
4. The law requiring annual examinations of school children was discussed and although five of the seven members of the committee were in favor of changing the law it was decided that there was no use in taking further action at this time.

The chairman attended the Seventh National Conference on Physicians and Schools, of the American Medical Association, in Highland Park, Illinois, October 13 to 15, as a representative of the Medical Society. A complete printed report of this meeting will be available soon.

At this meeting one of the conclusions was that "it is inadvisable to have physical examinations of all pupils each year as recommended by some State laws, since this is an unwise expenditure of money and professional time."

At the recent January meeting in Syracuse a report of the New York State Public High School Athletic Association by their Committee on Athletics for Boys in Grades 7, 8, and 9 was approved and referred to the Council subcommittee. This was done after a thorough study by the committee and a hearing of the authors of the report. This report sets up a very modified program for these boys.

The next subcommittee meeting probably will be held in New York City in May when the School Physicians Association meets and the State Health Conference is held.

Survey of Rehabilitation Programs in State Departments

At the June meeting of the Committee on Public Health and Education a special subcommittee of one was appointed to study rehabilitation programs of the State of New York, as follows:

Irving L. Ershler, M.D.	Onondaga

His report is as follows:

It became apparent at the outset of this investigation that there is no comprehensive, integrated rehabilitation program for the handicapped citizens of this State. It was amazing to find that the State's rehabilitation activities are scattered among no less than 19 different agencies. The bulk of these are concentrated among four State departments—Health, Mental Hygiene, Education, and Social Welfare—but the Workmen's Compensation Board and the Departments of Correction and Labor are heavily involved also. The strange thing about this is that each of these large departments has its own separate medical staff to handle the medical aspects of rehabilitation. This duplication is not only inefficient and costly but obviously does not even take into consideration the scarcity of skilled medical personnel.

The medical part of rehabilitation (which seems to be the predominant one) ought to be assigned to the Health Department which should service all the other agencies working in this field. In a like manner each other department should be assigned the work that rightfully falls within its natural functions. The educational aspects of rehabilitation, including vocational education, should be the responsibility of the Department of Education; the social aspects should be the responsibility of the Department of Social Welfare; and the industrial and placement aspects belong to the Department of Labor. Each of these departments thereupon could and should service all others in the entire field.

Under existing conditions no such coordinated effort is even attempted. Instead, there is fragmentation and duplication of effort, and in some cases there seems to be outright competition.

In order to clarify the situation existing rehabilitation programs in our State government should be outlined together with their distribution among the major departments.

The Department of Health provides medical rehabilitation for disabled persons under twenty-one years of age, children with handicapping dental malocclusions, epileptic children, adults with paralytic poliomyelitis, narcotic addicts, and tuberculous patients in State hospitals. Various types of facilities are used. The New York State Rehabilitation Hospital at West Haverstraw offers an integrated service which includes diagnostic and restorative work, social welfare counseling, educational opportunities, physical and occupational therapy for persons of all ages. Outpatient diagnostic clinics for children with orthopedic defects and cerebral palsy are maintained at key sites in the State. Riverside Hospital on North Brother Island attempts to rehabilitate narcotic addicts under twenty-one years of age; one half of the cost of this comes from the State Health Department.

The Department of Health also administers financial aid to medical schools teaching rehabilitation skills and makes annual stipends to hearing centers. In addition, physical therapists in the Department and in State-aided local health departments assist at clinics, make home visits, and teach in homes and hospitals. Pioneering experiments in rehabilitation methods are financed or operated by the Department; these include the "meals on wheels" project for the homebound, demonstration projects in home care and hospital outpatient care for rehabilitation patients, the design and testing of new prosthetic devices at New York University's School of Engineering, and research at the State University Alcoholism Clinic in Brooklyn.

The State Department of Education supervises four units that serve special needs of the handicapped. Chief among these is the Division of Vocational Rehabilitation which serves adults who have employment handicaps. The Division provides for the diagnosis and treatment of those with physical or mental employment handicaps of a relatively stable nature, assists applicants in finding suitable vocational goals, provides the training and equipment needed to achieve such goals, gives financial assistance during training periods, and provides job placement services.

This Division also promotes programs for the vocational rehabilitation of the disabled and screens persons receiving total disability payments from social security funds to decide whether rehabilitation is feasible. It also provides internship training for rehabilitation counselors in cooperation with universities in the State.

The other three units of the Department of Education serving rehabilitation needs are the Bureau of Handicapped Children, which provides educational services for physically handicapped and mentally retarded children; educational services are provided also for the New York State School for the Blind at Batavia and the New York State School for the Deaf at White Plains.

The Department of Labor has four units with rehabilitation duties: the New York State Employment Service, which provides a job placement service for handicapped persons; the Bureau of On-The-Job Training, which offers training for eligible veterans; the Workmen's Compensation Board, which carries on a program of medical rehabilitation for injured persons covered by provisions of the Workmen's Compensation Law; and the Governor's "Committee on Employment of the Handicapped," which seeks to expand employment opportunities for the handicapped.

Nine other units of State government have these responsibilities in rehabilitation, as follows:

1. The Department of Social Welfare's Commission for the Blind provides rehabilitation services for the blind and also for totally and permanently disabled persons on public assistance;

2. The Division of Veterans' Affairs provides vocational counseling and aptitude testing for veterans;

3. The Department of Civil Service is responsible for preventing discrimination against handicapped persons in State government service;

4. The Department of Mental Hygiene provides rehabilitation services at State hospitals, schools, and other institutions for the mentally handicapped;

5. The Department of Correction provides rehabilitation services for prisoners;

6. The Community Mental Health Board helps local agencies to rehabilitate mentally disturbed persons who live in the community;

7. The Joint Hospital Survey and Construction Commission surveys the need for new rehabilitation facilities at hospitals and nursing homes, assists in planning them, and disburses funds for new construction under the Hill-Burton Federal aid formulas;

8. The Interdepartmental Health Resources Board coordinates some of the State's rehabilitation activities, assigns funds to special rehabilitation

clinics, and sparks new projects in rehabilitation care;

9. The Governor's Council on Rehabilitation advises both the Governor and Interdepartmental Health Resources Board on rehabilitation needs and resources in the State.

The Federal, State, and local funds budgeted in fiscal 1958–1959 for rehabilitation programs by the three State departments providing the bulk of such services are as follows: Department of Health, $10,400,000; Department of Education (Division of Vocational Rehabilitation), $4,448,000; Department of Social Welfare, $861,000. These figures by no means reflect the total funds spent by public agencies in New York State for rehabilitation purposes. Rehabilitation is an important aspect of the other agencies listed above, but in them the costs are not so easily separated out and accurately identified.

It is easy to see why Governor Rockefeller in his message on rehabilitation to the Legislature on March 16, 1959, said, "Certain aspects of New York's public rehabilitation programs have failed to match the State's record in other social fields."

The unit of State government charged with the responsibility of coordinating all rehabilitation activities is the Interdepartmental Health Resources Board. This Board is composed of department heads, each with equal rank and responsibility. One can understand easily why it is difficult, if not impossible, for the Board alone to change existing conditions. No department head can tell another of equal rank what to do—and expect speedy compliance. Each feels his own responsibility, and each acts in the manner he feels is best. In such a situation only a stalemate can result and does. A higher authority in the government must make decisions and assign responsibilities. This duty must fall directly on the Governor of the State. To help him arrive at such decisions Governor Rockefeller appointed the Council on Rehabilitation in the summer of 1959; the first meeting of the Council was held on October 29, 1959. The members of this Council are as follows:

GOVERNOR'S COUNCIL ON REHABILITATION

Leonard Mayo, Executive Director of Association for the Aid of Crippled Children, *Chairman*	New York City
Arthur Abramson, M.D., Professor of Physical Medicine and Rehabilitation, Einstein Medical College	New York City
Paul Bulger, Ph.D., President, Buffalo State College for Teachers, State University	Buffalo
Alvin Carpenter, M.D., Medical Director, Binghamton Rehabilitation Center and Sheltered Workshop	Binghamton
Ralph Collins, M.D., Psychiatrist, Eastman Kodak Company	Rochester
Theodore Klumpp, M.D., President, Sterling Winthrop Company	Port Washington
T. Jefferson Miley, Commerce and Industry Association of New York State	New York City
Walter A. Miller, President, Federation Employment and Guidance Service	New York City
Eugene J. Taylor, The *New York Times*	New York City

The Council has a distinguished membership and there is good representation from the medical profession; but the group is purely advisory and has no administrative or directive authority. It is to be hoped that it will make some recommendations to Governor Rockefeller similar to those that will appear below in this report.

In his message to the Legislature early in 1959, Governor Rockefeller mentioned several ways of improving medical services for the handicapped in New York State. He pointed out, "The State Department of Health has had considerable experience in the administration of medical rehabilitation services through its program for physically handicapped children and for adults paralyzed by poliomyelitis, and through its operation of the New York State Rehabilitation Hospital. This experience includes the establishment of standards for medical personnel, services and facilities, determination of medical fee schedules, evaluation of medical disabilities and the potentialities of corrective services, and relationships with medical societies to assure the cooperation of the medical profession."

Representing as it does the medical profession of New York State, this Society's primary interest in the rehabilitation problem must be concerned with its medical aspects. However, the scope of the Society's position in these matters must include a comprehensive view, and medicine must be visualized in its proper perspective as only one phase of the entire program. Nevertheless, it must take the position that the medical effort be unified, properly administered, and intelligently implemented. In a like manner, our position should indicate that each of the other phases of the entire problem should also be handled efficiently, cohesively, and by appropriate personnel. Supervising the entire effort and integrating it into a cooperative program the Interdepartmental Health Resources Board could then assume its proper function in this area.

It seems inescapable that all of the medical aspects of the rehabilitation program must be the responsibility of the Department of Health. This department already performs such services effectively for persons under twenty-one years of age. It seems only logical that the same services could be provided with equal efficiency for persons of any age, and probably no pilot experimental projects would be necessary to prove such a statement. The vast majority of work in rehabilitating the handicapped is done for persons who are unlikely to return to productive employment after optimum medical rehabilitation, but there is no comprehensive program for such persons on either a State or national level. At present there are pending in the Congress of the United States bills which intend to offer Federal aid to states for the rehabilitation of such people. In New York State only adults with paralytic poliomyelitis, those receiving public assistance, or those judged to have vocational possibilities are eligible for financial aid. If Federal monies were appropriated in this State for helping disabled persons with no employment potential, a considerable problem would be encountered in its proper administration.

In his message to the 1959 Legislature, Governor Rockefeller recognized this problem and suggested that it be handled either through the Health Department or by extending the public assistance program of the Department of Social Welfare. He recommended that the Commissioners of Health, Social Welfare, and Education confer with representatives of the medical profession on the best way to reach and serve these persons and to study the costs involved. Inasmuch as the rehabilitative effort in this direction is strictly medical there seems to be no valid reason for involving departments of State government whose primary functions are not concerned with physical health. There should be no question that the Health Department should provide medical services for disabled persons of any age, and phases of the program other than medical should be supplied by the departments appropriately oriented in each case.

The State Health Department is medically oriented and, by law, headed by a physician skilled and experienced in medical administration. Health Department physicians, both State and local, are accustomed to working closely with private physicians and with State and local medical societies. It is axiomatic that medical services must be provided by physicians. If professional medical services in the field of rehabilitation are to be reviewed and assayed this, too, should be done by physicians, especially those trained in medical administration and public health. Then, too, there is the extensive work required in prevention of disabilities in the first instance. This is a primary function of the Health Department, which should have the same responsibility in helping private physicians to correct or arrest progress of disabilities once they have occurred. It is impossible to understand how this can be done properly by social workers or guidance counselors.

Rehabilitation of the mentally ill is a special problem for psychiatrists and properly falls upon psychiatric staffs of the Department of Mental Hygiene. Psychiatry is one of the medical disciplines which occupies a special category in the scheme of things. It can only be handled by those physicians who are properly trained, skilled, and oriented. When mental handicaps complicate physical handicaps of persons undergoing rehabilitative effort, psychiatric service should be provided by them no matter which agency of government is primarily involved. The talents and services of these physicians should be readily available, when needed, in the rehabilitation work of any of the other departments. Conversely, mental patients who are primarily the responsibility of the Department of Mental Hygiene and who present physical handicaps should receive this rehabilitative assistance from appropriate personnel from the Health Department.

The medical problems of a disabled person frequently require the efforts of a group of medical experts. The coordination of this must be handled by a medical expert who is best aware of the medical problems of diagnosis, prognosis, and treatment. He is also able to estimate more accurately the social adjustments and vocational capacities and is able to involve appropriate personnel in these areas from the proper State departments.

It seems obvious that no agency of government can provide all rehabilitation services to all disabled people. But it seems only simple common sense to use efficiently the personnel and talents available. Medical problems should be handled by medical people, and the Health Department should be responsible for those aspects of rehabilitation which involve medicine.

The other aspects of rehabilitation should be assigned to those departments into whose natural purview they may fall. For example, the Department of Education should be responsible for the many educational activities required. This responsibility must include all training of professional personnel involved in all phases of administering and implementing the entire rehabilitation program. Also the Department of Education must be responsible for the general and special education of handicapped persons. Physically handicapped children must continue to receive their regular schooling; mentally retarded children must be trained to their full capacity; the blind must be taught to extend the use of their other senses; the deaf must be taught to read lips. Doubtless, no one will deny these patent truths. Among others, these are functions of the Department of Education. But the medical aspects of vocational rehabilitation belong in the Department of Health.

The Department of Social Welfare engages in activities that seem to have little or no relation to its logical and reasonably expected purpose. This department should be engaged in the social aspects of rehabilitation, both general and specific. Rehabilitation for community living must be considered at least as important as rehabilitation of a single individual. Also, there is the enormous effort required for the social rehabilitation of the physically or mentally handicapped persons in this State. They require food, clothing, and shelter. They require transportation and assistance with individual household problems. There is the matter of social readjustment during the rehabilitation period and after, and there is also the problem of family dislocations when the breadwinner or homemaker becomes incapacitated. Consider also the social readjustment of the rehabilitated alcoholic or narcotic addict. These are but a few of the many areas in which the Department of Social Welfare should expend its rehabilitation efforts. Yet we find this department responsible for estimating the *medical* disability of beneficiaries of Old Age and Survivors' Insurance. Through its Commission for the Blind it provides rehabilitation services for the blind. In addition, the Department of Social Welfare is responsible for rehabilitation services for totally and permanently disabled persons who are receiving public assistance.

Undoubtedly, there are laws, rules, and regulations that might impede full collaboration among the various State agencies that have rehabilitation programs. As stated above, it seems unreasonable to expect the Interdepartmental Health Resources Board to effect any radical change in the present multiplicity of programs. However, if Governor Rockefeller, with the advice of his Council on Rehabilitation, were to direct the board specifically to accomplish this, there seems little doubt that it could be done. If legal obstacles should cause undue delay or difficulty, legislation could be enacted to accomplish the same thing. This seems especially true if such a reasonable and progressive step toward efficient operation of such an enormous program were to have the support of the Governor and legislative leaders.

Recommendations.—In conclusion I wish to make the following recommendations:

1. Because there are an estimated 250,000 disabled persons in the State of New York, and at least 25,000 newly disabled are added each year, there is an urgent need to mobilize the resources of this State into a comprehensive, integrated, cooperative, State-wide plan for rehabilitation.

2. Each of the various segments of the rehabilitation program should be assigned to that department of the State government whose natural functions are engaged in the type of work that segment requires. For example, medical work in the Health Department, education and training in the Department of Education, social rehabilitation and adjustment in the Department of Social Welfare, employment guidance and placement in the Labor Department, etc.

3. The work of each department shall be cooperatively integrated and interwoven under the aegis of the Interdepartmental Health Resources Board. In this effort the board shall have the advice and counsel of the Council on Rehabilitation. The Council on Rehabilitation shall also act as liaison between the board and the Governor and shall advise the Governor on all appropriate matters.

4. There shall be no age limit on any group of persons receiving rehabilitation activity in any department. All persons requiring medical rehabilitation shall receive it from the Health Department personnel irrespective of age. Similarly, all persons requiring education rehabilitation shall receive it from the Education Department, social rehabilitation from the Department of Social Welfare, etc.

5. Persons requiring aid in more than one department shall receive it from trained personnel on a cooperative basis assigned from the appropriate departments.

6. In any efforts to enact Federal legislation for the appropriation of funds to the states for assistance to the disabled who have no employment potentials, the Medical Society of the State of New York should lend its weight to the proposition that the governor of each state shall decide how these funds shall be administered. If such legislation shall be enacted in the future (including this provision) this Society should urge the Governor to disburse these funds in a manner similar to that in which the rehabilitation program is conducted. That is, funds for medical rehabilitation to the Health Department, funds for educational rehabilitation to the Department of Education, funds for social rehabilitation and adjustment to the Department of Social Welfare, etc.

7. Because of the importance that rehabilitation has on the health and welfare of the people of this State as well as on the State's economy, the Medical Society of the State of New York should give serious consideration to these recommendations and should take whatever steps are necessary to implement them.

ACKNOWLEDGMENT: The Interdepartmental Health Resources Board has been most cooperative in making freely available to me all of its published reports on rehabilitation services in the State of New York. I wish to take this opportunity to express my gratitude for this cooperation.

LEGISLATION AND LEGAL MATTERS

Reports in this section are referred to the Reference Committee on Legislation and Legal Matters, consisting of the following:

Charles R. Mathews, M.D., Monroe, *Chairman*
Irwin Alper, M.D., Oneida
Herbert A. Laughlin, M.D., Chautauqua
Irving M. Pallin, M.D., Kings
E. Kenneth Horton, M.D., Nassau

Legal Counsel

To the House of Delegates, Gentlemen:

The year 1960 marks my thirty-second year of service to the Society and the seventeenth presentation to you of my report as counsel. The past year was an exceedingly busy one for your counsel and staff because of the continued expansion of the activities of the Society and the continued growth of medical litigation.

In July of 1959 the office of your counsel was moved to 355 Lexington Avenue, where it occupies half of the 18th floor. As I have pointed out in past reports, the expanding activities of the Society and the ever-increasing legal complexities of the practice of medicine have periodically necessitated an increase in the number of attorneys serving you. There finally came a time when our former facilities were inadequate for our needs and a move to larger quarters became mandatory. In addition we wished to find quarters more readily accessible to Society members from all parts of the State and to the Society's new headquarters. Our offices are just two blocks south of Grand Central, and we cordially invite you to visit us when in the vicinity.

It is axiomatic that in the proper practice of any of the professions, continuity of experience and service is of prime importance. It may interest you to know that the combined years of service of your counsel and associates to the Society is one hundred thirty-four years. I am particularly pleased to report to you that all of my associates have continued their faithful work in your behalf.

Mr. Robert J. Bell, the Society's attorney, has had over twenty-nine years of service to the Society. His reputation as a trial attorney is of the highest, and he is known and respected for his ability and devotion to the interests of the physicians in all parts of the State.

Mr. Harold Shapero, after an association of some twenty-four years with the late Lloyd Paul Stryker, joined the staff of your counsel in 1955. He is uniformally regarded by judges and opposing attorneys alike as a trial counsel of exceptional ability and skill. I am most appreciative of the fine work he has done with a number of the county society malpractice committees.

The work of all of the members of my staff has been of great assistance to me in serving the Society. Mr. John J. DeLuca has been associated with your counsel for eighteen years. In this period he has demonstrated unusual ability in the writing of appeal briefs and in the preparation of actions for trial. Mr. William C. Richardson joined my staff in 1951 after many years as claim manager of a leading casualty insurance company, and his experience in the negligence claims field is of particular assistance in evaluating the legal and medical problems presented by malpractice suits and claims brought against Society members. Mr. J. Richard Burns has been a member of my staff for eight years. He has spent a great deal of time and has done first-rate work in assisting the officers of the Society with problems of a legal nature and in answering medicolegal inquiries from county societies and their members.

Mr. Donald J. Fager, who joined my staff in 1955, has prepared and argued several important appeals and has tried a number of lawsuits. I have received several commendations from the members of an active county malpractice committee for the efficient way in which he conducts the agenda at its meetings.

For their skillful assistance rendered in appeals and trials I am very grateful to the younger members of my staff, Mr. John H. Tovey, Jr., who came to us in 1956, Messrs. John P. Brosnan, Frederick L. Flynn, and Barton L. Ingraham, who joined my staff in 1958.

Malpractice.—You are all aware that in recent years the tide of malpractice actions has continued to grow and grow with the crest not yet in sight. Every day I receive reports of malpractice suits in various parts of the country where they were unknown a few years ago. I have been advised that in some parts of the country it is almost impossible for a physician to obtain malpractice insurance except at astronomic rates. I have also learned that many doctors here in New York who chose to obtain their own malpractice insurance coverage outside of the Society's Group Plan have been advised by their insurance carriers that the rates for coverage would be raised and that their coverage would be restricted or would contain deductible features. In addition many such doctors have been notified with little warning that their insurance would not be renewed.

In view of the foregoing, I am particularly pleased to advise that for the second consecutive year the rates of the Society's Group Malpractice Insurance and Defense Plan have been reduced. The Group Plan has been in existence for over thirty-eight years and the accumulated experience and continuity of operation has been of inestimable help in stabilizing this most unpredictable field of insurance.

Each of the carriers of the Group Plan has been a leader in the field of casualty insurance whose financial strength has been unassailable. The present carrier, Employers Mutual of Wausau, has been in business for almost a half century, is licensed in all of the United States, and is particularly conversant with medicolegal problems since it is one of the nation's largest workmen's compensation carriers. The financial stability of the carrier for the Group Plan is of particular importance because of the unavoidable time lag present in all litigation between the time a suit is started and the time it is finally terminated.

None of us can predict the changes which the courts and the legislature may make in the law governing malpractice actions in the future. These changes may have an extremely adverse effect on the medical profession as a whole, and a carrier able to withstand the financial storms thereby engendered is of prime importance. As I advised in my last annual report, the highest court in the State of New York in the case of *Ferrara v. Galluchio* in one sweeping decision permitted a whole new theory of liability to be imposed on the medical practitioner, that a patient could collect damages for purely mental suffering arising out of medical treatment. It is still too early to assess the effect that this decision and related theory of liability will have on the problem of malpractice actions, but I cannot be too sanguine about its future effects. For example, the decision of the Court of Appeals in the case of *Bing v. Thunig and St. John's Episcopal Hospital,* reported by me to you in my report of 1957, which abolished the distinctions between "professional" neglect and "administrative" negligence and held the hospital liable for all the negligent acts of its employes, has created tremendous problems for all hospitals in the State. I am advised that many hospitals have found extreme difficulty in obtaining adequate insurance coverage and then only at prohibitive rates. In addition, we have been confronted with a rash of cross-claims by hospitals against doctors on their staffs. In many instances the hospitals have brought doctors into lawsuits where the patient-plaintiff did not do so.

I am sure that you are all aware of the grief and uncertainty which many doctors in all parts of the country, including New York, are now experiencing because they carried their malpractice insurance with a British company which has gone into voluntary liquidation. I have personal knowledge of one physician who was advised on the eve of the trial of his malpractice suit that 80 per cent of his insurance coverage was tied up in the liquidation proceedings. I do not have to say more as to his state of mind when he learned this at a time when calmness and objective reasoning was essential. In my opinion the Society and its members can take a great deal of pride and comfort from the fact that its Group Plan carrier is one of unimpeachable financial stability and experience in the medical-legal field.

Prophylaxis is defined as the prevention of disease—preventive treatment. If I may borrow this term and apply it to the problem of malpractice actions, I would like to call to your attention a recent decision of the highest court in the State of Maine which in my opinion succinctly presents a prophylaxis for many unnecessary malpractice actions. In this particular instance the physician agreed to deliver a patient when she was due and according to the patient agreed to give her a whiff of ether to relieve her delivery pains. The doctor at the time of delivery needed a rest and had decided to go fishing. He arranged for a well-qualified colleague to substitute for him but neglected to advise the patient of the arrangement. The delivery was uneventful, but the substitute physician did not administer the promised anesthesia. The patient then sued the original doctor for breach of contract and the appeals court reversed a decision for the patient holding it had "earmarks of an ill-considered finding." The words of wisdom offered by the

Court, which in my opinion are elementary in preventing a suit as this, were:

> "Presumably a physician could protect himself when he is first engaged, or during the progress of the treatment, particularly in confinement cases, by giving his patient the name of a proposed substitute, in the event it becomes necessary for him to absent himself temporarily. Assent on the part of the patient would cover the situation and afford the attending physician the necessary protection." (*Miller v. Dore*, 148 A. 2d 692.)

Litigation.—In the year 1959 a total of 257 new lawsuits were commenced against Society members insured with the Group Plan and are being defended by your counsel. Many of these lawsuits involved more than one member of the Society and therefore the total number of Society members who are parties to these actions is somewhat higher.

During 1959 there were 153 active claims made against Group Plan members and 192 events reported involving one or more members of the Society. We have found that the majority of these claims and many of the events reported eventually blossom into full blown lawsuits. In view of this, each must be carefully investigated and the medical and legal problems carefully studied and evaluated.

In 1959 in addition to the foregoing there were on the average three lawsuits or claims per month instituted against uninsured members of the Society which were investigated and defended by your counsel.

I have received an increasing number of medical-legal inquiries from Society members and county societies in various parts of the State. In this day of constantly growing litigation involving the medical profession, I am particularly pleased that the members of the Society turn to me and my associates for guidance and advice in seeking to avoid the pitfalls which beset the path of medicine in our society. Among the inquiries was a request for information on the ability of a minor to give consent for an operative procedure and the effect marriage has on the ability to give consent. Another problem was that of a widow of a deceased member who wished advice on the retention of her husband's records. Still another member wanted counsel on the scope of the physician-patient confidential communication privilege.

In 1959 there were a wide variety of decisions intimately affecting the practice of medicine. Space will permit mention of only one of the more significant of these, however. The Appellate Division, Third Department in the case of *Morwin v. Albany Hospital*, 7 A.D. 2d 582, reiterated the long-standing rule of evidence applicable to malpractice actions and held that a layman is not in any position to determine whether a delicate operation has been performed properly when there is an absence of expert testimony on the subject. There have been numerous attempts to modify or abandon this rule because of the change in the liability of hospitals for the acts of their employes engendered by the now famous case of *Bing. v. Thunig and St. John's Episcopal Hospital* mentioned above. Fortunately the courts thus far have stood fast in resisting these attempts.

Council Work.—I or one or more of my associates have attended each meeting of the Council and Board of Trustees. Each meeting of the Malpractice Insurance and Defense Board has been attended by your counsel or one of my associates. Each such meeting of the Board requires the review of many files relating to members applying for a change in coverage or making application for such coverage. The members of the Board spend a great deal of time considering the applications for coverage, changes in coverage, or recommendations that further coverage be denied. They wish to have all the facts applicable to each problem before them for their consideration, and so I or my associates must be prepared to advise the Board as to the past record and history of claims of each applicant whenever possible. This frequently involves obtaining closed files from dead storage and the study of records and reports long since forgotten.

In addition I or my associates have attended each of the meetings of the county society malpractice committees. The preparation for these meetings entails a great deal of time and effort since each matter is discussed in detail with great emphasis placed on the medical problems involved. Much study of the medical and legal problems is required and the continued success of these committees is one of my ambitions.

Your counsel or his associates have attended meetings of the various committees of the Society in various parts of the State and have counselled them on the legal problems confronting them. We have continued to review all proposed amendments and changes of the constitutions and bylaws of the component county societies and district branches. We have reviewed all contracts, including the Medicare contract, presented to the Society and have recommended modifications and changes where necessary.

At the direction of the Council, we prepared a brief as *amicus curiae* at the request of the New York State Pharmaceutical Association in a declaratory judgment action brought by an upstate grocery chain to declare certain portions of the State Pharmacy Law unconstitutional. At the request of the Council we made an exhaustive study of the organization of philanthropic foundations in connection with the proposed establishment of a medical science and education foundation in New York State. We have made detailed recommendations to the Council concerning this project which are now under study.

Addresses.—In 1959 I spoke before the following groups and organizations: A malpractice panel discussion at the annual meeting of the New York State Bar Association at New York City; a district meeting of the New York State Society of Anesthesiologists at Ithaca; American Proctologic Society at Atlantic City, New Jersey; the Mount Vernon Medical Society; malpractice panel discussion at the Bronx County Medical Society; the Rensselaer County Medical Society; the Suffolk County Bar Association; the staff of the North Shore Hospital at Manhasset. I and my associate, Mr. Fager, gave a series of lectures on medical-legal problems to the students at New York Medical College, Flower and Fifth Avenue Hospitals. In addition I addressed a large group of New York physicians at a meeting on current malpractice litigation sponsored by the Viking Wholesale Drug Company at the Waldorf-Astoria in New York City.

My associate, Mr. Bell, delivered a lengthy paper on the legal liability of physicians at the annual meeting of the Federation of Insurance Counsel in Miami Beach, Florida. He also presented a paper on professional liability at the Society's Section on Legal Medicine at the annual meeting in Buffalo, New York. He participated in a medical-legal panel discussion at the Kings County Medical Society. Mr. Shapero addressed the Medical Society of the State of Delaware. He also took part in a symposium on medical liability problems sponsored by the New York County Lawyers Association. Mr. Shapero lectured on the defense of medical liability cases at a meeting in New York City of the National Association of Claimants' Compensation Attorneys. Another of my staff, Mr. Richardson, actively participated in each meeting of the Medical Jurisprudence Committee of the Association of the Bar of the City of New York. The recommendations of this committee are given great weight by the Legislature and it is vital that the views of organized medicine be considered by it. Mr. Fager, my associate, in addition to lecturing at New York Medical College as above mentioned, also delivered a series of speeches to medical assistants at the Onondaga County Medical Society and the Schenectady County Medical Society. He also spoke before the Richmond County Medical Society and a meeting of anesthesiologists at Columbia-Presbyterian Medical Center in New York City.

Comment.—I wish to express my sincere thanks to Henry I. Fineberg, M.D., president; Norman S. Moore, M.D., president-elect; William L. Wheeler, Jr., M.D., secretary; Maurice J. Dattelbaum, M.D., treasurer; Herbert H. Bauckus, M.D., chairman of the Board of Trustees; and Herbert T. Wagner, M.D., executive director, for the help and cooperation they have so unstintingly given me during the past year.

Mr. James M. Arnold, indemnity representative of the Society, and his assistant, Mr. Frank W. Appleton, have been of inestimable assistance to me in my efforts to defend the interests of the Society and its members. They have provided most efficient management of the Group Plan and have been ever alert to the changing nature of malpractice claims and have kept the Group Plan flexible and forward looking in all its activities.

Employers Mutual of Wausau, the insurance carrier for the Group Plan, through its State-wide system of claims offices has continued to provide the Society's members with most efficient investigation and claim services. Mr. Dale Snure, resident vice-president, and his claim assistants, Messrs. Marvin H. Marx, W. F. Hanner, Michael A. O'Malley, Gerald M. Wilson, and Joseph Fallon in New York City and Mr. E. C. Lester in Buffalo, Mr. Charles Bollman in Rochester, Mr. William Duggan in Syracuse, and Mr. Edward Halligan in Albany have continued to give me their complete cooperation and understanding in the task of defending the Society's members. I have continued to receive the aid and cooperation of Mr. Horace Crowell, vice-president, and Mr. Anthony J. Falke, Jr., secretary, of the Yorkshire Insurance Company in connection with the defense of the remaining lawsuits which grew out of the period when Yorkshire was the Group Plan carrier.

In conclusion I should like to submit for your consideration the statement of an eminent British jurist who in my opinion places the whole question of professional liability in proper focus and who most succinctly states the premise which I have advocated on your behalf for the past thirty-two years:

> "We should be doing a disservice to the community if we impose liability on hospitals and doctors for everything that happens to go wrong. Doctors would be led to think more of their own safety than of the good of their patients. Initiative would be stifled and confidence shaken. A proper sense of proportion requires us to have regard for the conditions in which hospitals and doctors work. We must insist on due care for the patient, but we must not condemn as negligence that which is only misadventure."

Respectfully submitted,
William F. Martin, *Legal Counsel*

Legislation

To the House of Delegates, Gentlemen:

The Committee on Legislation is composed of the following members:

James M. Blake, M.D., *Chairman*	Schenectady
George J. Lawrence, Jr., M.D., *Vice-chairman*	Queens
Jurgens H. Bauer, M.D	Onondaga
John C. Brady, M.D	Erie
Floyd C. Bratt, M.D	Monroe
E. Yale Clarke, M.D	Warren
E. Craig Coats, M.D	New York
Elton R. Dickson, M.D	Broome
Leonard L. Heimoff, M.D	Bronx
Frederic W. Holcomb, M.D	Ulster
Ralph Isabella, M.D	Schenectady
Henry W. Kaessler, M.D	Westchester
Aaron Kottler, M.D	Kings
Jacob L. Lochner, Jr., M.D	Albany
Herman B. Snow, M.D	St. Lawrence
Roman R. Violyn, M.D	Montgomery
Thomas M. Watkins, M.D	St. Lawrence
Joseph G. Zimring, M.D	Nassau
Granville W. Larimore, M.D., *Adviser*	Albany
Stiles D. Ezell, M.D., *Adviser*	Albany

This report of the Council Committee on Legislation, due to publication schedule, is being presented during the session of the State Legislature, as has been the custom in previous years.

The majority of the bills pertaining to the practice of medicine and public health as far as can be determined have been introduced into the Legislature; therefore at this time we do have a reasonable amount of information pertaining to the legislative activities which affect the practice of medicine and are being reviewed in the current session of the State Legislature.

However, there has not been any action taken on any of the items of legislation which are being supported or opposed by the State Medical Society. Therefore it will be necessary to present as a supplemental report the action with reference to items of medical legislation by the Legislature and by the Governor.

In presenting this report of the Committee on Legislation, your attention is called to certain changes which were effected in the basic operation of the legislative activities of the State Society during the past year. The office of the Legislative Bureau in Albany was discontinued early in the year, based on the recommendation of the executive director and on approval of the Council. This change was made as an economy measure, based also on the belief that the activities of the State Society could be served sufficiently satisfactorily without a specific office in Albany, inasmuch as the office of our legal counsel is located in that city.

Harold Smith, M.D., who has been in charge of this office, continues his work as legislative analyst for the Medical Society, the work now being done from his office in Syracuse. Dr. Smith continues to analyze the various items of legislation introduced from day to day, subsequently presenting his comments and analysis of such to the chairman of the Committee on Legislation, to our legislative counsel, Mr. Foy of the firm of DeGraff, Foy, Conway and Holt-Harris, and to our executive director. Close contact has been maintained between the involved individuals in determining the action which should be taken pertaining to certain items of medical legislation.

This change in program activity seems to have worked quite satisfactorily during this, its first year of operation, although there are certain minor changes which may be necessary in the future. It would appear, however, that this type of legislative analysis should serve the needs of the Society satisfactorily.

The first meeting of the entire Committee on Legislation was held in the fall of 1959, at which time the basic policies of the Society concerning medical legislation and the various resolutions which were referred to the committee by the House of Delegates were reviewed and recommended action approved.

The second meeting of the committee was held early in January, 1960, at the time of the opening of the Legislature with review of the other various items of legislation which had been referred to the committee. The actions and recommendations of the committee as outlined in these two meetings have been followed in our activities to date.

Subsequent actions pertaining to legislative activities during the remaining portion of the session will of necessity depend upon the subsequent course of the interested items of legislation.

Resolutions.—The following is a summation of the resolutions which were presented to the Committee on Legislation by the House of Delegates and from other sources. The action and recommendations of the committee with reference to these resolutions was based upon the advice and counsel of our legislative analyst and our legislative counsel.

Resolution 59-13, Fitting of Contact Lenses, introduced by Medical Society of the County of Erie:

"*Resolved*, that the Medical Society of the State

> of New York request the introduction of legislation in the 1960 New York State Legislature whereby Section 7101 of Article 143 of the Education Law would be amended to provide that a licensed optometrist may fit contact lenses only under the personal supervision of a physician."

This resolution was discussed in considerable detail by the committee, with particular reference to the difference between the activities of optometrists in the fitting of contact lenses and that of the oculist or ophthalmic dispenser.

The Committee on Legislation approved this legislation in principle and recommended that legislation incorporating the intent of this resolution be prepared for introduction into the State Legislature this year. It was further recommended by the committee that this legislation be prepared and introduced only after contact with and approval by the New York State Society of Ophthalmologists. This latter recommendation was presented with the intent of establishing a better liaison between the Medical Society of the State of New York and the specialty groups within our Society.

Resolution 59-20, Amendment to the General Municipal Law, Section 50-d, introduced by Medical Society of the County of Oneida:

> "*Resolved,* that this House of Delegates mandate the Legislation Committee to request the introduction of legislation of similar import under the proper laws affecting charitable, educational, and eleemosynary institutions to the effect that physicians who work for the benefit of the public under their auspices and without compensation shall not be liable for damages for personal injuries due to alleged malpractice, but shall be considered as the employes of such charitable, etc., institutions which shall primarily assume such liability."

Resolution 50-21, Amendment to Lien Law, introduced by Medical Society of the County of Oneida:

> "*Resolved,* that the House of Delegates of the Medical Society of the State of New York instruct the appropriate committee to seek legislation that would provide a lien in favor of physicians similar to the attorney's lien, making it mandatory for an attorney to disburse from any award, verdict, or settlement in favor of his client the just fees of the physicians who treated the plaintiff prior to his final settlement with his client; and be it further
>
> "*Resolved,* that the committee of the Medical Society of the State of New York, acting in liaison with the New York State Bar Association, contact their lawyer counterparts and make every effort to obtain the Bar Association's endorsement of this proposed legislation."

Resolution 59-22, Physician's Lien Under Workmen's Compensation Law, introduced by Medical Society of the County of Oneida:

> "*Resolved,* that this House of Delegates instruct the Council to seek a legal remedy that would provide for a lien in favor of physicians similar to the attorney's lien, making mandatory the disbursement from any award, verdict, or settlement in favor of his client through a 'third party' action, of such amounts as will permit the physician the usual fees for the services rendered the patient if said patient were not a claimant under the Workmen's Compensation Law; and be it further
>
> "*Resolved,* that the Medical Society of the State of New York make every effort to obtain the New York State Bar Association's endorsement of this proposed legal remedy."

Resolution 59-43, Lien Law, introduced by Medical Society of the County of New York:

> "*Resolved,* that the Committee on Legislation of the Medical Society of the State of New York cause to be introduced before the New York State Legislature a lien law for doctors of medicine similar to that currently in effect for hospitals; and be it further
>
> "*Resolved,* that the Committee on Legislation of the Medical Society of the State of New York bend every effort to secure the enactment of such a bill at the next legislative session."

Resolution 59-57, Administration of Physiotherapy by Written Prescription, introduced by Henry Fleck, M.D., Section on Physical Medicine:

> "*Resolved,* that the Medical Society of the State of New York through its appropriate committee take whatever steps necessary so that the present law covering the practice of physical therapy be amended to read as follows:
>
> "The administration of physiotherapy by a duly licensed and registered physiotherapist upon the written prescription of a duly licensed and registered physician."

Amendment to Workmen's Compensation Law, Section 13-a, subdivision 5.—The Council approved the sponsoring of legislation for amendment to this section of the Workmen's Compensation Law, which would make valid special services, increasing the cost of such from $25 to $40, and from $10 to $15.

Establishment of a Commission to Study the Healing Arts.—The Committee on Legislation recommended to the Council, which subsequently approved, that legislation be introduced calling for the establishment of a temporary commission for the study of the healing arts. The past year has seen a continuing and increasing activity on the part of all of those groups and individuals participating in paramedical activities. The activities of these groups in many instances have seemed to extend beyond the intent of such practice and more and more to encompass the actual practice of medicine.

Several years ago consideration was given to the advisability of recommending such a commission, but this was not approved at that time. The question was presented again this year, being recommended by the New York Academy of Medicine and the State Charities Aid Association. The Medical Society of the State of New York was approached in this respect and after much deliberation, conferences, and study, it was the decision of the Committee on Legislation, which was subsequently approved by the Council, that we should cosponsor and support legislation of this type.

It was recognized that the Medical Practice Act itself had not been reviewed since 1891, and the continual request for licensure by many groups participating in paramedical activities and by the actual illegal practice of medicine on the part of some seemed to make it desirable that the total activities be reviewed in detail, with appropriate recommendations made accordingly.

Revocation of License Because of Mental Illness.—Attorney General Louis J. Lefkowitz last year recommended legislation which would have amended the Education Law in relation to the suspension of license or the right to practice certain professions where the practitioner had been a patient in a State or private institution for the care and treatment of mental illness.

This legislation was opposed by the Medical Society of the State of New York, and because of our opposition and that of others it was withdrawn during the session of the Legislature last year. During the summer months, however, Attorney General Lefkowitz requested advice and recommendation pertaining to this subject, and meetings subsequently were held with him and other representatives of the Department of Law and of the Medical Society of the State of New York. Mr. Lefkowitz again expressed the opinion of the Department of Law and of the Department of Education that it was their opinion that some type of control in this respect was necessary; therefore, they would like to review and work out details in cooperation with the medical profession.

Representative members of the departments and organizations involved have met on several occasions during the summer and fall months, reviewing the many objectionable items which were present in the original bill and suggesting changes which might be acceptable to the various licensed groups and at the same time be sufficiently practical to be workable.

Some members of our Society who are active in mental health work still question not only the desirability for legislation of this type, but the need for such, believing that such a law may not be enforceable and that it might do more harm than good to the over-all mental health activities in the State. Nevertheless, this legislation as amended has been submitted by the Department of Law.

In addition to the above items of legislation which encompass the major phase of our legislative activities for this session, there are a number of items which have been introduced into the Legislature and many more which undoubtedly will be presented before the close of the session, about which the Committee on Legislation will have to take definitive action. It will be necessary for us either to support or oppose many of these bills. The items of significance in this group will be subsequently reported.

Recommendations.—The Council Committee on Legislation has been handicapped on several occasions during the past year because of inadequate information and incomplete data pertaining to resolutions and requests calling for legislative action. It is therefore being recommended to the Council, and is presented as a part of this report, that procedure necessary be established whereby a member of the Medical Society of the State of New York, acting as an individual, or a component county society, or a district branch, or a section of the Medical Society of the State of New York, proposes a resolution either through the House of Delegates or directly, calling for legislative action, that such proposals be accompanied by a supporting memorandum. This memorandum should give background information pertaining to the resolution, pointing out how medical activities operate at the time with reference to such, what the indications for change are, why they are necessary, and how the practice of medicine and the public health would be affected by the enactment of such legislation.

This supporting information would be extremely helpful to the Committee on Legislation and undoubtedly would prevent misunderstanding and would definitely improve our over-all legislative activities.

The Committee on Legislation in its report to the House of Delegates last year re-emphasized its opinion that it was very desirable that the activities and interest in medical legislation extend beyond the committee itself. It was pointed out that the component county societies, the specialty societies, and, in finality, the actual individual members throughout the State should take a more active interest in and participate in medical legislative activities in their respective areas.

The committee pointed out that in its opinion an effort should be made toward improving our over-all relationship with the members of the Legislature.

It was suggested at that time that the legislation chairmen, the public relations chairmen, and the individual members of the county societies make every attempt to contact and to know their various legislators in their respective areas. Getting to know them personally and taking advantage of the opportunity to discuss with them in detail not only the basic philosophy pertaining to medical legislation of our Society but also presenting to them our reasons for interest and our concern over specific items of legislation would do more toward furthering causes of good medical legislation than any other activity in which we could participate.

It is of interest and indeed a pleasure to report that throughout the State during the past year there has been an added interest in this respect. Many more of our county societies have arranged sessions with their legislators, reviewing with them their interest in medical legislation. Individual physicians also have been more active in this respect, and numerous complimentary comments have been returned to us by members of the Legislature concerning these activities.

This would seem to confirm the desirability of such and also should encourage the continuation of these activities, as well as stimulate the extension of such by those individuals and societies who have not carried out this type of activity during the current year.

Therefore it is again strongly urged that each county society make a meeting with their legislators "a must" in their fall program of activity. It is also suggested that they further encourage individual discussion by the various members of their society with the respective representatives in their area.

Responsibility of Medicine as a Part of Medical School Program.—During this year, several inquiries have been received from medical students requesting information about the State Society's position relative to certain legislative matters. These requests would seem to indicate, in some instances at least, that medical students are becoming more interested in some of the activities pertaining to the practice of medicine encountered following graduation.

The Committee on Legislation, considering this request, felt it might be desirable to contact the deans of the medical schools throughout the State and try to arrange for sessions with students where representatives of the Medical Society of the State of New York could review not only matters of legislation but could discuss more in detail some of the activities of medicine and the responsibilities which they, the students, should assume upon their graduation from medical school.

Therefore the Committee on Legislation recommended to the Council, and here to the House of Delegates, that consideration be given to this question and that the subject be referred to the appropriate committee for study as to whether or not a program of this type would be desirable, and, if so, to work out the necessary details for its establishment.

Miscellaneous.—The Committee on Autopsy and the Dead Human Body and the Subcommittee on Licensure of Clinical Laboratories have remained activated during the year.

The many details concerning autopsies and the dead human body are well recognized by everyone, and the patience of the committee in trying to arrive at an equitable solution for recommendation is most appreciated. There are many factors which lend influence to the subject, and it is therefore a very tedious job and will require a considerable period of time for a just solution.

The Subcommittee on Clinical Laboratories has again this year been faced with the problem of various groups desiring licensure for the practice of clinical pathology without adequate medical supervision. Continued study of this problem is indicated and it is hoped that specific conclusions can subsequently be arrived at which will be satisfactory in regulating this phase of the practice of medicine.

By becoming interested in medical legislation which affects us specifically, we also become interested in all types of legislation which affect us either directly or indirectly. By becoming interested in all types of legislation, we become a more integral part of our respective communities and will, as we should, take a more active interest in total community affairs.

Respectfully submitted,
James M. Blake, M.D., *Chairman*

Federal Legislation

To the House of Delegates, Gentlemen:

The Subcommittee on Federal Legislation consists of the following:

George J. Lawrence, Jr., II M.D., *Chairman*	Queens
Harold J. Dunlap, M.D.	Westchester
Walter G. Hayward, M.D.	Chautauqua
Solomon Schussheim, M.D.	Kings

During the past year, the subcommittee kept a watchful eye on all Federal legislation affecting the medical profession and the welfare of the people. As a member of the A.M.A.'s committee of key men, your chairman, as key man for New York State, was in a good position to obtain all the latest information concerning Federal legislation. Special attention was given to two very important bills, the Forand Bill (HR 4700) and the Simpson-Keogh Bill (HR 10).

Because the medical profession feels very strongly that the Forand Bill is more dangerous than was the Wagner-Murray-Dingle Bill, an extensive campaign to prevent its enaction was conducted in two parts, the first while Congress was in recess and the second immediately after Congress adjourned in January, 1960. The first phase of the campaign was launched in November, 1959, when a special letter went to all county medical society presidents, secretaries, and legislation and public relations chairmen. The primary goal was to inform the profession and the public about the evils of the proposed law and through both groups obtain the full-fledged support of as many congressmen as possible.

Each county medical society was strongly urged to conduct a special membership campaign meeting to accomplish the following objectives:

(1) Acquaint members with the status of the bill and urge whole-hearted participation in the campaign (an 18-minute recording and film strip were made available for this purpose);

(2) Assign the medical staff of each hospital and county the responsibility of obtaining the hospital support in opposing the bill;

(3) Discuss plans of campaign to be carried out by members in contacting their congressmen and appoint chairmen to direct drive;

(4) Enlist efforts of the Woman's Auxiliary and approve projects to be undertaken.

To spark the drive and to assist in the implementation of local programs wherever necessary, the field representatives of the State Society's Department of Communications visited the county medical societies and provided key county medical society officials with a special promotional kit containing a detailed plan of action. They urged these men to contact their local congressmen and to report back on a special report form to Society headquarters as soon as possible. At the time this report is being written, 19 reports have been received. All reports received to date, including oral reports, indicated that approximately 28 congressmen out of 41, one seat vacant, had been contacted. In some instances, more than one individual contacted his congressman.

The second phase, immediately after Congress adjourned, follows the A.M.A. special meeting in Chicago to discuss 1960 activities. The plan of action included five goals, the first being to win endorsement of medicine's opposition through resolutions, these to be obtained from the State Medical Society, county medical societies, State Woman's Auxiliary, and county woman's auxiliaries. As this report is being written, the State Society's Council had adopted a resolution and plans are under way to implement the others. Another phase was to obtain resolutions from organizations such as State Chamber of Commerce, local chambers of commerce, Rotary Clubs, and others.

Second objective was to follow up initial field trips to ascertain congressmen contacts and to promote the resolution drive. Third was to stimulate physicians and their wives to write letters and to request friends to do likewise; fourth, alerting of radio and television stations to the materials available to present medicine's position in opposition to the Forand Bill or any similar type legislation. Finally, the last step was publicity for the entire program. This was done through featured stories in the *Newsletter*, and plans call for similar publicity in the NEW YORK STATE JOURNAL OF MEDICINE.

At report time the location of the Forand Bill was before the House Ways and Means Committee. Predictions were that it would not come out of committee in its present form. Rumors, however, were to the effect that a watered-down type of Forand Bill was highly possible as an amendment to the Social Security Law. A rough estimate of the standing of New York State congressmen was that 21 were against the Forand Bill, 17 for it, and four in doubt or positions not known, making a total of 42. Another seat is vacant.

The general impression was that many of the congressmen against the bill might vote for a compromise bill. Many expressed the position that they were against the Forand Bill per se but that something must be done.

In regard to the Simpson-Keogh Bill (HR 10), the outlook is bright, according to a reliable source of information, which states that the bill's chances of passing are brighter now than at any time since the House passed the bill in 1959. The report goes on to say that backers are confident that it will be taken up by the Senate Finance Committee within the next thirty days, which would be about March

15, and that backers of the bill have enough votes to get it through the committee and on to the floor of the Senate. Since passage of HR 10 over Treasury opposition, which is anticipated, is improbable, all signs point to a modification of the bill to curtail revenue losses without sacrificing the principle of tax-deferred savings.

Respectfully submitted,

George J. Lawrence, Jr., M.D., *Chairman*

Autopsy and the Dead Human Body

To the House of Delegates, Gentlemen:

The Special Committee on Autopsy and the Dead Human Body consists of the following:

Alfred Angrist, M.D., *Chairman*	Bronx
Herbert Derman, M.D.	Kingston
Angelo M. Sala, M.D.	New York
Jacob Taub, M.D.	Bronx
John V. Connorton, Ph.D., *Adviser*	New York

The committee has been guided by its previous deliberations and the ineffective attempts at changing the Autopsy Law. The membership of the committee seemed to agree that no attempt be made this year to change the Autopsy Law.

The committee membership was circularized on the proposition of supporting a bill in the Legislature which would permit the legal donation of a body or part thereof for autopsy, dissection, transplantation, or other scientific purposes by will or written instrument by the decedent (equivalent to Public Act 82 of Michigan, 1959). A bill of this nature was vetoed by the Governor at the last session.

Since then a revised bill of this very nature was introduced independently by Representative Savarese (Number 2860, 1959). It is our feeling that this bill should obtain the endorsement of the State Society in its original form, which provided for donation of the "whole body or any part thereof." I have been informed that Representative Savarese has recently revised the bill downward to apply to eyes only to meet the wishes of the eye banks specifically. Representative Savarese found it necessary to do this because of the confusion existing as to need for clarification of the present laws covering legal donation and the expressed differences of opinion as to support of the original proposal. In particular the New York State Society for Medical Research, Inc., did not think this necessary or advisable. We do trust that they will not oppose the new bill. Although I have not surveyed the committee on this, it would be my own opinion that the Medical Society of the State of New York should not oppose it in its present form either.

It is a pity that we cannot get the concurrence on the support of the original bill to apply to the "whole body or any part thereof." This is another instance demonstrating the need for an over-all study and interpretation of the existing law, to detail what should not be revised, so that full agreement by all interested agencies can be obtained for full support of the proper legislation. Again, we are divided with a lack of unified action. In my opinion, this will continue until a real study of the laws of the dead human body is undertaken.

The president and executive director of our Society have had a luncheon and then a dinner meeting on the problem of proceeding with the commission to study the laws of the dead human body. The first meeting was held with Willard C. Rappleye, M.D., of the Macy Foundation, and the second meeting was arranged at his suggestion with John V. Connorton, Ph.D., Harry P. Smith, M.D., Henry I. Fineberg, M.D., Herbert T. Wagner, M.D., Mr. Jonathan Hayt, Dr. Rappleyet and Hayden C. Nicholson, M.D. The consensus was that a prior survey be conducted to establish that no harm would come from such an over-all study.

The president of our Society has under advisement the creation of such a group for a preliminary evaluation of the potential benefit and harm of such a study by a commission and to determine the composition of such a commission, if the need and advantage of such an activity is determined. It was urged that such an undertaking be done in collaboration with the New York Academy of Medicine and the New York Bar Association. Our president will probably present the results of these deliberations independently with his final recommendation.

Respectfully submitted,

Alfred Angrist, M.D., *Chairman*

To Combat Cults

To the House of Delegates, Gentlemen:

The Council Committee to Combat Cults is composed of the following:

James M. Blake, M.D., *Chairman*	Schenectady
Edward C. Hughes, M.D.	Syracuse
John C. McClintock, M.D.	Albany
Harold B. Smith, M.D., *Adviser*	Syracuse
Frederick W. Miebach, *Adviser*	New York

The primary activity of the Committee to Combat Cults continues to be the question of the practice of chiropractic. The chiropractors again this year have introduced legislation in the State Legislature requesting licensure of their activities as a part of the healing arts. The Medical Society of the State of New York cannot condone chiropractic as a scientifically sound basis for the practice of the healing arts and therefore must oppose the legal recognition of this cultism.

In preparing public information material pertaining to the practice of the cultism of chiropractic, it was somewhat disturbing to learn that some physicians at least in the State of New York are not familiar with the fact that chiropractic is not a legally recognized profession in this State and that such practice is entirely illegal and considered to be a true cultism.

This report is being submitted during the session of the Legislature and although a bill has been introduced calling for licensure, not too much activity has occurred up to the present time. The bill is not a very restrictive one, failing this year even to meet the inadequate standards which were established for a chiropractic licensing bill by the State Board of Regents last year. It is doubtful that this bill, as nonrestrictive as it is, could possibly be considered acceptable, and if past actions are a guide the chiropractors undoubtedly will amend this bill or introduce a more restrictive one before the current session of the Legislature is completed.

In addition to the licensure bill, the chiropractors also have introduced legislation which would exempt them from jury duty, classifying their activities with the profession of medicine and other legal practitioners of the healing arts.

Another attempt at recognition is a bill similar to that introduced and passed during the final hours of the legislative session last year but vetoed by the Governor, requiring the Department of Health to issue licenses to chiropractors for the operation of x-ray equipment.

The Medical Society of the State of New York has not in the past sanctioned the practice of chiropractic as having a scientific basis and does not recognize it as such at the present time.

The Committee on Legislation has this year introduced into the Legislature a bill calling for a commission to study in total the healing arts. Although chiropractic is not considered a scientific branch of the healing arts, if this commission is established the question of activity of chiropractic in the State of New York undoubtedly will be considered, and it will be essential for us to be alert to the potentials of such, maintaining adequate and necessary controls to the scientific practice of medicine.

The Committee to Combat Cults is an independent committee, although acting in close liaison with the Committee on Legislation. It would seem that it might be desirable for the Committee to Combat Cults to be a subcommittee of the Committee on Legislation, with members of the Cult Committee also being members of the Legislation Committee. It is therefore suggested that consideration be given to the reclassification of this committee as a subcommittee, with its membership being members of the Committee on Legislation.

Respectfully submitted,
James A. Blake, M.D., *Chairman*

Judicial Council

To the House of Delegates, Gentlemen:

The members of the Judicial Council are:

Edward T. Wentworth, M.D., *Chairman*	Monroe
James Greenough, M.D.	Otsego
John F. Kelley, M.D.	Oneida
Norton S. Brown, M.D.	New York
Charles H. Loughran, M.D.	Kings

Pursuant to Section 1 of Chapter VI of the By-laws, the Judicial Council held an organizational meeting immediately at the close of the annual meeting of the State Society on May 11, 1959, in Buffalo. In addition to the members, William F. Martin, legal counsel, and his associate, J. Richard Burns, attended the meeting.

At this meeting the members elected a chairman, Dr. Wentworth, as noted above.

No appeals were presented to the Judicial Council during the year, and no further meetings were held.

Respectfully submitted,
Edward T. Wentworth, M.D., *Chairman*

MEDICAL COMMUNICATION

Reports in this section are referred to the Reference Committee on Medical Communication, consisting of the following:

E. Dean Babbage, M.D., Erie, *Chairman*
C. Stewart Wallace, M.D., Tompkins
Monroe M. Broad, M.D., Queens
Robert F. McMahon, M.D., Onondaga
Theodore R. Proper, M.D., Orange

Publication

To the House of Delegates, Gentlemen:

The Publication Committee for the year 1959–1960 is composed of the following:

Alfred P. Ingegno, M.D., *Chairman*	Kings
Laurance D. Redway, M.D.	Westchester
Harold F. R. Brown, M.D.	Erie
Norman S. Moore, M.D.	Tompkins
Maurice J. Dattelbaum, M.D.	Kings
William Hammond, M.D.	Westchester
John G. Masterson, M.D.	Kings
Albert H. Douglas, M.D.	Queens
John J. Masterson, M.D., *Adviser*	Kings

Since the last report, the editorial board of the JOURNAL has been composed of the following by appointment of the president and the Council of the Society:

Laurance D. Redway, M.D., *Editor*
William Hammond, M.D., *Assistant Editor*
Norman S. Moore, M.D., *Consulting Editor*
John G. Masterson, M.D., *Consulting Editor*
Alvina Rich Lewis, M.A., *Executive Editor*
Thomas E. Alexander, *Business Manager*

The Publication Committee met monthly during the year, except in July and August. No changes other than as indicated above have been made in the management and operation of the JOURNAL and *Directory* to the date of this report.

It is recommended that circulation of the JOURNAL "gratis" to senior class students of the medical schools of the State during the academic year 1960–1961 be again carried out as in the past as a continuing gesture of good will.

Gross advertising revenue has continued to hold up well during the year although costs of operation have risen due to the ordinary salary increases of employes, rising costs of paper, printing, and mailing, and increased budgetary items charged against the JOURNAL and *Directory*.

New York State Journal of Medicine.—The JOURNAL has appeared uninterruptedly in 24 issues and a supplement, Part II of the September 1 issue containing the Minutes of the House of Delegates, making a total for the year of 25 issues. The JOURNAL has had a consistent growth during recent years.

In 1957 the total number of pages was 4,244, in 1958, 4,316, and in 1959, 4,670. Submitted articles rose from 503 in 1955 to 639 in 1958 and to 641 in 1959.

Some new sources of excellent scientific material have developed during the year. A number of older sources of material have been activated by the editors in order that the JOURNAL may become more truly representative of the entire State.

During the year a number of new editors were added to the Associate Editorial Board, from varying geographic localities throughout the State. Nearly all categories of the practice of medicine are represented by the associate editors who have done a truly remarkable service to the Society by the character of their reviews of scientific material submitted for their criticism. The net effect has been to raise considerably the standards of acceptance of submitted material.

During the year a number of studies of the JOURNAL have been initiated by the Publication Committee. It is anticipated that these studies will continue and that a long-range plan for JOURNAL improvement as to management, appearance, and content will be developed.

There has been excellent coordination of the editorial staff work under the direction of Miss Alvina Rich Lewis. Her title was changed during the year to executive editor and it is anticipated that she will undertake to resolve certain production problems in the integration of the editorial and advertising departments. Miss Lewis attended the conference of State Medical Journal Editors in Chicago in the latter part of the year for the purpose of studying similar problems which are encountered by other state medical journals. An award by the Metropolitan New York Chapter of the American Medical Writers Association was conferred upon Miss Lewis for her distinguished service in improving medical communication.

A study of the JOURNAL advertising department has also been initiated. It is anticipated that in the near future suggestions of maximum benefit to the JOURNAL and the Society will be forthcoming.

Highest standards of accuracy have been maintained. Miss Frances E. Casey, Miss Anne-Marie Fanshaw, Miss Nele Lape, Miss Elizabeth C. Smith, Miss Deborah Pritzker, and Mrs. Olga Mielke deserve the highest praise for their excellent production record, careful editing, and cooperative spirit. Miss Camille M. Marra has done her work well as secretary to the advertising representatives. Special commendation must be given to Mrs. Marcia Werbin who took over advertising production following Miss Grace West's retirement. Mrs. Werbin had assisted Miss West for several years. She has accepted the entire responsibility of advertising production and has shown energy and initiative and has handled the problems of that department well.

Mr. Thomas E. Alexander, business manager, has been of great assistance in handling the financial affairs of the JOURNAL during the year.

The excellent work of Mr. C. Lansing Baldwin, Mr. Joseph A. Mullaney, and Mr. James M. Kelly continues to produce advertising of highest quality. The relationship of advertising to editorial text material has been held during the year to the proportion of 35 to 65 per cent, respectively, calculated on a yearly basis.

Your committee wants to express again its sincere appreciation of Dr. Laurance D. Redway's splendid management and leadership in the conduct of JOURNAL affairs. The JOURNAL has attained and maintained a respected position among medical publications. It may be anticipated that the editor and his loyal and efficient associates and assistants in all departments of the JOURNAL will continually strive for even greater recognition.

STATISTICAL REPORT, 1959

In 1959 there were 24 issues and 1 supplement published, totaling 4,670 pages, the highest total ever published in one year.

A comparison of total pages for preceding years will show the growth of the JOURNAL, as follows:

1954	1955	1956	1957	1958	1959
3,620	3,840	4,172	4,244	4,316	4,670

The issues in 1959 ranged from 154 to 256 pages, with the average issue totaling 194 pages.

During 1959 a total of 641 articles were submitted, of which 191 or 31 per cent were rejected. This compares with previous years as follows:

	1955	1956	1957	1958	1959
Number submitted	503	519	511	639	641
Number rejected	103	99	87	161	191
Per cent rejected	20	19	17	25	31

Comparative statistics on page breakdowns follow:

	1957	1958	1959
Total number of pages	4,244	4,316	4,670
Text pages	2,900	2,920	3,019
Advertising pages (not including inserts, 1957 and 1958, and covers)	1,344	1,396	1,651
Number articles submitted	511	639	641
Number articles published	388	415	397
Number authors represented	548	558	662

Medical Directory of New York State.—Work on the 1961 edition of the *Directory* has already been started. As of December 31, 1959, a total of 1,479 copies of the 1959 *Directory* have been sold to individual purchasers. The sincere appreciation of the Publication Committee is extended to Miss Janet Loy, Mrs. Evelyn De Marco, Mr. Robert W. Miller, and their coworkers of the *Directory* staff for their helpful assistance in the production of this publication.

Report of the Library.—With the close of 1959 the Library of the Medical Society of the County of Kings, official library for the Medical Society of the State of New York, successfully completed its one hundred and eleventh year of service to the medical profession. In order to keep the Library up to date in an expanding medical research program, between three and four thousand carefully selected publications are secured annually. With those added during 1959 the Library now contains more than 200,000 volumes and is valued at about two and one half million dollars. Approximately 2,500 periodicals are received regularly. Practically all are bound and preserved for future use.

Most of the publications added to the Library are purchased by Library funds. Some of them are presented and others secured by review or through exchange. Exchanging with other publications and libraries is becoming increasingly important, as a number of foreign periodicals are not available any other way. Exchanging in foreign countries also makes the Medical Society and Library better known abroad and results in new periodicals coming to the Library, even before their existence is known through the usual channels. The Library contains a few publications received this way, which as far as any one knows are not available in any other American library, and since the war may not be found anywhere else in the world. However, exchanges, the same as material received from other sources, must be carefully selected, especially with a very limited budget. The first cost is not the last. Periodicals must be bound for preservation, and the expense of keeping the material permanently on the shelves is an item which should also be considered as part of the total cost in an area where high rental rates prevail, and when 1 square foot of floor space is required for the storage of every 11 volumes of medical books.

The lending of books to other libraries is an important activity, especially in the New York Metropolitan area, where a heavy concentration of medical research taxes to the limit all medical library resources and especially those of the larger libraries. During 1959 an average of 350 publications per month were loaned to local libraries and in addition a total of over 1,000 were mailed to libraries and individuals outside of Brooklyn.

One part of library work difficult to evaluate is information given over the telephone, and any records that can be kept fail to give a clear and complete picture of how valuable this service is to those unable to come to the Library. Almost 8,000 telephone requests were answered during the year, which undoubtedly resulted in a considerable saving of time for those seeking information which can be supplied this way. Quite a large number of mail requests for various types of information are also received, the most of which are answered from Library resources.

Services of the Library are available not only to the medical profession of New York State but also to all who have legitimate need of medical literature; however, only members of the Medical Society may borrow publications, and the loan period is two weeks. The borrower has the privilege of one renewal for an additional two weeks upon request provided that the material has not been requested by another member. Publications borrowed from the Library may not be reloaned to others but should be returned to the Library as soon as they are no longer needed, so that as many members as possible will have use of material they require.

Members outside Brooklyn may have their publications mailed to them by paying the cost of transportation both ways. No charge is made for the work and material required to prepare loans for shipping. Complete bibliographic citation is required for all requests. For texts and monographs, author, title, place, publisher, and date are necessary. For periodical references the author and title of the article, title of periodical, volume, month, year, and page are essential.

The Library staff will search for any reference difficult to locate but does not compile extensive bibliographies. Those expecting to do considerable research should have access to at least one of the medical indexes not only for locating material but also as an aid in securing complete references. A new *Index Medicus* began publication in January, 1960, and replaces both the *Current List of Medical Literature* and the *Quarterly Cumulative Index Medicus*. This index is published by the National Library of Medicine and may be secured from the Superintendent of Documents, Washington, D.C., at an annual subscription price of $20. It is a worth-while investment for anyone expecting to do extensive medical research.

Photocopies of any material in the Library will be supplied at 45 cents per page. Orders are usually filled the same day they are received. The Library also reserves the right to supply photocopies of articles requested for loan at this rate if the cost of mailing the original material amounts to approximately the same as the photocopies.

Much better service to all library users is provided when members outside Brooklyn desiring to borrow materials send their request in writing, if it is impossible to call at the Library or send a messenger. However, when the material is required immediately, telephone requests are acceptable.

At present most of the staff time is required for what might be called housekeeping activities, or in the securing of publications, cataloging them, and keeping them in order for use when needed. Many other facilities should be available for a modern medical research community, such as a more complete reference service consisting of translating, searching the literature, and compiling and checking bibliographies.

Some of these services are being supplied for the NEW YORK STATE JOURNAL OF MEDICINE, in that the Library staff is cooperating with the editorial staff in checking for accuracy reference lists received with articles submitted to the JOURNAL for publication. In addition, weekly messenger service is maintained between the Library and State Medical Society offices in order to pick up exchanges and books received for review and for the transportation of whatever may be necessary between the two offices.

The staff is always glad to give all possible aid to those using the Library. It is unfortunate that more facilities cannot be provided, but until additional space is available for a larger staff, together with an ample library budget, further expansion of library services is impossible.—WESLEY DRAPER, *Librarian;* HAROLD R. MERWARTH, M.D., *Directing Librarian.*

Respectfully submitted,

ALFRED P. INGEGNO, M.D., *Chairman*

Public Relations

To the House of Delegates, Gentlemen:

The Public Relations Committee for the current year includes the following:

John C. McClintock, M.D., *Chairman*	Albany
John M. Galbraith, M.D., *Vice-Chairman*	Suffolk
George A. Burgin, M.D.	Herkimer
James T. Carroll, M.D.	Monroe
Reid R. Heffner, M.D.	Westchester
John W. Latcher, M.D.	Otsego
John D. Naples, M.D.	Erie
Felix Ottaviano, M.D.	Madison
Kenneth Rowe, M.D.	Steuben
Edward Siegel, M.D.	Clinton
C. Stewart Wallace, M.D.	Tompkins
Mark H. Williams, M.D.	Broome

The committee engaged in numerous and varied activities during the past year through the Department of Communications. These projects were the result of policy-making decisions, made by the committee and approved by the Council. The decisions were agreed upon at regular meetings held almost on a monthly basis, except during the summer.

Monthly reports of all activities were submitted to the Council. To avoid duplication, the chairman requests that these reports be accepted by the House as part of this report. Ready reference to them can be made through the NEW YORK STATE JOURNAL OF MEDICINE and the Summary of Council Minutes, prepared by the department for key Society officials.

Your chairman, however, would like to highlight some of the principal activities.

The name of the Public and Professional Relations Bureau was changed to the Department of Communications. The department operated in about 25 areas, including the following: modified field program; promotion of the "Guide for Cooperation for Doctors, Hospitals, and Reporters" and "Standards of Practice for Doctors and Lawyers"; advisory service for press, radio, and TV; exhibits; district branch meetings; work before, at, and after Society's annual meeting; digests of proceedings of House of Delegates and Council meetings; development of Medical Assistants Courses; organization of Medical Assistants Associations, State and county; aiding Woman's Auxiliary; general publicity for all Society activities; improvement of Emergency Services; extension of public media activities, especially TV and radio programs; wider use of *Newsletter* with improved format; distribution of popular pamphlets; better liaison with Society committees and outside groups; special campaigns to preserve medicine's freedom; and assisting State Society committees.

The following are specific examples:

1. Revision of "Guide for Cooperation," reprint order 30,000; to date sent to about 27,500 members, editors, and others.

2. Formation of New York State Medical Assistants Association and 11 county groups.

3. Two-pronged campaign against Forand Bill, first in summer, 1959; second, early 1960.

4. Drive against chiropractic licensure law in early 1960.

5. Special issues of *Newsletter*—Medicare changes and Annual Meeting.

6. PR Conference—extended to include key officials in all county medical societies to cover all phases of county and State Society activities.

7. "Rockets to Inner Space"—publication co-sponsored by State Medical Society and Health Insurance Council.

8. Special speakers' panel to oppose chiropractic licensure.

9. Rural medical service meetings, help rendered in new project.

10. Exhibit, "Seven Paths of Fitness," co-sponsored with A.M.A. at Saratoga Springs.

11. Legislative Bulletin published twice weekly during session.

12. Releases on annual meeting scientific papers.

13. Distribution of approximately 100 releases in cooperation with Public Health and Education Committee.

While all activities of the department were supervised by and dependent on actions of the committee, attention is called to certain recommendations approved by the Council. Among these were the following:

1. The executive director designated as one of the official spokesmen in dealing with information media and Council's action of June, 1956, concerning statements by lay employes rescinded; (Guide for Cooperation should be basic rule);

2. Two executive secretaries of county medical societies named as consultants to the committee;

3. Campaign to have physicians use "M.D." after their names, instead of "Dr." before, started;

4. Ralph B. Post, M.D., chosen outstanding general practitioner for New York State for 1959;

5. An association of professions, similar to Michigan project, authorized to be explored;

6. Name of Public and Professional Relations Bureau changed to Department of Communications and department reorganized;

7. Selective sample of State Society members

started concerning amount of free time devoted to medical care and community services;

8. Certificate of appreciation awarded "Hi Mom" TV program;

9. Approval of Society's participation in hour-long live TV show presented by Upjohn Company, entitled "Nervous Tension," granted; show great success.

A separate report on the "Guide for Cooperation for Doctors, Hospitals, and Reporters" and "Standards of Practice for Doctors and Lawyers" is being submitted by the chairman of the Subcommittee on Media of Information, George A. Burgin, M.D. A very successful meeting concerning the Guide was held with the media representatives on January 29 and a meeting with the Bar representatives is scheduled.

Following the authorization of the above-mentioned projects, machinery was put in motion to accomplish the objectives, wherever necessary. Although most have been achieved, a few remain to be reached. Additional reports will be filed, if deemed feasible, particularly in regard to the reorganization of the department.

In compliance with the directive of the House given several years ago that a program of proposed public relations activities for the coming year be submitted, the committee reports that the basic program of the past year will be followed but will be implemented and changed as circumstances dictate. In general, the following activities will be sponsored:

1. Improving of Emergency Services;
2. Developing of Mediation Committees;
3. Increasing Medical Assistants Courses;
4. Encouraging formation of Medical Assistants local organizations;
5. Widening scope of TV and radio activities;
6. Strengthening "Guide for Cooperation";
7. Publicizing "Standards of Practice";
8. Aiding writers in obtaining accurate information;
9. Building better relations with all groups, inside and outside Society;
10. Continuing activities which have proved practical and workable.

Your chairman wishes to express his thanks to all who have assisted him. Mr. Miebach, Mr. Tracey, Mr. Walsh, and Mr. Schuyler have carried the work of the department in an admirable manner during this past year of reorganization. Special thanks go to them. He is grateful to the members of his committee, who, at great sacrifice, have met almost monthly to advance the public relations work of the Society.

The committee began a careful review and study of the work of the department in the Spring of 1959. Previous investigations of the department were consulted. Conclusions reached indicated a need for revitalization of the department with the addition of new ideas and a fresh approach to our public relations endeavors. The Council authorized the executive director in April, 1959, to undertake a reorganization and reaffirmed this action in September, 1959. In January, 1960, the Council approved the appointment of Mr. John K. Pardee as director of the Department of Communications. Mr. Pardee, formerly public relations field secretary of the Medical Society of the State of Michigan, assumed his new duties in New York on February 15, 1960.

Respectfully submitted,
JOHN C. MCCLINTOCK, M.D., *Chairman*

Cooperation with Media of Information

The Subcommittee on Cooperation with Media of Information, of the Council's Committee on Public Relations, consists of the following:

George A. Burgin, M.D., *Chairman*	Herkimer
John D. Naples, M.D.	Erie
C. Stewart Wallace, M.D.	Tompkins

Guide for Cooperation Meeting.—A record crowd of 35 persons attended the sixth annual meeting to "renew and review" the "Guide for Cooperation for Doctors, Hospitals, and Reporters" which was held at State Society's headquarters, January 29, 1960. The meeting was conducted by the subcommittee and was presided over by the chairman.

Among those from the State Medical Society present at the meeting were Henry I. Fineberg, M.D., president; John C. McClintock, M.D., chairman, Council Committee on Public Relations; Herbert T. Wagner, M.D., executive director; Miss Alvina Rich Lewis, executive editor, NEW YORK STATE JOURNAL OF MEDICINE; Frederick W. Miebach, director, Department of Communications, and members of the field staff.

In the field of information media, organizations represented included hospitals, hospital associations, newspapers, magazines, broadcasting networks, associations of magazine writers, newspaper reporters, press photographers, the radio-newsreel-television working press, and newspaper editors. The A.M.A. was also represented.

Your chairman is very pleased to report that a fine spirit of friendliness and cooperation pervaded the meeting. On the whole, it was agreed that the Guide was working well for all parties concerned and that no basic change was necessary at the time. One pertinent comment made was that the Guide itself need not be tampered with, but that more should be done in regard to individual doctors to see that they are made aware of the Guide and live up to its basic principles.

Attention was called to the fact that the subcommittee planned to add another section to the Guide when it is reprinted. This section is in keeping with the action of the Council that a campaign be conducted to encourage physicians to use the letters "M.D." rather than doctor. Although no vote was taken on this proposed addition, there were no objections presented.

While it was not necessary to obtain the approval of those present at the meeting, it is necessary for the subcommittee to obtain the approval of the Council to insert the proposed section in a new edition of the Guide. The subcommittee therefore, at the time this report is being written, is preparing a request to the Council that that body approve the following wording to be included in a future edition of the Guide:

> "It is recommended that all media use the initials 'M.D.' after the name of a Doctor of Medicine when making the first reference to him, in order to distinguish him from others who may use the designation 'Dr.' "

As a result of a lengthy discussion on coverage of emergency services during the meeting, a meeting was set for the evening of Wednesday, February 25, at Society headquarters. The purpose of this meeting will be to discuss ways and means by which procedures for securing medical information in "spot news" coverage may be streamlined. At the time this report is being written, in mid-February, the meeting has not yet been held. If necessary, a supplemental report on this meeting will be submitted to the House of Delegates in May.

Your chairman is happy to report another important development that has occurred since the last meeting of the House of Delegates concerning the Guide. In late 1959, the Guide was reprinted. It was sent to all members of the State Medical Society, newspaper editors, news editors of radio and television stations, science editors and writers, hospital associations, and other interested parties. The print order was for 30,000 copies and approximately 27,000 have been distributed.

During the past year, about 200 requests for assistance from writers preparing articles were received by the Department of Communications. The members of the staff assisted these writers by obtaining the necessary information through contacts with physicians in various fields. On many occasions, gratitude was expressed for the assistance rendered.

Standards of Practice.—At the time this report is being prepared, the chairman and the subcommittee are planning to have a meeting with the representatives of the legal profession to review and renew the "Standards of Practice for Doctors and Lawyers." The principal reason that the meeting has not been held to date is the fact that the committee handling this matter for the New York State Bar Association has not yet been found. After the meeting has been held, a supplemental report on the Standards will be presented to the House of Delegates at its May meeting.

Respectfully submitted,

GEORGE A. BURGIN, M.D., *Chairman*

American Medical Education Foundation

To the House of Delegates, Gentlemen:

The Special Committee on American Medical Education Foundation consists of the following members:

John W. Latcher, M.D., *Chairman*	Otsego
Henry G. Barrow, M.D.	Bronx
William C. T. Gaynor, M.D.	Suffolk
Milton J. Greenberg, M.D.	Washington
William O. Jackson, M.D.	Steuben
John E. Kiley, M.D.	Albany
Jerome L. Leon, M.D.	Queens
William J. Orr, M.D.	Erie
William E. Pelow, M.D.	Onondaga
Edwin P. Russell, M.D.	Oneida
Irving Weiner, M.D.	Orange
Carl G. Whitbeck, M.D.	Columbia

A meeting of the committee was held on September 10, 1959, at the offices of the Medical Society. Parenthetically, at this point it might be noted that, with one or two exceptions, this is the largest of the Council committees.

At this meeting it was requested that each member, representing a district branch, appoint a representative in the constituent county societies to represent him and to carry the campaign to the grass roots.

Several suggestions for increasing the response to the appeal of the American Medical Education Foundation were discussed, and those which seemed to have merit were recommended for consideration by the Council. These were first approved, but subsequently your chairman was notified on January 13, 1960, that this approval had been rescinded on the ground "that the report had been acted upon hastily, and that these items deserved further study." It is to be hoped that, before next year's American Medical Education Foundation campaign, these suggestions will be brought before the Council for reconsideration.

During December, an editorial written by your chairman urging support of the American Medical Education Foundation by members of the Society was published in the New York State Journal of Medicine.

It is gratifying to be able to report that 1959 showed an increase in the contributions of the physicians of our State to the American Medical Education Foundation over those of the year 1958. While the Foundation's fiscal year does not end until January 31, and full report is consequently not presently available, as of December 31, 1959, 3,706 physicians had contributed $53,188 to the Foundation. On the same date in 1958, 3,604 physicians had contributed $49,636. This represents an increase of 102 contributors and $3,552 While this is not a large increase percentage-wise, it represents some progress, which might be increased in 1961 by more vigorous efforts to disseminate the American Medical Education Foundation's appeal to the county level.

In conclusion, it should be noted that the biggest obstacle to securing larger contributions to the American Medical Education Foundation is the characteristic failure of the individual American physician to concern himself with causes which serve to advance the progress and enhance the prestige of the profession as a whole. This is probably no more true of physicians in New York than elsewhere in the nation, but the general apathy and lack of concern in this regard should be, and is, deeply disturbing to those who are struggling to preserve the priceless heritage of American medicine.

While many will argue that the fight against the steadily increasing bureaucratic encroachment on our system of free enterprise is faring badly, and that our profession stands as one of the last bulwarks against such encroachment, this is surely no reason to raise the white flag and abandon the field to the forces of governmental control—rather it should stimulate us to renewed efforts to demonstrate to others that the traditional system of medical practice in the United States is compatible with good medical care for all. This can in no way be better exemplified than by wholehearted support of our medical colleges in their efforts to avoid Federal subsidy and the inescapable sequel of eventual control by the government.

Respectfully submitted,
John W. Latcher, M.D., *Chairman*

Convention

To the House of Delegates, Gentlemen:

The Convention Committee consists of the following:

George J. Lawrence, Jr., M.D., *Chairman*	Queens
Maurice J. Dattelbaum, M.D.	Kings
Merle D. Evans, M.D.	Monroe
Thomas E. Alexander, *Adviser*	New York
Charles L. Baldwin, *Adviser*	New York

1959 Convention.—Samuel Z. Freedman, M.D., chairman of the 1959 Convention, reports as follows:

The 153rd Annual Convention of the Medical Society of the State of New York was held at the Statler Hilton Hotel in Buffalo, May 9 through 15, 1959.

Registration.—The registration figures follow:

Physicians	1,445
Guests	438
(Included are members of allied professions, as nurses, dentists, technicians, and medical students)	
Technical exhibitors	394
TOTAL	2,277

House of Delegates.—For the first time, the House of Delegates convened on Saturday, before the scientific program began. Also, for the first time in many years, it was not necessary to hold an evening meeting. A total of 68 resolutions were presented to the House for consideration and action.

The House voted to go into session on Saturday, May 7, 1960, at the Statler Hilton Hotel in New York City. The pros and cons of opening the meeting on Saturday rather than on Monday will be discussed at that time, and a decision for future meeting days arrived at.

Scientific Program.—Five general sessions, 21 section meetings, and two sessions were held from Monday afternoon through Friday afternoon. The Industrial Medicine and Surgery Section combined with the General Practice Section for a joint meeting.

The following are the attendance figures for the scientific meetings:

*Section**	*Day of Week*	*Number Attending*
Allergy	Thursday	52
Anesthesiology	Tuesday	95
Chest Diseases	Tuesday	62
Dermatology and Syphilology	Tuesday	49
Gastroenterology and Proctology	Tuesday	46
General Practice with Industrial Medicine and Surgery	Tuesday	125
Legal Medicine	Tuesday	24
Medicine	Wednesday	46
Neurology and Psychiatry	Friday	34
Obstetrics and Gynecology	Friday	40
Ophthalmology	Thursday	79
Orthopedic Surgery	Wednesday	55
Otolaryngology	Friday	46
Pathology, Clinical Pathology, and Blood Banking	Wednesday	43
Pediatrics	Thursday	61
Physical Medicine	Thursday	35
Preventive Medicine and Public Health	Wednesday	40
Radiology	Thursday	40
Surgery	Thursday	27
Urology	Wednesday	30
Sessions		
History of Medicine	Friday	25
Public Relations	Wednesday	35
General Sessions†		
Monday		150
Tuesday		100
Wednesday		125
Thursday		85
Friday		72

Scientific Exhibits.—There were 55 scientific exhibits. Six of these were chosen for special recognition by the Scientific Exhibits Awards Committee. They are:

Scientific Research

First Award

"Arteriography in Bone and Soft Tissue Tumors"
Ru-Kan Lin, M.D.
Elliott C. Lasser, M.D.
Herschel C. Moss, M.D.
Paul Zuckerman, B.S.
Roswell Park Memorial Institute, Buffalo

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*All sections and sessions met in the morning.

†All general sessions were held in the afternoon.

Second Award

"Management of Atypical Lesions of the Cervix"
Michael J. Jordan, M.D.
Emerson Day, M.D.
Genevieve M. Bader, M.D.
Memorial Center for Cancer and Allied Diseases, New York City

Honorable Mention

"Palliative Management of Cancer"
Eugene L. Bronstein, M.D.
James J. Nickson, M.D.
Memorial Center for Cancer and Allied Diseases, New York City

CLINICAL RESEARCH

First Award

"Neural Mechanism of Emesis and Antiemesis"
William Amols, M.D.
H. Houston Merritt, M.D.
S. C. Wang, M.D.
College of Physicians and Surgeons of Columbia University, New York City

Second Award

"Vascular Surgery of the Brain"
Wallace B. Hamby, M.D.
Lorenzo Belmusto, M.D.
Buffalo General Hospital, Buffalo

Honorable Mention

"The Red Eye: Differential Diagnosis and Treatment"
Arnold S. Breakey, M.D.
Conrad Berens, M.D.
New York University Post-Graduate Medical School, New York City

Ribboned awards were attached to the award-winning exhibits at the convention, and certificates were sent to each award-winning exhibitor.

SCIENTIFIC MOTION PICTURES.—Motion pictures shown in the "Motion Picture Theatre" were well received by members and guests. An application blank was devised for the use of the Motion Picture Subcommittee for the first time this year. The committee found this valuable and will continue to use application blanks for the 1960 convention.

TECHNICAL EXHIBITS.—There were 90 technical exhibits. All available space for technical exhibits was sold.

ANNUAL MEETING AND DINNER DANCE—The Annual Meeting and Dinner Dance was held on Monday of convention week, instead of on Wednesday as in previous years. There were 279 in attendance. The President's Reception which preceded the dinner was open to all who attended. The guests enjoyed an excellent meal and dancing during and after the dinner. The guest speaker was Gunnar Gunderson, M.D., president of the American Medical Association; the title of his interesting address, "Don't Fence Them In."

WOMAN'S AUXILIARY.—The convention of the Woman's Auxiliary to the Medical Society of the State of New York was held at the Statler Hilton Hotel, the same time as ours. The president expressed her pleasure at the facilities allotted to them. The Woman's Auxiliary helped to sell tickets for the dinner dance and organized committees to take attendance at our scientific meetings. This is appreciated.

MISCELLANEOUS.—A card of thanks was sent to each participant in the scientific program, to each scientific exhibitor, and to the members of the Woman's Auxiliary who helped us during the convention.

We are pleased to make facilities for meetings available to the American College of Chest Physicians, New York State Chapter; the Radiological Society of New York State; the Veterans Medical Service Plan of New York, Inc.; the Women's Medical Society of New York.

I wish to express my sincere appreciation to all the staff of the State Society who helped so ably in all the facets of convention activity, and notably to Miss Mollie Pesikoff, Mr. Thomas E. Alexander, and Mr. Charles L. Baldwin; also to all members of the subcommittees of the Convention Committee, and particularly to the chairmen.

1960 Convention.—The 1960 Convention will be held at the Statler Hilton Hotel in New York City, from May 7 through 13, 1960.

The Convention Committee, with the chairmen of the subcommittees, held several meetings during the year, the first one early in June, so that adequate plans for the 1960 Convention could be initiated well in advance. The subcommittees, too, met whenever the respective chairmen felt it necessary and sent progress reports of activities to the chairman of the parent committee.

Brief reports of the subcommittees are presented below:

DINNER DANCE.—Samuel Wagreich, M.D., *Chairman:* All plans for the annual dinner dance have been formulated. It will be held in the new ballroom of the Hotel Pierre, 61st Street and Fifth Avenue, Monday, May 9, 1960. Tickets are $15 each. It is felt that the Penn Top in the Statler Hilton Hotel is not large enough to hold the expected number of guests, and that a hotel such as the Pierre would lend more prestige to the occasion.

The dance band has been engaged, and the menu ordered. The President's Reception will be open to all dinner guests.

Local dinner subcommittees have been appointed by county medical societies to work with the Woman's Auxiliary and county medical society presidents, to publicize the dinner and stress the advance sale of tickets. A supply of tickets has been sent to each county medical society president. It is planned to keep in touch with the counties for progress reports on the sale of tickets. It is also hoped that the officers of the State and county societies will respond enthusiastically to the request that reservations be made far in advance.

The chairman of the dinner subcommittee expresses his thanks to his cochairmen, members of his committee, the Woman's Auxiliary, and State Society staff for their help.

GUEST RECEPTION.—Bernard J. Pisani, M.D., *Chairman:* The Guest Reception Subcommittee, made up of 23 members, will have an active part in convention activities. A hospitality room—the Pennsylvania Room, on the mezzanine of the Statler Hilton Hotel—will be available from Sunday through Friday, for the reception of out-of-State guests. Each guest will be assigned a host from among the members of the committee who will be at hand to greet the guest upon arrival and provide gracious hospitality throughout his stay. Any guests who are at the convention on Monday evening will be invited to the dinner.

It is felt that guest reception is a long-needed facet of convention operation, and this year's committee will endeavor to meet the need.

TECHNICAL EXHIBITS.—William L. Rawls, M.D., *Chairman:* There are about 175 exhibit booths this year. Extra booths were made available and sold to help defray the cost of the President's Reception.

SCIENTIFIC EXHIBIT AWARDS.—Thurman B. Givan, M.D., *Chairman:* Dr. Givan received permission from the Council to review the exhibits for several days and make awards later than on Monday, and that the subcommittee not be required to submit the report to the House of Delegates for approval.

SCIENTIFIC EXHIBITS.—William L. Watson, M.D., *Chairman:* A new, large area—Exhibit Hall—on the mezzanine of the Statler Hilton Hotel has been built for scientific exhibits. Although all the 75 exhibits will not fit into this area, it is a tremendous improvement over the space used in previous years and will show the exhibits to great advantage.

A plan was tried out this year whereby each member of the subcommittee was sent a copy of each application for study. His confidential comments were returned to the chairman prior to the meeting on a form devised for this purpose. This made for more effective utilization of the subcommittee's time at the meeting, better understanding of the needs of the individual exhibitors, and a wider familiarity with the subjects to be presented.

A new award for winners of exhibits is being designed and will be used at the convention.

SCIENTIFIC MOTION PICTURES.—Colgate Phillips, M.D., *Chairman:* Twenty-six films have been confirmed for showing. Eight of these will be either narrated or briefly discussed by their authors at the end of the showing. It has been found that the appearance in person of the authors of films greatly enhances the program.

SCIENTIFIC PROGRAM.—Alfred P. Ingegno, M.D., *Chairman:* For the first time, a theme upon which to build the scientific program was evolved. The General Sessions, with this theme in mind, "Horizons of Clinical Medicine," will stress future foreseeable advances in diagnosis and therapy. The specialty sections are also using this theme where feasible.

All the panel discussions in General Sessions and as many as possible in Sections will be recorded for publication in the JOURNAL.

HOUSE OF DELEGATES.—Joseph A. Lane, M.D., *Speaker:* The House of Delegates will convene on Saturday, May 7, at 10:00 A.M. and adjourn about 1:00 P.M.; reconvene Sunday at 2:00 P.M. and at 8:00 P.M.; and on Monday at 9:00 A.M. and at 2:00 P.M.

Reference committees will meet on Saturday afternoon and evening and Sunday morning. There are 10 reference committees instead of 18 as in the past.

MISCELLANEOUS.—The Woman's Auxiliary was granted $500 to hold a reception on Sunday evening, sponsored jointly by the State Society and the Woman's Auxiliary.

A cover for the *Booklet Program* will carry the theme of the scientific program.

In 1959, on the recommendation of the 1958 House of Delegates, the meeting days of the House were changed to start on Saturday and continue through Monday, instead of starting on Monday and ending on Wednesday. It was thought that the change in days would give the members of the House a chance to visit scientific meetings and exhibits.

The Convention Committee unanimously recommends to the House of Delegates that the meeting days of the House be returned to the pattern adhered to before 1959 for the following reasons:

1. The reason for the 1959 change is not valid,

since check-out figures of the hotel showed that almost all the members of the House left the hotel shortly after adjournment, without visiting the scientific meetings;

2. Many members of the House of Delegates have found attending week-end meetings irksome. It deprives them of contact with their families during the part of the week in which they might find time to spend with them. Attendance at church is interfered with by reference committee responsibilities; personal week-end obligations cannot be fulfilled.

3. At the time of the year we hold our convention, hotels have commitments for the weekends for years in advance, and we do not have the use of hotel facilities we should have for a smooth-running convention. This year reference committees have to vacate certain rooms at specified times so that the hotel can honor previous commitments; insufficient number of rooms are available for preconvention committee meetings.

4. This year, for instance, there is a House of Delegates evening session in conflict with another scheduled activity—the jointly sponsored reception.

To Be Referred for Study.—The House voted in 1959 that all our future conventions be held in New York City unless a special need arises (1961 convention committed to Rochester). The A.M.A. frequently holds its convention in New York City in June. This may conceivably hold a serious threat to good attendance at our scientific meetings the same year. It calls for a solution that would avoid two large conventions, that of the A.M.A. and of our State Society, meeting so close together. It has been suggested that when the A.M.A. meets in New York City we have our scientific sessions during the month of February.

The Convention Committee recommends this be considered by future convention committees.

The chairman of the Convention Committee extends thanks to the chairmen and members of the subcommittees, to Herbert T. Wagner, M.D., executive director; Mr. Thomas E. Alexander, Mr. Charles L. Baldwin, Miss Mollie Pesikoff, and to the State Society staff for their assistance.

Respectfully submitted,
George J. Lawrence, Jr., M.D., *Chairman*

ORGANIZATION AND POLICIES

Reports in this section are referred to the Reference Committee on Organization and Policies, consisting of the following:

Samuel Wagreich, M.D., Bronx, *Chairman*
Solomon Schussheim, M.D., Kings
George W. Fish, M.D., New York
Philip M. Standish, M.D., Ontario
Edward F. Shea, M.D., Ulster

Planning Committee for Medical Policies

To the House of Delegates, Gentlemen:

This is the annual report of this committee for the current Society year up to February 1, 1960. If needed, a supplemental report will be presented to the House of Delegates.

The Planning Committee is a special committee of the House of Delegates and that body sets up the personnel of this committee. One member is selected by each of the nine district branches; the standing members of this committee are the president, president-elect, secretary, speaker, and usually chairman of the Board of Trustees.

The make-up of the Planning Committee for this Society year, 1959–1960, is as follows:

Peter J. Di Natale, M.D., *Chairman*	Genesee
Henry I. Fineberg, M.D.	Queens
Norman S. Moore, M.D.	Tompkins
William L. Wheeler, Jr., M.D.	New York
Joseph A. Lane, M.D.	Monroe
Herbert H. Bauckus, M.D.	Erie
Frederick A. Wurzbach, Jr., M.D.	Bronx
Paul H. Sullivan, M.D.	Nassau
Edward F. Shea, M.D.	Ulster
Arthur Q. Penta, M.D.	Schenectady
Arthur F. Gaffney, M.D.	Oneida
William T. Boland, M.D.	Chemung
Donovan M. Jenkins, M.D.	Monroe
Frank A. Gagan, M.D.	Dutchess
John J. Bourke, M.D.	Albany

The first meeting of the committee was held on August 14, 1959, and was attended by nine members and Herbert T. Wagner, M.D., executive director. The committee at this time elected Dr. Wheeler recorder and Miss Doris K. Dougherty was appointed secretary of the committee.

The following matters had been referred to the Planning Committee for study and report back to the House of Delegates:

I. The House of Delegates adopted the suggestion of the Committee to Study the 1958 Management Survey Report that the Planning Committee be asked to review the voluminous material in its minutes on the subject of district branch organization and possible adjustment of district branch boundaries and to make recommendations relating to these matters.

II. The House voted that the Council conduct a study during the coming year to determine whether or not there is a need for revising the present district branch structure. It was also suggested that the Council consider the feasibility of evaluating the wishes of the membership in this regard by a referendum. These instructions were referred by the Council to the Planning Committee.

III. The House adopted the following suggestions of the Management Survey Committee:

(*a*) "XXIII. Let the Planning Committee be restored to being an actual planning committee to work with the executive director on long-range policy."

(*b*) "XXIV. Let the Planning Committee appoint annually a subcommittee under the chairmanship of the president-elect on objectives for the year ahead, meaning the year in which the president-elect will be president. Let the president-elect report on these objectives to the House of Delegates when he is about to become president. At the end of his term as president, let him report to the House of Delegates on the extent to which the year's objectives were accomplished."

IV. On June 4, the Council referred to the Planning Committee for Medical Policies the subject of remuneration for committee chairman, commission chairmen, and officers.

Following considerable discussion of the matters referred to the Planning Committee and other matters relating to the affairs of our State Medical Society, it was decided to have the chairman appoint several subcommittees to study subjects and report back to the committee.

District Branches.—The first two items referred to us were studied by the subcommittee chairman, Dr. Lane, speaker, and Drs. Boland, Bauckus, and Gagan.

The subcommittee made its report on November 18, 1959, and following discussion, your chairman of the Planning Committee made this report regarding matters I and II:

1. The district branches shall be a definite and integral part of our State Medical Society set-up.

2. Wherever possible, the district branches should be made a stronger unit than they have been in the past.

3. The district branches shall be encouraged by our State headquarters office and by our officers to participate in matters affecting the health of the people of the State of New York and in matters that are of vital interest to the medical profession.

4. The district branches shall decide for themselves what type of programs or meetings they are to have, be they social, economic, scientific, or otherwise. The State Society shall aid and counsel the district branches if they, the district branches, ask for same.

5. Your Planning Committee believes that, in matters affecting certain actions at the State level, the district branches could play a more important role than they have in the past; i.e., we believe that, in matters pertaining to workmen's compensation, legislation, economics, insurance, and perhaps others, the district branches could more effectively aid the State headquarters office, provided that each county has expressed itself to the district branch.

6. Your Planning Committee believes that the local autonomy of the county society must be insured at all times.

7. The Planning Committee believes that a referendum on the possible revision of the district branches set-up is not necessary at this time because much time has already been spent on this subject both by the Planning Committee, which really is a district branch committee, and by the reference committees at the annual meetings of the House of Delegates. Your Planning Committee believes that at this time it is not necessary to adjust district branch boundaries. If a demand for this is asked by any district, it can be discussed at that time.

8. Each district branch could study the practicability and advisability of assessing each member a small fee for conducting the affairs of the district branch.

9. Could the State Society aid the district branches in a financial manner, more than at present?

10. We urge each district branch to activate the executive committee of the district branch or form an advisory council of the district branch perhaps similar to the Eighth District Advisory Council and report to the Planning Committee on their activities in two years.

Long-Range Planning.—On item III (*a*) of the matters referred to the Planning Committee, your chairman was delegated by the members, as a committee of one, to meet periodically with the executive director on long-range planning. Several meetings have been held with the executive director and some of the matters discussed may be brought up by Dr. Wagner in his annual report to the House of Delegates.

On item III (*b*) Dr. Moore is in contact with his subcommittee and will make a report later, perhaps in his report to the House. Some ideas on planning may be forthcoming.

Remuneration.—On item IV of the matters referred to the Planning Committee, the question of remuneration of committee chairmen, commission chairmen, and officers; this subcommittee was chaired by Arthur Q. Penta, M.D., of the Fourth District Branch. The other members were Drs. Di Natale, Jenkins, and Wheeler. It was voted by the Planning Committee as a whole to submit for the final report of the Planning Committee the report, as submitted by Dr. Penta, which follows:

Subcommittee Report

As chairman of your subcommittee studying the problem of remuneration of officers and committee chairmen, I respectfully submit to you the following report of a questionnaire which was sent to 45 officials of the State Society.

The answers to the several questions and the comments received tend to show that the officials involved are sincerely devoted men in the interest of the Medical Society. The answers received from 40 physicians out of 45 to whom the questionnaire was sent revealed the following facts:

In answer to question number one: "How many days per year do you spend on State Medical Society business?" the results tabulated in percentage number are as follows:

Per Cent	*Days on State Society Business*
10.0	5
12.5	10
10.0	15
12.5	20
12.5	25
10.0	30
12.5	35
5.0	40
10.0	60
5.0	80

In answer to question number two: "How many days do you actually lose from your private practice?" no attempt was made to tabulate this question since the answers closely paralleled those received in question number one.

In answer to question number three: "What expenses incurred in the above State Medical Society business should be reimbursable?" 100 per cent of the members stated that reimbursable items should include traveling expenses, meals, hotel bills, and tips. Ten members also stated that emergency telephone calls should also be included.

In answer to question number four: "Do you favor a per diem basis instead of submitting vouchers for expenses incurred?" the answers received to this question revealed that 20 per cent of the men were in favor of a per diem allowance rather than to submitting vouchers; 80 per cent were in favor of continuing with the voucher system; two of the members commented that better records of expenses incurred should be made when submitting vouchers.

In answer to question number 4–B: "Do you favor receiving full expenses in addition to a per diem honorarium?" only 25 per cent of the men answering the questionnaire were in favor of receiving both an honorarium and full expenses; 75 per cent answered in the negative.

Question number five: "On a per diem basis, what do you feel is a fair fee for services rendered?" brought forth a variety of answers.

Per Cent of Answers	*Fair Fee Per Day*
5.0	$ 20
10.0	25
20.0	30
25.0	50
2.0	100
2.0	150
2.0	300
34.0	No comment

The questionnaire brought forth a number of interesting comments. Two members stated that the honorarium for the president should be raised to $150 each day spent on Society business. Three members stated that a per diem honorarium would be impractical. Several members stated that officers of the Society, requesting both a per diem honorarium plus full traveling expenses, would disrupt the financial structure of the Society. Two members were strong in their opinion that no physician should accept committee appointments if it were to cause him financial embarrassment. A number of the men commented that it was an honor for them to be privileged in the conduct of the business of the Society.

In summarizing this report, it is the opinion of your subcommittee, based on the results of the questionnaire, that the majority of the officers request only full expenses when engaged in conducting Society business and that the voucher system be continued. It must be stated, however, that there is a strong minority of the officers who are in favor of a per diem method of payment. The entire problem is rather complex, and the changing times may demand a further review of the entire matter.

The Planning Committee for Medical Policies presented to the Council on January 28, 1960, the following:

Frank A. Gagan, M.D., with approval of the Planning Committee for Medical Policies members, asked that it be recommended to the Council that the president of the State Society be allowed a per diem of $100 minimum, and the president-elect be directed to submit, for "legitimate expense," a bill for $50 per diem minimum. This was approved by the Council. Your chairman believes that this would merit continual study by the Planning Committee. It was stated that if a policy of a per diem or honorarium for only the president and president-elect were established, it could very easily preclude many physicians who are capable of becoming leaders in our Society from serving because of their financial status.

Future Plans.—Some subjects for future consideration by the Planning Committee:

1. *Programs in regards to careers in medicine.*—We believe that the county societies with aid and counsel of the State Society should develop a stepped-up program for the young men and women in medicine. There seems to be a lack of enrollment of medical students. We believe this should be started some time in high school, earlier if possible, and should include those who have not yet expressed their desire to pursue a medical career. These need encouragement and advice. Those that have expressed a desire should be given every aid possible.

2. *Planning for increased membership in county, State, and A.M.A.*—Your Planning Committee has on various occasions given considerable thought to this. The president has appointed, as of January 28, 1960, an ad hoc committee on the above matter.

3. *The subject of the elder physician.*—What can the State Society do for the elder physician who through some unforeseen circumstance finds it difficult to take care of self or spouse? Most of us know of the work of the Physicians' Home. What more can we do? Shall it be in the form of a physician benevolent association? Shall some insurance program be studied? We believe this merits continual study by the Planning Committee or a committee appointed by the president.

4. *Social security for physicians?*—Your chairman stated at a meeting of officers and committee

chairmen held on September 12, 1959, in New York City, that as long as our State Society House of Delegates has adopted favorable action on the same, we should continue our efforts at the A.M.A. level.

5. *Shortage of interns and residence staffs.*

6. *The Forand Bill.*—This being a legislative matter, it is being studied by the Committee on Legislation and the Subcommittee on Federal Legislation.

Your chairman wishes to express his sincere thanks to the members of the Planning Committee. First, for their confidence expressed in electing him chairman; second, for their valuable assistance in studying matters referred to our committee and for their good attendance at our three meetings so far this year. I also wish to express thanks to Dr. Wagner and Miss Dougherty, and to everyone who helped in any way.

Respectfully submitted,
PETER J. DI NATALE, M.D., *Chairman*

1958 Management Survey

To the House of Delegates, Gentlemen:

The Special Committee to Study the 1958 Management Survey Report is as follows:

Renato J. Azzari, M.D., *Chairman*	Bronx
Thurman B. Givan, M.D.	Kings
James Greenough, M.D.	Ostego
John J. Masterson, M.D.	Kings
Leo E. Gibson, M.D.	Onondaga
Norman S. Moore, M.D.	Tompkins
Walter W. Mott, M.D.	Westchester
Herbert H. Bauckus, M.D.	Erie

A meeting of the Special Committee to Study the 1958 Management Survey Report was held on December 17, 1959. The House Special Committee on Constitution and Bylaws was invited to attend. All members were present as well as our president, our executive director, with Drs. George A. Burgin and Alfred A. Hartmann representing the Committee on Constitution and Bylaws.

On September 8, 1959, a memorandum was sent to each president of the county societies of the State requesting an expression of opinion by all the component medical societies as to the implementation of suggestions II–IX, on pages 14 and 15 of the Management Survey Report, as follows:

II. Streamline the structure and work of government between Annual Meetings and save thousands of dollars annually by electing one governing body instead of two.

III. Elect 12 trustees, 4 each year for three years. Add 5 ex officio members: president, president-elect, secretary, treasurer, speaker of the House of Delegates. This will be a board of 17 replacing 29 councillors and trustees. It omits the past-president, vice-president, assistant secretary, assistant treasurer, and vice-speaker.

IV. Let the trustees meet quarterly or not over six or seven times a year instead of the present ten meetings of Council and Trustees. Let these meetings be for a day, or for an evening and a morning, instead of the present half day. If the Executive Committee meets between Trustees' meetings, the hours devoted annually to the Society will be greater than now.

V. Let the trustees elect an Executive Committee of 9 or 11 trustees empowered to act with authority between meetings of the Board. This is larger than the present Executive Committee in order to provide a good cross section and to avoid any relatively small clique running the Society.

VI. To supervise financial affairs and to invest reserves or surplus, let the trustees appoint one or more small committees made up of specially qualified members of the Society appointed on staggered terms to provide continuity of service, such members not necessarily being trustees but in that event the committee chairman to sit with the trustees and the Executive Committee. For purposes of this report, we shall assume the appointment of a Finance Committee.

VII. Let the trustees and Executive Committee eliminate needless and cluttering detail from meetings. Devote meetings mainly to problems and policy, leaving administration to the Executive Director.

VIII. Eliminate needless recording of every word spoken at meetings of Trustees and Executive Committee. Have a stenotypist or stenographer present, mainly to record actual action taken. This, too, will save dollars and time. Minutes should be available in 24 to 48 hours after each meeting.

IX. Restrict attendance at Trustee and Executive Committee meetings to members of these bodies, the Executive Director, and such assistants, including legal counsel, as he may desire, and at stated periods chairmen of committees, staff, or others who are asked to submit reports or to contribute to discussion of specific matters.

As a result of this request, there was a response from nine county societies and a verbal report from members of the committee as to the feelings of two counties, both of which have gone on record as opposing the implementation of the suggestions of the Survey Report. An analysis of the replies received shows that they are not conclusive inasmuch as some of the replies appeared to be the opinion of the writers rather than a statement of opinion as a result of polling or otherwise determining the vote of the membership at large.

County "A" answered in the name of the president that he would concur in all suggestions, II through IX, with the exception of suggestion III, which suggests the election of 12 trustees, 4 each year for three years and the addition of 5 ex officio members, president, president-elect, secretary, treasurer, and speaker of the House of Delegates. This will be a board of 17 replacing 29 councillors and trustees. It omits the past-president, vice-president, assistant secretary, assistant treasurer, and vice-speaker. The reason given for opposition to this suggestion by the president is that the omission of these last five, *elected by the House,* would deprive them of votes on policy decisions.

County "B" stated that discussion elicited the general feeling that little was known by its executive committee of this report, and it was regularly moved and seconded that the county would approve of anything that can be done to save money and facilitate the operation of the Medical Society of the State of New York.

County "C" replied that the president had carefully studied the suggestions and that he approves of the implementation of suggestions II to IX of the Survey Report. Whether this is the opinion of the membership or of the county or of the president is not clear.

County "D" reported the opinion of its comitia minora. It stated that there was general agreement in favor of streamlining the governing bodies of the State Society to one board, but it was felt that this board should include more than 12 elected trustees and should include all elected officers. Furthermore it was felt that the suggestion concerning the Executive Committee, that is, 9 to 11 members, was too large in comparison with the recommended membership of the Board but would problably be adequate if there was a large number of members on the full Board of Trustees.

County "E" reported that the question of implementation of the suggestion was brought up at their annual meeting of October 13, and the Society voted to approve in principle the implementation.

The president of "F" county reported *Yes* after suggestions II, IV, V, VI, VII, VIII, IX and *No* after suggestion III. Again the committee is unable to determine whether this is a personal rather than a membership decision.

The president of "G" county simply wrote the word "approved" on the memorandum accompanying the enclosed copy of the suggestions.

County "H" reported that it is their feeling that the functioning of the government of the State Society would be improved by implementing all of the suggestions in the report.

County "I" reported that its comitia minora and the membership recommended no change in the present composition of the governing body.

As a result of the response of these county societies, the committee feels that the expressions are far from being conclusive or of great value to the committee, first, because of the meager number of replies and, second, because it is questionable that they represent in all instances the opinion of the membership at large. The committee feels that it is fair to state, however, that, on the basis of the replies received, the counties having the larger membership are opposed to the implementation of the suggestions, and it appeared that the point of principal opposition referred to suggestion III, which is concerned with the establishment of a unicameral body rather than the presently established Council and Board of Trustees.

In general discussion by the committee it was asserted that properly functioning commissions and committees would give adequate representation to all counties and that they would do most of the basic work for reference to the unicameral body, but it was also asserted that the representation desired was actually voting representation in the ruling body. It was the consensus of the meeting that the downstate county societies would oppose the suggestions on the basis of reduced representation.

It was also brought out that it is of utmost importance to have a group with financial experience to serve as a valuable check in the utilization of funds in effecting programs voted by the Council.

It was agreed that the committee favors streamlining the work of the government of the Society in general but that there is doubt that a unicameral body rather than two will accomplish the purpose or save money. It was, further, the general feeling that financial control by a board permits independent action. It was moved, seconded, and passed that the committee recommend that the composition of the Council and Board of Trustees remain as it is for the present.

With reference to suggestion IV, President Fineberg spoke at length in regard to the fact that the present set-up of committee meetings, reports, and deliberations of the Executive Committee and Council is not working satisfactorily. His recommendation to the Council, approved by this body, directed committee chairmen to meet in the first two weeks of the month and submit their reports so that these could be disseminated to the membership of the Council. He also stated that the Executive Committee would be more functional than in the past and that the Council would act on a well-informed basis. On the basis of this resolve concerning meetings as above stated, the committee does not recommend at this time any change in the meeting schedule. Implementation of the president's recommendation would require no action by the House of Delegates.

Suggestion Number V.—The committee recognized that this and succeeding suggestions were made, and should be considered, in the light of preceding suggestions and the decisions taken on them. The committee recommends no action.

Suggestion Number VI.—The committee recommends no action.

Suggestion Number VII.—It was the opinion of the committee that steps had already been taken to accomplish this suggestion.

Suggestion Number VIII.—This suggestion was disapproved by motion and vote. In the discussion it was indicated that there was agreement that stenotyped notes should be taken of meetings of the Council and Board of Trustees and that there should be a record of all that is presented. However, it was felt that these minutes should be edited before preparation of the final minutes, with the result that we would eliminate the disadvantages of extensive off-the-record speaking and still protect the individuals and the Society in the matter of record. It was suggested that the executive director be directed to procure in writing an opinion from our legal counsel on this subject to establish our legal position on the matter of the minutes of the Society deliberations. The committee feels that our present system of recording is sound and recommends disapproval of suggestion VIII.

Suggestion Number IX.—In recognition that attendance is by invitation, it is the recommendation of the committee that no action need be taken.

Respectfully submitted,
Renato J. Azzari, M.D., *Chairman*

Constitution and Bylaws

To the House of Delegates, Gentlemen:

The Council Committee on Constitution and Bylaws has the following membership:

Ezra A. Wolff, M.D., *Chairman*	Queens
Norman C. Lyster, M.D.	Chenango
Homer L. Nelms, M.D.	Albany

During the year the committee has reviewed and made recommendations concerning such amendments to county society and district branch constitutions as have been submitted to it. We have also cooperated with the House of Delegates Special Committee on Constitution and Bylaws when requested to do so.

The sincere thanks of the chairman are extended to Drs. Nelms and Lyster for their conscientious and unstinted efforts in this time-consuming task, for the invaluable aid of Mr. J. Richard Burns of Martin, Clearwater and Bell, and to Herbert T. Wagner, M.D., and his office staff for their expedition and efficiency in transmission of the many requisite documents to all concerned.

Respectfully submitted,
Ezra A. Wolff, M.D., *Chairman*

DISTRICT BRANCHES

Second District Branch

To the House of Delegates, Gentlemen:

At our executive meeting held in the spring of 1959, it was decided to hold our annual dinner meeting on November 18, 1959, at Friede's Riverside Inn, Smithtown. The meeting in Smithtown was attended by over 100 doctors, wives, and members of the auxiliaries of both Nassau and Suffolk Counties. This meeting served also as a "kick-off" dinner for a campaign to found a medical school in this district.

Willard C. Rappeleye, M.D., dean emeritus of Columbia University College of Physicians and Surgeons, was the guest speaker on the topic, "A Medical School for Nassau and Suffolk Counties." Henry I. Fineberg, M.D., president of the Medical Society of the State of New York; Mrs. James L. McCartney, president of the Woman's Auxiliary to the Medical Society of the State of New York; Mrs. M. W. Kogan, president-elect of the Woman's Auxiliary to the Medical Society of the State of New York, and Herbert T. Wagner, M.D., executive director of the Medical Society of the State of New York, were guests at this dinner meeting.

A discussion of the difficulties surrounding a project of this nature was then held with a number of the guests participating. A rather interesting and educational session was the result of this dinner meeting.

Respectfully submitted,
JOSEPH G. ZIMRING, M.D., *President*

Fourth District Branch

To the House of Delegates, Gentlemen:

The executive committee meeting of the Fourth District Branch of the Medical Society of the State of New York was held on April 15, 1959, at the Hotel Queensbury, Glens Falls. A good representation of the members was present. Herbert T. Wagner, M.D., was also present as the new executive director of the State Medical Society. In no time at all Ted became a member of the "gang," and the routine business of the meeting was carried on, with Roman R. Violyn, M.D., presiding.

It was the opinion of the committee that a combined meeting of the Third and Fourth District Branches should be held in October to see how well the meeting would be attended and also to be able to meet with the men and women of the Third District for a social "get together" and know each other better and improve our relationship with our nearby district members.

With the cooperation of Lee R. Tompkins, M.D., of Liberty, president of the Third District Branch, a meeting was held at Grossingers at Liberty, on October 14 and 15, and an excellent program was arranged, both scientific and social. Those of us who were able to attend the meeting really had a "time." The accommodations were superb, and the food was what you would be able to have only at Grossingers. The scientific meetings were well attended, but, I must say, there were more members from the Fourth District than from the larger Third District.

At the end of the meeting it was decided that the combined meeting should be repeated in the fall of 1960. This being an election meeting in the two districts, a real attendance should be expected. We were fortunate to be able to make early reservations at Scaroon Manor at Schroon Lake, for September 15 and 16, and at this time we are inviting any or all officers of the State Medical Society.

Respectfully submitted,
ROMAN R. VIOLYN, M.D., *President*

Fifth District Branch

To the House of Delegates, Gentlemen:

On April 30, 1959, the executive committee of the Fifth District met at the Syracuse Hotel. We were privileged to have with us our State president, Leo E. Gibson, M.D., who gave to us valuable advice and wise direction.

Our executive director, Herbert T. Wagner, M.D., was present for the first visit to the Fifth District. We prophesy that under his dynamic leadership and judicious counsel progressive events will take place in all phases of our State Society work. We were also fortunate to have the executive secretaries of Onondaga and Tri-County Societies with us; their presence was most supportive.

Throughout the dinner and for an additional two hours, the state of health of the Fifth District was examined with all present taking part in the discussion. Reasons for the morbidity were advanced without a definite diagnosis being made. By some of those present it was felt that the prognosis was so poor as to preclude any supportive therapy. Others felt that the grand services rendered by the patient in a more vigorous period of existence justified the use of recuperative measures.

Two of our members were more optimistic and felt that with operative treatment followed by the latest remedial measures the patient would not only recover but could again function as a useful and creative integral unit of our Society.

It can be correctly stated that no one present could bring himself to vote in favor of no restorative therapy. Consequently all felt relieved when it was decided to hold a district branch meeting in the fall. Due to conflicting dates this meeting has been postponed to April 7, 1960. An excellent program for this occasion has been arranged by the committee on aging of the Onondaga County Medical Society. There will be a morning session on "Basic Research in Arteriosclerosis," and an afternoon session presenting the "Clinical Aspects of Cerebral Arteriosclerosis."

We are very pleased to include in this report a greeting and a welcome to the members of the Cayuga County Medical Society as they join the Fifth District Branch this year.

Again our thanks to those present at our executive meeting and to Mr. Stephen Leech for his guidance in the development of a program which, it is anticipated, will revitalize this part of our State Society.

Respectfully submitted,
OLIN J. MOWRY, M.D., *President*

Sixth District Branch

To the House of Delegates, Gentlemen:

On April 29, 1959, the executive committee of the Sixth District Branch met at the Carlton Hotel in Binghamton. The purpose of this meeting was to transact current business, nominate officers for the ensuing two years, and make arrangements for the Sixth District Branch meeting to be held in Binghamton on September 23, 1959. The meeting was well attended and the above-mentioned business was successfully completed.

The 53rd annual meeting of the Sixth District Branch was held on September 23, 1959, at the new Sheraton Inn, in Binghamton.

The afternoon session consisted of a scientific program in the form of a panel discussion on "Present Concepts in Infectious Disease with Emphasis on the Role of Antibiotics." The panel consisted of the following:

MODERATOR: Paul A. Bunn, M.D., Syracuse, professor of medicine, State University of New York, Upstate Medical Center;

PANEL: Thomas Gocke, M.D., Rochester, director of medical education and research, St. Mary's Hospital; Donald Louria, M.D., New York City, assistant professor of medicine, Cornell University Medical College; director of Infectious Disease Service, Cornell Division, Bellevue Hospital; Paul F. Wehrle, M.D., Syracuse, associate professor of pediatrics and director of the Virus Laboratory, State University of New York Upstate Medical Center.

The panel presented a very excellent summary of the subjects. Infectious diseases, viral diseases, and fungal diseases were well covered; the use and abuse of antibiotics was thoroughly discussed. New antibiotics and technics were covered. The panel discussion was followed by a question and answer period. The scientific program was attended by about 100 doctors from the Sixth District and was very well received.

Following the scientific meeting, a business session was held and the following officers elected for the ensuing two years:

President	C. Stewart Wallace, M.D., Ithaca
First Vice-President	George F. Nevin, M.D., Cortland
Second Vice-President	George G. McCauley, M.D., Ithaca
Secretary	Hugh D. Black, M.D., Oxford
Treasurer	Charles L. Shute, Jr., M.D., Binghamton
Delegate	Norman C. Lyster, M.D., Norwich

The business meeting was followed by a cocktail party and dinner meeting which was attended by the doctors and their wives. Mrs. James L. McCartney, president of the Women's Auxiliary to the Medical Society of the State of New York, extended greetings from that organization.

Henry I. Fineberg, M.D., president, Medical Society of the State of New York, gave an address in which he outlined the program of the State Medical Society and the responsibilities of the various county societies and their members to organized medicine and to the patients.

The guest speaker of the evening was Commander Richard F. Dobbins, M.C., U.S. Navy, who gave a most interesting talk concerning the historic trip of the *U.S.S. Nautilus SSN-571* during its trip under the North Pole. The dinner meeting was highly successful and enjoyed by all who attended.

As chairman of the meeting, I should like to extend thanks to Mr. Charles Bishara, executive secretary of the Broome County Medical Society, and to his secretary, Mrs. Betty Hudda, who gave generously of their time in helping to make this meeting a most successful one.

Respectfully submitted,
C. STEWART WALLACE, M.D., *President*

Seventh District Branch

To the House of Delegates, Gentlemen:

There has been a very active participation in the activities of the Seventh District Branch by the officers of the component county societies throughout the year. The meetings of the executive council have been well attended and interest in the discussions of the problems presented has been high. These meetings have been held at the Treadway Inn at Canandaigua.

At the June meeting a review of the activities of the House of Delegates was presented and special note was taken of those items which concerned our district or in which our district could help toward a solution. At this time, it was recorded with regret that the Cayuga County Medical Society had been transferred to the Fifth District Branch since it was felt that the majority of their interests lay in that direction. The association with those men that the Cayuga County Society sent to the branch meetings has been very pleasant and helpful in the past and we feel sure that the Fifth District Branch will find it so in the future.

Milton Tully, M.D., chairman of the nominating committee, revealed the following slate of officers to be voted on at the annual meeting:

President	James H. Arseneau, M.D., Wayne
Past-President	Joseph A. Lane, M.D., Monroe
First Vice-President	Philip M. Standish, M.D., Ontario
Second Vice-President	C. M. Smith, M.D., Seneca
Secretary	V. I. Bonafede, M.D., Livingston
Treasurer	John L. Shultz, M.D., Yates
Delegate	E. J. Stevens, M.D., Steuben

Dr. Philip Standish, chairman of a committee to study a program for group life insurance for the members of the branch, gave a very complete and favorable report on this type of insurance and approval was voted for this program. A recent report on the amount of this insurance already sold shows that it has met a need in the district and is being well received.

The annual meeting of the district branch was held in September at the Sheraton Hotel in Rochester. An afternoon program consisted of a talk by Mr. David Stuart on "Problems Facing Blue Cross and Blue Shield" and a panel discussion on viral diseases by Paul Bunn, M.D., of Syracuse, and Drs. Wendell Ames and Paul Fiset of Rochester. In the evening, after talks by the officers of the State Society, Dr. George Bond, Commander, United States Navy, gave a discussion on "Advances in Submarine Escape Technics" and the medical problems connected with this.

A recent meeting in December was given over to a presentation of the State Society field service representative, Mr. A. C. Schuyler, on the Forand type of legislation. Materials for use in the campaign against this bill were distributed to the various county societies.

A report of the activities of the child accident prevention program was given by Robert Hockelman, M.D., chairman, which showed much thought and work in organization in this direction.

One of the highlights of the activities of the year was the meeting of the Seventh and Eighth District Branch delegates to the House of Delegates in Buffalo. It is hoped to continue this agreeable and profitable association in years to come.

I wish to take this opportunity to thank all the members of the Seventh District Branch who have been so cooperative in the affairs of the organization in the past year.

Respectfully submitted,
JAMES H. ARSENEAU, M.D., *President*

Eighth District Branch

To the House of Delegates, Gentlemen:

The year 1959 for the Eighth District Branch of the Medical Society of the State of New York was marked by the annual scientific meeting and dinner dance, two dinner meetings of its advisory council of presidents and secretaries and other auxiliary bodies, and a joint cocktail party and dinner meeting of the Eighth and Seventh District Branches, held in conjunction with the 1959 Annual Meeting of the Medical Society of the State of New York in Buffalo in May.

Especially gratifying to the Eighth District Branch was the indication emanating from the Planning Committee on Medical Policies that the committee would not recommend any revision or disturbance of the present district branch structure.

The Eighth District Branch embarked on its year of programs and activities at the annual midwinter dinner meeting of the advisory council and allied groups at Statler Hilton Hotel, Buffalo, on the night of February 5. The meeting attracted an attendance of 22 branch leaders and associates. Wilfrid M. Anna, M.D., Lockport, branch president, presided.

Principal business of the evening was the consideration of a large number of bills pending in the

1959 session of the State Legislature of interest or concern to medicine, notably the Peterson-Butler Bill for the licensure of chiropractors. It was voted to wage a concerted branch-wide battle against enactment of this measure. The meeting also voted to disapprove and oppose two bills before the Legislature to permit life insurance companies to write group life insurance for professional organizations. Discussion was led by John C. Brady, M.D., chairman of the legislation committee of the Erie County Medical Society.

Peter A. Casagrande, M.D., chairman of the workmen's compensation committee of the Erie County Medical Society, was elected chairman of the central conference committee on workmen's compensation problems of the branch for the year 1959. President Anna appointed a nominating committee, headed by Elmer T. McGroder, M.D., past-president, to draft the ticket of recommended candidates for election at the 1959 annual meeting to be held at Wellsville on October 1. Mr. A. C. Schuyler, field representative of the State Medical Society, was a guest speaker.

On the evening of the opening day of the House of Delegates session in Buffalo, Saturday, May 9, the Eighth and Seventh District Branches joined for their fourth combined cocktail party and dinner meeting at Statler Hilton Hotel, Buffalo. Fifty delegates, branch officers, advisory council members, and guests from the two branches attended and participated in the interesting and enlivening discussions. Dr. Anna, Eighth District Branch president, shared presiding honors with Dr. Joseph A. Lane, Rochester, president of the Seventh District Branch and Speaker of the House. The guest speaker was Herbert T. Wagner, M.D., executive director of the State Medical Society.

In spite of fog, rain and chilly temperature, 110 physicians, members of the Woman's Auxiliary, and guests attended the 54th annual meeting of the branch at the Wellsville Country Club, Wellsville, Allegany County, on October 1. Irwin Felsen, M.D., had charge of arrangements. The luncheon meeting of the advisory council and members of other auxiliary groups was attended by 32 branch leaders and guests and "lifted the curtain" on the day's activities.

The afternoon scientific meeting was addressed by Milton Helpern, M.D., chief medical examiner of the City of New York; Alexius Rachun, M.D., Ithaca, of the Gannett Medical Clinic, Cornell University, and E. Earle Shouldice, M.D., Toronto, chief of Shouldice Surgery.

Elected by a unanimous vote at the business session which followed the scientific meeting were: Clyde L. Wilson, M.D., Jamestown, president; Richard A. Loomis, M.D., Springville, president-elect; Joseph A. Wintermantel, M.D., Olean, secretary; Irwin Felsen, M.D., Wellsville, treasurer. The branch voted to accept the invitation of the Chautauqua County Medical Society to hold the 1960 annual meeting of the branch at Hotel Jamestown, Jamestown, and later the date was set for Thursday, September 29. The branch also re-elected Peter J. Di Natale, M.D., Batavia, as the Eighth District Branch representative on the Planning Committee for Medical Policies of the State Medical Society. A resolution, urging the State Medical Society to "wage a vigorous campaign for the preservation and strengthening of the district branch system as a whole," was adopted.

The dinner meeting at the Wellsville Country Club was addressed by Henry I. Fineberg, M.D., president of the State Medical Society, and Mrs. James L. McCartney, Garden City, president of the Woman's Auxiliary to the State Medical Society. President Anna presided.

The 1959 season of branch activities concluded with the annual early winter dinner meeting of the advisory council and other auxiliary bodies at Statler Hilton Hotel on December 10. Speaker of the evening was Henry I. Fineberg, M.D., president of the State Medical Society, who addressed the meeting on "The 1960 Session of the State Legislature." Announcement was made that President Wilson of the branch had named Henry W. Ingham, M.D., Jamestown, as general chairman of arrangements for the 1960 annual meeting at Jamestown. It was voted to hold the fifth joint dinner meeting of Eighth and Seventh District Branch elements at Statler Hilton Hotel, New York City, on the night of May 7, opening day of the 1960 session of the House of Delegates of the State Medical Society.

Respectfully submitted,
WILFRID M. ANNA, M.D., *President*

MEDICAL CARE

Reports in this section are referred to the Reference Committee on Medical Care, consisting of the following:

Warren A. Lapp, M.D., Kings, *Chairman*
Francis A. Stephens, M.D., Albany
John L. Finnegan, M.D., Queens
Thomas S. Cotten, M.D., Steuben
Robert S. Cleaver, M.D., Putnam

Civil Defense and Catastrophe

To the House of Delegates, Gentlemen:

Your Special Civil Defense and Catastrophe Committee consists of the following:

Edward A. Burkhardt, M.D., *Chairman*........................New York
Irving G. Frohman, M.D...............Queens
Charles Sandler, M.D...................Bronx

During the past four years your committee has sought administrative aid at the local level for disaster medical care within the framework of civil defense. Politically controlled units assume the physician and paramedical assistance are well trained and need little guidance. We are casualty oriented, but training for millions of casualties demands special technics.

Local civil defense planning has seriously neglected disaster medical care. Your committee chairman pointed out these deficiencies in the New York State Journal of Medicine, November 1, 1959, issue in an article entitled, "Disaster Medicine: The Local Problem." A paper entitled "Errors in Civil Defense Thinking" was also presented at the tenth County Medical Societies Civil Defense Conference sponsored by the Council on National Defense of the American Medical Association. Both these papers cited the absence of adequate disaster medical care in the $2,000,000 budget of New York City's civil defense organizations. While this study specifically detailed facts relating to New York City, many conferees admitted similar deficiencies existed in their target areas.

The *AMA News* reported the Civil Defense Conference and over half the space was devoted to this problem; 22 papers were presented at the conference. The American Medical Association's report to the Office of Civilian Defense Mobilization on national emergency care has been published. This details plans for physician-directed medical care programs down to the local level. How much of this program the Office of Civilian Defense Mobilization and Congress intend to implement with funds remains a question.

In the meantime the United States Public Health Service has presented a plan for a vastly expanded department that will be responsible for disaster care at the national, state, and local levels. This is to include "individual survival, casualty care, sanitation and hygiene, protection against radiologic, biologic, and chemical warfare agents, civilian health resources and requirements, bomb damage assessment, implementation of water supply under emergency conditions, and hospital planning. Plans developed at the national level will be tested by means of training programs. Initially these plans will be tried and perfected at the local level and then disseminated to physicians, allied health workers, and nonprofessional persons through various national, state, and local organizations which have going programs or the potential to initiate them."

This is the type of program your committee has helped to promote by pointing out the failure of local civil defense groups in the area of disaster medicine.

Fruitful planning and training continues by the Office of Medical Defense of the New York State Department of Health under the direction of Drs. Hilleboe, Ingraham, and Lade. New courses have been presented for the training of medical aides in the improvised emergency hospital. Since the initiation of the program in 1957 about 8,360 medical defense volunteers have received this training.

Stockpiling of medical supplies continues and adequate storage areas have been constructed. These supplies and their localities will be published yearly in the NEW YORK STATE JOURNAL OF MEDICINE. These supplies occupy 1,500,000 cubic feet of space, weigh 7,200 tons, and are valued at $18,300,000. Many of these supplies are available for short-term loan to promote volunteer training. The number of nurses, x-ray technicians, and paramedical personnel trained in the State still remains inadequate to handle enormous casualties. This is only an index to public apathy and does not reflect on the ability of our State Department of Health to train personnel.

Your committee will continue to press for a national plan of disaster care that will bypass local political apathy and include volunteer disaster care groups.

Respectfully submitted,
EDWARD A. BURKHARDT, M.D., *Chairman*

Disability Determinations

To the House of Delegates, Gentlemen:

The Medical Advisory Committee to the Bureau of Disability Determinations consists of the following:

George Himler, M.D., *Chairman*	New York
Lewis Dickar, M.D.	Kings
Lawrence S. Kryle, M.D.	Nassau

The Bureau of Disability Determinations was faced with a great increase in the number of claims that it had to handle as a result of the changes of the Social Security Law in 1958. This increase required expansion and reorganization within the bureau which occupied all the attention of its personnel during 1959. These activities were not within the area of competence of the committee. As a consequence, only one formal meeting was held. Several minor matters were dealt with in telephone conversations between the director of the bureau and the chairman of the committee.

As the previous annual report of the committee indicated, the House of Delegates of the Society adopted resolution 58–60, introduced by the chairman of the committee, which recommended increasing the fees to consultants of the bureau. Effective March 1, 1960, the bureau has been authorized to use New York State Workmen's Compensation fee schedules in reimbursing its medical consultants. This is a considerable improvement over the schedule previously used. It is not known whether or not the passing of the above resolution was in any way responsible for the increase in fees, but it will do no harm for this committee to claim credit.

Our single formal meeting was held on Tuesday, January 19, 1960, at the offices of the bureau and dealt primarily with proposed letters and bulletins to medical consultants throughout the State informing them of the new fee schedule and recapitulating the bureau's requirements in information required in consultations.

The preparation of informational material for doctors which we began last year has been shelved temporarily because of other and more urgent preoccupations of the bureau. This project will be resumed when time permits.

Respectfully submitted,
GEORGE HIMLER, M.D., *Chairman*

Columbia University Study of Nonprofit Medical Insurance Plans

To the House of Delegates, Gentlemen:

The Advisory Committee to the Columbia University Study of Nonprofit Medical Insurance Plans in New York State consists of:

John C. McClintock, M.D., *Chairman*	Albany
Carl R. Ackerman, M.D.	Bronx
Merle D. Evans, M.D.	Monroe
Leo E. Gibson, M.D.	Onondaga
Carlton E. Wertz, M.D.	Erie
Norman S. Moore, M.D.	Tompkins

One meeting was called by Dr. Trussell and his study group to review the material contained in the first part of their report, having to do with Blue Cross plans. The committee met at the Sheraton-Russell Hotel in New York City on Sunday, October 25, at 10:00 A.M. Several suggestions were made to Dr. Trussell and his study group concerning the material covered in the first part of his report. It must be emphasized that the Commissioner of Insurance has complete control of publication of the report for the first year. It is anticipated, however, that printed copies will be ready for distribution the latter part of February.

The committee will meet again this spring at the call of Dr. Trussell when we will consider the chapters of their report dealing with medical and dental plans in the State of New York. After this meeting, I anticipate that the work of this committee will be concluded and the committee can then be discharged. It is purely an advisory committee to take to Dr. Trussell and his study group the ideas and policies of the Medical Society of the State of New York.

Respectfully submitted,
JOHN C. MCCLINTOCK, M.D., *Chairman*

To Combat Staphylococcal Infection

To the House of Delegates, Gentlemen:

The Joint Committee to Combat Staphylococcal Infection consists of the following members:

James Greenough, M.D., *Chairman*	Otsego
Norman S. Moore, M.D.	Tompkins
Christopher Parnall, Jr., M.D.	Monroe
Martin R. Steinberg, M.D.	New York
Alonzo S. Yerby, M.D.	Albany
Victor N. Tompkins, M.D., Adviser	Albany
Granville W. Larimore, M.D., Adviser	Albany

Early in May, 1959, the Joint Committee to Combat Staphylococcal Infection was notified that it was probable that a change would be made in the Sanitary Code, requiring the reporting of staphylococcus infections in hospital patients and in patients who had been discharged from a hospital less than twenty-eight days previously.

The committee was circularized and voted 6 to 1 to approve this proposal. One meeting of the committee was held July 16 to discuss future plans. Several additional members of the State Health Department attended.

The committee voted to combine "The Guide for Prevention and Control of Infections in Hospitals" with "The Control of Staphylococcus in Hospitals." Dr. Hilleboe volunteered to do this work through the personnel of his department.

The committee believed that the first printing, at an estimated cost of $2,500, should be 20,000, which could be distributed to all chiefs of hospitals, hospital services, and laboratories. Rather than send the booklet to all the doctors of the State, a joint letter could be drafted by Drs. Hilleboe and Fineberg, telling about the change in the Sanitary Code and explaining how the booklet could be obtained and sent to all physicians.

The Medical Society, the Hospital Association, the State Health Department, and the Social Welfare Department will finance this project equally as was originally planned.

No further activity was planned for the joint committee except to help, if requested, in final review of the booklet. The material has recently been put together and the chairman has had an opportunity of reading it. He wishes to congratulate the New York State Department of Health on the completed manuscript.

It appears probable that there will be very little necessity for this committee to function in 1960. I believe it could well be dissolved in the near future.

Respectfully submitted,
JAMES GREENOUGH, M.D., *Chairman*

ANCILLARY GROUPS

Reports in this section are referred to the Reference Committee on Ancillary Groups, consisting of the following:

Sol Axelrad, M.D., Queens, *Chairman*
James L. Palmer, M.D., Broome
Julia Lichtenstein, M.D., New York
Philip J. Hust, M.D., Delaware
John W. Latcher, M.D., Otsego

Woman's Auxiliary, Advisory to

To the House of Delegates, Gentlemen:

The Advisory Committee to the Woman's Auxiliary consists of the following:

Leo E. Gibson, M.D., *Chairman*	Onondaga
Thomas M. d'Angelo, M.D.	Queens
Albert Vander Veer, II, M.D.	Albany

The Woman's Auxiliary to the Medical Society of the State of New York has continued to supplement social, economic, and educational programs of the State and county medical societies while also instituting new programs of value to medicine and women's organizations. Mrs. James L. McCartney, Nassau County, the president, adopted as the Auxiliary theme for the year, "Facing Our Challenge." To prepare the membership for this role, the State president urged each county auxiliary president to form study groups so that everyone would have the opportunity to keep informed of the position and activities of organized medicine on all pertinent issues of the day. To make these groups most effective the county president recommended that the chairmen make special efforts to have every member participate in these study groups.

Through the cooperation of the State chairmen the Auxiliary conducted a State-wide Health Poster Contest, the Exhibit and Health Film Theatre at the State Fair, and the Nurses' Recruitment Program. The purpose and value of the American Medical Educational Foundation, the Physicians' Home, and the Recruitment Program, designed to interest both boys and girls in health careers, were stressed continuously.

Up-to-date information relative to Auxiliary activities was made available to the membership through the columns of the *Distaff*, edited by Mrs. Herbert J. Ulrich. The legislation and public relations committees chairmen and other State chairmen made certain that the Auxiliary was kept informed of developments in their areas.

Future plans call for emphasis on increased membership. The president and the board of directors believe that this is an area in which the cooperation of the State and county societies can be helpful. Special programs are planned to emphasize the purpose and value of Auxiliary membership and the need for county auxiliaries to be closely affiliated with the State Auxiliary. Physicians are urged to study the Auxiliary's purposes and accomplishments and to cooperate with it in its efforts to have every doctor's wife an Auxiliary member.

The Auxiliary will also intensify its efforts to make certain that members of all other women's organizations appreciate the importance of the role of private medical practice in the American way of life.

Your committee believes that the Auxiliary president, Mrs. James L. McCartney, the editor of the *Distaff*, Mrs. Herbert J. Ulrich, all the members of the board of directors and State chairmen, and all Auxiliary members are performing a valuable service in providing a bridge between the busy practicing physician, his patients, and his medical organizations in his community. We compliment the Auxiliary on its activities among other women's groups on the Forand Bill and chiropractic. We know that we can continue to depend upon the Auxiliary to assist us in our efforts to advance the standards of medical care in New York State.

Respectfully submitted,
Leo E. Gibson, M.D., *Chairman*

Nursing Education

To the House of Delegates, Gentlemen:

The Committee on Nursing Education consists of the following:

John M. Galbraith, M.D., *Chairman*	Nassau
Louis M. Rousselot, M.D.	New York
Charles M. Smith, M.D.	Seneca
William A. Cooper, M.D.	New York

During the past year the Committee on Nursing Education has concentrated on getting together the various organizations and individuals interested in the shortage of nurses problem. There was a meeting with the representatives of the Hospital Association of New York State along with the Joint State Committee, and a meeting with the State representatives of the American Nurses Association and the Nursing League along with representatives from the State Department of Health and the New York City Department of Health.

In the meeting with the representatives of the Hospital Association of New York State it was recommended, and later accepted by the Council of the Medical Society of the State of New York, that the Hospital Association and the Medical Society propose to the Board of Regents that hospital schools of nursing be authorized to grant an associate degree in nursing to the graduates of three-year schools of nursing. It is hoped that this will materially increase the number of students entering nursing schools who will graduate and go into bedside nursing.

An excellent discussion of nursing education problems was held with the nursing representatives of the State and the City of New York. It was agreed that the State should establish nursing schools in the community or junior colleges and that all possible efforts be made to expand scholarship aid to encourage high school graduates to study nursing.

There is an interesting trend in one of the practical nursing schools of the State. More and more graduates are going on to registered nursing schools. Many of these youngsters did not reach their true potential while in high school but found themselves while in practical nursing school.

The Committee on Nursing Education is deeply appreciative of the activity in the field by the Woman's Auxiliary to the Medical Society of the State of New York.

Respectfully submitted,
John M. Galbraith, M.D., *Chairman*

Dental Health

To the House of Delegates, Gentlemen:

The Joint Dental Health Committee with the Dental Society of the State of New York consists of the following:

Fred S. Dunn, M.D., *Chairman*	New York
Robert M. McCormack, M.D.	Monroe
Earle M. Crysler, D.D.S., *Chairman*	Jefferson
William F. Harrigan, D.D.S.	Nassau

The Joint Committee of the Medical Society of the State of New York and the Dental Society of the State of New York did not meet during the past year. Consequently, there is nothing to report.

Respectfully submitted,
Fred S. Dunn, M.D., *Chairman*

Pharmaceutical Association, Joint Committee with

To the House of Delegates, Gentlemen:

The members of the Joint Committee of the Medical Society of the State of New York and Pharmaceutical Association of New York State are as follows:

L. Maxwell Lockie, M.D., *Chairman*	Erie
Eli A. Leven, M.D.	Monroe
Herbert Pollack, M.D., Ph.G., L.L.D.	New York
Nicholas S. Gesoalde, Ph.G., *Chairman*	New York
Calvin Berger, Ph.G.	New York
John F. O'Brien, Ph.G.	Monroe

The committee has not met during the current Society year because there have been no matters of immediate concern before it.

Respectfully submitted,
L. Maxwell Lockie, M.D., *Chairman*

Blood Banks Commission

To the House of Delegates, Gentlemen:

The Blood Banks Commission has the following membership:

Norman S. Moore, M. D., *Chairman*	Tompkins
John C. McClintock, M.D.	Albany
Herbert R. Brown, Jr., M.D.	Monroe
Leon N. Sussman, M.D.	New York
Herman E. Hilleboe, M.D.	Albany
Herbert Berger, M.D.	Richmond
John J. Clemmer, M.D., *Adviser*	Albany
Martin L. Dreyfuss, M.D., *Adviser*	Dutchess
J. George Sharnoff, M.D., *Adviser*	Westchester

The Blood Banks Commission held a meeting on November 18, 1959. Present were Drs. John C. McClintock, Leon Sussman, Herbert Berger, Martin L. Dreyfuss, J. George Sharnoff, and your chairman, as well as Miss Evelyn P. Clarke, executive director of the Blood Banks Association of New York State.

The following financial facts were revealed for the ten months of 1959 ending October 31:

There had accrued a deficit of $3,354 in the North East District Clearing House operation. This amount, added to the $4,305 deficit of 1958 and the deficit of $6,071 for 1957, added up to a total loss of $13,730 for the operation of the Clearing House since its inception. This cost had been borne by the Medical Society of the State of New York. In addition there was a $2,400 outright grant given to the Clearing House in 1957. Further, there had been contributions by other medical societies in the North East District of $1,550, bringing the total deficit of $17,680 for the operation of 1957, 1958, and ten months of 1959.

In 1959 the Blood Banks Association received from dues through October $1,426 and had expenses of $6,369 with an actual deficit as of October 31 of $4,943. It was estimated that the deficit would be in the neighborhood of $6,000 on December 31.

The Commission was told by Dr. Berger, president of the Blood Banks Association of New York State, that the American Association of Blood Banks was desirous of taking over the North East District Clearing House operation and had offered to reimburse the Medical Society for what it had advanced, including all of 1959 and what it would spend in 1960. Therefore the Commission recommended to the Council "That the Blood Banks Association of New York State be empowered to negotiate with the American Association of Blood Banks to recover, on behalf of the Medical Society of the State of New York, the loan to the Clearing House to cover past deficits, with a minimum figure of $13,350 plus whatever monies are further loaned to the Clearing House until the transfer is made, and a maximum figure of $17,680, which includes the $2,400 grant and the $1,550 contribution of other medical societies, plus whatever deficit further accrues until the transfer is made; said repayment by the American Association of Blood Banks to be made within a maximum of five years."

At the above stated November meeting it was anticipated that the Council would approve the above recommendation, so, on condition that the recommendation for transfer be approved, the following resolution was passed by the Commission:

> WHEREAS, the Council has approved the Blood Banks Commission's recommendation, which is also the recommendation of the Blood Banks Association of New York State, that the North East District Clearing House be transferred to the American Association of Blood Banks for operation because this move will enhance the blood program for the citizens of New York State; and
>
> WHEREAS, the welfare of the citizens of New York State is of primary concern to the Medical Society of the State of New York; now therefore be it hereby
>
> *Resolved,* that the Council go on record that the Medical Society of the State of New York will continue to do its utmost to see that the citizens of the State of New York have an adequate blood program.

This resolution was recommended to the Council after the recommendation for transfer had been approved by the Council, and it was likewise approved.

On February 24 the Blood Banks Commission was notified that the American Association of Blood Banks had offered $7,500 for the North East District Clearing House. The Commission informed the negotiating group of the New York State Blood Banks Association that they should continue negotiations for the best possible financial settlement of the $13,730 owed the Medical Society of the State of New York, because the New York State Blood Banks Association would be morally responsible to the Society for the remainder of the debt.

As a final consideration by the Blood Banks Commission there was a request to it by the Blood Banks Association of New York State for a $6,000 grant from the Medical Society, plus working capital of $5,000 for the North East District Clearing House for 1960 until it was transferred to the A.A.B.B., this latter amount being reimbursable as a loan when the Clearing House was taken over by the A.A.B.B.

Because of much confusion in the past regarding the interaction of the Blood Banks Association, the Medical Society of the State of New York, the North East District Clearing House, and the Blood Banks Commission, the 1959 chairman wishes to make the following statement:

The Blood Banks Commission was organized as a liaison body between the Medical Society and the Blood Banks Association. The funds which were requested by the Commission for the various activities of the Association during the early part of the last decade were thought at first to be an investment which would be amortized by the Blood Banks Association. This proved not to be the case because the blood assurance program was discontinued for many reasons and the Trustees wrote off the indebtedness as a grant early in 1957.

However, in 1957 the Blood Banks Association convinced the Blood Banks Commission that the North East District Clearing House idea would be a proper investment from both a public relations and an economic point of view. The Blood Banks Commission therefore recommended that the Council and Trustees provide the North East District Clearing House with working capital. This is the portion of the Society's investment in the Blood Banks Association that will be recovered when the Clearing House is taken over by the A.A.B.B. It should be made quite clear, however, to members of the House of Delegates that the Blood Banks Association is an educational group; that it is not unlike a subcommittee of the Committee on Public Health and Education in that it has no way of providing funds for its activities other than dues of its members, and therefore any monies that the Blood Banks Commission requests from the Council and Trustees for the Association is an outright grant for educational and informative purposes. It is therefore anticipated that no further request for working capital for the North East District Clearing House will be made after 1959 but that the yearly request to supplement the funds obtained from dues will be made for the Blood Banks Association as an outright grant.

Respectfully submitted,

Norman S. Moore, M.D., *Chairman*

NOTICE

Additional Annual Reports will appear in the April 15 issue of the New York State Journal of Medicine.

MISCELLANEOUS BUSINESS

Reports in this section are referred to the Reference Committee on Miscellaneous Business, consisting of the following:

Raymond J. Byron, M.D., Schenectady, *Chairman*
Earl W. Douglas, M.D., Suffolk
Gilbert A. Clark, M.D., Rensselaer
Michael C. Armao, M.D., New York
Walter T. Heldmann, M.D., Richmond

American Medical Association Delegates

To the House of Delegates, Gentlemen:

The reports of the delegation from the Medical Society of the State of New York to the American Medical Association House of Delegates are presented in two parts, that of the June, 1959, meeting and that of the December, 1959, meeting.

June Meeting in Atlantic City.—At the A.M.A. annual convention, June 8 to 12, 1959, the New York State delegation was very active in its proceedings. This session presented matters of momentous importance to American medicine. The House of Delegates realized that a revolution which could change many of our concepts in the practice of medicine was presented to it.

Seven of our members served on important reference committees. Norman S. Moore, M.D., was chairman of the Reference Committee on Amendment to the Constitution and Bylaws; John Galbraith, M.D., on the committee, Reports of Trustees; James Greenough, M.D., Medical Education and Hospitals; Renato J. Azzari, M.D., Reports of Officers; J. Stanley Kenney, M.D., Rules and Order of Business; Thomas M. d'Angelo, M.D., Sergeants at Arms; and Thurman B. Givan, M.D., served on a special reference committee to consider the Report of the Commission on Medical Care Plans.

As has been the custom the other numbers of our delegation were assigned to sit in on other committees in order that at our breakfast meetings we might intelligently discuss the various problems to be presented to the House and be prepared to vote as nearly as possible as our constituents had directed us.

The remaining of our delegates who so participated were Drs. Walter P. Anderton, Peter J. Di Natale, Gerald D. Dorman, Henry I. Fineberg, Leo E. Gibson, John F. Kelley, Joseph A. Lane, John C. McClintock, Peter M. Murray, and Carlton E. Wertz. Drs. Andrew A. Eggston and Ezra A. Wolff also participated, as alternates, as did Drs. Louis H. Bauer and Chas. Gordon Heyd as past-presidents of the A.M.A. Also Stuart Ross, M.D., Section Delegate for Gastroenterology and Proctology, served as a member of the Reference Committee on Credentials.

Furthermore, an honor was bestowed upon our State by the unanimous election of J. Stanley Kenney, M.D., as vice-president of the A.M.A.

Respectfully submitted,
Thurman B. Givan, M.D., *Chairman*

Following is a report on the actions of the House of Delegates, American Medical Association, 108th Annual Meeting, June 8 to 12, 1959, Atlantic City, New Jersey, as transmitted by F. J. L. Blasingame, M.D., executive vice-president of the A.M.A.

Atlantic City, June 12.—The report of the A.M.A. Commission on Medical Care Plans, relations between medicine and osteopathy, the report of the Committee on Preparation for General Practice, and the issue of compulsory Social Security coverage for self-employed physicians were among the major subjects which brought important policy actions by the House of Delegates at the American Medical Association's 108th Annual Meeting held June 8 to 12 in Atlantic City.

Another highlight of the meeting was the appearance of President Dwight D. Eisenhower, who addressed an overflow audience of more than 5,000 at the Tuesday night inauguration of Dr. Louis M. Orr of Orlando, Florida, as the 113th president of the A.M.A. It marked the first time that a President of the United States has addressed an A.M.A. annual or clinical meeting.

Dr. E. Vincent Askey of Los Angeles, speaker of the House of Delegates since 1955, was named president-elect for the coming year. Dr. Askey will succeed

Dr. Orr as president at the association's annual meeting in June, 1960, in Miami Beach.

The 1959 Distinguished Service Award of the American Medical Association was voted to Dr. Michael E. DeBakey of Houston, Texas, chairman of the Department of Surgery at Baylor University College of Medicine, for his outstanding contributions in the field of cardiovascular surgery. Dr. DeBakey received the award at the Tuesday night inaugural ceremony.

Total registration through Thursday, with half a day of the meeting still remaining, had reached 28,225, including 12,921 physicians.

Eisenhower Address.—President Eisenhower, speaking at the inaugural ceremony in the ballroom of Convention Hall, warned that inflation posed the greatest danger to the traditional, free enterprise practice of medicine. The cost of inflation, he said, "is not paid in dollars alone but in increasingly stagnated progress, lost opportunity, and eventually, if unchecked, in lost freedoms for the doctor and the patient." Mr. Eisenhower also expressed gratification at learning of A.M.A. leadership in the program to meet the health care needs of the aged.

Commission on Medical Care Plans.—The House of Delegates received Part I of the report of the Commission on Medical Care Plans as information only and then acted on the Commission recommendations item by item. The House adopted 36 of the recommendations without change, but reworded three which relate to miscellaneous and unclassified plans. The changed recommendations now read as follows:

B–4. "In an effort to decrease, or at least to prevent an increase, in the over-all cost of health care, study should be given to the removal of the requirement of hospital admission as the only condition under which payment of certain benefits will be made."

B–6. "Medical care plans should be encouraged to increase their efforts to provide health education and information concerning the coverage of their subscribers."

B–16. "The American Medical Association believes that free choice of physician is the right of every individual and one which he should be free to exercise as he chooses. Each individual should be accorded the privilege to select and change his physician at will or to select his preferred system of medical care and the American Medical Association vigorously supports the right of the individual to choose between these alternatives."

In connection with free choice of physician, the House also requested the Board of Trustees to transmit to all constituent medical associations the "far-reaching significance" of Recommendation A–7, which says:

" 'Free choice of physician' is an important factor in the provision of good medical care. In order that the principle of 'free choice of physician' be maintained and be fully implemented, the medical profession should discharge more vigorously its self-imposed responsibility for assuring the competency of physicians' services and their provision at a cost which people can afford."

The House also strongly endorsed Recommendation B–11, which declares that "Those who receive medical care benefits as a result of collective bargaining should have the widest possible choice from among medical care plans for the provision of such care."

Many of the Commission recommendations urged increased activity by state and county medical societies and the American Medical Association in such fields as continuing study and liaison, closer attention to legal and legislative factors, and the development of guides for the relationship between the medical profession and the various types of third parties. To carry out three of the recommendations involving A.M.A. activities, the House also approved a seven-point program which it requested the Board of Trustees to transmit to the Division of Socio-Economic Activities for immediate attention.

Medicine and Osteopathy.—In considering a special report of the Judicial Council on the subject of osteopathy, the House adopted the following policy statement regarding interprofessional relations:

"(A) All voluntary professional associations between doctors of medicines and those who practice a system of healing not based on scientific principles are unethical.

"(B) Enactment of medical practice acts requiring all who practice as physicians and surgeons to meet the same qualifications, take the same examinations, and graduate from schools approved by the same agency should be encouraged by the constituent associations.

"(C) It shall not be considered contrary to the Principles of Medical Ethics for doctors of medicine to teach students in an osteopathic college which is in the process of being converted into an approved medical school under the supervision of the A.M.A. Council on Medical Education and Hospitals.

"(D) A liaison committee be appointed by the Board of Trustees of the American Medical Association to meet with representatives of the American Osteopathic Association, if mutually agreeable, to consider problems of common concern including interprofessional relationships on a national level."

In another action concerning osteopathy, the House recommended that the American Medical Association representatives on the Joint Commission on Accreditation of Hospitals suggest to the Joint Commission that they inspect upon request and consider for accreditation without prejudice those hospitals required by law to admit osteopathic physicians to their staff.

Preparation for General Practice.—The House approved and commended the final report of the Committee on Preparation for General Practice, which proposes a new two-year internship program for medical school graduates planning to become family physicians. To avoid unnecessary confusion, the House deleted only one sentence which read: "Indeed, the committee believes that the one-year internship actually encourages inadequate preparation for general practice." The Committee on Preparation for General Practice included representatives from the A.M.A. Council on Medical Education and Hospitals, the American Academy of General Practice, and the Association of American Medical Colleges.

The suggested program would include a basic minimum of eighteen months hospital training in the diagnostic, therapeutic, psychiatric, preventive, and rehabilitative aspects of medicine and pediatrics in a very broad sense, including care of the newborn. A physician then could elect to spend the remaining six months for additional training in other segments of the program. The committee stated, however, that participants who plan to practice obstetrics would be expected to spend at least four months of the elective period in obstetric training.

The report declared that "the graduate program of two years in preparation for family practice should be planned and implemented as a unified whole" with a maximum continuity of assignment in specific services. The program also calls for adequate experience in outpatient care and emergency room service.

Social Security.—In considering five resolutions on the subject of compulsory Social Security coverage for self-employed physicians, the House disapproved of four and adopted one reaffirming its opposition to the compulsory inclusion of physicians. In so doing, the delegates expressed concern over the possible effects that a change of policy might have on the Association's entire legislative program, particularly with respect to the Forand Bill.

The House also recognized "the apparent growing demand by physicians for economic security" and requested the Board of Trustees to investigate the possibilities of developing group insurance and retirement plans which could be made available to Association members. It accepted a reference committee suggestion "that the American Medical Association continue and expand its educational program to inform its members of the economic, social, and moral advantages of economic security obtained within the framework of our free enterprise system rather than through the mechanisms of governmental Social Security."

Miscellaneous Actions.—In dealing with a wide variety of other subjects, the House also: Urged all physicians to participate more fully in community activities and socioeconomic matters in their own communities but agreed that no change should be made at this time in Article II of the Constitution, which states Association objectives;

Approved in principle the aims and objectives of the President's Council on Youth Fitness and the Citizens Advisory Committee on the Fitness of American Youth;

Accepted a Board of Trustees recommendation that the 1962 Annual Meeting be held in Chicago;

Expressed heartfelt thanks to the Committee on Amphetamines and Athletes, which has completed its assignment;

Requested the Board of Trustees to study the problems and possibilities of establishing an A.M.A.-sponsored medical scholarship and/or loan program;

Approved the inclusion of *Today's Health* as a benefit of dues-paying membership and urged members to make it available to their patients;

Recommended that state medical societies, where advisable, initiate legislative efforts to eliminate cancer quackery;

Received a progress report indicating "phenomenal progress" in the field of health insurance for the aged since the Minneapolis meeting last December;

Gave a rising vote of thanks to Dr. Joseph D. McCarthy, who finished his term as chairman of the Council on Medical Service;

Reaffirmed its full support of the Educational Council for Foreign Medical Graduates;

Endorsed the purposes outlined in the initial report of the Medical Disciplinary Committee;

Urged every A.M.A. member to give a substantial gift to the medical schools through the American Medical Educational Foundation; and

Expressed appreciation for the outstanding disaster medicine program presented by the United States Army Medical Service on June 6, 1959, in Atlantic City.

Opening Session.—At the Monday opening session Dr. Gunnar Gundersen of LaCrosse, Wisconsin, retiring A.M.A. president, stressed the personal responsibility of every physician to keep abreast of medical advancements and to deliver "1959 medicine." Dr. Orr, then president-elect, called for concerted effort and medical leadership in four areas—the costs of medical care, recruitment of dedicated medical students, basic research and health care of the aged. Dr. Carl V. Moore, Busch professor of medicine at Washington University, St. Louis, was presented with the eighth Goldberger Award in clinical nutrition. Smith, Kline and French Laboratories of Philadelphia received a special A.M.A. award for its sponsorship of color medical television over the past ten years.

Inaugural Ceremony.—Dr. Orr, in his Tuesday night inaugural address, affirmed his belief in the basic principles of medicine, democracy, and faith under which America's physicians live. He pointed out that freedom must continually be fought for by men and women who are willing to stand up and be counted. Dr. Leonard Larson of Bismarck, North Dakota, A.M.A. Board chairman, administered the oath of office to Dr. Orr, and the latter presented the Distinguished Service Award to Dr. DeBakey. The Fort Dix Band Chorus presented the musical program.

Election of Officers.—In addition to Dr. Askey, the new president-elect, the following officers were selected at the Thursday session;

Vice-President, Dr. James Stanley Kenney of New York City; speaker of the House of Delegates, Dr. Norman A. Welch of Boston, and vice-speaker, Dr. Milford O. Rouse of Dallas, Texas.

Dr. R. B. Robins of Camden, Arkansas, and Dr. Hugh H. Hussey, Jr. of Washington, D.C., were re-elected for five-year terms on the Board of Trustees. Also elected to the Board, for the first time, was Dr. Percy E. Hopkins of Chicago.

Dr. J. M. Hutcheson of Richmond, Virginia, was re-elected to the Judicial Council. Re-elected to the Council on Medical Education and Hospitals were Dr. Charles T. Stone, Sr., of Galveston, Texas, and Dr. W. Andrew Bunten of Cheyenne, Wyoming.

Dr. Willard Wright of Williston, North Dakota, was elected, and Dr. J. Lafe Ludwig of Los Angeles was re-elected to the Council on Medical Service. Dr. William Hyland of Grand Rapids, Michigan, was re-elected to the Council on Constitution and Bylaws.

December Meeting in Dallas.—The thirteenth clinical meeting of the American Medical Association was held at the Hotel Adolphus in Dallas, Texas, December 1 to 4, 1959.

The following members of our Society attended: *Delegates*—Drs. Walter P. Anderton, Renato J. Azzari, Thomas M. d'Angelo, Peter J. Di Natale, Gerald D. Dorman, Henry I. Fineberg, John M. Galbraith, Leo E. Gibson, Thurman B. Givan, James Greenough, John F. Kelley, J. Stanley Kenney, Joseph A. Lane, John C. McClintock, Norman S. Moore, Peter M. Murray, and Carlton E. Wertz. *Alternate Delegates*—Drs. Elton R. Dickson and Ezra A. Wolff. Drs. Louis H. Bauer, John J. Masterson, William L. Wheeler, Jr., and Herbert T. Wagner were also present.

The delegation met on the evening of November 30; breakfast meetings were held on the mornings of December 2 and 3.

Meeting, November 30.—(A) Dr. Donald Cass, chairman of the California delegation, by invitation discussed the effective procedures that have been adopted by his group. He recommended strongly that we confer with our colleagues on the West Coast and he called for closer cooperation between our two great states.

(B) The chairman reviewed the agenda of the meeting of the delegation in New York City held on August 14. A chairman was elected. It was unanimously agreed that Gerald D. Dorman, M.D., would be our candidate for the position of trustee of the A.M.A. to fill the vacancy created by the fact that Dr. Larson will not be eligible for re-election. It was approved that the chairman write to each member of the A.M.A. House of Delegates announcing Dr. Dorman's candidacy. It was decided that later the chairman should contact key people in the various states, that every effort should be made to obtain as many "seconders" as possible before the annual meeting in June, 1960. No area of the country was to be ignored or neglected.

It was recommended that a committee be appointed to supervise the activities of the hospitality suite, the members to be selected after the reference committees have been published. Written invitations would be mailed, in advance, to delegates, alternate delegates, officers, and staff, to state executive directors, and to executive secretaries of county societies of New York.

The chairman reported that letters concerning Dr. Dorman had been sent to members of the A.M.A. House of Delegates and officers, on August 28 and November 19 (the latter included a curriculum vitae). The acknowledgments were quite encouraging.

Dr. Dorman's chances of being elected were discussed at length. The opinion was expressed that there is still a great deal of work to be done by all if we are to be successful. The possibility of other nominations was projected.

It was voted unanimously that the chairman be given unlimited power to act in negotiations with the delegations of other states. Once a course has been determined, we will vote as a unit to assure the fullest support for Dr. Dorman.

(C) Certain resolutions to be presented to the House of Delegates and other items were considered and evaluated, as follows:

1. Resolution of Oregon that the House of Delegates rescind its action taken at the 1959 annual meeting that "each individual should be accorded the privilege to select and change his physician at will or to select his preferred system of medical care and the American Medical Association vigorously supports the right of the individual to choose between these alternatives." The Oregon State Medical Society believes this statement to be ambiguous and confusing. *Disapproved.*

2. It was agreed to support the two New York resolutions:

(*a*) "That this House of Delegates clarify its position by hereby stating that the A.M.A. is solidly in favor of the prerogative of the individual to fully choose from whom he will purchase his medical care."

(*b*) That physicians be encouraged to use "M.D." after their names rather than "Dr." before.

3. Resolution introduced by Florida, Michigan, Nebraska, New York, and North Dakota "that (1) the A.M.A. reiterate its support of the Blue Shield concept; and (2) the Council on Medical Service be directed to prepare and submit to the House of Delegates at the June, 1960, meeting its recommendations as to a full statement of policy with respect to the A.M.A.'s relationship with Blue Shield plans." *Approved.*

4. Communication from the State of Maryland to study the advisability of urging a congressional hearing in order to correct present abuses in veterans medical care. It was pointed out that this matter is being studied by an A.M.A. committee. *Tabled.*

5. Request of the secretary of the American Society of Abdominal Surgeons that we consider very carefully the recommendation that the title Section on Surgery, General and Abdominal be changed to title Section on Surgery, implying that this action should be disapproved. *Tabled.*

6. A letter from North Dakota sponsoring Dr. Larson for president-elect was noted. This was received with approbation.

7. It was voted to send a telegram to Dr. George M. Fister of Ogden, Utah, member of the Board of Trustees, who is ill.

(D) The chairman announced: 1. The hospitality committee would be Dr. Greenough, chairman, Dr. Moore and Dr. Wagner;

2. An invitation has been submitted to the A.M.A. to hold its 1964 meeting in New York City, at the time of the World's Fair. (The Board of Trustees of the A.M.A. has tentatively approved this proposal);

3. Illinois luncheon, December 1 at 12:15 P.M.;

4. Texas dinner for House of Delegates, December 2, at 7:00 P.M.;

5. Reference committee appointments made by the speaker of the House of Delegates: Executive Session, Dr. Fineberg; Legislation and Public Relations, Dr. Gibson; Medical Education and Hospitals, Dr. Dorman, Chairman; Sergeant at Arms, Dr. Kelley.

6. Medical Services Conference (sponsored by Council on Medical Service) and Conference on Medical Aspects of Sport were held on November 30;

7. Cost of travel insurance is voucherable.

(E) Members of the delegation were assigned to attend the meetings of reference committees, as follows: Amendments to Constitutions and By-laws, Dr. Moore; Reports of Board of Trustees, Dr. Lane; Hygiene, Public Health, and Industrial Health, Dr. Di Natale; Insurance and Medical Service, Drs. Givan and Wertz; Medical Military Affairs, Dr. McClintock; Miscellaneous Business, Dr. Kelley; Reports of Officers, Dr. Galbraith, and Sections and Section Work, Dr. Dickson.

The chairman suggested that our delegates "spread out" at A.M.A. and state functions, in order to meet and talk to as many representatives from other states as possible. This was approved. It was voted that the wives be invited to the hospitality suite.

Breakfast Meeting, December 2.—(A) The chairman reviewed the assignments of those scheduled to attend reference committee meetings. He reported on his contacts with the delegates of other states and the progress of his negotiations concerning our candidate for the Board of Trustees.

(B) The following actions were taken:

1. Transfer Council on Medical Education and Hospitals from a standing committee of the House of Delegates to a council of the Board of Trustees. *Approved.* Dr. Moore was directed to support this change.

2. Accreditation of hospitals with osteopathic physicians on the medical staff. It was moved and seconded that hospitals in which osteopaths are on the staff by provision of the law be inspected without prejudice. *Tabled.*

3. It was voted to support the resolution calling for a change of name of the Section on Surgery, General and Abdominal.

4. It was agreed that we should support the recommendation that the examinations to determine the physical and mental fitness of aircraft crew members should be made by doctors of medicine with special knowledge and proficiency in certain technics.

The chairman was instructed to transmit to the speaker of the House of Delegates the names of those in our delegation who are serving in the House for the last time.

The chairman announced that the "Aces and Deuces" were giving a luncheon for the delegates.

Breakfast Meeting, December 3.—(A) The chairman reported that a survey of the entire situation and a canvas of delegates from the various states revealed that as of this time, a majority is in favor of our candidate for the Board of Trustees. At least 20 states have signified their intention to second our nomination and eight additional states are apparently in "our corner." If the election were held in December, it would appear that our efforts have not been in vain.

(B) The members of the delegation assigned to sit in on reference committee meetings submitted these reports:

1. *Amendments to Constitution and Bylaws:* Dr. Moore stated that it was the consensus that the Council on Medical Education and Hospitals should be a standing committee of the Board of Trustees, the members to be elected by the House.

2. *Report of Board of Trustees:* Dr. Lane reported no major controversies. There were discussions about the 1963 and 1964 annual meetings. The big question concerns the former and the site of San Francisco.

3. *Hygiene, Public Health, and Industrial Health:* Dr. Di Natale reported no debatable matters.

4. *Insurance and Medical Service:* Drs. Givan and Wertz reported:

(*a*) There was considerable difference of opinion about free choice. Several persons suggested changes in the A.M.A.'s June action in order to clarify the issue. Others espoused free choice of physician and free choice of plan without reservation. It appeared that the committee was not in favor of an open condemnation of closed panels.

(*b*) Relationships between physicians and hospitals. It was suggested that we go back to the 1951 "Guides for Conduct of Physicians in Relationships with Institutions."

5. *Medical Military Affairs:* Dr. McClintock agreed that there should be medical representation in the Joint Chiefs of Staff organization.

6. *Miscellaneous Business:* Dr. Kelley reported our resolution concerned with the use of "M.D." was approved.

7. *Medical Education and Hospitals:* Dr. Dorman reported:

(*a*) Those hospitals which are required by law to admit osteopaths to their staffs may, on request, be considered for accreditation.

(*b*) The program of the Educational Council for Foreign Medical Graduates was endorsed, with the recommendation that judicious consideration be given to local problems involved in the July 1, 1960, deadline for certification of foreign graduates.

(*c*) Postgraduate education of American physicians in the foreign mission field was approved.

(*d*) The committee approved the recommendation that the A.M.A. continue to use its influence to persuade medical schools to include in their curriculum a course in social, political, and economic aspects of the art and science of medicine.

8. *Sections and Section Work:* Dr. Dickson reported the Section on Surgery, General and Abdominal will be changed to the Section on General Surgery.

The delegates attended to their duties faithfully. The chairman is very grateful to them and to the staff of our Society for their grand assistance and great cooperation. It is an honor and a privilege to be the chairman of so fine a group.

Respectfully submitted,
HENRY I. FINEBERG, M.D., *Chairman*

Following is a report on the actions of the House of Delegates, American Medical Association, 13th Clinical Meeting, December 1 to 4, 1959, Dallas, Texas, as transmitted by F. J. L. Blasingame, M.D., executive vice-president of the A.M.A.

Dallas, December 4.—Freedom of choice of physician, relations between physicians and hospitals, a scholarship program for deserving medical students, and relative value studies of medical services were among the major subjects acted upon by the House of Delegates at the American Medical Association's Thirteenth Clinical Meeting held December 1 to 4 in Dallas.

Dr. Chesley M. Martin of Elgin, Oklahoma, was named as the 1959 General Practitioner of the Year for his outstanding contributions to the health and civic affairs of his home community. Dr. Martin, who has practiced in Elgin for the past forty-four years, was the 13th recipient of the annual award and the first Oklahoman to be so honored.

Speaking at the Tuesday session of the House, Dr. Louis M. Orr of Orlando, Florida, A.M.A. president, urged the nation's physicians to take a more active interest in the whole area of politics, public affairs, and community life. Dr. Orr also asked physicians and medical societies to do a more effective job of telling medicine's positive story, adding that "if more people knew more about the things we support and encourage, they would listen to us much more carefully about those occasional things that we oppose."

Two nationally known political leaders from Texas also addressed the Tuesday morning session. Senator Lyndon B. Johnson, majority leader in the U.S. Senate, called for a "politics of unity" which will enable Americans to exert strength and determination in an effort to create a world in which all men can be free. Speaker of the U.S. House of Representatives Sam Rayburn urged greater attention to the task of educating young people in the principles of American government and giving them a desire to perpetuate it.

Total registration through Thursday, with half a day of the meeting still remaining, had reached 4,727, including 2,742 physicians.

Freedom of Choice.—In considering four resolutions which in various ways would have changed or replaced the statements on freedom of choice of physician which the House adopted in June, 1959, when acting upon the recommendations in the report of the Commission on Medical Care Plans, the House reaffirmed the following two statements approved in Atlantic City:

1. "The American Medical Association believes that free choice of physician is the right of every individual and one which he should be free to exercise as he chooses."

2. "Each individual should be accorded the privilege to select and change his physician at will or to select his preferred system of medical care, and the American Medical Association vigorously supports the right of the individual to choose between these alternatives."

However, in order to clarify and strengthen its position on the issue of freedom of choice of physician, the House also adopted this additional statement which was submitted as a substitute amendment on the floor of the House:

3. "Lest there be any misinterpretation, we state unequivocally that the American Medical Association firmly subscribes to freedom of choice of physician and free competition among physicians as being prerequisites to optimal medical care. The benefits of any system which provides medical care must be judged on the degree to which it allows of, or abridges, such freedom of choice and such competition."

Physician-Hospital Relations.—The House received 12 resolutions on the subject of relationships between physicians and hospitals. To resolve any doubt about its position, the House did not act upon any of the resolutions but instead reaffirmed the 1951 "Guides for Conduct of Physicians in Relationships with Institutions." It also declared that "all subsequent or inconsistent actions are considered superseded."

The House also accepted recommendations that (1) the House of Delegates acknowledge the need to strengthen relationships with hospitals by action at state and local levels, (2) the Board of Trustees of the Association continue to maintain liaison with the Board of Trustees of the American Hospital Association, and (3) the Council on Medical Service review this entire problem to ascertain if there have been actions inconsistent with the 1951 Guides.

Those Guides summarize the following general principles as a basis for adjusting controversies:

"1. A physician should not dispose of his professional attainments or services to any hospital, corporation or lay body by whatever name called or however organized under terms or conditions which permit the sale of the services of that physician by such agency for a fee.

"2. Where a hospital is not selling the services of a physician, the financial arrangement if any between the hospital and the physician may be placed on any mutually satisfactory basis. This refers to the remuneration of a physician for teaching or research or charitable services or the like. Corporations or other lay bodies properly may provide such services and employ or otherwise engage doctors for those purposes.

"3. The practice of anesthesiology, pathology, physical medicine, and radiology are an integral part of the practice of medicine in the same category as the practice of surgery, internal medicine, or any other designated field of medicine."

Scholarship Program.—To help meet the need for an increasing number of physicians in the future, the House approved the creation of a special study committee which was asked to:

1. Present a scholarship program, its development, administration, and the role of the American Medical Association in fulfilling it;
2. Ascertain the maximum to which medical schools could expand their student bodies while maintaining the quality of medical education;
3. Ascertain what universities can support new medical schools with qualified students and sufficient clinical material for teaching, either on a two-year or a full four-year basis;
4. Investigate the securing of competent medical faculties;
5. Investigate financing of expansion and establishment of medical schools;
6. Investigate financing of medical education as to the most economical methods of obtaining high quality medical training;
7. Develop methods of getting well-qualified students to undertake the study of medicine;
8. Investigate the possibility of relaxing rigid geographic restrictions on the admission of students to medical schools.

The House urged that the special committee be implemented promptly with adequate funds and staff so that it may make an initial report by June, 1960.

Relative Value Studies.—Reaffirming a previous policy statement, the House approved in principle the conducting of relative value studies by each state medical society, rather than a nation-wide study or a series of regional studies by the A.M.A. The House also reiterated its authorization for the Committee on Medical Practices to inform each state medical association, through regional or other meetings, of the purpose, scope, and objectives of such studies, the steps to be followed in conducting studies, the problems which may be encountered, and the manner in which the results can be applied.

The House recognized, however, that some state medical societies are either not interested in relative value studies or are actively opposed to them. It pointed out that some state medical associations fear that the regional conferences of the Committee on Medical Practices will put pressure on them to carry out such studies and that this will result in the adoption of "fixed fees."

Since the regional conferences are educational in nature, the House said, it remains for each state or county medical association to accept or reject the idea of a study in its area.

The House expressed awareness of the fact that this is still a controversial matter. However, it commended the Committee on Medical Practices for its effort to carry out the instructions of the House, and it urged the committee to continue its educational work.

Miscellaneous Actions.—In considering 44 resolutions and a large volume of annual, supplementary, and special reports, the House also:

Learned that the A.M.A. Board of Trustees has appointed a liaison committee to meet with a similar committee of the American Osteopathic Association to consider matters of common concern;

Emphasized that local medical societies should insure that no member violates ethical traditions as they relate to ownership of pharmacies or stock in pharmaceutical companies;

Approved the plan of the Committee on Medical Rating of Physical Impairment to publish its new guide on the cardiovascular system in the A.M.A. *Journal.*

Recommended that Association councils and committees, whenever feasible, hold their meetings in the remodeled Chicago headquarters;

Called for investigation of the need, desirability, and feasibility of establishing a home for aged and retired physicians;

Commended Dr. F. S. Crockett, retiring chairman of the Council on Rural Health, for his many years of devoted duty;

Urged active promotion and careful study of the newly developed "Guides for Medical Care in Nursing Homes and Related Facilities";

Suggested that fees for consultative examinations under programs of the Bureau of Old Age and Survivors Insurance should be adjudicated directly between the state medical society and the state agency involved;

Registered a strong protest to the Veterans Administration, urging stricter screening of nonservice-connected disability patients admitted to government hospitals;

Reiterated the Association's support of the Blue Shield concept and directed the Council on Medical Service to submit at the June, 1960, meeting its recommendations concerning a policy statement on A.M.A. relationship with Blue Shield plans;

Suggested that S.J. Res. 41, a bill which would institute a separate program of international medical research, be delayed until an over-all assessment can be made of proposals now before Congress dealing with domestic and international medical research;

Endorsed the program of the Educational Council for Foreign Medical Graduates but also urged that judicious consideration be given to local problems involved in the July 1, 1960, deadline for certification of foreign graduates;

Urged that medical schools include in their curricula a course on the social, political and economic aspects of medicine;

Declared that the threat of nuclear warfare has imposed a tremendous responsibility on the medical profession, which must be prepared to assume a critically important role in such an event;

Suggested that the A.M.A. make available to school libraries information and literature showing the advantages of private medical care and the American free enterprise system;

Stated that examinations to determine the physical and mental fitness of aircraft crew members should be made by doctors of medicine with special knowledge and proficiency in certain technics;

Urged the American people to get proper tetanus toxoid, original and booster, and other immunizations as indicated from their physicians, and called on A.M.A. members to cooperate in an educational program on tetanus immunization;

Recommended that all state and county medical societies establish programs for the inspection and testing of all fluoroscopes and radiographic equipment;

Approved the Speaker's proposal that the opening session of the House, at the Interim Meeting, be moved from Tuesday morning to Monday morning, with the reference committees meeting on Tuesday and the House reconvening on Wednesday afternoon;

Called upon each individual physician to wage "a vigorous, dynamic and uncompromising fight" against the Forand type of legislation;

Urged state and local medical societies and individual physicians to implement the A.M.A. program for recruitment of high-grade medical students;

Changed the title of the Section on Surgery, General and Abdominal, to the Section on General Surgery;

Accepted with appreciation a $2,500 contribution by Smith, Kline and French Laboratories toward establishment of a suitable award honoring the name of Dr. Thomas G. Hull, retiring secretary of the Council on Scientific Assembly; and

Reaffirmed the "Suggested Guides to Relations Between Medical Societies and Voluntary Health Agencies," which were adopted at the December, 1957, meeting in Philadelphia.

At the Tuesday opening session, six state medical societies presented nearly $250,000 to the American Medical Education Foundation. The checks turned over to Dr. George F. Lull, president of A.M.E.F., were: California, $156,562; Indiana, $35,570; New York, $19,546; Utah, $10,355; New Jersey, $10,000, and Arizona, $9,263.

NECROLOGY

David Adlersberg, M.D., of New York City, died on January 10 at the age of sixty-three. Dr. Adlersberg received his medical degree from the University of Vienna in 1921. He was an associate attending physician in gastroenterology at Beth Israel Hospital and an associate attending physician in metabolic diseases at Mount Sinai Hospital. Dr. Adlersberg was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the American Federation for Clinical Research, the American Gastro-Enterological Association, the Endocrine Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Bergstein, M.D., of Brooklyn, died on October 10, 1959, at the age of fifty-five. Dr. Bergstein graduated in 1929 from New York University and Bellevue Hospital Medical College and interned at Maimonides Hospital. He was an assistant attending in pediatrics at Maimonides Hospital and an assistant in pediatrics at the Coney Island Hospital. Dr. Bergstein was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joshua Breuer, M.D., of New York City, died on September 17, 1959, at the age of sixty-seven. Dr. Breuer received his medical degree in 1919 from the University of Berlin. He was a member of the Rudolf Virchow Medical Society, The New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Marion Collins, M.D., of Hagaman, died on January 24 at the age of seventy-four. Dr. Collins graduated in 1922 from Women's Medical College of Pennsylvania, Philadelphia. She was a Member of the American Psychiatric Association and a member of the Mohawk Valley Neuropsychiatric Society, the Montgomery County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sara Elizabeth Green, M.D., of Elmira, died on October 18, 1959, at the age of ninety-one. Dr. Green graduated in 1906 from the University of Buffalo School of Medicine. She was a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Clive E. Hallenbeck, M.D., of Dunkirk, died on November 15, 1959, at the age of seventy-seven. Dr. Hallenbeck graduated in 1907 from the University of Michigan Medical School, Ann Arbor. He was an honorary attending in otolaryngology at Brooks Memorial Hospital, Dunkirk.

Thomas Charles Healy, M.D., of Yonkers, died on October 19, 1959, at the age of sixty-four. Dr. Healy graduated in 1931 from Georgetown University School of Medicine. He was a Fellow of the American College of Physicians and a member of the Washington County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Kaldor, M.D., of Brooklyn and New York City, died on December 11, 1959, at the age of seventy. Dr. Kaldor received his medical degree from the University of Budapest in 1913. He was a consultant in gynecology at Jewish Chronic Disease Hospital and a consultant in gynecology and obstetrics at Maimonides Hospital. Dr. Kaldor was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the Brooklyn Gynecological Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Charles Kline, M.D., of Prospect, died on February 9 in St. Luke's Memorial Hospital Center at the age of eighty-one. Dr. Kline graduated from Albany Medical College in 1904. He was an associate member of the staff at St. Luke's Memorial Hospital, Utica. Dr. Kline was a member of the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max William Kulik, M.D., of New York City, died on September 8, 1959, at the age of sixty-one. Dr.

[Continued on page 1152]

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NEW FURACIN®-HC CREAM

(NITROFURAZONE 0.2% AND HYDROCORTISONE 1%, EATON)

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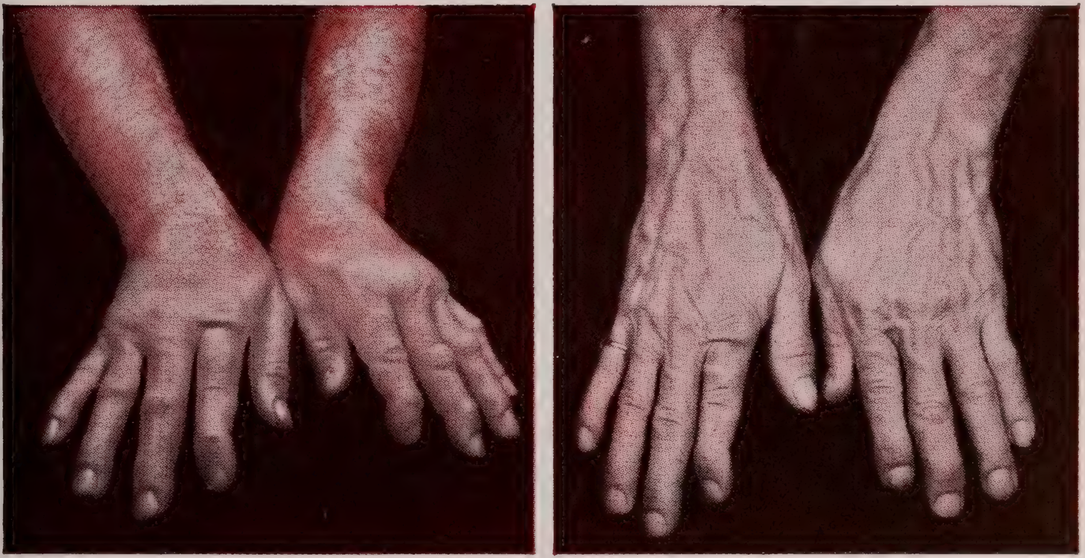

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In 100 consecutive patients with the low back syndrome, Kestler[1] reported that particularly gratifying was the ability of SOMA "to relax muscular spasm, relieve pain, and restore normal movement, thus speeding recovery in a large majority of the patients."

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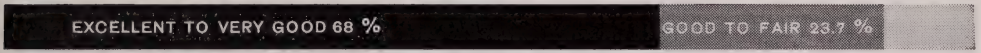

*Investigators' reports to the Medical Department, Wallace Laboratories. (Total of 278 cases)

NOTABLE SAFETY—extremely low toxicity; no known contraindications; side effects are rare; drowsiness may occur, usually at higher dosage

RAPID ACTION—starts to act quickly **SUSTAINED EFFECT**—relief lasts up to 6 hours

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SUPPLIED—as white, coated 350 mg. tablets, bottles of 50; also available for pediatric use: 250 mg., orange capsules, bottles of 50

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(carisoprodol Wallace)

1. Kestler, O: In The Pharmacology and Clinical Usefulness of Carisoprodol. Wayne State University Press, Detroit, 1959. 2. Berger, F. M.; Kletzkin, M.; Ludwig, B. J.; Margolin, S., and Powell, L. S.: J. Pharm. Exp. Ther. *127*:66 (Sept.) 1959. 3. Spears, C. E. and Phelps, W. M.: Arch. Pediat. *76*:287 (July) 1959. 4. Phelps, W. M.: Arch. Pediat. *76*:243 (June) 1959. 5. Friedman, A. P.; Frankel, K., and Fransway, R. L.: Papers presented at Scientific Meeting, New York State Society of Industrial Medicine, Inc. ,New York, Sept. 30, 1959. 6. Kuge, T.: Unpublished reports. 7. Ostrowski, J. P.: Orthopedics (In Press).

Literature and samples on request

Also available on request: The Pharmacology and Clinical Usefulness of Carisoprodol, Wayne State University Press, Detroit, 1959. (185 pages)

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in nutritional breadth
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In a well controlled institutional study,[2] Enfamil was thoroughly tested in conjunction with three widely used infant formula products. The investigators report: ▪ good weight gains ▪ soft stool consistency ▪ normal stool frequency

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Enfamil contains oleo and vegetable fats . . . does not result in sour regurgitation

1. Macy, I. G.; Kelly, H. J., and Sloan, R. E.: With the Consultation of the Committee on Maternal and Child Feeding of the Food and Nutrition Board, National Research Council: The Composition of Milks, National Academy of Sciences, National Research Council, Publication 254, Revised 1953. 2. Brown, G. W.; Tuholski, J. M.; Sauer, L. W.; Minsk, L. D., and Rosenstern, I.: Evaluation of Prepared Milks in Infant Nutrition, Use of the Latin Square Technique. To be published.

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[Continued from page 1146]

Kulik received his medical degree from the University of Hamburg in 1924. He was an associate in cardiology at Sydenham Hospital and an associate attending physician at the French Hospital. Dr. Kulik was a Member of the American College of Cardiology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert O. Loebel, M.D., of New York City, retired, died on February 17 at his home at the age of sixty-one. Dr. Loebel graduated in 1921 from Cornell University Medical College. A former instructor at Cornell University Medical College, Dr. Loebel was a member of the American Society for Clinical Investigation, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Harold MacDonald, M.D., of Kingston, died on January 1, 1959, at the age of sixty-four. Dr. MacDonald graduated in 1920 from New York Homeopathic Medical College and Flower Hospital and interned at Jamaica Hospital.

Marguerite Holman, M.D., of Jamestown, died on January 20 at the age of sixty-nine. Dr. Holman graduated in 1920 from Boston University School of Medicine. She was a member of the American Public Health Association, the Chautauqua County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Francis McEvoy, Jr., M.D., of Brooklyn, died on February 14 at the age of thirty-six. Dr. McEvoy graduated in 1949 from Long Island College of Medicine and interned at Ellis Hospital, Schenectady. He was an assistant physician at Columbia Memorial Hospital, Hudson.

Isidore Irving Neistadt, M.D., of Valley Stream, died on November 28, 1959, in South Nassau Communities Hospital at the age of fifty-four. Dr. Neistadt graduated in 1929 from the University of Maryland School of Medicine and interned at Bellevue Hospital. He was an assistant in physical medicine and rehabilitation at Meadowbrook Hospital. Dr. Neistadt was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Stephen Francis Ovary, M.D., died on October 13, 1959, at the age of seventy-eight. Dr. Ovary graduated in 1908 from Long Island College Hospital Medical School. He was a consultant in dermatology at Lenox Hill Hospital Outpatient Department.

Frederick A. Pizzi, M.D., of Brooklyn, died on November 21, 1959, at the age of fifty-seven. Dr. Pizzi graduated in 1927 from Columbia University College of Physicians and Surgeons and interned at Brooklyn Hospital. He was an attending in surgery at Brooklyn Hospital and chief of surgery at Brooklyn Hospital Outpatient Department. Dr. Pizzi was a Fellow of the American College of Surgeons and a member of the Brooklyn Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Rudolph Leonard Prudhomme, M.D., of Brooklyn, died on February 11, 1959, at the age of fifty-nine. Dr. Prudhomme graduated in 1936 from Meharry Medical College, Nashville, Tennessee.

Theodore Rosenberg, M.D., of the Bronx, died on December 28, 1959, at the age of fifty-four. Dr. Rosenberg graduated in 1931 from Rush Medical College. He was director of medical care of the Welfare Department and senior physician in general practice at Bronx Hospital. Dr. Rosenberg was a member of the American Public Health Association, the New York Medical Society on Alcoholism, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lecky Harper Russell, M.D., of New York City and Elmhurst, died on October 11, 1959, at the age of seventy. Dr. Russell graduated in 1916 from Ohio State University College of Medicine. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

John Valentine Swierat, Sr., M.D., of Buffalo, died on October 8, 1959, at the age of sixty-six. Dr. Swierat graduated in 1917 from the University of Buffalo School of Medicine.

Herbert William Thomssen, M.D., of Utica, retired, died on October 13, 1959, at the age of seventy-six. Dr. Thomssen graduated in 1905 from Jefferson Medical College of Philadelphia.

Charles A. Turtz, M.D., of New York City, died on February 12 in the Columbia-Presbyterian Medical Center at the age of sixty-eight. Dr. Turtz graduated in 1915 from New York Homeopathic Medical College and Flower Hospital. He was director of

[Continued on page 1154]

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[Continued from page 1152]

ophthalmology and attending in ophthalmology at Flower and Fifth Avenue Hospitals, and a consultant in ophthalmology at Metropolitan Hospital, Bird S. Coler Memorial Hospital and Home, and Prospect Heights Hospital. Dr. Turtz was a Diplomate of the American Board of Ophthalmology, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York Society for Clinical Ophthalmology, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Willard Hall Veeder, M.D., of Geneseo, retired, died on December 5, 1959, at the age of eighty. Dr. Veeder graduated in 1903 from the University of Buffalo School of Medicine. He was a former director of Craig Colony, Sonyea. Dr. Veeder was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Fellow of the American Psychiatric Association, and a member of the Livingston County Medical Society, the Medical Society of the State of New York and the American Medical Association.

Elmer John Wendel, M.D., of Rochester, retired, died on December 25, 1959, at the age of seventy-seven. Dr. Wendel graduated in 1907 from the University of Buffalo School of Medicine. He was an honorary consultant in surgery at Park Avenue Hospital which he helped found. Dr. Wendel was a member of the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

MEDICAL MEETINGS

American Society of Facial Plastic Surgery

The American Society of Facial Plastic Surgery will hold its spring meeting on April 6, at the Hotel Elysee, 60 East 54th Street, New York City. The subject of the meeting will be methods of otoplasty.

Election of officers will be held at the business meeting which will begin at 5:30 P.M. Cocktails will be served at 6:30 P.M. and dinner at 7:00 P.M. The scientific session will begin at 8:00 P.M.

For information concerning the meeting contact: Samuel M. Bloom, M.D., secretary, American Society of Facial Plastic Surgery, 123 East 83rd Street, New York 28, New York.

Silver Anniversary Banquet of New York Proctologic Society

The New York Proctologic Society will hold its annual banquet at the Astor Hotel, Broadway and 44th Street, New York City, on Thursday, April 7, at 6:30 P.M. The banquet will mark the Society's silver anniversary.

Guest speaker will be Walter A. Fansler, M.D., president-elect of the American Proctologic Society, who will discuss, "Proctology, Past, Present, and Future."

Physicians interested in attending the banquet may make reservations through the secretary, Norman L. Freund, M.D., 163 Ocean Avenue, Brooklyn 25, New York.

Eastern Psychiatric Research Association

The Eastern Psychiatric Research Association will hold its twenty-third scientific meeting on April 7, at 8:00 P.M. in alumni hall "B" of the New York University Medical School, 30th Street and First Avenue, New York City.

All members of the medical profession are welcome to attend.

West Virginia Academy of Ophthalmology and Otolaryngology

The West Virginia Academy of Ophthalmology and Otolaryngology will hold its annual meeting at the Greenbrier Hotel, White Sulphur Springs, West Virginia, April 10 through 12.

For further information contact the secretary, Albert C. Esposito, M.D., First Huntington National Bank Building, Huntington, West Virginia.

MEDICAL NEWS

Physician Ends Retirement—A former Long Island doctor and his wife will spend the next two years of their planned retirement in Afghanistan working as a medical team teaching the latest developments in American medicine to local doctors.

George Borden Granger, M.D., age sixty-three, and his wife, formerly of Rockville Centre, have ended their retirement in a rural section of Massachusetts to serve as volunteer workers for Medical, International Cooperation Organization (MEDICO)

Dr. Granger was a general practitioner on Long Island from 1926 to 1937. He then specialized in obstetrics and gynecology until his retirement in 1950. He also served as chief of obstetric service at Nassau and Meadowbrook Hospitals.

One-Day Symposium on Diabetes—The New Jersey State Department of Health in cooperation with the New Jersey Diabetes Association will present its second annual spring symposium on "Pre-Diabetes and Diabetes in Pregnancy" at the Princeton Inn, Princeton, New Jersey, May 11.

Arthur Krosnick, M.D., coordinator, Diabetes Control Program, New Jersey State Department of Health, will be session chairman. Among the speakers will be Alan F. Guttmacher, M.D., New York City.

Members of the American Academy of General Practice will receive 3 hours credit under category II for attendance at the symposium.

For further information write to: Arthur Krosnick, M.D., coordinator, Diabetes Control Program, State of New Jersey, Department of Health, Trenton 25, New Jersey.

Social Hygiene, Now Social Health—The American Social Hygiene Association has voted to become "The American Social Health Association." The reason given for the change in name is that the work "hygiene" is an outmoded word which no longer is broad enough to describe the agency's family-centered program.

[Continued on page 1156]

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degreases the skin completely emulsifies and washes off excess oil from the skin.

helps remove blackheads penetrates and softens comedones, unblocks pores and facilitates removal of sebum plugs.

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Patients like Fostex because it is so easy to use. They simply wash acne skin 2 to 4 times a day with Fostex Cream or Fostex Cake, instead of using soap.

Fostex contains Sebulytic®,* a combination of surface-active wetting agents with remarkable antiseborrheic, keratolytic and antibacterial actions . . . enhanced by sulfur 2%, salicylic acid 2%, and hexachlorophene 1%.

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Fostex is available in two forms

FOSTEX CREAM in 4.5 oz. jars

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Fostex Cream and Fostex Cake are interchangeable for therapeutic washing of the skin. Fostex Cream is approximately twice as drying as Fostex Cake.

Fostex Cream is also used as a therapeutic shampoo in dandruff and oily scalp.

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WESTWOOD PHARMACEUTICALS

Buffalo 13, New York

[Continued from page 1155]

New Reference Guide Shows Treatment for Overdosage—A reference guide to all Smith Kline & French products—including directions for treatment in the event of accidental overdosage—is available for physicians' use in retail pharmacies throughout the United States. Physicians are urged to contact their local retail pharmacists in emergencies when pertinent information is needed.

In addition to the overdosage information, the comprehensive book lists formulas, indications, dosages, contraindications, cautions, pharmacology, compatabilities, and reference sources.

New Hearing and Speech Clinic Opens—A new hearing and speech clinic was opened on February 24, at Kings County Hospital Center, 451 Clarkson Avenue, Brooklyn.

The clinic's program of diagnosis and treatment of hearing and speech problems in patients of all ages will be under the direction of Ira A. Polisar, M.D. Dr. Polisar is director of otorhinolaryngology at the Kings County Hospital. He is also associate professor and head of the Division of Otorhinolaryngology at the State University of New York Downstate Medical Center.

The clinic, which will be open Monday to Friday, 9:00 A.M. to 5:00 P.M., is under the supervision of the City Department of Hospitals. It will receive a grant from the State Department of health to cover part of the expected deficit.

Ophthalmology Residency Fellowships Announced—Six additional fellowships for residents in ophthalmology, to be awarded July 1, 1960, have been announced by the Guild of Prescription Opticians of America, Inc. Applications for these fellowships must be received by May 15, 1960.

Each fellowship is for a total of $1,800, payable in monthly stipends over the period of a three-year residency. The grants are limited to residencies at approved institutions where full three-year residencies are offered, but residencies which begin anytime during the calendar year are eligible. Application forms and covering information are available by writing to: Fellowships, Guild of Prescription Opticians of America, Inc., 110 East 23rd Street, New York 10, New York.

Seminar on Rehabilitation Medicine—The American Academy of Physical Medicine and Rehabilitation, State University of New York Downstate Medical Center, and the Kings County Chapter of the American Academy of General Practice will present a seminar on "Recent Advances in Rehabilitation Medicine" on April 15 and 16, in the Basic Sciences Building, 450 Clarkson Avenue, Brooklyn.

On April 15 there will be a symposium on collagen diseases and on April 16 a symposium on the rehabilitation of the industrially injured worker.

The seminar is supported by a grant from the Sister Elizabeth Kenny Foundation to the American Rehabilitation Foundation. Twelve hours of category I credit are available to members of the American Academy of General Practice who attend the seminar.

Institute on "Alcohol Intoxication and Influence"—The Western Reserve University Law-Medicine Center, Cleveland, Ohio, will hold a two-day institute on May 12 and 13 on "Alcohol Intoxication and Influence."

The institute will emphasize the civil and criminal aspects of the topic and will consider the physiologic effects of alcohol on the human body, the history and theory of chemical tests and the scientific equipment available to perform chemical tests.

For further information contact: Mr. Oliver Schroeder, Jr., Director, The Law-Medicine Center, 2145 Adelbert Road, Cleveland 6, Ohio.

Simplified Quarantine Procedures at Airports—The Public Health Service of the United States Department of Health, Education, and Welfare has announced the adoption of simplified quarantine procedures at international airports.

The principal change is elimination of group clearance, which preceded individual quarantine clearance on arrival of planes from foreign countries. Under the new procedures, if the aircraft captain certifies that no illness has been observed during flight, only individual clearance of passengers is required. Group clearance had been maintained to prevent spread of disease by travelers who might have symptoms of quarantinable illness on arrival. If such illness is reported aboard a plane, or if there is an unusual disease problem in the country where the flight originates, the strictest quarantine procedures will be applied.

The only major airport where passengers will be kept in groups is Miami, Florida, where the means of access to quarantine facilities makes the change impractical.

The new procedures stress the responsibility of travelers for maintaining valid immunization records and the responsibility of airlines for reporting illness observed among passengers.

[Continued on page 1160]

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A biochemical compound used to diminish intestinal gas in healthy persons and those patients having digestive disorders:

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Each Kanulase tablet contains Dorase,* 320 units, combined with pepsin, N.F., 150 mg.; glutamic acid HCl, 200 mg.; pancreatin, N.F., 500 mg.; ox bile extract, 100 mg. Dosage: 1 or 2 tablets at mealtime. Supplied: Bottles of 50 tablets.

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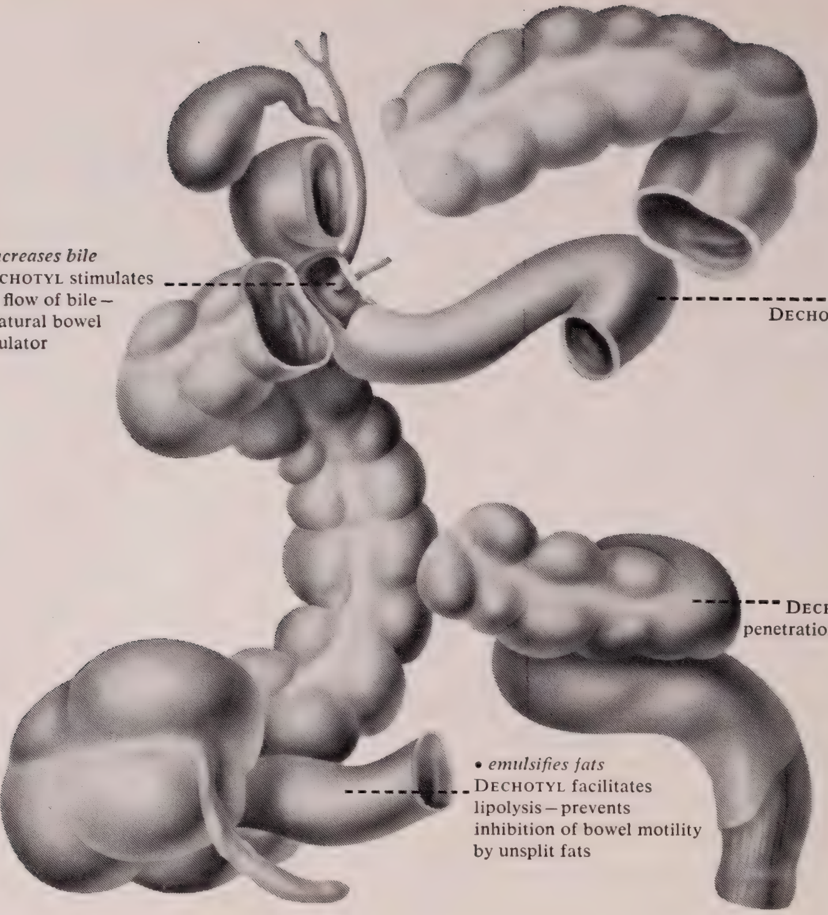

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Dechotyl stimulates the flow of bile – a natural bowel regulator

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Contraindications: Biliary tract obstruction; acute hepatitis.

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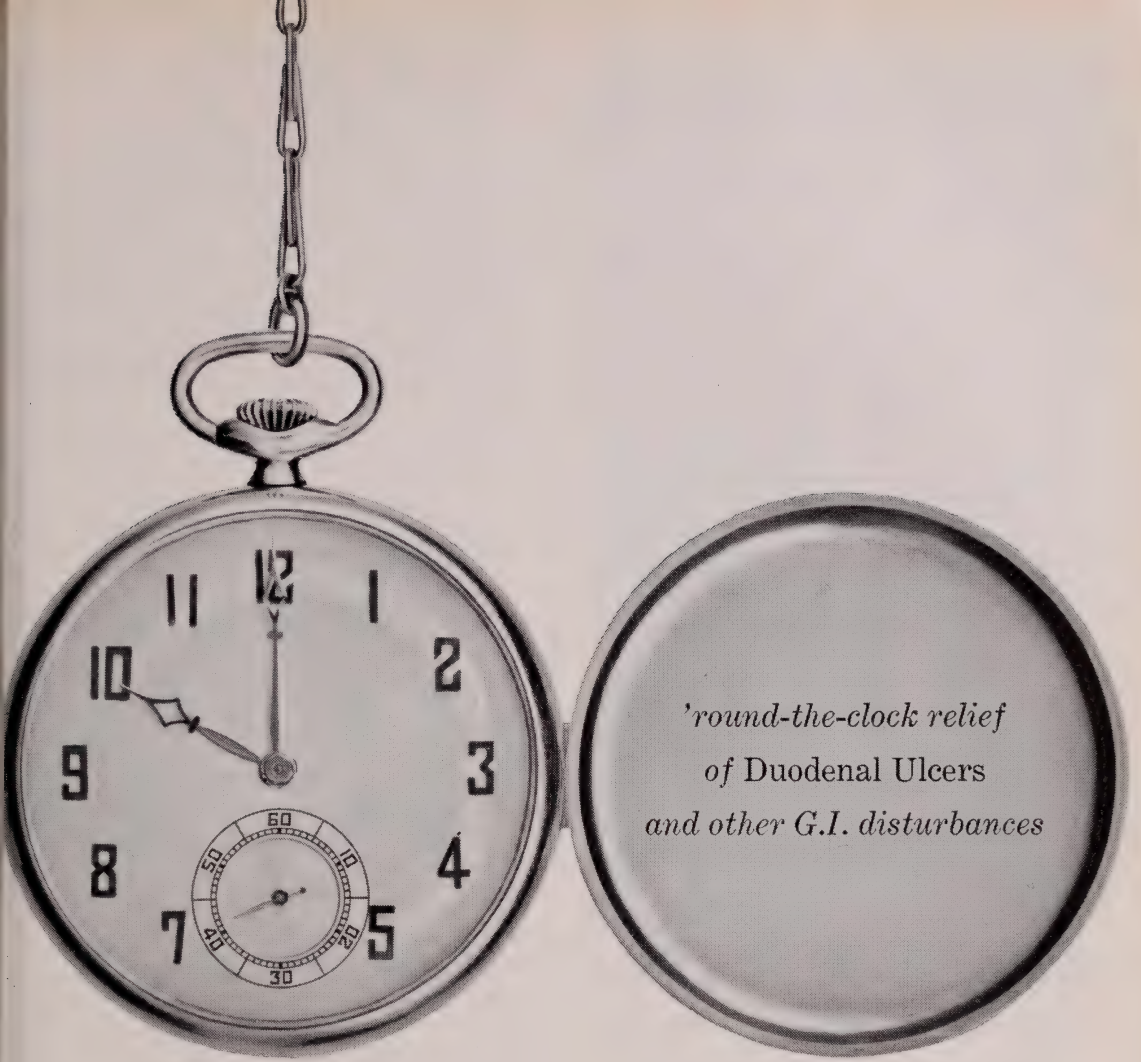
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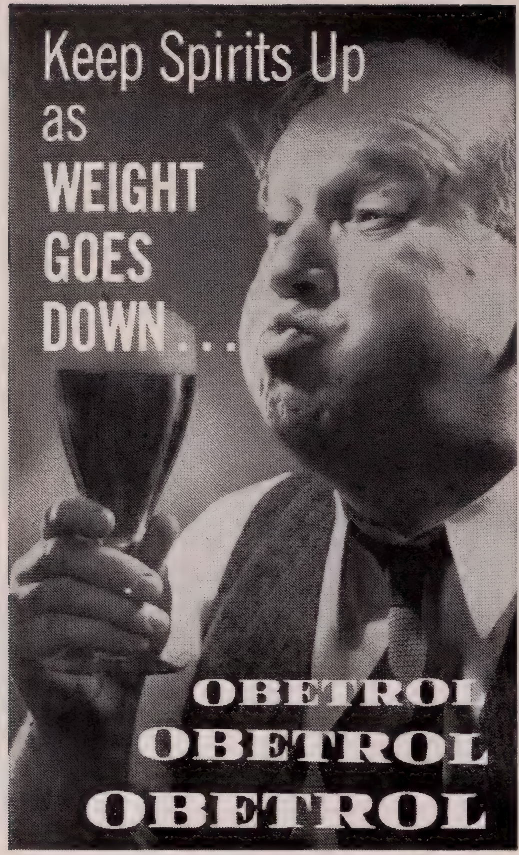

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REFER TO PDR Page 753

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[Continued from page 1156]

Personalities

Resigned

Leo Gitman, M.D., as medical director and director of research at the Brooklyn Hebrew Home and Hospital for the Aged, to join the staff of Beth-El Hospital, Brooklyn, where, in addition to his duties as attending in medicine and senior research associate, he will be in charge of the gerontologic activities of the hospital.

Elected

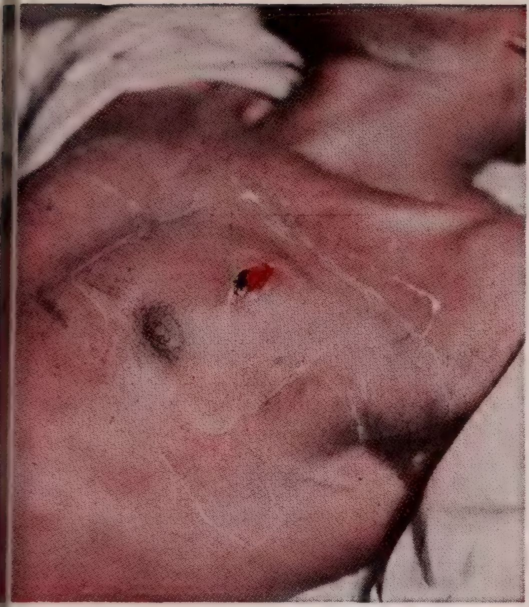
Soll Goodman, M.D., New York City, as secretary and William S. Langford, M.D., New York City, as president of the American Orthopsychiatric Association.

Appointed

John G. Grozine, M.D., White Plains, as medical director of American Export Lines . . . Jonathan T. Lanman, M.D., Stamford, Connecticut, as professor and chairman of the Department of Pediatrics, State University of New York Downstate Medical Center, and chief of pediatrics at Kings County Hospital Center . . . Charles G. Rob, M.D., Great Britain, as chairman of the Department of Surgery of the Rochester University School of Medicine and Dentistry.

Speakers

Philip Cooper, M.D., New York City, before the seventh national congress of the Association of Operating Room Nurses in February on the subject of lung cancer and smoking . . . Irving S. Cooper, M.D., New York City, on the topic, "Chemosurgery of the Basal Ganglia in Parkinsonism, Dystonia Musculorum Deformans, and Multiple Sclerosis," and M. Ralph Kaufman, M.D., New York City, on the topic, "Psychiatric Aspects of Medical Practice," in April at the annual meeting of the Medical and Chirurgical Faculty of the State of Maryland . . . Howard A. Rusk, M.D., at the 1960 Compensation Insurance Conference of the Institute for the Crippled and Disabled on March 3 on the topic "The University's Responsibility in Rehabilitating the Industrially Injured" . . . Earl Saxe, M.D., New York City, on May 2, and Martin H. Stein, M.D., New York City, on March 7, on the subject of "Sexual Development of Teen-Agers" for an audience of parents and social workers.



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ccelerates natural healing by as much as several days

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MONTH IN WASHINGTON

Congress appears headed for a showdown this session on legislation for the Federal government to provide medical care for aged persons.

The medical profession and allied groups stepped up their activities in opposition to such legislation as indications mounted that the issue was approaching a crucial stage. Several state medical societies planned to send delegations to Washington to personally express their opposition to their Congressmen. Pressure behind such legislation began to build up early in February.

The Eisenhower Adminstration announced it was working on three possible programs for providing health care for aged persons in cases of catastrophic—lengthy and costly—illness.

With amplification, President Eisenhower told a news conference that there was under consideration "a possible change" in the Social Security Act "to run up the taxes by a quarter of a per cent to make greater provision for the care of the aged." The President's statement that "there has been no conclusion reached in the administration" was backed up by Arthur S. Flemming, Secretary of Health, Education, and Welfare, in a clarifying announcement.

Flemming said his department was working on two other approaches to what he called a serious problem in addition to the possible revision of the Social Security law mentioned by Mr. Eisenhower. The HEW Secretary said consideration also was being given to: (1) stepped-up Federal assistance under the Federal-state public assistance program, and (2) the Federal government supplementing voluntary insurance programs.

Flemming again expressed opposition to the Forand bill which would increase Social Security taxes by one quarter of one per cent each on employers and employes to provide hospitalization, surgical benefits, and nursing home care for Social Security beneficiaries. The Secretary said he wanted to "underline that the position of the adminstration is opposition to the Forand bill."

Flemming said he hoped to have an administration bill ready to submit in early April to the House Ways and Means Committee where the Forand bill is pending. The Committee is scheduled to take up in late March or early April proposed changes to the Social Security Act.

Proponents of the Forand bill—which is vigorously opposed by the American Medical Association and allied groups—were pointing their campaign toward securing the House Committee's approval of the legislation at that time.

The AFL-CIO, a main supporter of the Forand bill, urged labor union members to write to congressmen on the Committee urging them to vote for it. The AFL-CIO also distributed a pamphlet quoting a handful of physicians as supporting the legislation. But the labor organization didn't mention that the overwhelming majority of doctors oppose it.

The Senate Subcommittee on Problems of the Aged and Aging, headed by Sen. Pat McNamara (D., Mich.), issued on behalf of its Democratic majority a report stating that use of the Social Security program " is the most efficient procedure for providing" health care for older persons.

The A.M.A. and the Subcommittee's Republican minority promptly disputed this conclusion. An A.M.A. statement issued in Chicago said: "The American Medical Association today sharply disagreed with the recommendations of the McNamara subcommittee regarding government medicine for Social Securities beneficiaries.

"Louis M. Orr, M.D., Orlando, Florida, president of the A.M.A., said: 'This is a politically inspired committee. Senator McNamara, Democrat from Michigan, has long supported political medicine. The fact is that at the seven subcommittee hearings held throughout the United States, observers heard little support expressed by the older citizens who attended the hearings for government medicine financed by additional taxes and administered through Social Security.' "

The Republican minority stated that testimony before the Subcommittee "proves that it is possible for elderly people to secure private insurance to provide hospitalization and surgical benefits without any intervention by public authorities."

Sen. John F. Kennedy (D., Mass.), a leading contender for the Democratic nomination for President, introduced legislation similar to the controversial Forand bill but broader in scope. The Kennedy bill would eliminate surgical benefits but would add diagnostic, outpatient, and home nursing services.

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SAPERSTEIN, R. B.: Treatment of Acne with Long Term Continuous Abrasion. Presented at 107th Annual Meeting of A.M.A.

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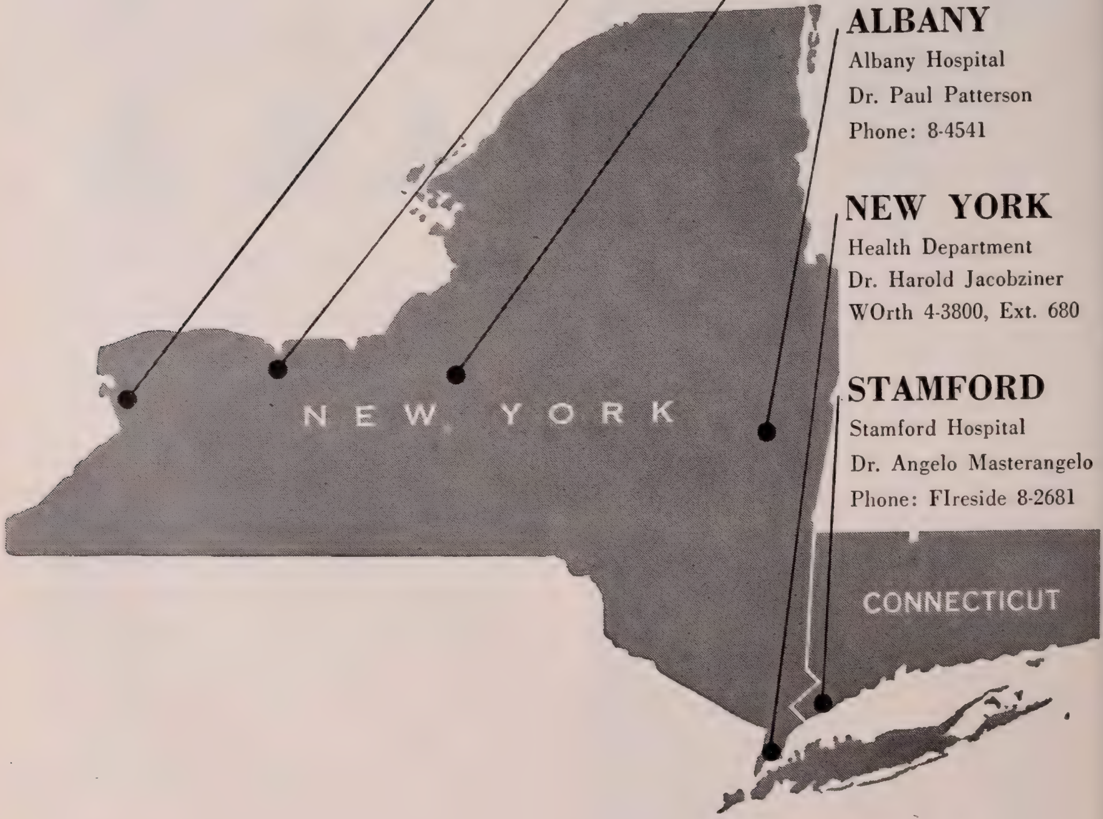

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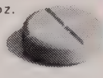

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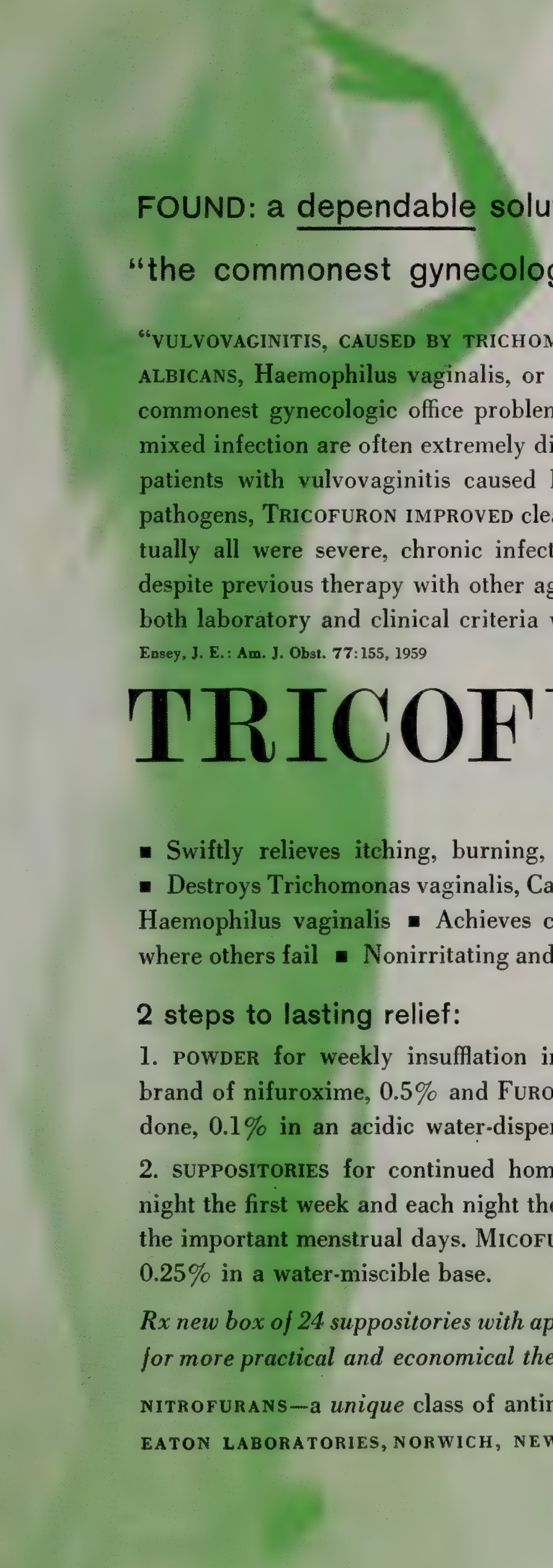

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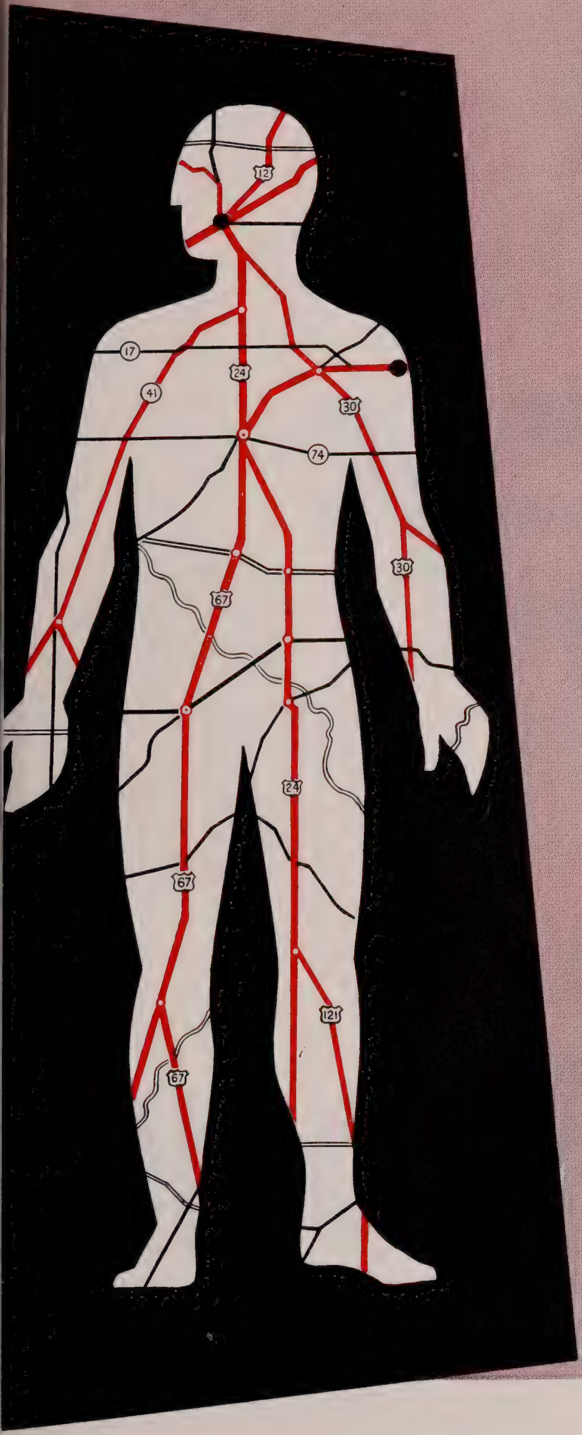

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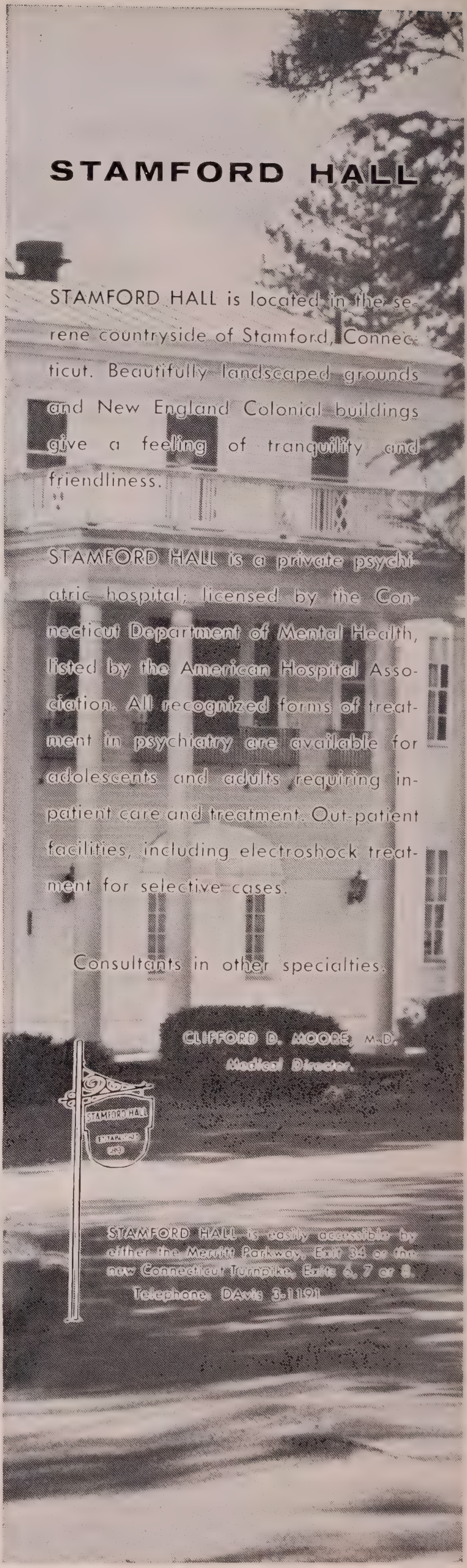

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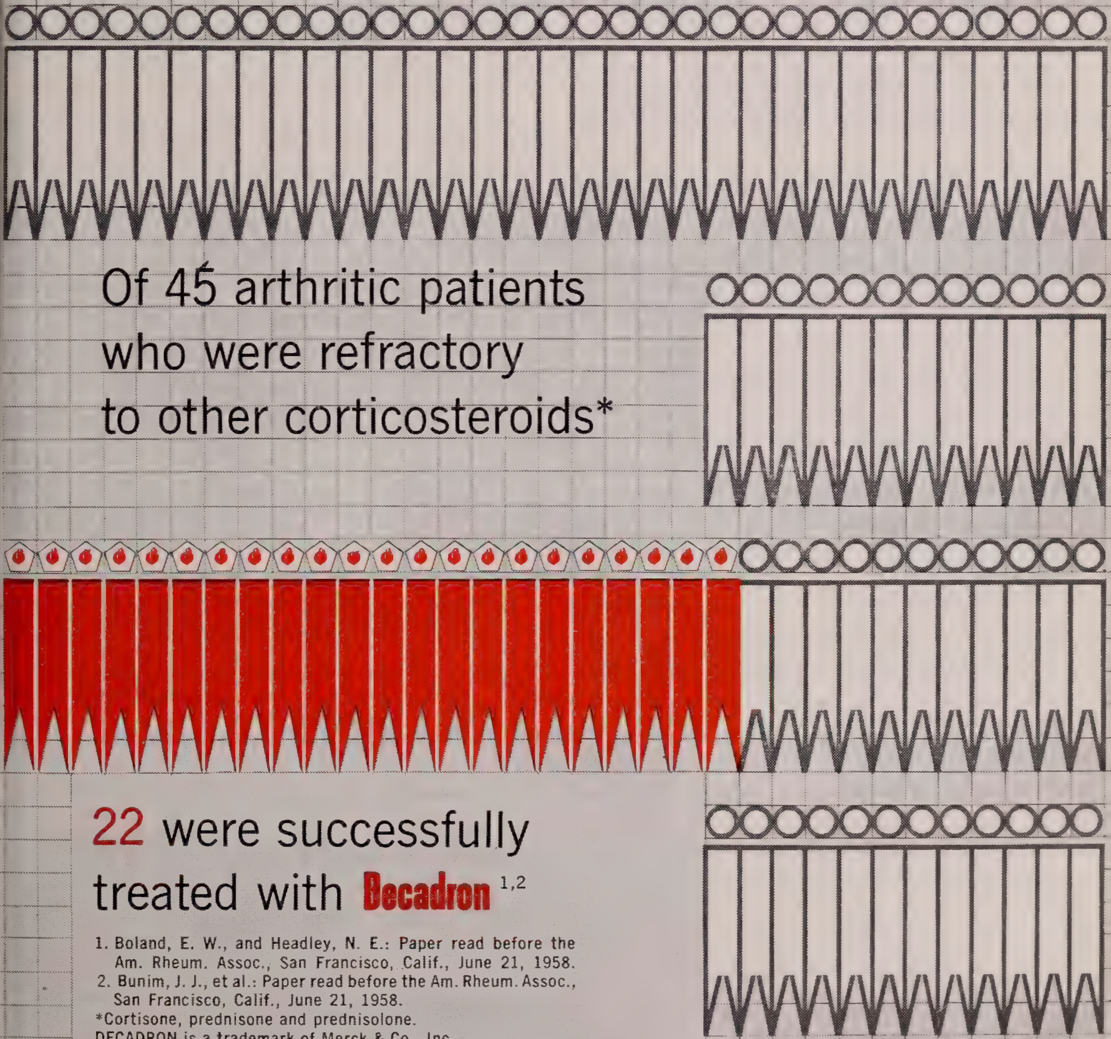

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1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

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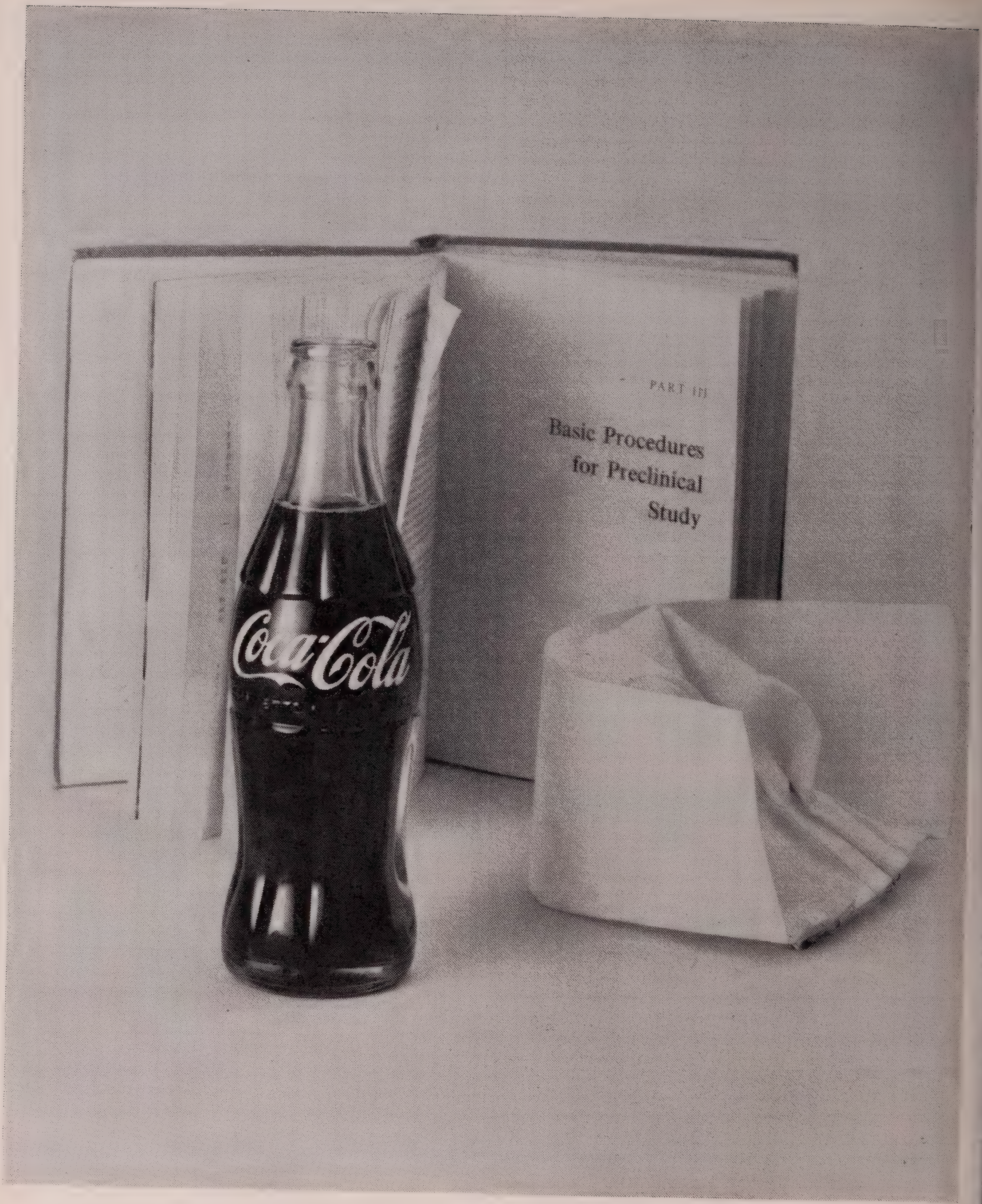
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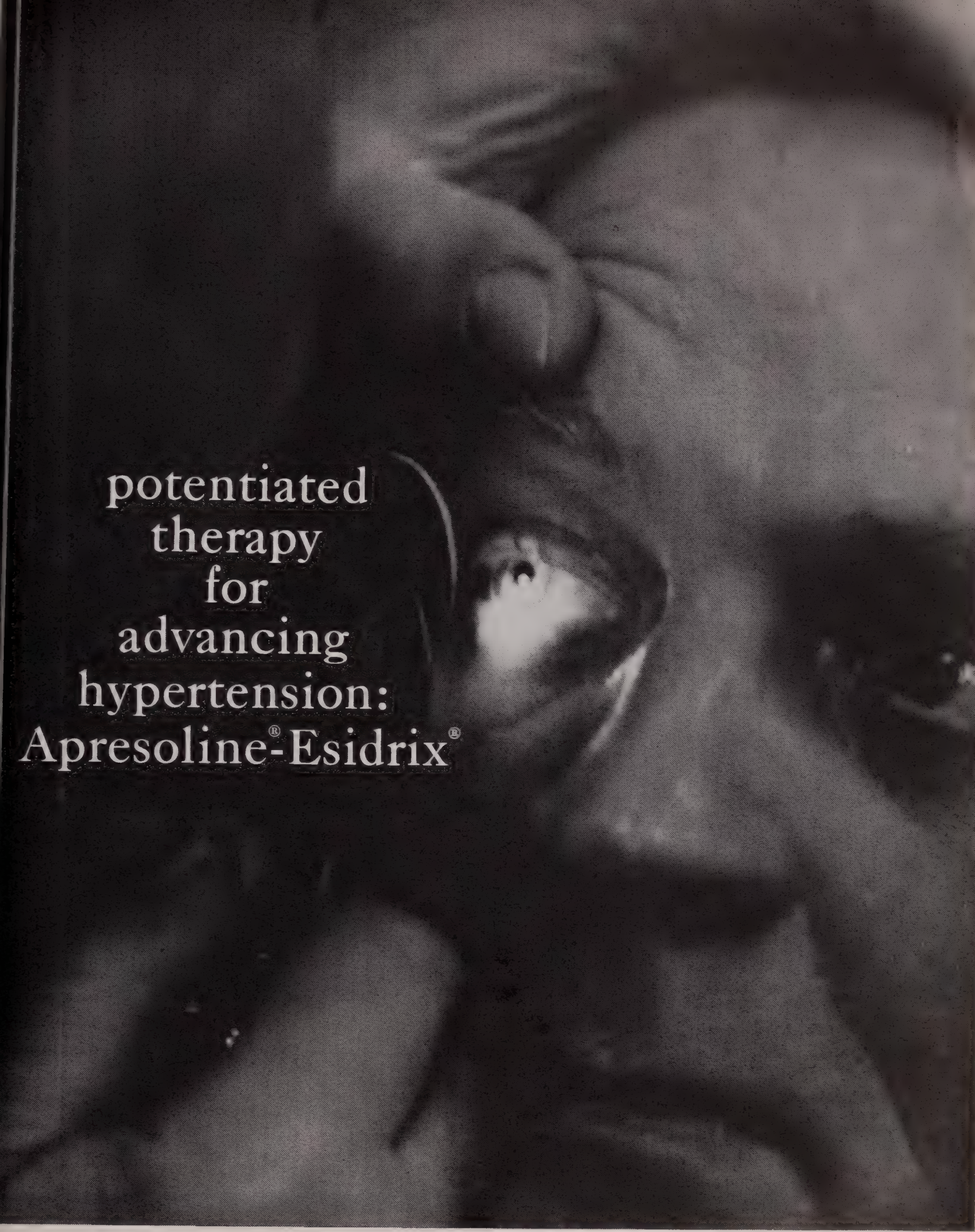
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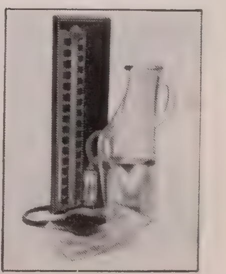

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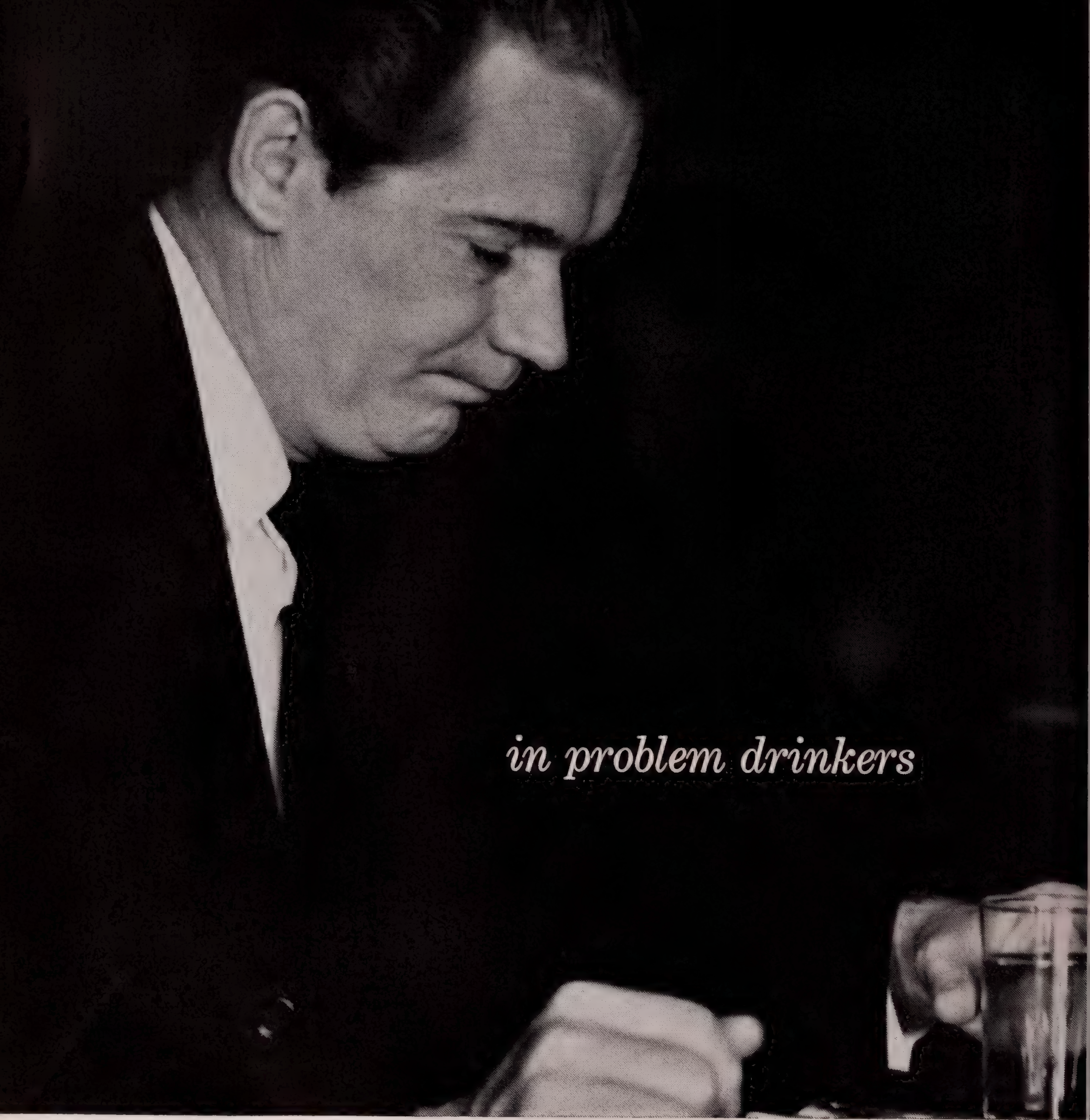

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*Fries, J. H.: Milk Allergy — Diagnostic Aspects and the Role of Milk Substitutes, J.A.M.A., *165:*1544, 1957.

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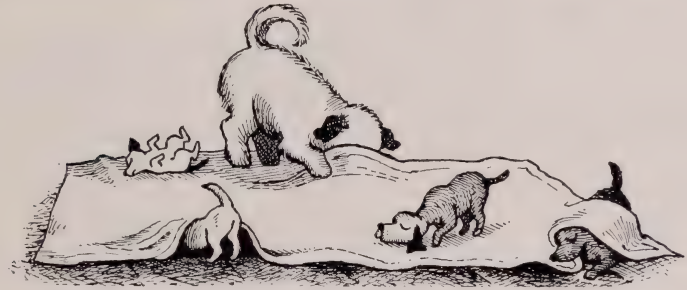

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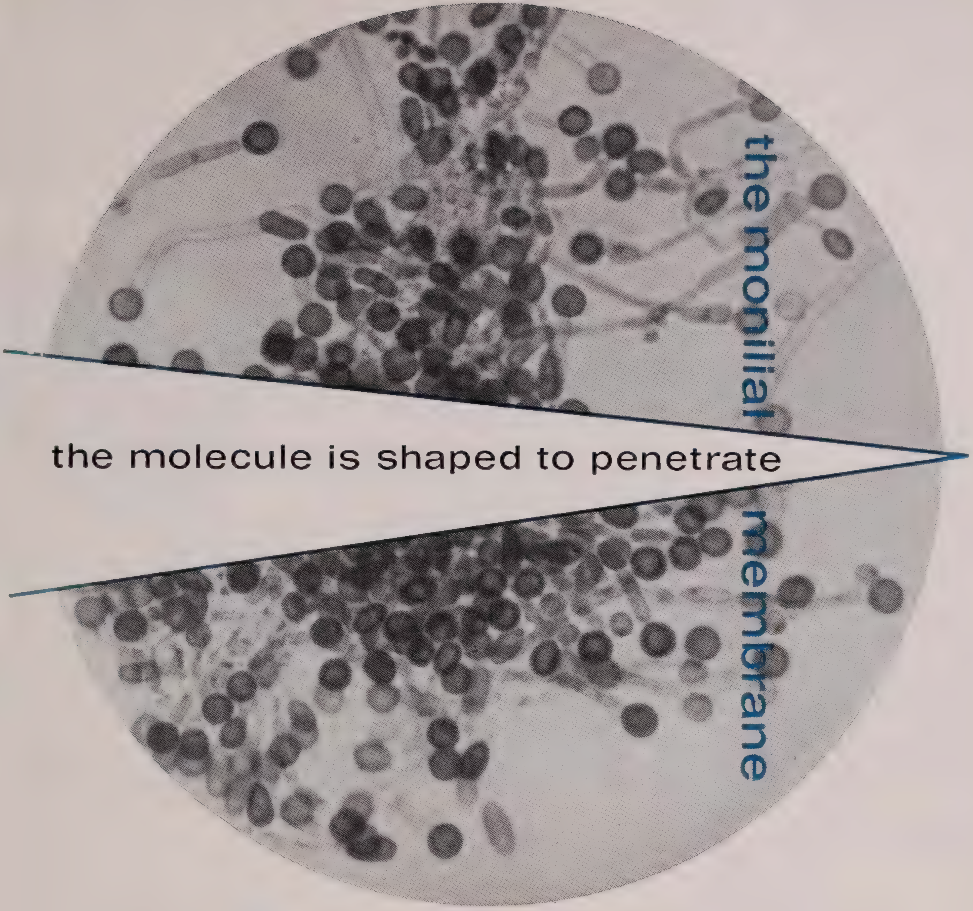

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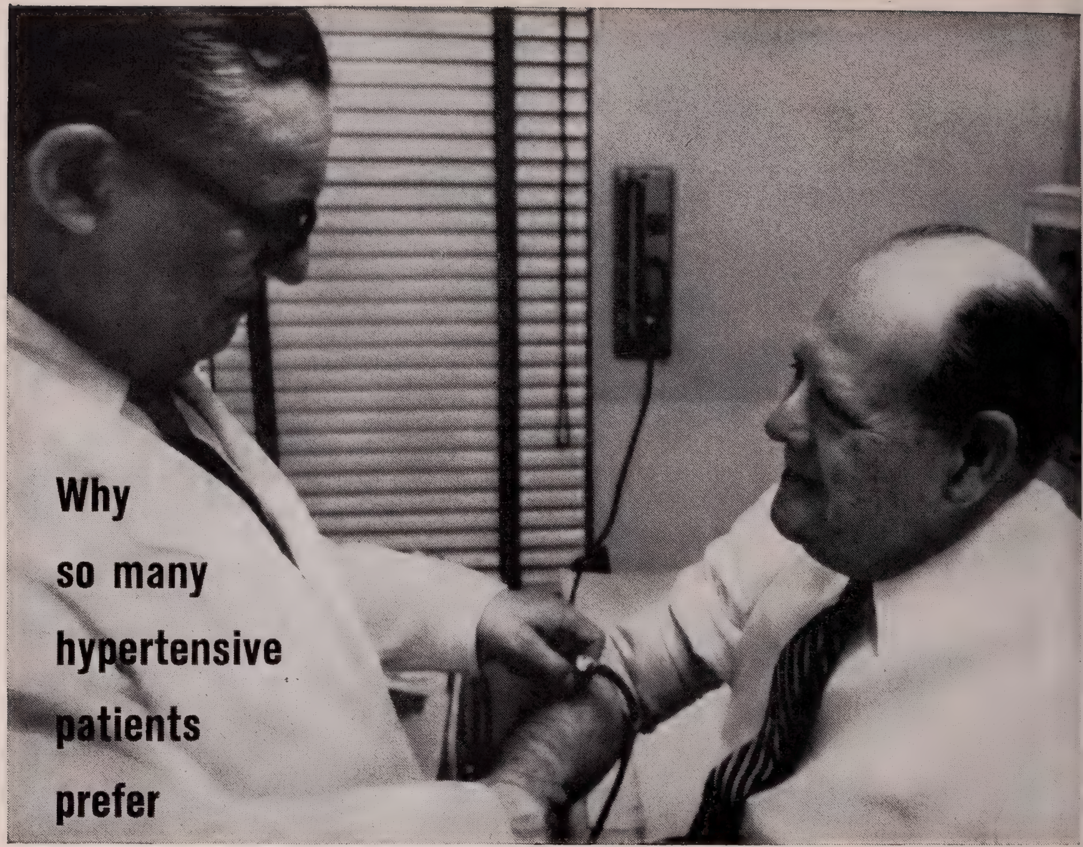

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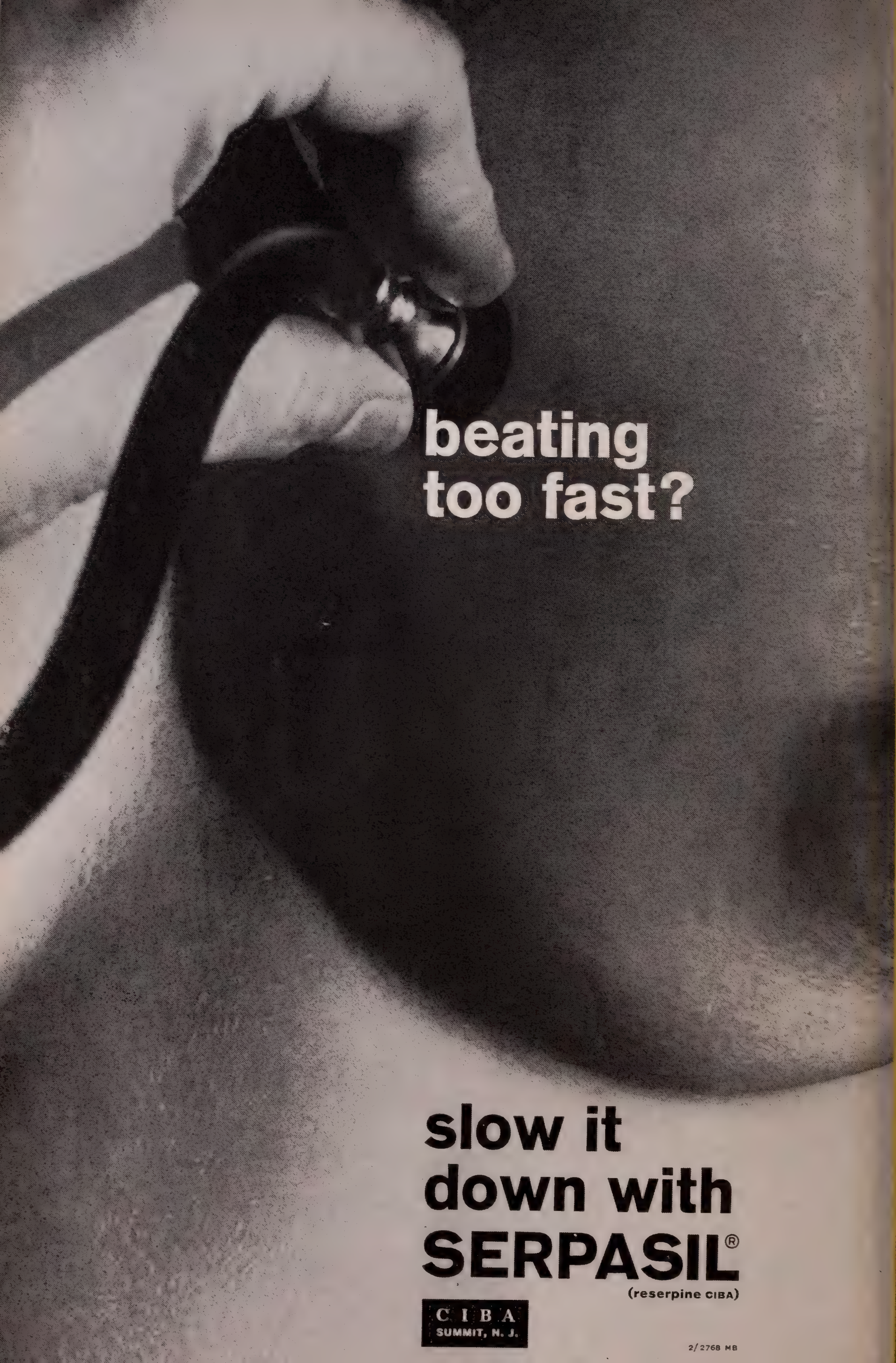

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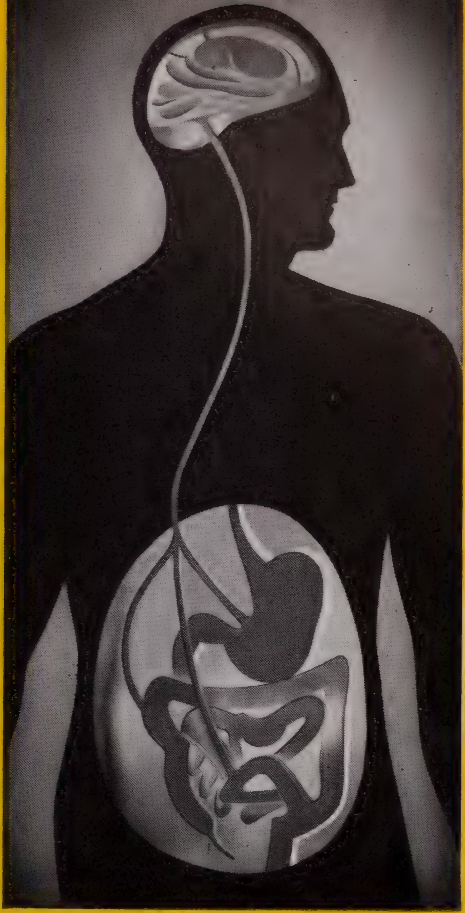
KEEPS
THE MIND OFF
THE STOMACH



Milpath acts quickly to suppress hypermotility, hypersecretion, pain and spasm, and to allay anxiety and tension with minimal side effects.

AVAILABLE IN TWO POTENCIES:

Milpath-400 – Yellow, scored tablets of 400 mg. Miltown (meprobamate) and 25 mg. tridihexethyl chloride. Bottle of 50.

Dosage: 1 tablet t.i.d. at mealtime and 2 at bedtime.

Milpath-200 – Yellow, coated tablets of 200 mg. Miltown (meprobamate) and 25 mg. tridihexethyl chloride. Bottle of 50.

Dosage: 1 or 2 tablets t.i.d. at mealtime and 2 at bedtime.

Milpath®

®Miltown + *anticholinergic*

WALLACE LABORATORIES *New Brunswick, N. J.*

treats seborrheic dermatitis as an infectious process as well as a cosmetic problem

BETADINE™

(active ingredient: Povidone-Iodine)

SHAMPOO

established in 1905
TAILBY-NASON COMPANY, INC.
DOVER, DELAWARE

THE SEBORRHEIC STATE IS ALWAYS FOUND ASSOCIATED WITH BACTERIAL AND YEAST INFECTION. A TRUE ANTIDANDRUFF PREPARATION MUST BE CAPABLE OF DESTROYING THESE MICROORGANISMS.[1]

- kills pathogens on contact
- effective adjunctive therapy in severe pyoderma[2]
- safe, nontoxic, nonirritating, nonsensitizing
- rich golden lather, pleasantly scented, leaves hair easy-to-manage

1. Spoor, H.: Proc. Scient. Sec. TGA No. 31, May 1959
2. Frank, L.: New York J. Med. 59:2892, 1959

physiologically natural treatment of CONSTIPATION

COMBINING NATURAL ox bile extract

WITH A PHYSIOLOGICALLY EFFECTIVE STOOL SOFTENER

FORREST
100 TABLETS
ENTERIC COATED
LIST NO 138
BIDROLAR
FOR CORRECTING AND PREVENTING CONSTIPATION
FORREST COMPANY
DISTRIBUTORS, NEW YORK 12, N. Y.

INDICATIONS: Bidrolar is the therapy of choice in individuals past 40 since it strikes at the most common cause of constipation, namely biliary deficiency.

It is highly effective in managing constipation of atonic, dietary and psychogenic type; safely used in pregnancy, anorectal surgery and cathartic habituation.

DOSAGE: 1 tablet 1 or 2 times daily for mild constipation. 2 tablets b.i.d. or t.i.d. for severe constipation (until bowel movements are normal). To be taken with a full glass of water.

FORMULA: Each tablet contains: Dioctyl Sodium Sulfosuccinate 40 mg., Ox Bile Extract 60 mg.

SUPPLIED: In bottles of 30 and 100.

Bidrolar provides an efficient stool softener that keeps feces soft for easy evacuation; and ox bile, a natural stimulant of peristaltic activity without adverse effects or irritation of the intestinal mucosa. Ox Bile has long been recognized as a natural laxative that is neither irritating nor habit forming. It is similar in composition to natural bile. It contains all the bile salts—and in conjugated form—the form which is most effective. Ox bile stimulates the liver to increase free flow of natural bile thus promoting natural hydration of the stool.

BIDROLAR

SAMPLES AND LITERATURE ON REQUEST

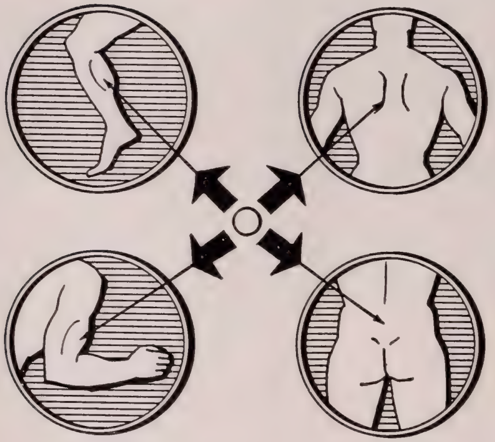
FORREST COMPANY • 93 CROSBY STREET, NEW YORK 12, N. Y.

For Dependable Relief of Skeletal Muscle Spasm...

Two Tablets Per Day

Norflex™*

orphenadrine citrate



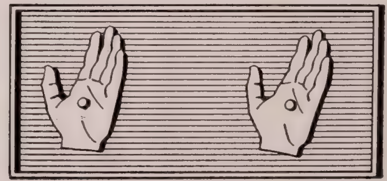
ADVANTAGES

- Mobility is restored quickly and associated pain relieved by prompt relaxation of muscle spasm.
- Prolonged action and potency provide round-the-clock benefits—including uninterrupted sleep.
- Impairment of general muscle tonus has not been reported when the recommended standard dosage is followed.

INDICATED IN ALL TYPES OF ACUTE MUSCLE SPASM following sprains, strains, whiplash injuries, intervertebral disc syndrone, chronic osteoarthritis, etc.

STANDARD DOSAGE Only one tablet b.i.d. for all adults regardless of age, weight, or sex. Simple dosage assures maximum patient cooperation.

Norflex™ for prompt, safe spasmolytic action



*Trademark U. S. Patent No. 2,567,351
Other patents pending

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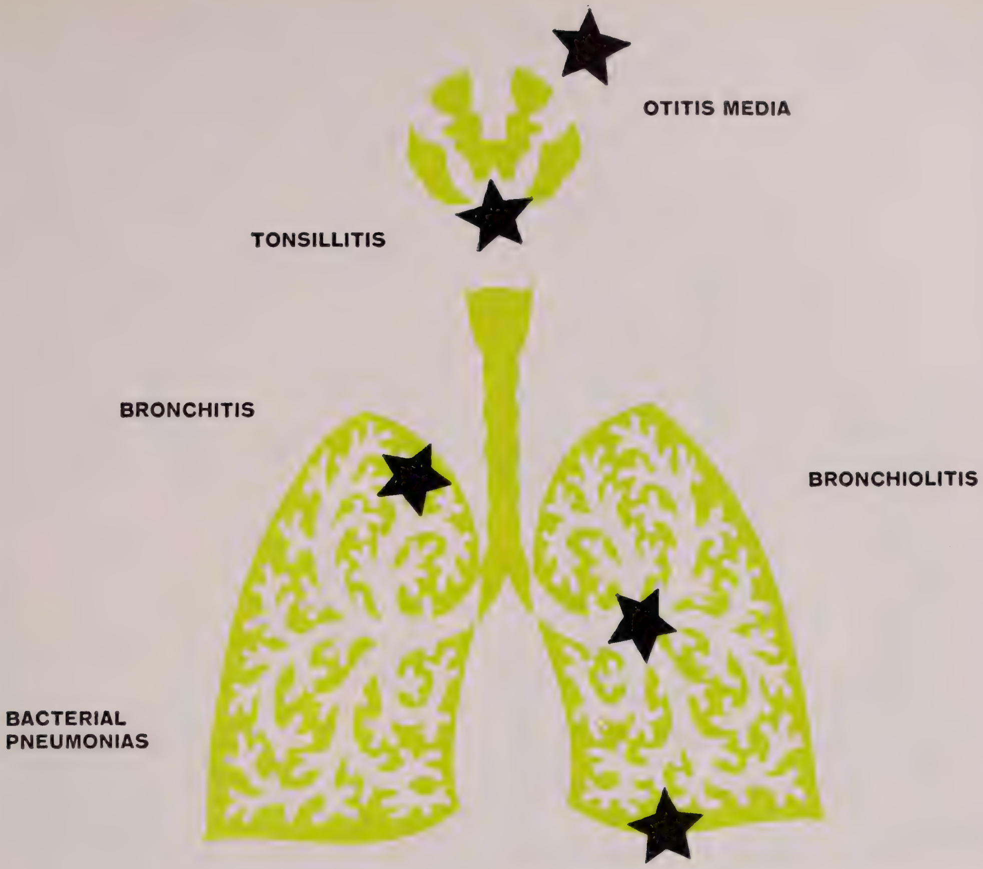
Northridge, California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FEWER TREATMENT FAILURES IN RESPIRATORY TRACT INFECTIONS

"...outstanding advantages over many previously accepted chemotherapeutic and antibiotic agents"[1]

ALTAFUR®

BRAND OF FURALTADONE

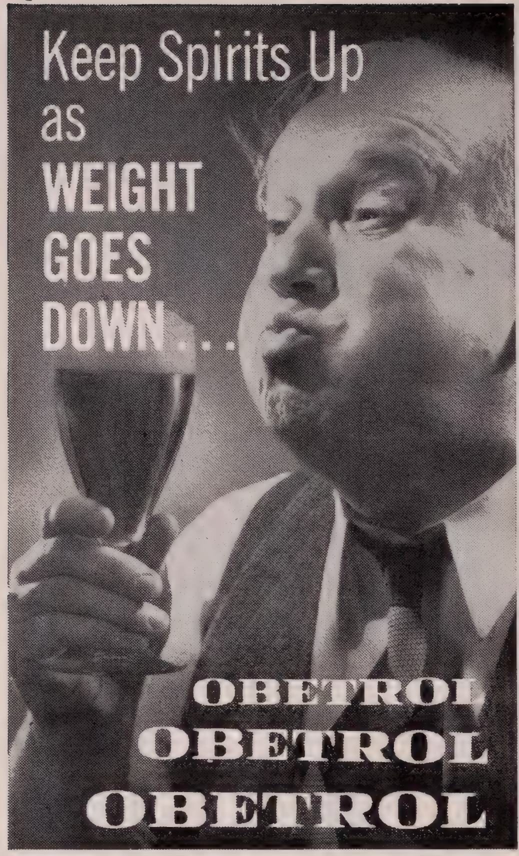
effective perorally against the majority of common infections caused by pathogenic bacteria including the antibiotic-resistant staphylococci

ALTAFUR is available in tablets of 250 mg. (adult) and 50 mg. (pediatric), bottles of 20 and 100.

1. Lysaught, J. N., and Cleaver, W.: Proceedings of the Detroit Symposium on Antibacterial Therapy (Michigan and Wayne County Academies of General Practice, Detroit, Sept. 12, 1959).

THE NITROFURANS ... a *unique* class of antimicrobials

EATON LABORATORIES, NORWICH, NEW YORK



OBETROL®

Patent #2748052

for medical management of obesity

The **different** amphetamine combination of choice...even in many cases of hyperthyroidism, hypertension, coronary artery and other cardiovascular diseases.

- **Safer**
- **Allays hunger**
- **Fewer contraindications**
- **Diuretic action**
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OBETROL incorporates the desirous action of amphetamines without usual drawbacks.

OBETROL tablets contain Methamphetamine Saccharate, the safer, longer acting compound, with other effective amphetamine salts.

SUPPLIED: in 10 mg. and 20 mg. tablets in bottles of 100, 500, and 1,000.

Available on prescription at all leading pharmacies.
Write today for clinical samples.

REFER TO PDR Page 753

OBETROL PHARMACEUTICALS
382 Schenck Avenue, Brooklyn 7, N. Y.

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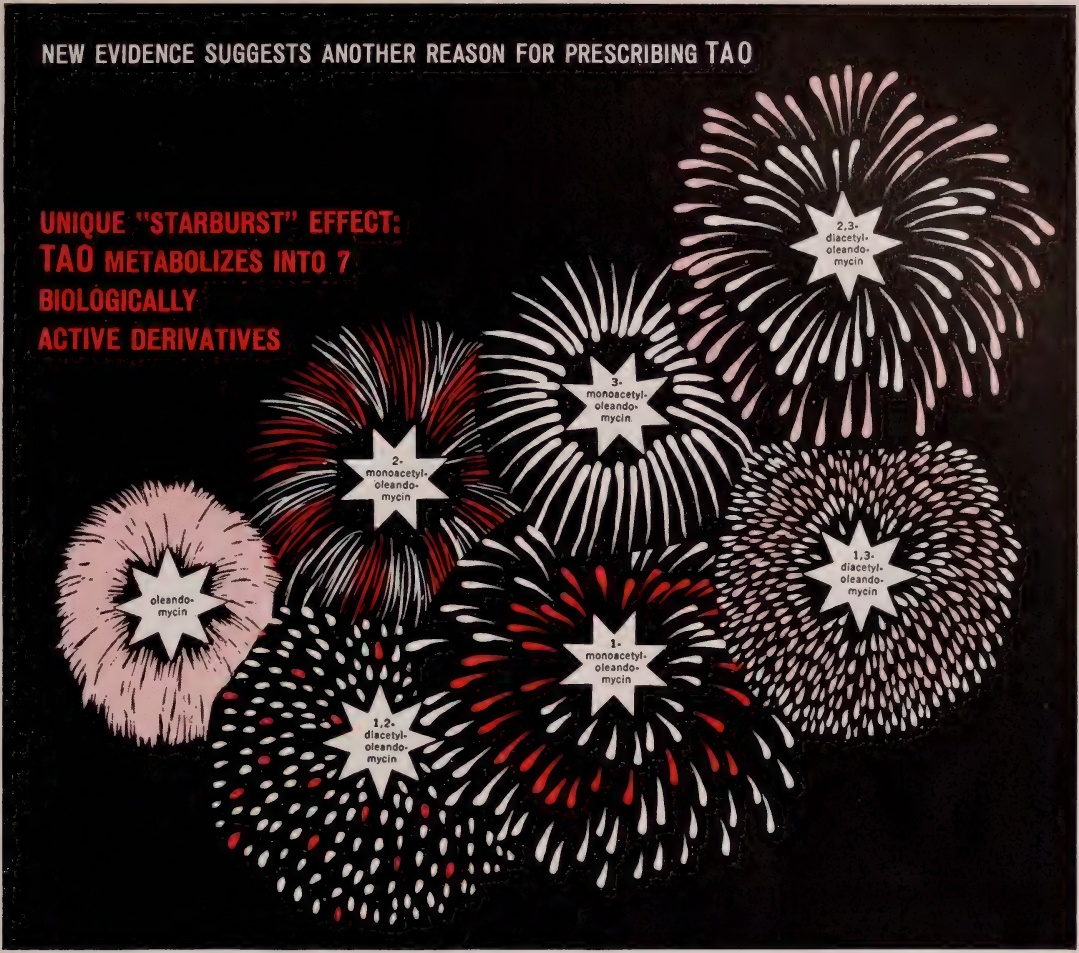
NEW EVIDENCE SUGGESTS ANOTHER REASON FOR PRESCRIBING TAO
UNIQUE "STARBURST" EFFECT:
TAO METABOLIZES INTO 7
BIOLOGICALLY
ACTIVE DERIVATIVES
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3-monoacetyl-oleando-mycin
2-monoacetyl-oleando-mycin
oleando-mycin
1,3-diacetyl-oleando-mycin
1-monoacetyl-oleando-mycin
1,2-diacetyl-oleando-mycin

The impression that TAO is an unusually active antibiotic has steadily gained recognition by impressive clinical performance. Now come reports of **in vivo** and **in vitro** biological and biochemical evaluations that show TAO to be indeed unique.[1,2]

TAO differs from other antibiotics in that it is metabolized to multiple active compounds which **remain** active throughout their presence in the body. These 7 derivatives (in addition to TAO) show activity against common Gram-positive pathogens, including resistant strains of **Staph. aureus.**

In light of these findings, take another look at TAO performance: • 92% success in published cases of Gram-positive respiratory, skin, soft tissue and genitourinary infection • Effective against 78% of 64 "antibiotic-resistant" epidemic staphylococci. (In the same study, chloramphenicol was active against 52%; erythromycin against only 25%)[3] • No side effects in 94%; infrequent reactions mild and easily reversed • Quickly absorbed • Highly palatable.

Sound reasons to: Start with TAO to end 9 out of 10 common Gram-positive infections.

Supplied: TAO Capsules—250 mg., and 125 mg., bottles of 60. **TAO for Oral Suspension**—125 mg. per tsp. (5 cc.) when reconstituted; unusually palatable cherry flavor; 60 cc. bottle. Prescription only.

Other TAO forms available: TAO Pediatric Drops: flavorful, easy to administer. **TAO®-AC:** TAO analgesic, antihistaminic compound. **TAOMID®:** TAO with triple sulfas. **Intramuscular or Intravenous:** in clinical emergencies. Prescription only.

1. English, A. R., and McBride, T. J.: Proc. Soc. Exper. Biol. & Med. 100:880 (Apr.) 1959. 2. Celmer, W. D.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 277. 3. English, A. R., and Fink, F. C.: Antibiotics & Chemother. 8:420 (Aug.) 1958.

**designed
for
superior
control
of
common
Gram-
positive
infections**

Tao®

(triacetyloleandomycin)
Capsules/Oral Suspension

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New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

Doctors and Dentists
recommend NO-CAL
with confidence

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FIRST
NON-FATTENING
SOFT
DRINK

She can drink and be merry when she gives her figure a NO-CAL break. NO-CAL guards her shape . . . helps safeguard her teeth. It's wonderful for sparking up dull diet meals or as a delicious snack.

Only sweetener is calcium cyclamate. NO-CAL is absolutely non-fattening . . . contains no sugar, no salt, no fats, proteins or carbohydrates with no calories to be derived therefrom. You can confidently tell your patients that NO-CAL is safe for diabetics and dieters.

NO-CAL
NO-CAL

8 DELICIOUS FLAVORS
PLUS SALT-FREE CLUB SODA

COMMENDED PARENTS'

SUGAR FREE
NO·CAL
BEVERAGES

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“R Day”

for the neuritis patient can be tomorrow

“R Day”—*when pain is relieved*—can come early for patients with inflammatory (non-traumatic) neuritis if treatment with Protamide is started promptly after onset.

Protamide is the therapy of choice for either early or delayed treatment, but early use assures greatest efficacy.

For example, in a 4-year study[1] and a 26-month study[2] a combined total of 374 neuritis patients treated with Protamide during the first week of symptoms responded as follows:

60% required only 1 or 2 daily injections for complete relief

96% experienced excellent or good results with 5 or less injections

Thus, the neuritis patient’s first visit—especially an early one—affords the opportunity to speed his personal “R Day.”

Protamide is available at pharmacies and supply houses in boxes of ten 1.3 cc. ampuls. Intramuscularly only, one ampul daily.

PROTAMIDE®

REFER TO
PDR
PAGE 812

Sherman Laboratories
Detroit 11, Michigan

1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

Announcing

‘ACTIFED’®

Decongestant / Antihistamine

THE POTENTIATED DECONGESTANT

provides symptomatic relief of nasal congestion and rhinorrhea of allergic or infectious origin Many patients whose symptoms are inadequately controlled by decongestants or antihistamines alone respond promptly and favorably to ‘ACTIFED’.

‘ACTIFED’ contains:	in each Tablet	in each tsp. Syrup
‘Actidil’® brand Triprolidine Hydrochloride	2.5 mg.	1.25 mg.
‘Sudafed’® brand Pseudoephedrine Hydrochloride	60 mg.	30 mg.

safe and effective for patients of all ages suffering from respiratory tract congestion

DOSAGE

	TABLETS	SYRUP (5 cc. tsp.)	
Adults and older children	1	2	three times daily
Children 4 months to 6 years of age	½	1	
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BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, New York

FOR SIMULTANEOUS IMMUNIZATION AGAINST 4 DISEASES:

Poliomyelitis-Diphtheria-Pertussis-Tetanus

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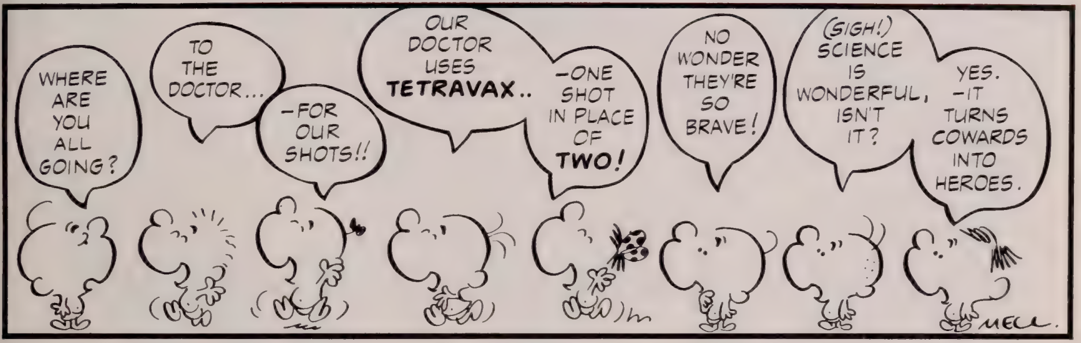
WHERE ARE YOU ALL GOING?
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—FOR OUR SHOTS!!
OUR DOCTOR USES TETRAVAX..
—ONE SHOT IN PLACE OF TWO!
NO WONDER THEY'RE SO BRAVE!
(SIGH!) SCIENCE IS WONDERFUL, ISN'T IT?
YES. —IT TURNS COWARDS INTO HEROES.

TETRAVAX®

DIPHTHERIA AND TETANUS TOXOIDS WITH PERTUSSIS AND POLIOMYELITIS VACCINES

now you can immunize against more *diseases...with* fewer *injections*

Dose: 1 cc.
Supplied: 9 cc. vials in *clear plastic* cartons. Package circular and material in vial can be examined without damaging carton. Expiration date is on vial for checking even if carton is discarded.

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IN CONTRACEPTION...

WHY IS SPEEDIER SPERMICIDAL ACTION IMPORTANT?

Because a swift-acting spermicide best meets the variables of spermatozoan activity.

Lanesta Gel, "...found to immobilize human spermatozoa in one-third to one-eighth the time required by five of the leading contraceptive products currently available . . ."* thus provides the *extra* margin of assurance in conception control. The accelerated action of Lanesta Gel — it kills sperm in minutes instead of hours — may well mean the difference between success and failure.

**Berberian, D. A., and Slighter, R. G.: J.A.M.A. 168:2257 (Dec. 27) 1958.*

In Lanesta Gel *7-chloro-4-indanol,* a new, effective, nonirritating, nonallergenic spermicide produces immediate immobilization of spermatozoa in dilution of up to 1:4,000. Spermicidal action is greatly accelerated by the addition of 10% NaCl in ionic form. Ricinoleic acid facilitates the rapid inactivation and immobilization of spermatozoa and sodium lauryl sulfate acts as a dispersing agent and spermicidal detergent.

Lanesta Gel with a diaphragm provides one of the most effective means of conception control. However, whether used with or without a diaphragm, the patient and you, doctor, can be certain that Lanesta Gel provides faster spermicidal action — plus essential diffusion and retention of the spermicidal agents in a position where they can act upon the spermatozoa.

new Lanesta® Gel

Supplied: Lanesta Exquiset . . . with diaphragm of prescribed size and type; universal introducer; Lanesta Gel, 3 oz. tube, with easy clean applicator, in an attractive purse. Lanesta Gel, 3 oz. tube with applicator; 3 oz. refill tube — available at all pharmacies.

Manufactured by Esta Medical Laboratories, Inc., Alliance, Ohio Distributed by GEORGE A. BREON & CO., New York 18, N. Y.

A product of Lanteen® research.

1
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Antivert® STOPS VERTIGO 9 TIMES OUT OF 10!!

The latest ANTIVERT report confirms earlier findings: ANTIVERT relieves vertigo in 9 out of 10 patients. This combination of meclizine (an outstanding antihistamine for vestibular dysfunction) and nicotinic acid (the drug of choice for prompt vasodilation[1]) "... proved more effective than the use of either drug alone."[2] Out of 50 patients with Meniere's syndrome, only 4 failed to respond to ANTIVERT.[2] Prescribe one ANTIVERT tablet (12.5 mg. meclizine; 50 mg. nicotinic acid) before each meal for relief of Meniere's syndrome, arteriosclerotic vertigo, labyrinthitis and vertigo of nonspecific origin.

Supplied: In bottles of 100 blue-and-white scored tablets. Prescription only.

References: 1. Menger, H. C.: Clin. Med. *4*:313 (Mar.) 1957. 2. Scal, J. C.: Eye Ear Nose & Throat Month. *38*:738 (Sept.) 1959.

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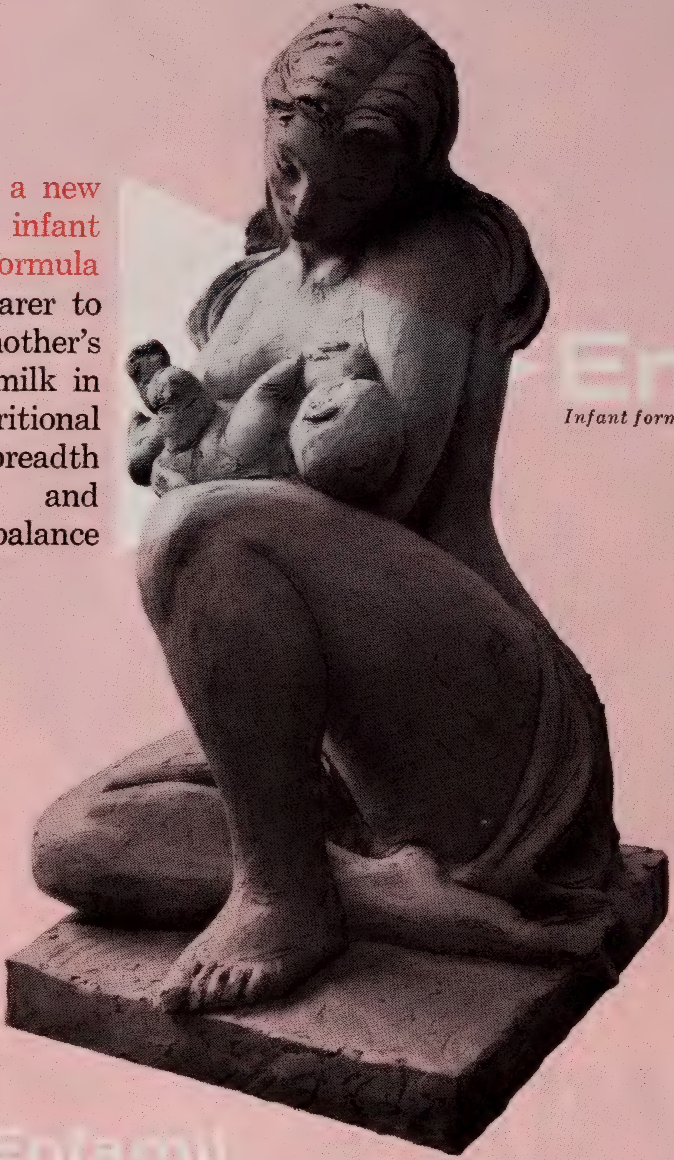
Science for the World's Well-Being



a new
infant
formula
nearer to
mother's
milk in
nutritional
breadth
and
balance

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Infant formula

Enfamil

NEARER . . . in caloric distribution of protein, fat and carbohydrate
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ENFAMIL IS ALMOST IDENTICAL to mother's milk in . . .

- ratio of unsaturated to saturated fatty acids
- absence of measurable curd tension . . . enhances digestibility

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Symbol of service in medicine

greater activity | unsurpassed G.I. toleration | sustained peak action | extra-day protection against relapse

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DECLOMYCIN®

Demethylchlortetracycline Lederle

IN THE NEW,
CHERRY-FLAVORED SYRUP

75 mg./5 cc. tsp., in 2 fl. oz. bottle—3-6 mg. per lb. daily in four divided doses

LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, N. Y.

new modern site-of-pain relief in musculoskeletal distress

GER-O-FOAM

(aerosol foam)

GER-O-FOAM
ANAESTHETIC & ANALGESIC FOAM

eases pain, spasm; improves function

Deeply absorbed to permeate affected sensory endings, the proven local analgesic-anesthetic agents in GER-O-FOAM give relief in minutes, lasting for hours in . . . rheumatoid arthritis, osteoarthritis, muscle sprain, fibromyositis, low back pain, etc.

IN A NEW CLINICAL STUDY[1] GER-O-FOAM gave "satisfactory" results in 85% of chronic musculoskeletal patients. Response was "striking" in certain intractable acute conditions . . . "permitting functional exercises otherwise impossible."

GER-O-FOAM combines: Methyl salicylate 30%, benzocaine 1%, traces of volatile oils in a specially processed, neutralized emulsion base, for aerosol use.

samples, reprint and literature from

GERIATRIC PHARMACEUTICAL CORPORATION Bellerose New York

GERIATRIC

[1] Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

MULTI-FACETED CONTROL IN

PARKINSONISM

REQUIRES

DISIPAL®*

Brand of Orphenadrine HCl

Highly selective action

Potent action against sialorrhea

Counteracts diaphoresis, oculogyria and blepharospasm

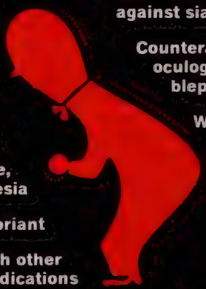
Well tolerated—even in presence of glaucoma

Lessens rigidity and tremor

Energizes against fatigue, adynamia and akinesia

An effective euphoriant

Thoroughly compatible with other antiparkinsonism medications



Dosage: Usually 1 tablet (50 mg.) t.i.d. When used in combination, dosage should be correspondingly reduced.

Minimal side reactions
Nonsoporific
No known organic contraindications

*Trademark of Brocades-Stheeman & Pharmacia. U.S. Patent No. 2,567,351. Other patents pending.

Bibliography and file card available on request.

Riker Northridge, California

it started
as a
"cold"...

to prevent the sequelae
of u.r.i....and relieve the
symptom complex

ACHROCIDIN®

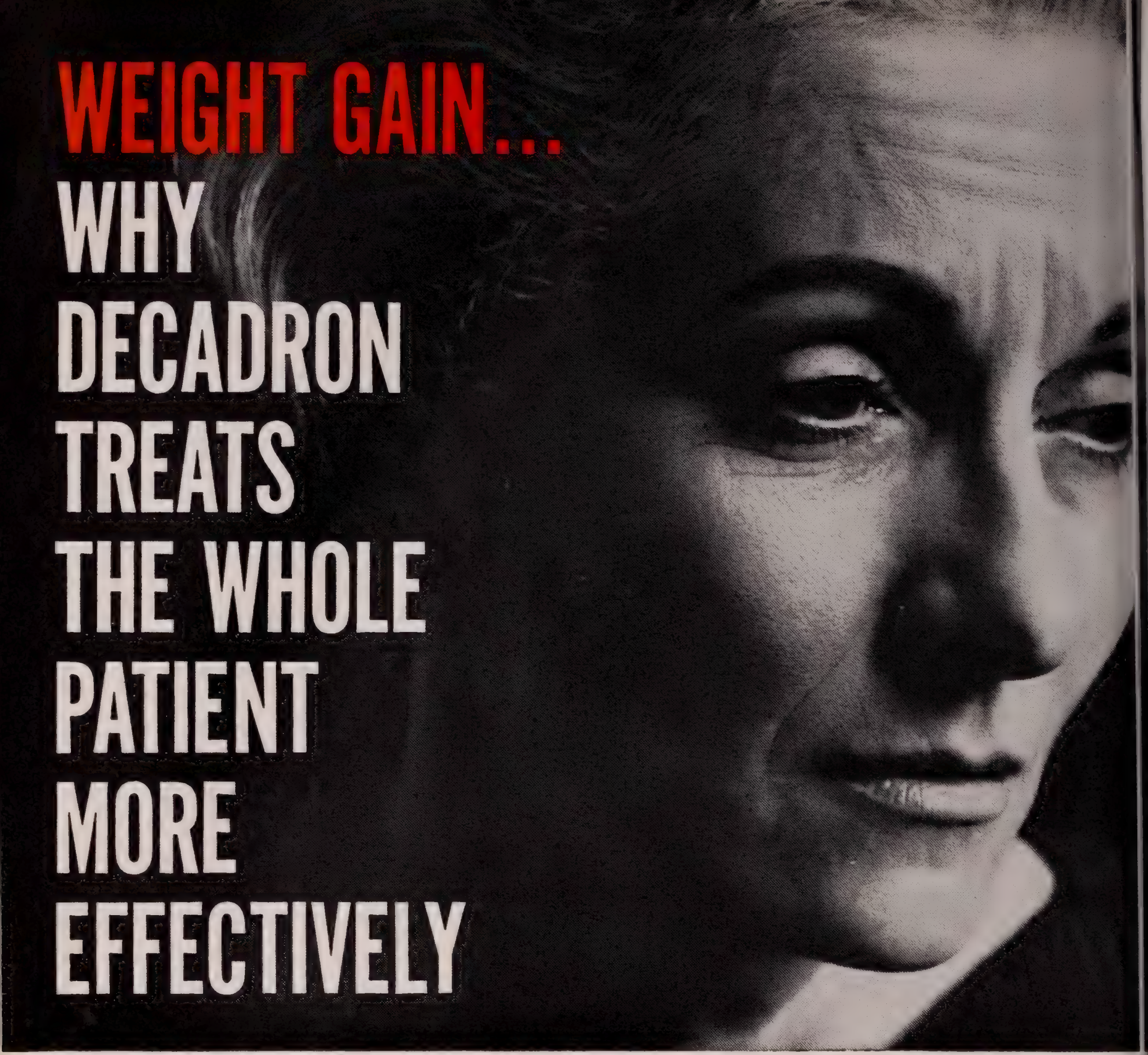
Tetracycline-Antihistamine-Analgesic Compound Lederle

Otitis, tonsillitis, adenitis, sinusitis, bronchitis or pneumonitis develops as a serious bacterial complication in about one in eight cases of acute upper respiratory infection.[1] To protect and relieve the "cold" patient... ACHROCIDIN.

Usual dosage: 2 tablets or teaspoonfuls q.i.d. (equiv. 1 Gm. tetracycline). Each TABLET contains: ACHROMYCIN® Tetracycline (125 mg.); phenacetin (120 mg.); caffeine (30 mg.); salicylamide (150 mg.); chlorothen citrate (25 mg.). Also as SYRUP (lemon-lime flavored), caffeine-free.

1. Based on estimate by Van Volkenburgh, V. A., and Frost, W. H.: Am. J. Hygiene 71:122 (Jan.) 1933

Lederle LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



WEIGHT GAIN...
WHY DECADRON TREATS THE WHOLE PATIENT MORE EFFECTIVELY

Patients with chronic rheumatoid arthritis or other collagen or allergic diseases often require the "tonic effect"[3] as well as the anti-inflammatory effects of dexamethasone. For them, DECADRON has relieved fatigue and weakness,[4,5] increased appetite[4-6] and often promoted a "real gain in weight"[6]—"*...a definite therapeutic advantage in many patients requiring steroid therapy.*"[7]

References: 1. Bunim, J. J., et al.: Arthritis & Rheumatism *1*:313, 1958. 2. Silverman, H. I., and Urdang, A.: Am. Prof. Pharm. *25*:531, 1959. 3. Rudolph, J. A., and Rudolph, B. M.: Ann. Allergy *17*:710, 1959. 4. Spies, T. D., et al.: South. M. J. *51*:1066, 1958. 5. Galli, T., and Mannetti, C.: Minerva med. *50*:949, 1959. 6. Segal, M. S., et al.: Ann. Allergy *17*:413, 1959. 7. Duvenci, J., et al.: Ann. Allergy *17*:695, 1959.

Supplied: As 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100 and 1000. Also available as Injection DECADRON Phosphate.

Additional information on DECADRON is available to physicians on request.

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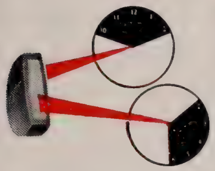

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1. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958.
2. Lhotka, F. M.: Illinois M. J.: *112*:259 (Dec.) 1957.
3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958.

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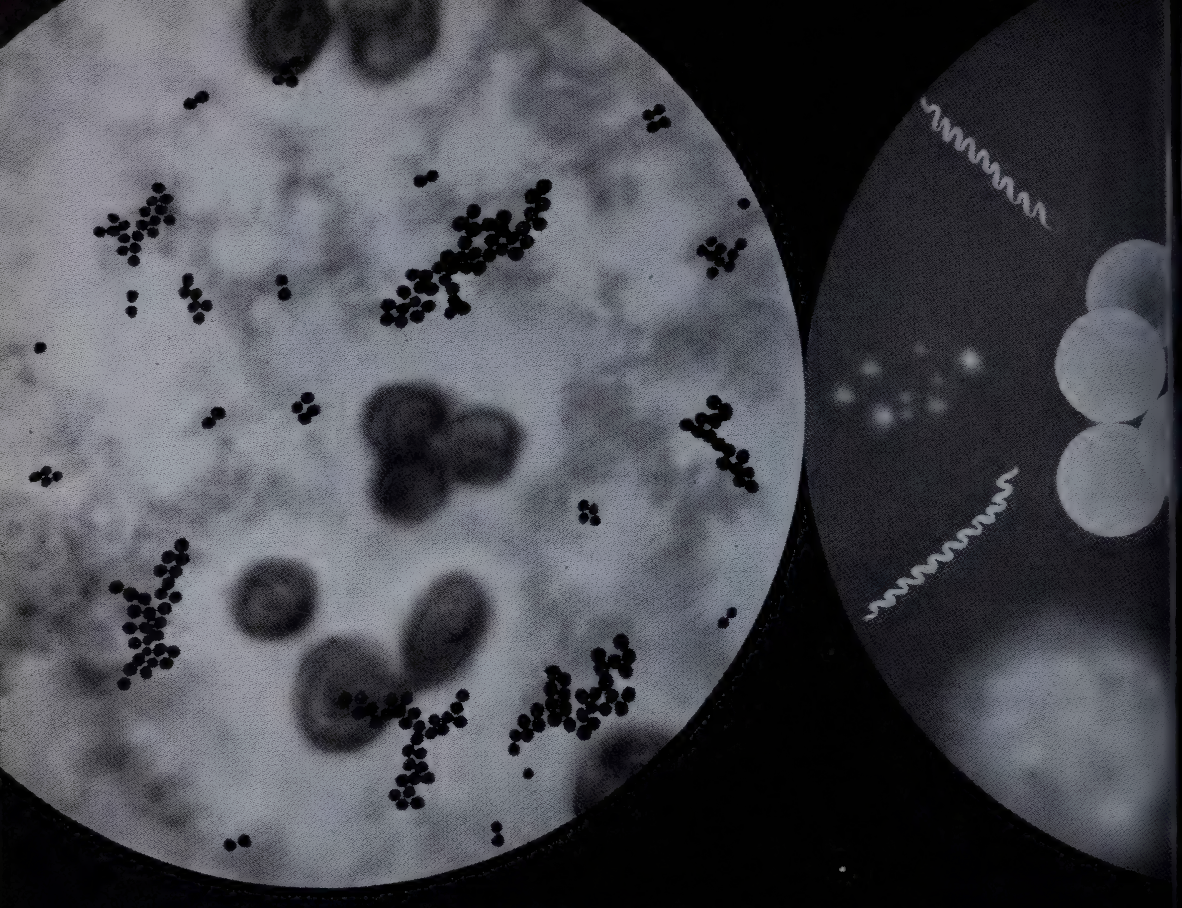

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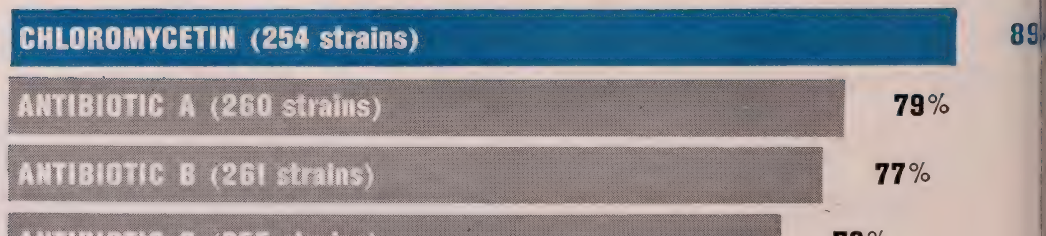

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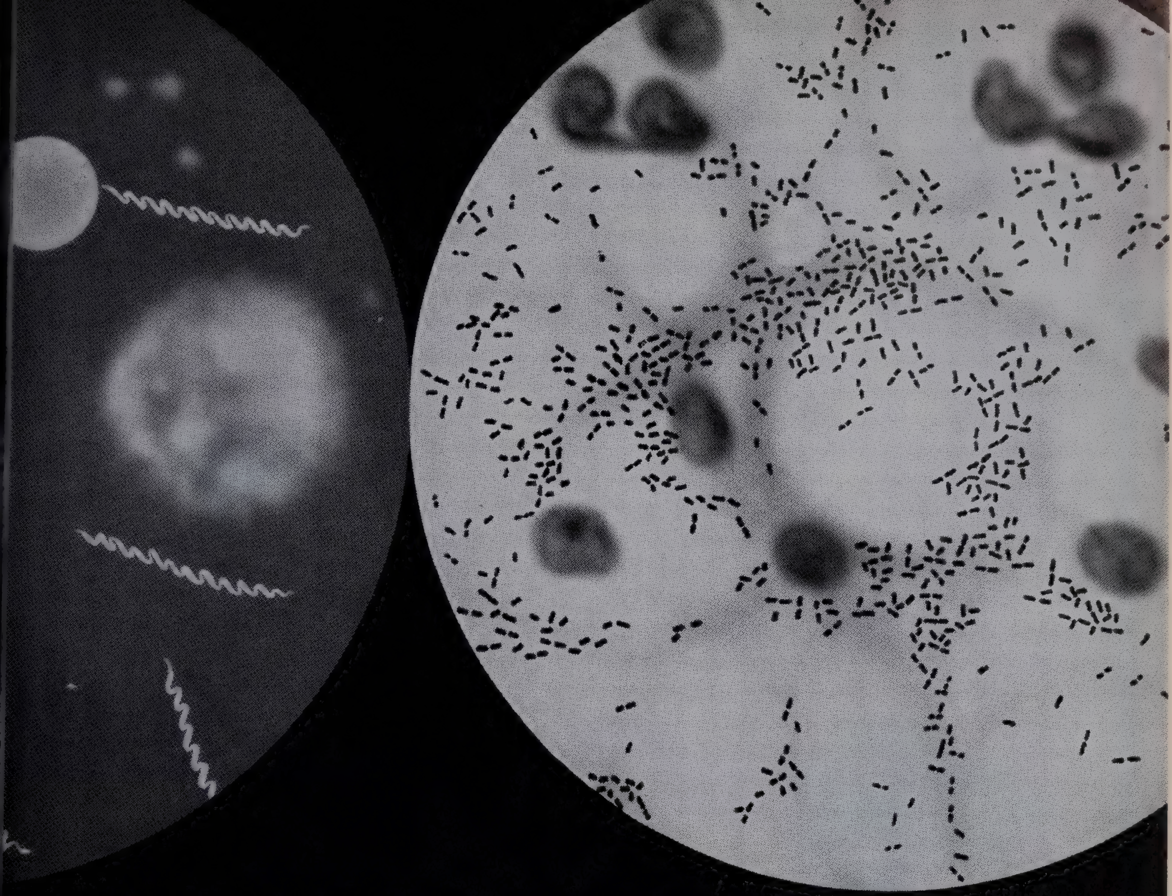

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References: (1) Morton, J. J.: *Yale J. Biol. & Med.* **31**:397, 1959. (2) Rogers, D. E., & Louria, D. B.: *New England J. Med.* **261**:86, 1959. (3) Leming, B. H., Jr., & Flanigan, C., Jr., in Welch, H., & Marti-Ibañez, F.: Antibiotics Annual 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 414. (4) Edwards, T. S.: *Am. J. Ophth.* **48**:19, 1959. (5) Olarte, J., & de la Torre, J. A.: *Am. J. Trop. Med.* **18**:324, 1959. (6) Suter, L. S., & Ulrich, E. W.: *Antibiotics & Chemother.* **9**:38, 1959. (7) Holloway, W. J., & Scott, E. G.: *Delaware M. J.* **30**:175, 1958.

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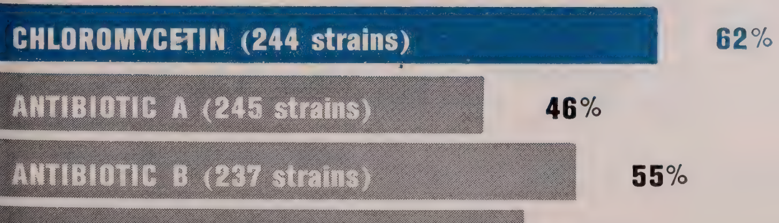

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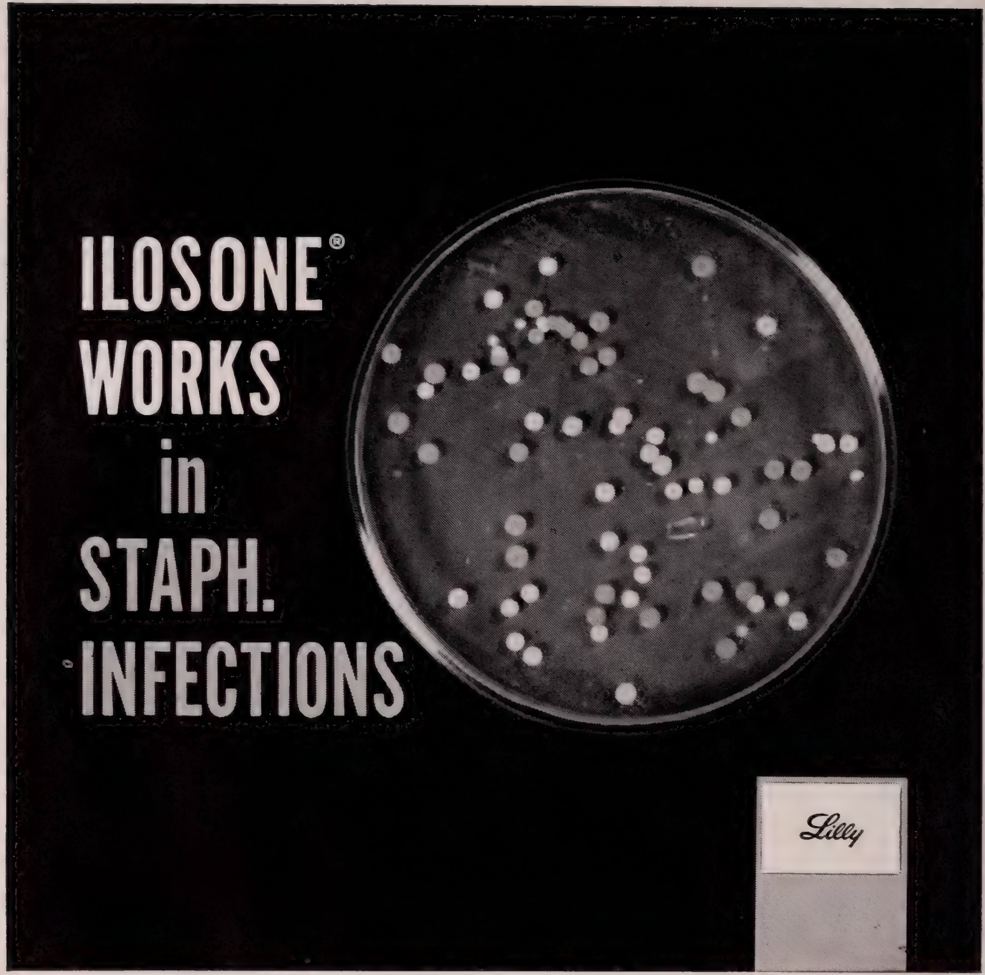

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1. Smith, I. M., and Soderstrom, W. H.: J. A. M. A., *170*:184 (May 9), 1959.

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EDITORIALS

Medical Leadership in Rehabilitation

The rehabilitation of the handicapped person to his maximum capacity for functional, social, and economic independence may require a coordinated process in which several professional groups participate. Some patients need only single services, such as physical or occupational therapy. Others require a comprehensive procedure beginning with a complete medical appraisal of the mental and physical status and including an analysis of the social background and the motivational factors and a vocational evaluation of employment potentials and capacity for retraining.

Whether simple or complex, rehabilitation begins with medical care, preferably concurrent with the latter rather than subsequent to it. Certainly, the physician is not the sole determinator of the full potentialities of the patient and he must rely upon the social workers, the therapists, and the vocational rehabilitation counselors for their professional contributions. The physician is responsible for determining the level of mental and physical improvement the patient is likely to reach, the intensity of medical and other services the patient is capable of accepting, and the time such services should begin. Likewise, it is his responsibility to the patient, throughout the entire rehabilitation procedure, to be certain that the latter's health status is maintained at an optimal level.

These medical functions are shared by all physicians, regardless of specialty, who care for patients with any disease or disorder which may leave a residual disability. Responsibility cannot be left for the very small number of physicians who have chosen physical medicine and rehabilitation as a specialty and have received board certification in this field as a mark of their exceptional professional competence. To this group must be assigned the responsibilities for the management of very difficult cases, for the organization of special rehabilitation services, and for providing consultation to other physicians as necessary.

Unfortunately, there are many physicians who have not taken an interest in or accepted responsibility in regard to the rehabilitation aspects of their patient's medical problem. As a result, complaints of the following types are often made by nonmedical agencies administering rehabilitation programs, such as vocational rehabilitation, sheltered workshops, or welfare medical care (Aid-to-the-Disabled):

1. Physicians frequently fail, either deliberately or by just not getting around to doing it, to provide the necessary medical information to assist the agency in determining the eligibility of the patient for the rehabilitation program.

2. Physicians often write down, "totally disabled," without reporting any clinical findings to back up such a statement.

3. When adequate clinical reports are submitted, physicians too often state that no rehabilitation services are indicated, when it is known by both medical and nonmedical members of rehabilitation teams that patients with similar types of handicap often show good responses to rehabilitation.

4 It is recognized that rehabilitation services are not adequate in many areas of the State. Yet several of the existing high quality facilities are having administrative and financial difficulties because they are not receiving sufficient referrals from the physicians in the community. On the basis of numerous studies of the prevalence of disabilities in a community, it appears that there are many patients just not being referred for available services.

5. When patients are referred, the physi-

cian's request is often made for a single service, such as physical therapy or occupational therapy, when it is obvious to those experienced in rehabilitation that the person requires a comprehensive evaluation. Such persons often have problems in adjusting to their disabilities, which may be interpersonal or may relate to their dealings with their family or their community. On the other hand, it may be necessary for them to have a complete change in work habits or be trained for a new vocational field because the disability prevents them from returning to their former area of occupation. Thus, rather than a few physical therapy treatments a week, they should have a social evaluation and a prevocational counseling and testing service to be followed by actual vocational training if indicated. All of these services should be begun at the earliest possible time.

6. Physicians rarely consider the current labor market or the types of jobs available in the community when recommending handicapped patients for certain jobs. The most common complaint by employment specialists is that physicians state that the patient is suitable for "light work," without having any idea of what "light work" involves. The classic example is the referral of a patient for a position as night watchman, when it is well known that the watchman must make rounds through a multistoried building every hour and be ready to take quick action in case of fire or intruders.

Related to this lack of medical leadership is the frequent tendency of many nonmedical agencies to take for granted that they are the leaders in the rehabilitation field and that physicians play a very secondary role, simply a source for which medical services may be purchased. This seems to reach a peak in the current Federal legislative proposal for a Federal program for "Independent Living Rehabilitation" (primarily a medical rehabilitation program for handicapped persons with no potentialities for return to employment) which would be placed in the vocational rehabilitation unit of the states. This bill (HR-3465) is being sponsored by the National Rehabilitation Association. In a widely distributed "background statement," this association declares that only vocational rehabilitation counselors have the philosophy and the experience to undertake such a program. While holding that rehabilitation for independent living is not primarily medical, the statement emphasizes that the vocational counselors have had lots of experience in running medical programs, and are perfectly capable of doing so.

Thus we see here the pattern which is characteristic of phenomena in other areas of medical care. Whenever physicians fail to exert the necessary leadership in medical problems, there will be lay groups ready to step in and do it for them. It is still our philosophy that physicians should have the key role of responsibility for problems which are primarily medical.

Thus we must face the question of "who leads in rehabilitation." Medicine is not the only discipline concerned with the rehabilitation of disabled persons, whether the objective be employment or a maximum degree of independent living. However, the physician is a very important member of that team, and if he is not the captain, he would at least appear to be the quarterback. It is up to him to determine the medical potentialities of a patient and what the patient's mental and physical status will accept.

If the physician fails to carry out this role, there is the immediate danger of unfairness to the patient who may thus not achieve his full potentialities. There is also the long-range danger of handing over medical problems to nonmedical groups on a silver platter—I.J.B.

Shapiro v. Health Insurance Plan

Because of the complex relationship of the physician today with various organizations and institutions associated with the practice of medicine, a recent decision of the Court of Appeals of the State of New York is of particular interest. The Court dismissed an action for libel and slander brought by a surgeon against the Health Insurance Plan of Greater New York and two of its officers, both physicians, holding that the alleged defamatory communications were privileged, were made without malice, and therefore did not furnish a basis for the law suit.

The Health Insurance Plan of Greater New York (HIP) is a nonprofit membership corporation which sells medical expense indemnity insurance to some 500,000 insureds in Metropolitan New York. The indemnified medical care is made available to the insured persons by 32 partnerships of physicians called Medical Groups. Each Medical Group is an independent contractor with HIP and each has in its membership general practitioners and specialists, including surgeons. The contracts between the Medical Groups and HIP and between HIP and its insureds provide that medical services are to be rendered in accordance with accepted medical and surgical practices and in accordance with standards adopted by the Medical Control Board of HIP.

The plaintiff-surgeon complained that the defendants had made a number of alleged defamatory statements, some oral and some in writing, on four dates in December, 1953, and January, 1954. Substantially all the alleged libels and slanders were made by the defendant officers of HIP at Medical Control Board hearings called to investigate the plaintiff's qualifications to act as surgeon for his Group or were made in communications to his Group notifying it of the Medical Control Board's conclusion that he was not qualified and of the Board's decision rescinding its approval of him as a Group surgeon or were made to the Medical Group Council, an organization of various HIP Medical Groups. In general terms, the theory of the law suit was that these statements defamed the plaintiff-surgeon by charging him with lack of competence as a surgeon, by stating that his hospital appointment or staff memberships had been cancelled or not renewed by reason of his incompetency, by asserting that he did not meet the minimal requirements of HIP for surgery and that he lacked adequate surgical training and skill, and by charging that he wilfully withheld information for HIP and wilfully made misrepresentations to HIP and concealed facts from HIP as to his hospital connections and as to his qualifications and experience.

The plaintiff-surgeon alleged that each of the defamatory statements was made in bad faith, without justification, in disregard of his rights, and with intent to injure him professionally, and that each libel and slander was motivated by actual malice.

The answer submitted by the defendants admitted that the two individual defendant physicians were acting within the scope of their authority and employment with HIP and that some, but not all, of the alleged defamatory statements had been made.

Of primary interest is the main defense to the action which was interposed by the defendants. It was that these statements, if made, were made, *in the course of defendants' duties, to persons who had an interest in the matter, in good faith* and *without malice*, and so were *privileged.* The other separate defenses were to the effect that the statements complained of were true in fact or in substance or were based on trustworthy information believed by the defendants to be true.

The defendants moved for summary judgment dismissing the plaintiff's complaint on the ground that all the communications complained of were made because of defendants' duties and obligations and so were *privileged.* The plaintiff, in opposing the motion, conceded *qualified* or *conditional privilege,* but charged the defendants with malice and reckless disregard of his rights and interests. The lower courts held that the circumstances and relationships were such as to produce a *qualified privilege* provided that the communications had been made without *actual malice,* but denied the defendants' motion for summary judgment on the ground that a trial was necessary to determine if there was actual malice.

The Court of Appeals in reaching its decision stated the basic principle applicable to such a situation and declared in part: "A communication made bona fide upon any subject matter in which the party communicating has an interest, or in reference to which he has a duty, is privileged if made to a person having a corresponding interest or duty, although it contained criminating matter which, without this privilege, would be slanderous and actionable; and this though the duty be not a legal one, but only a moral or social duty of imperfect obligation. . . .Such privilege is known as a qualified privilege. It is qualified because it does not extend beyond such statements as the writer makes in the performance of such duty and in good faith believing them to be true."

The Court explained that although there are numerous decisions which say that "as to privileged communications the good faith of the defendant and the existence of actual malice are questions of fact for the jury, the expression must not be misunderstood. Those questions are for the jury only where there is evidence in the case warranting their submission to the jury, and the burden of proof is on the plaintiff. . . .Falsity is not sufficient for an inference of malice. It must be consistent only with a desire to injure the plaintiff, to justify sending the question of malice to the jury. . . .By actual malice is meant personal spite or ill will, or culpable recklessness or negligence."

It made a detailed examination of the affidavits and exhibits submitted by the plaintiff and the defendants and came to the conclusion that the plaintiff had failed to show facts demonstrating actual malice on the part of the defendants. The Court observed that although the defendants did not have the burden of showing lack of malice, the documents annexed to their affidavits, consisting of actual minutes of hearings and meetings, went far toward negating malicious motivation.

The Court in rejecting the plaintiff's arguments in support of the allegation of actual malice stated that: "Nowhere in plaintiff's affidavit are there any evidentiary facts (as distinguished from mere conclusory allegations). Facts from which a jury could infer malice are not revealed. Defendants had a duty and a right to investigate and to communicate the results of their investigation to other similarly interested persons. Those communications were privileged unless made because of malice. It was for plaintiff to show that he had facts available to prove such malice. He produced none. Suspicion, surmise, and accusation are not enough. The existence of earlier disputes between the parties is not evidence of malice."

The Court of Appeals then reversed the order of the lower court and directed that the complaint be dismissed. (*Shapiro v. Health Insurance Plan of Greater New York, & ors., & c., Court of Appeals, November 25, 1959*).—J.R.B.

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See program on pages 1342 and 1343

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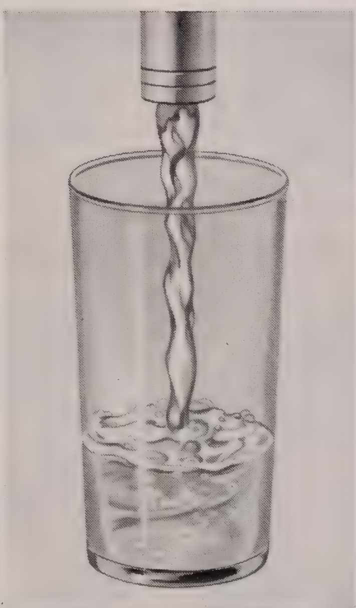

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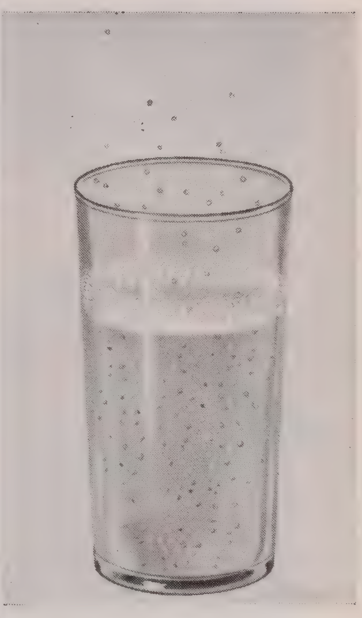

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(1) Holly, R. G.: Postgrad. Med. **26**:418, 1959. (2) Evans, L. A. J., in Wallerstein, R. O., and Mettier, S. R.: Iron in Clinical Medicine, Berkeley, Univ. California Press, 1958, p. 170. (3) Schwartz, L.; Greenwald, J. C., and Tendler, D.: Am. J. Obst. & Gynec. **75**:829, 1958.

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SCIENTIFIC ARTICLES

*Status of Eastern Equine Encephalitis and the Mosquito Vector Potential in New York State**

D. L. COLLINS, PH.D., ALBANY, NEW YORK

(*State Entomologist and Principal Scientist of the New York State Museum and Science Service Biological Survey*)

IN NEW York State the virus of eastern equine encephalitis (EEE) was first isolated from pheasants during 1952 to 1953.[1] Despite the recovery of the virus from pheasants and other birds and mosquitoes in the neighboring states of Massachusetts, Connecticut, and New Jersey and the occurrence of human cases in Massachusetts and New Jersey, the eastern equine encephalitis virus was not again determined to be present in New York until the summer of 1959, when it was isolated from White Peking ducks by E. Dougherty III, Ph.D., director of the Duck Disease Research Laboratory, Eastport, Long Island, New York.†

Dr. Dougherty first observed the disease syndrome which led to the isolation of the virus on July 18, 1959. Since that time, virus isolations have been made from 2 pens of ring-neck pheasants out of 13 (comprising some 3,000 birds) that were tested as well as from 12 duck accessions, representing 5 farms. The last isolation was made on November 6, 1959. The identity of the virus as eastern equine encephalitis was confirmed at the Communicable Disease Center of the United States Department of Health, Education, and Welfare. The Division of Laboratories and Research of the New York State Department of Health independently also confirmed the existence of the virus, from two pheasants on another farm in the same general area.

These reports of Dr. Dougherty and the New York State Division of Laboratories and Research are the first authenticated records of the occurrence of the EEE virus in New York State since the 1952 to 1953 instance cited.

Mosquitoes of New York as EEE Vectors

The preponderance of evidence that mosquitoes are the principal vectors of EEE, perhaps the only vectors of importance, and the uncertainty as to which ones can be ruled out have led the public to a new appreciation of the value of general mosquito control—not just abatement of the superabundant salt marsh varieties in coastal regions, which has long been practiced on Long Island, but of all mosquitoes, especially in populated areas.

Mosquito control is a very specialized type of community effort. Since mosquitoes pay no attention to political boundaries and control programs cost money, special legislation often is needed to enable adjoining communities to inaugurate a single effective program by combined taxation. New York State does not have special mosquito control legislation that applies outside of Long Island. However, mosquito control may be practiced to a limited extent by municipalities acting under certain provisions of the Public Health Law. The Public Health Law contains articles and sections relating to the control of "mosquitoes, black flies, punkies, ticks, and other insects detrimental to health." Power to take steps to control these insects and other arthropods is given to local boards of health.

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* Adapted from a report made at a staff meeting of the New York State Department of Health, Albany, New York, November 2, 1959. Published by permission of the Director of the New York State Museum and Science Service.

† A laboratory of the New York State Veterinary College, a unit of the State University of New York at Cornell University.

Thus, in the mosquito control picture as it exists in New York State at present, the physician, especially the health officer, is a key figure. In order to act intelligently under the increasing pressure which periodically occurs to "do something about the mosquitoes," it is necessary for the physician and especially public health officials to have some knowledge of mosquitoes, including information on which ones are known, suspected, or potential disease vectors. In the recent publicity on EEE the name of one mosquito, *Culiseta melanura* Coq., has been prominent. Although this species is presumed to be the principal enzootic vector responsible for the perpetuation of the virus in nature, it seems likely, since *C. melanura* seems to have a preference for birds and seldom bites man, that other vectors also are involved in transmitting the virus to man.

C. melanura is not common in New York State but has been collected from a sufficient number of widely separated localities to make it probable that it occurs throughout the State in localities with suitable breeding habitats. It was reported by Barnes, Fellton, and Wilson in 1950[2] to exist in the following localities: Pawling, Dutchess County; Duck Lake and Tupper Lake, Franklin County; Watertown, Jefferson County; Brooklyn, Kings County; Hempstead, Merrick, and North Merrick, Nassau County; Governor's Island, New York County; Utica, Oneida County; West Point, Orange County; Queens County; Orangeburg, Rockland County; Cayuta Lake, Schuyler County; Yaphank, Suffolk County; and Ithaca, Tompkins County. More recently (October 15, 1959) larvae of the species were collected near Blue Mountain Lake, Hamilton County, by H. Jamnback and J. Wilcox of the State Museum. The western third of the State is not represented in this list, but this may well be due to lack of effort in collecting rather than to absence of the species. Until as recently as 1926 the species had been rerecorded (under the name of *Theobaldia melanurus* Coq.). from only Tupper Lake and Duck Lake, Franklin County. The addition of the other localities was made, for the most part, from 1937 to 1945, as a result of more intensified collecting around military establishments.

Although it already had been decided that Long Island is a logical region to begin a more intensive search for breeding places of *C. melanura*, the recovery of the EEE virus from ducks in Suffolk County in 1959 seemed to suggest even more specific starting points, namely, the vicinity of the duck farms where the infected ducks had been found. In a rather hurried collecting trip to some of these sites in December, 1959, Dr. Jamnback found *C. melanura* larvae in seven out of eight suitable sites, from Massapequa in Nassau County on the west to Water Mill, near Southampton, in Suffolk County on the east.

C. melanura breeds only in fresh-water swamps, especially cold-water bogs, and heavily shaded seepage areas, which are swamplike in character. Its range is generally restricted to the eastern half of the United States and coincides with the distribution of EEE. Precipitin tests on specimens engorged with blood when caught have shown that birds are the predominant hosts, possibly as much because of greater availability as because of preference by the mosquitoes.

In fact, this tendency to feed on hosts other than man is so pronounced that when it bites man it is "news." The first authentic record of *C. melanura* biting man in nature is in the September, 1958, issue of *Mosquito News*.[3] This observation of *C. melanura* biting man was made on September, 5, 1957, a mild clear day, in a cedar swamp in Raynham, Massachusetts, one

TABLE I.—MOSQUITOES FROM WHICH THE EASTERN EQUINE ENCEPHALITIS VIRUS HAS BEEN ISOLATED IN NATURE[6]

Species	Distribution in New York State[2]	Habitat	Characteristics
Culiseta melanura (Coq.)	Probably throughout State;* not common	Larvae in cold pools, especially sphagnum bogs	Mature larvae live through winter; adults feed primarily on birds
Mansonia perturbans (Walker)	Throughout State; may be locally common	Larvae attach themselves to stems and roots of submerged vegetation such as cattails	Larvae obtain oxygen from air cells of plants
Anopheles crucians Wied.	Southeast counties; fairly common	Larvae most abundant in acid waters containing decaying vegetation, such as small ponds, margins of lakes, swampy pools; adults found around (usually not inside) houses, usually close to larval habitats	Commonly feed on man and domestic animals
Culex salinarius Coq.	Throughout State; especially common in southeast	Breeds in pools in both fresh and salt marshes (probably only in occasional freshwater pools in latter)	Migratory flights of several miles over open water observed
Aedes mitchellae (Dyar)	Recorded only from Staten Island; rare	Rain pools	. . .

* Breakdown in preceeding text, 1226

and a half hours before sunset. Hayes and Doane in the same article make other statements about the species that have special significance in the light of the current concern over it. The EEE virus has been isolated from this species from specimens collected in Louisiana, Alabama, New Jersey, and Massachusetts. In the laboratory, *C. melanura* has been induced to feed on fowl, occasionally on rabbits and mice, and once on man.

The question might well be raised that if it is so unusual for *C. melanura* to bite man, why is there so much concern over it? Why is it the focus of all discussion about vectors of EEE? However, in view of the relatively very small number of human cases that have been reported, it is logical to look for a vector that does not bite man and/or birds often, such as *C. melanura*. As Hayes and Doane point out, "An occasional infection resulting from the bite of this species could be expected to occur only after large numbers had fed on reservoir hosts circulating the virus in their blood. This combination of conditions would be necessarily dependent on an assortment of variables, such as: climatic conditions, reservoir host epizootics, and the relative accessibility of human hosts; the infrequent occurrence of this combination could result in the characteristic interepidemic period between outbreaks of human cases of EEE."[3]

From this point of view, *C. melanura* remains prominent in the gallery of principal enzootic vector suspects. But in the light of current knowledge we are not justified in referring to it as "the" carrier in the sense that we speak of *Anopheles quadrimaculatus* in relation to malaria or *Aedes aegypti* in relation to yellow fever. It is commonly assumed, as previously suggested, that other species of mosquitoes also may be involved.

Species other than *C. melanura* from which the EEE virus has been isolated in nature are *Mansonia perturbans*, in Georgia; *Anopheles crucians*, in Louisiana; *Culex salinarius*, in New Jersey; and *Aedes mitchellae*, in Georgia.[4] In the laboratory, infection with and transmission of the EEE virus occurred with 13 of the 20 species tested in the studies of Chamberlain, Sikes, Nelson, and Sudia,[5] who rated the vector potential of these species as fair to excellent. Information on species from which the EEE virus has been isolated in nature or in the laboratory, including distribution in New York State, is given in Tables I and II.[2,6] These tables

TABLE II.—MOSQUITOES FROM WHICH THE EASTERN EQUINE ENCEPHALITIS VIRUS HAS BEEN ISOLATED IN THE LABORATORY[6]

Species	Distribution in New York State[2]	Habitat	Characteristics
Aedes sollicitans (Walker)	Long Island, Staten Island, locally upstate; extremely common where it occurs	Salt marshes; inland: sites inundated by salt water from oil wells, swimming pools, and mines; eggs laid on sods and surface mud	Eggs hatch when flooded by high tide; 5 to 8 broods annually in New Jersey; migratory flights common; generally feeds twice before oviposition,* bites any time of day and night; feeds on any available animal; may live 35 days
Aedes aegypti (L.)	Not known to occur in New York State	. . .	. . .
Aedes triseriatus (Say)	Throughout State; may be common locally	Adults stay near larval sites, including small containers in shaded areas and leaf-choked roof gutters and tree holes	. . .
Aedes atropalpus (Coq.)	Throughout State	Larvae in potholes in rocks and ledges beside streams and lakes; adults remain near larval sites	. . .
Aedes vexans Meigen	Throughout State; common	Eggs laid on ground in shallow depressions subject to flooding to become temporary pools in woods, meadows, roadsides	Vicious biter, female bites any available host, strong flier; breeds from Mar. through Oct.; eggs resistant to freezing and drying, may survive year; adults migratory, may travel several miles, wind direction immaterial; may take nectar from flowers, especially golden rod
Culex restuans Theobald	Throughout State; common	Larvae occur especially in foul water, marshes, swamps, overflow from sewage disposal plants, discarded tire casings	Resembles common house mosquito Culex pipiens in appearance and habits; continuous generations
Culex erraticus (D. and K.)	Not known to occur in New York State	. . .	. . .
Culiseta melanura (Coq.)†	. . .	. . .	. . .
Mansonia perturbans (Walker)†	. . .	. . .	. . .
Orthopodomyia signifera (Coq.)	Long Island, Rockland County, Ithaca; rare	Tree-hole species; also in artificial containers of sticks and leaves; adults usually stay close to breeding site	Hosts not definitely known
Psorophora ciliata (Fab.)	Throughout State; not common	Eggs laid under debris on damp soil subject to inundation; larvae in all kinds of temporary pools; adults rest on vegetation, especially in damp, brushy areas	Fringe-legged, largest species in State, vicious biter; continuous breeding but number of broods restricted in northern latitudes; eggs resistant to freezing, drying, prolonged submergence
Psorophora confinnis (L.-A.)	Southeast counties and Utica; rare	Similar to P. ciliata	Similar in habits to P. ciliata
Psorophora ferox (Hum.)	Southeast counties and Ithaca; rare	Similar to P. ciliata	Similar in habits to P. ciliata

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* A significant characteristic in a potential disease vector.

† Table I.

show that of the 16 species of mosquitoes ascertained be able to carry it and transmit it in the laboratory, all but two occur in New York State. At least five of them (*Aedes sollicitans*, *Culex salinarius*, *Aedes vexans*, *Culex restuans*, and *Mansonia perturbans*), and possibly one or two others, could be classified among our most important pest either to carry the virus in nature* or to mosquitoes.

In considering the possible significance of data such as these, Hayes and Parsons[7] point out that the fact that a certain mosquito has proved capable of transmitting the EEE virus in the laboratory does not consitute conclusive evidence that the same species can serve as a vector in nature nor does the recovery of the virus from field-collected mosquitoes prove that the species is an important vector or even that it can transmit the disease to man. Hess and Holden[8] and Hess[9] suggest other primary considerations; such as the population densities, distribution, and nesting, resting, and roosting habits of the avian hosts and the population densities, summer and winter longevity, blood-feeding habits, and host preferences of the arthropod vectors.

Mosquito Control

The two counties on Long Island outside the jurisdiction of New York City have well-organized mosquito control units with specially trained permanent personnel, light and heavy equipment, maintenance shops, and other assets that result in effective annual mosquito control. In these counties mosquito control is accepted as a routine local government function, like fire protection, snow removal, and street maintenance.

In upstate New York most of the "official" mosquito control has been accomplished on a township or municipal basis under the provisions of the laws already cited, in which power to control mosquitoes is given to local boards of health. However, not more than a half dozen communities or so have availed themselves of these provisions to accomplish mosquito control financed from the town health budget. Most of the mosquito control programs have relied primarily on mist-blowing and fogging, with some larviciding and adulticiding from planes. None of the communities have had complete programs, including source reduction by draining and filling preceded and followed by adequate surveys, and all of them have suffered from lack of continuity, adequate supervision, and technically trained personnel. Those interested in mosquito control legislation will find a comprehensive source of information in a publication of the Cummunicable Disease Center.[10]

Unfortunately, adequate mosquito control may entail greater expense than many communities can or will assume. Several states have provisions for state participation on some sort of subvention basis or at least as a survey and coordinating agency. This is a subject which may well come up for consideration in New York State if the present interest in mosquito control continues or increases, as it seems bound to do if diseases such as encephalitis occur.

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* Research in this field is under way at several laboratories, and it is indicated that other species will be added to this list.

A Clinical Evaluation and Toxicity Study of Griseofulvin

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THE effectiveness of orally administered griseofulvin (Fulvicin)* in many types of superficial fungus infections of the skin, scalp, and nails is now well established. We have more than justified the initial enthusiasm for an effective antibiotic to treat fungus infections which can be given systemically. Some of the problems which must be answered now are: (1) what disease states are responsive to griseofulvin, (2) anticipated toxicity, (3) optimal effective dosage, and (4) the possible development of resistant strains.

Griseofulvin was first isolated from Penicillium griseofulvin by Oxford, Raistrick, and Simonart in 1939.[1] Several investigators[2-4] then demonstrated that the antibiotic was effective against mycotic diseases of plants and vegetables. Gentles[5] found griseofulvin effective against ringworm-infected guinea pigs by oral administration. Williams, Marten, and Sarkany[6] were the first to report on the use of griseofulvin in man, observing good initial results in 10 patients. Blank and Roth's report[7] on a favorable response in 31 patients was the impetus for the wave of investigative work now taking place in the United States.

The following report is a clinical evaluation of the effectiveness of griseofulvin in superficial fungus infections of the skin, scalp, and nails, and in other dermatologic conditions not considered at present to be mycotic in nature. Toxicity studies, optimal dosage schedules, and relapse rates were explored in the study.

TABLE I.—FUNGUS INFECTIONS TREATED WITH GRISEOFULVIN

Diagnosis	Number of Cases Treated
Tinea capitis	19
Onychomycosis of fingernails	15
Onychomycosis of toenails	8
Tinea versicolor	6
Tinea rubrum infection of glabrous skin	22
Tinea cruris	11
Tinea circinata	10
Moniliasis	11
Epidermophytosis	31

Method and Materials

One hundred and thirty-three patients (Table I) with proved fungus infections of the skin, scalp, and nails were treated with varying doses of griseofulvin for a period sufficient to evaluate the response to therapy. Only those patients were included in this series who were followed for a length of time adequate to evaluate the clinical response. Many were followed after the completion of therapy, and all were cautioned to report any signs of a recurrence. Dosages were adjusted on three schedules. Most patients were treated with 250 mg. of griseofulvin four times a day. A sizable group was given 3 Gm. a day for four days and was then observed for therapeutic response. Failures here were treated with conventional therapy. A third group received 2 Gm. a day for a prolonged period in an effort to evaluate the effect of this dosage on the sperm count. Complete blood counts and urinalyses were done in about one third of the patients treated. Sperm counts were done on 24

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* Supplied by Kenneth Hawkins, M.D., of the Schering Corporation, Bloomfield, New Jersey.

TABLE II.—NONMYCOTIC DERMATOSES TREATED WITH GRISEOFULVIN

Diagnosis	Number Treated	Response
Vitiligo	5	Failures
Psoriasis	14	Failures
Chronic discoid lupus erythematosus	3	Failures
Scleroderma	1	Failure
Acne	10	Failures
Pityriasis rosea	7	Failures
Exudative discoid and lichenoid dermatoses	3	Good (1) Failures (2)
Lichen planus	4	Failures
Pemphigus	2	Failures
Dermatitis herpetiformis	3	Failures
Seborrheic dermatitis	8	Failures
Granuloma annulare	2	Failures
Necrobiosis lipoidica diabeticorum	1	Failure
Mycosis fungoides	1	Failure

patients every two weeks for a three-month period.

Sixty-four patients with various dermatoses (Table II) not considered at present to be mycotic were treated with griseofulvin. The dosage varied from 250 mg. four times a day to 500 mg. four times a day.

Results

The clinical response in the group of patients receiving 3 Gm. of griseofulvin daily for four days was uniformly poor. Seven patients with tinea capitis failed to respond after six weeks of post-treatment observation. Four patients with onychomycosis of the fingernails failed to show any improvements after three months of observation. Two of the five patients with tinea cruris improved and relapsed within six weeks. The remainder were therapeutic failures. Extensive infections of the trunk caused by tinea rubrum failed to respond to short-term therapy.

Of the 64 patients with various dermatoses (Table II) who were considered nonmycotic all but 1 patient were treatment failures. A patient with exudative, discoid, and lichenoid dermatoses and onychomycosis of the toenails responded with improvement of the generalized dermatoses and the onychomycosis. Two other patients with an "—oid" disease but with no demonstrable fungus infection showed no response to therapy. Two patients with vitiligo were somewhat encouraged for the first month of therapy because the depigmented areas became somewhat erythematous. Continued observation and treatment here were disappointing.

The response to therapy in the group of patients with proved fungus infections treated with daily doses of 1 to 2 Gm. of griseofulvin was quite satisfactory. All patients with tinea capitis responded completely to therapy. Of the 19 cases treated, 7 were caused by Microsporum lanosum, 10 by Microsporum audouini, and 2 by tinea tonsurans. Therapy was required for from five to twelve weeks before the results of mycologic examination became negative. The duration of therapy was not affected by the type of organism found on culture. Onychomycosis of the fingernails and toenails responded to griseofulvin in an entirely different manner. Thirteen patients with onychomycosis of the fingernails responded to treatment in from ten to seventeen weeks.

Two failures occurred in patients who originally grew tinea mentagrophytes and tinea rubrum respectively on culture. Subsequent cultures showed only Candida albicans. Whether these were mixed infections initially, with the Candida albicans suppressed by the other organisms, or whether the yeast infection appeared at a later date is an important consideration for future study. In contrast to the responsiveness of fingernails, infections of the toenails were much more resistant to treatment. Four patients with onychomycosis of the toenails responded after continuous treatment for from eight to ten months. Four patients still have markedly infected toenails after ten months of continuous therapy. Such fungus infections of the skin as tinea pedis, tinea cruris, tinea circinata, and the notoriously resistant tinea rubrum infections of the trunk and buttocks all responded gratifyingly after three to six weeks of treatment. As a rule, clinical improvement was apparent between the second and third weeks, and by the fourth to the sixth week most patients were free from clinical infection. Two widespread infections of the trunk and buttocks caused by tinea rubrum did not respond to treatment after four and five months of continuous therapy with griseofulvin. Monilial infections were not responsive to griseofulvin nor was tinea versicolor.

Toxicity Studies

Twenty-four patients were started on griseofulvin in dosages ranging from 1 to 2 Gm. a day after two weekly basic sperm counts had been performed. These patients were followed for a three-month period with sperm counts done every two weeks. No abnormal alterations were noted in the total count or morphology. One patient, whose initial count had varied from 2 to 4 million for several years preceding the administration of griseofulvin, became aspermic during therapy. Discontinuance of griseofulvin and subsequent bimonthly counts revealed a return to the pretreatment level on subsequent examinations. Complete blood counts done in 36 patients bimonthly for a three-month period revealed a lymphocytosis in almost 30 per cent of the patients. The total count remained essentially unaltered. However, the lymphocytic-polymorphonuclear cell ratio was frequently altered with lymphocytes predominating. This occurred during the first and second month and frequently persisted throughout treatment. Three patients developed a severe morbilliform eruption shortly after starting griseofulvin. Temperature elevation occurred here but the white cell counts were unaltered. Headache, often severe in character, was the most common toxic reaction. About 10 per cent of those taking griseofulvin complained of severe headaches at the onset of therapy. Gastric distress, nausea, and diarrhea were infrequent complaints.

Recurrence Rate

Recurrences occurred in 2 Microsporum audouini infections of the scalp four and six weeks after apparent clinical cure. Five patients with tinea rubrum infections of the buttocks and trunk developed new lesions at the sites of former infection. Four patients with epidermophytosis were found to be reinfected on re-examination. Post-treatment observation is difficult to obtain and no accurate estimation of the recurrence rate is predictable from this study.

It was disappointing to find that only superficial fungus infections were responsive to griseofulvin. It had been hoped that other dermatoses might prove responsive or that mycotic etiologic conditions might be suggested from the response to therapy in some of the dermatoses treated.

In the light of recent findings, the recurrence of infection when griseofulvin was discontinued after apparent clinical cure is understandable. Goldfarb and Sulzberger[8] found demonstrable fungi present in the superficial scales of the epidermis after apparent clinical cure. This, plus the demonstration by Roth and Blank[9] of maximum griseofulvin concentration beneath the stratum corneum with a decreasing concentration in the outer layer of epidermis, suggest that local keratolytic or fungicidal topical therapy, in addition to the systemic administration of griseofulvin, might be the ideal approach in the treatment of superficial fungus infections. Recurrences of infection in as short a time as three weeks suggest that the effect of griseofulvin in the epidermis is depleted in a moderately short period of time.

The 2 cases of tinea rubrum which failed to respond suggest that resistant strains do exist.

Summary

The clinical trial with griseofulvin demonstrates this to be an effective drug when given orally in a dose of 250 mg. four times a day for superficial fungus in-

fections of the skin, scalp, and fingernails. Fungus infections of the toenails are much slower to respond to continuous treatment. Griseofulvin is not effective in moniliasis or in tinea versicolor. Recurrences of infection after apparent clinical cure suggest that topical therapy plus the systemic use of griseofulvin is the ideal approach for systemic fungus infections of the skin. The incidence of toxic reactions to griseofulvin was very low in this series of patients treated.

Addendum

Griseofulvin topical dusting powder used in conjunction with systemic griseofulvin has since been found quite effective in preventing recurrences in tinea cruris and epidermophytosis.

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1960 ANNUAL CONVENTION

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Visual Problems of Roentgen Interpretation

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THE objective of all radiologists, whether engaged in research or in clinical film reading, is to increase the accuracy of roentgen diagnosis. If we are to achieve this goal, we must identify and learn to control the factors which limit the accuracy of the method. The purpose of this report is to analyze these limiting factors and, particularly, to draw attention to certain among them which have been largely neglected in the past but which can and must be controlled if we are to realize the full potential of diagnostic roentgenology.

The nature of the factors which govern the visibility of the roentgen image has been the subject of extensive speculation and experimentation for many years—efforts which have led to the widely held concept that the most useful roentgenogram is characterized by maximum sharpness or definition, high contrast, and minimum distortion. Actually, the perception of an image depends on the pattern of illumination projected on the retina of the observer and bears no constant relationship to either radiographic contrast or definition as they are commonly defined. Nevertheless, the vast majority of our investigative resources have been, and, indeed still are, devoted to the achievement of more precise control of these factors and, as a result, we are offered ever smaller focal spots, ever finer recording media, and ever more precise timing mechanisms—all, it should be noted, at an ever-increasing cost.

Certainly, none would deny that such developments have in the past resulted in greatly improved radiography, and undoubtedly they have resulted in more accurate roentgen diagnoses. However, there is considerable evidence that today we have reached the point of diminishing returns in the control of definition, contrast, and distortion. If this is true, we might better direct our efforts toward the solution of other problems. Before discussing the nature of such problems, let us consider some of the evidence pertaining to the importance of definition, contrast, and distortion.

Definition, Contrast, and Distortion

First, it should be noted that the vast majority of the findings on which roentgen diagnoses are based are gross findings. They are gross abnormalities in the size or shape of structures, in their position or function, or in their density or number. More important, most avoidable diagnostic errors result from our failure to perceive gross abnormalities in the roentgenogram. We have all seen examples of lesions 1 cm. or more in diameter which, although recorded clearly, have been repeatedly overlooked in multiple examinations. It is difficult to believe that roentgenography with a microfocal spot tube, an ultrafine grain film, or a millisecond timing device would have made prompt, accurate diagnosis any more probable.

Second, the apparent importance of the radiographic control of definition and contrast is in large part an artefact of the experimental systems with which these variables have been studied. For example, the importance of focal spot size in controlling unsharpness is always illustrated with images of wire mesh, a total absorber of diagnostic x-ray films. Now, in practice, patients are not composed of wire mesh or anything faintly resembling it. Human tissues, even bones, are not total absorbers

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with respect to the radiation employed in roentgen diagnosis, and there are no square edges in the human anatomy. There is always a gradual change in the quantity of radiation transmitted by an anatomic structure as one approaches and crosses its border. The roentgen images of anatomic details are, therefore, always unsharp because of their configuration, regardless of the size of the focal spot employed in recording them. As long as the "unsharpness of configuration" exceeds the "unsharpness of focal spot size," there is nothing to be gained by employing a microfocal spot. This circumstance certainly is evident in the roentgenography of soft tissues. Thus you cannot distinguish a film of the female breast made with a 2 mm. spot from one made with a 0.3 mm. focal spot. In supervoltage roentgenography, where bone detail is deliberately suppressed, observers cannot distinguish shadows cast by a 1 mm. focal spot from those cast by a 1 cm. focal spot with better than chance accuracy.

In recording the fine trabecular pattern of the bone, the "unsharpness of focal spot size" may approach or even exceed the "unsharpness of configuration," and it is said that the accurate diagnosis of skeletal lesions does depend on the perception of such trabecular detail. Yet, when trabeculation is obscured, lesions of the bone are still obvious because of the gross changes in the size, shape, and over-all density of the affected part. We find that half the substance of a bone can be destroyed without producing a perceptible change in its trabecular pattern, and where no gross, unsharp border is apparent, such a defect may escape detection completely.

Therefore, most lesions of both soft tissue and bone are probably detected by virtue of their gross and relatively unsharp borders, and it appears that a more precise control of focal spot size or film grain size can be expected to add little to the likelihood of their detection.

Similarly, the seeming advantages of "high contrast" roentgenography are confined largely to test films of step tablets, for although their contrast is excellent in areas of adequate exposure, such roentgenograms usually contain large areas of underexposure in which contrast actually approaches zero. As a result, many a lesion has been obscured by the "high contrast" shadow of a rib, the mediastinum, or an opaque-filled viscus. A recognition of this problem has led to the exploration of higher voltage radiography in recent years. Despite bitter arguments about the relative merits of low-voltage, optimum-voltage, and high-voltage radiography, it can be shown that in the realistic chest phantom, at least, there is no difference between the number of simulated lesions which are perceptible in roentgenograms made with 60-kv. radiation and those made with 120-kv. radiation, providing they are exposed to adequate and comparable densities.

There is no reason to believe that more precise control of other factors affecting radiographic contrast will increase significantly the radiologist's ability to record perceptible evidence of disease. Currently, efforts to modulate radiographic contrast electronically have been shown to be technically feasible. It is still too early to judge the effectiveness of such systems in clinical roentgenology, but in appraising them it must be noted that no such device can create shadows which are not recorded in the original roentgenogram, so that the inherent properties of roentgenographic recording systems still limit the number and nature of the shadows which can be detected.

Distortion by itself may affect the interpretation of images, but it probably will not limit their perceptibility. Where distortion is unrecognized, it may limit the accuracy of roentgen diagnosis, but many systems have been devised to minimize distortion or compensate for it where precise measurement is critical. Often distortion is employed deliberately to simplify the analysis of highly complex images. It seems unlikely that further efforts to control distortion will affect the accuracy of roentgen diagnosis significantly.

In summary, then, it appears that most significant images are gross and, except in areas of frank underexposure, they are recorded adequately by existing roentgen technics. Therefore, mechanical and electronic devices designed to provide more precise control of radiographic definition, contrast, and distortion, may be expected to add more to the cost of roentgen diagnosis than to its accuracy. Errors from roentgen diagnosis result more commonly from the radiologist's failure to perceive recorded images than from his failure to record them. The most pressing need in diagnostic radiology at the moment appears to lie in the better understanding, and ultimately in the control, of the psychologic factors which affect our ability to perceive recorded images. Let us consider, therefore, some of the possible mechanisms of visual perception in the hope of gaining some insight into the nature of these factors.

Mechanisms of Visual Perception

When we consider the multitude of shadows which comprise even the simplest roentgenogram and the limited time available for film scanning, it is clear that the radiologist must in some way organize and simplify the visual field created by the roentgenogram. It has been said that such organization "originates as a characteristic achievement of the (human) nervous system." It is spontaneous, it is beyond the conscious control of the individual, and it results in the emergence of the principal part of the field—the so-called "figure"—from the remainder of the field which is the "ground." This segregation of images is of utmost importance, for only the figural part of the field is clearly perceived at any one time, and only the figural part of the field conveys meaning. Hence, significant shadows may be visible easily, yet they may be overlooked on the initial interpretation of a roentgenogram because in this spontaneous organization of the field their identity is lost in the "ground." When such shadows are sought in retrospective study, they may emerge as "figure" and be all too glaringly apparent.

The organization of the visual field, however, does not stop with the development of the "figure-ground" relationship. Various figural elements are in turn organized into meaningful patterns, and while this form of organization depends in part on the attributes of the observer, such as his experience and index of suspicion, it must also depend in part on the characteristics and distribution of the shadows. Thus, most people readily organize the elements of a dissected figure, and the ancients, at a somewhat more imaginative and poetic level, saw gods and goddesses and a whole menagerie of creatures in the stars which they organized into patterns or constellations.

Now, while such organization simplifies the task of rapidly extracting a meaning from tremendously complex visual stimuli, it often complicates the problems of analyzing them critically. For example, the instantaneous segregation of "figure" and "ground" can be very helpful if the diagnostically significant shadows in a roentgenogram emerge as "figure." However, as one might anticipate, the shadows which emerge as "figure" are those which are relatively brighter, more sharply defined, and have more nearly complete borders than those which comprise the "ground." Complete image borders are surprisingly important in establishing the "figure-ground" relationship. Images with complete, well-defined borders may emerge as "figure," even though they are meaningless, and the "figureground" relationship may be reversed by completely broken borders. Bones, opaque-filled viscera, and orthopedic appliances, therefore, emerge immediately and are perceived readily, but soft tissue details, which by their very nature are less bright and less well defined, are lost in the "ground" unless by conscious effort we are able to overcome this spontaneous form of organization. That we succeed as often as we do in detecting significant soft tissue details is evidence that it is possible to overcome or modify the "figure-ground" organization, but our failures suggest that all too often we follow the more effortless course, noting the most impressive shadows and overlooking the less conspicuous ones.

Problems may also arise in the course of organizing figural elements into meaningful patterns. Some groups of stimuli may be organized in more than one way and each such pattern may have a distinct meaning—that is to say, the stimuli may be ambiguous. Thus, in Boring's[1] famous example some will see a young woman and some will see an old crone. A curious and important feature of this phenomenon is that, having organized an ambiguous stimulus into one meaningful pattern, the observer rarely perceives the alternative pattern, at least at the same viewing. Hence, if we misinterpret ambiguous shadows, we are very unlikely to recognize any alternative meaning at the time of the initial reading, although it may be apparent in a subsequent examination, particularly if additional information alters the observer's bias or index of suspicion.

The ambiguity of such a stimulus can be removed by altering the relative impressiveness of its various elements. Thus, by altering the relative brightness and definition of its elements, the ambiguity of Boring's figure is removed and we insure that the observer will perceive the "bride," or by a slightly different modification, the "mother-in-law." Similarly, at a clinical level, some may see a vertebral body in a picture, while others may see a tracheal lesion. The alteration in the relative impressiveness of the various shadows in the supervoltage study resolves the ambiguity and makes it obvious that it is a mass in the trachea.

In organizing figural elements into meaningful patterns we are guided, of course, by our experience and expectations. We may interpolate shadows which are not actually perceived and we may actually falsify perceived images in order to create a meaningful pattern. This can lead to serious errors in roentgen diagnosis. In 1 case the radiologist, in viewing a survey roentgenogram, felt so certain that a shadow represented an arteriovenous aneurysm that he described its opacification in the subsequent angiocardiogram. At surgery it proved to be a tuberculoma.

Control of Visual Field Organization

We may err, then, if, in our initial organization of the shadows of a roentgenogram significant shadows are lost in the "ground"; we may err in organizing figural elements into meaningful patterns if we misconstrue ambiguous figures; or we may err in organizing the visual field by falsifying the shadows recorded. If we could learn to control the factors which govern visual field organization, we might be able to increase significantly the accuracy of roentgen diagnosis.

Perhaps the most important of these factors is the habitual "film-scanning pattern" developed by the radiologist either empirically or by specific training. Since such patterns are of fundamental importance in roentgen diagnosis, it may be well to note that no one has ever really established which, if any, pattern is best. Most of our present knowledge about these patterns is based on introspective study, a notoriously inaccurate source of information. However, technics for the objective study of scanning patterns have been developed which are potentially applicable to roentgen diagnosis and may provide a basis for more accurate film interpretation through more efficient training. An illustration from the book *How People Look at Pictures*[2] shows the effect of purposefulness on the scanning patterns of individuals looking "at a picture" on the one hand and looking "for specific findings in the picture" on the other. This isolated example suggests the importance of looking for specific findings rather than looking simply at recorded structures in a systematic order.

Again we have noted that the "figure-ground" organization of a field is governed by the relative physical characteristics—the relative definition, the relative brightness, and the relative completeness—of the recorded shadows. This suggests that we are more concerned with controlling the relative characteristics of the various shadows of a roentgenogram than with achieving greater definition and contrast for all recorded images. It suggests, too, that we should strive to record selected details rather than to record an infinite number of details in a roentgenogram. This, in turn, implies that there is no single optimum technic.

The choice of technics must be determined entirely by the nature of the process we are attempting to record. Of course, in practice many selective technics are in use today. Thus, we control the relative impressiveness of images by varying their relative definition, as in body-section roentgenography; by varying their relative distortion, as in Mayer's[3] view of the mastoids; and by varying their relative brightness by the introduction of contrast media or by variations in kilovoltage. Moreover, by varying the relative impressiveness of various figural elements, selective technics may resolve ambiguous stimuli and thus help to avoid another cause for diagnostic error. Therefore, it seems reasonable to inquire if we might not increase the accuracy of roentgen diagnosis by extending the application of these principles, by specifying more precisely the circumstances under which each should be employed, and by seeking and developing new selective methods. Some readers will protest that selective technics obscure useful information, but it must be remembered that the conventional roentgenograms are frequently highly selective. The conventional chest roentgenogram, for example, records selectively the peripheral lung fields, but it obscures details of the mediastinum and the portion of the lung overlain by it. It would seem quite as reasonable to record selectively the soft tissue details of the lung parenchyma as it is to record selectively the bones and the outlines of the mediastinum.

Finally, limited studies suggest that environmental factors such as the illumination of the surround and the use of reading lenses affect the perception of critical roentgen shadows, and proper control of these and many other factors remains to be investigated.

Summary

Our efforts to increase the accuracy of roentgen interpretation by increasing radiographic definition and contrast appear to have reached the point of diminishing returns. There is little to be gained by striving to record finer detail if we are unable to utilize effectively the detail recorded with present methods. It is proposed that diagnostic errors today derive most often not from our failure to record critical shadows but rather from our failure to organize the visual field effectively. It is suggested that further study of film-scanning systems, selective radiographic technics, and environmental factors may help to solve this problem and thus may help to contribute to greater accuracy in roentgen diagnosis.

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The created world is but a parenthesis in eternity.—Sir Thomas Browne

Pseudoaneurysm of the Right Common Carotid Artery

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During the past six years we have had occasion to examine 10 patients who were referred with the diagnosis of aneurysm of the right common carotid artery. In each instance subsequent study revealed the condition to be a tortuous or kinked carotid artery. This diagnosis was made on the basis of clinical evidence in 9 of the patients and on operative exploration in the tenth patient.

Coulson first described this syndrome in 1852,[1] and since that time sporadic reports of the condition have appeared. In 1952 Deterling[2] collected 68 cases from the literature and reported on an additional 21 cases from the Hypertension-Nephritis Clinic of the Presbyterian Hospital in New York City.

We feel that it is important for the clinician to be cognizant of this condition, not only to avoid unnecessary surgical exploration but also to assure the patient of the inconsequential nature of the lesion.

Case Reports

Case 1.—A fifty-nine-year-old Negro female was seen in December, 1953, with a two-month history of a pulsatile mass at the base of the right side of the neck. There were no symptoms attributable to the mass. General findings of significance included moderate obesity and a blood pressure of 200/100. The local lesion consisted of a 4 by 3 cm. pulsatile mass situated behind the medial head of the right sternomastoid muscle. No thrill or bruit was elicited in the vicinity of this mass. All major arterial pulsations were present in the upper portion of the neck and in the right arm. The patient was last seen three years after the initial visit, at which time there was no evidence of interval change in the mass. She was receiving drug therapy for the associated hypertension.

Case 2.—A fifty-six-year-old white female had noted a pulsating mass at the base of the right side of the neck two years prior to examination. She believed that there had been slight enlargement of the mass during the two-year interval. She was known to have had hypertension for many years. Examination revealed a tortuous and elongated mass of the right common carotid artery beginning on the right side of the suprasternal notch and extending into the base of the neck. The blood pressure was 180 to 190/110.

Case 3.—A forty-one-year-old white female was referred in November, 1954, because of a pulsatile mass at the base of the right side of the neck. It had been discovered five years previously. There were no symptoms referable to this mass, and there had been no interval change in its size or character. At examination a 3 by 2 cm. pulsatile mass at the base of the right side of the neck was found. A bruit was audible over the lesion and in the first right intercostal space. The blood pressure was 190/105. Follow-up examination two years later revealed no change in the mass.

Case 4.—A fifty-six-year-old white female had noted a pulsating mass in the right side of the neck approximately two and one-half years prior to examination. There were no associated symptoms, and the mass had not changed in size. Examination revealed marked tortuosity and elongation of the right common carotid artery extending to the level of the mandible. Slight prominence of the tissues in the right suprasternal notch secondary to the arterial abnormality was also noted. The blood pressure was 190/160. When the patient was seen two and one-half years after the initial examination, no change in the lesion was noted.

Case 5.—A sixty-six-year-old white female was seen primarily because of digestive complaints but also because of an associated history of a pulsatile mass in the right side of the neck. The mass was asymptomatic, and its duration was unknown. Examination revealed a tortuous right common carotid artery. The systemic blood pressure was 230/130.

Case 6.—An eighty-year-old Puerto Rican female with a history of epilepsy and a nephrectomy for hydronephrosis was seen in consultation because of a 3 by 3 cm. pulsatile mass at the base of the right side of the neck. The patient did not know the duration of this mass. The mass displaced the medial head of the sternomastoid muscle anteriorly. No thrill or bruit was noted over the mass. Pressure on the mass obliterated the distal carotid pulses but did not produce syncope. Roentgenograms of the chest and neck were negative. The blood pressure was 160/110.

Case 7.—A sixty-three-year-old white female was seen because of a history of a mass at the base of the right side of the neck. Its duration was unknown. Pressure on the mass produced dizziness and nausea. Examination revealed a prominent and tortuous right common carotid artery and a marked carotid sinus reflex with dizziness and bradycardia following pressure on the artery. The blood pressure was 140/85. The right cervical region was explored, and the lesion was found to be a markedly kinked and elongated external carotid artery. The carotid sinus was denervated.

Case 8.—A sixty-year-old white female had noted a mass at the base of the right side of the neck five months prior to examination. She had had a right hemithyroidectomy for adenoma approximately three years prior to examination. The only symptom referable to the mass was pain in the mass radiating to the right cheek and nose when the patient was lying supinely. Examination revealed a tortuous pulsatile mass at the base of the right side of the neck. There was no associated bruit or thrill. The blood pressure was 200/120. Examination three years later revealed the patient to be in good condition with no significant change in the physical findings.

Case 9.—A sixty-three-year-old white female was seen in consultation because of a pulsatile mass at the base of the right side of the neck. The mass had been present for eighteen years without any change in size or character. Other than an awareness of the mass by the patient there were no symptoms referable to it. Examination revealed a 4 by 3 cm. pulsatile, compressible mass immediately above the medial end of the right clavicle and deep into the medial head of the sternomastoid muscle. There was no thrill over the mass, but auscultation revealed a systolic bruit. All pulses in the right cervical region and arm were present. Roentgenograms of the chest and neck were negative except for unusual soft tissue densities or calcification. The blood pressure was 250/110. Drug therapy for the hypertension was prescribed.

Case 10.—A fifty-two-year-old white female was referred to the Vascular Clinic of the University Hospital, New York City, because of a pulsatile mass at the base of the right side of the neck. The patient did not know the duration of this mass. The only symptom was occasional vague discomfort in the region of the mass radiating upward and into the right side of the head. A thyroidectomy had been performed six years previously with hoarseness since that time. Examination revealed a 4 by 2 cm. pulsatile mass just above the medial head of the right clavicle. No bruit or thrill was elicited. Pulses in the upper cervical area and in the right arm were present. The systemic blood pressure was 160/100.

Comment

The patients in this series conform to the characteristic triad described by Deterling[2] and others who have reported on pseudoaneurysm of the right common carotid artery: (1) predilection of the lesion for the female, (2) location of the lesion in the right side of the neck, and (3) associated hypertension and/or arteriosclerosis.

The mechanism by which tortuosity or kinking of the right common carotid artery is produced appears to be an elevation and elongation of the aortic arch secondary to an intrinsic loss of elasticity within the wall of the aorta at the level of the arch. In view of the fixation of the external carotid artery by its branches, bending or kinking more readily occurs in the unfixed portion of the arterial axis, namely the common carotid artery. This accounts for the occasional associated tortuosity of the innominate and subclavian arteries with the more extreme degrees of carotid tortuosity.

For the most part, the lesion produces no specific or local symptoms; in fact, a few of the patients in this series had been unaware of the mass prior to its notation by a physician. Although the syndrome usually is confined to the female, there have been reports of its occurrence in the male.[2] The majority of reports indicate a predominance of the syndrome in the white race, although in Deterling's series there was an almost equal distribution between white and Negro individuals. Of course, this syndrome must be differentiated from the rare true luetic aneurysm of the carotid artery and the neoplastic and congenital lesions which are commonly seen in this location.

No specific treatment is indicated for the kinked carotid artery syndrome, since long-term follow-ups of these patients have revealed it to be a stable and asymptomatic condition. However, periodic medical evaluation and measures to reduce the associated hypertension are recommended.

Summary

A series of 10 patients with pseudoaneurysm of the right common carotid artery is reported. Attention is directed to the ease with which this syndrome may be confused with true aneurysm of this artery. The etiology and symptomatology of the syndrome are discussed. No specific local treatment is required but medical treatment to reduce the frequently associated hypertension is recommended.

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The Pathology of Viral Myositis

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DIRECT involvement of skeletal muscle during the course of systemic infectious disease is presumed to be a rare occurrence.[1] An unfavorable biochemical environment, possibly related to lactic acid concentration, has been offered as one cause of this relative tissue immunity. The pyogenic organisms, for example, seldom implicate striated muscle except by continuity (such as subcutaneous abscess); following protracted vascular insufficiency, as in gangrene of the limb; or by direct septic trauma. In miliary tuberculosis focal lesions in muscle are extremely uncommon despite widespread dissemination in most other tissues.

The frequency with which viral agents can propagate in human skeletal muscle has not as yet been determined systematically. This is due, in part, to the self-limitation of most viral infections, making tissues unavailable either for histologic evaluation or viral assay.

It is important to distinguish clearly between the ill-defined myalgias which may emerge during the evolution of numerous systemic infections of viral etiology and a specific viral infection within the muscle. The isolation of a viral agent from the involved muscle together with parallel histologic evidence of muscle necrosis are essential criteria for the designation of viral myositis. Therefore, it is pertinent to list first those viral agents which have been found capable of causing a myositis in experimental hosts and to outline the pathologic lesions provoked.

Experimentally Induced Myositis

During the course of studies concerning the experimental factors modifying the spread of the vesicular stomatitis virus in rodents, Sabin and Olitsky[2] noted skeletal muscle lesions in the preneural phase. The changes were characterized by segmental fiber degeneration accompanied by an acute, profuse inflammatory reaction. The virus was recovered from such sites. A similar pattern (that is, virus propagation in skeletal muscle prior to neural invasion) was described by Peck and Sabin[3] in mice infected with the virus of St. Louis encephalitis. Furthermore, this binary tropism for striated muscle and neural tissue has been exhibited by some rodent viruses. Rustigian and Pappenheimer[4] described a florid myositis in mice infected with the mouse encephalomyelitis group or related viruses. The histologic changes in muscle were essentially similar to the previously noted lesions, but were singular in the appearance of circumscribed intranuclear inclusion bodies.

The Coxsackie viruses, first identified a decade ago, have been associated with a range of human infections often characterized by severe but reversible muscle pain. Suckling mice are uniquely susceptible to parenteral introduction of this virus. As a result of this virus, histologic studies by numerous investigators[5-7] have outlined the sequence of changes in voluntary muscle. The inaugural alterations consist of a widespread segmental necrosis of the muscle fibers and concurrent multiplication of muscle and sarcolemmic nuclei. The zones of necrosis become rapidly basophilic and selectively mineralized. The necrotic segments become hyalinized with areas of focal inhomogeneity. Numerous transverse fractures through the region of hyaline degeneration are seen. A delayed inflammatory reaction occurs. An early and occasionally exuberant sarcoplastic regeneration is seen, originating from

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the interrupted ends of intact muscle fibers. These morbid changes in skeletal muscle are noted consistently regardless of the site of viral introduction.

Until recently, the viruses of poliomyelitis were considered rigidly neurotropic, since a search for reproducible extraneural lesions had been consistently fruitless. In 1950, Shwartzman[8] demonstrated that experimental poliomyelitis was appreciably potentiated when cortisone was administered prior to the parenteral introduction of the virus (strain MEF_1). The Syrian hamster, essentially refractory to poliomyelitis infection except when infected intracerebrally, could be made indiscriminately susceptible by means of this steroid compound. A latent period between the time of virus introduction and the onset of paralysis suggested that the virus was harbored in some extraneural tissues. Large numbers of cortisone-altered hamsters were sacrificed at daily intervals following virus inoculation and were studied histologically.[9] Parallel virus assays were also performed.[10]

The initial changes in the musculature neighboring on the site of virus infection consist of vague fiber swelling, focal obscurity of the cross-striations, and some interstitial edema. The swollen hyalinized zones of sarcoplasm are sometimes acidophilic, but are more often basophilic. During this phase, the myositis is indistinguishable from the nonspecific, waxy degeneration of muscle. Within an additional day, however, the swollen segments assume a globular shape and, as a result of transverse fractures, often are isolated from the remaining fiber sarcoplasm. At this time the sarcoplasmic nuclei undergo karyolysis. Small sudanophilic vacuoles appear between the thickened and basophilic myofibrils and tend to migrate toward the ruptured sarcoplasmic surfaces. No prominent inflammatory response is evident. The sarcolemmic reticulum remains intact despite the underlying necrosis; the sarcolemmic cells are quiescent. The process of segmental disruption evolves to an extensive degree, leaving numerous gaps in the longitudinal continuity of the affected fibers. Curiously, some intervening portions of muscle are histologically normal.

The lipid globules, originally adjacent to the altered myofibrils, congregate at the fracture lines and now become intensely basophilic, the result of a secondary calcific deposition. With further necrosis these mineralized granules are extruded into the spaces between the necrotic globoid swellings. The fuchsinophil granules in Coxsackie disease, which Pappenheimer[11] described, are probably the same as the intermyofibrillar lipid globules seen in poliomyelitis myositis, and rather than representing viral elementary bodies, they form a component of sarcoplasmic disintegration.

At this stage in the progression of the disease, on the fourth day after virus inoculation, the viral titer in the affected muscle is high and exceeds that found in the cerebral tissues. If the animal survives an additional forty-eight hours, a belated inflammatory reaction supervenes in the destroyed musculature. Diffuse calcification is also seen.

The topographic distribution of myopathic changes is determined largely by the point of viral introduction. If intramuscular, the myositis develops initially in the vicinity of inoculation; if intraperitoneal or intracerebral, the paravertebral musculature shows these changes first. Subsequently, a wider dissemination of muscle lesions occurs. Only the diaphragm escapes discernible lesions at the termination of the cortisone-enhanced poliomyelitis. A fulminant myositis is also produced in cortisone-treated hamsters infected with Yale-SK or Lansing strains of type 2 poliomyelitis, as well as the Columbia-SK virus.[12] Cortisone alone produces no muscle changes in the hamster.

A comparable poliomyelitis myositis could not be provoked in white mice or monkeys despite preliminary employment of cortisone. Various strains of herpes simplex virus parenterally injected into a wide range of experimental hosts failed to cause any muscle changes.[9]

The histologic features in hamster muscle infected with type 2 poliomyelitis virus are morphologically indistinguishable from those noted in experimentally produced muscle infections with Coxsackie or encephalitis viruses. It cannot be assumed, however, that only myotrophic viruses are capable of producing segmental intracellular lesions of the muscle. Kellner and Robertson[13] have indicated that focal necrosis of skeletal muscle is consistently produced in rabbits by means of a single intravascular injection of some proteolytic enzymes. In the rabbit, a massive dosage of cortisone, unaccompanied by any other introduced agent, also results in a segmental myopathy qualitatively resembling the more profound rodent virus myosidites.[14] A segmental myopathy, more focal in nature and generally lacking in any appreciable inflammation, has been described in potassium deficiencies in dogs and rats,[15] as well as vitamin E deficiency of rodents.[16] It should be emphasized, however, that these metabolically oriented disturbances of muscle cannot be equated quantitatively with the devastating myopathies of viral origin.

With so many divergent agents capable of causing segmental disorders of muscle fibers, it would be difficult to establish any common denominator. It should be emphasized, however, that the only viruses capable of proliferating in skeletal muscle are those which are equivalently neurotropic.

Viral Myositis in the Human Body

It is apparent that evidence of viral myotropism derived from animal experimentation cannot be extrapolated to human disease without necessary precaution. The selective tissue affinities which characterize viral activity are modified additionally by the choice of basically susceptible species. Thus, while rhesus monkeys, white mice, and Syrian hamsters are all vulnerable to the nervous system component of poliomyelitis, reproducible muscle lesions can be evoked only in the hormonally altered hamster. The striated musculature of monkeys and mice are resistant to this virus as determined by virologic and histologic examination, even after preliminary cortisone administration.

In the extensive treasury of medical literature concerning poliomyelitis, only isolated reports have advanced evidence of virus propagation in the human muscle. Jungeblut and Stevens[17] described a four-and-one-half-year-old male child with clinical evidence of acute poliomyelitis. On the fifth day of illness a needle biopsy of the quadriceps muscle was performed and the resultant tissue was inoculated into cynomolgus monkeys. Poliomyelitis, pathologically verified, was produced in the second experimental passage, and a myositis was noted after an additional passage in monkeys. These investigators described multiple areas of muscle fiber granular necrosis accompanied by reactive inflammatory infiltration, and they conjectured that central nervous system invasion was but a terminal phase of a systemic disease caused by a virus with pantropic potentialities.

There is greater clinical reason to suspect that Coxsackie virus disease in the human being may be accompanied by a viral myositis. The actual evidence for this, however, is only tentative. Myositis has been demonstrated histologically in 2 cases of Bornholm disease and 2 additional cases of Coxsackie virus infection.[18,19] In 2 instances, attempts at parallel virus isolation were successful and agents of group A-2 and C were identified. In a recent case study by Sussman, Strauss, and Hodes,[20] focal hyaline degeneration, fragmentation, loss of striations, and a granular alteration of affected sarcoplasm were observed in the intercostal muscles of a newborn infant dying of Coxsackie B virus infection. It should be noted that the muscle changes described by these authors are in accord with those seen in laboratory animals infected with the Coxsackie virus.

Muscle pain and, occasionally, muscle tenderness may be prominent during the course of many fundamentally neurotropic infections of the human body (for example, equine encephalitis and west Nile encephalitis).[21,22] The striking myalgia arising during the acute phase of Colorado tick fever is an outstanding feature of this viral disease, but no histologic studies of muscle have been reported as yet. Subjective evidence cannot be construed as an indication of underlying myositis until histologic criteria are fulfilled and the virus is isolated from the affected tissues.

Comment

Despite extensive clinical evidence suggesting specific involvement of skeletal muscle during the course of viral infections which are categorized as encephalopathic, current pathologic and virologic substantiation is meager. Further observations will be required before viral myoneurotropism in the human being is fully explored and unconditionally accepted.

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Those who are believed to be most abject and humble are usually most ambitious and envious.—Spinoza

Vascular Ring in Infancy*

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THORACIC surgeons who operate frequently in the superior mediastinum often discover many vascular malformations which have little or no clinical significance. On the other hand, some malformations assume great clinical significance because they compress the trachea and/or esophagus and, therefore, give symptomatology related to the obstruction of these important pathways. It is important to recognize these abnormalities early so that corrective measures of a surgical nature can be instituted as soon as possible.

Various classifications of these abnormalities have been proposed and are extremely useful as far as their pathologic and embryologic derivations are concerned.[1] From a practical point of view, it is more important to know that these anomalies do exist, that they can be diagnosed fairly simply, and that they can be treated successfully with a resultant low mortality.

Although the symptom complex due to vascular rings has been described previously,[2-5] we should like to re-emphasize its presence and bring it to the attention of the medical profession, especially to those physicians in smaller communities who deal with tiny infants and with children.

Double Aortic Arch

ANATOMY.—The normal course of the aorta is anterior to the trachea as the arch of the aorta and to the left of the trachea and then downward as the descending aorta. Nature arrives at this normal position by obliterating the various arches during the embryonic phase of development.

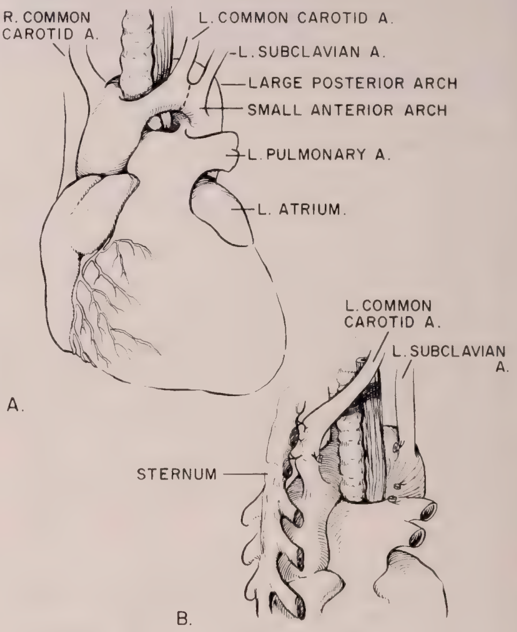

FIG. 1. *Case 1.*—(*A*) Double aortic arch; note the small anterior arch. The dotted line indicates the line of division that should be made in dividing the anterior arch. (*B*) A lateral view; the anterior arch has been tacked to the posterior sternal area and the ductus arteriosus has been divided. Note the relief of constriction that has been obtained.

However, during the embryonic phase it is possible for abnormalities to occur and this is the case in the patient with a double aortic arch. In this instance the ascending aorta branches into two divisions. One passes in front of the trachea while the other passes posteriorly to the esophagus with both limbs then coming together to form the descending aorta (Fig. 1). Usually, the anterior limb is a smaller one and the posterior limb is the main portion of the aorta. Also, usually, the anterior limb branches into the left common carotid and left subclavian arteries.

SYMPTOMS.—Most infants with a double aortic arch come to the attention of their physician rather early in life. Although it

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* This study was supported in part by the Surgical Research Fund.

is possible for these children not to have any symptomatology and to live a perfectly normal life span, most of them do have difficulties. These difficulties usually are related either to tracheal or to esophageal obstruction. Tracheal obstructive symptoms are such that the child may have great difficulty in breathing. The respiratory rate may be greatly increased and there may be a growing effort on inspiration. It is obvious that the child works with great difficulty in an attempt to breathe. A retraction of the suprasternal area is present. Wheezing is commonly present and may be heard at some distance from the baby. Gurgling from the lower trachea is quite common and it sounds as if fluid is always being trapped in the trachea in spite of every effort to cleanse the trachea with suction.

The main complaint that the parents have on bringing the child to the physician is the fact that the swallowing of food greatly increases the respiratory distress. This, of course, is owing to the fact that impingement on the esophagus causes a regurgitation and aspiration of this material into a trachea partially obstructed to begin with and decreases the available tracheal space. The children tend to lie in a hyperextended position because of the comfort obtained in breathing. It is in this position that the trachea is less obstructed. Symptoms and signs of a pneumonic process in the lungs may be present and, of course, they may be due to the aspiratory element of this syndrome.

Roentgenologic Findings

Simple films of the chest show the common findings of pneumonitis. In the lateral position it is sometimes possible to outline the trachea and the obstruction present on its anterior surface, corresponding to the anterior arch. This defect can be outlined better by the instillation of lipidol, and, in this way, a tracheogram can be obtained.

A small swallow of barium will outline the esophagus very adequately. A defect on the posterior wall of the esophagus pressing anteriorly can be seen easily (Fig. 2). This posterior indentation is usually seen on about the same level as is the anterior indentation on the trachea. This combination of roentgenologic findings is pathognomonic for a vascular ring.

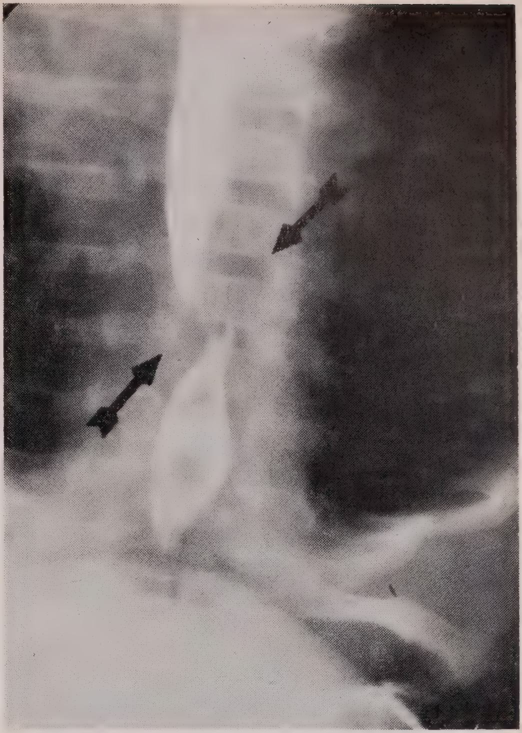

FIG. 2. *Case 1.*—Barium swallow; note indentation on the esophagus. At this level the anterior and posterior arches constrict the trachea and the esophagus completely.

It is possible with the use of angiocardiography to outline this entire odd system, but this is not necessary since previous studies give very adequate information.

Treatment

Of course, surgical therapy is the only approach when symptomatology is present. The approach consists of dividing this vascular ring in such a fashion that no harm can come to the neurologic system.

The incision is an anterolateral one with a division of the third and fourth costal cartilages for wide exposure. The entire mediastinal area should be carefully dissected before dividing anything. Usually a good approach is obtained by removing the thymus gland. A careful and slow dissection is necessary because it is extremely important to determine which of the two arches is the smaller, for the smaller one should be divided. If the posterior one is the smaller, it is exposed in the posterior mediastinum and it is doubly ligated and divided. Much more commonly, the anterior one is the smaller one and is the one that should be severed.

A division of the anterior arch, which gives off the left subclavian and left common carotid arteries, should be accomplished between the common carotid and subclavian arteries. In this fashion, a direct flow of blood to the brain can be obtained. Dividing the arch proximal to the left common carotid would result in a retrograde flow of blood.

Following the division of the vessel there is a great improvement in the pressure on the trachea and esophagus; however, in order to relieve any remnant of obstruction completely, it is essential to cut any strands or bands of tissue which accompany these vessels. Forward displacement of the anterior arch is aided also by stitching the adventitia of the anterior arch to the posterior surface of the sternum. This draws this vessel forward so that complete relief of any pressure on the trachea is obtained.

Postoperatively these cases are observed very carefully for forty-eight to seventy-two hours. Antibiotics are given because respiratory tract infections are usually present preoperatively. Close observation for tracheal obstruction is necessary because of the trauma of exploration. Wherever these malformations impinge on the trachea, care in the postoperative period is the measure of success.

Oxygen is administered and intravenous fluids are continued until the children are able to take fluids by mouth, usually after seventy-two hours.

We should like to present 2 cases of the more common types of anomalies that have been treated successfully and to discuss the approach to their diagnoses.

Case Reports

Case 1.—This was the first Mount Sinai Hospital admission of a three-and-a-half-month-old infant girl. Since birth the baby had exhibited spells of stridor and choking. These spells had been provoked often by feeding and by a supine position, and they had disappeared after the baby's position had been changed to hyperextension. The attacks had been accompanied also by a slight cyanosis. Between attacks the baby was completely asymptomatic and the development was normal.

X-ray films, done prior to admission, showed pneumonia in the right base and esophageal compression by a vascular ring.

Physical Examination.—Physical examination showed a normally developed infant with stridor present at all times. There was no retraction except during crying spells. No cardiac murmurs were noted and the rest of the examination showed negative findings except for scattered rales in both bases.

The temperature was 98, pulse was 140 and regular, and respirations were 50.

Laboratory Studies.—The hemoglobin was 9.4, the white blood count was 7,600, and the urine gave normal findings. Electrolyte studies showed completely normal results. X-ray films of the chest revealed clear lung fields, and an esophagram showed that there was pressure on the anterior, posterior, and both lateral aspects of the esophagus. The findings were compatible with compression by a vascular ring at the level of the aorta.

Course.—On November 4, 1957, the patient was prepared for surgery and operated on under general anesthesia. A double aortic arch was discovered. The anterior one was the smaller one and it was divided just proximal to the take-off of the left subclavian artery. The anterior arch was then tacked to the posterior portion of the sternum and a good decompression was thus accomplished.

Postoperatively, the patient developed some evidence of failure and was treated with intravenous fluids and digoxin. The baby's condition improved, so that six days postoperatively she was taking feedings normally and passed formed stools.

The patient has continued to do very well, gaining weight and not developing stridor.

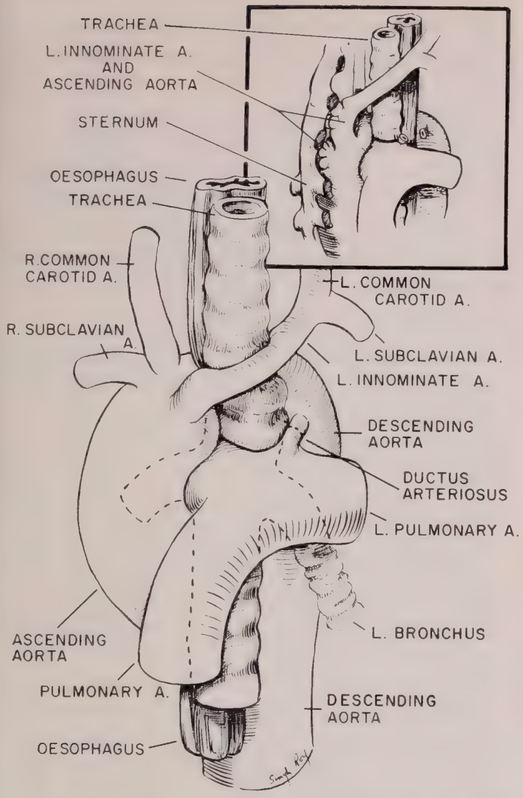
TRACHEA
L. INNOMINATE A. AND ASCENDING AORTA
STERNUM
OESOPHAGUS
TRACHEA
R. COMMON CAROTID A.
R. SUBCLAVIAN A.
L. COMMON CAROTID A.
L. SUBCLAVIAN A.
L. INNOMINATE A.
DESCENDING AORTA
DUCTUS ARTERIOSUS
L. PULMONARY A.
L. BRONCHUS
ASCENDING AORTA
PULMONARY A.
DESCENDING AORTA
OESOPHAGUS

FIG. 3. *Case 2.*—Right ascending aorta, right aortic arch, left descending aorta, left ligamentum arteriosum. Note the arch of the aorta going posterior to the esophagus. The insert shows the division of the ductus arteriosus and the pulling forward of the arch of the aorta by sutures to the posterior sternum.

Right Ascending Aorta, Right Aortic Arch, Left Descending Aorta, and Left Ligamentum Arteriosum

ANATOMY.—Under normal circumstances a right aortic arch causes no difficulty. In the case to be presented, however, the right aortic arch is combined with a left descending aorta, which in turn connects to the pulmonary artery through the ligamentum arteriosum. The ductus arteriosus may, or may not, be patent. The arch of the aorta is posterior to the esophagus. Thus, in effect, a complete vascular ring is obtained (Fig. 3).

SYMPTOMATOLOGY.—The symptoms are quite similar to those present with a double arch. It has been stated that the symptomatology occurs a little later in life in this anomaly, as compared to the double aortic arch; however, as will be seen in the case to be presented, they do occur in some instances at quite an early age.

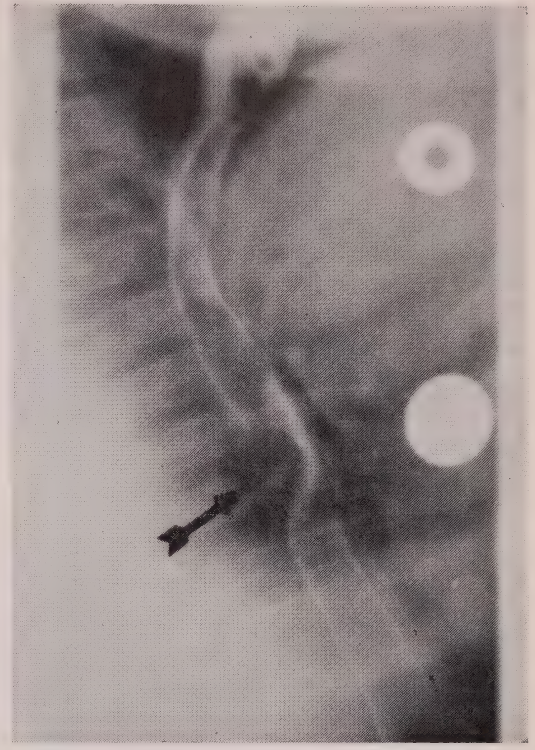

FIG. 4. *Case 2.*—Barium swallow; note the posterior indentation on the esophagus. The posterior arch of the aorta is at this level.

Roentgenologic Findings

The roentgenologic findings usually can be outlined with a barium swallow in the esophagus (Fig. 4). A posterior indentation on the esophagus is usually one caused either by the arch itself or by the ligamentum arteriosum which comes to meet the arch from the pulmonary artery posterior to the esophagus. If there is a right arch and a left descending aorta, it will be caused by the aortic arch. If there is a right arch and a right descending aorta, it will be caused by the ligamentum arteriosum. An indentation of the esophagus is obtained also from right to left because the right aortic arch is pushing on the lateral aspect of the esophagus. Although a tracheogram may be obtained, which will also show an indentation both laterally and anteriorly, it is not necessary to obtain this picture, as this may aggravate the pneumonitis usually associated with the condition.

Although angiocardiography may be obtained, it is not necessary since the diagnosis may be made roentgenologically by comparison with the previous studies. Although at times it may be difficult to distinguish this anomaly from a double aortic arch, it is important to make the diagnosis of a vascular anomaly, since the approach is the same for both.

Therapy

The surgical approach is similar to the one used in a double aortic arch. A right anterolateral approach is used and careful dissection of the entire mediastinal area is accomplished. After complete recognition is obtained, the ligamentum arteriosum, whether it is patent or not, is divided. The recurrent laryngeal nerve is identified carefully. Following the division of the ductus and the careful dissection of all the structures away from the trachea and esophagus, the right aortic arch is sutured anteriorly to the sternum, and this also relieves the tension.

The postoperative care is the same as in cases with a double aortic arch.

CASE 2.—This was the first Mount Sinai Hospital admission of a three-and-a-half-month-old infant girl in whom a heart murmur was detected one week after birth. The patient was otherwise asymptomatic at this time. Shortly after this, the patient developed a cough which increased the severity and was aggravated by eating. Some vomiting following the ingestion of solid foods also was noted. There was no problem in swallowing liquids. At the age of three months x-ray films, taken in another hospital, revealed a constriction of the trachea and esophagus. The remainder of the history was noncontributory.

Physical Examination.—Physical examination revealed a well-developed female child. The pulse was 108, and the respirations were 30. Examinations of the head, neck, abdomen, and extremities showed negative findings. A chest examination revealed no deformity, and normal breath sounds were heard bilaterally. An examination of the heart revealed no cardiomegaly. The point of maximal impulse was felt best at the fourth intercostal space along the midclavicular line. The heart sounds were good. A harsh-blowing systolic murmur was heard loudest at the apex with radiation to the left sternal border. The remainder of the physical examination showed negative results.

Laboratory Studies.—The hemaglobin was 10.2; the white blood count was 5,800 with a normal differential count. The platelet count was 550,000; the bleeding time was one minute, ten seconds. The coagulation time was six and one-half to nine minutes with a solid clot and good clot retraction. The serum sodium was 143, the potassium was 5.1, the carbon dioxide combining power was 28.8, and the chlorides were 102. The electrocardiogram indicated normal findings. The chest x-ray film showed normal results. The barium swallow showed a hemispheric indentation on the posterior aspect of the esophagus at a level just below the lower margin of the manubrium. There were slight bilateral indentations on both aspects of the esophagus just above this level and an anterior indentation on the trachea at the level of the upper margin of the manubrium. The appearance was indicative of a vascular ring presumably with a double aortic arch. The descending aorta appeared to be on the left side.

Course.—On April 6, 1959, an operation was performed. At the time of exploration a congenital vascular ring was found. The ring was composed of the ascending aorta and an aortic arch which went around the trachea and esophagus to the right, returning posterior to the esophagus and descending on the left side. The remainder of the ring was made up of a persistent patent ductus arteriosus in the left main pulmonary artery. The ductus arteriosus was transected and ligated. The posterior aspect of the aortic arch was mobilized off the esophagus. Anteriorly, the ascending aorta was mobilized off the trachea and tacked up to the posterior surface of the sternum by several sutures. In this way the trachea and esophagus were completely liberated.

The patient sustained this procedure well. Her postoperative course was completely uneventful. She was discharged on April 9, 1959, afebrile and swallowing well.

Summary

1. Mediastinal vascular rings can cause compression of the esophagus and/or trachea.

2. Early recognition should be obtained if enough symptoms suggesting the presence of this anomaly are present.

3. Surgical therapy should be instituted following adequate preoperative preparation; complete relief of symptoms usually ensues.

4. A case of double aortic arch and a case of right aortic arch, right descending aorta with ligamentum arteriosum, are presented.

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Parenteral Fluid Therapy in the Pediatric Surgical Patient

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THE major aim of a pediatric surgical parenteral fluid therapy program is to supply the need of the body for blood, water, electrolytes, calories, proteins, and vitamins. These needs, in most instances, may be defined easily as daily maintenance plus body deficits; such is the case with water and electrolytes. However, deficits of protein may not be readily discernible even though the importance of protein deficiency has been documented adequately, particularly with regard to delayed tissue healing, decreased intestinal motility, and increased sensitivity to shock. Once the specific needs have been outlined, the clinician must ask what physiologic and pathologic limitations exist which tend to modify the administration of these needs.

In the very young pediatric patient the renal excretion of water and electrolytes may not be comparable to that of the adult, even when the surface area is used as a basis for comparison. Also, the effects of preoperative medications, anesthesia, surgery, and shock can alter the renal excretion of these constituents.

Since water is the main solvent for most of the ingredients of parenteral alimentation, such as carbohydrates, electrolytes, and amino acids, and since body water expenditure is closely correlated with the body surface and caloric expenditure, the use of the body surface area as a reference for determining water needs in most ages becomes logical. A few key surface areas can easily be remembered (Table I).

TABLE I.—KEY BODY SURFACE AREAS OF FOUR AGE LEVELS

Age Levels	Body Weight Kg.	Body Weight Pounds	Surface Area (Per Square Meter)
Newborn infant	3	6.6	0.20
One-year-old child	10	22	0.50
Preschool child	20	44	0.80
School child	30	66	1.00

In attempting to calculate daily water maintenance, a knowledge of the insensible and urinary water loss is helpful. In hospitalized patients the insensible loss of water was estimated to be 930 ml. per square meter of surface area per day. The urinary water loss may be related to the total renal osmotic excretion. Mature renal function will require 0.7 ml. of water for each milliosmol of solute excreted. If the range of the average daily solute excretion is 10 to 40 mols per 100 calories per day during parenteral fluid therapy administration, then the minimal urinary water losses will total from 105 to 420 ml. per square meter per day. Combining the water requirement for the upper range of urinary solute excretion plus the average insensible water losses, a figure of 1,350 ml. per square meter per day would be required; actually we have used a round figure of 1,500 ml. per square meter per day for the daily maintenance level. With regard to electrolyte maintenance, it has been shown that electrolyte urinary concentrations during fasting with ample water intake approach 71 mEq. per L. for sodium and 53 mEq. per L. for chloride per kilogram of body water lost. It is obvious that urinary sodium concentration is about one-half that observed in plasma sodium. It must be noted also that the ratio of urinary sodium to urinary chloride, 1.4 to 1, approaches that

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TABLE II.—COMPOSITION OF A MULTIPLE ELECTROLYTE SOLUTION USED FOR PARENTERAL FLUID THERAPY PER 1,500 ML. PER SQUARE METER PER DAY

Component	Amount
Sodium	60 mEq. per L.
Chloride	50 mEq. per L.
Potassium	25 mEq. per L.
Lactate	25 mEq. per L.
Phosphate	12 mEq. per L.
Magnesium	6 mEq. per L.
Invert sugar	100 Gm.
Water	1,000 ml.

seen in plasma. A parenteral fluid formulated to approximate these electrolyte concentrations observed during periods of fast could be used for electrolyte maintenance. Table II shows the composition of the multiple electrolyte solution most commonly used for parenteral fluid therapy at the Buffalo Children's Hospital.

Sugar solutions do provide calories (400 calories per L.) and therefore tend to minimize protein losses. The use of fructose or invert sugar will lessen urinary losses of carbohydrate and will facilitate liver glycogenation. The minimal needs of the body (excluding blood, nitrogen, and vitamins) can be met with the use of this electrolyte solution. If parenteral alimentation is required for an extended period, amino acids should be administered, at least to make up basal nitrogen losses, 100 mg. per kilogram per day.

This same solution can be used to make up deficits which were incurred prior to admission to the hospital and also, in most instances, as a replacement therapy for continued losses. Exceptions to this general principle are mentioned in the appropriate section.

Preoperative Management

AIMS.—1. Make diagnosis of fluid and electrolyte deficiencies.

2. Replace deficits and maintain daily requirements.

3. Correct dehydration. Dehydrated patients are poor surgical risks.

NEEDS.—Supply water, electrolytes, and minimal calories to prevent ketosis and protein, blood, and vitamin losses.

TABLE III.—MULTIPLE ELECTROLYTE SOLUTION REQUIREMENTS IN A 30 KG. DEHYDRATED CHILD

Number of Days	Ml. per Square Meter		
	Maintenance	Deficit	Total
1	1,500	1,000	2,500
2	1,500	1,000	2,500
3	1,500	. . .	1,500

THERAPY.—1. Take accurate weight measurement before fluid therapy is initiated; continue to weigh each day.

2. Tabulate intake and output as ml. per square meter per day. For example, a 10 Kg. child excretes 200 ml. of urine per day; corrected for surface area the output for this child is 400 ml. per square meter per day.

3. Measure blood urea nitrogen, carbon dioxide, chloride, sodium, potassium, pH, albumin, and globulin. Hemoglobin concentrations are elevated during dehydration, owing to contracted plasma volume. With adequate hydration the true hemoglobin concentration will be observed.

4. If oliguria exists, administer intravenously one-third normal saline (50 mEq. per L. of sodium and chloride) in a 10 per cent sugar solution at a rate of 360 ml. per square meter in forty-five minutes. If the patient does not void, the rate of one-third normal saline infusion should be lowered to a total level of 1,500 ml. per square meter per day (insensible loss plus 25 per cent deficit).

5. When a patient voids, it is advisable to administer the multiple electrolyte potassium-containing solution at a rate of 1,500 ml. per square meter per day as maintenance.

6. Deficits should be made up within forty-eight to seventy-two hours by the addition of 2,000 to 2,500 ml. per square meter totally to the same electrolyte solution during this same period (about 1,000 ml. per square meter additional per day for two days); for example, multiple electrolyte solution requirements of milliliters per

TABLE IV.—Electrolyte Concentration of Body Fluid Losses Twenty-four Hours Following Surgery

Loss	Ml. per Square Meter Sodium	Potassium	Chloride
Gastric drainage	20 to 80	5 to 20	100 to 150
Ileostomy drainage	100 to 140	5 to 15	90 to 130
Diarrheal stool (severe)	60 to 120	60 to 100	40 to 80
Urine	20 to 40	20 to 120	10 to 60
Sweat	40 to 100	7 to 37	35 to 90

square meter per day in a 30 Kg. child who is dehydrated, assuming a 2,000 ml. deficit, are shown in Table III. Deficit repair depends on the degree and extent of dehydration. As a routine, no more than 75 per cent of the deficit should be restored within the first twenty-four hours of therapy.

7. Dehydrate patients by having them take nothing by mouth until morning; continue parenteral therapy during the night.

8. Meperidine hydrochloride (Demerol hydrochloride) (100 mg. per square meter) and morphine (10 mg. per square meter) have a depressing effect on the glomerular filtration rate, renal plasma flow, urine flow, and sodium excretion. These reductions are of the order of magnitude of 25 to 50 per cent of the control normal values. Following the continued administration of these drugs, the depressed renal excretion values should be considered carefully and, if necessary, adjustments should be made in the therapeutic regimen.

Operative Management

Aims.—1. Maintain infusion for possible emergency.

2. Renal losses of water and salt are minimal and need not be included in calculated parenteral fluid therapy during the operation.

3. Replenish blood losses.

Needs.—1. Water losses during an operative procedure under heavy drapes may be as high as 300 ml. per square meter per hour.

2. During surgery metabolism is lowered and renal function is depressed from 20 to 30 per cent of normal control values.

Therapy.—1. Water loss depends on the duration of the operative procedure, drapes, and bright lights, particularly if air conditioning is not present. If possible, weigh patient to determine losses incurred during surgery.

2. Administer sugar solutions at the rate of 50 ml. per square meter per hour.

3. If a prolonged operation is anticipated, give such minimal amounts of sodium chloride as one-sixth normal saline (25 mEq. per L. of both sodium and chloride) with 10 per cent sugar solutions at the same rate of 50 ml. per square meter per hour.

4. Make up abnormal losses by plasma or blood.

Postoperative Management

Aims.—1. Maintain daily requirements and replace deficits.

2. Attempt to prevent hypokalemia or hyperkalemia, hyponatremia, or hypernatremia.

Needs.—The requirements are the same as those for preoperative management plus deficits incurred through gastric suction and ileostomy tubes. Table IV lists the average concentrations of these electrolytes in these fluids.

Therapy.—1. Weigh patient in recovery room daily.

2. In severe electrolyte disorders, obtain blood urea nitrogen, carbon dioxide, chloride, sodium, and potassium after the patient's return from the recovery room and every other day during the administration of parenteral fluid.

3. Before starting the potassium-containing solution be sure the patient is voiding. Chart output per milliliter per square meter per day.

4. Administer a multiple electrolyte solution at a rate of 1,500 ml. per square meter per day plus deficits incurred from abnormal gastrointestinal losses.

5. Gastrointestinal losses can be estimated by weighing sponges. Anticipate

losses from four to twelve hours ahead and place them during this time.

6. If possible, determine electrolyte concentration of gastric fluid, ileostomy drainage, and biliary or pancreatic fistula drainage.

7. Use a multiple electrolyte solution to lavage drainage tubes.

8. In patients with ileostomies, extensive quantities of sodium and chloride may be lost in addition to potassium. For such conditions use a solution with a higher concentration of electrolytes for maintenance and repair; an example of this is listed in Table IV. Approximate deficits are from 500 to 1,000 ml. per square meter per day, as observed.

9. Gastrointestinal electrolyte losses can be minimized by withholding fluids by mouth because food and water stimulate intestinal secretions. If water is used, electrolytes must be secreted to adjust fluid concentration prior to absorption from the gut.

10. Start oral feedings as soon as tolerated.

11. Blood, 20 ml. per kilogram, may be given up to 500 ml. Administer albumin if hypoproteinemia exists.

12. Morphine administration may cause reduction in urine volume, not only because of a decrease in glomerular filtration rate and renal plasma flow but also because of the antidiuretic action of the posterior pituitary hormone released by stimulation of the hypothalamicohypophyseal system.

Discussion

Theodore C. Jewett.—*Buffalo, New York.*—Dr. Calcagno has described very aptly the general plan of parenteral fluid therapy in surgical patients, which he has found to be both practical and workable. The surgical service at this hospital uses a similar program for the intravenous alimentation of infants and children, differing only in minor ways from the plan described by Dr. Calcagno.

One of the main points which Dr. Calcagno has mentioned is the ability with which children in the postoperative period can handle both sodium and potassium if these are given to them with adequate amounts of water. With increasing experience, it is becoming more and more obvious that not only does the postoperative child need sodium and potassium as well as water, but also that he has the ability to utilize them without becoming edematous. However, I believe that it is worth mentioning at this time that while the child may not be clinically edematous, the operative areas, such as anastomoses in the intestinal tract and the wound itself, may become waterlogged before the patient shows obvious evidence of edema. It is important to us as surgeons not to have this happen because edema interferes with the normal healing processes and, in the case of the intestinal tract, particularly in the newborn infant, it can cause obstruction to the lumen of the anastomosis in the early postoperative period.

As a consequence of this, in the early postoperative period we tend to give somewhat less fluid than our medical colleagues. This is particularly true in newborn babies, both in regard to water and electrolytes, and, in particular, it is true of the premature infant, to whom electrolytes are seldom given except for major losses from the gastrointestinal tract and other sites.

In conclusion, I would like to say that we have no major arguments with Dr. Calcagno in regard to the outlined fluid program. Our only difference of opinion is in the degree of amounts of fluids and electrolytes administered.

Wrinkles should merely indicate where smiles have been.—Mark Twain

Unstressed Factors in Malpractice

WILLIAM F. MARTIN, ESQ.,* NEW YORK CITY

THE Court of Appeals of the State of New York in the case of *Bing v. Thunig*, 2 N. Y. 2nd 656, 143 N.E. 2nd 3 (1957) removed the immunity of all hospitals, whether charitable or for profit, which for years had enabled institutions to defend successfully cases based on the professional negligence of employed doctors, nurses, and orderlies. In the Bing case, in preparing the plaintiff for an operation, before her surgeon appeared nurses employed by the defendant hospital negligently failed to remove linen stained with an inflammable antiseptic. As a result, the plaintiff was burned seriously during the operation. A judgment against the hospital was reversed by the Appellate Division, which ruled that the nurses' acts were "medical" rather than "administrative," and applied the old New York rule exempting nongovernment hospitals from liability for the negligence of their professional employes where performing "medical" acts. On the plaintiff's appeal, the Court of Appeals reversed the lower court and discarded the rule immunizing hospitals from the normal operation of respondeat superior. Not only in New York State but also in Ohio, New Jersey, and a number of other leading jurisdictions the immunity rule has been changed. There remain but few jurisdictions where a hospital is not responsible for professional acts of its employed personnel.

Of course, a hospital is even now not responsible for acts of negligence of the visiting staff who are not employed by the hospital. A different rule applies to the visiting staff in institutions maintained wholly by the State, the city, or other municipal subdivisions. Section 50D of the General Municipal Law provides that the municipality must hold harmless all professional staff members who treat without charge the patients in the institution. Since it is quite customary for an institution to submit bills in liability, compensation, and other types of cases for the services of its doctors, it is seriously to be questioned whether Section 50D of the General Municipal Law would hold them harmless for their acts of claimed professional negligence should it be proved that the staff members derive income from such billing. It is, therefore, sound for all doctors who treat at city hospitals to make sure that they are covered by malpractice insurance.

It is, of course, vital for all hospitals, as well as physicians, in view of the present state of the law, to carry malpractice insurance. This type of insurance has become very expensive because of the suits and claims. A series of articles on medical and hospital malpractice which claims that the national cost of insuring against such suits is in excess of 50 million dollars has appeared in the *Saturday Evening Post.*[1] *Look* magazine has recently published an article[2] which could be interpreted as highly critical of hospital care of patients. The *New York Post* ran a long series of articles entitled "Inside a City Hospital." In one of the chapters of this series, under the date of March 27, 1959, the following appeared, "In hospitals, as anywhere, errors of judgment are made. On the wards, as anywhere, mistakes are committed. And the City faces a steady attack from suits charging malpractice." (The Hospital Department says that it has no idea how many such suits it was involved in last year, but from the way "lawsuits" keep cropping up in the conversations of hospital staffs, malpractice charges

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are obviously a serious problem). The article has a discussion of the report of the California Medical Association which formed part of the substance of the *Look* article previously referred to.

My references to the *Saturday Evening Post*, *Look*, and the *New York Post* articles are intended to call attention to the seriousness of the problem with which hospitals and doctors are faced and to try to arrive at some idea of what may be done to correct the situation. I can make one or two suggestions which are based on the experience of our office in the handling of thousands of claims and suits brought against hospitals and doctors. Medicine and surgery have made enormous strides in the last generation and it is rather ironic when, seeing the troubles that face medicine, one reads the comment of Lord Nathan[3] who says, regarding malpractice cases, "it may be some consolation to reflect that a Court which exacts a high degree of skill and care from a particular defendant is in effect paying tribute to high standards maintained by the medical profession as a whole." As the *Saturday Evening Post* article says, "One of the most important findings of the California study was that a patient is more likely to sue on the basis of a psychologic reaction than of quality of treatment or errors in medical judgment." "Often the patient exhibited a strained emotional attitude. 'I would not have sued' a patient would insist 'if I had been treated like a human being.'" The *Saturday Evening Post* quotes a Chicago surgeon as stating, "When I have told my patients that I made a mistake, they don't even get angry. They actually seem to feel sorry for me" (page 49).[1]

Prompt Disclosure of Mistakes

I can illustrate this clearly by two contrasting actual situations that were presented to me within a period of a week, several years ago. One doctor called me to say that he had been sued for leaving a needle in a patient. The law of the State of New York is clear that the mere breaking of a needle in a patient, while calling for explanation from the doctor, is not per se negligence for it has been testified to frequently that a needle may break with the best of care and skill (*Benson v. Deane*, 232 N. Y. 52). However, there is the duty of a surgeon who breaks off a needle to tell the patient or a relative of the foreign body which is in the patient. The doctor who called me said that he had broken off a needle and had elected to wait a week or so before he told either his patient or her husband about it, as they were both very nervous and he did not feel the needle was doing any harm. Unfortunately, the day following the operation, the patients's husband received an anonymous letter stating "Don't be fooled by Dr. ————, he broke off a needle in your wife. If you do not believe this letter have an x-ray taken of your wife." The husband was very irate and took the patient away from the doctor, went to a nearby city, and arranged to have the needle removed. The failure of the doctor to make a full and frank disclosure seriously embarrassed his position in this matter.

Several days later, an upstate doctor called me and announced that a patient had come into the hospital that morning on whom he had done a very serious operation a month before. He found to his horror, when he x-rayed the patient, who had an intestinal obstruction, that two hemostats had been left in the course of the first operation. I proceeded to tell him that he should tell the patient before reoperating, but he told me that the nature of the patient's condition was such that he had already operated on him and removed the hemostats and corrected the obstruction and the patient seemed to be doing well. I told him he still must tell the patient. Within a month, he sent me a release stating "$1.00 and release of hospital bills" as the consideration and stating in the handwriting of the patient that the doctor had told him that a mistake in the first operation had made the second operation necessary, but that he did not want to know the details of the mistake, the doctor had taken care of the mistake, and had underwritten the hospital bills and that he, the patient, willingly signed the release. No more was heard of the matter.

Since the hospital is now responsible for the professional acts of its paid staff it therefore behooves both the operating surgeon and the hospital to see that if anything untoward happens the patient or his relatives are fully informed of any complications which have arisen. Prompt disclosure of mistakes made in the care of the patient will promote good will and understanding even if compensation must be made for the mistake.

This was borne home to me forcefully several years ago when an officer of a life insurance company called me up to state that he wished me to inform a surgeon who had operated on a patient that the company would wait forty-eight hours to give the surgeon a chance to explain to the family that a patient who had been operated on two weeks before had died because of a mistake in transfusing him with the wrong type of blood. The widow of the deceased had no notion of the fact that her husband had died because he received the wrong type of blood. She had four children. She was seeking to collect from the insurance a $50,000 policy. There was a double indemnity clause which would give her $100,000 if it could be shown that her husband had died from an accidental death. The company had sought an inspection of the hospital record because they suspected that in an application signed two years before his death for the insurance, the patient had deceived them as to the then condition of his health. The company official informed me that not only was it clear that he had not deceived them, for there were no signs of the condition existing two years before his death, but also that they were convinced that they owed the double indemnity amount as well.

I told the surgeon and rather reluctantly he called the widow in and told her all the circumstances. She was very fond of him and he had been the family doctor for many years. If he had made a full disclosure while the husband was in the hospital, he himself would not have been responsible because he did not handle the blood in any way. It was handled by a paid employe of the hospital and at that time the hospital would not have been responsible for the acts of a paid employe. There was just one member of the operating staff who had had something to do with handling the blood and it is conceivable that the case might have been made out against him. But neither the hospital nor the operating surgeon would have been responsible had they made a full disclosure of the circumstances. The only way the hospital might have been responsible would have been if it was found that there was an administrative error in their method of handling the blood and in not taking all safeguards to see the patient received the right type of blood. But as the result of this failure to be frank at the time, the operating surgeon found himself involved in a malpractice case along with several other members of the operating room team and the hospital, and a settlement in a substantial amount became necessary.

Subsequent to the case just mentioned, I was called to the office of a large hospital in New York City where a very tragic mistake in substituting potassium iodide for sodium iodide as an additive in spinal anesthesia administration had caused three deaths. We promptly brought in the next of kin of all three people and fully and fairly told them exactly what had happened. Settlements were effected in the cases but there was a minimum of acrimony and no publicity and the whole matter was disposed of within two months. Incidentally, a number of steps were taken immediately to correct the mistakes which had occurred and to insure that in the future the method of sending the drugs up to the operating room would be changed and all members of the staff warned to look at the labels of every vial used for any purpose before actual administration of the drug.

And while I am on the subject of looking at the drugs, another illustration of how failure to look at the label on the drug can cause harm brings to mind the case where an operating room nurse handed the doctor alcohol instead of novacaine, which he injected into the finger of the wife of another doctor causing loss of the finger. If any professional person is about to use a solution which is not in a labeled container, he should take every reasonable precaution to identify clearly the agent being used, particularly when it is used under circumstances in which it would not be inconceivable that it might be mixed with a different type of solution.

A surgeon who accidentally traumatizes a ureter in the course of a hysterectomy is well advised to tell the patient or a relative, where necessary, promptly that there has been an injury to a ureter, and a urologic consultation should be sought. We have seen a number of these accidents. Prompt disclosure and skillful aftertreatment following consultation are essential. I do not say that such an injury cannot happen with the best of care and skill and many such injuries rightly do not result in lawsuits.

Patient-Physician Relationship

Let me make a final observation, that kindness and decency toward patients affect the possibility of malpractice litigation greatly. Every case or claim we see involves some corrosion of the patient-physician relationship. It is, therefore, an inevitable conclusion that everything that is done to maintain good relations with the patient is a form of insurance against trouble.

Often we are called by doctors who have run into complications and sometimes they tell us that they have made a mistake for which some remuneration should be made to the patient. But if they maintain a friendly relationship with the patient, the situation is enormously easier to handle. It is only human nature that when you let your bad results get out of your own care and they go to others, some careless remark will lead to trouble. We recently read a hospital record which said of the care at a hospital where the patient had previously been, "If what the patient says is correct, she is entitled to a large sum in damages." What the patient said was absolutely incorrect and was conclusively proved to be incorrect before a jury, but only after a two weeks trial which cost a great deal of money.

One other story about conduct toward a patient: Some years ago, we tried a case involving a charge that a doctor did not diagnose a cancer promptly and take steps to see that the patient was operated on. We believed that in the course of the case we could establish conclusively that the state of the cancer was such that no matter what the doctor did the life expectancy would be practically the same. From a cold scientific standpoint, I then believed and still believe that we were entitled to a defendant's verdict, but the personal relations between our client and the patient left something to be desired and I might say that that was our principal concern in the case. We got a fair charge to the jury from the trial judge in the case, we had produced excellent expert testimony in support of our doctor, and the jury were out for a very long period of time. When they finally reported, they were 10 to 2 for the plaintiff in a very substantial sum. I asked to have the jury polled and was shocked to find that one particular juror, who was a substantial business man, had voted against us, although I had felt that all through the trial he was with us. The judge after considering our motions to set the verdict aside finally did so.

More than a generation went by and after a dinner that I attended several weeks ago, I went with the former president of the college I had attended to have a little chat before going home. As we were sitting in a hotel lobby, there came across the lobby a gentleman who introduced himself to me. He is now the head of a large corporation and he called to my attention the fact that he had been one of the jurors in the cancer case and, as I remembered, he was the juror whose vote against us had been so surprising. He stated that the case had bothered him for years, as he was not at all sure that from the medical standpoint our doctor was not entitled to a verdict. He said that when the jury went out, they were 7 to 5 in favor of the defendant and that he was the one who swung the tide against the doctor. He said that the arrogant, unfeeling, unsympathetic attitude of the doctor toward the deceased woman, when she was in such trouble, was something that he could not tolerate. He felt that the essence of the physician-patient relationship was a fair consideration of the patient. He said that the surgeon made light of the woman's complaints and showed a callous disregard of her plight. I informed him that he was probably better in his business than as a juror because the judge had later decided that the verdict of the jury was clearly against the weight of evidence.

It brought home to my mind the fact that the greatest asset that a doctor can have when he appears in court to defend a charge of improper practice is a character and a personality that impress a jury favorably. Nothing is more helpful to a doctor than good records and notes, showing obviously careful consideration of the problem presented by the patient and indicating that even if perhaps a mistake was made, sound judgment went into the determination of the type of treatment used.

No matter what you have heard about past malpractice decisions or the way past trials went, it is well always to keep in mind the words of Lord Nathan:

> It is impossible to emphasize too strongly that in the last resort the success or failure of every action for negligence depends on the particular circumstances of the individual case. The vital question is always whether the defendant exercised reasonable skill and care in the circumstances; and the circumstances inevitably differ in detail from case to case. It follows therefore that a study of past decisions in medical negligence cases will be unrewarding, and indeed misleading, unless the limits of its usefulness are carefully borne in mind. The actual decision in such cases is seldom, if ever, of any lasting significance, for the effect of the decision is simply that a particular defendant in a particular case either did or did not exercise the degree of skill and care which, having regard to the circumstances there established in evidence, he ought to have exercised. The reader therefore should have in mind that the facts of past cases and the decisions given in them are of value only as indicating in what manner the Courts apply the general principles of the law of negligence to the facts of particular cases, and as showing the sort of conduct which may be capable of amounting to negligence (page 4).[3]

Preparation of Malpractice Case

May I call the attention of all those who are interested in the trial and preparation of a malpractice action to the excellent speech made by Salvatore J. Capecelatro, Sr., printed in the March 11, 1959, issue of the *New York Law Journal*, and presenting a plaintiff's viewpoint. The conclusion of his speech is that:

> No malpractice suit, whatever it may cost a physician, ever hurt the medical profession. Rather, it is like an invaluable discipline.

I would say that is rather cold comfort. As an indication of the interest in this whole subject, Mr. Capecelatro's speech was one of a number made at a symposium on this general subject held at the recent meeting of The New York State Bar Association in which I participated and presented the viewpoint of the defendant.

I should also like to call attention to the fact that in addition to the *Bing v. Thunig* case which changed the law insofar as hospitals are concerned, there was a recent Court of Appeals decision which not only hurts in the defense of a malpractice case, but also seems to have a serious effect insofar as all negligence cases are concerned. That is the decision in *Ferrara v. Galluchio, et al.*, 5 N. Y. 2nd 16. Time does not admit of my going into the entire factual situation in this case, but the principle of law which was announced may be stated as follows from the majority opinion:

> This case is somewhat novel, of course, in that it appears to be the first case in which a recovery has been allowed against the original wrongdoer for purely mental suffering arising

> from information the plaintiff received from a doctor to whom she went for treatment of the original injury.

The doctor to whom the patient went was a friend of the plaintiff's lawyer, to whom he sent her for an opinion. The doctor told her that she should come back every six months to have a diathermy burn examined and he told her that if she did not do so she "might get cancer." A neurologist took the stand and testified that when he examined the plaintiff she had a pronounced "cancerophobia." The jury gave her $10,000 for her burn and $15,000 additional for the mental anguish produced by the cancerophobia. The minority opinion stated that this decision would open the door "to countless opportunities for fraudulent unverifiable claims."

A word about the preparation of a malpractice case for trial: The case must be discussed not only with the defendant and his factual witnesses, but also a great deal of medical and legal research must be done. Time does not admit of our going into all the details of this procedure. But one thing must be borne in mind, that what to the uninitiated eye might seem like a case of liability may well not be one as revealed by careful study.

I recall recently that we appeared before a Supreme Court judge on a pretrial hearing and told him that the case involved injury to the recurrent laryngeal nerve during the course of a thyroid operation. The plaintiff's attorney claimed that the plaintiff had been assured that no such injury would take place and that the injury did take place and, therefore, she had been misled and that the doctor's operation was negligently performed. The judge was inclined to sympathize with the view of the plaintiff and suggested a rather substantial price in settlement. We told him that we did not regard this as a case of liability and among the other authorities on which we relied, although we did not so state at that particular time, was Lord Nathan's book again:

> In another recent English case (k) the patient was seen by a doctor who diagnosed a toxic goitre; he discussed with the patient the possible alternative treatments, namely, an operation or medical treatment by drugs, and pointed out that the treatment by drugs would take a long time. The patient chose the operation and in the course of it her left recurrent laryngeal nerve was injured and the left vocal cord paralyzed. The patient brought an action against the doctor and the surgeon who performed the operation, alleging against the doctor that he negligently advised her that there was no risk to her voice involved in the operation and against the surgeon that he had performed the operation negligently and unskillfully. In the course of the evidence the doctor denied having told the patient that there was no risk to her voice, but the surgeon admitted that he had told her just that. Denning, L. J., in summing up to the jury said.
>
> "What should a doctor tell a patient? (The surgeon) has admitted that on the evening before the operation he told (the plaintiff) that there was no risk to her voice when he knew that there was some slight risk; but that he did it for her own good because it was of vital importance that she should not worry. . . He told a lie; but he did it because in the circumstances it was justifiable . . . But the law does not condemn the doctor when he only does what a wise doctor so placed would do. And none of the doctors called as witnesses have suggested that (the surgeon) was wrong. All agreed that it was a matter for his own judgment. It is for you to say whether you think (the doctor) told her that there was no risk whatever, or he may have prevaricated to put her off, as many a good doctor would rather than worry her. But even if you think that he did tell her, is that a cause for censure?" (page 54).[3]

New Drugs.—We are being plagued today by cases brought with relation to the use of many of the new drugs that are on the market. A word of caution to a doctor who uses any of these so-called "miracle drugs." He must not only read the literature that is available as to their use before he prescribes, but also he must keep in touch with the literature that relates to contraindications that have appeared within the period of time that each drug has been in use. The price that can be paid for casual use of these drugs is shown by a recent New Jersey decision.

> The Superior Court of New Jersey sustained a verdict of $56,000 against a general practitioner. The Court found that the physician had negligently treated the plaintiff with mycifradin (neomycin), an antibiotic, and that as a result of this negligent treatment the plaintiff, who was forty-eight years old, would be deaf and tormented by tinnitus for the rest of his life. The defendant admitted he had never used the drug before using it on the plaintiff. He insisted that in all substantial respects he followed the manufacturer's directions. The evidence showed that the plaintiff had indications of "intrinsic renal disease" or "impaired renal function." The manufacturer's brochure warned that "under such conditions the benefits that may be derived . . . should be weighed against the possible development of deafness." The plaintiff's expert testified that in such a case the drug should be used only in cases of extreme urgency. The defendant conceded at the trial that "it was not an emergency."
>
> The Supreme Court held that "the jury had the right to conclude not only that the defendant did not know precisely what organism was ailing plaintiff, but in addition that he failed to exercise reasonable care to find out whether the drug would do any good." *Marchese v. Monaco*, 145 A. 2d 809 (N.J., November 10, 1958).

I might say that over the years practically every new drug that has come into use has, so far as it is claimed to have been misused, led to malpractice cases. From the days of traumatic cataracts caused by an overenthusiastic use of dinitrophenol to reduce weight, through some of the claimed abuses of the antibiotics and steroid preparations, there is a constant flow of cases where it is claimed that improper or excessive medication resulted in severe damage to the patient.

Special Knowledge.—The speech of Mr. Capecelatro, which I mentioned previously, gives a clear narration of how he prepared a case which involved a claim that the physicians and the hospital involved failed properly to take care of an Rh negative birth wherein the child had an erythroblastosis. We have had a number of these cases and in several of them have found that the pediatrician involved had little or no insurance and several of the cases which we have had to settle have necessitated the pediatrician making a substantial payment from his own pocket. I say this to call attention of the profession to the fact that no type of practice is immune from suit and a physician's assets should be protected by adequate insurance.

Another lesson to be derived from the erythroblastosis cases applies to all conditions which demand rather specialized knowledge in their care. Some of the best doctors are those men of limited attainments who have enough humility to realize that they are not possessed of specialized knowledge in many fields. They call for help in time and avoid trouble. I remember years ago defending a doctor who ran a maternity home where a great many births took place and where he was very, very busy indeed. But the least untoward situation that developed led him to call for help immediately. When I asked him what experts we could use in his case he named three or four of the outstanding men in the city, and I was pleasantly surprised to find that they were not only willing to testify for him, but also would say in his defense that to their knowledge he always called for help when it was necessary. Failure to call for consultation has caused trouble for many doctors. When a professional man is faced with a complication that worries him, that is the time to call for help. Very often when help arrives, a caution will be issued to wait for the best possible time to do a corrective procedure. When consultation is not sought, very often the doctor is so anxious to correct the condition that he has created that he will go in too soon and will not show the best judgment under the circumstances. Sometimes a doctor will not call on one of his fellow specialists in a hospital because they are rather jealous of one another, but it is amazing how improved the relationship between the two men can become immediately if one occasionally seeks the opinion of the other with some indication that he needs it, relies on it, and appreciates it.

Function of the Court

Many of the counties in New York State now have active malpractice committees which review the cases in their community, and their members carry back to their hospital staffs and associates the many useful lessons which can be derived from the clinical material which is presented to them. We feel that these committees do a great deal of good and they sometimes learn of situations which can be corrected.

However, let me add, that it is not the function of these committees to try to discipline a doctor because he has testified against another doctor in a malpractice case. This would be a very unwise procedure indeed. The Courts are very jealous of their prerogatives and protect witnesses from any undue pressure which is put on them. I am pleased to say that in the three decades that I have been associated with this work, my predecessors and I have never countenanced an attempt to discipline a doctor because he has testified for a plaintiff in a malpractice action. It is my experience and that of my associates that in scores of cases we have tried recently there are always one or more experts testifying against us. The myth that testimony cannot be had on the plaintiff's behalf in these cases is not well founded. There may have been alleged repressive practices in other states which have led the courts of those states to issue some opinions criticizing the medical profession, but I do believe that it is the experience of judges in this State that any such condition exists.

It is part of our function as counsel for the Medical Society of the State of New York to see that the judiciary and the Bar of this State have respect for the manner in which the medical profession reacts to the great number of claims that are presented against it. It is also, however, an obligation of my profession and the bench to see that the doctors are treated fairly. Many of these malpractice cases are stirred up by other doctors and there has been a recent documentation in several important Appellate decisions in this State of the fact that there is a close liaison between a certain number of doctors and a certain number of negligence lawyers. When this close relationship exists, such individuals are interested not only in general liability cases but also in malpractice cases. The plaintiff's negligence lawyers of this State are by and large very well educated in all matters medical. We have seen briefs which they have prepared in some of these malpractice cases that would do credit as textbooks on the subject.

Before closing I wish to call your attention to and wish to seek your cooperation in preventing what I think is an injustice in this field of work. The Association of the Bar of the City of New York by a closely divided vote recently supported a proposed amendment to Section 50, Subdivision I, of the Civil Practice Act which relates to the Statute of Limitations in a malpractice action and the proposed change would read as follows:

> The following actions must be commenced within two years after the cause of action has accrued:
>
> 1. An action to recover damages for assault, battery, false imprisonment, malicious prosecution or malpractice. *A cause of action for malpractice is not deemed to have accrued until the discovery by the plaintiff or the person under whom he claims of the facts constituting the malpractice, but in no event may such action be commenced more than four years after the commission of the malpractice.* (The matter in italics is new.)

There is no substantial basis for making this change. The documentation of it was very weak before the Committee. Any Statute of Limitations must occasionally inflict an injustice, but the situation in which four years after discovery are necessary is extremely rare, and it is my feeling that this field of work, which is already overburdened by an inordinate number of claims and cases, will be made even more untenable by this proposed change in the law. I have had plaintiff's lawyers in this field tell me that they are so concerned about the fact that this may become an uninsurable situation that they are perfectly happy to leave the law the way it is.

We know of cases where, even only a year and a half after the events involved, a doctor is sued, and it is very difficult for him to recall what the case is all about. It often comes as a complete surprise to him and is very hard to document at the time. Remember that in the ordinary negligence case, such as an automobile knockdown case, the people involved on the defendant's side know immediately that there is the potentiality of a suit and that they are under an obligation to notify their insurance company. Prompt investigation is made. One of the great expenses of this whole malpractice situation is the amount of late reporting that is involved and very often the doctor reports late because he does not have the faintest idea that he is going to be sued in the matter.

Conclusion

Before I close I should like again to call the attention of the medical profession to the need for adequate malpractice insurance. There have been some papers written to the effect that there might be many fewer cases brought if there was no malpractice insurance, but I refer you to Part I of the *Saturday Evening Post* article[1] wherein there is a story of a California doctor who lost all of his assets because he did not have insurance. We could tell you other stories in this regard. And may I say that I am convinced that the Group Malpractice policy of the State Society is one of the finest plans that is in existence. It is supervised by the doctors themselves and audited by their independent designee. No doctor can lose his insurance with the Group Plan until the Malpractice Defense Insurance Board of the State Society has had a chance to review the situation. As one necessary concomitant of the competition which has developed to the Group Plan, it is no longer possible for a doctor always to take out the Group Plan coverage without detailing his previous claim experience, when he left the Group Plan, and what verdicts or settlements have been made against him in the meantime. It is not easy to get back into the Group Plan. It therefore behooves the doctor who has the Group Plan coverage to continue it. It has been proved to be of great service to him.

In closing I would like to quote from the learned judgment of Lord Justice Denning in a British malpractice suit of 1947, which I suggest is a fair guide for all concerned with the problem of malpractice:

> We should be doing a disservice to the community if we imposed liability on hospitals and doctors for everything that happens to go wrong. Doctors would be led to think more of their own safety than of the good of their patients. Initiative would be stifled and confidence shaken. A proper sense of proportion requires us to have regard to the conditions in which hospitals and doctors work. We must insist on due care for the patient, but we must not condemn as negligence that which is only misadventure.

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Blessed is he who has found his work; let him ask no other blessedness.—CARLYLE

RECENT ADVANCES IN MEDICINE AND SURGERY

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Present Status of Surgery of the Biliary Tract

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Over 10 per cent of the present adult population suffer from biliary tract disease. Of these, over 90 per cent harbor stones in their bile ducts and/or gallbladder. Whatever the mode and site of formation of these stones, the modern treatment of biliary tract disease revolves around their diagnosis and elimination. Medical therapy of gallstone disease is symptomatic and supportive but hardly ever curative. There is substantial evidence, although knowledge about the etiology and pathogenesis of stones is not complete, that the gallbladder is usually the focus of calcareous biliary tract disease. On the basis of the gallbladder as the prime factor, we have formulated our concept of the progress of this disease.

Stages of Biliary Tract Disease

We believe that the pathogenesis of calcareous biliary tract disease can be divided into four main stages.[1] Although the limits of each stage cannot be clearly defined because the changes are not always concurrent, there will be periods in the lifetime of an individual with gallstones when the disease can be assigned to one of these four groups. We assume that the great majority of these calcareous conditions have their inception in the gallbladder and that secondary changes occur in other parts of the biliary tract as the disease progresses. These secondary changes might be prevented by early cholecystectomy. Each stage of biliary tract disease may last for many years, for progress is not always continual. Undoubtedly many cases remain in the early stages for many years or for most of the patient's lifetime. The course, however, cannot be predicted.

Stage I.—During Stage I the biliary tract disease is limited to the gallbladder. Stones usually are present, but grossly and microscopically the organ otherwise is almost normal. The function of the gallbladder appears to be normal on cholecystography. Also included in this stage are cases of acute noncalcareous cholecystitis in which repeated attacks have left some scarring and thickening of the gallbladder wall as well as cases of stone formation from excessive blood destruction and cholesterosis of the gallbladder. Those in this stage of the disease usually are young females who have recently completed their first pregnancies. A little over 10 per cent of patients with biliary tract disease on our ward services are in this stage of the disease.

Stage II.—Stage II, a continuation of the first one, is characterized by infection and obstruction, associated with the stones, which lead to fibrosis and thickening of the gallbladder wall. Grossly there is thickening and the color of the organ has changed from blue to dull gray. On cholecystography there is poor concentration of dye in the gallbladder and the emptying is incomplete. Stones may be found in the common duct in from 7 to 15 per cent of cases. The liver is grossly normal but on microscopic examination some slight periportal fibrosis and round cell infiltration usually is found. Clinically there still may be minimal or no subjective symptoms; this stage is often found at autopsy with no history of gallbladder disturbance. This stage is the most commonly encountered one at surgery for cholelithiasis; about 72 per cent of our patients belong to this group.

Stage III.—Stage III is usually readily recognized clinically and is an advanced phase of the disease. The stones have been in the gallbladder for a long period of time. The organ is thickened, scarred, and contracted around the stones; it is not visualized on cholecystography. Stones usually are found in the common duct. There is increased fibrosis of the walls of the bile ducts to the duodenum, and the ampulla of Vater may have lost its resiliency. The liver grossly may show the firmness and fine scarring of biliary cirrhosis, which on microscopic examination is confirmed. The rigidity and chills accompanying ascending cholangitis are frequently seen in this group, and the cumulative injury to the liver substance is likely to limit severely the patient's ability to withstand recrudescence. For the most part, elderly patients with long-standing disease are in this stage, which may account for the fact that most of the fatalities and postoperative complications occur in this stage. About 15 per cent of our patients with biliary tract disease are in this stage. This stage can be prevented by surgery early in the course of the disease, and as this precaution becomes more widespread such patients will be less frequently encountered.

Stage IV.—In Stage IV we have grouped a number of conditions in the biliary tract which are far-advanced and often irreversible: biliary enteric fistulas, carcinoma of the gallbladder and the ducts, cirrhosis of the liver, and benign stenosing fibrosis of the ductal system. Stones and chronic inflammatory conditions often are associated with these conditions, but the relationship is not always apparent. These conditions, although usually preceded by the first three stages of biliary tract disease, actually constitute distinct entities from the standpoint of clinical manifestation and pathology. They comprise about 3 per cent of our cases.

Each stage of the disease may be subject to changes from which there is either recovery or radical advancement. Acute cholecystitis, for example, may be caused by obstruction, infection, or chemical action. Whatever the cause, the acute process may subside completely and leave minimal scarring so that the organ remains essentially in the same stage. On the other hand, a biliary enteric fistula may result so that a condition previously classified as Stage I has progressed to Stage IV.

What, then, is the purpose of this classification? First, it serves as a reminder that calculous biliary tract disease is chronic and usually progressive. In this era of preventive medicine the medical profession should be aware that the proper time for treatment of biliary tract disease is in the early stages, when the process is reversible and secondary changes can be prevented. Second, it can serve to indicate the incidence of the disease in a given community. For instance, a disproportionately high number of patients coming to operation with Stage III disease should arouse suspicion that there are a large number of individuals with the less-advanced form of the disease. The realization that prevention is preferable to doubtful cure should serve as a call to vigilance.

Acute Cholecystitis

Acute cholecystitis is associated with stones in 85 to 90 per cent of cases. Noncalculous acute cholecystitis is primarily bacterial or chemical in origin; acute cholecystitis with stones usually is primarily obstructive. The danger from acute cholecystitis is gangrene and perforation; this occurs in 10 to 15 per cent of cases. The incidence of acute cholecystitis rises sharply with age. In our series the incidence of acute cholecystitis under the age of fifty is 18 per cent, from fifty to sixty-four 20 per cent, and over the age of sixty-five 30 per cent. It is not possible to predict the course of acute cholecystitis and to determine whether an attack will subside or continue until perforation. Chemotherapy has not influenced the course of acute obstructive cholecystitis, for in this disease, which is primarily nonbacterial, the avenues of entrance for the antimicrobial drugs, both the cystic artery and duct, are closed.

Mortality in the past has been high for both surgically and conservatively treated cases. Those patients whose outcome is fatal usually have the advanced form of the disease. Surgical mortality has been high because in the majority of instances surgery has been performed late and heroic measures therefore had to be undertaken in an effort to save the patient's life. Experience in hospitals in which early operation for acute cholecystitis is practiced has established surgery as the method of choice. The mortality in 877 cases of acute cholecystitis in our hospital, where early operation is advocated and practiced, was 2.5 per cent over a twenty-five-year period; cholecystectomy alone was carried out on 698 of these patients, with a mortality of only 1.2 per cent.

Biliary Enteric Fistulas and Gallstone Ileus[2]

Cholecystoenteric fistulas probably are caused mainly by obstructive acute cholecystitis. The ischemic gangrenous areas of the gallbladder are sealed by the wall of the duodenum and colon, and pressure from inside the gallbladder causes formation of an opening in these hollow viscera with resultant evacuation of the gallbladder contents. If a stone large enough to obstruct the bowel is evacuated, ileus may result. The fistula which is formed may remain open or may close. If the common duct is obstructed by stones, the fistula is less likely to close because the bile needs a route for escape. This is one reason why common duct exploration is necessary when cholecystoenteric fistulas are repaired. Choledochoduodenal fistulas are rare and nowadays are probably more often caused by penetrating peptic ulcers than by stones eroding through the wall, although the latter stituation was commonly observed before the advent of biliary tract surgery.

Gallstone ileus is a rare condition. It is responsible for about 4 per cent of cases of intestinal obstruction. The obstructive symptoms usually are preceded by a severe episode of upper abdominal distress, and examination of the patient at this time usually reveals rather marked right upper quadrant tenderness and on occasion a palpable mass. These symptoms, however, sometimes pass almost unnoticed. The passage of the stone is followed by intermittent cramping pains until the stone is lodged in the terminal ileum. Diagnosis at this stage is often possible if one is on the lookout for three signs: (1) small bowel distention, indicative of obstruction, (2) visualization of the stone on a scout film of the abdomen (although not always possible), and (3) visualization of the bile ducts outlined by air entering through the fistula on a scout film of the abdomen.

The diagnosis, however, usually is not made clinically but on exploration. We firmly believe that no attempt should be made to treat surgically the biliary tract disease in the face of gallstone ileus until the small bowel obstruction, a serious condition, is relieved. The gallstone may be removed from the bowel by means of an enterotomy proximal to the obstruction. If the intestine does not appear viable, resection has to be carried out. When the patient has recovered from the surgery for intestinal obstruction, the definitive attack on the biliary tree may be planned. If the obstructing gallstone was found in the colon rather than in the small bowel, investigation should be carried out to determine the possibility of a cholecystocolic fistula. If it is present, thorough cleansing and preparation of the large bowel is indicated before surgery. The operation may be easy or difficult to accomplish. Dismantling of the fistula and closure of the bowel should be followed, as already stated, by common duct exploration.

Biliary enteric fistulas and gallstone ileus are seen mainly in elderly individuals. Long-standing disease of the biliary tract usually has compromised the liver, and the addition of acute small bowel obstruction increases the hazard of the imperative surgical intervention. The best results may be obtained by staging the surgical attack as outlined.

Concurrent Conditions

Chronic cholecystitis and cholelithiasis may exist for a long period of time and yet give the patient only minimal subjective symptoms. There are several more obscure disease entities, however, which may exist concomitantly with cholelithiasis and faithfully mimic the symptoms of biliary tract disease. The following conditions caused confusion in the preoperative evaluation of the patient with biliary tract disease:

Peptic ulcer
Recurrent pancreatitis
Lesions of the right kidney
Coronary heart disease
Diseases of the large bowel, particularly the hepatic flexure
Lesions of the vertebral and spinal cord
Tumors of the right adrenal gland
Carcinoma of the pancreas and ampulla of Vater
Diaphragmatic hernia

Most of these conditions can be ruled out or confirmed by an accurate and complete history and physical examination.

Peptic ulcer is probably more common among patients with cholelithiasis than in the average population. As a rule we prefer to perform surgery on the biliary tract first, if there is a choice.

We feel that both conditions should not be operated on simultaneously, except as an emergency measure, since there is a sharp rise in mortality and morbidity for combined operations.

Pancreatitis may be secondary to biliary tract disease and, if so, may be arrested by treatment of the biliary disease in the early stages. Carcinoma of the body and tail of the pancreas presents unusual difficulty in diagnosis in the early stages, even at operation.

The pain, however, often is relieved by the patient's standing up; it has a tendency to move toward the left side and is often worse at night.

Coronary heart disease may both mimic and be aggravated by biliary tract disease and colic. At times attacks of angina may be relieved and even electrocardiographic changes may disappear after cholecystectomy. The outcome is difficult to predict, but signs and symptoms of coronary heart disease, as a rule, should not be considered contraindications to cholecystectomy for calculous disease.

Lesions of the right kidney and adrenal usually can be differentiated easily from biliary tract disease. However, we have encountered 3 patients with pheochromocytoma of the right adrenal whose admission has been prompted by suspicion of cholelithiasis.

Diverticulosis and hiatus hernia often are found with cholelithiasis, the so-called Saint's triad. Carcinoma of the hepatic flexure of the colon may give rise to colicky pain resembling that of cholelithiasis. Blood in the stools and a history of a change in bowel habits should arouse suspicion.

Intravenous Cholangiography

In 1953 a new iodine compound (Biligrafin) was introduced for cholangiography.[3] This iodine compound is only one-tenth as toxic as previous ones and can be given in a concentration of 60 per cent. It acts as a powerful choleretic and because of its concentration allows direct visualization of the bile ducts ten to fifteen minutes after its administration. It is remarkably innocuous and the injections are well tolerated. We have now done over 3,000 intravenous cholangiograms without a major complication resulting.

One of the advantages of intravenous cholangiography is its speed. Another advantage is that the examination is not dependent on absorption from the intestinal tract or on the concentrating action of the gallbladder. Cholecystography in children has also been greatly aided by the drug. The most important attribute of intravenous cholecystography, in our opinion, is its aid in evaluating the common duct before operation. It is our practice to perform this evaluation on any patient who, before undergoing cholecystectomy, presents some evidence or suggestion of the possibility of common duct stones.

We recently evaluated 72 consecutive examinations of this nature. Forty-six patients were considered to have a normal common duct, 9 had common ducts which were dilated without direct evidence of stones, 16 common ducts were considered to show choledocholithiasis, and 1 had a cholecystoenteric fistula. Of the 46 patients with a normal intravenous cholangiogram, indications for choledochotomy were present in only 17 before operation. In 2 of these patients the ducts were found to be dilated at operation but contained no stone and stones were found on exploration in 3. Thus, of the 46 patients with a normal preoperative cholangiogram, 41 were found to have a normal common duct at operation. Of the 9 patients with the diagnosis of a dilated common duct, only 1 duct was found normal at operation. The 16 cholangiograms indicating stones were found to be correct in all but 1 instance. The total accuracy of intravenous cholangiography in this series was thus found to be about 90 per cent.

Surgery for Calculous Biliary Tract Disease

Cholecystostomy vs. Cholecystectomy.—The primary operations for calculous biliary tract disease are cholecystostomy and cholecystectomy, with or without common duct exploration. A cholecystectomy should be carried out whenever possible but there are certain indications for the less radical temporizing procedure of cholecystostomy. These indications for the most part pertain to acute cholecystitis. We prefer to perform a cholecystostomy in acute cholecystitis whenever the condition of the patient is too poor to withstand cholecystectomy. This is a decision which should be made before the operation is embarked on so that the procedure may be carried out with the least anesthesia and through as small an incision as possible; local anesthesia often is sufficient. Two conditions warrant a change to cholecystostomy during an operation planned as a cholecystectomy: when anatomic relationships are obscured owing to inflammation and when perforation with local and spreading peritonitis have occurred.

Exploration of Common Duct.—The common duct should always be explored when the following conditions are present: (1) palpable stones within the common duct, (2) dilatation of the common duct, (3) thickened wall of the common duct, and (4) obstructive jaundice. There are other conditions in which the common duct probably should be explored but which allow some latitude: (1) history of jaundice, (2) small stones in gallbladder, (3) cholelithiasis in patients over the age of sixty-five, and (4) enlargement or induration of the head of the pancreas.

There are various estimates on how often the common duct should be explored and on the incidence of stones recovered from common duct exploration. There is no doubt that the common duct should not be explored indiscriminately because mortality, morbidity, and hospital stay increase when this is done. On the other hand, it is also distressing to have a patient return with jaundice from an overlooked common duct stone. We are not certain how many common duct stones discovered after cholecystectomy are the result of insufficient common duct exploration or the lack of it or are formed subsequently. We suspect that the origin of most common duct stones is the gallbladder. We believe that intravenous cholangiography before cholecystectomy, as stated previously, could materially lessen the incidence of these retained stones, because beforehand knowledge of their presence will lead to a more precise and complete exploration at the time of surgery.

Mortality.—Although the figures are difficult to obtain, it is estimated from various sources that at least 15 per cent of persons with symptomatic gallstone disease died as a result of it before the advent of biliary tract surgery, usually after many years of suffering. We already have declared our belief that early eradication of calculous biliary tract disease in the form of cholecystectomy may prevent the complications of the disease and arrest an otherwise progressive disability. Our experience leads us to believe that cholecystectomy, especially when the disease is confined to the gallbladder, is a very gratifying procedure. When done with care by an experienced surgeon, it is associated with little risk. The mortality for cholecystectomy for chronic cholecystitis and cholelithiasis in over 3,000 cases of all age groups has been about 0.6 per cent. As the biliary tract disease progresses and common duct stones and liver damage are associated with it, the mortality rises. The addition of common duct exploration increases the mortality to 3.8 per cent, mainly in those over fifty years of age.

Age per se does not influence the ability to withstand operation. On the other hand, chronologic age and physiologic age often concur, and it therefore is imperative to bear this in mind when evaluating elderly patients. An analysis of 450 geriatric cases undergoing biliary tract surgery in this hospital revealed that this group can withstand elective surgery remarkably well and that mortality among patients over sixty-five as compared to that of those between fifty and sixty-five does not show marked difference. On the other hand, emergency operations are relatively poorly tolerated by elderly individuals. Both mortality and morbidity rates are strikingly higher for geriatric patients than for younger patients.[1,4]

Associated diseases, particularly of the chronic degenerative type, of course, are more common among the old and influence the outcome of surgery. Among our 450 patients there were only 153 who had no major degenerative disease process; this did not include some degree of arteriosclerosis, osteoarthritis, diverticulosis, and benign prostate hypertrophy. The most common major disease was hypertensive cardiovascular disease, inflicting 172 patients, and the next most common one was arteriosclerotic heart disease, inflicting 97 patients. Mortality was highest among those with advanced cirrhosis of the liver or chronic renal disease (25 per cent in each group). The mortality for the hypertensive group was 7.5 per cent and for the group with arteriosclerotic heart disease 8.2 per cent. The mortality in the group with no major disease was lowest (2.6 per cent), as may be expected.

These figures help emphasize the importance of surgical eradication of biliary tract disease in the young. However, they also indicate that elective surgery can yield good results in the aged, who with careful preparation withstand these operative procedures remarkably well.

Malignant Disease of the Biliary Tract

Carcinoma of the Gallbladder.—Carcinoma of the gallbladder is the most frequently encountered malignant tumor of the biliary tract Its etiology is not understood any better than that of other malignant tumors, but gallstones undoubtedly play an important role. In over 90 per cent of our cases of carcinoma of the gallbladder in women there were concomitant stones[5]; the incidence of stones in male cases has been lower, over 60 per cent, but still significant. Cancer rarely is seen in the gallbladder until after the age of fifty and mainly in the seventh decade. The signs and symptoms of early carcinoma of the gallbladder are the same as those of cholelithiasis As the tumor grows, unmistakable signs of a palpable mass and jaundice appear, but by this time it is usually too late to eradicate the tumor.

Jaundice or a palpable tumor, however, should not be considered proof of inoperability since we have observed cases in which the jaundice was caused by common duct stones and the tumor was resectable. At present, the success of surgical therapy has been confined to cases discovered accidentally during routine cholecystectomy. We have 3 such patients who are alive over seven years after cholecystectomy. The only profitable way to attack carcinoma of the gallbladder at present is by early cholecystectomy for calculous disease. In its later stages the tumor spreads to the right lobe of the liver, where initial evidence of recurrence usually is found. This fact has led to the adoption of a right hepatic lobectomy as a primary and secondary procedure for this disease. It is a formidable but anatomically quite feasible procedure; it still has to undergo the test of time.

CARCINOMA OF THE BILE DUCTS.—Carcinoma of the bile ducts is more common in men than in women and is less often associated with gallstones than when the tumor is in the gallbladder. One of the usual symptoms is jaundice, although 2 patients observed by us never became jaundiced. Patients die from the effects of obstructive jaundice, but half of the patients in a series of 31 were not found to have metastases at operation or autopsy. Pain also is a common symptom, usually similar to that of the colic of gallstones. These rumors usually are small and associated with a remarkable degree of desmoplasia, or fibrous reaction. The only laboratory finding which is consistently abnormal is an elevated alkaline phosphatase; it rises early, before jaundice is apparent.[6]

The proximity of the portal vein and hepatic artery makes resection difficult. Removal was possible in only 4 of our 31 cases. Occasionally these tumors arise in the intrahepatic branches of the biliary ducts.[7] In this location they are difficult to find, but since they are slow-growing, palliative procedures are worth while.

CARCINOMA OF THE AMPULLA OF VATER.—Carcinomas originating in the ampullary region are often difficult to differentiate grossly and histologically from the same tumors originating in the lower end of the common duct, duodenum, or head of the pancreas. The distinction is not too important except that the prognosis for pancreatic carcinoma is worse than for the other three kinds. This tumor is twice as common in men as in women.

Resection should be carried out whenever possible. We have encountered over 30 ampullary carcinomas in our hospital. Of these patients, 20 underwent radical pancreaticoduodenectomy, of which 25 per cent were alive and well five years after operation. The mortality from radical operations in this region is formidable but the results in those who survive, which are better than for any other biliary tract cancers, certainly justify the effort. Other hospitals have reported even better survival rates in this group of patients; there is one report of a remarkably low operative mortality of 4.2 per cent in 24 resections.[8]

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Conducted by PATRICK J. FITZGERALD, M.D. FEBRUARY 27, 1958

Discussed by E. JEFFERSON BROWDER, M.D.

Case History

A thirty-seven-year-old Negro male house painter had been in his usual state of health until April, 1956, when he experienced a transient blurring of vision of the right eye. There were no further complaints until April, 1957, when he again had blurring of vision of the right eye. This continued and one day later was accompanied by sharp pain behind the right eye. Blurred vision in the right eye and intermittent pain behind this eye persisted. One week later there was drooping of the upper right eyelid, failure of the right eye to move, and diplopia. Shortly afterwards this was followed by unsteadiness of gait and rapidly progressive weakness of the extremities of the left side. For the three weeks these complaints persisted there was low-grade fever.

On April 11, 1957, he was admitted to Mount Sinai Hospital, New York City. Neurologic examination revealed diplopia on right lateral gaze with limitation of upward, downward, and inward movements of the right optic bulb; nystagmus on both right and left lateral gaze; absence of sweating over the right side of the face; central left facial weakness: deviation of the tongue to the left on protrusion; left hemiparesis, although the deep tendon reflexes were equally active throughout; and dystaxia in the upper left and lower extremities. No alteration of sensation was demonstrable.

Laboratory findings relating to the urine; hemoglobin; serologic reactions; blood sugar, urea nitrogen, calcium, and phosphorus; and serum albumin and globulin were normal. The white cell count of the peripheral blood was 12,000 with a normal differential. Blood culture, febrile agglutinins, and heterophil agglutinations were normal. A tuberculin skin test result was interpreted as negative. X-ray films of the skull, thorax, and sinuses disclosed no abnormalities. Vertebral and right carotid angiograms were interpreted as normal. Pneumoencephalograms were normal except for an equivocal shift of the third ventricle from right to left. Repeated spinal punctures showed normal pressure of the cerebrospinal fluid, with the white cell count varying between 27 and 300—usually greater than 50—and lymphocytes predominating. The total protein fluctuated between 40 and 120 mg. per 100 ml. Cultures of the spinal fluid for tuberculosis and fungi were repeatedly negative.

During the first two weeks of hospitalization there was slight improvement. Therapy consisted of streptomycin and parasalicylic acid (PAS). During the third week of hospitalization the left hemiparesis advanced to hemiplegia, and lack of sweating over the entire right side of the body was present. Further antituberculosis therapy, isoniazid, was initiated at this time. However, the low-grade fever continued. Cold-water irrigation of the external auditory canals produced normal responses. The visual fields were normal except for suggestive homonymous defeat of the left inferior fields on testing of central vision. A clivus myelogram revealed a filling defect of the right "angle," a finding of questionable significance. Two electroencephalographic examinations showed a focus of slow activity over the right parietal-occipital region. Pharyngeal biopsy showed no tumor. The marked left hemiparesis persisted. On June 7, 1957, the patient was discharged on Achromycin and isoniazid.

At home the low-grade fever continued, but no other changes were noticed until May 31, 1957, when lethargy and a return of inability to move the left eye developed.

On admission to Kings County Hospital on July 3, 1957, physical examination revealed a well-developed, well-nourished Negro male who was alert, cooperative, and well oriented. His temperature was 101.2 F., pulse 90, respirations 20, and blood pressure 130/80. There was moderate prominence of the eyes bilaterally.

Neurologic examination showed no palpable abnormalities of the skull or spine. There was mild pallor in the optic disks. The right pupil was larger than the left, and both pupils were irregular and did not react to light. Complete bilateral ophthalmoplegia was present except for slight external rotation of the right eye. Left facial paresis was also present. The gag reflex was absent on the left and suppressed on the right side. The tongue deviated to the left. There was left spastic hemiplegia. The tendon reflexes were more active on the left than on the right side. The left Babinski toe sign and the left Hoffman finger sign were demonstrable. Abdominal and cremasteric reflexes were absent on the left side. The finger-to-nose test was interpreted as showing impairment on the right side. Sensation was intact throughout. Sweating was diminished over the right side of the body.

Laboratory examination showed a hemoglobin of 11.25 Gm. per 100 ml. and a white cell count of 7,200 and 12,300. The urine findings were normal, as were the serologic ones and those for blood sugar and urea nitrogen. Repeated gastric washings for tubercle bacilli gave negative results. Repeated cultures of the spinal fluid for fungi were negative. Spinal puncture on admission showed faintly xanthochromic fluid with a white cell count of 80 (lymphocytes) and a total protein of 150 mg. per 100 ml.

Intravenous penicillin in large doses and chloramphenicol (Chloromycetin) were started immediately, and by the seventh hospital day the left pupil reacted to light and there were movements, albeit weak, of the left optic bulb on medial and lateral gaze. His temperature fluctuated between 99 and 100 F. The tuberculin skin test results were positive in both first and second strengths. Spinal puncture on July 22 revealed 5 lymphocytes, 5 red blood cells, and 1 polymorphonuclear leukocyte per cu. mm., with a total protein of 82 mg. per 100 ml. On August 18, 1957, the neurologic consultant considered the symptoms and signs to represent a tumor of the posterior cranial fossa, and he advised craniotomy. Examination at this time revealed the pupils to be equal and reactive, with residual weakness of the right lateral rectus muscle and absence of upward gaze. The left facial weakness, deviation of the tongue to the left on protrusion, and left spastic hemiplegia persisted.

On August 20 the triple antituberculosis therapy was discontinued, and on August 30 the penicillin and chloramphenicol were discontinued. There was no further change until September 3, when the temperature rose rapidly to 103.2 F. Spinal puncture revealed no cells and a protein of 64 mg. per 100 ml. The white cell count of the peripheral blood was 16,000, and the lead content of both the blood and urine was within normal limits.

On September 8 the left facial weakness became more prominent, and two days later there was a sudden onset of marked dysarthria which progressed within several hours to anarthria and severe dysphagia. The pupils were equal and reacted to light, and the corneas were equal. The jaw deviated to the left. Bilateral lateral rectus palsy was evident. The palate did not elevate, and the gag reflex was absent bilaterally. The tongue protruded with difficulty. The ocular changes progressed to total external ophthalmoplegia of the right eye and external ophthalmoplegia of the left one except for slight internal motion of the bulb.

Intravenous penicillin therapy was reinstituted. The patient remained alert and cooperative. Within three days the ability to speak and swallow returned, and the temperature, which had varied from 99 to 103 F., returned to 99 to 100 F. Within six days of onset of this exacerbation the ocular changes subsided, leaving left lateral rectus muscle weakness and limitation of upward gaze bilaterally. The left spastic hemiplegia remained unchanged. Intravenous penicillin was discontinued. Oral chloramphenicol and penicillin (intramuscular) were reinstituted. On September 24 bilateral ptosis and severe weakness of the lateral rectus muscles bilaterally developed within twelve hours. The temperature was 102 F.

The triple antituberculosis therapy was reinstituted. During the next month there was no essential change. Penicillin, chloramphenicol, and the triple therapy were all continued. Re-examination on October 28 revealed distinct bitemporal pallor of the optic disks. The pupils were small and reacted to light and accommodation. Paralysis of upward gaze (bilateral) and left lateral rectus muscle paresis persisted. For the first time there was horizontal nystagmus on right lateral gaze and rotatory nystagmus on attempted upward gaze. The left hemiplegia persisted unchanged.

There was another exacerbation of symptoms and abnormal signs on November 9, the third following entry to Kings County Hospital and in the main similar to the previous ones. This one lasted three weeks, after which time extraocular palsies and left hemiplegia continued. The fourth exacerbation began on December 30 and was in most respects the same as the second. Stupor, bilateral ophthalmoplegia, anarthria, dysphagia, and left hemiplegia continued. Despite all therapeutic measures, the patient died on January 14, 1958.

Discussion

E. Jefferson Browder, M.D.: It becomes evident from review of the case history that this patient died of a lesion of the central nervous system, and, so far as I can estimate, there is no evidence that the spinal cord as such or the peripheral nerves were involved anatomically. Diminution of vision in one eye, which recurred after a period of some months, suggests a lesion within the optic mechanism itself—the optic nerve, optic pathway, or, more likely, extraocular circuits. Patients are prone to interpret slight double vision as blurred vision in one eye. Shortly after the recurrence of the alleged partial or complete loss of vision of the right eye, there was pain behind this eye and shortly thereafter ptosis of the upper right lid. This combination suggests the possibility of a lesion in the region of the apex of the right orbit, specifically a lesion implicating the intracranial portion of the internal carotid artery. Very commonly one encounters lesions in this region which are manifested by pain in the corresponding eye with involvement of the nerve supply to the extraocular muscles.

Shortly thereafter, however, something else ensued which takes the lesion out of this anatomic position: left hemiparesis and absence of sweating of the right side of the face. These occurrences may indicate involvement of structures in the posterior diencephalic or mesencephalic region. As you recall, the fiber pathways subserving the sweat glands are both crossed and uncrossed, in the main uncrossed. In the case under discussion they were apparently implicated in their passage through the right diencephalon.

The patient's problem was reviewed at Mount Sinai Hospital prior to his entry here. At that time there was a disturbance in function of the extraocular apparatus of the right orbit, left hemiparesis, and absence of sweating on the right side of the face and neck. Accessory diagnostic procedures were carried out at that hospital; these included vertebral and carotid angiography, clivus myelography, and pneumonencephalography. There was a finding that was not stressed at that time: the third ventricle as revealed in the pneumoencephalogram was possibly slightly deviated from right to left and the clivus myelogram indicated a possible abnormality high in the cerebellopontine angle. The cell count of the cerebrospinal fluid at that time was increased, and the total protein fluctuated between 40 and 120 mg. per 100 ml. Cultures of the fluid were negative. The abnormal findings in the cerebrospinal fluid suggested tuberculosis or possible fungus invasion of the leptomeninges. It is to be remembered that a tumor bordering on or invading the ependymal lining of the ventricular system may produce striking pleocytosis. One patient in our brain tumor series had 30,000 cells in the cerebrospinal fluid resulting from a neoplasm which impinged on the third ventricular ependyma. One, therefore, would not only think of an inflammatory lesion as the causative factor but also of a neoplastic process or disseminated encephalomyelitis. After a period he improved somewhat and was discharged. At home there was an alleged low-grade fever accompanied by persistent left hemiparesis and ocular disturbances, particularly in the right eye.

After being at home for a while, he was admitted to Kings County Hospital. On entry there was mild fever with disturbances in the extraocular mechanism bilaterally, left spastic hemiplegia, and complete absence of sweating on the entire right side. One would deduce that the lesion was in the upper hindbrain-midbrain zone, possibly with some involvement of the posterior diencephalic region. It is believed that the anterior diencephalic region is concerned with the dissipation of heat.

During his stay here there were four exacerbations of symptoms, each characterized by fever, disturbances in extraocular movements, left hemiplegia, and, on two occasions, disturbances in swallowing and speech. He recovered temporarily from each of these episodes, except for the last one, which terminated in death. With each exacerbation there was an increase in the cell content of the cerebrospinal fluid. The chlorides of the fluid were constantly between 114 and 127 mg. per 100 ml., and the total protein ranged between 58 and 150 mg. per 100 ml. We are therefore dealing with a lesion of the right brain stem, namely the midbrain-upper hindbrain zone, and possible involvement of the posterior diencephalon.

The cerebrospinal fluid findings suggest the possibility of a low-grade inflammatory disease of the brain and leptomeninges, as does the recurring febrile state. One would also consider as the causative factor an angioblastic malformation with recurring intrinsic thromboses. The picture is not that of multiple sclerosis, although this possibility should be mentioned. The evidence does not support the notion that the lesion is tuberculous, although an intrinsic tuberculoma in this area of the midbrain is possible. Another possibility is an encephalomyelitic process created by some extracranial factor.

I cannot believe that the lesion is a tumor. There never was evidence of any block of the cerebrospinal fluid pathways. The optic fundi remained clear throughout the illness. The foreign material in the subarachnoid space on the roentgenogram is the result of the introduction of a contrast medium for a clivus myelogram. Once in the cerebral subarachnoid space, it stays there. To say the least, it is highly undesirable. Our efforts were directed to determine if a tumor was present in the posterior fossa. Dr. Gannon, would you comment on the film?

WILLIAM GANNON, M.D.: A small amount of air, approximately 10 ml., was injected in an attempt to visualize the fourth ventricle. There is a small amount of air in the cisterna magna and a well-delineated fourth ventricle; the aqueduct and third ventricle are obscured by the previously introduced contrast medium. A small amount of air is seen in the lateral ventricles. As far as I can determine, these studies yielded normal findings.

DR. BROWDER: In conclusion, I would say that I do not think that the lesion is a tumor. Nor do I believe that it is an intrinsic tuberculoma. The features are not quite those of multiple sclerosis, although that is a possibility. Disseminated encephalomyelitis is another possibility. However, the most likely disturbance with a fluctuating type of symptomatology would be a lesion related to the vascular system. It would have to be intrinsic. The only entity that I can think of for this mesencephalic-upper hindbrain region would be angioblastic malformation with internal recurring thrombotic lesions.

PATRICK J. FITZGERALD, M.D.: One so often hears an indecisive, wandering clinical discussion that a neat, definitive presentation is a surprise.

WILLIAM DOCK, M.D.: You almost mentioned cysticercus, a lesion halfway between a tumor and an infection. If the patient had been in Japan, you may add Paragonimus westermani, which produces pseudoneoplasms. I mention this just to add to the difficulties. There is no specific therapy for these conditions, and, as far as I know, they cannot be successfully removed surgically. In many cases there are severe residua after exploration and removal of these large parasitic cysts.

DR. BROWDER: Dr. Rabiner suggested that the posterior fossa be explored. That is what prompted the repeat aerogram, since we are reluctant to subject a patient to a major surgical procedure unless we have potent evidence to warrant it. We have had reports of cysticercus cysts which have been completely resected at this institution; I can recall 3 cases offhand that were still going strong many years postoperatively.

DR. DOCK: Not done at the base of the brain, I trust? Weren't the resected lesions on the surface of the cerebral hemispheres?

DR. BROWDER: Those at the base are all dead. We had 2 cases of schistosomiasis from the Leyte invasion. If the lesion produced by this parasite is in a favorable position to the cortex or subcortex, it may be extirpated successfully. Unfortunately there was substantial hemiparesis following removal in both cases.

DR. FITZGERALD: A student's diagnosis was meningosyphilis. Would you consider it in the differential diagnosis?

DR. DOCK: It is a reasonable diagnosis, as suggested by the onset of the disease. With no positive serologic evidence of it, however, one is hesitant since about 98 per cent of such patients have a positive spinal fluid reaction as well as positive serologic findings. Also, this patient had prolonged penicillin therapy which was not effective. Although there are gummas which do not resolve following penicillin therapy, a meningovascular disease of this sort should have been brought under control by it.

DR. FITZGERALD: What about a tuberculoma?

DR. DOCK: The patient's findings fit a tuberculoma. He had a positive skin test result, and his findings, in general, could have been due to a tuberculoma unassociated with tuberculous meningitis. I think that Dr. Browder mentioned that.

STUDENT: Can toxoplasmosis cause a picture like this?

DR. DOCK: Toxoplasmosis sometimes does diffuse cerebral damage in early life,

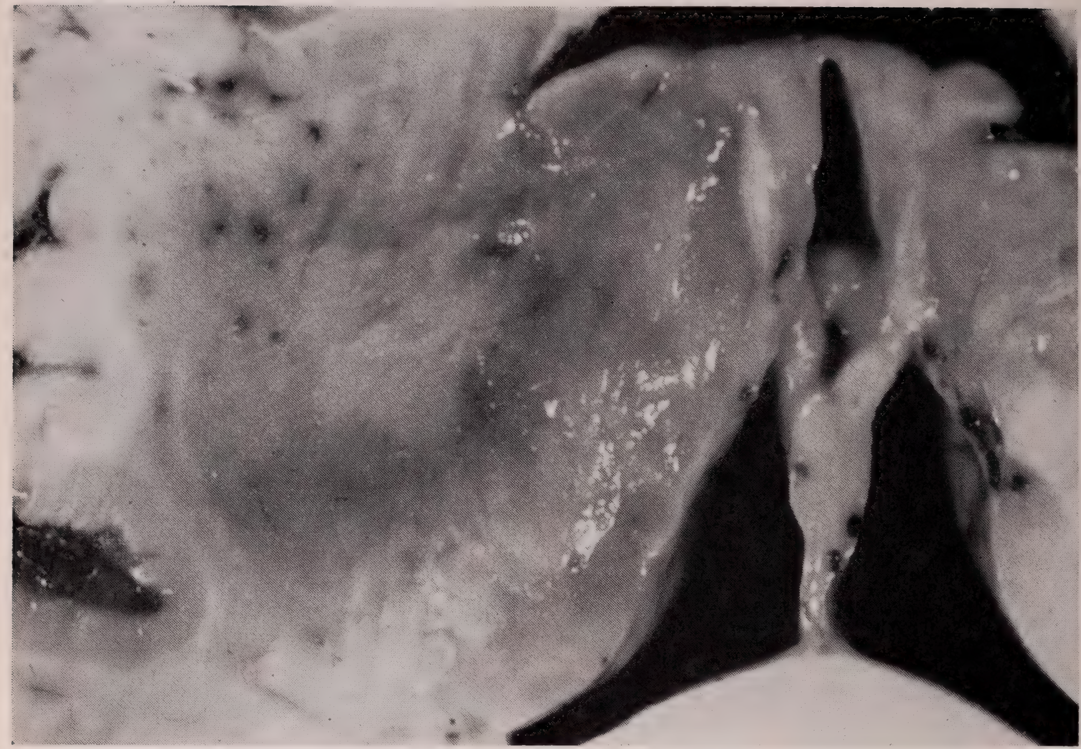

FIG. 1. Cross section through cerebral hemispheres showing swelling, discoloration, and softening in internal capsule and adjacent structures.

but in a man of his age with a focal lesion it would be quite extraordinary. I do not know whether it is possible. Do you know, Dr. Browder, whether anyone has reported a brain tumor stimulated by toxoplasmosis in an adult?

DR. BROWDER: Not to my knowledge.

DR. FITZGERALD: The student diagnoses were split between meningovascular syphilis, a tuberculoma, and tuberculous meningitis.

Diagnoses

Clinical.—(*1*) *Tuberculosis;* (*2*) *tumor of posterior cranial fossa.*

Dr. Browder.—*Angioblastic malformation with internal recurring thrombotic lesions.*

Anatomic.—*Acute disseminated encephalomyelitis.*

Pathologic Report

STANLEY M. ARONSON, M.D.: Some of the doubts and hesitancies expressed by Dr. Browder persist in the morphologic diagnosis. Autopsy examination of the visceral organs showed no changes of any importance. This negative feature will take on significance in an ultimate evaluation of the case. Specifically, the liver and spleen were normal. The brain before dissection was essentially unremarkable. The leptomeninges were relatively clear and transparent. There was no evidence of any neoplastic mass protruding from the substance of the brain or located in any extramedullary position. Similarly, the vessels at the base of the brain were of normal distribution with no evidence of any appreciable atherosclerosis. The supratentorial tissues exhibited no definitive gross changes other than what appeared to be a slight accentuation of the perivascular tissues within the cerebral white matter, particularly the tissues around the deep-collection veins.

Within the basal ganglia the first truly definitive change is seen, representing a coalescence of lesions. The entire structure of this area is grossly distorted and destroyed. There are no areas of cystic degeneration, but quite clearly the internal capsule is obscured. Superimposed on this there is a distinct yellowish discoloration throughout the involved tissues. In some places the discoloration is well circumscribed; in other areas it tends to diffuse throughout the obviously implicated and partially destroyed tissues (Fig. 1). Within the midbrain, particularly on the right, a comparable area of diffuse tissue degeneration is seen, again in association with a yellowish discoloration; to a lesser degree there are similar loci on the contralateral side of the mesencephalon. These changes, to a variable degree, continue in the pons, medulla, and, minimally, spinal cord.

If some of these changes are traced with myelin stains, I think that the topographic aspects of the disease emerge more clearly. The internal capsule is largely demyelinated. In addition, there are small, punctate, well-circumscribed areas of demarcated perivascular demyelination. Within the midbrain, in addition to the coalescent zone of destruction, small focal zones of demyelination are again visible, perhaps representative of the fundamental lesion of this disease.

Within the spinal cord, in addition to scattered, focal areas of demyelination, severe secondary atrophy of the corticospinal tracts was observed. The lesion appeared to be confined to the perivenous white matter, predominately in those topographic zones previously mentioned, but to a lesser degree at all levels of the neuraxis. In close association with this perivenous inflammatory lesion were occasional areas of demyelination which were becoming coalescent. The tissue destruction was also associated with destruction of the axon, particularly in the immediate vicinity of the central veins. An occasional pronounced perivenous lymphocytic infiltration was also evident. There was one other conspicuous cell present in very large numbers throughout the central nervous system but particularly around these veins, the xanthoma cell. Such cells generally are polyhedral with abundant granular cytoplasm.

The condition closely resembles a syndrome first described approximately twenty years ago in Europe, by Feigin,[1] and designated as cerebral cholesterosis. Schneider[2] referred to this entity as perivascular lipidosis; he qualified the word "lipidosis" so that it should not imply relation to any of the true dyscrasias of lipoid metabolism, such as Niemann-Pick disease. Neither of these authors attempted to explain the nature of these lesions.

The abundant neutral lipid content of these perivascular and interstitial xanthoma cells was quite apparent by means of appropriate stains. The Schultz reaction for cholesterol was markedly positive. Dr. Memoir Marsh of the Institute of Pathology of this hospital was kind enough to do some tissue analyses for us. It is quite apparent that the lipid cholesterol and cholesterol ester content in this case differs in no significant manner from that of normal control tissues. Such data indicate that this case is not an instance of true cholesterosis.

It is not uncommon to observe xanthomatous cells as a transient feature of a central nervous system disease of varying etiology. Such cells are also found in bone tumors, such as fibrous dysplasia. They are noted even in certain intracerebral neoplasms, such as cerebellar hemangioblastoma. The presence of xanthoma cells per se does not indicate the primacy of any metabolic disorder.[3]

If we conclude that this case is an instance of perivascular histiocytosis-x or cholesterosis, we merely raise the issue to a higher degree of semantic obscurity. I would like to refer to a few of our previous cases which showed identical pathologic changes and perhaps extrapolate to the case under discussion. In some of the cases showing this particular pattern (xanthomatous infiltration and perivenous demyelination at all levels of the neuraxis) a history of a previous exanthematous infection, such as measles, was recorded. Such cases would fulfill the qualifications of a disease generally referred to as acute disseminated encephalomyelitis, a form of a demyelinating allergy disorder. We have no such preliminary history in the present case. But the peculiar and singular localization of the lesion around the veins at all levels and the lesion's close morphologic resemblance to that of previous cases in which there was such a history justify the suggestion that this may be a diffuse hypersensitivity phenomenon within the central nervous system and that the xanthomatous component merely represents a transient phase of myelin degeneration.

Dr. Fitzgerald: I think that only a few cases of this entity are recorded.

Dr. Browder: I am surprised to see the lesion so far rostral as depicted. I would like to ask Dr. Aronson if he studied the anterior diencephalic region? I am thinking primarily of the correlation between the clinical features, especially the febrile states, and the site of the pathologic lesion.

Dr. Aronson: There were lesions in the diencephalic areas.

Dr. Dock: It is worth emphasizing that although this disease is diffuse, it may produce highly unilateral symptomatology, as in poliomyelitis. This is one of the awkward aspects of these diffuse diseases. The same holds true for multiple sclerosis, even though the disease may seem to be unilateral for a very long while. Isn't it true that a parasagittal lesion can produce symptoms by pressure on the contralateral nuclei?

Dr. Browder: I would say that there was bilateral implication at the mesencephalic level.

Dr. Dock: Infratentorial and bilateral?

Dr. Browder: Yes.

Harold A. Lyons, M.D.: Was it well established that exophthalmos was actually present in this patient? It was noted on his first hospital admission.

Dr. Aronson: It was minimal.

Dr. Fitzgerald: Dr. Aronson, would you care to comment on what percentage of these cases have the same clinical pattern. There may be an absence of antecedent exanthemas, may there not?

Dr. Aronson: I know of a few cases in the New York City area in the last three or four years, and many of these had a history of exanthematous infection. In the previous reports of cases from Europe there was no mention of any preceding history relative to the present illness.

Dr. Dock: In toxoplasma is there ever collateral cholesterosis?

Dr. Aronson: Yes. One can see it even in a lesion as mundane as encephalomalacia. One occasionally finds localized collections of cholesterol in the lesions of toxoplasmosis, interspersed among the mesodermal components as well as in the zones of calcification and glial encapsulation.

Dr. Dock: In a person with toxoplasmosis with long-standing symptoms, would there be demonstrable chalk histologically?

Dr. Aronson: Yes, in addition to organisms.

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1. Feigin, I.: Xanthomatosis of the nervous system. J. Neuropath. & Exper. Neurol. **15**: 400 (Oct.) 1956.
2. Schneider, C.: Uber eine eigenartige Hirnerkrankung (vaskuläre Lipoidose), Allg. Ztschr. Psychiat. **104**: 144 (1936).
3. Thannhauser, S.: Metabolic and Toxic Diseases of the Nervous System, American Research in Nervous and Mental Disease, Baltimore, Williams & Wilkins Co., 1953, ch. XII.

Did you know—that goiter trouble affected about 40 per cent of school-age children in some midwestern areas in the days before iodized salt was introduced? The goiter rates in the same regions have been brought well below 2 per cent in the last few years, thanks to the iodine supplement to the local diet in the form of iodized salt.—*Nutrition Foundation*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Oxygen-Induced Dyspnea

When a patient is brought to the recovery room immediately after surgery, certain orders sometimes are left to be carried out by the nursing team in the recovery room. Oxygen therapy, either by mask or nasopharyngeal insufflation, occasionally is deemed desirable, and this simple maneuver is left to be carried out by the recovery room nursing personnel, who have been shown how to accomplish it. Although oxygen inhalation is good therapy for respiratory deficiency of any kind, it may be accompanied by dangerous sequelae if the oxygen is administered incorrectly, as it was in the following case.

Case Report

A fifty-year-old man who had undergone repair of an esophageal hiatus hernia by means of a transthoracic approach was brought to the recovery room in good condition. His arterial blood pressure was 140 mm. Hg systolic and 90 diastolic, pulse rate 70 per minute, and respirations of good volume at a rate of 22 per minute. An underwater tube was connected to his chest wound, and a Levin tube was inserted through the nasopharynx and esophagus into the stomach. He already had regained consciousness when he was brought to the recovery room. Immediate postoperative orders consisted of intravenous fluid therapy, a narcotic for relief of pain, and oxygen to be administered by nasopharyngeal insufflation.

About three minutes after the nasal oxygen therapy had been started, the patient complained of pain in his chest and abdomen. The surgeon, just completing the writing of the postoperative orders, came to the patient and immediately noticed the error that had been committed: The oxygen supply, flowing at a rate of 8 L.

Discussed at a conference held at Bellevue Hospital, New York City, January 4, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

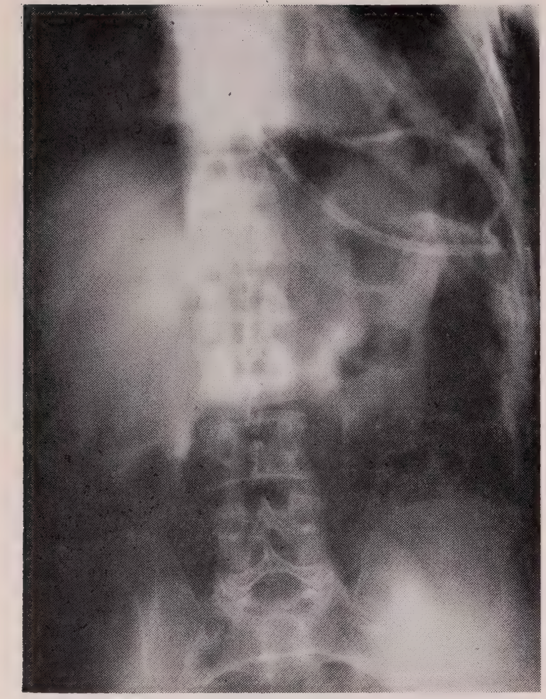

FIG. 1. Roentgenogram taken one hour after oxygen-administration error was discovered showing air between diaphragm and liver, distended intestines (down into pelvis), and subcutaneous emphysema.

per minute, had been connected to the free end of the Levin tube. The Levin tube immediately was disconnected from the oxygen supply and the air and bloody fluid were suctioned off. The bulging abdomen was seen to deflate, but crepitations were noted over the abdomen and continuing down to the groin. Gastric irrigation and suction were continued for several hours.

Serial roentgenograms of the chest and abdomen were taken for several days. An early film, taken one hour after discovery of the error, shows air between the diaphragm and liver, distended intestines (down into the pelvis), and subcutaneous emphysema (Fig. 1). A film taken one day postoperatively still shows air between the diaphragm and liver, as well between the diaphragm and spleen, and subcutaneous emphysema (Fig. 2). These signs gradually subsided, until ten days later the roentgenographic picture was normal (Fig. 3).

Comment

Vigilance over a patient who has been anesthetized and operated on must continue

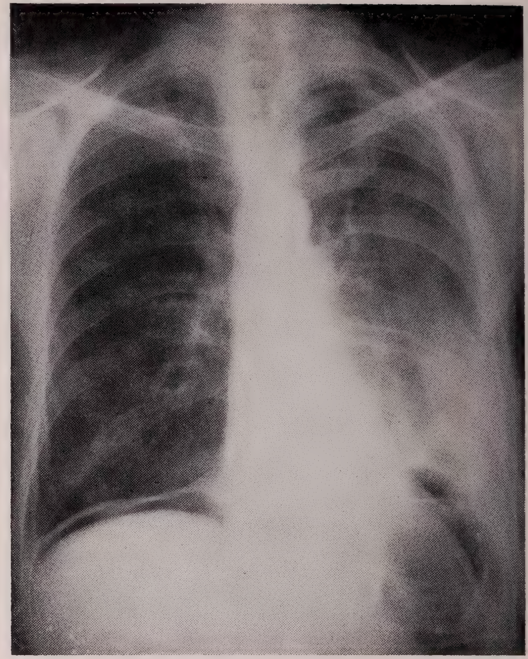

FIG. 2. Roentgenogram taken one day postoperatively showing continued presence of air between diaphragm and liver, as well as between diaphragm and spleen, and subcutaneous emphysema.

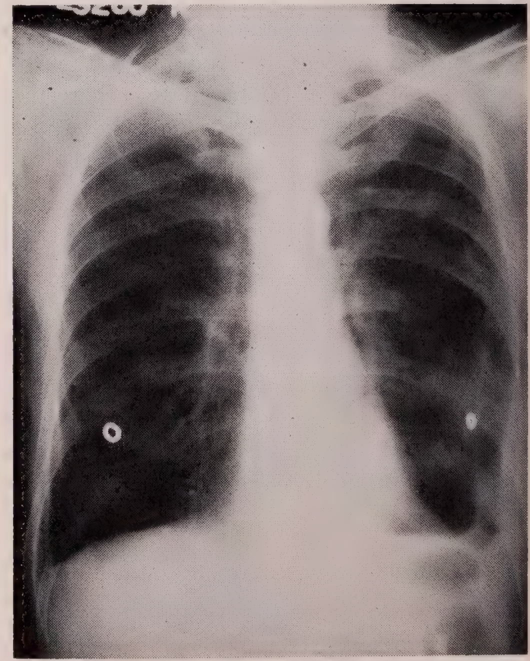

FIG. 3. Roentgenogram taken ten days postoperatively showing normal status in regard to presence of air.

throughout the recovery room period. In the present instance a middle-aged man who had undergone a three-and-a-half-hour intrathoracic procedure for repair of an esophageal hiatus hernia was impaired by a well-meaning but ignorant nurse, who connected the source of oxygen flow to a nasogastric tube instead of to a nasopharyngeal tube. The prompt treatment that was instituted prevented dangerous complications.

It may be well, in this connection, to bear in mind that a similar error may be possible during the administration of anesthesia with an ordinary face mask (without an endotracheal airway). Gas pressure transmitted to a patient either by manual compression of the breathing bag or by excessive flow of gas may so inflate the patient's stomach as to result in acute gastric dilatation, with possible ensuing cardiovascular collapse. Treatment, both prophylactic and therapeutic, of such a condition is simple. To avoid such an error, excessive pressure should not be applied to the breathing bag. When artificial, or controlled, respiration is necessary, it is preferable to accomplish it by means of an endotracheal tube. In this way part of the breathing mixture will not be forced into the stomach during each inspiratory flow. If induced gastric dilatation should occur, it can be corrected quickly by inserting a nasogastric tube and then emptying the stomach contents, both by pressing on the abdomen and by applying suction to the tube.

(Number eight-five in a series of Clinical Anesthesia Conferences)

Medical Society of the State of New York

154th Annual Convention

"HORIZONS OF CLINICAL MEDICINE"

May 9 to 13, 1960

Statler Hilton Hotel **New York City**

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Vitamin, Sedative, Aspirin, and Nonmedicinal Poisonings

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Vitamin Preparation	9 years	Female

A nine-year-old girl was being treated by her mother with a proprietary enteric-coated tablet. The child had been given 3 tablets one day prior to the visit to the doctor's office and 1 on the day of the visit. Medical assistance was solicited from the physician because of the vomiting and generalized erythema that ensued.

The physician called the Center for an explanation of the erythema. The Center consulted the manufacturer of the product but was unable to obtain histories of similar reactions from ingestion of this preparation. When the physician was thus informed, he related that the mother had also given the child a liquid vitamin preparation which contained 20 mg. of niacin per teaspoonful. A tablespoonful had been given at a time. The unexplained redness was accounted for as a manifestation of an overdose of nicotinic acid.

Similar confusing situations frequently come to the attention of the Center.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Desperidine	1 year	Male

The military installations in this geographic area have been instructed by their respective commands to utilize the New York City Poison Control Center for accidental ingestions associated with chemical poisonings.

This patient swallowed an unknown number of deserpidine tablets two hours prior to admission to the Steward Air Force Base Dispensary, where a gastric lavage was done. After the lavage he was referred to West Point Hospital. Past history and family history were entirely noncontributory. Physical examination on admission revealed an irritable, slightly lethargic male with generalized redness and vasodilation. The pupils were equal and reacted to light. The remainder of the findings on physical examination were within normal limits. Laboratory studies gave essentially negative findings except for mild secondary anemia and a slightly elevated white cell count (15,800). Treatment in the hospital consisted of bed rest and observation. After one day of hospitalization the patient was discharged as improved but scheduled to be followed in the outpatient department.

The marked redness in this case was very similar to that following an overdose of reserpine. Deserpidine is one of the more recent Rauwolfia compounds used as a hypotensive agent and tranquilizer.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Motor Oil	14 months	Female

The child ingested a small amount of oil from a 2-gallon can on the oil burner gun. About six hours later she was observed to have marked cyanosis of the extremities. The physician called the Center for advice. By the time the physician had been called, the cyanosis had diminished markedly. The physician was not certain whether the cyanosis was a manifestation of the ingestion of the oil, and he did not exclude the possibility of either an infection or a vasomotor reaction. This product was labeled as "Mercury Made," and there was some concern that mercury might be an ingredient. In addition, a recent outbreak of paralysis in Morocco owing to motor oil ingestions made the parents especially apprehensive.

The Center ascertained the ingredients of the motor oil that the child had ingested and, in so doing, learned some interesting facts about motor oils in general which may be of value to physicians. Even 100 per cent "Pennsylvania" paraffin oils are not as described by the designation. Many motor oils contain additives, the exact nature of which is known only to the manufacturers. Most motor oils contain dialkyl zinc dithiophosphate. As far as we were able to ascertain, none of the major motor oil firms admits to using constituents which are highly toxic on ingestion. Oil from the lesser-known firms and redistilled oils (collected from garages) are of unknown composition. Orthotricresol phosphate does not seem to be used in ordinary motor oils. The tricresol phosphate contained in gasoline is a mixture of meta- and paracresol phosphates, with a maximum of approximately 3 per cent orthotricresol phosphates. However, according to an article in the December 5, 1959, issue of *Lancet,* the oil in the Moroccan incident contained only 3 per cent of the mixed cresol phosphates, mainly the meta and para varieties. Apparently the small amount of orthotricresol phosphates in this mixture was enough to induce the severe symptoms in that incident. The term "Mercury Made," which caused concern in this case, was of no significance. We were informed that it now is merely a trademark designation; at one time mercury was used in the process of making motor oil, apparently as a catalyst.

Although the incident reported here was without sequelae, the widespread use of motor oil and its availability to children makes this report of interest. Since the high viscosity of motor oils does not present the aspiration hazard of kerosene, ingestion of motor oil normally does not indicate lavage, providing the additives are harmless. Firms using unknown additives with toxic possibilities on ingestion have a responsibility under the New York City Health Code to identify such contents on the label.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Secobarbital	4 years	Male

According to the mother the child could not be awakened from deep slumber. The mother then found that eight $1^1/_2$-grain capsules of secobarbital, which were prescribed for herself, were missing from the bottle.

She immediately called the family physician, who recommended transfer to a hospital.

The child was admitted to Coney Island Hospital on October 24, 1959, in deep coma. He did not respond to stimuli. Both pupils were pinpointed, and the conjunctivas and scleras were injected. The heart rate was 110 per minute with normal rhythm, and the chest and lungs were clear. The abdomen was soft and not tympanic, and the liver and spleen could not be felt. The reflexes were hyperactive, and there was poor response to painful stimuli. The skin was dry but there were no petechiae or purpura.

Gastric lavage with sodium bicarbonate was immediately performed. A thick, brownish, precipitated fluid was obtained. On analysis the gastric contents and urine revealed traces of barbiturate. On October 24, 1959, an exchange transfusion was performed; approximately 5 pints of blood were exchanged during four and one-half hours. When the procedure was completed, the patient became more responsive, began to cry, and was very irritable. The following day he was conscious, began to talk, and improved very rapidly. Additional therapy consisted of caffein and sodium benzoate, 1,000 cc. of 5 per cent glucose intravenously, and picrotoxin 3 mg. every half hour for 5 doses. The child began to respond to stimuli after the last doses of caffein and sodium benzoate and picrotoxin.

Soon after the child's admission to the hospital the Center was consulted about the best management of cases of barbiturate poisoning. Hemodialysis was advised, and the Center offered to make arrangements to transfer the patient to a hospital where equipment and personnel for the procedure are available. The physician preferred to attempt an exchange transfusion first. Three days following the exchange transfusion the patient was out of bed and walking, and he was discharged in good condition. Although exchange transfusions are much more simple to perform and at times are very effective, hemodialysis affords a more effective method of eliminating toxic materials from the body.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Antispasmodic Compound	1 month	Male

This one-month-old infant vomited after every feeding. The family physician prescribed 20 to 30 drops of a liquid anticholinergic for each bottle feeding. The infant received 240 drops in the course of two days. After four doses the infant felt warm to the mother, and in the evening the child developed a temperature of 102 F. and edema of the legs. On the fourth day, the day of admission to the hospital, the temperature rose to 107 F. and the patient developed convulsions and stupor. He was taken to the Coney Island Hospital, where he was given an enema, penicillin, and Chloromycetin. The patient responded well to the therapy and after three days made a complete recovery.

The use of formula milk as a menstruum for medication should be discouraged.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	15 years	Female

Because of some difficulties with her boy friend, the patient took 18 over-the-counter sedative tablets with suicidal intent. After ingesting the medication she telephoned her boy friend and told him what she had done. He took her to the hospital emergency room. On admission she was stuporous. After the lavage, sodium sulfate was instilled into her stomach.

After several hours the patient was transferred to Kings County Hospital for observation. She was judged to be of above average intelligence, active, and very mature for her age. In 1957 she had taken large quantities of codeine. At that time the family had insisted that it was accidental. The mother had a nervous breakdown following the present incident, and both she and the patient are now under psychiatric care. This girl will be followed by the school health service on her return to school.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Nonbarbiturate Sedative	21 years	Male

The mother related that this patient had ingested 36 over-the-counter sedative tablets with suicidal intent because he was very dejected and disturbed "because his sweetheart jilted him." After ingesting the tablets he called his mother, and she rushed him to the Coney Island Hospital emergency room. On admission, about an hour after ingestion, the patient was cyanotic, dyspneic, and stuporous. His stomach was lavaged with saline, and a preparation of caffein and sodium benzoate was administered. He was observed for twenty-seven hours, after which time he was referred for psychiatric care.

He was judged to be of average intelligence, and no history of previous emotional disturbance could be obtained. Follow-ups by a public health nurse and social worker will be instituted to arrange for appropriate psychotherapy.

An argument for the availability of relatively "safe," over-the-counter sedatives is that they provide a means of thwarting suicidal attempts by disturbed adolescents.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Rat Rodenticide	15 years	Female

The patient, her husband, and their two-week-old infant came from South Carolina to live with her father. The patient appeared cheerful and apparently happy on the day of occurrence according to the interviewing public health nurse. The patient visited with a neighbor about 3:30 P.M. and suddenly complained of not feeling well, abdominal pains, and nausea. She vomited and became progressively worse. The neighbor did not wait for an ambulance but took her via a cab to a nearby hospital emergency room.

On admission the following symptoms were noted: nausea, vomiting, abdominal pains, and stupor. Her stomach was lavaged with tap water and charcoal one hour and fifteen minutes following ingestion. The neighbor related that on questioning the patient she had been unable to obtain any information because of the deep stupor which had developed. After several hours of observation in the emergency room the patient was transferred to Kings County Hospital. A diagnosis of phosphorous poisoning was made, and it was deduced that the patient had ingested a phosphorous paste rodenticide with suicidal attempt. Treatment in the hospital consisted of fluids, sedation, and other supportive measures. Despite all therapeutic measures the patient expired eight hours following admission, or ten hours after ingestion.

Elementary phosphorous paste rodenticides are particularly dangerous because no antidote or other satisfactory mode of treatment is available. Over-the-counter sale of such rodenticides is permitted under the Federal Rodenticide Act, but the availability of effective, less toxic agents is an argument for a change in policy.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Aspirin	20 months	Male

The patient suffered from an upper respiratory infection accompanied by vomiting; he had been presumably well until the present episode. He had not been taking his feedings well and appeared to be somewhat dehydrated. According to his mother he received 1,500 mg. of aspirin (five 5-grain tablets) within eighteen hours. However, the physician suspects that more was administered than was admitted. After the last dose the patient became unresponsive and placid, and he was taken to the Mount Sinai Hospital emergency room.

On admission he was comatose. A gastric lavage was not performed because the patient vomited spontaneously. On the inpatient service the patient was given fluids intravenously and also was treated with penicillin and Chloromycetin. An x-ray film of the chest revealed pneumonitis. The blood salicylate level was 35 mg. per 100 ml., and the urine showed a 4 plus reaction to the ferric chloride test. Within thirty-six hours the patient awoke. The salicylism and pneumonitis cleared by the time of discharge, eight days after admission.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Aspirin	$4^1/_2$ years	Male

According to the interviewing public health nurse, the child was suffering from an upper respiratory infection for which the family physician prescribed 1 tablet of aspirin every three hours with oral instructions not to exceed 3 to 4 tablets per day. The mother relates that the aspirin was administered around the clock for four days. The child also received an oral pediatric antibiotic suspension during the night. The mother insisted that the child could not have ingested any aspirin tablets accidentally, since no tablets were missing and the bottle had been entirely out of the child's reach. On the fourth day of illness the patient became dyspneic and stuporous and was taken to the Coney Island Hospital emergency room.

He was admitted in a semicomatose condition with a history of intermittent fever and vomiting of four days duration accompanied by extreme irritability. According to the father the child had had vomiting spells and nausea prior to the onset of the present episode. On examination the child had rapid breathing followed by Cheyne-Stokes respirations. There was marked stiffness of both upper and lower extremities, and the pupils were dilated and did not respond to light. The liver was palpable $3^1/_2$ fingerbreadths below the right costal margin, and the spleen was palpable and enlarged. There was a positive Kernig sign, and all reflexes were exaggerated. While in the hospital, the patient vomited "coffee-ground" material. The vomiting was projectile in nature. The temperature ranged between 96 and 104 F. The blood pressure and pulse were not perceptible for four hours prior to expiration. The blood carbon dioxide combining power was 28 volumes per cent on admission and when repeated several hours later was reduced to 25 volumes per cent. The urine was strongly positive for acetone, and the ferric chloride test gave a strongly positive result for salicylates. Transfusions, fluids intravenously, sodium bicarbonate, sodium lactate, and penicillin were administered.

Despite all heroic therapeutic measures the patient expired within six hours following admission with a diagnosis of aspirin poisoning.

Autopsy, however, showed a brain stem tumor with generalized visceral congestion. The complete anatomic diagnosis was: tumor of the medulla (possibly a glioma), cerebral edema and congestion, hepatomegaly, splenomegaly, fatty metamorphosis of the liver, pulmonary edema and congestion, and bilateral epicardial petechiae and ecchymoses. Parts of the brain and liver and the stomach and its contents are now awaiting chemical analysis, particularly with regard to salicylates.

The cause of death was finally adjusted to be brain stem tumor. However, the mode of occurrence and the laboratory and chemical findings clearly show accompanying salicylate intoxication.

These 2 cases are further evidence of the necessity for written warnings by physicians when prescribing aspirin about the hazards of overdosage.

TABLE I.—POISONINGS ABOUT WHICH INFORMATION WAS REQUESTED OVER A RECENT WEEKEND

Product*	Patient		Reported
	Age†	Sex	By
Dextroamphetamine (overdose)	30	F	Layman
Barbiturate	60	M	Physician
Ex-Lax (overdose)	2	F	Physician
Aspirin	$4^{1}/_{2}$	M	Layman
Lestoil (detergent)	18 months	F	Emergency nurse
Drowze	38	F	Physician
707X (rodenticide; amount unknown)	$2^{1}/_{2}$	M	Physician
Lestoil ("small" amount)	22 months	M	Physician
Antihistamine (portion of 12-mg. capsule)	$2^{1}/_{2}$	F	Mother
Mornidine	3	M	Physician
Rubbing alcohol	19	F	Physician
Quinine	26	F	Physician
Vitamin preparation	2	M	Physician
Polaroid film coater	$1^{1}/_{2}$	M	Layman
Barbiturate (overdose)	65	M	Policeman
Meprobamate	2	M	Layman
Clorox	22	M	Physician
Rodenticide (liquid)	31	F	Physician
Pill (unknown)	10 months	F	Physician
Warfarin	1	M	Physician
Peroxide ($^{1}/_{2}$ tsp.)	4	M	Mother
Rubber plant (chewed)	10 months	F	Mother
Glass Wax (hives by touching it)	$12^{1}/_{2}$	F	Nurse
Rodenticide (ingested by dog)	. . .	. .	Layman
Lipcoat	$1^{1}/_{2}$	M	Mother
Nil-Odor (air refresher)	$2^{1}/_{2}$	M	Father
Barbiturate (overdose)	54	F	Policeman
Lipstick	16 months	M	Mother
Griffin All-White Shoe Polish ($^{1}/_{2}$ ounce)	2	M	Mother
Nialamide	. . .	. .	Physician
Isopropyl alcohol	21	F	Physician
Meprobamate-Benactyzine	$7^{1}/_{2}$	M	Physician (father)
Barbiturate	25	F	Physician
Mr. Clean (detergent)	68	M	Daughter
Reducing pills	26	F	Physician
Hoppes Powder Solvent #9 (gun cleaner)	2	M	Physician
Thermometer mercury	26	F	Physician
Jackson Plastic Cement	2	F	Father
Tranquilizer	21	F	Physician
Lestoil	$3^{1}/_{2}$	F	Physician
Baby aspirin (50)	$2^{1}/_{2}$	F	Mother
Flea spray	$2^{1}/_{2}$	M	Mother
J.O. Paste (rodenticide)	2	F	Physician
Dextropropoxyphene hydrochloride (analgesic)	26	F	Physician
Peyote	23	F	Physician
Cresol	43	M	Physician
Narcotic (overdose)	26	F	Policeman
Gin	Adult	F	Policeman
Calomine lotion	76	M	Layman
Crepe paper, black (licked)	3	F	Layman
Ammonia and bleach (inhaled fumes)	34	F	Patient
Isopropyl alcohol and eucalyptole	16	F	Physician
Liniment	5	F	Physician
Prednisolone	2	M	Physician
Isopropyl alcohol	21	F	Physician
Potassium permanganate	23	F	Physician
Man Tan After Shave Lotion	$1^{1}/_{2}$	F	Physician
Turpentine	1	F	Father
Plastic cement tube (bite)	16 months	M	Mother
Mercury of oral thermometer	79	M	Physician
Boric acid solution	2	F	Physician
Motorin (cleaning fluid)	. . .	. .	Layman
Quinacrine hydrochloride	Adult	M	Physician

* Ingestion unless other mode of occurrence is indicated.
† In years unless months is indicated.

INCIDENT 11

Toxic Agent	*Age*	*Sex*
Lindane (Insecticide)	$3^{1}/_{2}$ years	Female

The child obtained the tablets from the back seat of the car. She began to vomit and appeared ill. She was taken to the emergency room of the United Hospital in Port Chester. On admission she was convulsing, cyanotic, and comatose. She was treated with sodium phenobarbital, intravenously and intramuscularly. Magnesium sulfate as a cathartic and oxygen were also administered during seizures.

A Lindane tablet, 1 Gm., is inserted into a Champion light bulb, an electric bulb with a depression on top to hold the tablet. The Lindane is vaporized by the heat of the filament. These gadgets were widely advocated as "fumigator insecticidal devices," but their use in the home and in food establishments presents hazards. Local restrictions have been placed on the methods of their administration.

Materials for household and industrial purposes in tablet form present an accidental poisoning problem because children associate the shapes with candy. Since these tablets or their containers frequently bear no identification, the determination of their content is a problem to the physician. Some kind of identification of nonmedicinal materials which are in tablet form is strongly urged. The drug industry fortunately is giving increased attention to identification of its own tablet products—by imprint on the tablet and description in the product literature and advertising copy.

Table I lists the poisonings reported over a recent weekend.

(*Number fifty-one in a series of Briefs on Accidental Chemical Poisonings*)

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CASE REPORT

Acute Massive Perforation of Peptic Ulcer in Infants

GERALD ADAMS, M.D., BROOKLYN, NEW YORK

(*From the Department of Surgery, Cumberland Hospital*)

While relatively rare, gastric and duodenal ulcers and their unfortunate sequelae do occur in infancy with enough frequency to trouble first the pediatrician and then the surgeon. Thus, every new contribution to the literature alerts us further to this extremely grave condition. As an index to its rarity, Guthrie[1] reported 9 cases of peptic ulcer out of a total of 6,059 autopsies performed at Glasgow Royal Hospital for Sick Children. In 1941, Bird, Limper, and Mayer[2] collected 243 cases from the literature, and it is estimated that about 350 cases of ulcer in infancy and childhood have been reviewed.

Incidence, Symptomatology, and Treatment

Incidence.—Peptic ulcers appear to be somewhat more numerous in infancy than in childhood and, complicated by hemorrhage and perforation, they run a more acute course than they do in adult life. They are most common up to the age of two years, and they are least common from two to seven years of age. It is in this group, before the age of two years, that perforation is most frequent. The duodenal variety occurs three times as frequently as the gastric variety, predominantly in males. The youngest case of perforation reported was in an infant thirty-four and one-half hours old, although Swenson[3] has reported a case of Lee's of intrauterine perforation of a peptic ulcer.

There are two types of perforation: a "primary," in which the ulcer and its effects comprise the main clinical and pathologic picture; and a "secondary" type, in a child already seriously ill from a burn, an infection, or an intracranial injury. In this report we are limiting our discussion to the primary type.

Symptomatology.—In infants the clinical course is generally "silent," but after the second year of life the symptomatology is the same as in adults. In infants, because of the relatively asymptomatic course, hemorrhage and/or perforation are generally the abrupt presenting symptoms. Usually the infant has vomited or refused feedings, but it is only when the abdomen is distended and tense that an acute condition of the abdomen is suspected, and subsequently an x-ray film taken in the upright position reveals the presence of free intraperitoneal air. As we shall see in this case report, the course and symptomatology are characteristic of the disease.

Treatment.—The mortality with perforation is very high, being about 70 per cent. Between 1930 and 1952, at Boston City Hospital, 8 cases of peptic ulcer, of which 2 perforated, were reported in infants. One patient died on the second postoperative day, and the other patient recovered.

Surgical closure of the ulcer offers the only hope for survival. According to some physicians, plication or excision of the ulcer should never be done because of the danger of constriction of the bowel. It is sufficient to take 3 or 4 sutures to close the perforation and then to seal it with a free or attached piece of omental fat. In regard to the postoperative management, the gastric tube should be removed as soon as possible, just as soon as peristalsis is noted, and then oral alimentation should be started. If they survive, these infants usually have no gastric difficulties.

Case Report

On September 14, 1959, a two-and-one-half-month-old white male of Puerto Rican descent

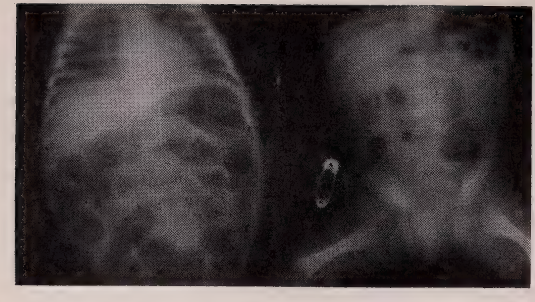

Fig. 1. Two flat plate views of the abdomen in the upright position.

was admitted to the Department of Pediatrics of Cumberland Hospital.

The chief complaints were vomiting and diarrhea of five days duration, becoming progressively worse. The present illness started with diarrhea with about 9 yellowish watery stools daily, and this was accompanied by vomiting after feedings.

Past History.—This was the second admission for the infant. The first admission was seventeen days before, on August 28, 1959, with the same complaints of diarrhea and vomiting after feedings. At this first admission the child had a temperature of 101 F. and was mildly dehydrated. During this hospital stay there was no diarrhea or vomiting. At that time an x-ray film of the chest revealed a bilateral pneumonitis. The infant apparently made an uneventful recovery.

Family History.—The patient's mother was diabetic. There was no familial ulcer history.

Birth History.—The patient was born on June 22, 1959, at Kings County Hospital, with a spontaneous delivery at full term and a birth weight of 5 pounds.

Physical Findings.—On the last admission the patient was fairly developed, poorly nourished, mildly dehydrated, afebrile, and not in acute distress.

Systemic Review.—In the skin there was a loss of turgor and elasticity. The head was normocephalic with the fontanels depressed. The eyes reacted to light accommodation, and the pupils were equal and regular. The neck was supple, and there was no lymphadenopathy. The thorax was symmetrical in contour and equal in respiratory excursion on both sides. On auscultation the lungs showed normal breath sounds with occasional rhonchi. The heart had a rapid rate and was closed in all areas. The abdomen was soft and flat throughout, with no localized tenderness and no masses. There was a small umbilical hernia present. The genitalia were normal. There were no deformities and no anomalies in the extremities. The reflexes were physiologic.

Laboratory Findings	September 14, 1959	September 16, 1959	September 21, 1959	September 24, 1959
Red blood count	375	360	385	440
White blood count	18,200	8,050	13,900	14,200
Hemoglobin (Gm.)	11.5	13	12	13.5
Differential	...	...	...	...
Segments	32	38	46	66
Stabs	4	17	35	4
Lymphocytes	60	84	40	25
Monocytes	4	4	5	2

Urinalysis. (September 15, 1959) Albumin negative; glucose trace.

Stool. (September 23, 1959) Positive for occult blood.

Stool culture. (September 15, 1959) Pathogenic enteric organisms. (September 16, 1959) Negative.

Nose and throat cultures. Staphylococcus albus.

Blood culture. (September 23, 1959) Negative.

Carbon dioxide. 26 volumes per cent.

Chest x-ray film. (September 14, 1959) Negative. (September 20, 1959) Bronchitic changes with bilateral emphysema.

Flat plate of abdomen. (September 20, 1959) Negative. (September 22, 1959) Large amounts of free intraperitoneal air.

Course in Hospital.—On admission the patient was placed on a skimmed milk diet, and on the following day he was started on maintenance fluid intravenously, taking nothing by mouth. The patient still continued to vomit and passed frequent, watery stools. On the fifth hospital day the patient had chocolate-colored vomitus, and his general condition was one of inanition and dehydration. At this time the abdomen was soft and flat, and there were no localizing signs. On the sixth hospital day the patient passed fresh blood rectally, and on the seventh day the abdomen became distended. There were no bowel sounds, and at this time a surgical consultation was requested. Flat plates of the abdomen in the upright position were done (Fig. 1), and at that time large amounts of free air were seen intraperitoneally. A diagnosis of perforated hollow viscus, probably peptic ulcer, was made and that evening the infant was explored. The patient was under massive antibiotic therapy and intravenous fluids and electrolytes, and before the operation he was given 60 cc. of blood.

The abdomen was opened with an upper right rectus incision under very light open ether, and about 250 cc. of greenish fluid were found in the peritoneal cavity. When the stomach was mobilized, a perforation about $^1/_2$ cm. in diameter was found in the pyloroduodenal region, anteriorly, through which a glairy, greenish fluid was issuing. The edges of the perforation were markedly indurated. The perforation was closed with four interrupted double O straumatic chromic sutures and sealed with a piece of omental fat. Immediately postoperatively the patient did well. The abdomen became scaphoid, and on the second day the polyethylene gastric tube was removed and the infant was started on oral feedings. The patient was doing fairly well until about 9:00 P.M. of the eleventh hospital day (fourth postoperative day) when he had two bouts of frank blood per rectum. He was transfused with 60 cc. of whole blood. On the fifth postoperative day he had another episode of rectal bleeding, but his general appearance and condition seemed to be good. The infant expired at 5:00 A.M. of the sixth postoperative day.

AUTOPSY.—At autopsy, the perforation was found to be well sealed, but there was evidence of exsanguination from the vessels in the ulcer bed. The relevant autopsy findings, gross and microscopic, were as follows:

Gastrointestinal System.—The mouth, the salivary glands, the tongue, the palate and the esophagus were normal.

Stomach and Pyloric Region.—The stomach and duodenum were dilated and filled with fluid and clotted blood. A sutured wound, 1 cm. in length, was present on the lesser curvature adjacent to the posterior wall and 0.3 cm. from the pylorus. An 0.5 cm. ulcer was noted in the posterior wall of the postpyloric duodenum. The serosal surface was congested, roughened, and finely granular.

Remainder of Intestinal Tract.—The lumen was filled with clotted blood. The mucosa was normal. The serosa showed areas of congestion and finely granular roughening.

The pyloric junction sections of the gastroduodenal wall showed an area of dehiscence through all the layers of the wall of the duodenum. The edges showed necrosis, polynuclear cells, and fibrin. The mucosal lining and muscularis of the duodenum showed progressive thinning, disruption, and dissolution in the area of perforation. The duodenal mucosa was flattened and denuded. There was an abrupt transition of the duodenum to the gastric glandular mucosa with an ovoid-suture defect.

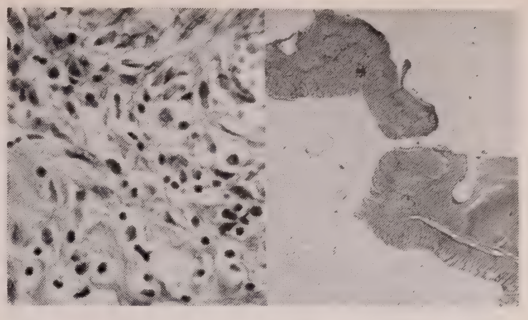

FIG. 2. Microscopic serial sections through the area of perforation, showing consistent attenuated muscularis of the duodenal wall with focal dipping of the glandular mucosa (×500 and × 64, respectively).

Microscopic Findings.—In the pyloric junction of the pyloric muscle, the serosa showed diffuse areas of polynuclear inflammatory infiltration with fibrin and areas of vascularization. Serial sections through the area of perforation showed consistent attenuated muscularis of the duodenal wall with focal dipping of the glandular mucosa (Fig. 2).

In the small intestines, a random section showed an area of thinning of the muscularis with dipping of the mucosal lining.

ANATOMIC DIAGNOSIS.—1. Massive gastrointestinal hemorrhage: sutured perforation of duodenal ulcer in probable postpyloric diverticulum: fibrinous peritonitis.

2. Bronchopneumonia.

Summary

We have presented a case of a two-and-one-half-month-old Puerto Rican male with a previous history of eleven days hospitalization for vomiting after meals and diarrhea who was readmitted two weeks later with the same complaints of five days duration. A physical examination revealed a two-and-one-half-month-old male with dehydration, malnutrition, normal temperature, mild anemia with a 18,000 white blood count, a normal differential, and occult blood in stool. Chocolate-like vomitus was seen on the fifth hospital day, tarry stools were passed on the sixth day, the abdomen was soft, and a general improvement was noted on the eighth day. A laparotomy revealed a large perforation at the pyloric region which was repaired. Oral feedings were begun on the third postoperative day with subsequent bloody stools which continued, and by the fourth postoperative day there was a frank bloody vomitus with increased bowel hemorrhage, followed by exitus on the fifth postoperative day.

Necropsy revealed massive gastrointestinal hemorrhage in a sutured perforation of an acute duodenal ulcer in a probable postpyloric diverticulum.

Although this case was managed in the orthodox, accepted fashion, it now becomes a matter of conjecture whether or not this fashion was good enough. If the ulcer had been plicated or excised, would this fatal hemorrhage have been avoided? Is simple closure of the perforation sufficient in these cases?

With respect to the postpyloric diverticulum, in a search through the literature, I have failed to find any cases of this nature reported in infants.

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SPECIAL ARTICLE

A Medical Student's Impressions of India

KEVIN M. CAHILL,* NEW YORK CITY

The crowd had gathered slowly, and sheltering themselves from the 105 F. heat, the natives waited under mango trees. By noon there were a few hundred people dressed in saris, in dhotis, or in nothing at all. From habit they grouped themselves so that all the lepers were under one tree, those with scabies were under another, and those with malnutrition and new complaints were under a third. They came, as they come each week, with their two annas (one penny), their tin cans, ragged clothes, hope, and trust. For this was the day the bus from the central hospital in South India arrived at its roadside clinics. Within an hour and a half the doctors had come and gone, and the villagers were alone again for another week. Many areas do not have a rural health program which is even this extensive. Yet this is where 300-odd million people live, dream, and die. Often this is considered the fulcrum between Eastern and Western ideologies. This is the soil of the future. This is India today.

BY A very fortunate set of circumstances, a grant was made available so that I might spend the summer before my third year in Cornell University Medical College traveling around the world. Through the honesty and frankness of the people of the nations I visited I had the priviege of observing at first hand the conditions in which one-half the world's population exists. In this transitional, and often crucial, period n their dreams for the future I was able to see their efforts toward advancement, some of their successes, some of their failures, and most important of all, their people. I should like to tell you of this experience, of the differences I noted in medical training, and especially of the feelings this trip has engendered in me.

In the three and one-half months alloted, I was able to visit 13 countries in the Near and Far East, and to meet and address the students, interns, residents, and often the faculty of some 20-odd medical centers. Since the mode of higher education in India is English, I concentrated my efforts there, spending about two months in eight of its major cities and in innumerable small villages. I have great admiration for these people for willingly exposing to me all the facets of their situation; at no time did I find a door shut to my curiosity. I took full advantage of their warm welcome, and I was introduced to prominent figures in politics, ranging from the Prime Minister and members of his cabinet to local tax collectors, and, in medicine, from state health directors to first-year students. I also met leading personages in music and art, business, and religion. I spent days with starving people, as well as with maharajahs. I was able to live with and share the food of the native people; not a single night was passed in a hotel.

The Situation in India

The cultural, educational, health, and economic situations of India differ so very much from our own that it is almost impossible to appreciate them without seeing them personally. It is, of course, just as impossible to judge or criticize their systems by our own standards and criteria.

India is an immense land. Within the span of a single month I shivered on a Himalayan peak with Mt. Everest in view and perspired in the humid 110 F. heat of the southern plains a few degrees above the equator. In area, India is less than one-half the size of the United States, yet its population is nearly three times our own. The 400 million people, one fifth of the world's population, comprise a host of ethnic types speaking a virtual babel of tongues of entirely different derivations. At least 500,000 villages harbor 75 per cent of India's population, and these become isolated islands during the monsoon season or as famine or disease spreads. Yet India's immensely rich cultural background, dating from the very beginning of time, her love of independence and fierce nationalism, her poverty, and, of course, the pervasive force of the Hindu religion, provide a cohesiveness that binds all these elements into one nation.

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* The author, a third-year student at Cornell Medical College, was enabled to travel through the Far East addressing and observing students in forty medical centers, especially in India, through a grant made available to him by a private foundation.

India is a land of sharp contrasts. There is the great wealth of the few versus the appalling poverty of the masses; the extent of suffering versus the dearth of complaint; the stifling heat of the plains versus the cool breezes of the hill stations; the genuine warmth of welcome in the village versus the lack of food in the huts; in short, the contrast between the supply and the great needs. My first glimpse of the magnificent Taj Mahal, for example, came as I walked down a dirty lane crowded with famished and dying destitutes, with undernourished sacred cows, and with filth and feces everywhere.

Seemingly the only commodity in which the supply exceeds the demands is that of human labor. This is evident in the country's statistics, but even more sharply it is evident in the vast crowds of unemployed people or in the transportation field. One morning in Calcutta I counted 308 human-drawn carts passing by before one animal-drawn vehicle came into view. I could cite many similar examples in other fields, but would this not be rash? For we must remember continually that the problems and conditions of the Indian people differ greatly from our own, that their solutions and even desires are very unlike ours.

Practice of Medicine in India

Of course, all these contrasts exert a profound effect on the practice of medicine in India. But the field of medicine itself is no exception to the rule, for it too is full of contrasts. Its history is long and important. One will recall that while the ancient Greeks are supposed to have borrowed from the Arabic teachers, the latter previously had borrowed heavily from the ancient Indian Vedic system of medicine that is known to have flourished at least some 3,500 years B.C. From father to son, through century after century, the rules for the mixing of the herbs and roots that comprise the armamentarium of the ayurvedic doctor, together with hot brands and special tattoos, have been handed down. There is little exchange of knowledge among these men, and one practitioner who claimed to have a cure for infectious hepatitis was amazed when I asked him for more information. He answered only "that if you knew my secret then where would I be?" Yet today the government of India recognizes these local ayurvedic men and licenses and supports the schools of their curious medicine side by side with, and at times even under, the same roof as the more modern Western medical science.

Nor are these two the only systems of medicine in India. In many a rural village a "medical practitioner," one who has been trained by his predecessor and is licensed by no one, dispenses his dubious benefits unhindered. And, of course, in a land so pervaded by one religion, where literacy is low and superstitions so strong, there arises inevitably a strong priest-physician class. Again, however, one must recall constantly that the supply of physicians trained according to our system is woefully inadequate, the material rewards for a physician in rural practice are almost nonexistent, and inducements offered by the government are unsatisfactory. Although there is now under consideration by a number of the states a program of compulsory service at the village level, at the present time a local medicine man may be a far better solution than no one at all.

Although this need for some type of medical care is ever present, it is magnified periodically by the epidemics of disease and famine that ravage the land and her people. Malaria, cholera, smallpox, leprosy, filariasis, kala-azar, and so many other plagues, which to us are history, to India are monumental, everyday problems of control and eradication. Infectious diseases have been a scourge in every era of Indian history including the present. They are of national, and even international, concern, for the rampage does not respect the rich nor stop at the river's edge but spreads inexorably through touchables and untouchables, from crowded cities to secluded villages, and stops either when only resistant hosts remain or when the public health agencies are equipped to control the attack.

Special Problems

The obstacles to the success of the latter procedure are immense, as has been shown by the recent Malaria Eradication Program. To begin with, such projects are expensive, and in this instance the United States bore the burden of a large percentage of the insecticides, trucks, equipment, and other aids. But then, one must also contend with the illiteracy which prevents pamphlet propaganda, with roads that are often impassable, with poor communications, with ignorance and superstition, with lack of vital statistics and adequate maps, and certainly, not the least of all, with immense anthropologic differences among the castes and ethnic groups of the subcontinent. In many areas of rural India the caste system is as strong today as it was hundreds of years ago, and one must either work within its framework or fail until he has altered it. For example, every village has an untouchable quarter separated from the touchables' huts. In providing wells one must decide whether to build two wells and make the cleavage between the two groups even stronger and more permanent, or whether to attempt long range re-education, knowing that some will go without water until this program has succeeded.

The caste system has found its place in medicine as well. In most medical schools a certain number of seats are reserved for the lower castes. There are also geographic criteria of selection. The candidate from a crowded city may encounter considerable difficulty in gaining admission, whereas the student from a remote area has a distinct advantage. In some schools one can still buy his entrance for a set price, although this system is losing favor. Almost the only school that selects its students on purely academic and character criteria is the All-India Institute of Medical Science in Delhi, a center still being built, which will serve as a model for other schools and train graduate and undergraduate leaders in medicine for the entire nation. One other difference between the student selection in India and in the United States is the percentage of female students. Many Indian schools have an alloted quota of seats for women, and frequently there are more women than men.

Differences in Medical Curriculum

Several of the striking differences in the medical curriculum in India as opposed to that in the United States are quickly apparent to an American student who meets his counterpart in the East. There are relatively few full-time professors in the great percentage of medical schools in India. I found very rare the intellectual give-and-take between student and teacher in classrooms or conferences or after classes that an American student takes for granted. It seemed too often that statements were considered incontrovertible because they had been enunciated by the professor. Another difference that can be attributed to a lack of full-time staff is the paucity of research activity outside the main centers and the inevitable lack of feeling for research in most students. I cite these differences, and yet again I stress that their problems are far removed from ours and so must their solutions be. This is a period of transition for India. I am certain that the succeeding years will show more and more rapid advances and changes in medical education.

The courses required in the Western-styled schools (I did not have sufficient time to stay at many ayurvedic centers) are largely the same as ours. Of course, some courses are more pertinent there—tropical medicine, for example—and are therefore stressed to a greater degree. It was obvious, however, that the basic sciences are not handled with the thoroughness known here, and pathology has a far less prominent place. The number of postmortem examinations is very low (this is only partially due to religious reasons), and the result is that many students graduate without ever taking part in, or even seeing, an autopsy. This is unfortunate from another point of view also, for I am certain that the gross and microscopic specimens India could give to the world would be of an almost infinite variety. The clinical years are busy, and the student learns to work rapidly with available tools and under conditions unimaginable to his relatively sheltered American peer. The complete medical program, after high school, is usually five and one-half years, including one year of rotating internship.

One final difference that I might cite, although this certainly is not an exhaustive list, is in graduate medical education. The internship year is of the rotating type, but it may vary in services not only from our own but also from one another throughout the subcontinent, depending on the needs of the area. For example, in some local areas three months in rural health may be a compulsory quarter while in the trachoma belt one third of the year must be spent in ophthalmology. Once again, the programs must vary directly with the demands of the particular area.

A problem that is now being rectified in India is graduate certification. The degree of Master of Surgery, for example, may be very easy to obtain in one city hospital and very difficult in another. An attempt is now being made to replace local certification with an all-India examination. At least this shows that the local leaders are aware of this, as of the many other, seemingly overwhelming problems of India, and solutions are being sought conscientiously.

Comment

There are many obvious benefits in a trip such as mine. For me it has been a broadening experience socially, culturally, and medically. A section of the world unfolded with a heritage far older than our Western one, with problems that are but history in the United States, and with struggles we have never known.

One quickly loses the idea that our system, be it in medicine or any other field, is the only one or even that it is the best one for situations so foreign to those in America. One Indian professor expressed to me his hesitancy in urging his students to study in the United States. He felt that many would never return and the nation thereby would lose her ablest men, while many others who would come back would not have the flexibility to adapt to conditions for which they were never trained, nor to produce results without the complex apparatus they had become so accustomed to. There is, nonetheless, a strong and deep desire on the part of Indian medical students and interns to know more about the graduate training facilities of the United States, and there is a continual interest in all our advances. I met very few, indeed, who did not want to come here for a few years of postgraduate work.

Time was when we might have avoided or denied these desires. But political as well as humane reasons no longer make such a position tenable. In the light of the differences in undergraduate medical education, it would be wise for us now to re-evaluate the selection of and the programs for foreign students, as well as the needs of the nations and the conditions to which they will return. Increased person-to-person contact at all levels of medical training would aid in obviating the difficulties which unfortunately arise all too often after the foreign student has arrived here. It would help also in disseminating our advances and systems, as well as provide the opportunity for us to learn, and through medicine it would lead inevitably to a closer relationship between our nation and the increasingly important nations of the East.

1300 York Avenue, New York 21

Have you heard?

"HORIZONS IN CLINICAL MEDICINE"

is the theme for the

154th ANNUAL CONVENTION

of the

Medical Society of the State of New York

May 9 to 13, 1960

Statler Hilton Hotel ***New York City***

ADDITIONAL ANNUAL REPORTS

Medical Society of the State of New York

1959–1960

REPORTS OF OFFICERS

Reports in this section are referred to the Reference Committee on Reports of Officers, consisting of the following:

Paul H. Sullivan, M.D., Nassau, *Chairman*
Thomas F. McCarthy, M.D., Bronx
Thomas M. Flanagan, M.D., Chenango
Irwin Felsen, M.D., Allegany
Carl G. Whitbeck, M.D., Columbia

Treasurer

To the House of Delegates, Gentlemen:

Your treasurer presents herewith in Table I a comparison of General Fund income and expenditures for the years 1954 through 1959. In 1959, the General Fund sustained a deficit of $45,173. In 1958, there was a surplus of $9,579. Some of the more significant items are compared below.

The increase in dues income results from an increase in the membership. In 1959 there were 24,689 dues paying members. In 1958, this figure was 24,370.

The loss increase in the JOURNAL was $5,396 (before dues allocation). Net advertising was $397,506 for the year against $364,884 in the previous year, an increase of $67,378. However, the increase was offset by rising expenses in almost every category. The cost of printing, paper, and postage increased by more than $21,000.

JOURNAL advertising department expenses increased from $96,000 to more than $108,000, or $42,000. This category includes salesmen's commis-

	1959	1958	Increase (Decrease)
Dues income (gross)	$584,644	$574,950	$ 9,694
JOURNAL net loss before dues allocation	26,734(L)	21,337(L)	5,396
Administration	214,927	165,805	49,122
Public and Professional Relations Bureau	85,027	76,060	8,967
Woman's Auxiliary	5,087	8,903	(3,816)
Legal counsel	40,000	35,000	5,000
A.M.A. hospitality room	4,310	2,017	2,293
Blood Banks Association of New York State, Inc.	9,000	10,577	(1,577)
Annual Meeting	25,938	19,870	6,068
Management Survey	...	10,785	(10,785)

TABLE I.—INCOME AND EXPENDITURES, 1954 THROUGH 1959

	1954	1955	1956	1957	1958	1959
INCOME						
Members' Dues	$551,711.48	$559,514.67	$567,476.30	$572,886.30	$574,949.71	$584,644.43
JOURNAL (before dues allocation)	*37,234.09**	*32,210.23**	*17,965.55**	*12,650.77**	*21,337.48**	*26,734.37**
Interest	869.25	590.52	2,645.46	1,627.86	3,337.03	3,460.64
Sundry	.....	.....	.....	329.45	32.50	.....
Transfers to or from other funds	.....	.....	.....	.....	63,312.53	*53,970.72*
TOTAL INCOME	515,346.64	527,894.96	552,156.21	562,192.84	620,294.29	507,399.98
EXPENDITURES						
Administrative	124,058.70	129,698.05	134,845.40	135,965.68	165,804.51	214,926.74
Department of Communications	73,132.78	71,657.56	69,521.64	72,731.42	76,060.05	85,026.72
Legislation Bureau—Albany	26,018.33	25,614.06	26,102.48	29,950.53	31,837.57	28,193.11
Workmen's Compensation Bureau	25,109.39	23,355.53	21,720.68	36,267.97	32,037.42	31,375.26
Bureau of Medical Care Insurance	19,330.80	18,919.04	20,252.03	7,621.43	14,461.59	17,654.02
Scientific Activities	22,513.56	22,251.22	20,890.76	21,704.83	18,454.90	20,172.40
District Branches	2,809.28	3,009.28	3,177.44	3,309.68	3,705.26	4,688.49
Planning Committee for Medical Policies	1,283.92	571.77	693.45	420.51	118.92	871.00
Woman's Auxiliary	7,913.82	9,048.61	6,515.22	9,173.36	8,903.46	5,086.61
Malpractice Insurance and Defense Board	2,962.64	2,949.47	2,439.38	2,154.83	2,081.34	2,149.35
Malpractice Audit	1,250.00	1,250.00	1,250.00	2,000.00	2,000.00	2,067.49
Malpractice Survey	.....	.....	1,250.00	.....	.....	.....
Counsel—Retainer and Expenses	30,000.00	32,500.01	35,000.00	35,000.00	35,000.00	40,000.00
Traveling Expenses	27,996.78	21,135.84	30,233.17	23,769.28	27,683.86	38,066.33
World Medical Association	1,000.00	.....	.....	1,000.00	1,000.00	1,000.00
A.M.A. Conference Room Expense	150.00	1,359.82	1,401.30	799.52	2,016.66	4,309.94
Societies for Medical Research	500.00	.....	75.00	.....	100.00	300.00
Conference of Presidents	150.00	.....	75.00	75.00	75.00	75.00
Veterans Medical Service Plan	88.86	115.70	284.51	98.77	2,126.38	*341.78*
Medical Directory	40,397.05	72,534.89	28,103.53	64,674.24	57,334.34	60,204.98
Annual Meeting	1,073.07	16,533.17	5,487.05	12,640.11	19,869.78	25,938.44
Moving Expense and Alterations	518.43	60.00	732.80	1,840.00	63,312.53	.....
Special Legal Counsel	.....	.....	.....	.....	.....	404.90
Commission on Medical Services	.....	.....	.....	.....	.....	247.43
Pensions	7,400.00	3,600.00	3,600.00	3,016.20	8,932.40	3,225.82
Empire State Health Council	25.00	100.00	100.00	.....	.....	100.00
Blood Banks Commission	64.98	667.12	144.53	231.26	.....	.....
A.M.A. Committee on Medical Facilities	.....	.....	.....	.....	.....	277.76
American Medical Association Convention	.....	.....	.....	7,745.95	14,345.94	9,083.49
State Convention—Students	396.09	.....	.....	.....	.....	.....
Blood Banks Association of New York State, Inc.	27,658.64	47,000.00	12,600.00	15,822.86	10,577.14	9,000.00
Rural Medical Service Committee	.....	.....	850.00	.....	19.50	155.51
Cults, Committee to Combat	.....	.....	2,833.49	1,867.79	598.48	1,944.08
Contribution—Refugee Hungarian Physicians	.....	.....	5,000.00	.....	.....	.....
Contribution—Blood Banks Association of New York State, Inc.	.....	.....	1,400.00	2,400.00	.....	.....
Medicare—Tentative Credits to Overhead	.....	.....	*726.20**	726.20	.....	.....
Cameron Parish Medical Rehabilitation Fund	.....	.....	.....	250.00	.....	.....
Management Survey	.....	.....	.....	2,721.62	10,784.90	.....
Advisory Committee to Columbia University Study	.....	.....	.....	.....	210.46	.....
Staphylococcal Committee................................	.....	.....	.....	.....	771.46	86.79
Electrical Survey	.....	.....	.....	.....	150.00	.....
Membership Drive	.....	.....	.....	.....	341.61	254.13
TOTAL EXPENSE	443,802.12	503,931.14	435,902.66	495,979.04	610,715.46	606,544.01
NET INCOME	$ 71,544.52	$ 23,963.82	$116,253.55	$ 66,213.80	$ 9,578.83	*$ 99,144.03*

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* Italics denote figures in red.

sions, promotional expenses, salaries relating to production of the advertising section, and the various general office items of rent, telephone, travel, and the like.

JOURNAL editorial department expense increased from $70,900 in 1958 to $75,800 in 1959, or $4,900.

Circulation and general administrative expenses decreased from $16,300 in 1958 to $12,700 in 1959, or $3,600.

As to administrative expenses, the total increase was $49,122. Some of the major items are: Salary expenditures—from $131,000 to $147,000, or $16,000. A good portion of this is due to the employment of the elected secretary at the same time the executive director was employed and resulted in payment to both over the first four and a half months of 1959.

Rent and electricity expenditures increased from $19,168 to $30,970. This is due to our move to the new headquarters in July, 1958, and was an expense fully expected. Telephone increased from $2,450 to $3,300.

New equipment cost in 1959 was $11,760 while in 1958 it amounted to $2,465. Two equipment purchases were primarily responsible for this. In 1959 we bought an offset printing machine and a new addressograph machine. The latter was an absolute necessity because of the poor condition of the old machine which we had used for about ten years. The offset printer will produce better work and enable us to print our own letterheads and other material.

Public and Professional Relations Bureau expenditures increased $8,967. A new printing of *You and Your Medical Society* resulted in an increased expense. The total increase was approximately $2,000. *Newsletter* printing and postage increased about $500. Rent and electricity increased $1,700 as was expected because of the headquarters move. Travel increased about $1,300. Other sundry items increased $2,700. There were some decreases, notably $1,300 in office expenses.

Expenses of the Woman's Auxiliary decreased $3,816. This was primarily because the Auxiliary paid most of the expenses of printing and mailing the *Distaff* as well as a $1,200 refund of expenses the Society paid in previous years.

Expenses of the Annual Convention increased $6,068. In 1958 (New York City) the loss was $9,870. In 1959 (Buffalo) it was $25,938. Some years ago, the New York City meeting was able to pay for itself but in recent years this has not been the case, and losses have been sustained on both meetings.

The sum and substance of the above is to indicate as clearly as possible that we are not living within our income. General Fund surplus at December 31, 1959, amounted to almost $97,000. If our 1960 budget is accurate, this surplus will have disappeared by the end of this year.

Toward the end of the year, our cash position became precarious to the extent that it was thought it might be necessary to borrow money. However, certain securities in the Investment Fund matured at an advantageous time, and the necessary funds were "borrowed" from this fund. The amount so borrowed was $29,500. At the present time, this has been paid back.

In keeping with a recommendation of the Management Survey Report, all incoming cash is deposited in a "treasurer's account." At the beginning of each month, the executive director, through the accounting department, submits an estimate of his cash disbursements for the month. On the basis of this estimate, a check is drawn on the treasurer's account and is deposited to an account under the control of the executive director. All expenditures are made from this latter account upon the approval of the executive director.

Your treasurer submits financial reports monthly to the Board of Trustees. At this time the Board is advised of those details needing comment by the treasurer. This procedure is followed during the months of July and August by mailing reports to each member of the Board.

The treasurer expresses deep appreciation to the Council, Board of Trustees, and the various staff members for their cooperation and assistance.

Respectfully submitted,

MAURICE J. DATTELBAUM, M.D., *Treasurer*

Board of Trustees

To the House of Delegates, Gentlemen:

The Board of Trustees consists of the following members:

Herbert H. Bauckus, M.D., *Chairman*	Erie
Renato J. Azzari, M.D.	Bronx
Frederic W. Holcomb, M.D.	Ulster
John J. Masterson, M.D.	Kings
J. Stanley Kenney, M.D.	New York
Leo E. Gibson, M.D.	Onondaga
James Greenough, M.D.	Otsego

This report presents certain items relating to the activities and business of the Board of Trustees up to the date of writing, February 15, 1960. Because of the deadline for printing, it will very likely be necessary to submit a supplemental report for the period remaining up to the time of the Annual Meeting. There will be special items submitted by the chairman of the Investment Committee and by the chairman of the War Memorial Committee.

All trustees have, of course, been requested to join in submitting their opinions and recommendations. The experience of our trustees covers many years of observation and active participation in numerous medical organizations. The Bylaws of the Medical Society of the State of New York qualify eligibility for the position of trustee as having "served at least two years as an officer, or at least three years as a member of the Council, or at least five years as a member of the House of Delegates." (CHAPTER III, SECTION 3)

The Bylaws provide, CHAPTER V, SECTION 2: "The Board of Trustees shall have charge of all property including trust funds and shall supervise the financial affairs of the Society and shall invest the surplus from time to time. The budget prepared by the Council shall be submitted to the Board for its approval, and all resolutions or recommendations of the House of Delegates or Council pertaining to expenditures of money must be approved by the Board of Trustees before the same shall become effective. The Board of Trustees shall make and execute all contracts for the Society. The fiscal year shall begin January 1 and end December 31 of each calendar year."

Further, CHAPTER V, SECTION 3, last paragraph: "The chairman of the Board of Trustees shall make a report to the House of Delegates of its transactions for the year and of the amount of money belonging to the Society under its control."

The report of the treasurer will present details of the income and expenditures for the year ending December 31, 1959. It is most important that the members of the Medical Society of the State of New York carefully examine and study the data presented. This is quite necessary if we are to have a proper understanding of the work of our Society, its limitations, and its opportunities for the future.

We have a challenging interest this year in the part of our work that follows the planning recommended to the House of Delegates in a report April 25, 1958, by Rogers, Slade and Hill, whom we employed as professional consultants in organization and management. In general, those items which did not require changes in the Bylaws have been put into effect. Later Bylaw changes may allow us to implement other recommendations. The report of 66 pages, better known as the Management Survey Report, stated that at that time the Society had 24,500 members and the dues income for 1958 was budgeted at $560,000. The number of members at end of 1959 was 24,689.

To develop important changes in an organization of this size, and at the same time provide for current business, is an arduous and difficult task. It requires diplomacy and a certain amount of experimentation. The costs of the new projects, to date, are within reason and over the long range should prove the wisdom of our investments. In so doing, our Medical Society of the State of New York has only in mind its dedication to the betterment of the health of the public.

When we left our old offices for the new, we were much pleased. But now it comes to us as a sort of grim realization that our efficiency, our opportunities, and even our desire for improvement might have slowly disappeared but for our new environment. It is, to me, a great source of satisfaction that my predecessor as chairman of the Board of Trustees, Walter W. Mott, M.D., after much diligent and painstaking effort, made the selection of a site, later approved by the Council and Board of Trustees, and thus achieved an epoch in the history of our Society.

The Board of Trustees assisted the Council in a search for an executive director. Herbert T. Wagner, M.D., was appointed executive director on December 1, 1958. The trustees have made every effort to grant Dr. Wagner full opportunity to set up and follow the recommendations in the new work outlined by the Management Survey Report. This well-trained official has taken himself into the work of the Society with great zest. The problems of greatest difficulty presented themselves because the executive director did not have sufficient trained personnel to take care of the immediate office staff requirements, and, at the same time, go into the field of the district branches, county societies, American Medical Association committee contacts, and the many other functions in professional and public relations. Although we were following recommended plans, we ourselves did not plan specifically for limitations of work necessary when the executive director acquired the responsibility for leadership in so many fields. I believe this error of omission in our own management diluted benefits suggested in the survey. I feel this will soon be corrected and that the Medical Society will be well repaid for the increased costs of the department of the executive director and its augmented personnel. It was expected that there would be a considerably increased cost of administration under the survey recommendations. A suitable return should be in order, with patience and forbearance.

At its January, 1959, meeting, the Board of Trustees approved action of the Council in the appointment of George W. Forrest, Jr., of Glenhead, New York, as assistant to the executive director. At the same meeting, the Board approved action of the Council in appointing Mr. John K. Pardee as director of the Department of Communications. These are two very important positions.

It has been my pleasure to have worked closely with Walter P. Anderton, M.D., former secretary and man of all work. In 1944–1945, when I was State Society president, we pleaded with Dr. Anderton to come with us part time. We had lost our faithful secretary, Peter Irving, M.D., by death, and in the same year our experienced Joseph Lawrence, M.D., went to the A.M.A. at Washington. We persuaded Dr. Anderton to give up his practice and come to us full time in 1946. This great physician remained as secretary until the present regime in December, 1958. The Board of Trustees allotted a life time pension of $9,000 per year to the retiring secretary. I am very much honored to be a member of the Board recognizing his worth to our Society. I deem it a most cherished honor to have been all of the fifteen years in close association with the dedicated service of Dr. Anderton.

There will be a report of a special committee under the chairmanship of Dr. Azzari, which refers to suggestions 2 to 9 of the survey. The suggestions relating to the Board of Trustees have to do with electing one governing body instead of two, as at present. This would essentially eliminate the present Board of Trustees and set up a board of 17 replacing 29 councillors and trustees. I am especially interested in paragraph 6 of the survey which states: "To supervise financial affairs and to invest reserves of surplus, let the Trustees appoint one or more small committees made up of specially qualified members of the Society appointed on staggered terms to provide continuity of service, such members not necessarily being trustees but in that event the committee chairman to sit with the Trustees and the Executive Committee. For purposes of this report, we shall assume the appointment of a Finance Committee."

I would refer again to the before quoted CHAPTER V, SECTION 2, relating to responsibility of the Board of Trustees. We are charged with the management and preservation of approximately a million and one-half dollars belonging to other members. We have legal responsibilities in contracts, in our War Memorial Fund, and in our newly established employe Pension Fund. The purchase and sale of investments and the judgment required to derive an adequate income therefrom require constant financial study and experience. No bank or investment advisers, however competent and well paid, can take the place of a final authority in the satisfactory conduct of our finances. Withal we need to keep at hand cash payments consistent with a budget of some $600,000 and with a payroll of 70 employes earning over $35,000 per month. By various means, our trustees manage to earn interest on money employed on a short-term basis. The Board is singularly effective in not having money lie idle, even in small amounts. The Board of Trustees has the responsibility of approval of expenditure of all moneys recommended not only by the Council but even that by the House of Delegates. The Trustees must have independence in standing, along with cooperation.

The Survey, Section VI, suggests that a Finance Committee be appointed to "supervise financial affairs and to invest reserves or surplus." This is a very large order. If a finance committee is to take charge of the work presently done by the trustees, it should certainly be elected by the House of Delegates and not be appointed by any officer or group. It is my own opinion that if a finance committee is either elected or appointed, it is all the more desirable that the nominating committees of the Medical Society shall be elected by each of the district branches or their component counties instead of appointed, as is at present the case.

Among our larger items of cost are those of the NEW YORK STATE JOURNAL OF MEDICINE and the *Medical Directory*. The JOURNAL still operates with a deficit that is taken care of by allocation of a certain amount of dues. It is my belief that there will be a better understanding of the JOURNAL financial picture if the JOURNAL figures are illustrated separately from the dues allocation. It is really the case that whatever deficit occurs from the operation of the JOURNAL is covered by an appropriation from the income of the State Society.

The continued improvement in the scientific and editorial portions of the JOURNAL should give us much satisfaction. I would like to see more public relations material relative to transfusion blood supply, veterans organizations, labor, government, and a fuller report on the district branch, county society, State Society, and the American Medical Association. As I look over the many pages of advertising found in our JOURNAL, I have wondered why the JOURNAL cannot be self-sustaining. There are presently studies directed for improving the business operations of the JOURNAL.

In September, 1959, the Board of Trustees approved a contract for the service of a tabulating card system used to convert and to keep membership history records.

In 1958 the Council voted to activate a membership campaign in the State Medical Society. The Board again approved the necessary funds in 1959, which will be forthcoming when and if the program finally gets under way.

The Board provided fund support for an important meeting of county medical society officers, county committee chairmen, and executive secretaries. This was a two-day meeting held in New York City, September 11 and 12, 1959, and was a decided success. It has been arranged to have a similar meeting in September, 1960. The budget will provide for this meeting.

Blood Banks Association.—There has been improvement in the financing of the Blood Banks Association and the North East District Clearing House. In 1959, a deficit of $3,744 accrued in the North East District Clearing House and a deficit of approximately $6,142 in the Blood Banks Association. By request of the Council and with the approval of the Board of Trustees, the budget of 1960 makes provision for continuing our Blood Banks Association support. Norman S. Moore, M.D., president-elect, deserves great credit for an active, continued interest in the blood program.

In the past year, the Board of Trustees has written off former Blood Banks Association loans in the amount of some $103,000, as a contribution of the Medical Society in the interest of the public health. The past criticism of such expenditure has been somewhat misunderstood. There really was no valid objection presented to a blood banks program except that the results obtained were not fulfilling our aims.

It was thought that the program did not sufficiently make use of the necessary beneficial public relations. The Blood Banks Commission and the Blood Banks Association of New York State have recommended that the North East District Clearing House be transferred to the American Association of Blood Banks for operation because this move will enhance vital blood programs for all people. This was approved by the Council and the Board of Trustees. Our experience indicates that the American Red Cross, local hospital blood banks, and our physicians generally have great joint responsibility in participating in this support. It is to be hoped that our new public relations personnel will direct its attention to arouse the public interest in the coordination of work by the various responsible and interested agencies.

Miscellaneous.—Each year the Board of Trustees looks forward to supporting the activities of the Legislation Committee. This committee and its chairman, James M. Blake, M.D., have a constant activity in the protection of our public health.

We still have attempts at agitated selfish raids on the high standards of medical care. It is true that we should personally discuss these questions with our legislators. However, a continuous broad educational public relations program is also necessary, as legislators endeavor to satisfy the majority of their constituents.

We have budget support for the education and protection of labor and physicians in the important work of our Bureau of Industrial Health and Workmen's Compensation. As of February 1, 1960, the director of the bureau, Anthony A. Mira, M.D., presented his resignation which was accepted with regret. It may be difficult to find a suitable experienced replacement for this position. In the interim we may require the use of part-time consultation on industrial health problems.

We now have business travel accident insurance through Marsh and McLennan, representing the Insurance Company of North America, covering accidental death or dismemberment against all accidents that might occur on travel or sojourn on business for the Society. This covers officers, councillors, trustees, the executive director, controller, and several other executive heads defined in the agreement. It does not provide any workmen's compensation coverage as this is otherwise insured. The coverage for each person named is in the amount of $100,000. The annual cost to the Society is $1,700.

I have made some personal studies relating to group protection for employes and for members. The State Medical Society of Michigan has a program of life insurance for its membership. There is considerable advantage in the cost and availability of insurance in group plans, leading to the great popularity of this protection at the lowest possible cost. As a matter of interest, I find that in our employment of 65 persons with an average age of forty-two, with average monthly salary $539 and an over-all average basic salary of $35,000 per month, life insurance could be provided by a monthly premium of $1.17 per thousand for life insurance and an additional premium of $.07 for accidental death and dismemberment. In this plan, if contributory, at least 75 per cent of the eligible employes must apply. If the plan is contributory, the maximum contribution any employe can make is $.60 per thousand per month. The additional premium is payable by the employer. There are, of course, many variations in such plans and because of the popular interest in the subject, I have presented these sample figures.

On the subject of protection, I have advanced to the Board the question of assistance to retired needy physicians. We have, at present, the aid of the Physicians' Home program to which our membership personally makes annual contributions. I would continue this. However, I feel we should set up a portion of our funds, or of our dues income, for a special fund to be managed by the Board of Trustees. This could be termed a special reserve for retired member physicians. The Medical Society of the State of New York has voted for social security for physicians. The American Medical Association, up to the present time, has rejected the present social security system now in general use because it is compulsory. However, it is compulsory for physicians employed on salary to take social security and it is compulsory for our employes. Thus it is that a large portion of our membership enjoys social security and the remainder do not. I have heard no objections to employed physicians accepting such social security. Under the circumstances and with the general approval of group protection funds and plans, it would seem that our Medical Society should adopt, this year, an appropriate resolution to effect such coverage.

If it becomes necessary, for other purposes, to raise dues, a portion of this, possibly $2.00 per member, could be very well diverted to such a special reserve. However, we already have the funds and knowledge for a modest beginning. Each year we receive more and more requests from our members to take constructive action. I have advised the Planning Committee of this great need.

In order to reactivate A.M.A. memberships, action was taken for waiving of delinquent dues from 1954 through 1959. At the last report, over 200 had renewed their A.M.A. membership.

The collection of A.M.A. dues by the State Medical Society calls for a reimbursement by the A.M.A. of 1 per cent total dues collected, or 25 cents per member. It was agreed in late 1957 to remit these dues May 31 and December 31. By short-term investing, we were able to earn interest of $1,250 on such funds. However, the A.M.A. would not allow this interest collection and also pay on the 1 per cent basis. This 1 per cent basis in 1958 would have been $4,026, making a loss difference of $2,430 for the year. It is estimated that the cost to the State Society of collecting A.M.A. dues is about $8,900. Conferences are being held with A.M.A. officials on this troublesome question. At present, we are forwarding the dues to the A.M.A., as collected, and receiving 25 cents per member.

In May, 1959, the Board of Trustees approved a Council resolution to open a treasury account and approved three corporate resolutions authorizing Herbert T. Wagner, M.D., executive director, to sign checks on three accounts, namely General Account, Payroll Account, and U.S. Army Account. Only one signature is necessary. Legal approval was obtained for the controller, Mr. Alexander, to sign in place of Dr. Wagner, if the executive director is absent. We approved a corporate resolution for facsimile signature attached to permit the use of our check signer machine. The treasurer replenishes Dr. Wagner's fund at intervals.

The Board of Trustees appreciates the loyal and carefully sponsored aid of the Woman's Auxiliary. It approved a $600 budget booth at the New York State Fair, conducted by the Woman's Auxiliary. In past years, we provided the resources for publication of the *Distaff*. In 1959, the Auxiliary met this expense from their own funds. Advances were made during the year but subsequently were returned to us in the amount of $1,200. An amount of $500 has been provided in our 1960 budget to underwrite and sponsor a joint reception on Sunday, May 8, 1960, honoring all State Auxiliary past-presidents. All physicians and their wives are invited.

The chairman of the Board signed a new contract between the State Medical Society and our Group Plan malpractice insurance carriers, the Employers Mutual Liability Insurance Company of Wisconsin. This also discontinues the contingent loss factor clause in premiums.

Contracts have been signed for a continued Medicare program. This provides cash advances to the Medical Society for physicians rendering service to eligible patients.

Following action by the Council, the Board of Trustees approved the purchase of Blue Cross insurance for all employes. This is the 120-day hospitalization plan and is provided by the Medical Society at a cost of $2,260 per year.

At its regular meetings, the Board of Trustees often finds it necessary to add to the budget. The Budget Committee, which is a committee of the Council, provides annually an outline of projected costs. However, during the year numerous changes are needed for the conduct of the Society activities. Council action on voting expenditure of money must be approved by the Board of Trustees. I present, as examples, the following items approved by the Board:

Appropriation not to exceed $700 for travel expenses of 14 representatives to New York City for formation of State Association of Medical Office Assistants.

$100 to Empire State Health Council for 1959–1960.

$50 to Joint Council to Improve the Health

Care of the Aged.

$60 for an educational plaque and $200 for exhibit at 1960 International Congress for Industrial Health.

$750 on request of Public Relations Committee for survey of free medical and civic services contributed by physicians in New York State.

For expense of sending two representatives from each of the county societies of the Seventh and Eighth District Branches for regional conference on medical care—$1,100 plus $450 for luncheon.

$200 to New York State Society for Medical Research.

$100 to National Society for Medical Research.

Increase the budget to $4,700 to cover expenses of September 11 and 12 meeting of county medical society officers and executive secretaries.

At its January 20, 1960, meeting, following Council request, the Trustees approved:

1. An amount not to exceed $3,000 for participation in the International Congress of Industrial Health, to be held in New York City in 1960.

2. An amount not to exceed $750 for special study by Rural Medical Service Committee and Maternal and Child Welfare Subcommittee.

3. An amount not to exceed $1,000 for a relative value study for the State of New York.

4. An amount not to exceed $750 to provide for a meeting of chairmen of reference committees to discuss conduct of business of the House of Delegates.

The Board of Trustees did not approve an item of $850 to cover cost of a conference with county executive secretaries on the introduction of the IBM system for the membership department, since the decision to install this had been made in previous action.

These items are represented as examples of the various transactions the Board of Trustees needs to consider. It should be pointed out that there are also many reductions in various costs that are budgeted. Up to February 1, 1960, it has not been necessary to borrow from the bank for current needs. With variations in expenses, and in the time of receipt of dues income, and with the continued investment of money, it has been necessary in past years to borrow for a short period. This was done to save interest, especially on money in savings banks. The figures for the year 1959 for the operation of the JOURNAL show before allocation of members dues of $74,568 a loss of $26,734. The dues allocation is $3.00 per member. The JOURNAL is sent to all members without additional charge. The JOURNAL, as is the case with all other departments of the Medical Society, shares its allocated rental cost.

The rent for our entire quarters of the 18th floor, and some space in the basement, is $73,637 annually. This does not include cost of electricity, which is a separate item.

The report of the treasurer and of the investment committee will present statistical and other data on our income and on our costs.

A few general statements as to our operations during 1959 would, however, be in order. With regard to the General Fund, it will be noted that surplus decreased $99,144 during 1959. This requires a word of explanation.

We moved our offices in 1958. At that time, the Board voted to pay the entire moving cost from the Repair and Replacement and Building Funds. The cash, however, was not available in these two funds at the time. It was, therefore, decided that the General Fund would advance the cash and be repaid over a period of about fifteen years from fund income. During 1958 approximately $10,000 was repaid.

In 1959, the Board decided that we ought not to continue this and voted to wipe out the balances due the General Fund. The balance at that time was $53,970. Accounting procedures required that this amount be charged against income of the General Fund. It is included in the surplus of $99,144 mentioned above. If this amount is deleted from the $99,144 our actual deficit from 1959 operations was $45,174.

Our financial advisers, the Chase Manhattan Bank, present quarterly reports, and we have the report ending December 31, 1959. We have special funds such as a War Memorial Fund and the Pension Fund, and we have the Operating and Reserve Funds known as the General Fund, Investment Fund, Employe's Beneficiary Fund, Repair and Replacement Fund. As of October 1, 1959, the return on securities in the Regular or Investment Fund was 3.72, the Employe's Beneficiary Fund 3.45, the Pension Fund 4.03, the War Memorial Fund 2.97. Investments in the War Memorial Fund are entirely in U.S. Treasury Bonds. The Pension Fund is the more recent fund.

It is to be noted that the Medical Society does not have, as yet, investments in securities generally referred to as "mutual funds."

The recapitulation of the combined security holdings of the Medical Society of the State of New York presents a total market value of $1,503,375, with an approximate annual income of $54,700.

For the Board of Trustees, I wish to present our sincere thanks to the Budget Committee consisting of Maurice J. Dattelbaum, M.D., Samuel Z. Freedman, M.D., and Frederic W. Holcomb, M.D.; to the treasurer, Maurice J. Dattelbaum, M.D.; to the secretary, William L. Wheeler, Jr., M.D., and to the executive director, Herbert T. Wagner, M.D. We have had the great help of the controller, Thomas E. Alexander, at all of our Board meetings. Mr.

Alexander and Dr. Dattelbaum can usually come up with the answer on our inquiries for statistics. We are especially indebted to the executive assistant, Miss Doris K. Dougherty. Over the years, Miss Dougherty has been of great assistance to me. In the ten years of service on the Board of Trustees, during which I have twice been chairman, I have found great comfort in Miss Dougherty's assistance. We all appreciate the efficiency and great ability of our stenotypist, Mrs. Grimm.

Respectfully submitted,

Herbert H. Bauckus, M.D., *Chairman*

Budget

To the House of Delegates, Gentlemen:

The Budget Committee consists of the following:

Maurice J. Dattelbaum, M.D., *Chairman*	Kings
Samuel Z. Freedman, M.D.	New York
Frederic W. Holcomb, M.D.	Ulster

The Budget Committee is responsible for obtaining budgets for each department and activity of the Society. During the latter months of 1959, five meetings were held to prepare the 1960 budget for submission to the Council.

During April and May, 1960, additional time will be devoted to revising our present estimates as well as to include those items which were approved by the Council and Board of Trustees since the Budget Committee last reported to these groups.

A supplemental report will be submitted.

Budget preparation is an interesting and worth-while task. A full knowledge of the Society as related to all bureaus and activities is required if a reasonable and accurate report is to be presented. Awareness of over-all policy is a prerequisite, since the committee does not attempt—nor does it have the power—to establish policy. The completed budget, therefore, represents what we believe is a combination of the necessary financial needs of each activity coupled with our over-all policy. Furthermore, the work is approached with the desire to maintain a "pay as you go" policy. Sometimes this is almost impossible to accomplish. The Society is faced with rising wages and prices. An adequate staff must be maintained. We must pay salaries that will attract high caliber personnel. We must provide sufficient remuneration to continue this staff in our employ, thereby avoiding costly turnover. As to other rising prices, we know that everything we buy is costing more. Rent, telephone, stationery, and the like require higher budgetary provision each year. This condition is in no way different from that which the small business to the largest of organizations faces.

In the past we have found it advisable to confer with committee chairmen in some instances to arrive at an equitable budgetary appropriation. The Budget Committee hopes to extend this method of budgeting to go deeper into the problems of the various departments when connected with finance.

We realize the budget is only a plan. Often estimates are not realistic and need revision. Emergencies arise. This results in extra budgetary appropriations during the ensuing year. As has been noted before, we hope that the need for extra budgetary requests will substantially decrease.

It is interesting to note that the budget report submitted to the House at the May, 1959, meeting showed a net deficit of $79,426. Our actual 1959 deficit was $45,173.

The 1960 budget as presented to the Council is appended in Table I.

The chairman of the Budget Committee wishes to thank each committee member for his work during the past year. There has been excellent cooperation and much work has been put into this phase of the Society's work. The Council and the various committee chairmen responsible for Society activities also deserve a word of thanks for their advice and suggestions.

Respectfully submitted,

MAURICE J. DATTELBAUM, M.D., *Chairman*

TABLE I.—PROPOSED BUDGET FOR THE YEAR ENDED DECEMBER 31, 1960

INCOME	
Dues (net)	$ 494,750
JOURNAL	17,702
Transfers to other funds	. . .
TOTAL INCOME	$ 512,452
EXPENDITURES:	
Administration	$ 217,478
Department of Communications	91,750
Legislation Bureau	26,220
Workmen's Compensation Bureau and Bureau of Industrial Health	33,106
Bureau of Medical Care Insurance	18,205
Scientific Activities	22,247
Woman's Auxiliary	7,968
Travel	50,450
Annual Meeting	15,004
District Branches	5,900
Planning Committee for Medical Policies	1,500
Malpractice Insurance and Defense Board	2,500
Malpractice Audit	2,000
Legal Counsel	40,000
A.M.A. Delegates Expense Fund	5,000
Conference of Presidents	75
Veterans Medical Service Plan of New York	300
Pensions	1,233
Citizen's Health Council	100
Rural Medical Service Committee	?
Blood Banks Association of New York State	11,000
Committee to Combat Cults	3,000
New York Society for Medical Research	100
National Society for Medical Research	. . .
World Medical Association	?
Staphylococcal Committee	. . .
Membership Campaign	2,500
Special Legal Counsel	. . .
Executive Director's Contingency Fund	5,000
Budget Committee's Salary and Overtime Contingency Fund	19,000
Commission of Medical Services	1,000
A.M.A. Committee on Medical Facilities	. . .
Regional Conference on Medical Care	1,550
Provision to Increase Employe's Blue Cross	450
Medical Directory	64,426
TOTAL EXPENDITURES	$ 649,062
Excess of Income over Expenditures	− 136,610
Interest earned	2,500
NET EXCESS OF INCOME OVER EXPENDITURES	$−134,110

Auditor's Certificate

To the Board of Trustees, Medical Society of the State of New York:

We have examined the balance sheet of the Medical Society of the State of New York as of December 31, 1959, and the related statement of operating income and expenses and general and other funds for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

We did not confirm the unpaid members' dues by correspondence with the members, nor did we confirm the amounts due from the U.S. Government under the "Medicare" program, but with respect to the latter we satisfied ourselves by other auditing procedures.

In our opinion, the accompanying balance sheet and the statement of operating income and expenses and general and other funds present fairly the financial position of the Medical Society of the State of New York as of December 31, 1959, and the results of its operations for the year then ended, in conformity with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

PATTERSON & RIDGWAY
Certified Public Accountants

February 18, 1960

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Statement of Operating Income and Expenses

For the Year Ended December 31, 1959

OPERATING INCOME		
Members dues after reserve		$584,644.43
Less: Allocation to JOURNAL circulation income, as authorized by the Board of Trustees		74,568.00
		$510,076.43
Net operating income from JOURNAL		47,833.63
Sales of *Medical Directory*, 1957 edition less charges		318.76
Interest on savings accounts and treasury bills		3,460.64
		$561,689.46
OPERATING EXPENSES		
Administrative	$214,926.74	
Department of Communications	85,026.72	
Legislation Bureau, Albany	28,193.11	
Workmen's Compensation Bureau	31,375.26	
Bureau of Medical Care Insurance	17,654.02	
Scientific Activities	20,172.40	
Woman's Auxiliary	5,086.61	
District branches	4,688.49	
Planning Committee for Medical Policies	871.00	
Malpractice Insurance and Defense Board	2,149.35	
Malpractice Defense Audit	2,067.49	
Legal counsel, retainer and expenses	40,000.00	
Traveling expenses	47,236.61	
Veterans Medical Service Plan of New York	_341.78_*	
American Medical Association Hospitality room expenses	4,309.94	
World Medical Association	1,000.00	
Pensions	3,225.82	
Sundries	3,758.81	
Expenses of Blood Banks Association of the State of New York, Inc.	9,000.00	
Annual Meeting, 1959	25,938.44	
Medical Directory, 1959 (portion of loss allocated to current year)	60,523.74	
		606,862.77
EXCESS OF EXPENSES OVER INCOME TRANSFERRED TO GENERAL FUND		$ _45,173.31_*

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* Italics denote figures in red.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Balance Sheet—December 31, 1959

ASSETS

GENERAL FUND			
CURRENT ASSETS			
Cash in banks and on hand	$ 33,034.99		
Less: Due American Medical Association	50.00	$ 32,984.99	
Accounts and notes receivable (after reserves)		34,270.71	
Dues receivable—net, estimated		6,018.00	
Due from other funds, per contra		8,577.58	
Due from U.S. Government "Medicare"		28,743.28	
Inventories		24,946.34	
Advances to employes		738.87	
TOTAL CURRENT ASSETS			$ 136,279.77
PREPAID EXPENSES			
Sundry expenses and deposits			32,501.55
FURNITURE AND FIXTURES			
At nominal value			2.00
ADVANCES (AFTER RESERVE)			
Veterans Medical Service Plan of New York		14,510.53	
Blood Banks Association of New York State, Inc.		3,200.00	
TOTAL ADVANCES			17,710.53
TOTAL GENERAL FUND			186,493.85
INVESTMENT FUND			
Cash in banks		82,300.59	
Investments at cost (market or redemption value $947,792.77)		612,771.58	
Accrued interest receivable		3,090.99	
Due from Other Funds—per contra		8,026.98	
TOTAL INVESTMENT FUND			706,190.14
SPECIAL FUNDS UNDER CONTROL OF THE BOARD OF TRUSTEES			
EMPLOYEES BENEFICIARY FUND			
Investments—U.S. and other obligations, at cost (market value $89,925.00)	105,934.08		
Accrued interest receivable	674.48		
Due from Investment Fund—per contra	637.45	107,246.01	
REPAIR AND REPLACEMENT FUND			
Investments, at cost (market value $55,593.37)	56,385.06		
Accrued interest receivable	268.85		
Due from Investment Fund—per contra	1,757.37	58,411.28	
TOTAL SPECIAL FUNDS			165,657.29
ENDOWMENT FUNDS			
Cash in banks		15,258.20	
Less: Due to General Fund—per contra		200.00	
TOTAL ENDOWMENT FUNDS			15,058.20
PENSION FUND			
Cash in bank		1,464.69	
Investments, at cost (market value $235,992.50)		249,717.37	
Interest receivable		2,651.64	
Due from General Fund—per contra		2.84	
TOTAL PENSION FUND			253,836.54
WAR MEMORIAL FUND			
Cash in bank		35.35	
Investments—U.S. Treasury Bonds (market value $174,070.94)		189,289.89	
Accrued interest receivable		801.80	
		190,127.04	
Less: Due to General Fund—per contra		5,700.00	
TOTAL WAR MEMORIAL FUND			184,427.04
TOTAL ASSETS			$1,511,663.06

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Balance Sheet—December 31, 1959

LIABILITIES AND FUNDS

GENERAL FUND			
Current Liabilities			
Accounts payable		$ 34,340.78	
Taxes payable (including withholding)		13,659.14	
Due to Pension Fund—per contra		2.84	
Due to Investment Fund—per contra		8,000.00	
Total Current Liabilities			$ 56,002.76
Deferred Credits			
Membership dues 1960		9,769.80	
Annual Meeting 1960		21,440.00	
Sundry		2,301.25	
Total Deferred Credits			33,511.05
General Fund			96,980.04
TOTAL GENERAL FUND			186,493.85
INVESTMENT FUND			
Reserve for depreciation of investments		50,000.00	
Due to Other Funds—per contra		2,394.82	
Balance		653,795.32	
TOTAL INVESTMENT FUND			706,190.14
SPECIAL FUNDS UNDER CONTROL OF THE BOARD OF TRUSTEES			
Employees Beneficiary Fund	$104,568.43		
Due to General Fund	2,677.58		
		107,246.01	
Repair and Replacement Fund		58,411.28	
TOTAL SPECIAL FUNDS			165,657.29
ENDOWMENT FUNDS			
Lucien Howe Prize Fund		6,339.12	
Merit H. Cash Prize Fund		2,131.18	
A. Walter Suiter Lectureship Fund		6,587.90	
TOTAL ENDOWMENT FUNDS			15,058.20
PENSION FUND		253,809.56	
Due to Investment Fund—per contra		26.98	
TOTAL PENSION FUND			253,836.54
WAR MEMORIAL FUND			184,427.04
TOTAL LIABILITIES AND FUNDS			$1,511,663.06

Note: The Society has a Revolving Fund of $150,000 from the U.S. Army (Medicare Program). It has claims from physicians, either paid or approved for payment, totaling $127,766.99, that have not yet been reimbursed by the government.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Cash in Banks and on Hand

December 31, 1959

GENERAL FUND	$ 33,034.99*
INVESTMENT FUND	82,300.59
PENSION FUND	1,464.69
TOTAL	116,800.27
ENDOWMENT FUNDS	
Lucien Howe Prize Fund	6,339.12
Merit H. Cash Prize Fund	2,231.18
A. Walter Suiter Lectureship Fund	6,687.90
TOTAL (UNION DIME SAVINGS BANK)	15,258.20
WAR MEMORIAL FUND	
On deposit	35.35

* Includes $50 due American Medical Association.

Investments

The investments of the Society are summarized as follows:

	Cost	Market
INVESTMENT FUND		
U.S. Government obligations	$128,070.71	$118,140.96
Railroad Bonds	5,551.25	5,400.00
Industrial and Finance Bonds	49,887.18	47,452.50
Utility Bonds	151,079.09	138,980.00
Mortgage	1,505.31	1,505.31
Preferred Stocks	29,501.47	26,565.00
Common Stocks	247,176.57	609,749.00
TOTAL	612,771.58	947,792.77
PENSION FUND		
U.S. Government obligations	2,969.49	3,000.00
Utility Bonds	188,167.83	174,390.00
Bank and Finance Bonds	41,100.00	39,621.25
Common Stocks	17,480.05	18,981.25
TOTAL	249,717.37	235,992.50
EMPLOYEES BENEFICIARY FUND		
U.S. Treasury Bonds	55,000.00	46,450.00
Public Utility Bonds	40,631.89	34,950.00
Industrial Bonds	10,302.19	8,525.00
TOTAL	105,934.08	89,925.00
REPAIR AND REPLACEMENT FUND		
U.S. Treasury Bonds	29,987.50	27,806.87
Utility Bonds	16,555.65	15,415.00
Common Stocks	9,841.91	12,371.50
TOTAL	56,385.06	55,593.37
WAR MEMORIAL FUND		
U.S. Government obligations	$189,289.89	174,070.94

MEDICAL SOCIETY OF THE STATE OF NEW YORK

Statement of General and Other Funds

For the Year Ended December 31, 1959

	General Fund	Investment Fund	Building Fund	Employees Beneficiary Fund	Repair and Replacement Fund	Pension Fund	War Memorial Fund	Lucien Howe Prize Fund	Merit H. Cash Prize Fund	A.W. Suiter Lectureship Fund
BALANCE AT JANUARY 1, 1959	$196,124.07	$519,754.92	$76,425.10	$112,045.25	$34,357.81	$242,653.69	$201,844.85	$6,133.44	$2,158.81	$6,470.92
ADDITIONS										
Interest on bank balances	.....	2,304.19	.....	.....	.....	.....	.....	205.68	72.37	216.98
Income from securities	.....	34,814.13	.....	3,208.55	2,176.00	9,342.85	5,162.50	.....	.....	.....
Assessments and contributions received	.....	.....	.....	.....	.....	2,836.56	.....	.....	.....	.....
Transfer of Building Fund to Investment Fund—per contra	.....	76,425.10	.....	.....	.....	.....	.....	.....	.....	.....
Transfer of expenses incurred being absorbed by General Fund	.....	32,071.30	.....	.....	21,899.42	.....	.....	.....	.....	.....
Total Additions	.....	145,614.72	.....	3,208.55	24,075.42	12,179.41	5,162.50	205.68	72.37	216.98
DEDUCTIONS										
Custodian and investment service fees	.....	2,605.00	.....	.....	.....	.....	.....	.....	.....	.....
Amortization of bond premiums	.....	59.32	.....	75.89	21.95	50.78	80.31	.....	.....	.....
Prizes	.....	.....	.....	.....	.....	.....	.....	.....	100.00	100.00
Loss (net) from sale of securities	.....	8,910.00	.....	.....	.....	19.60	5,400.00	.....	.....	.....
Transfers—Building Fund transferred to Investment Fund—per contra	.....	.....	76,425.10	.....	.....	.....	.....	.....	.....	.....
Benefits disbursed	.....	.....	.....	10,609.48	.....	953.16	17,100.00	.....	.....	.....
Excess of expenses over income	45,173.31	.....	.....	.....	.....	.....	.....	.....	.....	.....
Transfer of expenses incurred by Investment Fund and Repair and Replacement Fund being absorbed by General Fund	53,970.72	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total Deductions	99,144.03	11,574.32	76,425.10	10,685.37	21.95	1,023.54	22,580.31	.....	100.00	100.00
Net Increase or *Decrease*	*99,144.03**	134,040.40	*$76,425.10**	*7,476.82**	24,053.47	11,155.87	*17,417.81**	205.68	*27.63**	116.98
BALANCE DECEMBER 31, 1959	$ 96,980.04	$653,795.32	.....	$104,568.43	$58,411.28	$253,809.56	$184,427.04	$6,339.12	$2,131.18	$6,587.90

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*Italics denote figures in red.

War Memorial

To the House of Delegates, Gentlemen:

The War Memorial Committee consists of the following members of the Board of Trustees:

Renato J. Azzari, M.D., *Chairman*	Bronx
Leo E. Gibson, M.D.	Onondaga
James Greenough, M.D.	Otsego
Maurice J. Dattelbaum, M.D., *ex officio*	Kings

It gives me sincere pleasure to report to you on this State Society project with which I am so closely associated. The members of the War Memorial Committee who administer the War Memorial Fund share with me the pride of achievement of this Fund, one of the most worthy of our activities. We want you, the House of Delegates, the officers, and the members of the State Society to share with the committee this pride. We also want to share with you the pride we take in the achievements of our students; the children of our colleagues who died in the service of our country. It is a very personal relationship that we have with these children; and though we are aware of the grave responsibilities we have in the administration of the Fund we are gratified for the chance to do for these children what their own fathers would have liked to do if they were alive today. The students who have received our help in the past and those receiving it now are aware of the privileges of the Fund and feel a strong obligation to live up to these privileges. This they show by their application to their college work and the high marks they receive. The letters from the students and their mothers are replete with gratitude at a chance for college, and in many instances, postgraduate education, that they might not otherwise have.

I quote excerpts from just a few of the many letters on file in our office.

Mother of N. who is taking a B.S. in Nursing:

"She is the second highest in her class and very interested in her chosen profession. I wish to thank you again for your interest and concern and wish to thank the members of your profession for making this possible."

Mrs. S. whose son is a law student:

"James is very enthusiastic about his chosen profession and was told he showed 'extreme excellence' in this three-hour entrance examination."

Mrs. S. whose son, Dr. C., we saw through college and medical school, has six children, five of whom we have helped:

". . . is a urology resident at Blank Hospital. I can never thank you for all the financial assistance you have given me. It has helped so much during their college years. They have turned out to be fine children, and my heart wells with gratitude to the doctors in the Medical Society who have made this possible."

Mrs. H., two children in college:

"Happy to report they are both doing well. They have both made the dean's list. Thank you for your concern. We are most grateful to the Medical Society for helping to make this fine education possible. Both children work during the summer vacation."

Stepfather of F.B., who graduated from Yale and entered the Navy:

"I think I told you also that his Navy experience took him over much of the course followed earlier by his father, and that he took photographs of his father's grave, which is now in Honolulu, although he was killed on Okinawa—which, also, F. has visited.

"Last June F. finished his tour of duty and came home. He investigated a number of business opportunities in New York, and right after Labor Day began work in the management training program of the Blank Bank. For the time being, he is making his home with us and commuting to New York. To the best of my knowledge, he is doing well in this program.

"Within reason, it seems now that F.'s future is assured. Also he has been most considerate of his mother and of me and his return home has been a most happy family reunion. We do not ever forget how much of the credit for this situation belongs to the Medical Society of the State of New York. Your assistance in financing F.'s education was truly needed and has been deeply appreciated by us. His mother and I think—and we believe you will agree—that F. has proven a worthy son of a fine father and a sound investment in American manhood on the part of the Society."

Mrs. T., whose daughter is a student in college:

"S. is a sophomore at the College of Blank and is doing well. She is considering going into nursing next year to get her B.S. degree. Plans, however, are not definite.

"Again, I wish words could express my gratitude to the Medical Society for this gesture of creating the War Memorial Fund. Without it an education for my girls would have been very doubtful. So it has not only been a blessing to them but also to me, their mother.

TABLE I.—PROJECTION OF WAR MEMORIAL FUND ASSETS THROUGH 1978

Year	Assets Beginning of Year	Interest Earned During Year	Total	Estimated Payments to Beneficiaries	Assets End of Year
1958	$216,182	$ 5,117	$226,587	$ 19,620	$201,679
1959	201,679	4,556	205,855	20,700	185,535
1960	185,535	4,155	189,690	25,560	164,130
1961	164,130	3,675	167,805	26,100	141,705
1962	141,705	3,075	144,780	23,400	121,380
1963	121,380	2,600	123,980	20,520	103,460
1964	103,460	2,175	105,635	17,640	87,995
1965	87,995	1,825	89,820	15,300	74,520
1966	74,520	1,512	76,032	13,500	62,532
1967	62,532	1,430	63,962	11,520	52,442
1968	52,442	1,265	53,707	6,120	47,587
1969	47,587	1,237	48,824	2,880	45,944
1970	45,944	1,182	47,126	2,160	44,966
1971	44,966	1,182	46,148	1,980	44,168
1972	44,168	1,182	45,350	1,440	43,910
1973	43,910	1,155	45,065	1,080	43,985
1974	43,985	1,155	45,140	900	44,240
1975	44,240	1,155	45,395	540	44,855
1976	44,855	1,155	46,010	540	45,470
1977	45,470	1,155	46,625	540	46,085
1978	46,085	1,155	47,240	360	46,880
TOTAL		$43,098		$212,400	

"Thank you again. With all good wishes to you for the New Year."

There have been a few cases where the absence of the father presented a schooling problem with which the mother needed assistance. Here, too, the committee was able to act as adviser with good results.

A total of 48 students to date have received benefits; 16 for the 1959–1960 school year.

The financial report as of December 31, 1959, follows:

	Amount
Total assessments received*	$248,606
Total interest received*	55,619
Total paid out in benefits*	113,400
Assets of Fund, December 31, 1959	190,207
Year ended December 31, 1959	
Assessments received	. . .
Interest received	5,082
Payments to beneficiaries	17,100

*Since inception of Fund.

A report of investments will appear in the Treasurer's report.

Table I is a projection of the War Memorial Fund assets through 1978, after which year, we believe, there will be no further need for the War Memorial Fund to exist.

The projection, however, is purely statistical, and may not present a true picture for the entire period shown. For instance, there may be changes in the earned interest of our investments in any given year; there may be a family unknown to us now who will be entitled to benefits; some of the children may not wish to enter college and take advantage of the benefits from the Fund; some may marry and relinquish their rights. There have been no changes in the projection since it was prepared on November 1, 1958. With this flexibility in interpretation it is hereby presented.

One family has been brought to our attention by the executive secretary of a county medical society. We are in the process of collecting documents which will show whether the deceased physician died of a service-connected illness. If this is proved to the satisfaction of the committee, the children of the physician may be entitled to benefits.

The chairman wishes to thank the members of his committee for their sage advice and assistance; and Mr. Thomas E. Alexander for his painstaking efforts in preparing the projection. The committee extends to Miss Mollie Pesikoff sincere thanks for her devoted and enthusiastic work in carrying out the administrative duties of the Fund and her friendly interest in our beneficiaries.

Respectfully submitted,
RENATO J. AZZARI, M.D., *Chairman*

COMMISSION ON MEDICAL SERVICES—A

Reports in this section are referred to the Reference Committee on Commission on Medical Services—A, consisting of the following:

Irving L. Ershler, M.D., Onondaga, *Chairman*
Alfred L. George, M.D., Genesee
Harold J. Dunlap, M.D., Westchester
Vincent J. Collins, M.D., New York, Section on Anesthesiology
William T. Boland, M.D., Chemung

COMMISSION ON MEDICAL SERVICES

To the House of Delegates, Gentlemen:

The Commission on Medical Services was set up in June, 1959, to include the Council Committees on Economics, Questions of Ethics, Hospital and Professional Relations, Industrial Health, Medical Care Insurance, Rural Medical Service, and Workmen's Compensation, together with their subcommittees. The annual reports of the individual committees appear below.

In implementing this portion of the Management Survey Report, the Commission has been able to strengthen some of the committees with increased staff assistance. The reports to the monthly meetings of the Council have also been presented more expeditiously with the important highlights emphasized for careful evaluation before final action is taken. Particularly noteworthy are the increased activities and achievements in the field of rural medical service under Edward C. Hughes, M.D., and the tremendous volume of work under William E. Pelow, M.D., in workmen's compensation, ably assisted by Anthony A. Mira, M.D., as director. We shall miss him and wish him well in his new position. Medicare, under Waring Willis, M.D., economics, came in for justifiable praise when reviewed by the Army team of inspectors, who feel that Mr. George P. Farrell has done an outstanding job for New York. These activities have reflected favorably on the State Medical Society from a public relations point of view, and further prestige can be expected from the vigorous leadership of these Council committee chairmen in the year ahead.

Respectfully submitted,
Gerald D. Dorman, M.D., *Chairman*

Economics

To the House of Delegates, Gentlemen:

The Economics Committee is composed of the following:

Waring Willis, M.D., *Chairman*	Westchester
George Rehmi Denton, M.D.	Albany
Merle D. Evans, M.D.	Monroe
Milton B. Spiegel, M.D.	Kings

The committee has held one meeting, with the full committee present, on January 5, 1960. The committee has met regularly as required, for the review and adjudication of Medicare claims.

The committee reviewed the schedule of allowances submitted to it by Norman S. Moore, M.D., chairman, Committee on Public Health and Education, which was a uniform schedule for the Medical Rehabilitation Program of the New York State Department of Health and the Department of Education's Vocational Rehabilitation Program. The committee recommended adoption of this schedule by the Council since it provided uniformity for these departments and an increase of 25 per cent in practically all procedures. The committee felt further thought should be given to the fees for internists but recommended adoption of the schedule at this time. The Council approved this at its September meeting.

Your chairman attended a meeting of Associated Blue Shield Plans of New York State on August 29, 1959, in Syracuse, the first official meeting of the association. The public relations committee of the association recommended the following points for the attention of the State Medical Society: (1) guarantee to the subscriber free choice of physician, (2) increased effort to disseminate information to the public regarding the role of the participating physician in Blue Shield plans, specifically their contribution of time in the development of these plans.

The association's legislative committee recommended the employment of a legislative consultant to represent the plans regarding legislation, also that Article IX–C of the Insurance Law, by legislative amendment, be modified to make dental and podiatry services permissive in Blue Shield plans rather than mandatory.

A relative value study was discussed, and it was recommended that the State Medical Society undertake such a study because it should be done by the medical profession. The association offered any help to the State Medical Society it might request.

Also discussed was the problem of the participating and nonparticipating doctors rendering services to members of the State civil service group. A participating doctor is bound by the service feature of the contract, whereas the nonparticipating doctor may charge his usual fee and if in excess of the schedule in the basic contract, the excess would be made up by the commercial major medical coverage contract. It was agreed that the Temporary Health Insurance Board, which negotiated the contract for the civil service employes, be petitioned by the association to so amend their contracts that no additional payments would be available under the commercial major medical portion of the contract to nonparticipating physician treating eligible service benefit patients.

A request by the hospitals in the Buffalo area that interns and residents receive payment from Blue Shield for services rendered to participants was considered. It was pointed out that the State Society was against payment for services rendered under Blue Shield contracts for such services.

A suggestion was adopted that the association ask the cooperation of the Publication Committee of the State Society in approving a program to include articles on voluntary health insurance and Blue Shield in the NEW YORK STATE JOURNAL OF MEDICINE with the plans participating in supplying articles.

The report on your chairman's attendance at the association meeting on August 29, 1959, was approved by the Council at its September meeting.

Your chairman participated in a panel discussion on October 15, 1959, regarding medical economics as applied to the practice of medicine, at the joint Third and Fourth District Branch meeting in Liberty.

At the November Council meeting the appointment of Milton B. Spiegel, M.D., of Kings as a member of the Economics Committee was approved.

At the committee's January 5, 1960, meeting, a relative value study for the State of New York was discussed in considerable detail. The committee unanimously agreed that such a study should be undertaken, and after review of the experiences in states which had completed a study, it was felt that by utilizing the questionnaire developed by the American Medical Association a study for New York State could be undertaken without too much expense involved. The committee recommended that Mr. George P. Farrell supervise the study and a budget be recommended for this purpose. Approval was voted by the Council at its January meeting, an appropriation of not more than $1,000 recommended by the Council for authorization by the Board of Trustees.

The committee considered correspondence from the Medical Society of the County of Albany regarding a major hospital and nursing expense plan and a life insurance program for members of the Third and Fourth District Branches. It was noted that solicitation by Mr. James Brock of Utica was on the letterhead of the State Medical Society. The Council approved a recommendation of the committee that district branches be notified that State Medical Society letterheads are not to be used for any commercial promotion purposes, unless approved by the State Society.

The committee considered a matter from Harold J. Harris, M.D., supervisor of medical services, Essex County Department of Public Welfare, concerning a directive of the State Department of Social Welfare whereby physicians shall prescribe for welfare patients drugs by nonproprietary, chemical, or generic names instead of by their proprietary or trade names. The purpose is to cut down the cost of drugs for welfare patients. The Medical Society of the County of Essex in April, 1959, approved the State Department of Social Welfare's ruling, but the ruling was not well received by the pharmacists and the Pharmaceutical Association. The Council voted to refer this matter to the Joint Committee with the State Pharmaceutical Association.

The Council at its January meeting referred back to the committee the matter regarding nonparticipating physicians' charges for civil service employes, for further consideration with the Medical Care Insurance Committee. The outcome of this matter is included in the report of the Medical Care Insurance Committee.

The committee wishes to express its thanks to the officers of the State Society and to Herbert T. Wagner, M.D., executive director, for their interest in the committee.

It also wishes to express its appreciation to Mr. George P. Farrell, director of the Bureau of Medical Care Insurance, for his assistance and advice.

Respectfully submitted,

WARING WILLIS, M.D., *Chairman*

Bureau of Medical Insurance

The Bureau of Medical Care Insurance, Mr. George P. Farrell, director and administrative officer of the Medicare Program, reports through your Economics Committee to the Council. The Bureau operates under the direction of the Economics Committee and Medical Care Insurance Committee, components of the Commission on Medical Services.

In addition to his duties as director of the Bureau of Medical Care Insurance and administrative officer of the Medicare Program, Mr. Farrell has arranged two regional conferences on medical services at the request of and in cooperation with George J. Lawrence, Jr., M.D., chairman of the Special Committee on Resolution 58–49—"Medical Care, the Job of the Medical Profession," sponsoring the conferences. The first conference was held in Buffalo, representative of the Seventh and Eighth District Branches, the second in Syracuse, representative of the Fifth and Sixth District Branches, January 15 and 16, 1960, and March 12 and 13, 1960, respectively.

Mr. Farrell's other activities were as follows:

April 12 to 16, 1959—Attended Blue Cross-Blue Shield Conference, Miami Beach, Florida.

April 21, May 25, 1959—Spoke before Bronx and Rensselaer County office assistants groups on Medicare.

June 12 and 13, 1959—First National Conference of the Joint Council to Improve the Health Care of the Aged, Washington, D.C.

July 18, 1959—Regional Conference on Relative Value Studies, on invitation of Norman S. Moore, M.D., called by the A.M.A., and held in Boston, Massachusetts.

July 28, 1959—Symposium by the Life Insurance Association of America, American Life Convention, and Institute of Life Insurance, on invitation of Mr. Holgar J. Johnson, president of the Institute of Life Insurance, at Madison Square Garden, New York City.

August 29, 1959—Joint meeting of Associated Blue Shield Plans of New York State and Medical Care Insurance Committee, Syracuse.

September 12, 1959—Conference of Medical Society Officers.

October 7, 1959—Meeting of Public Health Association of New York City.

October 22, 1959—Joint Blue Cross-Blue Shield meeting regarding Public Law 86,382, Sen. 2162, to establish a contributory plan of health benefits for Federal employes, effective July 1, 1960, held in Chicago, Illinois.

October 25 to 29, 1959—Meetings called by Dr. Ray E. Trussell, chairman of the Columbia University Study of Nonprofit Medical Care Insurance Plans.

November 18, 1959—Meeting in Kingston on invitation of Arthur A. Fischl, M.D., Medical Director of Group Health Insurance, New York City.

December 1 to 4, 1959—Interim Session of the

TABLE I.—MEMBERSHIP IN BLUE SHIELD AND BLUE CROSS PLANS IN NEW YORK STATE

Location	Membership		Increase	
	Medical	Hospital	Medical	Hospital
New York	5,134,482	7,221,962	106,865	111,395
Buffalo	667,375	752,554	92,723	35,667
Rochester	471,833	519,362	29,282	9,375
Syracuse	260,664	426,464	14,728	−122
Utica	229,161	227,827	7,286	1,542
Albany	292,462	358,456	13,064	7,666
Jamestown	30,205	55,720	871	1,195
Watertown*	. . .	30,459	. . .	1,676
TOTALS	7,086,182	9,592,804	264,819	168,394

*Utica Plan serves Watertown area for Blue Shield members.

A.M.A., reference committees and House of Delegates, Dallas, Texas.

December 8, 1959—Represented Carl R. Ackerman, M.D., at meeting of the Advisory Committee to the Special Task Force on Catastrophic Expense Health Insurance Legislation, with report made to Dr. Ackerman.

During September and October, 1959, Mr. Farrell attended the Seventh and Eighth District Branch meetings, and the joint Third and Fourth District Branch meetings, and spoke briefly on the progress of the Blue Shield plans and the activities of Medicare.

Mr. Farrell has also attended meetings of the Economics and Medical Care Insurance Committees, Special Committee on Resolution 58–49, and Council meetings.

The bureau compiled the Thirteenth Annual Progress Report for 1959 on the New York State Blue Shield Plans, showing detailed analysis of each plan in regard to membership, incurred and paid claims, claim incidence, operating expenses, premium income, and so forth, for the information of the House of Delegates and members of the State Society.

Quarterly progress reports on the plans have been prepared, and detailed information on the experience and utilization is available to the members of the State Society at the office of the Bureau of Medical Care Insurance.

Progress of the Blue Shield plans in New York State shows that as of December 31, 1959, total membership (subscribers and dependents) was 7,086,182, an increase of 264,819 for the year.

Table I is a statement of membership in Blue Shield medical care plans and Blue Cross hospital plans, showing comparative increases for 1959.

Blue Shield plans in the State had an earned premium income during 1959 of $94,744,940 as compared to $87,529,940 in 1958, an increase of $7,215,000.

Incurred claim expense during 1959 amounted to $83,863,913, as compared to $76,127,305, an increase of $7,736,608 during the year. Incurred claims were 88.52 per cent of earned premium income in 1959 as compared to 86.97 per cent in 1958.

Mr. Farrell wishes to express his appreciation to Mrs. Alice Arana for her conscientious service to the bureau in preparing reports on the Blue Shield plans and many other duties in a secretarial capacity.

Medicare

Because of changes in benefits under the Medicare Program during the past year, a brief history is in order.

The Program which became effective December 7, 1956, provided medical and hospital care for dependents of people in active military duty.

During the first year's operation there were 12,497 medical claims paid in the amount of $949,988 in New York State. During 1958, the second year of operation, it increased to 20,772 claims in the amount of $1,558,151.

Effective as of October 1, 1958, a directive was issued from the Office for Dependents' Medical Care, Washington, D.C., curtailing benefits under the program because the appropriation allotted to the Program was being exceeded by approximately $12,000,000 per year.

A special *Newsletter* of the Medical Society of the State of New York was sent to all members regarding these changes.

During 1959, the third year of operation, there were 11,900 claims paid in the amount of $938,385.

During the three-year period 45,169 claims have been paid for medical services in the amount of $3,456,545, and as of March 1, 1960, 7,706 physicians have rendered service under the Program.

Waring Willis, M.D., chairman of the Council Committee on Economics under whose jurisdiction the Medicare Program operates, is pleased to announce that most Medicare services for dependents were restored, effective January 1, 1960.

A special *Newsletter* was sent to all members regarding these changes including specific information contained in the government directive.

It has been necessary for the Economics Committee to review claims which require special consideration for adjudication at least monthly.

The Washington Office under the direction of General Floyd L. Wergeland, executive director, has been most helpful and cooperative in accepting the recommendation of the physicians' review committee regarding unusual claims.

During the past year three separate departments of the Federal Government have separately audited the office of Medicare and commended the operation as efficient and in order.

Commendation to Mr. George P. Farrell and Mrs. Nan Boynton and her staff for the manner in which the Medicare Program has been operated is in order.

Liaison with U.S. Veterans Administration

The membership of the Subcommittee on Liaison with U.S. Veterans Administration of the Economics Committee is as follows:

Harry Golembe, M.D., *Chairman*	Sullivan
Herbert H. Bauckus, M.D.	Erie
Samuel B. Burk, M.D.	New York

This subcommittee has not found it necessary to have a meeting since its report at the last House of Delegates in May, 1959.

At the last subcommittee meeting held just prior to the annual meeting, a new contract and fee schedule was adopted and approved by the Veterans Administration, effective July 1, 1959, through June 30, 1960. From all reports everything has been running smoothly, and no specific complaints have been reported to the Veterans Medical Service Plan of New York, Inc., of which Herbert H. Bauckus, M.D., is president.

The annual report of the Veterans Medical Service Plan of New York, Inc., follows.

Respectfully submitted,
HARRY GOLEMBE, M.D., *Chairman*

Veterans Medical Service Plan of New York, Inc.

To the House of Delegates, Gentlemen:

Since 1957 to 1959, we have had changes in our authorization procedure. Instead of monthly authorization we now have what is known as long-term authorization. This authorization may extend for a period up to a year in many chronic cases. This has greatly reduced the work of our coordinators. It has also greatly reduced the contact which our coordinators make with the fee basis system. Authorization, in all cases, is always made by the Veterans Administration.

It is interesting to note that in past years we have had similar efforts made by our fee basis physicians, for which they were summarily criticized. I think I can best illustrate this by quoting from one of my reports to the Council:

> "If you will recall in 1952 and 1953 we had prescriptions filled by pharmacists, especially in the New York City area, that were prescription refills. In this case the doctor did not write the prescription, he received no pay or authorization for his call, but he did state this was a refill. When it came to the question of the pharmacies receiving payment—and there were some 130 cases—the Veterans Administration local office in New York City, and for a time they were upheld by Washington, stated that this was a bill that must be paid by the physician who had first authorized, and we had considerable difficulty about that. They took steps to collect. In some cases they took money from fees that were owed to the doctor for other cases, and in general made life pretty miserable for us. However, finally it was shown that this was a saving to the Veterans Administration because of the saving of reauthorization and the payment to the doctor for medical services, and it is the way that medicine is generally practiced, and we resolved it in large part in that way."

Over the years I have called attention to various difficulties in our efforts. In 1957 I presented an interesting incident to the Council, in the following:

> "The Manager, Veterans Administration Hospital,——————, has furnished a report of the circumstances surrounding the reclaim in the amount of $40.70 against Dr. X. The veteran patient, Mr. R.C., has a 50 per cent service-connected disability for arthritis, hypertrophic, dorsal and lumbar spine with limitation of motion and scoliosis. During the period February 3, 1956, to December 10, 1956, prescriptions amounting to $40.70 were written for Metamine, a vasodilator. This prescription obviously was written for the patient's nonservice-connected disability of coronary disease.
>
> "As pointed out in our letter of September 19, we are permitted by law to provide outpatient care for those conditions which have been adjudicated as being service-connected or are adjunct thereto. Any treatment rendered for nonservice-connected disabilities must therefore be arranged between the physician and the patient."

This letter was signed by the assistant chief medical director for operations. The coordinator reported that the veteran patient agreed to reimburse the Veterans Administration at the rate of $3.00 per month for the drugs he received for treatments that were designated for a nonservice condition, although for the same man suffering from a chronic service-connected disability. The coordinator adds, "I should expect that in the very near future Dr. X will receive all the monies due him." This was one of those cases in which the physician was required to advance the money for the drug in question. One of the disturbing features is that this case had been in a veterans hospital and when the patient is cared for in a veterans hospital, all treatment is provided by the Veterans Administration.

In the past year I do not recall receiving any complaints on our fee basis cases, either from the Veterans Administration, the veteran patient, the coordinator, or by any of our fee basis attending physicians. It appears that there has been very little work required of the coordinator. In our Western New York office, the fee basis and clinic work have been administered in the Veterans Hospital. The coordinator reports that for several months he had no requests made upon his services and, apparently, has had no participation in the fee basis work.

In 1958, our Liaison Committee, with the approval of the Council, adopted a fee schedule also approved by the Veterans Administration.

At the present status, I do not feel that the Veterans Administration is any longer justified in reimbursements for the work of the coordinator. The coordinators in our four regional offices now work only three half days per week. Under these circumstances, I do not believe we should desire to make a new agreement to employ coordinators when our present agreement with the Veterans Administration expires June 30, 1960.

I am of the opinion that the Medical Society of the State of New York should continue its liaison with the Veterans Administration so that the Society may cooperate in medical care for service-connected disease or disability in veterans. This would call for attention to fee schedules and the receiving of suggestions and complaints from physicians and patients. In 1958, I received from our legal counsel an opinion that we did not need a separate veterans plan to make agreement or contract with the Veterans Administration. At that time the legal counsel added that it would not be necessary to dissolve the Veterans Medical Service Plan, Inc., if it ceased to function.

On February 19, 1960, the legal counsel gave his opinion as follows:

> "In our opinion there is no legal reason why the State Society cannot enter into an agreement with the Veterans Administration to administer the Veterans Care Plan in the place and stead of the Veterans Medical Service Plan of New York, Inc. as suggested by Dr. Bauckus. May we suggest that consideration be given to placing the administration of such an agreement under the aegis of the Bureau of Medical Care Insurance which is already handling the administration of the Medicare contract between the Society and Federal Government."

The Veterans Medical Service Plan of New York, Inc., began its work in 1946. The director of the Veterans Administration, General Omar Bradley, enthused with us at our first meeting. He called for medical care "second to none" for the veteran. I believe our fee basis physicians have always responded in full to this toast.

The New York Plan is unique in that it, alone, in the United States had made use of active physician coordinators. This to safeguard the veteran, the attending physician, the Veterans Administration, and the highest standards of medical care. The "Proceedings: Conference on Federal Medical Services" December 1, 1958, presents several articles on home town care plans. Unfortunately, it contains no description of the Veterans Medical Service Plan of New York, Inc.

I believe the subject of medical care for the veteran, such as we have in home town fee basis ventures, calls for A.M.A. coordination in all the states. We will probably have greater cooperation from veterans and their organizations now that A.M.A. policies on nonservice hospitalization have been ameliorated. The former principle was sound, but we should not expect that 50,000 veterans hospital beds would be vacated when the wards of our local hospitals are full. Our efforts should be to secure admission in nonservice cases on a selection basis, favoring economic hardship. In this problem, deans committees and medical education authorities could be helpful.

The Veterans Medical Service Plan of New York, Inc., has participated in all of the home town fee basis service-connected cases in New York State ever since its formation in 1946.

In the annual report to the Council and House of Delegates in the year 1955, we presented statistics of payments and authorizations to fee basis physicians as follows:

In the New York Regional Office and area (1947 through 1954)	$1,725,171
In the Albany Regional area (1949 through 1954)	$794,798
In the Syracuse Regional area (1948 through 1954)	$1,578,270
In the Western New York area (1946 through 1954)	$2,628,000

This is a tremendous amount of business and experience in medical care spread out over the State of New York.

Since 1955, there has been a considerable reduction in the fee basis work of the plan. However, I have just received the 1959 Albany coordinators' report for the Albany regional area. This shows:

Average monthly number of patients	623
Average monthly visits	1,392
Average visits per patient per month	2.22
Average cost per patient per month	$12.52
Average cost per visit	$5.68
Total amount authorized for year 1958	$82,999

All illness or disability in Spanish-American War veterans, in recent years, has been adjudicated service-connected. This has caused a greater demand for home calls by fee basis physicians. In time we shall have a similar need for medical service to the World War I, World War II, and Korean War veterans.

Throughout the entire veteran program, since 1946, W. P. Anderton, M.D., has cheerfully acted as secretary of the plan, with many duties and without financial reward of any kind.

During the past year, the executive director, Herbert T. Wagner, M.D., has taken time from his busy schedule to help us. I am very appreciative of the aid given by Miss Mollie Pesikoff on numerous occasions.

The Board of Directors of the Veterans Medical Service Plan of New York, Inc., is as follows:

Herbert H. Bauckus, M.D., *President*	Erie
Joseph P. Henry, M.D., *Vice-President*	Monroe
W. P. Anderton, M.D., *Secretary*	New York
Renato J. Azzari, M.D., *Treasurer*	Bronx
J. Stanley Kenney, M.D.	New York
Arthur H. Stein, M.D.	Albany
George Burgin, M.D.	Herkimer
Carlton E. Wertz, M.D.	Erie

Respectfully submitted,
HERBERT H. BAUCKUS, M.D., *President*

Rural Medical Service

To the House of Delegates, Gentlemen:

The Rural Medical Service Committee consists of the following:

Edward C. Hughes, M.D., *Chairman*	Onondaga
Thurston L. Keese, M.D., *Vice-Chairman*	Onondaga
Donald C. Walker, M.D.	Schenectady
Bert Ellenbogen, *Adviser*	Ithaca
Granville D. Larimore, M.D., *Adviser*	Albany

During the past year, the Committee on Rural Medical Service has been busy planning and completing its program which embodies an educational and informational program in the areas of our State which are distant from large cities and medical centers. In making preparation for this program, the committee has met with the leaders of the lay agricultural services and the county medical societies throughout the State. It was decided to use the counties of Cortland, Oswego, and Onondaga as a pilot study. The program as outlined is as follows:

Public Forums.—The committee, together with the county medical societies of Oswego and Cortland, is planning public forums which will be informational in nature to discuss the advances which have been made in the science and practice of medicine and which will bring knowledge of these latest methods of treatment to the people of our State These public forums will give information concerning the important epochs of the life cycle. They will be as follows:

1. The physiology of the events involved in the intrauterine growth of the fetus together with some of the conditions which create spontaneous abortion, congenital malformation, premature labor, and congenital anomalies will be illustrated.

2. A second forum will discuss the physical and mental changes of the preschool child, illustrating and describing some of the conditions which cause the highest incidence of death at this time of life. The accident and prevention program will also fit into this phase of the program.

3. The third forum will be directed towards discussing the psychologic, endocrinologic, and physical changes which occur in the teenager.

4. The next forum will discuss some of the diseases which cause the highest number of deaths in the ages twenty to forty and some of the modern methods of treating these diseases, that is, cancer, heart disease, and hypertension.

5. The fifth forum will include the facts concerning the physical and mental changes which occur at the change of life in the male and female.

6. The last forum will discuss the preparation for old age and physical and mental changes which are prone to occur at this time of life.

At these forums, the county medical societies will be in charge. There will be a master of ceremonies and a panel of experts who will describe these conditions and answer questions from the floor. These forums will be entirely informational in character and it is hoped that they will take the place of some of the articles which have been written in the lay magazines concerning medical problems.

Small Group Meetings.—A second phase of the program is the extension of informational material to small groups in these communities. These meetings will be conducted by members of the county medical societies who have organized a speakers bureau for these programs. They will be assisted by other individuals from the medical centers throughout our State. Also they will have at their disposal the various visual aids which will be made available to them.

Information on Careers.—The third phase of the program will be directed towards the 4–H Clubs, high school groups, and other groups of young individuals who should be informed about medicine and medical problems. These meetings will be organized namely to encourage young people to pursue careers in medicine and its allied sciences.

News Releases.—The fourth portion of the program will consist of a series of small articles which will appear in the journals, newsletters, and other papers which are sent to the constituents of these areas almost weekly or monthly. The committee has been very happy that it has been able to obtain the help of the Agricultural Extension Service, the Home Demonstration Group, the 4–H Clubs, and other organizations which deal with people in the outlying areas.

Lay Participation.—Meetings have been held, both in Fulton and Cortland, at which time lay individuals representing various organizational groups were invited. The committee was happy to note that there was a good turn out in each city and all of those present at these meetings have consented to serve as members of a subcommittee. In the near future, these subcommittees will hold meetings in each area to discuss the future programs of their counties. By such arrangement, they will help to assume the responsibility of having the forums well attended.

The forums will start sometime in April and continue in a series for about one month. It is hoped that it will be called health month and that the committee will have the support of the county officials.

Evaluation of the Programs.—In order to have some idea of the effectiveness of these forums, the committee has planned to set up a method of determining what the individual has learned at these forums. Two sets of cards will be given to those who attend the meetings and simple questions about the topic will be asked at the beginning of the session. A short time will be given at the end of the meeting for them to record on another card their answers to various questions on the topic of the evening. It will be arranged that the grading will be done by the IBM method and can be quickly recorded. It is hoped that by this simple method of testing we can learn a great deal of the effectiveness of such programs. A careful record is being kept of all procedures which are being done by this committee so that as the program expands to the rest of the State, which has been divided into districts, a protocol will be established and progress can take place rather quickly and easily. It is hoped that in the near future a district chairman will be appointed to serve on a subcommittee to the main committee to initiate and promote the programs which have been carried out in the pilot study.

Expense.—The expense of this program has been carried mainly by the Medical Society of the State of New York through a small budget which was granted to the Committee on Rural Medical Service. It is now hoped that the Sears-Roebuck Foundation will likewise give a grant to this committee to carry out the program in the near future. This year the Sears-Roebuck Foundation will give a thousand dollars for this purpose. It is hoped that as the program expands to the rest of the State the size of the grant will be increased. The Committee on Rural Medical Service is indebted greatly to this Foundation for their interest and service and also to the members of the County Medical Societies of Onondaga, Cortland, and Oswego. The program has not as yet been started in Onondaga County, but it is hoped that by fall the same type of program will be under way.

Respectfully submitted,
EDWARD C. HUGHES, M.D., *Chairman*

Medical Care Insurance

To the House of Delegates, Gentlemen:

The Medical Care Insurance Committee is composed of the following:

Carl R. Ackerman, M.D., *Chairman*	Bronx
Kennedy Creevey, M.D.	Rensselaer
Arthur F. Gaffney, M.D.	Oneida
Alfred P. Ingegno, M.D.	Kings
Cyril M. Levin, M.D.	Richmond
C. Otto Lindbeck, M.D.	Chautauqua
Melvin S. Martin, M.D.	Wyoming
Dwight V. Needham, M.D.	Onondaga
Carlton E. Wertz, M.D.	Erie
A. Vaughn Winchell, M.D.	Monroe
George P. Farrell, *Adviser*	New York

The committee has held three meetings: May 24, 1959, August 29, 1959, and February 7, 1960, and met jointly with New York State Blue Shield Plans on May 24, 1959.

The joint meeting held May 24, 1959, at the Hotel Manger-Vanderbilt in New York City, was for the organization of the proposed "Associated Blue Shield Plans of New York State" to be composed of the seven Blue Shield plans in the State. It was felt an association of this type could accomplish much for the benefit of the Blue Shield plans, the medical profession, and the public. Bylaws were adopted and the following officers unanimously elected: John C. Kinzly, M.D., North Tonawanda, chairman; H. Dan Vickers, M.D., Little Falls, vice-chairman; and Leonard J. Raider, M.D., New York City, secretary-treasurer.

Dr. Kinzly conducted the meeting and requested representatives of plans present for a report on the availability of some type of medical care coverage contract for low-income people over age sixty-five, pointing out the A.M.A.'s request that medicine do its part in the development of a program to meet this need. A poll of the representatives present indicated that the plans were in some stage of the development or consideration of such a program and that the Buffalo plan had made available a "Golden Age Contract" on March 1, 1959.

On the recommendation of Dr. Ackerman, chairman of the Medical Care Insurance Committee, the newly formed association agreed to appoint committees on legislation, public relations, and medical policy, and that the chairman, Dr. Kinzly, call meetings at such times of the year most effective regarding matters directly affecting the profession and Blue Shield plans.

The organization of the new association shall consist of three designated persons from each member plan, and at least two of the designated persons shall be members of the board of directors of the member plan. The terms of these members representative of each plan are to be at the pleasure of the plan. In addition the Medical Society of the State of New York shall designate three representatives, the original group to be composed of the chairmen of the Council Committee on Economics, the Medical Care Insurance Committee, and Council Committee on Legislation. Thereafter the terms of these representatives shall be at the pleasure of the president of the State Society.

A strong feeling was indicated for an association of this type as six of the seven plans had already given formal approval, and it was felt that no other type of organization previously set up, either on a national, state, or area level, had accomplished the purposes which this organization hopes to do.

At the May 24, 1959, meeting of the Medical Care Insurance Committee, insurance coverage for over age sixty-five persons was discussed at length. The Council approved the committee's recommendation that county societies again be informed concerning resolutions adopted by the State Society House of Delegates at the 1959 meeting, that Blue Shield plans provide benefits for our senior citizens over age sixty-five.

The committee discussed the matter of multiple insurance coverage and recommended that the Council consider the principles set forth by the Coordinating Council on this matter, and, if they approve these principles, that Blue Shield plans be notified so that steps may be taken to carry out these principles, even if necessary to modify their contracts.

At the August 29, 1959, meeting progress reports were given regarding Blue Shield coverage for over age sixty-five persons. Most of the plans reported steps were being taken to effect coverage for these people.

Multiple coverage under Blue Shield and other types of medical care insurance coverage was considered. It was generally agreed that where there was multiple coverage the physician should be able to charge his usual fee and not have to adhere to the service feature of the contract. In order to do this, it perhaps would be necessary to change the contracts either by a rider or by issuing a new contract.

The Council approved the following actions of the committee: (1) agreement with the actions taken by Associated Blue Shield Plans of New York State that the State Society cooperate with them and all Blue Shield plans; (2) the suggestion that Kennedy Creevey, M.D., chairman of the Association's legislation committee, contact James M. Blake, M.D., chairman of the State Society's Legislation Committee, regarding mutual legislative problems.

The Council approved the committee's recommendation that the State Society make a relative value study and disseminate information to county medical societies for their consideration of the feasibility of such a study for New York State.

The Council approved the committee's recommendation that the concept of a foundation for medical care as employed by the San Joaquin County Medical Society of California should receive further consideration because of possible implication that it may challenge the preferred position of Blue Shield plans in relation to the distribution of medical care insurance.

The committee considered an inquiry from the Union Labor Life Insurance Company of New York regarding the position of the State Society with respect to the practice of certain hospitals charging for surgical services rendered by an intern, resident, or assistant resident. The Council approved the committee's recommendation that the executive director of the State Society point out to Mr. Robert Renzi of the Union Labor Life Insurance Company that by resolution of the House of Delegates it (1) opposed hospitals charging for services rendered by an intern or resident, (2) opposed any Blue Shield plan paying fees or benefits to interns or residents; also that payments to interns or residents is contrary to A.M.A. Code of Ethics, and that there are specific provisions in the law for both the State of New York and the City of New York which would apply to Mr. Renzi's inquiry.

Your chairman participated in a panel discussion regarding medical economics as applied to the practice of medicine, October 15, 1959, at the joint meeting of the Third and Fourth District Branches in Liberty.

The Council authorized your chairman, as a member of the Advisory Committee to the Special Task Force on Catastrophic Expense Health Insurance Legislation, to oppose compulsory health insurance legislation.

Your chairman has reported to the Council regarding the meetings of the Advisory Committee to the Special Task Force for the information of the Council, also a statement from the Commerce and Industry Association of New York, Inc., regarding its stand on the addition of major medical insurance to the Disability Benefits Law.

Your chairman presented a statement to the Council on the pressure for definition of physicians' fees and suggested that the State Medical Society, through its Medical Care Insurance Committee, explore this subject for the purpose of making recommendations relative to reaching an understanding among interested parties and the medical profession regarding medical fees in health insurance. The Council approved.

At the February 7, 1960 meeting, the following matters were discussed and acted upon:

Motion was carried to modify the committee's stand regarding dual coverage as outlined at the August 29 meeting. It is therefore recommended that in such cases where dual coverage exists Blue Shield contracts be modified to permit participating physicians to charge up to their usual fee, so long as it is not greater than the multiple coverage available.

The committee considered a communication from Henry I. Fineberg, M.D., president of the State Society, regarding a major hospital and nursing program for the doctors in the Third and Fourth Districts, written by Mutual of Omaha, requesting review and advice. The committee felt that county medical societies should use the facilities of the State Society for review and advice on insurance policies and the committee passed a motion that component county societies and district branches be notified that the Bureau of Medical Care Insurance was available and encourage them to use its services.

Legislation affecting Blue Shield plans was reviewed and motion was carried to recommend to the Council that all bills, either introduced or to be introduced, to voice opposition to any type of proposed compulsory health insurance bills. The bills in question were those which might be introduced by Senator George R. Metcalf, chairman of the Joint Legislative Committee on Health Insurance Plans. Your chairman pointed out that opposition to this type of legislation had been announced by industry and business organizations, the Department of Commerce and Industry, the Empire State Chamber of Commerce, and others.

The committee approved the attendance of Mr. George P. Farrell at legislative hearings in Albany held by the Joint Legislative Committee on Health Insurance Plans and recommended that there be representation and presentation by the State Society of its attitudes regarding the proposed legislation.

The committee was in favor of an amendment to the Insurance Law making coverage by voluntary health insurance plans for dental and podiatry services permissive rather than mandatory.

The committee established a mechanism that through the Bureau of Medical Care Insurance all bills affecting medical care insurance be promptly distributed to members of the committee.

The committee received favorable reports from members of the committee regarding progress of each Blue Shield plan in providing coverage for people over age sixty-five. All plans are progressing with programs for providing this coverage, and it is anticipated that the older age citizens will have available to them both hospital and medical coverage under the voluntary Blue Shield and Blue Cross plans in the near future.

Your chairman called to the committee's attention a memorandum which he had presented to the Council of the State Society regarding the necessity for the establishment of some mechanism for the stabilization of physicans' fees. Pressure is mounting from commercial companies, the public, and big business for the concept that the cost of medical care should be predictable. Insurance companies are receiving charges from doctors which seem excessively high and they feel that something should be done in the development of a mechanism whereby physicians' fees could be kept at a just and reasonable range. With health insurance the size it is today, the medical profession should control the adjustment of fees before it is forced upon them. Medicine should take the initiative in this matter to use its influence and control. Your chairman felt that if the medical profession explored this field, it would win support and confidence from management and industry, but there must be a mechanism within each county medical society with power in their constitutions to make it workable.

Waring Willis, M.D., chairman of the Economics Committee, had referred to his committee for consultation with the Medical Care Insurance Committee the problem of charges by participating and nonparticipating physicians under the Civil Service Employes' program; that the participating physician's fee has to be a service fee but the nonparticipating physician can present whatever fee he desires and if higher than the basic contract, payment will be by the major commercial insurance aspect of the program for the excess fee. After discussion, it was the consensus that Dr. Willis convey to Norman S. Moore, M.D., member of the Temporary Health Insurance Board, that nonparticipating physicians should receive only what the basic contract calls for in the case of patients below income ceiling, and that the extended benefits of commercial companies be modified so as not to pay over and above the basic contract benefits to nonparticipating physicians.

The committee approved the following resolution relating to State-wide participation by doctors in Blue Shield plans:

> Whereas, the State and County Medical Societies have approved and endorsed service benefits through Blue Shield for those persons in the community who need it; and
>
> Whereas, thousands of participating physicians now provide service benefits to patients in their communities who are subscribers to their local Blue Shield plans; and
>
> Whereas, subscribers sometimes require treatment from participating physicians in areas of the State other than their own local plan area; and
>
> Whereas, the provision of service benefits under these circumstances also would be additional tangible evidence of the significant contribution of physicians to the community's welfare and the advancement of voluntary health insurance; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York recommend to all participating physicians in Blue Shield that they provide service benefits protection to eligible subscribers of all the Blue Shield plans of New York State; and be it further
>
> *Resolved,* that the Medical Society of the State of New York refer this resolution to the county medical societies for their consideration, approval, and implementation.

The Council approved a recommendation of the committee that the State Society request meetings with the Joint Legislative Committee on Health Insurance Plans of New York State and suggests that two such meetings a year would be advisable.

The committee recommends for approval for the ensuing year the following Blue Shield plans: United Medical Service, Inc., New York City; Western New York Medical Plan, Inc., Buffalo; Genesee Valley Medical Care, Inc., Rochester; Central New York Medical Plan, Inc., Syracuse; Medical and Surgical Care, Inc., Utica; Northeastern New York Medical Service, Inc., Albany; and Chautauqua Region Medical Service, Inc., Jamestown.

The committee wishes to express its thanks to the officers of the State Society, Gerald D. Dorman, M.D., chairman of the Commission on Medical Services; Waring Willis, M.D., chairman of the Economics Committee; and to Herbert T. Wagner, M.D., executive director of the Medical Society of the State of New York, for their interest and attendance at meetings. It is especially grateful to Mr. George P. Farrell, director of the Bureau of Medical Care Insurance and adviser to the Medical Care Insurance Committee, for his assistance to the committee.

Respectfully submitted,

Carl R. Ackerman, M.D., *Chairman*

COMMISSION ON MEDICAL SERVICES—B

Reports in this section are referred to the Reference Committee on Commission on Medical Services—B, consisting of the following:

Henry T. Randall, M.D., New York, *Chairman*
Henry Vinicor, M.D., St. Lawrence
Arthur H. Diedrich, M.D., Westchester
Alfred A. Hartmann, M.D., Franklin
Michael J. Crino, M.D., Monroe

Hospital and Professional Relations

To the House of Delegates, Gentlemen:

The Hospital and Professional Relations Committee consists of the following:

Raymond S. McKeeby, M.D., *Chairman*	Broome
James Bordley, III, M.D.	Otsego
Vincent J. Collins, M.D.	New York

A meeting of the Hospital and Professional Relations Committee was held on January 19, 1960, in the headquarters office. All members of the committee were present.

The first item discussed was the question of coverage during a doctor's absence from his practice. This is an important item not only in terms of adequate patient care but from the standpoint of the physician's need for rest, postgraduate study, and time with his family. It was pointed out that the doctor who keeps these factors in proper balance is better equipped mentally and physically to take care of his patients. It is advisable to set up ways and means, through our constituent county medical societies, to provide "patient education" as well as "doctor education" to make both groups fully aware of the situation. There should be complete frankness on the part of the doctor in explaining these needs to his patient.

Emergency Service.—There was a discussion on the adequacy of the present "emergency medical panels." It was suggested that in a few areas these panels are a sporadic, half-hearted arrangement, more on paper than in actual practice. It is acknowledged that this problem varies greatly throughout the State, depending on the population and doctor distribution. However, the following practical suggestions were mentioned:

1. In sparsely populated counties with wide areas, separate north and south panels could be organized.
2. In more heavily populated counties, the president of the county medical society could designate by townships certain representatives whose duty it would be to decide the format which would be proper to provide the best emergency service.

As to the participants of such panels, only qualified men should be on call who could personally handle any emergency situation for which he might be called. The idea of having an emergency bag in strategically appointed places is good in theory but may lack practicality. The control agencies, such as the doctor's exchange or a hospital switchboard, should be carefully screened as to their ability for proper functioning.

What to do in small towns where there is a single doctor presents greater problems, of course. However, in this modern age of speed and ambulance services, seriously ill or injured can be transported quickly if the need arises. In order to provide "vacations" for the solo doctor, it would be easy to conceive how qualified residents might take over a remote practice for a couple of weeks thus not only gaining valuable experience but also providing relief for an overworked doctor.

Another way of providing good full-time medical service is through the encouragement of "group participation." The committee felt that this type of practice should be encouraged. In order to gain more information on this subject and also to find out just what is being done at present throughout the

State regarding coverage, the committee suggested and the Council approved that a questionnaire be sent to the secretary of each county medical society. The answers to the questionnaire will be tabulated by this committee, and a report which should yield a wealth of interesting and constructive data will be made. Following is a suggested questionnaire:

1. Do you have an emergency plan?
2. Is the person on call able to cover the situation personally at all times?
3. Have you had many complaints in regard to your emergency care?
4. (*a*) Estimate how many calls are received by the emergency panel.
   (*b*) How many complaints are there about failure to receive coverage?
5. Are there "participating groups" of doctors in your area? About how many? Do they have any special features?
6. What are your suggestions for improving medical coverage in your county?

Physician's Personal Physician.—The next topic discussed was the feasibility of a campaign whereby each physician would be encouraged to have his own personal physician. The committee unanimously approved this program. It has been said that "shoemakers' children never have any shoes." Of course, if anything serious happens to the physician, he is usually channeled to proper treatment eventually. However, for annual medical checkups, preventive medicine, and psychologic support he depends on his friends at hand. Isn't it more in keeping with good medical practice to say doctors should set the example by each one having his own physician? And since "curbstone consultations" are worth about as much as they cost, the committee further suggested and the Council approved that local county societies should encourage their members to take out Blue Shield and Blue Cross insurance or equivalent coverage as has been done in some local societies already. Such arrangements would not only benefit the doctor for service rendered but would eliminate "gifts" for payment and would give the doctor-patient relationship a more satisfying basis.

Additions to Committee.—The next topic discussed was the importance of encouraging a close relationship between all types of physicians such as practicing physicians, medical school personnel, and those in administration, public health, and industry. The committee feels that there are many doctors who are not members of the State Society who are making definite contributions to medicine, not only in private practice but in other endeavors. We, as a Society, should recognize the contribution of each physician, regardless of his specialty, and should encourage active participation in all phases of our medical organization.

The next recommendation of this committee is in practical consideration of the ideas expressed in the previous paragraph and has to do also with the number of members of the Hospital and Professional Relations Committee. When meeting with the Committee on Medical Relations of New York State Hospital Association, as we do at least annually, we find that we are outnumbered in comparison with the size of their committee. Therefore, it is hereby recommended that the Hospital and Professional Relations Committee be expanded to include six doctors of medicine and that the number might include: (1) a dean of a medical school (this appointment could be rotated each year among the various deans); (2) a representative from the public health field; (3) a full-time teaching professor; (4) a hospital administrator representing the Medical Society; (5 and 6) two others from the rank and file of the practicing physician.

The Council voted approval with the suggestion that, in appointing the committee, the president take into consideration that the practicing physicians should at least rank equal with the full-time teaching and hospital people.

Miscellaneous.—This committee notes with approval the action of the A.M.A. House of Delegates in regard to the A.M.A. official concept of freedom of choice of physician at the recent Dallas meeting.

The chairman of the Hospital and Professional Relations Committee appeared before the Board of Regents of the State of New York in cooperation with the Hospital Association on February 25, 1960, and asked for approval of the wishes of the Hospital Association that a Regents diploma be issued to graduates of three-year nurses training schools.

The annual meeting of the Medical Relations Committee of the Hospital Association of New York State and the Hospital and Professional Relations Committee of the Medical Society of the State of New York is scheduled for March 25 at the Medical Society headquarters. A report of this meeting will be issued at a later date as a supplement to this report.

Respectfully submitted,
Raymond S. McKeeby, M.D., *Chairman*

LEGISLATION AND LEGAL MATTERS

Reports in this section are referred to the Reference Committee on Legislation and Legal Matters, consisting of the following:

Charles R. Mathews, M.D., Monroe, *Chairman*
Irwin Alper, M.D., Oneida
Herbert A. Laughlin, M.D., Chautauqua
Irving M. Pallin, M.D., Kings
E. Kenneth Horton, M.D., Nassau

Malpractice Insurance and Defense Board

To the House of Delegates, Gentlemen:

The Malpractice Insurance and Defense Board consists of the following:

John C. Brady, M.D., *Chairman*	Erie
Thomas M. d'Angelo, M.D., *Vice-Chairman*	Queens
John F. Kelley, M.D.	Oneida
J. Stanley Kenney, M.D.	New York
Renato J. Azzari, M.D.	Bronx
Waring Willis, M.D.	Westchester
Joseph A. Lane, M.D.	Monroe
William L. Wheeler, Jr., M.D., *ex officio*	New York
Maurice J. Dattelbaum, M.D., *ex officio*	Kings
William F. Martin, counsel, *ex officio*	New York
James M. Arnold, indemnity representative, *ex officio*	New York

The most noteworthy development during the past year is the marked increase in the number of members insured under the State Society program. This is especially important since it means that the Group Plan is becoming stronger and more stable.

The usual analysis by county of membership (Table I) shows a net increase of 1,361 during the year. Of this number, counties in the metropolitan and suburban areas accounted for 1,020, all but one having a 6 to 9 per cent net gain in members insured. With respect to specialty or type of practice, the greatest increase was in internal medicine, followed by general practice, psychiatry, and pediatrics.

Many of the physicians returning to the Group Plan have told us that they have come to realize the long-range advantages of a State-wide program that includes general practice and the various specialties and thus avoids conflicts of interest that often arise when codefendants are insured with different carriers. Some have learned through bitter experience that insurance in a financially sound company such as the Employers Mutual Liability Insurance Company of Wisconsin and the assurance that their protection can be terminated only by action of their State Society are benefits of far greater importance than a temporarily lower premium.

Acting in accordance with the recommendation adopted by the House of Delegates in 1959, the Board, in addition to examining loss records, has interviewed many members applying for insurance. In the interest of the Group Plan as a whole, the Board has found it necessary to decline a number of applications. We wish again to emphasize that, except for members in good standing who have no record of malpractice suits or claims, acceptance of an application is not automatic. Those members who have had suits or claims should submit full information concerning them and apply well in advance of the expiration date of their present insurance.

New and Closed Cases.—

	1959	1958
On hand at first of year	861	832
Reported during year	548	484
Total	1,409	1,316
Disposed of during year	532	455
On hand at end of year	877	861

TABLE I.—ANNUAL REPORT OF MEMBERS INSURED AS OF DECEMBER 31, 1959, SHOWING PERCENTAGE INSURED OF COUNTY MEMBERSHIP

County	Number of Members	Number Insured	Per Cent Insured
Schoharie	16	16	100
Cayuga	76	69	91
Madison	53	45	85
Chemung	115	94	82
Orleans	20	16	80
Schuyler	10	8	80
Sullivan	49	39	80
Herkimer	55	43	78
Allegany	30	23	77
Genesee	55	42	76
Oneida	305	231	76
Yates	21	16	76
St. Lawrence	98	73	74
Oswego	65	48	74
Wayne	60	44	73
Fulton	58	42	72
Orange	213	154	72
Steuben	111	80	72
Tompkins	88	63	72
Albany	428	305	71
Broome	292	207	71
Onondaga	591	419	71
Rensselaer	155	109	70
Jefferson	97	68	70
Otsego	56	39	70
Ulster	113	79	70
Chenango	42	29	69
Schenectady	226	155	69
Monroe	877	595	68
Tioga	22	15	68
Clinton	60	39	65
Delaware	40	26	65
Cattaraugus	97	61	63
Westchester	1,261	778	62
Essex	29	18	62
Ontario	106	65	61
Saratoga	64	39	61
Warren	79	47	60
Erie	1,282	755	59
Chautauqua	132	77	58
Wyoming	26	15	58
Greene	28	16	57
Columbia	52	29	56
Seneca	25	14	56
Cortland	43	24	56
Niagara	201	108	54
Montgomery	56	29	52
Rockland	186	96	52
Washington	41	21	51
Franklin	63	32	51
Putnam	20	10	50
Nassau	1,474	722	49
Suffolk	634	308	49
Livingston	42	20	48
Dutchess	267	120	45
New York	6,998	3,090	44
Queens	2,028	823	41
Bronx	1,503	601	40
Kings	3,222	1,236	38
Richmond	218	83	38
Lewis	16	6	38
TOTAL	24,690	12,474	50.5

High jury verdicts, some recent court decisions, and the constant publicity given to personal injury cases continue to encourage malpractice actions. This nation-wide trend is reflected in the above figures, which show that 64 more new cases were reported during 1959 than during 1958. A large part of this increase, however, is represented by reported incidents, many of which normally do not develop into active suits or claims.

The 548 cases reported during 1959 involved an additional 75 insured members as actual or possible codefendants. This means that one member out of every 20 insured during 1959 was involved in a malpractice action.

The distribution, by policy year, of the cases reported during 1959 is as follows:

1950	2
1951	2
1952	1
1953	5
1954	4
1955	13
1956	44
1957	111
1958	243
1959	123

Underwriting Results.—The following statement summarizes the experience of our insurance carrier for the period July 1, 1949, through December 31, 1958, as developed to December 31, 1959:

Premium income	$17,358,212	
Contingent loss factor	924,971	$18,283,183
Operating costs	4,191,190	
Taxes on contingent loss factor	27,749	
		4,218,939
Available for losses		14,064,244
Cost of closed cases	9,060,718	
Reserves on open cases	5,702,350	
Reserve for unreported cases	1,125,016	
		15,888,084
Premium insufficiency		$ 1,823,840

The "premium insufficiency" figure represents the amount of additional premium that the Company should have collected during the period 1949 through 1958 in order to be able to strike a balance between premium income and losses, both actual and estimated. This figure, which had been reduced during 1957 and 1958, shows an increase when compared with last year. The actual and estimated loss experience of the last three policy years, which serves as the basis for computing future premiums, also shows an increase over comparable experience figures used last year.

These developments are offset to some extent by an improvement in the loss experience of past years as more cases were closed. In view of the substantial increase in Group Plan participation and especially in view of the change in the distribution of premium classes whereby a higher percentage of insured members fall within the groups having a lower loss experience, the Company has accepted the recommendation of the Society's actuary that no change in rates be made for the coming year.

Until the distribution of insureds by specialty has become more stabilized and until more experience has been accumulated, our actuary recommends that no adjustments in the assignment of specialties to premium classes be made. The Board concurs in this recommendation.

Conclusion.—The Board wishes to express its sincere appreciation to the many members who have served on county and specialty advisory committees during the past year. The specialty committees have continued to make available to the Board advice and assistance within their respective fields. The county malpractice committees have continued their excellent work and we again urge all counties that have not already done so to organize such committees along the lines prescribed by the Council in 1956.

We wish also to thank the representatives of our insurance carrier and of our legal counsel, particularly for their work in conjunction with that of the county committees. Our thanks also to Mr. Martin and members of his staff for their many appearances before local groups. These talks have contributed greatly to a better understanding of the benefits of the Group Plan and to an awareness of the steps that can be taken to avoid malpractice actions.

Respectfully submitted,
JOHN C. BRADY, M.D., *Chairman*

MEDICAL CARE

Reports in this section are referred to the Reference Committee on Medical Care, consisting of the following:

Warren A. Lapp, M.D., Kings, *Chairman*
Francis A. Stephens, M.D., Albany
John L. Finnegan, M.D., Queens
Thomas S. Cotten, M.D., Steuben
Robert S. Cleaver, M.D., Putnam

Resolution 58–49—
"Medical Care, the Job of the Medical Profession"

To the House of Delegates, Gentlemen:

The Special Committee on Resolution 58–49 has the following membership:

George J. Lawrence, Jr., M.D., *Chairman*	Queens
Frank A. Gagan, M.D.	Dutchess
A. H. Aaron, M.D.	Erie
Edward C. Hughes, M.D.	Onondaga
Carlton E. Wertz, M.D.	Erie

The committee met September 23, 1959, and sponsored a Regional Conference on Medical Services at the Statler Hilton Hotel, Buffalo, on January 15 and 16, 1960.

As previously reported to the House, it was the decision of the committee to confine its activities in the implementing of resolution 58–49 to the betterment of medical care for all the people of New York State through the medium of some form of medical insurance because of the expense involved in projects in other fields of medical care.

The Council approved the committee's recommendation that a campaign be undertaken by the State Society, either through this committee or some other committee, for the accreditation of proprietary hospitals in an effort to improve the standards for qualification, the campaign to also include nursing homes.

The Council approved the committee's recommendation for a program to be initiated to bring about some control over the high hospital utilization costs. Many county medical societies and plans have the mechanism available for this type of program in cooperation with the designated agencies. The committee recommends implementation of such committees in local hospitals to review admissions and length of stay in order to cut down unnecessary hospitalization.

Carlton E. Wertz, M.D., author of the resolution, has pointed out very clearly the import of resolution 58–49, that unless the medical profession in New York State assumes the leadership with a positive program to assure the people in the State of New York the best medical care, through other sources the profession may be handed a program it will have to accept. Dr. Wertz referred specifically to the report forthcoming through the State's investigation being carried on by Columbia University under the direction of Dr. Ray E. Trussell, director of the University's School of Public Health and Administrative Medicine.

In order to publicize to the doctors the problems facing the medical profession, the Council approved the committee's recommendation that it sponsor regional meetings similar to those being held by the American Medical Association, the first meeting to comprise District Branches Seven and Eight as a pilot project.

The Council approved a recommendation of the committee that a communication be sent to New York State Blue Shield plans, Associated Blue Shield Plans of New York State, and the Health Insurance Council that the problems of irregularities in practice by physicians in Blue Shield and other insurance carriers should be called to the attention of the doctor's county medical society by insurance carriers for proper corrective action, and that Blue Shield plans report annually to the State Society on the number and disposition of cases referred to the societies.

The Council approved the committee's recommendation that the State Society's Journal of Medicine and *Newsletter* be used as good media for publicizing the regional meetings.

The first Regional Conference on Medical Services sponsored by the committee was held January 15 and 16, 1960, at the Statler Hilton Hotel in Buffalo, and comments indicated favorable reception to programs of this type. The speakers and topics covered were: An address of welcome by Henry I. Fineberg, M.D., president of the State Society; a review of the committee's activities by George J. Lawrence, Jr., M.D., chairman; "Purposes and Problems Facing the Profession" by Carlton E. Wertz, M.D., who outlined in detail the profession's responsibility in offering a program to offset the possibility of a government or union program.

Merle D. Evans, M.D., spoke on the purposes and objectives of the Trussell Report; Paul I. Robinson, M.D., medical director of the Metropolitan Life Insurance Company, representing the Health Insurance Council, spoke on medical care costs.

The Forand Bill was covered by Herbert T. Wagner, M.D., executive director of the State Society, who appealed to all county medical societies for cooperation and support with the State Society to help defeat this type of legislation.

John C. Kinzly, M.D., chairman of Associated Blue Shield Plans of New York State, reviewed Blue Shield coverage now available to people over age sixty-five as well as contemplated programs.

Waring Willis, M.D., chairman of the Economics Committee, spoke on economics as it applies to the practice of medicine, pointing out the importance of a relative value scale in New York State.

Anthony A. Mira, M.D., director of the State Society's Bureau of Industrial Health and Workmen's Compensation, outlined labor's attitude toward health insurance, offering his opinion that medicine and labor should discuss their mutual problems in an attempt to devise a system of providing the best medical care for all people.

Carl R. Ackerman, M.D., spoke briefly on proposed legislation under consideration by the Advisory Committee to the Special Task Force on Catastrophic Expense Health Insurance of Governor Rockefeller, of which he is a member.

On Saturday morning, January 16, a most able summary was made by A. H. Aaron, M.D., it being his feeling that the medical profession can provide the best care for the sick and can present a program which will be a better one than any which might be conceived by the State or Federal governments.

The second Regional Conference on Medical Services was held on March 12 and 13, 1960, in Syracuse.

In addition to the subjects covered at the first regional conference as mentioned herein, Edward C. Hughes, M.D., chairman of the Council Committee on Rural Medical Service, spoke on the third party in medicine; and George A. Burgin, M.D., chairman of the Subcommittee on Cooperation with Media of Information, spoke on the importance of media of information.

William L. Wheeler, Jr., M.D., secretary of the Medical Society of the State of New York, spoke on the same subject previously presented by Dr. Mira; and Mr. John Clancy, director of professional relations, Central New York Medical Plan, Syracuse, spoke on professional relations between Blue Shield and the doctor.

Leo E. Gibson, M.D., past-president of the Medical Society of the State of New York, gave the welcoming address at the opening of the conference and made special reference to the resolution introduced by Dr. Wertz.

Norman S. Moore, M.D., president-elect of the Medical Society of the State of New York, addressed the luncheon meeting, his subject being the public's attitude toward medicine. Dr. Moore pointed out that the continuity of medical care is made difficult because of the moving population, not alone geographically but also economically and culturally.

James Greenough, M.D., past-president of the Medical Society of the State of New York, summarized the conference following the discussions on Sunday morning of the papers presented, and pointed out that the ambition of the doctors in this State is to provide the best medical care to their patients who are all the people of the State, and there is no other source where this care can be provided; that no government, labor union, or other agency can provide it, only the physician.

The Council approved the committee's recommendation that conferences of this type be held to cover the balance of the districts in the State.

Your committee plans to have two more regional conferences and will submit a final report to the House of Delegates in 1961.

Respectfully submitted,

George J. Lawrence, Jr., M.D., *Chairman*

ORGANIZATION AND POLICIES

Reports in tnis section are referred to the Reference Committee on Organization and Policies, consisting of the following:

Samuel Wagreich, M.D., Bronx, *Chairman*
Solomon Schussheim, M.D., Kings
George W. Fish, M.D., New York
Philip M. Standish, M.D., Ontario
Edward F. Shea, M.D., Ulster

Office Administration and Policies

To the House of Delegates, Gentlemen:

The Committee on Office Administration and Policies is composed of the following:

John J. Masterson, M.D., *Chairman*	Kings
Maurice J. Dattelbaum, M.D	Kings
Leo E. Gibson, M.D	Onondaga
Norman S. Moore, M.D	Tompkins
Henry I. Fineberg, M.D., *ex officio*	Queens
William L. Wheeler, Jr., M.D., *ex officio*	New York

It is to be noted that the various governing bodies of the Society are well represented. In addition, the executive director and office manager are invited to all meetings.

During the 1959–1960 year your committee met regularly once a month except for July and August. During the summer months, committee members are available should any problems arise.

At the beginning of 1959, we received delivery of our offset printing machine and immediately placed it into operation. The advantages over mimeographing are many. The quality of work obtained is excellent. In addition, we have been able to produce in our own office many of our printed letterheads and forms.

In connection with our letterheads, it was felt that some modernization of style was necessary, as well as a change in printed material. Previously, we printed the names of committee members on stationery used by the associated department. In most instances, this practice has been discontinued because of the waste occurring when there are changes in committee makeup.

In February, 1959, after study as to cost, it was recommended to the Council to pay Blue Cross premiums for staff members. This action was subsequently approved by the Council and Board of Trustees.

It has been customary for many years for the Society to offer to the staff a physical examination and chest x-ray. The services of two local physicians are used. We added to this program by requiring that new staff members be examined to determine their employability from the medical viewpoint.

As a committee responsible for clerical personnel, we review each salary to determine salary needs. We are also responsible for the matter of pension allowances, providing recommendations to the Council and Board of Trustees as the occasion requires. There are those who feel that we might review our pension plan at this time to determine its actuarial soundness. The committee, however, feels that we should adhere to our original intention of reviewing the plan each five years. In this instance, the next review will take place at the beginning of 1962.

Since our last report, Miss Elizabeth Wheeler, who was on pension, passed away. Her work over a period of many years in the Workmen's Compensation Bureau was excellent. As secretary to David J. Kaliski, M.D., director, her heart and soul was in the work of his department.

During 1959, the committee approved what we believe to be a forward step in the handling of our membership records. We are now in process of converting to a tabulating card procedure. It had been hoped that we could commence the new procedure last January 1, but there were many problems and difficulties to the extent that it now appears the new system will have gone into effect on April 1.

The staff had its usual annual outing last summer at James Baird State Park. In November, President Henry I. Fineberg was host to a staff party and in December we held our Christmas party.

In keeping with the spirit of the Management Survey Report, your committee has given due consideration to any suggestions made therein which had any connection with general staff policies. We need a staff that is loyal and willing in every respect. It is our intent that staff morale be high.

As of the date this report is written, our staff is made up of the following persons:

Staff of Medical Society

Mr. Thomas E. Alexander
Mrs. Alice Arana
Mr. Bernard Ascher
Miss Susan V. Baker
Mr. Charles L. Baldwin
Miss Lieselotte Benz
Mr. William H. Bonzer
Mrs. Nan M. Boynton
Miss Frances E. Casey
Mrs. Yvonne Chapman
Mrs. Evelyn G. Clark
Mrs. Estelle Danzeisen
Mrs. Evelyn De Marco
Mr. Eugene S. Dombrowski
Miss Doris K. Dougherty
Mrs. Beatrice M. Duckfield
Miss Anne-Marie Fanshaw
Mr. George P. Farrell
Miss Roslyn Feinberg
Mr. George W. Forrest, Jr.
Mrs. Florence Gallagher
Mrs. Suzanne Glasberg
Mrs. Alla Gutoff
William Hammond, M.D.
Miss Dorothy Hart
Mrs. Dorothy Hucke
Mr. Harold W. Kammerer
Miss Dorothy Kelleher
Mr. James M. Kelly
Miss Nele Lape
Miss Lucille Leipziger
Mrs. Eunice M. Leonard
Miss Alvina Rich Lewis
Mrs. Dorothy Lotosky
Miss Janet E. Loy
Miss Camille M. Marra
Miss Ann Marie Marrinan
Miss Mary McMahon
Miss Marilyn McKenna
Mr. Frederick W. Miebach
Mrs. Olga Mielke
Mr. Robert W. Miller
Norman S. Moore, M.D.
Mrs. Beatrice Moosa
Mrs. Miriam A. Mosonyi
Mr. Joseph A. Mullaney
Mr. Jack O'Brien
Mr. John K. Pardee
Miss Mollie Pesikoff
Miss Deborah Pritzker
Mr. John A. Puca
Mr. Philip Raimondo
Laurance D. Redway, M.D.
Miss Loretta Schmoll
Mr. Ackley C. Schuyler
Miss Mary Singer
Miss Elizabeth C. Smith
Mr. Charles Struzinski
Mr. Wiley E. Tatum, Jr.
Mr. Martin J. Tracey
Miss Ethel Turetsky
Herbert T. Wagner, M.D.
Mr. Thomas E. Walsh
Mrs. Marcia Werbin
Miss Alice E. Wheeler
Miss Gretchen Wunsch

The committee wishes to extend its thanks to all members of the staff for their loyalty and cooperation. It would be impossible to list the names of all those to whom we are especially indebted in the work of carrying out the normal office functions. We extend deep appreciation to Mr. William Bonzer, our mailroom supervisor; Miss Janet E. Loy, *Directory* department supervisor; Miss Mary McMahon, membership department supervisor; Mr. Eugene Dombrowski, accounting department supervisor, and Miss Doris K. Dougherty, executive assistant.

The controller, Mr. Thomas E. Alexander, attends all meetings of the committee. The information and advice have materially assisted the committee in its work.

It is recommended to the House of Delegates that a committee of similar composition be appointed for the coming year.

Respectfully submitted,
John J. Masterson, M.D., *Chairman*

First District Branch

To the House of Delegates, Gentlemen:

A meeting of the First District Branch of the Medical Society of the State of New York was held on Saturday, May 9, 1959, at the Statler Hilton Hotel, Buffalo, with President Frederick A. Wurzbach presiding. There were 45 voting members of the district branch present.

At this meeting, the bylaws of the First District Branch, as amended, were submitted to the membership and approved. These amended bylaws have been submitted to the Council of the Medical Society of the State of New York for its approval.

The meeting was adjourned and a meeting of the Coordinating Council then followed.

The nominating committee, consisting of the presidents of the five county medical societies, Norton S. Brown, M.D., chairman, Drs. Samuel Wagreich, David Kershner, Harry Epstein, and Edward H. Robitzek, submitted the following nominees for chairman and vice-chairman of the Coordinating Council for the years 1959–1961: Samuel Wagreich, M.D., chairman, and George J. Lawrence, Jr., M.D., vice-chairman.

As there was no opposition, the secretary was instructed to cast one ballot for the election of these officers for the ensuing two years.

The following matter submitted by the Medical Society of the County of New York was unanimously approved: "That the Society go on record as expressing gratification that voluntary hospitals are being reimbursed for clinic costs in connection with treatment of welfare recipients under the newly inaugurated program of the City and State Departments of Welfare. The Comitia Minora further recommends that the Society endorse the recommendations of the Coordinating Council as follows:

1. That the council deplores the lack of consultation with representatives of the medical profession before the initiation of a program that depends upon the free cooperation of the profession for its existence.
2. That the New York City Welfare Department immediately raise the fee paid to a panel physician for a welfare home visit to a realistic figure (6.00) or more.
3. That the City and State Welfare Departments confer with representatives of the Coordinating Council, the individual metropolitan medical societies, the State Medical Society, or any combination thereof to investigate ways and means of incorporating the principle of free choice of physician into the program without impairing its effectiveness."

A special meeting of the Coordinating Council was held on June 17, 1959, at the Medical Society of the State of New York, 750 Third Avenue, New York City. The first order of business was the appointment of committees for 1959–1960. Dr. Wagreich nominated the following chairmen to the standing committees of the Coordinating Council: Economics: Charles C. Mangi, M.D., Queens; Legislative: Joseph F. Shanaphy, M.D., Richmond; Public Health: Milton Helpern, M.D., New York; Public Relations: Solomon Schussheim, M.D., Kings. These names were approved by the Council.

It was the consensus of the members of the council who were present that narcotic addiction is a medical problem. A committee, consisting of Drs. Herbert Berger, Leonard Heimoff, and Jerome Leon, was appointed to prepare a statement concerning narcotic addiction for consideration by the council at the September meeting.

The matter of statements made by Paul Hawley, M.D., director of the American College of Surgeons, before the Group Health Institute at New York City, and subsequently quoted by New York newpapers, was discussed, together with a reply from I. S. Ravdin, M.D., president of the American College of Surgeons, concerning Dr. Hawley's remarks. This matter was referred to the public relations committee of the council for report at the September meeting.

The matter of the law on abortions in Puerto Rico was also referred to the public relations committee for report.

The request that the Coordinating Council join the Community Blood Council of Greater New York as an active member was referred to the public health committee for report at the September meeting.

At a meeting of the ad interim committee of the Coordinating Council, held on July 21, 1959, discussion was held on the forthcoming meeting of Blue Cross on so-called contract #2 which, among other items, proposes to cover costs of radiology and other diagnostic services to outpatients of hospitals. Dr. Schussheim proposed and Dr. Wurzbach seconded the following statement, which was adopted: "The Coordinating Council is vigorously opposed to the entrance of Blue Cross into the practice of medicine by the proposed contract #2. The Coordinating Council supports the general principles of the resolution of the Medical Society of the State of New York, adopted at the annual meeting of said Society in May 1958, to wit:

> *Resolved*, that the House of Delegates of the Medical Society of the State of New York go on record as opposing the inclusion of medical services in hospital insurance contracts and recommends the transfer of coverage for such services from Blue Cross to Blue Shield organizations."

The Coordinating Council took cognizance of press statements issued in the name of the Commission on Health Services of the City of New York, David M. Heyman, chairman, and the letter from the Bronx County Medical Society to the Mayor in regard to the aims of the Commission and the paucity of practicing physicians in its membership. The following action was approved: "That the Coordinating Council approves the appointment of a committee to consider statements and press reports relating to the Commission on Health Services of the City of New York and further, that the Coordinating Council urge the provision of additional representation of the practicing medical profession, especially in municipal hospitals, upon the Commission; and that such physicians be nominated by the respective medical societies of the City of New York."

At the meeting of the Coordinating Council held September 15, 1959, Samuel Wagreich, M.D., was nominated as the representative to the Hospital Council of Greater New York.

The Coordinating Council instructed the secretary to write Mr. L. E. St. John of the Society of Professional Engineers to inform him a committee from our council would be happy to explore the possibilities of our joining a professional council.

The secretary was instructed to send the following telegram to Honorable Robert F. Wagner; Comptroller Lawrence E. Gerosa; President of Council, Abe Stark; President of Borough of Manhattan, Hulan E. Jack; President of Borough of Brooklyn, John Cashmore; President of Borough of Bronx, James J. Lyons; President of Borough of Queens, John T. Clancy; President of Borough of Richmond, Albert V. Maniscalco: "We respectfully request that you support the resolution to be introduced by Borough President Clancy of Queens, calling for the formation of a committee to re-evaluate the health care program of our City employes. We urge this committee to explore the plan of New York State giving free choice of plan to its civil service employes. This plan now enrolls 95 per cent of the State employes. In contrast, the City only pays premiums on hospital and medical care coverage if employes belong to one plan—Health Insurance Plan of Greater New York. Only 41.5 per cent of the City employes have enrolled in HIP over a period of ten years. We believe the City should pay its proper share for the health care of all its employes."

A newspaper clipping from the *World Telegram* of July 28, 1959, was discussed. The statement was made that Dr. John J. Theobald, Superintendent of Schools, recommended to the Board of Education of the City of New York that the Board's bylaws be waived in order to permit teachers to be paid for sick leave upon a certificate by a chiropractor.

A letter from Dr. Theobald to Dr. Wagreich was read, stating: "Upon my return from vacation, I find your letter of August 19 expressing, on behalf of your association, displeasure at the acceptance of certificates from chiropractors.

"May I point out that you have completely misunderstood this matter. My recommendation for a waiving of a bylaw was made in view of the special circumstances in these two cases involving teachers with good service records. The recommendation was made as an exception to regulations and I cannot quite understand why it was so clearly misunderstood.

"I have no intention of changing the general regulations requiring a certificate by a doctor of medicine."

After discussion, the council accepted Dr. Theobald's reply as satisfactory.

Dr. Wagreich asked for nominations to a committee to study cooperation in a plan for health and hospital care by labor, management, and medicine. The following committee was appointed: George J. Lawrence, Jr., M.D., chairman, and Drs. Carl Ackerman, Albert B. Accettola, Michael C. Armao, David Kershner, Jerome L. Leon, Charles F. McCarty, Edward M. Robitzek, and Samuel Wagreich, and Mr. Robert D. Potter.

Dr. Wagreich appointed the following committee to study the problem of narcotic addiction: Herbert Berger, M.D., Richmond; Leonard Heimoff, M.D., Bronx, and Jerome Leon, M.D., Queens. Following is part of the report of the committee:

(1) There is a serious narcotic problem within the City of New York.

(2) Present methods have failed to cope with it.

(3) Addiction is a symptom of a complex social and medical disorder. The medical nature of this problem has been recognized by the Medical Society of the State of New York, the Joint Committee of the American Medical Association, and the American Bar Association, the American Psychiatric organization, and the governments of many countries other than the United States.

(4) Despite Supreme Court of the United States rulings (*Linder v. United States*) the medical profession has been kept from the treatment of these patients by the harassment of police officers who are not members of our profession.

(5) The importation, sale, and distribution of narcotics is an area for the police and not one of concern to the medical profession.

(6) The treatment of the addict is in the province of the medical profession.

The committee recommended the following: (*a*) That licensed physicians should be permitted to treat narcotic addicts as they do all other patients (the alcoholic addict, for example), attempting withdrawal of drugs in or out of a hospital, and prescribing such materials, narcotic or otherwise, that the physician believes the patient needs according to the best interests of the patient and the community;

(*b*) That where a physician feels that the patient cannot be maintained without drugs, a certificate testifying to this fact be signed by the physician and be countersigned by another practicing physician after appropriate examination, such certificate to be deposited with the Department of Health of the State of New York;

(*c*) That general hospitals be persuaded to admit such patients on the written order of a licensed physician;

(*d*) That similar recommendations be introduced by the delegates from the Medical Society of the State of New York in the House of Delegates of the American Medical Association in June and that the New York State delegates work actively for its passage.

The Council also approved the following recommendation of the committee: That the physicians of New York City, through its Coordinating Council, memorialize the Mayor requesting that these patients be admitted immediately to the municipal hospitals on demand as is any other patient; and that Riverside Hospital for the study of narcotic problems be continued.

The New York County Medical Society reported that a Dr. Lapidus, who is a member of that Society, was informed by his landlord that his office, a ground floor apartment in a residential area, had been decontrolled so that the landlord had the right to charge any rent he wished for the apartment. Dr. Lapidus appealed to the New York County Medical Society for help. The Counsel for the Society, Reed B. Dawson, has made an appeal to the Court for assistance for Dr. Lapidus and other physicians similarly situated.

At the request of the New York County Medical Society, it was agreed that the Coordinating Council oppose the decision in the Lapidus case, in which the courts have ruled that a doctor's office on the first floor of a building is a "store" for the sale of merchandise. It was agreed that each county medical society be asked to file a brief as "amicus curiae" in this case. The four other county medical societies did file such a brief.

The following amendment to the bylaws was offered by the Medical Society of the County of Queens, at the November meeting of the council:

> *Resolved*, that Chapter VI, Article 2, shall be amended to read as follows: The Ad Interim Committee shall consist of the President, Vice-President, Secretary, and Treasurer of the District Branch, the Chairman and Vice-Chairman of the Coordinating Council, and the president of each of the constituent societies or a member of the Coordinating Council from that Society designated by its president. At the meetings of the Ad Interim Committee, the Secretary and Treasurer shall have voice but no vote. The Ad Interim Committee shall act for the Coordinating Council between meetings and during the months of June, July, and August. It shall serve as the publicity committee of the Coordinating Council. No member of the Coordinating Council may give any information to the public concerning the Coordinating Council except with the approval of the Ad Interim Committee.

George J. Lawrence, Jr., M.D., reported for the committee to study the relationship between the Coordinating Council and organized labor. A plan in which the Coordinating Council would cooperate with organized labor in setting up some type of plan for health care of employed persons was approved.

The resolution from the New York County Medical Society was approved that the Department of Hospitals be requested to make available a sufficient number of hospital beds for people suffering from the various manifestations of alcoholism and that the Commissioner of Hospitals, Morris A. Jacobs, M.D., be so notified.

Prior to a meeting of the Coordinating Council held at the Press Box, Tuesday, January 12, 1960, a majority of the members attended a demonstration at the NBC Studios, Johnny Victor Theatre, where Mr. Murray Heilweil gave a demonstration of the medical radio system. This system is to be leased to physicians for use in their offices. It will give spot news announcements, medical news and music, three times a day, five days a week. Features of the program will be repeated on Saturday. There will be a speaker installed in the physician's own office where he may obtain medical news for his own use and which is not for the waiting room. Each county medical society will receive a loan of one of these closed-circuit radios.

The spot announcements of medical meetings, or news of interest to the members of the Coordinating Council, or to the general medical profession of Greater New York, will be made upon request of the council. Announcements, such as a request to all physicians of Greater New York to have their patients immunized with Salk vaccine, can be made over this system, which would be in addition to the mailings made on the immunization drive in January of 1958.

David Kershner, M.D., reported on a joint meeting of the committee on utilization of the Greater New York Hospital Association and the committee appointed by the Coordinating Council of the First District Branch, held on December 8, 1959.

The report follows: There was a thorough discussion of a variety of problems involved in the effective use of hospital resources. There should be real savings over-all to the community if any hospital admissions could be eliminated and if hospital stays could be further shortened. Some mechanism must be developed to provide for diagnostic services on an ambulatory basis by U.M.S. since such an arrangement would have a significant effect upon hospital utilization.

It was generally agreed that the development of new scientific methods and equipment, development of new drugs, and increased labor costs would force hospital costs up much higher than they are now, and that it was desirable for the doctors representing the Coordinating Council and the administrators representing the Hospital Association to continue to meet and discuss ways and means of utilizing, most effectively, hospital resources, and encouraging the development of a Blue Cross plan which would meet the needs of the community we serve.

At this meeting Dr. Kershner also reported on a meeting held on December 3, 1959, in Justice Edward G. Baker's office, Supreme Court, to recommend practical remedies for certain practices prevalent in negligence cases as disclosed by the judicial inquiry. It was brought out that the investigation revealed a wide range of abuses and offenses, including the employment by lawyers of lay adjusters, payoffs under the table between representatives of insurance carriers and attorneys, exaggerated false and forged statements of personal injuries and medical bills entailing collusion between lawyers and doctors, false and forged statements of loss of earnings and property damage, and other evidence of "chasing" and collusion between personnel of casualty companies, collision shops, insurance brokers, hospital employes, doctors, and others.

Representing as it does the 17,000 physicians who are members of the medical socieities in the five counties of the City of New York, the Coordinating Council has deep concern for the quality of medical care rendered in the hospitals of the city, both municipal, voluntary, and private institutions.

It is known that the Commission on Health Services of the City has in preparation a review of this problem, especially as it relates to municipal hospitals, and is contemplating certain recommendations.

Since no member of the current Coordinating Council is represented upon the Commission on Health Services, and indeed, because practicing physicians are in the great minority among its membership, the Coordinating Council finds it necessary to prepare the following analysis of the purported recommendations supplemented by some additional observations on the general problem. It is hoped that by this example of cooperation and demonstration of joint interest in the same problems, representatives of the Coordinating Council can meet with representatives of the Commission on Health Services for further discussions.

It seems desirable to take each of the six "suggested solutions for consideration and discussion" proposed by the Commission on Health Services and, after each one, present the variation or suggested substitute recommended by the Coordinating Council.

Commission Suggestion 1.—The Board of Hospitals establish a policy to affiliate as many municipal hospitals as possible with medical schools or with voluntary hospitals having strong teaching programs, and the Commissioner of Hospitals take the appropriate steps to implement this policy.

SUBSTITUTION RECOMMENDATION 1.—The Coordinating Council concurs in the above recommendation but would note that mechanisms already exist where municipal hospitals can affiliate with teaching hospitals. The benefits of such affiliation are well recognized and will have mutual benefit both to residents at medical centers and those in city hospitals. The interchange of academic training and practical clinical experience will truly have great value to both groups. The Coordinating Council reiterates its firm belief that the autonomy of the medical boards of the municipal hospitals be preserved and such affiliation with a teaching center be permitted only when the medical board of the municipal concurs. Moreover, such affiliation should be possible of termination by each institution on due and proper notice.

Commission Suggestion 2.—An objective in future planning of hospital facilities should be the concentration of municipal hospital beds at major teaching centers. Consideration should be given to the closing of certain unaffiliated hospitals when it is demonstrated that effective service cannot be maintained or the facilities are no longer required.

SUBSTITUTE RECOMMENDATION 2.—Planning for the future location of municipal hospitals should be determined by the demigraphic needs of the population. The location of such hospitals should have its primary object service to the public. The Coordinating Council concurs on the criteria for the closing of any municipal hospital, affiliated or otherwise, when it is demonstrated that effective service cannot be maintained or when the facilities are no longer needed. The needs of the population in the geographic area of the hospital should, however, have precedence over residency training programs in such decisions.

Commission Suggestion 3.—For unaffiliated institutions the deans of the medical schools located in New York City should be invited to serve on a committee reporting to the Commissioner of Hospitals through the Board of Hospitals to screen and propose candidates for full-time paid chiefs-of-services in each such hospital.

SUBSTITUTE RECOMMENDATION 3.—Decisions on staffing of individual hospitals must remain the primary function of the medical board of the individual hospital, as the City charter, long custom, and equity all demand.

Commission Suggestion 4.—A review mechanism should be implemented by the Board of Hospitals to examine periodically the standards of care and education in hospitals under their jurisdiction.

SUBSTITUTE RECOMMENDATION 4.—Whether an additional review mechanism is needed, as suggested, is a matter of question. The Coordinating Council believes that active, functioning organizations already exist to evaluate periodically the care rendered by and the education values in all municipal hospitals. Any recommendations of the Commission of Health Services in this matter should make certain such evaluation remain with the Department of Hospitals and the respective medical boards of the individual hospitals.

Commission Suggestion 5.—The Board of Hospitals should have a nonsalaried chairman designated by the Mayor.

SUBSTITUTE RECOMMENDATION 5.—In view of the broad powers of the Board of Hospitals the Commissioner of Hospitals, rather than a separate, nonsalaried chairman, should remain as chairman of the Board of Hospitals.

Commission Suggestion 6.—Responsibility for the final distribution of total available budgetary funds allocated to the Department of Hospitals should rest with the Commissioner of Hospitals to be exercised in consultation with the Board of Hospitals. The Board of Estimate should allocate funds to the several major programs of the Department on a lump-sum basis, without line-by-line itemization of position and supplies.

SUBSTITUTE RECOMMENDATION 6.—The Coordinating Council concurs in the above suggestion except the last portion of the second sentence and thus would delete the phrase "on a lump-sum basis, without line-by-line itemization of position and supplies."

The Coordinating Council has additional recommendations to the Commission on Health Services which it believes deserve serious consideration.

The recruitment of American-trained interns and residents to municipal hospitals cannot alone be solved by medical school-directed residency training programs. Such programs are desirable, it is true, but with them must go improvements in the physical facilities of the particular institutions. Better living and working quarters for the resident house staff of physicians are needed. So, too, is there need to increase the stipend of these men for many of them in this day are married with family responsibilities.

The same thought would apply to the recruitment of nurses for these hospitals. They, too, should have better quarters and more financial rewards. And the staffs of the ancillary services in municipal hospitals should receive compensation and working conditions commensurate with similar positions in competitive fields.

The Coordinating Council would reemphasize its conviction that the primary role of hospitals, especially municipal hospitals, is to serve the community and the patients in these hospitals, who are the public. Educational and research training, while highly desirable for the house staff of these institutions, should be secondary to the prime role—patient care and service to the public.

Finally, the Coordinating Council would urge the Commission on Health Services to use its influence and best efforts to help restore to postgraduate medical education the two-year internship. Each year finds the ranks of the general practitioner of medicine growing smaller and smaller. Yet the greatest need for the public is not for more and more specialists but the well-trained general practitioner. We believe the two-year internship is one answer to this problem.

The Coordinating Council is well aware that there are approximately 7,000 physicians graduated yearly from medical schools in the United States. Yet there are available approximately 14,000 internships in the hospitals of the nation. Extension of this two-year program would ultimately make available enough interns to man most of the hospitals in the nation.

We know that the Commission on Health Services of the City of New York cannot alone bring this to pass; that it involves the national boards of the respective specialties and their consent to permit the physician who takes a two-year internship some credit if he later wishes to enter upon an extended residency in a specialty. But we believe that the Commission on Health Services can—with other segments of the medical community across the nation—help bring this goal to realization.

The Coordinating Council on behalf of the medical societies of the City of New York again pledges its best effort and cooperation to the Commission on Health Services in all matters concerning the health and medical care of the citizens of the City of New York.

Joseph Shanaphy, M.D., reported on the Management Survey Report of the State Society, as follows: Concerning that segment of the Management Survey Report dealing with the consolidation of the Trustees and the Council into one board of 17 instead of two of 29, the attitude of the county medical societies has been obtained from their legislation chairmen. While apparently no formal action has been taken by any of the counties, their attitude is that they would be reluctant to agree to any decrease in representation. In line with this type of thinking, it has been urged that when a member of the council is elected to State office the vacancy thus created be filled by election at that time instead of the existing interim appointment made by the council itself.

Jerome L. Leon, M.D., reported on the Albany meeting concerning the abuse of narcotics: "A conference on the rehabilitation of adolescent narcotic addicts was held in Albany on January 8 and 9, 1960. This conference was sponsored by the Governors' Task Force on Narcotic Addiction, the State Interdepartmental Health Resources Board, and the Board of Hospitals of New York City. The recommendations of the ad hoc committee are as follows:

1. There should be an expansion of government hospital facilities on the City, State, and Federal levels. The units should be established only in hospitals affiliated with medical schools.

2. An in-area comprehensive rehabilitation service program should be instituted early during the period of hospitalization. Research programs in social, psychiatric, and biochemical fields should be developed.

3. Out-of-area centers should be established and suitable adolescent addicts should be sent to these rehabilitation facilities to learn good work habits. While the adolescent is away from home, appropriate staff should prepare his family for his return.

4. An interdepartmental committee representing the City, the State, and the Federal governments should be created to coordinate and evaluate the entire program.

George James, M.D., Deputy Commissioner of Health, reported on cooperation between the Health Department and the medical profession: "It has been the policy of the Department of Health for many years to recommend prophylactic immunization to household contacts of cases of small pox, diphtheria, typhoid fever, and whooping cough. Contacts to cases of these diseases are advised to go to their physician to receive the prophylactic immunization. However, if they cannot afford the services of a private physician they may receive them from a Department physician. There are several communicable diseases against which there are no immunizations available, but which can be prevented by the use of sulfonamides or antibiotics. These are bacillary dysentery, meningococcus infections, and streptococcal sore throat, including scarlet fever. Hitherto, the Department of Health has not made recommendations for the use of drugs by contacts to cases of these diseases. In several instances where outbreaks occurred in an institution the Department has recommended the use of one of these drugs and the outbreak was promptly controlled. It appears reasonable to recommend prophylactic treatment regularly to household contacts of the three diseases mentioned.

Household contacts to cases of bacillary dysentery, meningococcus infection and streptococcal sore throat, including scarlet fever, will be requested to go to their private physicians to receive prophylactic treatment. If they cannot afford the services of a private physician such treatment will be given to them by a physician employed by the Department of Health."

A special conference to discuss the Medical Practice Act was held on Tuesday, December 22, 1959, at the headquarters of the Medical Society of the State of New York, Henry I. Fineberg, M.D., president of the Medical Society, presided. It was voted (1) to continue as heretofore opposing laws proposed each year for the licensing of chiropractors. This was approved by the Coordinating Council;

(2) To ask for an official commission to study the question of medical licensure. The Coordinating Council voted to ask the government to appoint a task force to study the questions of medical licensure and the Medical Practice Act.

A letter was read from Leslie H. Tisdall, M.D., secretary of the Medical Society of the County of Kings, stating: "The following recommendation of the board of censors of the Medical Society of the County of Kings was approved by the Comitia Minora at its meeting on February 3, 1960: 'That the Comitia Minora urge the Coordinating Council to form a committee, representing the boards of censors of the component county medical societies, to meet, discuss, and to arrive at a more uniform interpretation of the various provisions of the Code of Ethics, so that some uniformity of action on similar problems may be taken by the various boards of censors.' "

It was agreed that the chairmen of the boards of censors of each of the five county medical societies would meet together to discuss mutual problems.

At this meeting, Dr. James reported that bacillary dysentery, meningococcus infections, and streptococcal sore throat, including scarlet fever, can be controlled by the sulfa drugs. It is advised that doctors use these drugs on all contacts immediately upon discovery of one of the foregoing diseases. It was agreed certain hospitals in the city would be designated as depots where a proper package would be on hand with one of the sulfonamides.

At the suggestion of the Bronx County Medical Society on the urgency of solving the problems of the shortage of interns, it was decided to take positive action on a two-year rotating internship. It was decided that the First District Branch introduce a resolution asking the boards to recognize a second year of rotating internship as one year towards board certification.

Respectfully submitted,

CHARLES F. MCCARTY, M.D., *Secretary*

MEDICAL COMMUNICATIONS DAY

Saturday, May 14, 1960

Statler Hilton Hotel ***New York City***

sponsored by

NEW YORK STATE JOURNAL OF MEDICINE

Official publication, Medical Society of the State of New York

and

AMERICAN MEDICAL WRITERS ASSOCIATION
METROPOLITAN NEW YORK CHAPTER

"The Practicing Physician: Transmitter and Receiver of Medical Information"

Morning Session

William Hammond, M.D., Scarsdale, Assistant Editor, New York State Journal of Medicine, *Presiding*

9:00 a.m.—Registration, Washington Room, Mezzanine

9:30 a.m.—Welcome

Herbert T. Wagner, M.D., Executive Director, Medical Society of the State of New York

9:40 a.m.—Panel Discussion: **"The Practicing Physician: Transmitter of Medical Information"**

Robert Turell, M.D., New York City, Associate Editorial Board, New York State Journal of Medicine, *Chairman*

1. **"In a Medical Journal: How to Get Your Paper Published"**

   Colonel Robert J. Benford, USAF, Washington, D.C., former editor, *Armed Forces Medical Journal*

2. **"In a Medical Book"**

   Mr. John L. Dusseau, Philadelphia, Pennsylvania, Editor, W. B. Saunders Company

3. **"To the Public"**

   Theodore R. Van Dellen, M.D., Chicago, Illinois, Medical Editor, Chicago *Tribune*—New York *News* Syndicate; Editor, *Illinois Medical Journal*

4. **"At a Medical Meeting"**

   Ivan D. Baronofsky, M.D., New York City, Surgeon-in-Chief, Mount Sinai Hospital

A question and answer period will follow the four presentations.

12:30 P.M.—Luncheon, Skytop, 18th floor

LAURANCE D. REDWAY, M.D., Ossining, Editor, NEW YORK STATE JOURNAL OF MEDICINE, *Presiding*

Address: JOSEPH C. HINSEY, PH.D., New York City, Director, New York Hospital-Cornell Medical Center

Afternoon Session

RICHARD H. BRASFIELD, M.D., New York City, Vice-President, American Medical Writers Association, Metropolitan New York Chapter, *Presiding—Washington Room, Mezzanine*

2:30 P.M.—PANEL DISCUSSION: **"The Practicing Physician: Receiver of Medical Information"**

RICHARD H. ORR, M.D., New York City, President, American Medical Writers Association, Metropolitan New York Chapter, *Chairman*

1. **"How the Busy Practitioner Can Keep Up"**

   I. PHILLIPS FROHMAN, M.D., Washington, D.C.

2. **"New Communication Methods Promise the Practitioner Help"**

   EDWARD C. ROSENOW, JR., M.D., Philadelphia, Pennsylvania, Executive Director, American College of Physicians

3. **"The Pharmaceutical Industry's Concern with the Problem"**

   AUSTIN SMITH, M.D., Washington, D.C., President, Pharmaceutical Manufacturers Association

4. **"The Medical Society's Concern with the Problem"**

   ALFRED P. INGEGNO, M.D., Brooklyn, Councillor, Medical Society of the State of New York; Chairman, Convention Scientific Program Committee and Publication Committee

A question and answer period will follow the four presentations.

5:15 P.M.—Cocktail Party, Pennsylvania Room, Mezzanine
(*Courtesy Hoffmann-La Roche Inc., Nutley, New Jersey*)

Medical Communications Day

Saturday, May 14, 1960 ***Statler Hilton Hotel, New York City***

Sponsored by NEW YORK STATE JOURNAL OF MEDICINE and American Medical Writers Association, Metropolitan New York Chapter

Registration Fee: $6.00 for members of Medical Society of the State of New York and American Medical Writers Association
$10.00 for nonmembers

Registration fee includes morning and afternoon sessions, luncheon, and cocktail party.

Enclosed is a check (or money order) for ...... for ...... registrations.

Name...

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Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Invitation to 1960 Convention of the Women's Auxiliary to Medical Society of the State of New York

The president and the Convention Committee of the Women's Auxiliary through the Medical Society of the State of New York, extends a cordial invitation to each and every doctor's wife in New York State to the twenty-fourth annual convention to be held in New York City, May 8 to May 11.

The House of Delegates will convene on Monday, May 9 at 9:00 A.M. at the Skytop (18th Floor) Statler Hilton Hotel. There will be a morning and afternoon session Monday and a morning session on Tuesday, May 10 and Wednesday, May 11.

The Convention Committee is certain that you will find the program both interesting and stimulating. Members and guests are constantly amazed at the broad scope of Auxiliary activities and achievements.

Gala social events have also been planned for your entertainment and enjoyment.

The Medical Society of the State of New York will honor past presidents to the State Auxiliary with a reception Sunday, May 9, 9:00 P.M., Skytop (18th Floor), Statler Hilton Hotel.

The tea, formerly given on Monday afternoon, has not been scheduled this year in order to provide more time for both the doctors and their wives to prepare for the dinner dance to be held in honor of Henry I. Fineberg, M.D., retiring president of the Medical Society of the State of New York. This lavish affair will be held on Monday, May 9, 7:00 P.M. at the Hotel Pierre. Many distinguished persons will be present.

The luncheon in honor of Mrs. James L. McCartney, State Auxiliary president, will be held Tuesday, May 10 at 12:30 P.M. in the North Ballroom of the Hotel Astor. Delightful surprises are in store for all who attend this function.

In an effort to stimulate attendance at this year's convention, round table discussions have been omitted. The House of Delegates will not convene on Tuesday afternoon after the President's luncheon. This time has been allotted to the delegates for their own use.

A Night Life Party is being planned for those who wish to do a bit of "night clubbing." This tour will be made Tuesday and/or Wednesday nights at a reasonable and inclusive rate. Details may be obtained at the Auxiliary information and ticket table, Skytop foyer.

The Convention Committee is most anxious to welcome all doctors' wives who, though not members of the Auxiliary, attend the State Society Convention with their husbands. A special invitation is extended to each of these ladies to attend Auxiliary activities.

It is the committee's hope that the 1960 convention will be most successful. We need every doctor's wife's help to make it so.

MRS. JOSEPH H. KINNAMAN, *Convention Chairman*
MRS. JULIUS GALE, *Convention Cochairman*

30 Cathedral Avenue
Hempstead, New York

432 South Second
Lindenhurst, New York

Did You Know—that annual per capita consumption of mushrooms in the United States is about one third of a pound? Esteemed for their unique flavor by gourmets, mushrooms are also to be commended as relatively good vegetable sources of the vitamin B components, riboflavin, and niacin.

MONTH IN WASHINGTON

Congress has been warned against acting on legislation to provide health care for the aged before receiving the recommendations of next year's White House Conference on Aging.

Rep. Noah M. Mason (R., Ill.), ranking minority member of the House Ways and Means Committee which handles such legislation, put in the *Congressional Record* an exchange of correspondence with former Rep. Robert W. Kean (R., N.J.), chairman of the National Advisory Committee supervising preparations for the White House Conference next January.

Rep. Mason said the correspondence "reveals the reason why Congress should await the results of the Conference."

"Let us not waste the $2 million we have already appropriated to bring thousands of good minds together to suggest solutions to problems of our aging population," Rep. Mason said. "Certainly we should get the benefit of their advice rather than enact legislation in haste and without proper study."

F. J. L. Blasingame, M.D., executive vice-president of the American Medical Association, also voiced this warning in a radio interview while he was in Washington for conferences with White House aides and Arthur S. Flemming, Secretary of Health, Education, and Welfare.

Dr. Blasingame said that it would be "neither practical nor realistic" for Congress to act on such legislation until the White House Conference and other sources had compiled "more conclusive and complete information" on a nation-wide basis.

Dr. Blasingame and other A.M.A. representatives emphasized to President Eisenhower's aides and Secretary Flemming that the medical profession is unalterably opposed to any legislation, such as the Forand bill, that would use the Social Security system to provide health care for the aged.

In his letter to Mason, Kean predicted that "in all probability" most of the White House Conference's recommendations would be for "state and local activity" in dealing with the problems of the aged. Kean said that action at the state and local level "seems most effective."

The National Association of Manufacturers charged in a pamphlet that supporters of Forand-type legislation have exaggerated the health care needs of the nation's older people. The N.A.M. pamphlet also said the Forand bill was an entering wedge for a cradle-to-grave compulsory health insurance plan.

Meantime, supporters of the Forand bill—particularly the AFL-CIO, continued an intensive pressure campaign aimed at Congressional approval of the legislation in this national election year when Congressmen are more susceptible to such pressure.

Another Democratic presidential hopeful, Sen. Hubert H. Humphrey (D., Minn.), reiterated his support for Forand-type legislation. He proposed a six-point program for aid for the elderly including "an extension of the Social Security system to cover the cost of hospital and nursing home care for senior citizens."

Sen. John F. Kennedy (D., Mass.), a leading contender for the Democratic nomination for president, has introduced similar, but even broader, legislation.

Elsewhere on the national legislative front, prospects brightened for Congressional passage this year of a bill to permit physicians and other self-employed persons to set aside money for retirement.

The Administration, which last year opposed a bill with such provisions, appeared in mid-March to be ready to support it with modifications.

The Administration shift improved the already favorable odds that both the Senate Finance Committee, where a House-approved bill was pending, and the Senate would approve such legislation this session.

Notes

The issue of generic names versus trade names in doctor's prescriptions came to the forefront in the Senate Monopoly Subcommittee's investigation of the drug industry.

Austin Smith, M.D., president of the Pharmaceutical Manufacturers Association, testified at a subcommittee hearing that "behind brand names lie the reputation, reliability, and skill of the manufacturer." He said use of generic terms would restrict a physician's choice as to drugs and would transfer some of the physician's responsibility to the pharmacist.

"By brand name prescription, the doctor orders for a patient a specific product in which he has absolute knowledge of quality, purity, and any side-effects that might have importance for a particular patient," Dr. Smith said.

R. B. Robins, M.D., of Camden, Arkansas, who accompanied Dr. Smith at the hearing, submitted a

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

similar statement. He said he used trade names because: "It is simpler to write such a prescription and I can be assured that no substitution will be made by the druggist—this assures me that the patient will get top quality."

Dr. Robins appeared before the subcommittee as a private practicing physician and not in his capacity as a member of the A.M.A. Board of Trustees.

Despite this testimony, Sen. Estes Kefauver (D., Tenn.), the chairman of the subcommittee, said he hoped physicians would give "serious thought" to use of generic terms. He contended that doctors thus could bring down drug prices by opening the way for small manufacturers to give the major companies "some good, honest, old-fashioned price competition."

President Eisenhower's Conference on Occupational Safety urged stronger x-ray legislation by the states with an aim of protecting consumers and workers against too much radiation.

The three-day Conference also said there is need "for effective educational programs to reduce both consumer and occupational exposures to x-rays used for diagnosis and therapy, x-ray installations in industry for product control and related purposes, and various x-ray devices such as shoe-fitting fluoroscopes."

The Conference also recommended intensive efforts to develop better ways of determining safe exposure levels of radiation.

ANNOUNCEMENT

Medical Society of the State of New York
1960 Annual Convention

DINNER DANCE

- Monday evening, May 9
- New Hotel Pierre Ballroom
- Cocktails preceding dinner
- Gourmet menu
- Famous name band

Set aside the date
Bring your family and friends

NECROLOGY

Walter Ing Akana, M.D., of Rome, died on January 28 in Florida at the age of fifty-nine. Dr. Akana graduated in 1926 from Cornell University Medical College. He was an associate physician at Rome and Murphy Memorial Hospitals and a founder of Rose Hospital. Dr. Akana was a member of the International Academy of Proctology, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Bernard Aschner, M.D., of New York City, died on March 9 in Flower and Fifth Avenue Hospitals at the age of seventy-seven. Dr. Aschner received his medical degree from the University of Vienna in 1907. He was the discoverer of Aschner's phenomenon in 1908. Dr. Aschner was a member of the New York Rheumatism Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Margaret Powell Brewster, M.D., of Elsinore, California, formerly of New York City, died on March 7 at the age of eighty-seven. Dr. Brewster graduated in 1901 from Cornell University Medical College. Retired in 1953, Dr. Brewster was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Britenstool, M.D., of New York City, died on March 7 at his home at the age of eighty-one. Dr. Britenstool graduated in 1901 from Columbia University College of Physicians and Surgeons. He was a consultant in internal medicine at St. Clare's Hospital and at the Hospital for Joint Diseases of which he was a founder in 1906 with his uncles, Drs. Henry W. and Herman C. Frauenthal. Dr. Britenstool was a member of the American Congress of Physical Medicine and Rehabilitation, the New York Society of Physical Medicine and Rehabilitation, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Howard William Brondum, M.D., of Brooklyn, died on February 27 in Long Island College Hospital at the age of forty-six. Dr. Brondum graduated in 1937 from Long Island College of Medicine and interned at Norwegian Lutheran Deaconess Home and Hospital (now Lutheran Medical Center) and Long Island College Hospital. He was director of radiology and attending in radiology at Lutheran Medical Center and an associate in roentgenology at Cumberland Hospital. Dr. Brondum was a Diplomate of the American Board of Radiology (Roentgenology), a Member of the American College of Radiology, and a member of the Associated Physicians of Long Island, the Radiological Society of New York State, the Brooklyn Radiological Society, the New York Roentgen Society, the Brooklyn Thoracic Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Joseph Ciancimino, M.D., of Brooklyn, died on February 17 at the age of sixty-one. Dr. Ciancimino graduated in 1924 from New York University and Bellevue Hospital Medical College and interned at St. John's Long Island City Hospital. He was an assistant in surgery at Kings County Hospital Center and attending surgeon at St. John's Long Island City Hospital. Dr. Ciancimino was a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the Kings County Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William J. Clemens, M.D., of Brooklyn, died on January 31 at the age of seventy-one. Dr. Clemens graduated in 1913 from Fordham University School of Medicine. He was an associate attending physician at the Hospital of the Holy Family. Dr. Clemens was a member of the Kings County Medical Society and the Medical Society of the State of New York.

Frederick C. Donnelly, M.D., retired, of Newark, died on February 12 at the age of seventy-six. Dr. Donnelly graduated in 1908 from Syracuse University College of Medicine. He was a member of the Wayne County Medical Society and the Medical Society of the State of New York.

Anthony Hans Hansen, M.D., of Douglaston, died on February 17 at the age of eighty-two. Dr.

Hansen graduated in 1903 from Cornell University Medical College. He was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Carl Hausheer, M.D., of Staten Island, died at his home on February 25 at the age of sixty-five. Dr. Hausheer graduated in 1918 from the University of Pennsylvania School of Medicine and in 1927 he received his degree of Doctor of Public Health from Johns Hopkins University School of Medicine. He was a consulting physician at St. Vincent's and Sea View Hospitals. From 1919 to 1928 he was a researcher in tropical medicine with the Rockefeller Foundation and from 1928 until his retirement in 1959 he was an associate medical director for the Prudential Insurance Company. Attached to the air section of the Navy in World War I, Dr. Hausheer was instrumental in planning the first ambulance plane used to carry casualties. Dr. Hausheer was a Diplomate of the American Board of Preventive Medicine, Inc. (Public Health), a Fellow of the American College of Physicians, a Fellow of the American College of Preventive Medicine, and a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Moses Kupperman, M.D., of New York City and Hempstead, died on March 10 in Beth Israel Hospital at the age of sixty-four. Dr. Kupperman graduated in 1917 from Long Island College Hospital Medical School and interned at Beth Israel Hospital. He was a member of the American Academy of General Practice, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jacob Levy, M.D., of Brooklyn, died on February 9 in Unity Hospital at the age of sixty-two. Dr. Levy graduated in 1927 from the University of Illinois College of Medicine. He was an assistant attending physician at Unity Hospital. Dr. Levy was a member of the American Academy of General Practice, the American Geriatrics Society, the East New York Medical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Arthur McQuilkin, M.D., of Varysburg, died on January 30 at the age of eighty. Dr. McQuilkin graduated in 1905 from Northwestern University Medical School. He was a member of the staff of the Wyoming County Community Hospital. Dr. McQuilkin was a member of the Wyoming County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Felix Lawrence Millus, Jr., M.D., of Brooklyn, died on February 7 at his home at the age of thirty-five. Dr. Millus graduated in 1953 from New York University College of Medicine. He was a junior assistant physician at Methodist Hospital of Brooklyn. Dr. Millus was a member of the Brooklyn Society of Internal Medicine, the Kings County Medical Society, and the Medical Society of the State of New York.

Albert S. Morrow, M.D., of New York City, died on February 27 in the Veterans Administration Hospital at the age of eighty-one. Dr. Morrow graduated in 1901 from New York University and Bellevue Hospital Medical College and interned at Bellevue Hospital. He was a consultant in surgery at Elmhurst General Hospital. From 1940 to 1948 he was director of the New York City Cancer Committee. Dr. Morrow was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Oscar Northway-Meyer, M.D., of Seattle, Washington, formerly of Middletown, died on December 12, 1959, at the age of eighty-eight. Dr. Northway-Meyer graduated in 1895 from New York Homeopathic Medical College and Flower Hospital. He was a consulting surgeon in eye, ear, nose, and throat at the Elizabeth A. Horton Memorial Hospital, Middletown, and the Goshen Hospital. Dr. Northway-Meyer was a member of the Orange County Medical Society and the Medical Society of the State of New York.

Paul Joseph Raia, M.D., of Brooklyn, died on February 3 at the age of sixty-three. Dr. Raia graduated in 1921 from New York Homeopathic Medical College and Flower Hospital. He was an attending in surgery at St. Mary's Hospital and an associate in surgery at Queens General Hospital Medical Center. Dr. Raia was a Fellow of the American College of Surgeons and a member of the Brooklyn Surgical Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Loren Percy Ransom, M.D., of Syracuse, retired, died on February 11 at the age of seventy-four. Dr. Ransom graduated in 1912 from Syracuse University College of Medicine. He was an associate in surgery (inactive) at St. Joseph's Hospital. Dr.

Ransom was a member of the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Otto M. Schwerdtfeger, M.D., retired, of New York City, died on February 18 at his home at the age of eighty-one. Dr. Schwerdtfeger graduated in 1898 from Long Island College Hospital Medical School. He was a consulting physician at Lenox Hill Hospital. Dr. Schwerdtfeger was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick W. Seward, M.D., of New Hampton, retired, died on March 4 at his home at the age of eighty-five. Dr. Seward graduated in 1898 from New York Homeopathic Medical College and Flower Hospital. Dr. Seward, owner and director of the Interpines Sanitarium which was established in 1890 and closed in 1958, was a member of the Orange County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William J. V. Taylor, M.D., of Buffalo, died on January 1, 1959, at the age of eighty-four. Dr. Taylor graduated in 1907 from Baltimore Medical College.

Rubin Tylbor, M.D., of New York City, died on November 8, 1959, at the age of sixty-four. Dr. Tylbor received his medical degree from the University of Warsaw in 1926. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

Dorean David Wyser, M.D., of Ossining, died on November 6, 1959, at the age of sixty-seven. Dr. Wyser received his medical degree from the University of Vienna in 1920. Dr. Wyser was a Diplomate of the American Board of Radiology and a Member of the American College of Radiology.

Ulcer Not Rare in Youth: Often Unnoticed for Years

Junior could get a peptic stomach ulcer before his "old man." And if his father does develop the ailment, it may have started in his youth.

These are the conclusions of three Chicago physicians reported in the February *Journal of Diseases of Children.*

"Despite its relative infrequency, peptic ulcer in children should not be considered rare," they said. The true incidence of peptic ulcer in children cannot be evaluated on the basis of the recorded cases, since these undoubtedly represent a small fraction of the total number of children with the disease. In many cases, symptoms are entirely lacking and the condition is identified only at operation or autopsy.

Alberto Ramirez Ramos, M.D., Joseph B. Kirsner, M.D., and Walter L. Palmer, M.D., of the University of Chicago Department of Medicine cited studies showing that out of 1,000 adult patients with duodenal ulcer, 26 of them had symptoms traceable as far back as four years of age, and out of 1,000 with gastric ulcer, 16 had symptoms that dated from childhood. From their own experience with 32 cases of peptic ulcer in children up to age fifteen, observed from 1936 to 1958, they concluded:

—Chronic peptic ulcer in children is more frequent in males than in females at all ages.

—Symptoms of peptic ulcer are vague in children until the age of puberty when they begin to resemble those of adults.

—Duodenal ulcers exceed gastric ulcers.

—Chronic peptic ulcer in children is more frequent than acute ulceration and often remains unrecognized for long periods.

—Medical management with avoidance of gastrointestinal irritants in food and medication, frequent antacids, and sedation, is effective in the majority of children with peptic ulcer.

—As in the adult, surgical management may by necessary in childhood peptic ulcer complicated by hemorrhage or perforation.

The cause of peptic ulcer in children remains as obscure as its occurrence in adults, the researchers noted. However, in the 4 cases of acute peptic ulceration among the 32 patients, cerebral damage and certain drugs may have been implicated as causative factors, they said.

Two patients, aged six and seven, developed acute peptic ulceration following a month's treatment with corticotropin, salicylates, and aspirin for rheumatic fever. But it could not be determined whether the drugs produced the ulcers, or irritated a susceptibility to ulcer, or whether rheumatic fever predisposed to peptic ulceration.

MEDICAL NEWS

Fifty Year Club of the A.M.A. Being Organized—The Fifty Year Club of the American Medical Association is being organized as a social function for physicians who have been in practice for fifty years or more.

Plans will be made to have a room set aside at each clinical meeting of the American Medical Association in which members can meet. There will be no dues. A luncheon or breakfast will be decided upon at each meeting. Members will be given a fifty-year button. The usefulness, benefits, and procedures of the organization will be decided by the members' interest.

Anyone wishing information about the new club should write to: J. H. McCurry, M.D., Organizer, Fifty Year Club, Cash, Arkansas.

Televised Grand Rounds—On April 20 another in the series of live, grand rounds closed-circuit telecasts will be presented to physicians throughout the country. The telecast will be broadcast from the Ohio State University College of Medicine, Columbus, Ohio. The subject of the grand rounds will be "Gastrointestinal Problems: Medicine or Surgery?" Physicians who attend are eligible for credit in category II of the American Academy of General Practice.

Viewing locations in New York State are as follows: Brooklyn—Brooklyn Academy of Music, Music Hall; New York City—Statler Hilton Hotel, Grand Ballroom; Syracuse—Onondaga County War Memorial, Auditorium. Viewing time in these locations will be 9:00 P.M.

New Pediatric Cardiac Diagnostic Unit at NYU-Bellevue—Children with heart disease of every type will be studied from infancy through adolescence at a new cardiac diagnostic unit at New York University-Bellevue Medical Center.

The unit has been created as a memorial, by colleagues and friends, to the late Janet S. Baldwin, M.D., an associate professor of pediatrics at the Medical Center and a pioneer in the diagnosis of congenital cardiac anomalies in children. It is expected to start functioning on or about May 1.

Nutrition Institute to be Held at Cornell—A nutrition institute, sponsored by the Graduate School of Nutrition, Cornell University, in cooperation with the New York State Nutrition council, will be held on July 7 and 8, at the Alice Statler Auditorium at the University.

Further information can be obtained by writing to: Miss Catherine Personius, College of Home Economics, Cornell University, Ithaca, New York.

Physician's Novel Purchased by Film Company—The crime novel *Just Murder Darling*, published by Scribner's and written by James A. Brussel, M.D., Assistant Commissioner, New York State Department of Mental Hygiene, has been purchased by a Hollywood film company. Dr. Brussell has recently completed another book entitled, *Psychiatry for the Layman*. It is scheduled for June publication by Barnes & Noble.

Medical Publications Urgently Needed Abroad—Foreign physicians are eager to receive medical publications from the United States. In order to promote better understanding between the U.S. and countries now being influenced by Soviet propaganda mediums, American physicians are urged to send back issues of medical journals overseas. Mr. William Stockdale McCabe, II, 612 Mount Pleasant Street, Greensburg, Pennsylvania, is willing to receive such material and to reship it to overseas points.

Mr. McCabe is working in cooperation with Magazines for Friendship, Inc., a nonprofit corporation of Occidental College, Los Angeles 41, California. Physicians who would like to ship their material directly overseas should contact this organization for mailing instructions. Since Magazines for Friendship is a nonprofit organization, it depends wholly on contributions to help meet the expense of printing and mailing of informational material and the answering of the many letters it receives.

New Association for Study of Headache—The American Association for the Study of Headache was recently formed in order to bring together men who are interested in the study of headache so that they may express their views on current trends in this field. At the present time it is planned to have one formal meeting before the annual meeting of the American Medical Association.

Interested physicians should write to: Bayard

[Continued on page 1352]

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[Continued from page 1350]

T. Horton, M.D., Secretary, American Association for the Study of Headache, Mayo Clinic, Rochester, Minnesota.

First Daily Medical Newspaper—The American Research and Development Corporation has announced its sponsorship of what is expected to be the first daily medical newspaper published in the United States. The name of the new paper is the *Medical Tribune*. It began publication in March as a 32-page edition published on Wednesday. Later in the year the paper will add a Friday edition and, according to current plans, sometime in 1961 will become a daily paper.

For information contact: Medical Tribune, Inc., 624 Madison Avenue, New York City. Telephone PLaza 1-2814.

New Recorded Medical Journal in Offing—In April the Excerpta Medica Foundation will release volume 1, number 1 of a recorded medical journal entitled, *Voice of Medicine*. The new journal will be prepared under the direction and supervision of the Foundation and will have on its editorial advisory board more than 150 members who will represent all fields of medicine including public health and rehabilitation.

Although the editors feel that medical publications will continue to provide the basis of postgraduate knowledge for the general physician, it is expected that the recordings will supplement this knowledge by the dissemination of authoritative viewpoints as they are expressed and evaluated by scientists all over the world at meetings which are not accessible to most physicians.

Information concerning the new journal can be obtained from: Mr. Peter A. Warren, Director, Excerpta Medica Foundation, New York Academy of Medicine Building, 2 East 103rd Street, New York 29, New York.

Cardiovascular Seminar to be Held in Miami—The sixth biennial cardiovascular seminar sponsored by the Florida Heart Association, the Florida State Board of Health, and the Heart Association of Greater Miami will be held at the Balmoral Hotel, Miami Beach, Florida, April 27 through 30.

Among the members of the faculty will be two physicians from New York City, William T. Foley, M.D., and Charles K. Friedberg, M.D.

For additional information and registration blanks contact: Heart Association of Greater Miami, 2 S.E. 13th Street, Miami 32, Florida.

Symposium on Polio Vaccines—The Academy of Medicine of New Jersey will present a symposium on polio vaccines on April 20, at the Essex House, Newark, New Jersey. The meeting is cosponsored by the Medical Society of New Jersey, the New Jersey State Department of Health, and The National Foundation.

For further information contact the Academy of Medicine of New Jersey, 307-17 Belleville Avenue, Bloomfield, New Jersey. Telephone PIlgrim 8-0544.

Duke University to Sponsor Medical Seminar Cruise—The Duke University School of Medicine will offer doctors a chance to combine postgraduate study with an overseas vacation on its fifth medical seminar cruise. This year's cruise will be to the Baltic, visiting Le Havre, Cuxhaven, Leningrad, Helsinki, Stockholm, Copenhagen, and Hamburg. The cruise ship, *T.S. Ariadne*, will sail from Wilmington, North Carolina, June 5, and from New York City, June 8. The cruise will terminate in Hamburg, Germany, June 28. The medical program has been approved by the Academy of General Practice for Category I credit.

Inquiries should be addressed to: W. M. Nicholson, M.D., Professor of Medicine and Assistant Dean in Charge of Postgraduate Education, Box 3017, Duke University Medical Center, Durham, North Carolina.

Emergency Grant Awarded—Harry A. Feldman, M.D., professor and chairman, Department of Preventive Medicine, State University of New York Upstate Medical Center, has been awarded an emergency grant for $12,072 from the National Institutes of Health to study the current influenza outbreak. Associated with Dr. Feldman in the study will be Miss Beverly Silverthorne and Drs. Alvin Novack, Stephen Wang, and Thomas W. Mou.

Judges Named for Medical Reporting Award—Announcement has been made of the selection of judges for the first Empire State award for excellence in medical reporting. They are as follows: Mr. David H. Beetle, editor, *The Knickerbocker News*, Albany, representing the New York State Association of Newspaper Editors; William Hammond, M.D., Scarsdale, assistant editor, NEW YORK STATE JOURNAL OF MEDICINE, representing the Medical Society of the State of New York; Professor Hillier Kreighbaum, chairman, Department of Journalism, New York University, representing the National Association of Science Writers; Granville W. Larimore, M.D., Albany, Deputy Commissioner, State Health Department, representing his department; James J. Quinlivan, M.D., Albany, assistant secretary, Annual Health Conference, representing

[Continued on page 1354]

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REFERENCES:

SAPERSTEIN, R. B.: Treatment of Acne with Long Term Continuous Abrasion. Presented at 107th Annual Meeting of A.M.A.

REES, R. B.; BENNETT, J. H.; GREENLEE, M. R.: Newer Drug Treatment in Dermatology, Cal. Med.; 91:1, July 1959.

SULZBERGER, M. B. & WITTEN, V. H.: The Management of Acne Today. Med. Clinics of No. America, 43:3, May 1959.

REFER TO PDR
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Annual Health Conference Inc.; and Mr. Harvey I. Cobert of the State Health Department's Publications Section, who will serve as secretary to the awards jury. Professor Kreighbaum will serve as chairman.

The award is sponsored by the Medical Society of the State of New York and Annual Health Conference Inc. on behalf of the State Health Department. It has been established to encourage the further development of sound medical reporting in New York State.

Any member of the editorial staff of any newspaper published five or more times a week in New York State may be nominated to receive the award. The recipient of the award will receive a certificate and $500. In addition, the newspaper represented by the recipient will receive a certificate.

Fifth District Branch Meets—The Fifth District Branch of the Medical Society of the State of New York met on April 7 at the Onondaga Hotel, Syracuse.

The morning session of the fifty-third annual meeting and the geriatrics teaching day of the Branch featured a panel discussion—"Basic Research in Arteriosclerosis"—moderated by John M. McKibbin, Ph.D., professor of biochemistry, State University of New York Upstate Medical Center. Also on the morning program were Albert I. Lansing, M.D., professor of anatomy, University of Pittsburgh School of Medicine, who spoke on "Pathogenesis of Arteriosclerosis," and Frederick, J. Stare, M.D., professor of nutrition, Harvard School of Public Health, whose address was entitled "Experimental Approaches to Arteriosclerosis."

Luncheon speakers were Norman S. Moore, M.D., president-elect, and Herbert T. Wagner, M.D., executive director, of the Medical Society of the State of New York.

The afternoon session consisted of a symposium, the moderator and panelists of which were members of the teaching staff of the State University of New York Upstate Medical Center. The title of the symposium was, "Clinical Aspects of Cerebral Arteriosclerosis." Moderator was Richard H. Lyons, M.D., chairman of department and professor of medicine. Panelists were as follows: Philip E. Duffy, M.D., assistant professor of medicine, "Neurological Aspects"; Paul A. Riemenschneider, M.D., professor of radiology, "Radiologic Aspects"; Robert B. King, M.D., professor of neurosurgery, "Neurosurgical Aspects"; Leo Jivoff, M.D., associate professor of rehabilitation medicine, "Rehabilitative Aspects"; and Herbert Notkin, M.D., clinical associate professor of preventive medicine, "Community Aspects of Hemiplegia."

Election of officers also took place at the meeting.

Personalities

Awarded

Leona Baumgartner, M.D., New York City Commissioner of Health, a scroll from the First District Dental Society of New York for her "Cooperation with dentistry's efforts in the public interest" . . . Morton I. Berson, M.D., New York City, an honorary citation by the Greater Miami chapter of the Alpha Omega fraternity.

Relocated

Leon N. Zoghlin, M.D., the practice of general medicine from Levittown, Long Island, to a new office in Shortsville.

Appointed

Morris Alpert, M.D., Albany, as director of surgery, Memorial Hospital, Albany . . . Mabelle A. Cremer, M.D., Flushing, as medical director of David Cummins and Associates, Inc., . . . William J. Staubitz, M.D., Buffalo, as professor of urology and head of the Division of Urology, University of Buffalo Medical School.

Elected

James A. Caddy, M.D., Levittown, C. Joseph Delaney, M.D., New York City, and John J. Flynn, M.D., Brooklyn, as directors of Blue Shield . . . Paul S. Ingrassia, M.D., Nanuet, to the board of directors of the New York State Division of the American Cancer Society.

Speaker

Murray Bass, M.D., New York City, on a special panel at the New York Academy of Medicine on March 10 concerning the effects of divorce on children . . . Morton I. Berson, M.D., New York City, February 11, before the Greater Miami chapter of the Alpha Omega fraternity, at Mount Sinai Hospital, Miami, on "Reconstructive and Cosmetic Plastic Surgery" . . . James A. Brussel, M.D., Assistant Commissioner, New York State Department of Mental Hygiene, on March 16, before Geigy Pharmaceutical's hospital representatives, and on April 27, as guest speaker at the New York State Hospital Medical Alumni Association's annual banquet . . . Joseph H. Denton, M.D., Troy, guest speaker at the opening session of "The New You" series sponsored by the Rensselaer County Extension Service . . . Morris Herman,

[Continued on page 1356]

CALIFORNIA

INTERVIEWS

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California State Representatives, with authority to make definite employment commitments, will be available in New York City, May 16, 17 and 18. Please contact NOW for appointment: Nurse and Medical Office, Professional Placement Center, 444 Madison Ave., N. Y. Telephone MUrray Hill 8-0540.

Also in Atlantic City, May 9-14, APA Convention. Or meet them in any of the following cities, by making your appointment now with the respective State Employment Office: Minneapolis-May 2; Chicago - May 3, 4; Detroit - May 5, 6; St. Louis-May 19, 20.

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[Continued from page 1354]

M.D., New York City, on the topic "Psychiatric Connotation of the Pathological Personality" at a meeting of the Society of Medical Jurisprudence, on March 14.

Norman J. Levy, M.D., New York City, before a meeting of the Association for the Improvement of Mental Health, March 8, on the subject "Uses and Abuses of Love and Sex" . . . Bernard L. Pacella, M.D., New York City, on March 7, before the hospital staff of the Veterans Administration Hospital at Northport, Long Island, on the subject "Applied Psychiatry" . . . William P. Shepard, M.D., New York City, at the quarterly meeting of the New York State Society of Industrial Medicine Inc., March 30, on the topic "Retirement from Industry" . . . Paul W. Spear, M.D., Brooklyn, at the Veterans Administration Hospital, Montrose, on the subject "Blood Coagulation" on April 18 . . . Thomas S. Szasz, M.D., New York City, March 25, at a meeting of the Association for the Advancement of Psychotherapy, on the topic "Game Model Analysis of Hysteria" . . . George Volow, M.D., Kings Park, on a panel discussion sponsored by the Family Service League of Smithtown, on the topic, "Marital Problems, Parent-Child Relationships, and Family Budgeting" . . . John R. Williams, Jr., M.D., Rochester, on April 2, at the Fourth Annual Meeting of the American Society of Internal Medicine, San Francisco.

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Elected—Charles M. Landmesser, M.D., has been elected president-elect of the New York State Society of Anesthesiologists. Dr. Landmesser is chairman of the Department of Anesthesiology and anesthesiologist-in-chief at Albany Hospital, as well as consultant in anesthesiology at the Albany VA Hospital and Physicians' Hospital in Plattsburgh.

Rebroadcasts—The two-way radio medical conferences are currently being rebroadcast at 10:30 P.M. on Thursday evenings. These broadcasts, which will continue until May, have been initiated in response to requests by physicians who find it inconvenient to listen in at the regular broadcast time. Physicians living within an approximate 100-mile radius of Albany can listen to the conferences by tuning their FM radios to a setting of 90.7 megacycles and at the outer fringes of this radius an outside antenna will be required for interference-free listening.

Alpha Omega Alpha Lecture—Allen O. Gamble, Manpower Evaluation and Development Officer for the National Aeronautics and Space Administration, gave the annual Alpha Omega Alpha Lecture on January 28.

Grant—The National Heart Institute granted $85,000 in support of a study of coronary artery disease which will involve more than 1,000 adult autopsies during the next three years. The comprehensive study seeks to discover the nature of the relationship between various amounts of coronary artery disease and various patterns of these life activities to see if an association exists between them.

Columbia University College of Physicians and Surgeons

Elected—William S. Langford, M.D., professor of clinical psychiatry, was named president of the American Orthopsychiatric Association on February 26.

Grant—The Damon Runyon Fund awarded $25,000 for the continuation of cancer research under the direction of Dr. Samuel Graff.

[Continued on page 1358]

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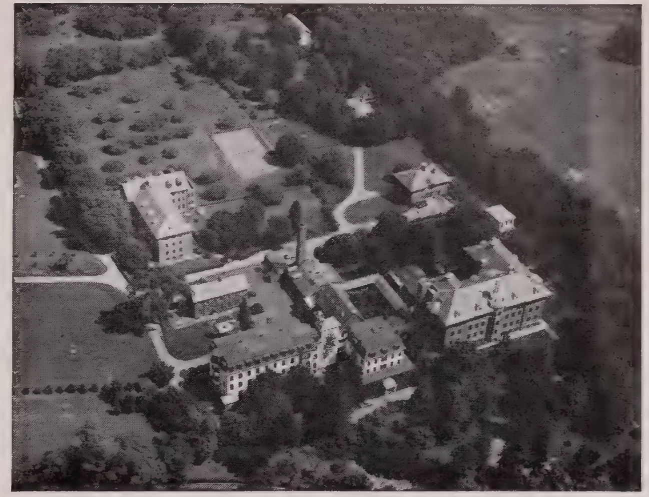

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[Continued from page 1356]

New York University, College of Medicine

Awarded—Henry C. Falk, M.D., and Emery A. Rovenstine, M.D., were awarded presidential citations for medical achievements in anesthesiology and gynecology, and Albert B. Sabin, M.D., received the Medical Alumni award for "distinction as a scientist" at ceremonies held at the Center on February 22.

State University of New York Downstate Medical Center

Appointments—David Benninghoff, M.D., formerly instructor in radiology at Temple University School, Philadelphia, as assistant professor of radiology; Dr. David Hewitt, Oxford, England, as assistant professor of environmental medicine and community health; Daniel Feldman, M.D., director of the neurologic division of Maimonides Hospital, Brooklyn, as assistant professor of neurology; and Norman Blackman, M.D., cardiac consultant to the New York City Department of Health, as clinical assistant professor of medicine.

100th Anniversary—An Academic Convocation in the Basic Sciences Building on March 30 marked the 100th Anniversary of the Downstate Medical Center and its two predecessors, the Long Island College of Medicine and The Long Island College Hospital. Dr. Thomas Hale Hamilton, President of the State University of New York, presided and Dr. Alvin C. Eurich, first President of the State University of New York in 1950 and now Vice-President of the Ford Fund for the Advancement of Education, delivered the major address.

Faculty Appointments—Jonathan T. Lanman, M.D., associate professor of pediatrics of New York University College of Medicine, has been appointed professor and chairman of the Department of Pediatrics and chief of pediatrics at the Kings County Hospital Center, the College of Medicine's major teaching affiliate.

Morton F. Reiser, M.D., and David M. Levy, M.D., have been named professorial lecturers in the Department of Psychiatry and James O'Connor, M.D., has been named clinical assistant professor in medicine.

State University of New York Upstate Medical Center at Syracuse

Grants—Four U.S. Public Health Service grants have been renewed and one new grant has been issued to: J. Howland Auchincloss, Jr., M.D., associate professor, and Robert Gilbert, M.D., instructor, Department of Medicine, for the study on the "Effects of Excessive Weight on Respiration," for $7,537; Frank W. Furth, M.D., assistant professor of medicine, and coordinator of the Cancer Teaching Program, $25,000 for teaching program in malignant diseases in undergraduate education; Daniel Ivler, M.D., Department of Microbiology, $11,500—$5,750 this year to study the nutritional role of fatty acids in the growth of a specific type of bacteria; and C. Barber Mueller, M.D., professor and chairman, Department of Surgery, $9,800 for support of experimental studies, particularly using the electronmicroscope to find specific factors causing acute renal failure.

New York State Committee of One Hundred—Charles V. Willie, M.D., Department of Preventive Medicine, accepted Governor Nelson A. Rockefeller's invitation to membership on the Committee for the 1960 White House Conference on Aging which will be held in Washington, January, 1961, and the State Committee Meeting in Albany.

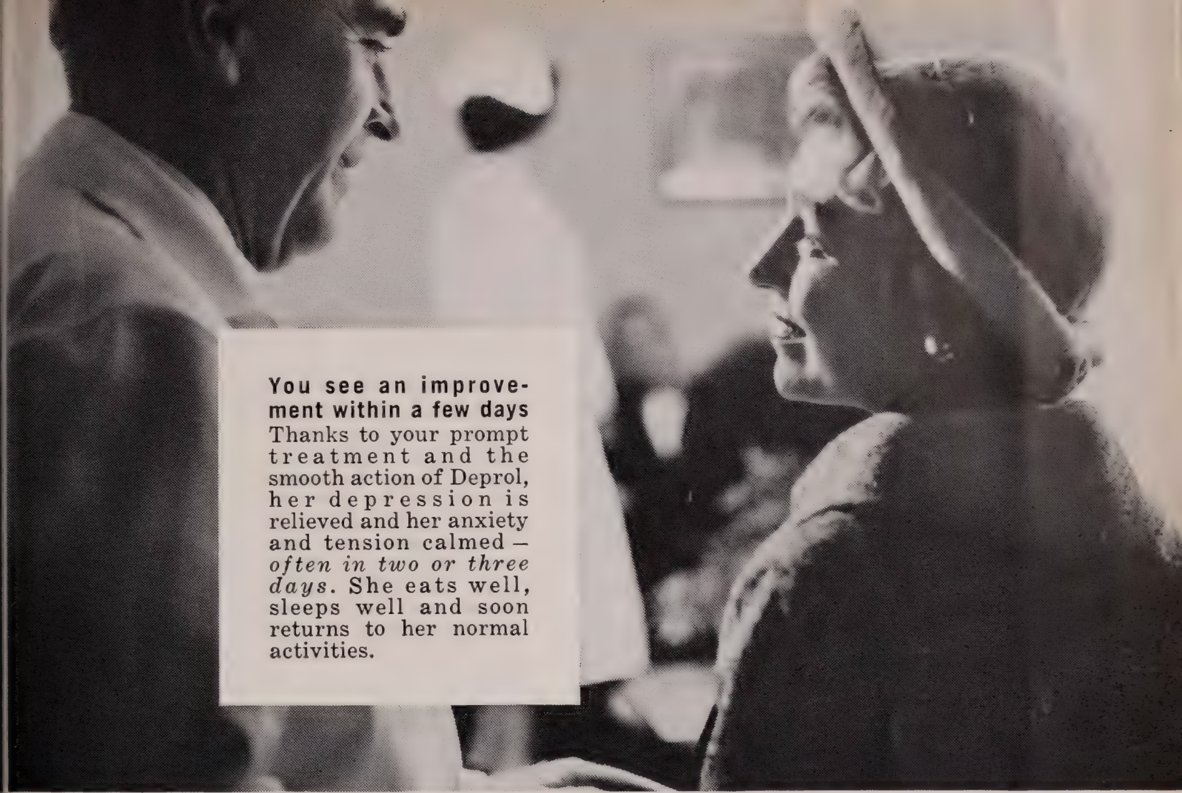
Appointed—Dr. Robert E. Fager, an assistant professor of psychiatry (psychology); Herbert Lourie, M.D., as instructor, Department of Surgery; and Dr. William D. Fisher, an assistant professor, Department of Physiology and Radiology, are recent faculty appointments.

University of Buffalo School of Medicine

Resigns—Ernest Witebsky, M.D., resigned his post as Dean. Dr. Witebsky will devote more time to his duties in conjunction with his research and teaching.

University of Rochester School of Medicine and Dentistry

Appointed—Dr. Charles G. Rob, of Great Britain, will become chairman of the Department of Surgery in July. Dr. Rob is now professor of surgery at the University of London, a post he has held since 1950. He will succeed W. J. Merle Scott, M.D., who is retiring on June 30.



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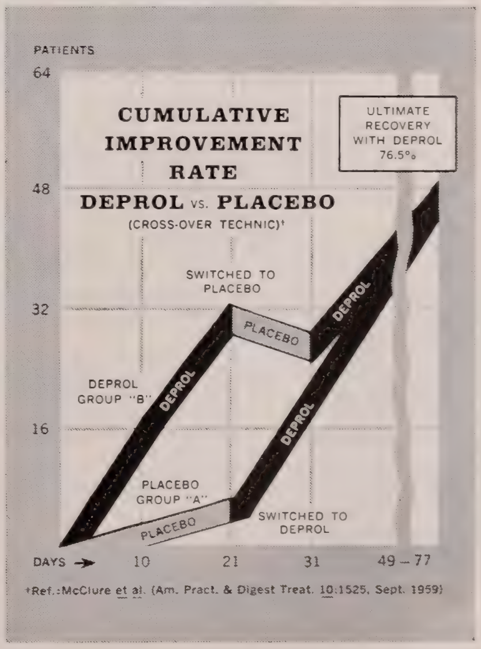

†Ref.: McClure *et al.* (Am. Pract. & Digest Treat. 10:1525, Sept. 1959)

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MEDICAL MEETINGS

New York Academy of Medicine, Monthly Panel Meeting on Therapeutics

The New York Academy of Medicine will hold the sixth meeting of its eighth series of monthly panel meeting on therapeutics on April 21, at 9:00 P.M., at the Academy, 2 East 103rd Street, New York City. The topic for the evening will be "Pathogenesis and Management of Ascites."

On March 17, the subject of the monthly meeting was "Causation, Epidemiology, and Treatment of Common Poisonings." Harold Jacobziner, M.D., Assistant Commissioner, New York City Department of Health, was the moderator. Members of the panel were: Milton Helpern, M.D., Chief Medical Examiner, City of New York; Walter Modell, M.D., New York City; Barbara A. Parker, M.D., New York City; and Mr. Harry W. Raybin, New York City.

The monthly panel meetings are held on the third Thursday of each month at 9:00 P.M. For further information call TRafalgar 6–8200.

David Greenberg Memorial Lecture

The Dr. David Greenberg Memorial Lecture on "The Status of Clinical Neurology," will be delivered by Israel S. Wechsler, M.D., New York City, at the Murray Cohen Auditorium, Lebanon Hospital, Grand Concourse and Mt. Eden Parkway at 173rd Street, the Bronx, on Thursday, April 21, at 9:00 P.M.

New York Society for Cardiovascular Surgery

The twelfth annual meeting of the New York Society for Cardiovascular Surgery and the Committee on Cardiovascular Surgery of the New York Heart Association will be held at the Academy of Medicine Building, 2 East 103rd Street, New York City, on Friday, April 22, at 8:00 P.M.

Joseph E. Murray, M.D., associate in surgery, Peter Bent Brigham Hospital, and director, Surgical Research Laboratory, Harvard Medical School, Boston, Massachusetts, will present the paper of the evening entitled, "Consideration in Tissue and Organ Homotransplantation." Members of the medical profession are invited to attend the meeting.

Brooklyn Tuberculosis and Health Association

The Brooklyn Tuberculosis and Health Association will meet on April 25 from 2:30 to 5:00 P.M., at the Hotel Granada, Ashland Place and Lafayette Avenue, Brooklyn. The theme of the meeting will be "TB is a Brooklyn Problem." Among the speakers will be Harold A. Lyon, M.D., of Kings County Hospital.

Second Annual Louis Gross Memorial Lecture

The second annual Louis Gross Memorial Lecture of the New York University-Bellevue Medical Center will be held April 25, at 8:30 P.M., in the Center's Alumni Hall, 550 First Avenue, New York City.

Guest speaker will be Dr. Bruce Cruickshank, associate director of the Mallory Institute of Pathology, Boston City Hospital, who will speak on the topic "Localization of Tissue Antigens with the Fluorescent Antibody Technic."

Association of Medical Group Psychoanalysts

The Association of Medical Group Psychoanalysts will hold a meeting on Thursday, April 28, at 8:30 P.M., at the New York Academy of Sciences, 2 East 63rd Street, New York City. Irvin A. Kraft, M.D., Department of Psychiatry, Baylor University School of Medicine, Houston, Texas, will present a paper entitled "Family Centered Group Psychotherapy." Discussants of Dr. Kraft's paper will be Jack Sheps, M.D., chairman, and Alexander Wolf, M.D., both of New York City.

New York State Medical Assistants Association

The New York State Medical Assistants Association will hold its first annual convention at the Governor Clinton Hotel, New York City, May 7 and 8.

International Society for Tropical Dermatology

The inaugural meeting of the International Society for Tropical Dermatology will be held on May 10, at 8:00 P.M., at the Caspary Hall of the Rockefeller Institute in New York City. The principal speaker will be Professor Aldo Castellani of the Institute of Tropical Medicine, Lisbon, Portugal. His subject will be, "Elephantiasis Tropica and Elephantiasis Nostras."

The organizational meeting of the International Society of Tropical Dermatology was held on January 25, 1960, at the New York Academy of Medicine, at which time the election of officers took place. Frederick Reiss, M.D., New York City, was elected

[Continued on page 1362]

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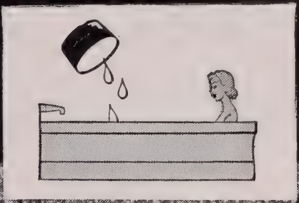

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[Continued from page 1360]

secretary-general, and J. Lowry Miller, M.D., New York City, was elected treasurer.

For information concerning this new society contact: Frederick Reiss, M.D., 870 Fifth Avenue, New York 21, New York.

Medical Communications Day

The first annual Medical Communications Day will be held Saturday, May 14, at the Statler Hilton Hotel, New York City, following the Annual Convention of the Medical Society of the State of New York. Cosponsors for the program are the NEW YORK STATE JOURNAL OF MEDICINE and the Metropolitan New York Chapter, American Medical Writers Association.

Theme for the Day is "The Practicing Physician as a Transmitter and Receiver of Medical Information," and the program will consist of morning and afternoon panel discussions and a luncheon with special guest speaker. General arrangements are in charge of Robert Turell, M.D., and Richard H. Orr, M.D., both of New York City.

All interested are invited to attend. A registration blank appears on page 1343 of this issue of the JOURNAL.

International College of Surgeons, Section of Colon and Rectal Surgery

The colon and rectal section of the International College of Surgeons will hold a symposium on diseases of the colon and rectum at the University of Bologna, Italy, May 20 and 21.

The following New York physicians will present papers at the symposium: James P. Fleming, M.D., Rochester, "The Ileostomized Patient"; Richard M. Alexander, M.D., and Jack W. McElwain, M.D., Great Neck, "Chemotherapy in Carcinoma of the Colon and Rectum"; Joseph F. Montague, M.D., New York City, "A Survey of Modern Methods of Proctologic Examinations"; and Alexander Brunschwig, M.D., New York City, "The Radical Surgery of the Colon Cancer that has Extended to Adjacent Organs and Tissues or Metastasized to the Liver."

For further information contact: James P. Fleming, M.D., Secretary, International College of Surgeons, 125 Meigs Street, Rochester 7, New York.

Fourteenth Annual Rocky Mountain Cancer Conference

The fourteenth annual Rocky Mountain Cancer Conference will be held in the Denver Hilton Hotel, Denver, Colorado, July 20 and 21. The meeting is jointly sponsored by the Colorado division of the American Cancer Society and the Colorado State Medical Society. Physicians who attend the two-day scientific session are eligible for 10 American Academy of General Practice category I credits.

For further information write to: Rocky Mountain Cancer Conference, 835 Republic Building, Denver 2, Colorado.

Sixth International Congress of Internal Medicine

The sixth international congress of internal medicine, will be held in Basle, Switzerland, August 24 through 27. Principal subjects of the congress will be, "Pathogenesy and Therapy in Edema" and "Enzymic Regulations in the Clinic." Official languages of the congress will be German, French, and English.

Programs and registration forms may be obtained from Prof. Dr. H. Ludwig, Sixth International Congress of Internal Medicine, Steinentorstrasse 13, Basle 10, Switzerland. Registration should reach the secretary before April 30, if possible.

Seventh International Conference of the Society of Biological Rhythm

The seventh international conference of the Society for Biological Rhythm will be held at Siena, Italy, September 5 through 7. The theme of the conferences will be endogenous rhythms. The third day of the conference will be held in conjunction with the International Basimetric Society under the chairmanship of Joseph Wilder, M.D., New York City.

Applications for lectures or participation should be sent to the secretary of the Society, Dr. Arne Sollberger, Department of Anatomy, Caroline Institute, Stockholm 60, Sweden. Applications for lectures regarding basimetry should be sent to Dr. Wilder, 1150 Fifth Avenue, New York 28, New York. All applications for lectures should be sent not later than June 1.

The National Science Foundation will provide grants for American participants at the conference. For information concerning grants write to: Dr. R. P. Forster, program director, Regulatory Biology, National Science Foundation, Washington 25, D.C.

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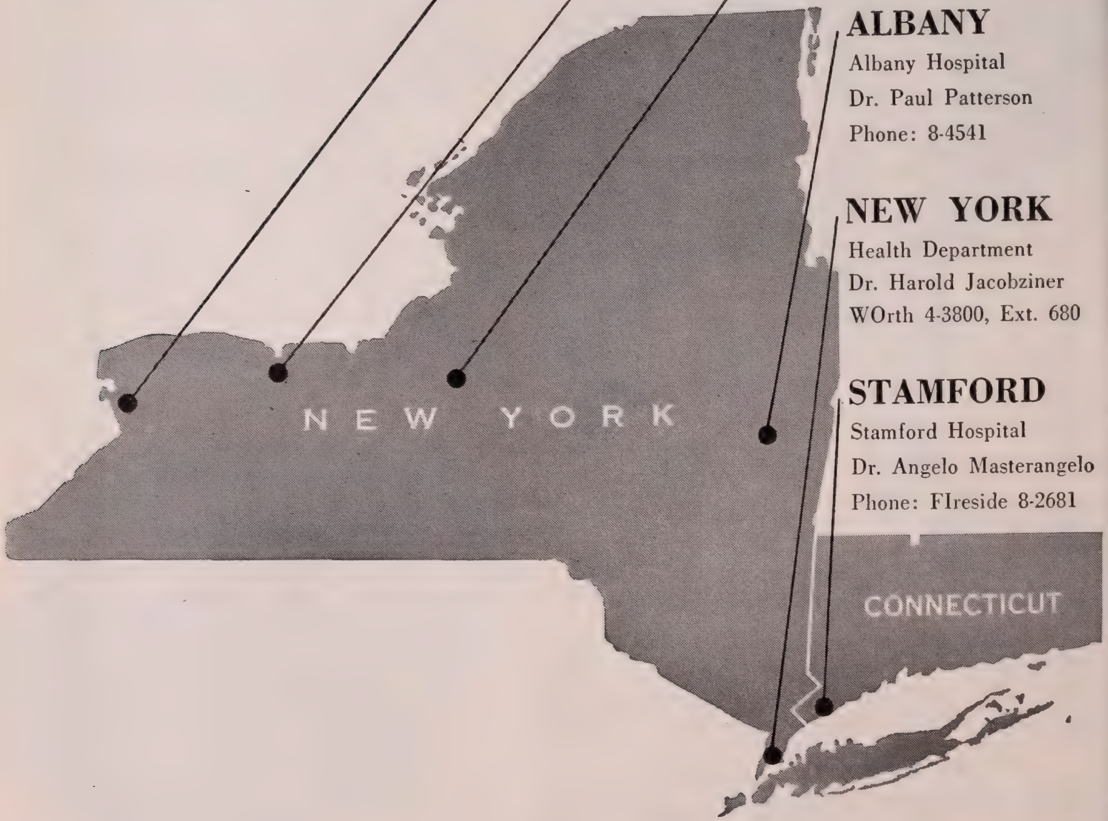

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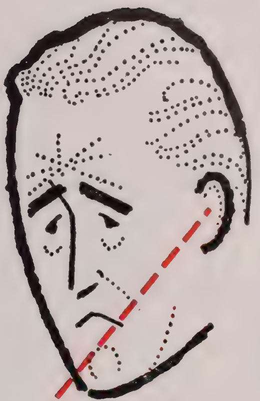

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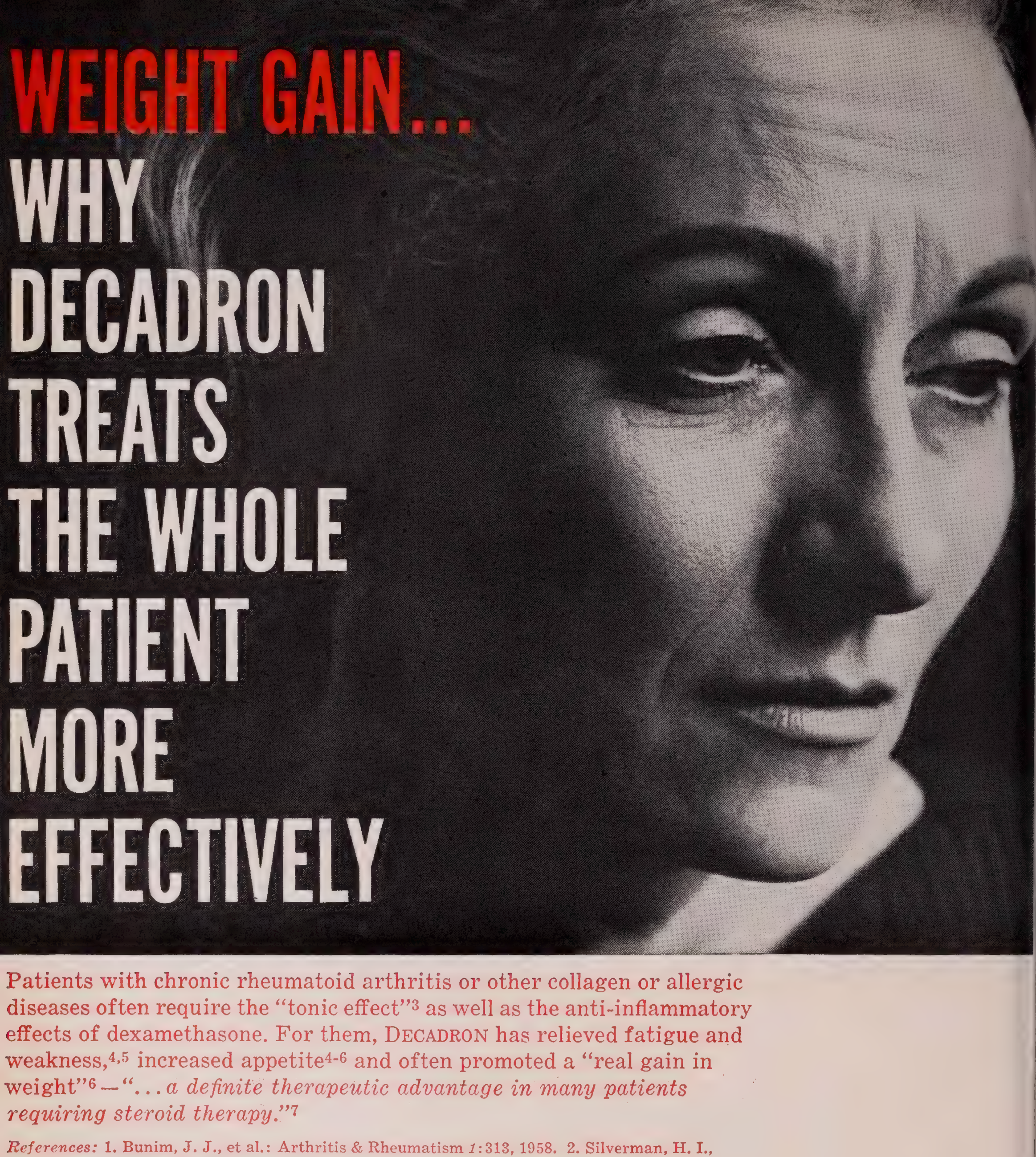

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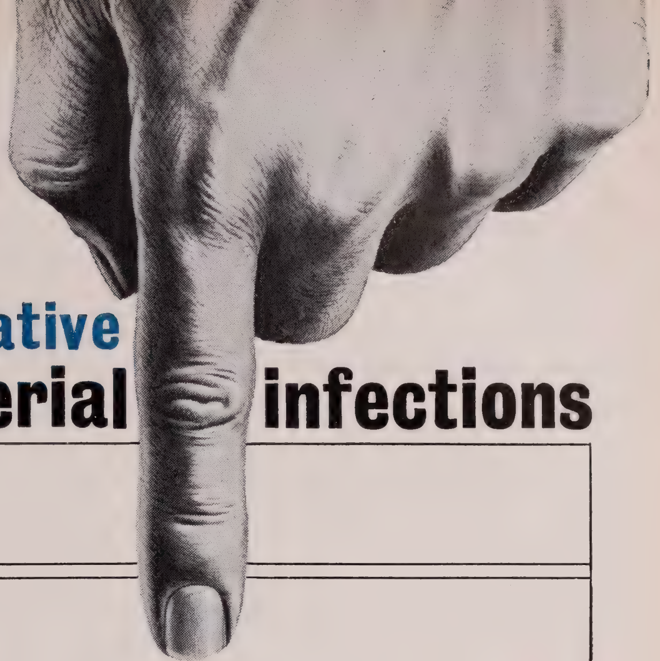

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1. Jones, E. H.: Eye, Ear, Nose & Throat Month. *38*:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists *4*:2, 1955.

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[1] Kuge, T.: To be published.

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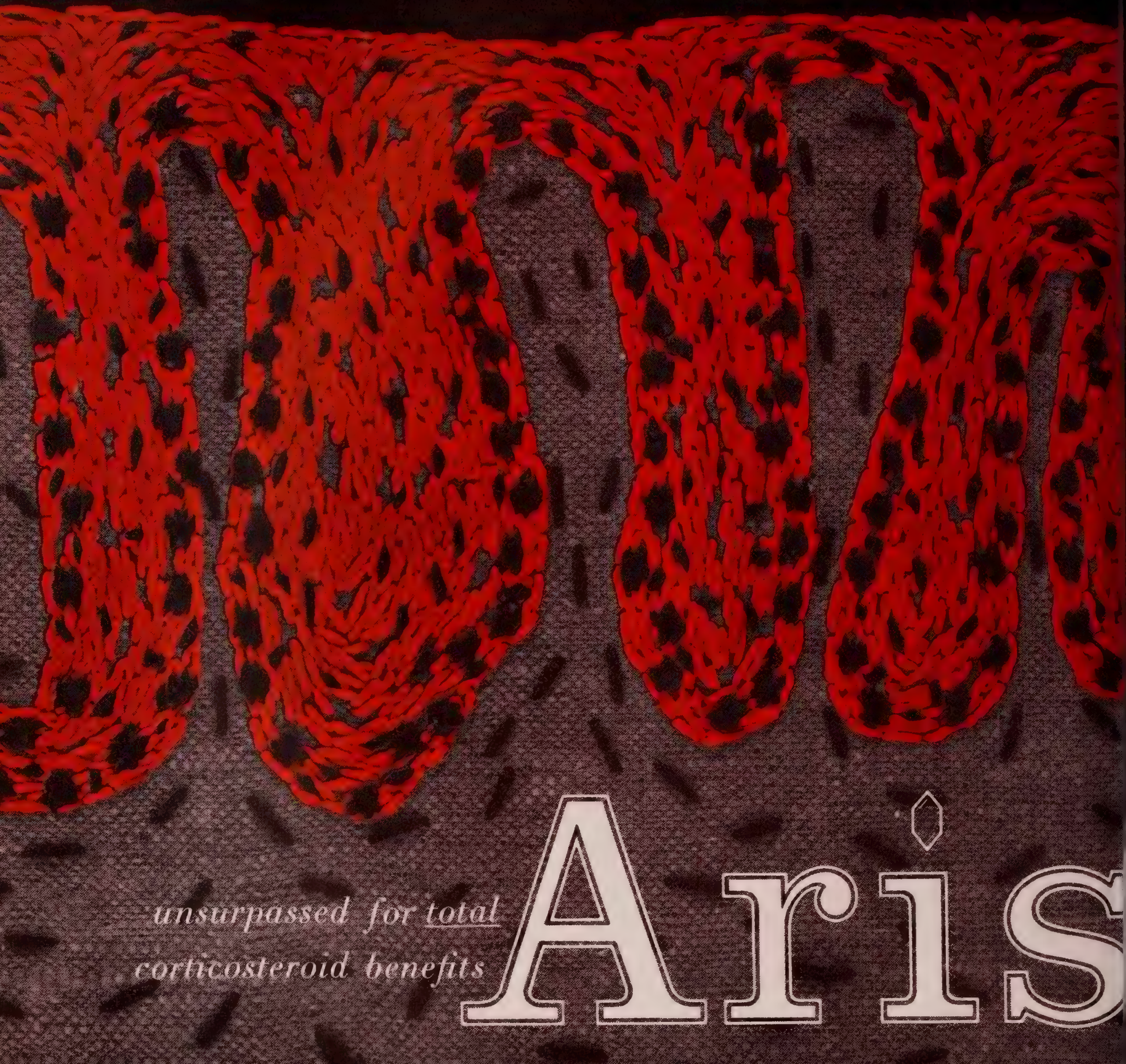

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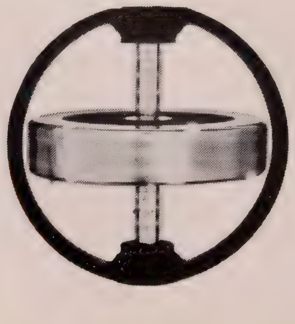

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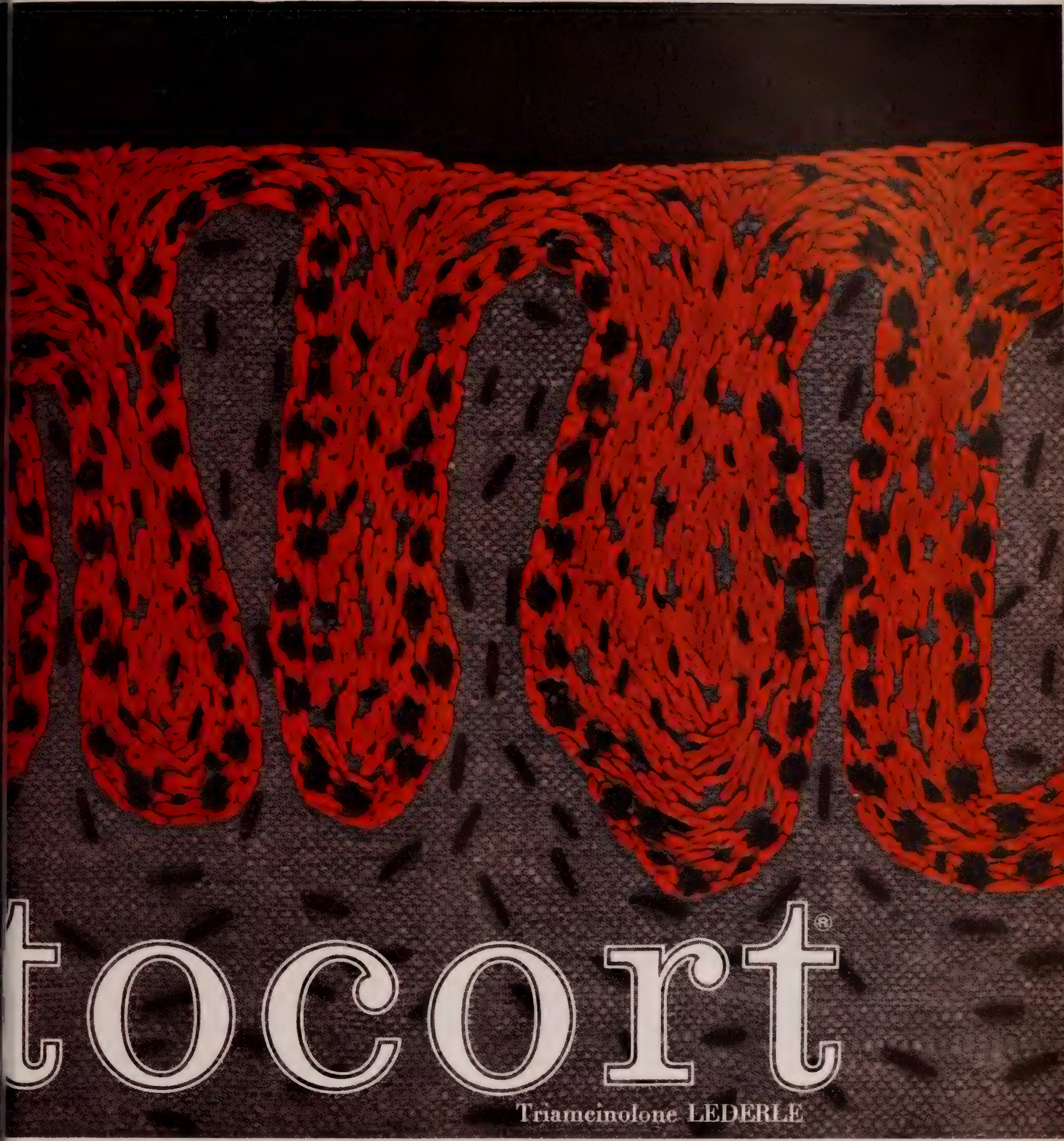

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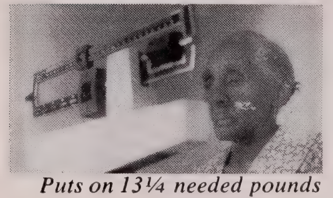

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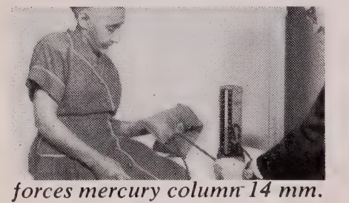

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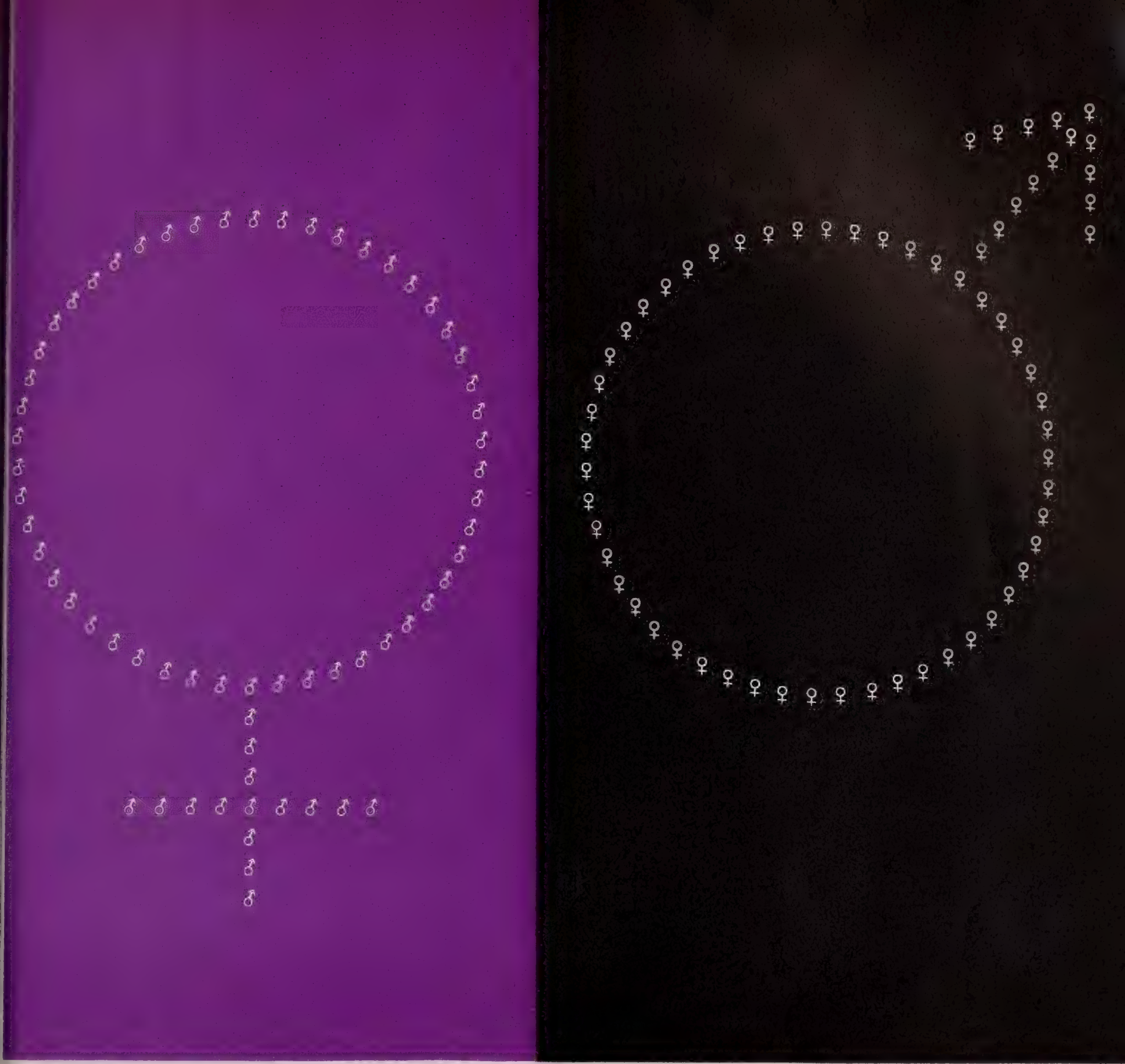

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*Marmell, M., and Prigot, A.: Tetracycline phosphate complex in the treatment of acute gonococcal urethritis in men. Antibiotic Med. & Clin. Ther. 6:108 (Feb.) 1959.

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[1] Goddard, E.S.: in *Trifluoperazine, Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959.

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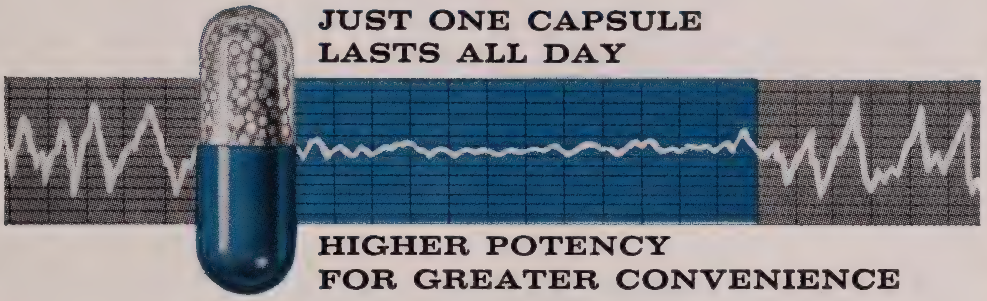

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stimulates the appetite,
increases the flow of digestive juices,
provides: supplementary amounts of vitamins, minerals and soluble proteins,
extra-dietary vitamin B_{12},
protective quantities of potassium, in a palatable and readily assimilated form.

Supplied in bottles of 2 or 6 fluidounces.

DOSAGE *is 1 teaspoonful two or three times daily; two or three times this amount for potassium therapy.*

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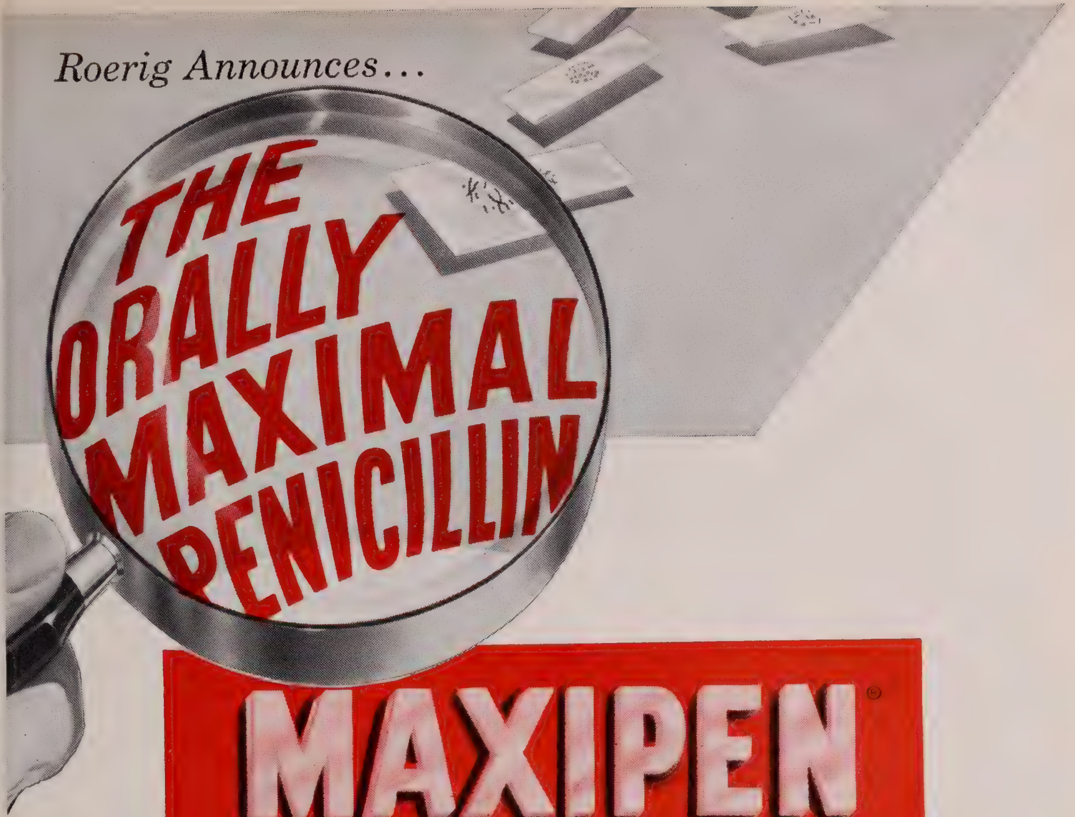

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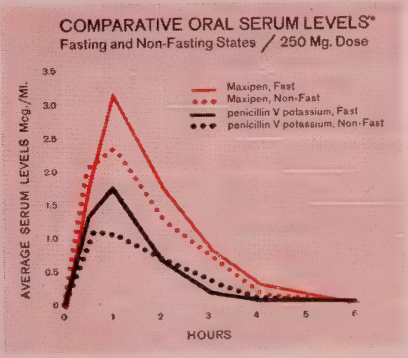

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**antipyrine (870 mg.) with iodopyrine (30 mg.) and citrated caffeine (100 mg.)*

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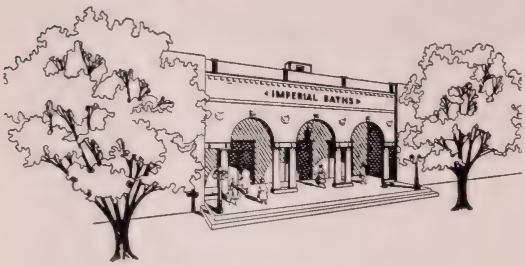

Stubborn cases of arthritis and rheumatism will often respond to complete relaxation in pleasant surroundings.

That has proved to be especially true at Sharon Springs, N. Y. Here, balneotherapy (sulphur water baths, massage, Nauheim baths and related treatments) has combined with bracing mountain air and a restful atmosphere to "perform wonders" for patients with these disorders.

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Fostex® treats their **acne** while they wash

degreases the skin
completely emulsifies and washes off excess oil from the skin.

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Fostex Cream and Fostex Cake are interchangeable for therapeutic washing of the skin. Fostex Cream is approximately twice as drying as Fostex Cake.

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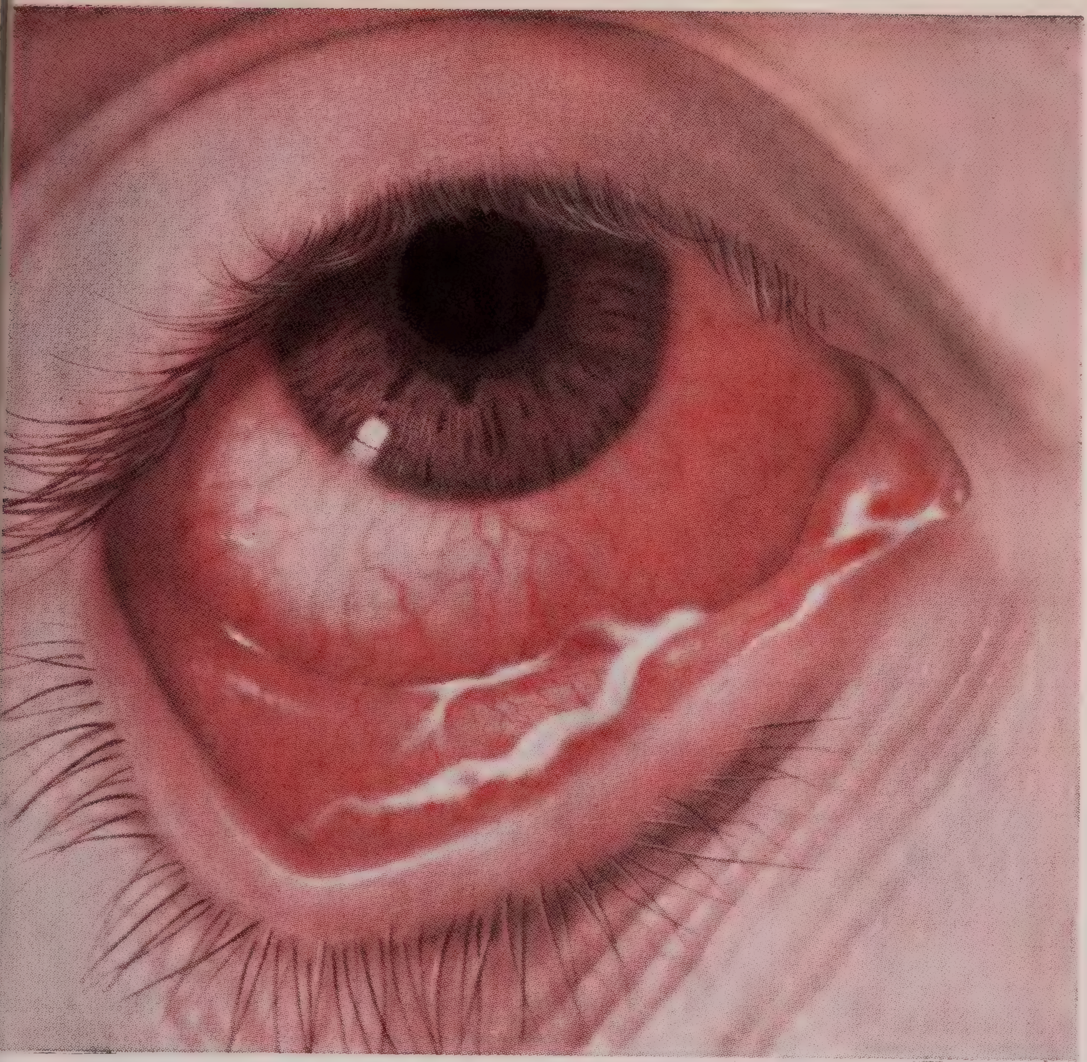

no irritating crystals[1] · uniform concentration in each drop[2]

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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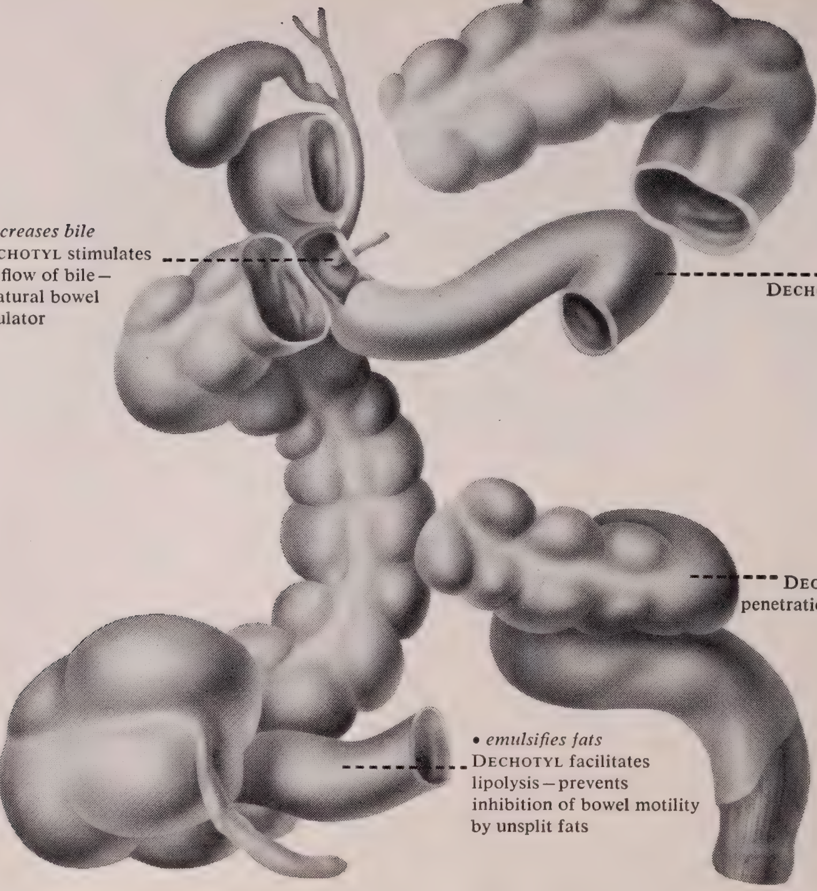

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helps free your patient from both... constipation and laxatives

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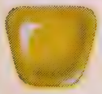
well tolerated...gentle transition to normal bowel function



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Contraindications: Biliary tract obstruction; acute hepatitis.

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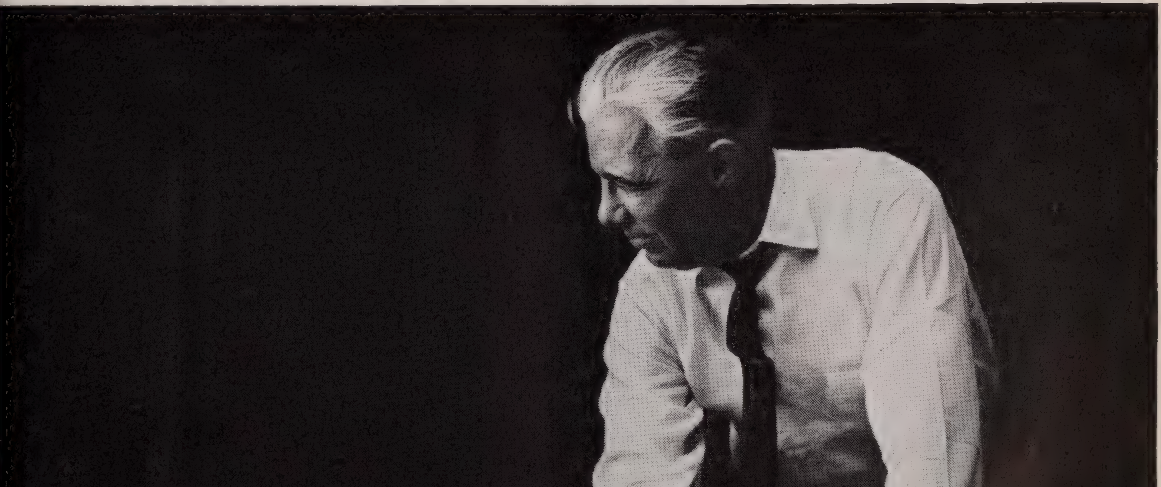

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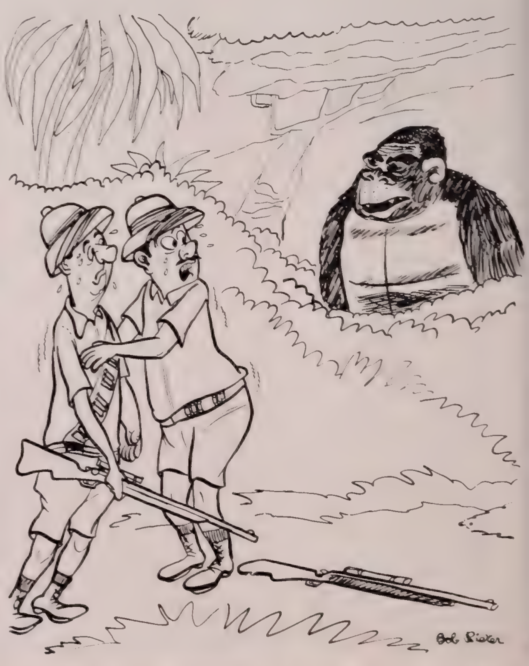

"You get him, Preston! I just remembered—my Blue Cross has expired!"

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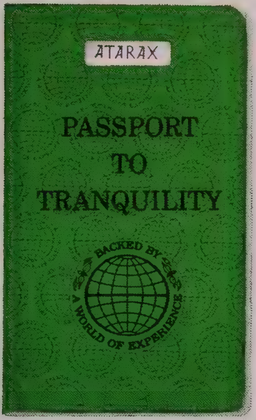

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World-wide record of effectiveness—over 200 laboratory and clinical papers from 14 countries.
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IN ELDERLY PATIENTS well tolerated by debilitated patients	"...seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: J. Am. Geriatrics Soc. **7**:61 (Jan.) 1959.	Settel, E.: Am. Pract. & Digest Treat. **8**:1584 (Oct.) 1957. Negri, F.: Minerva med. **48**:607 (Feb. 21) 1957. Shalowitz, M.: Geriatrics **11**:312 (July) 1956.
IN ALLERGIC PATIENTS useful adjunctive therapy for asthma and dermatosis; particularly effective in urticaria	"All [asthmatic] patients reported greater calmness and were able to rest and sleep better...and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medicament." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.	Eisenberg, B. C.: J.A.M.A. **169**:14 (Jan. 3) 1959. Coirault, R., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. Robinson, H. M., Jr., et al.: South. M. J. **50**:1282 (Oct.) 1957.
IN HYPEREMOTIVE ADULTS does not impair mental acuity	"...especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

SUPPLIED: Tablets, 10 mg., 25 mg., 100 mg.; bottles of 100. Syrup (10 mg. per tsp.), pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules.

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Analexin is a new synthetic chemical[1,2] which produces (1) *analgesia* by raising the pain threshold and thus decreasing perception of pain and (2) muscle relaxation by selectively depressing polysynaptic transmission (interneuronal blockade), abolishing abnormal muscle tone without impairing normal neuromuscular function. The analgesic potency of one tablet is clinically equivalent to 1 grain of codeine; yet, Analexin is neither narcotic nor is it narcotic-related. Its muscle relaxant effect is comparable to the most potent oral skeletal muscle relaxants available.[3,4]

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in low back pain, arthritis and other musculoskeletal disorders . . . where pain makes tension and tension makes pain

analexin

stops both effectively

Phenyramidol HCl (Analexin) was evaluated by Batterman, et al.[5] in a series of 118 ambulatory patients with various painful musculoskeletal disorders. These patients were observed for periods as long as 22 weeks. The authors conclude: "Not only is satisfactory relief of painful states achieved in the majority of patients regardless of etiology and duration of pain, but there is also no evidence suggestive of cumulative toxicity. Furthermore, in contrast to codeine and meperidine, the likelihood of untoward reactions occurring in ambulant patients is not high. This is a decided advantage since the control of pain in the ambulant patient with chronic pain is a major clinical problem."

In other studies, Bealer[6] used Analexin in 26 cases of musculoskeletal pain and observed good or very good results in 11 patients; fair results in 14 and 1 case was unsatisfactory. Fifteen other patients were given Analexin-AF, and good or very good results were obtained in 13 out of 15 of these cases.[6,7]

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BIBLIOGRAPHY: 1. Gray, A. P., and Heitmeier, D. E.: J. Am. Chem. Soc. *81*:4347, 1959. 2. Gray, A. P., *et al*: J. Am. Chem. Soc. *81*:4351, 1959. 3. O'Dell, T. B.; Wilson, L. R.; Napoli, M. D.; White, H. D., and Mirsky, J. H.: J. Pharmacol. & Exper. Therap. *128*:65, 1960. 4. O'Dell, T. B.; Wilson, L. R.; Napoli, M. D.; White, H. D., and Mirsky, J. H.: Fed. Proc. *18*:1694, 1959. 5. Batterman, R. C.; Grossman, A. J., and Mouratoff, G. J.; Am. J. Med. Sc. *238*:315, 1959. 6. Bealer, J. D.: Clinical Report *511*:592, April 1, 1959. 7. Stern, E.: Clinical Report *511*:599, May, 1959. (Clinical Reports in file of Medical Department, Irwin, Neisler & Co.)

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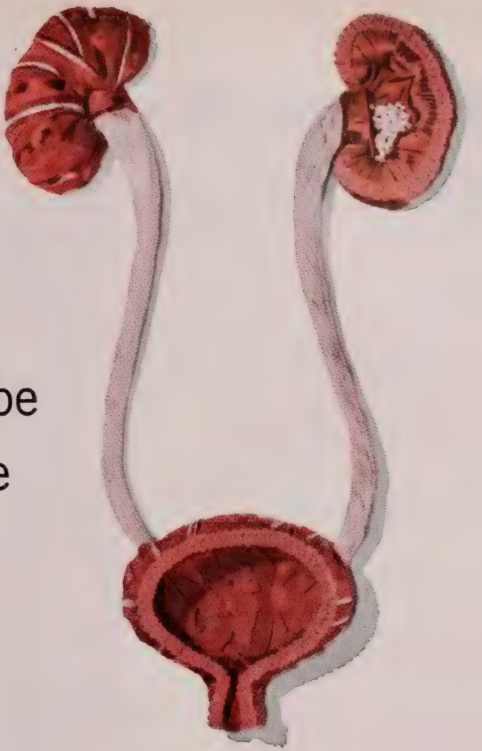

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REFERENCES: 1. Campbell, M. F.: Principles of Urology, Philadelphia, W. B. Saunders Co., 1957. 2. Colby, F. H.: Essential Urology, Baltimore, The Williams & Wilkins Co., 1953.

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	Caffeine	gr. ½
	Codeine Phosphate	gr. ¼
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	Acetylsalicylic Acid	gr. 3½
	Caffeine	gr. ½
	Codeine Phosphate	gr. ½
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post-partum pain
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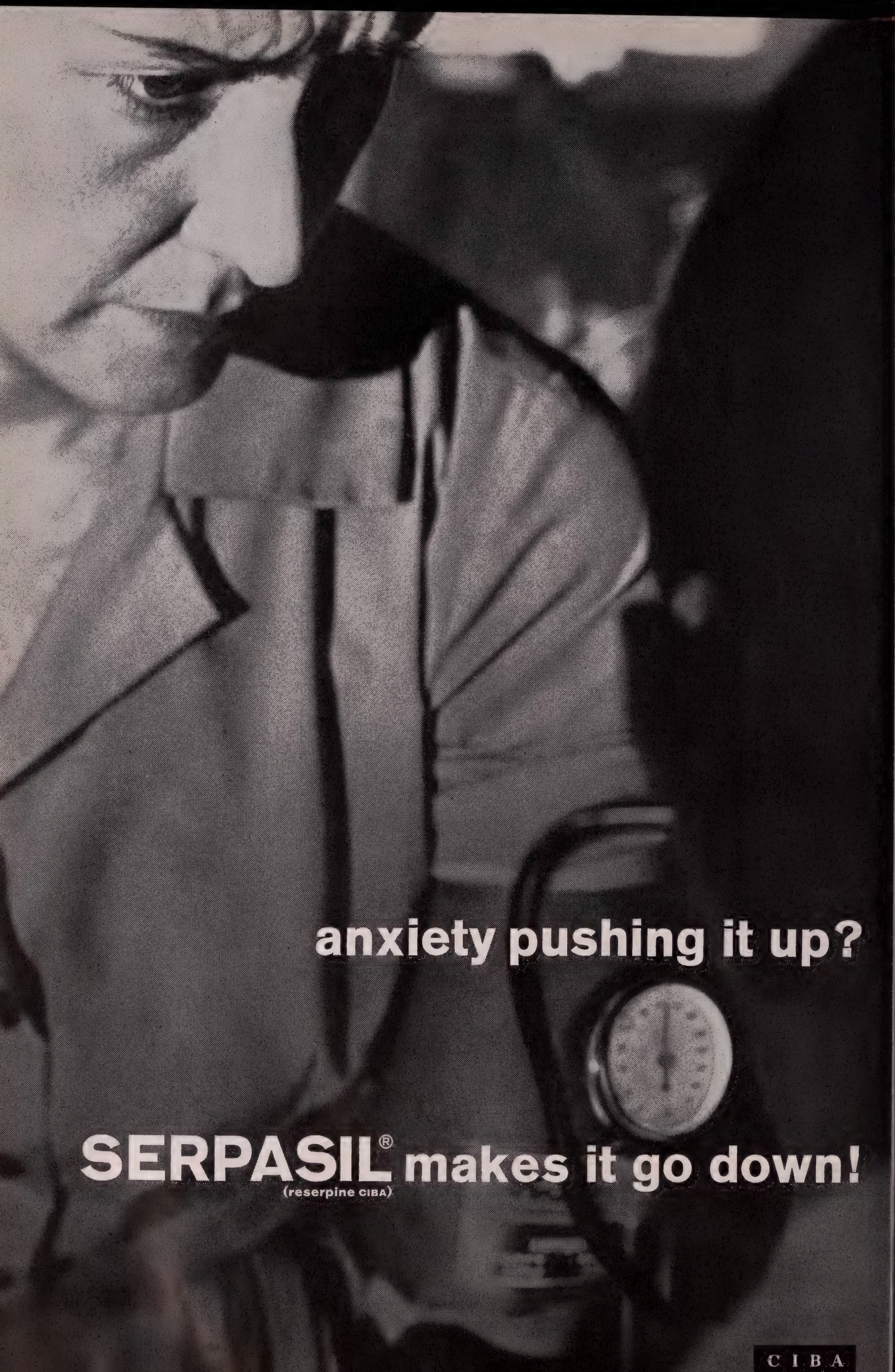
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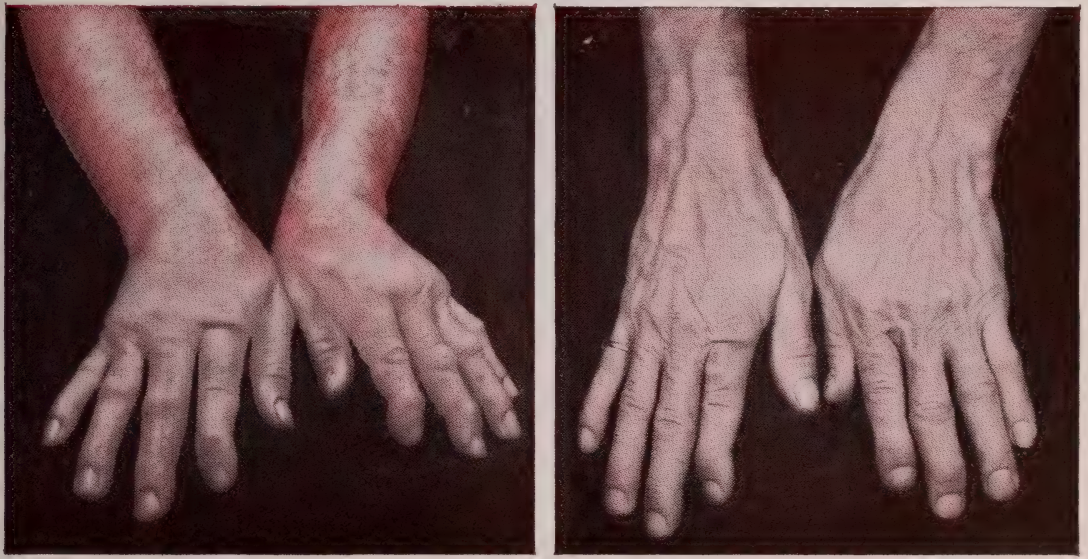

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*Adams, L. D.: The Commonsense Book of Wine, New York, David McKay Company, Inc., 1958, pp. 162-163.

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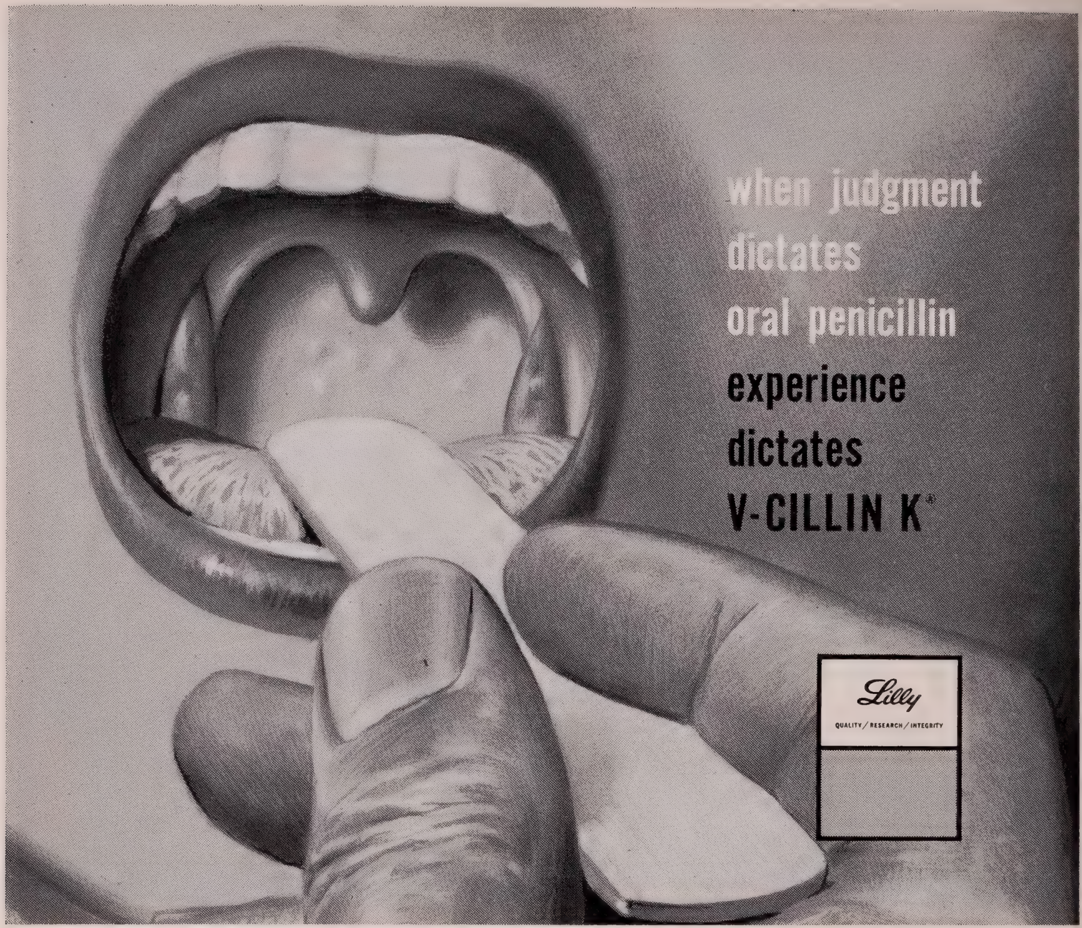

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1. Griffith, R. S.: Comparison of Antibiotic Activity in Sera Following the Administration of Three Different Penicillins, Antibiotic Med. & Clin. Therapy, *7:* No. 2 (February), 1960.

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EDITORIALS

Arden House Conference on Tuberculosis

The February issue of the *Bulletin* of the National Tuberculosis Association reported the Arden House Conference at Harriman, New York, from November 29 to December 2, 1959. The conference was sponsored by the United States Public Health Service and the National Tuberculosis Association. Eighteen conferees with assistance from staff members of the Public Health Service and the National Tuberculosis Association deliberated for three days on the ultimate goal for eradication of tuberculosis in the United States. From 1948 to 1958 annual death and case rates for the United States declined, the death rate by 76.7 per cent, the case rate by only 52.2 per cent. Estimated case and death rates for continental United States in 1958 were 36.4 and 7.0 per 100,000 population, respectively.

The major recommendation from the Arden House Conference is a program for widespread use of chemotherapy, but 11 other recommendations for strengthening tuberculosis control programs were made. Briefly summarized they are to:

(1) *Ensure adequate treatment*—State and local public health authorities should assume responsibility for insuring adequate treatment and rehabilitation of all patients;

(2) *Concentrate our resources*—Concentrate tuberculosis control programs where the greatest tuberculosis problem exists;

(3) *Establish intermediate goals*—Provide program priorities and require performance standards;

(4) *Evaluate detection programs*—Periodic reappraisal of detection programs with adjustments for obtaining maximum results from available funds;

(5) *Review reporting practices*—Periodic review of reporting practices;

(6) *Investigate deaths from unreported tuberculosis*—Systematic investigation, by appropriate representatives, of tuberculosis cases first reported by death certificate, to permit proper examination of contacts;

(7) *Provide laboratory services*—Provide modern laboratory facilities for all physicians diagnosing and treating tuberculous patients, including culture method for identification and differentiation of the organism and susceptibility tests to antimicrobial agents;

(8) *Continue use of BCG when appropriate*—For those with a negative tuberculin before exposure an improved standard for evaluating activity of BCG vaccines should be established;

(9) *Expand social research*—Intensification of research into medical sociopsychologic and cultural factors influencing acceptance of detection and treatment; nature and results of program;

(10) *Find a new skin test*—Intensify research for a simple and accurate tuberculin test that can be administered and interpreted by nonmedical personnel;

(11) *Continue isoniazid studies*—Further research in the clinical and prophylactic use of isoniazid.

Discussion of present gaps in treatment pertained to former patients whose disease became inactive by old methods of treatment but who are not free of tuberculosis germs; failure to report cases of disease to the health departments; patients leaving the hospital against medical advice, resulting in a large number of nonhospitalized patients needing continued treatment and follow-up; and the need for consultative medical rehabilitation and social services in a home or clinic care program. Of great concern is the complacency and unwarranted optimism regarding the present danger of tuberculosis manifested by the public—and perhaps the medical profession.

Chemotherapy, particularly isoniazid, is not only clinically effective but has powerful public health potentialities as a prophylactic measure in the control of tuberculosis. It has been shown that isoniazid offers protection to experimental animals against infection by the tubercle bacillus, and a control study by the United States Public Health Service revealed a much lower incidence of complications in children with primary infection tuberculosis treated with isoniazid than in the control untreated group. The family physician is faced with a greater challenge than ever because of the key position that he will have in the treatment and management of patients and in program development.

Optimistic was the conclusion that the goal of eradication can be reached if the nation really wants to reach it. The United States Public Health Service and the National Tuberculosis Association are to be commended on the position taken in an effort to reduce to a minimum and eventually eradicate tuberculosis as a disease of major consequence in the United States of America. This has long been an objective of both organizations.—W.G.C.

Reeder v. City of New York

The Supreme Court, New York County, recently held the City of New York liable for the negligent acts of its employes in treating a patient at a city hospital without the necessity of the patient introducing expert medical testimony to show want of care or improper procedure on the part of said employes.

The plaintiff, a fifty-three-year-old woman, was struck and thrown down by a hit-and-run vehicle on Saturday, April 30, 1955, at about 8:00 P.M., with resulting injuries to her right leg, right knee, hip, and thigh, and a loss of control of her right leg. While being removed from the scene of the accident to Harlem Hospital she complained to the ambulance doctor of pain and of a deprivation of function of her right leg. She arrived at the hospital, which is a city-operated institution, at about 9:00 P.M. The physician in charge of the emergency room, who was an employe of the hospital, ordered that x-rays be taken of her right leg, right arm, and pelvis. The x-ray technician, also an employe of the hospital, took x-rays of her arm, thigh, and pelvis but not of her right leg. At 2 o'clock in the morning and before the x-rays were read by the defendant's roentgenologist, the plaintiff was sent home on crutches and told to return on Tuesday. No treatment or medication was administered, nor was she advised as to the actual condition of her right knee. She was taken to her home by friends and assisted by them to her apartment, to which she had to hop up five flights of stairs. The pain in her right leg increased, and at 9:00 P.M. she was taken to St. Luke's Hospital, where she informed the person in charge of her accident and said attendance at Harlem Hospital. At St. Luke's Hospital she was given injections and pills and told to return on May 3. X-rays taken at St. Luke's Hospital on May 3 revealed a fracture of her right knee. Splints were thereupon applied to the said knee and she was hospitalized at St. Luke's Hospital from May 3 to June 1, with complete bed rest during the first nineteen days and thereafter ambulation on crutches without weight-bearing. This was followed by treatment at St. Luke's Hospital clinic until October. It also appears that when the Harlem Hospital roentgenologist examined the x-rays that had been taken of her at Harlem Hospital, which examination was several hours after she had been sent home, he directed that she be returned for an x-ray of her knee; that a notification was first mailed to her ten days thereafter, when she was already in St. Luke's Hospital.

The plaintiff-patient urged that the defendant-City was negligent in its employes' failing to follow its doctor's instructions by omitting to take an x-ray of the plaintiff's right leg, in failing to permit the plaintiff to remain in its hospital until the x-rays could be read by its x-ray specialist, in sending her out in spite of her disabling condition, in failing to recall her immediately for a knee x-ray; and that as a result the plaintiff sustained an aggravation of her injuries and was subjected to unnecessary pain and anguish.

The defendant-City maintained that the plaintiff had failed to establish the defendant's legal liability—that with absent proof of expert medical testimony, there was an insufficient showing of want of care or improper procedure on its part or of damages attributable thereto.

The Court found no merit in the defendant's contention that the onus of proof cast on the plaintiff had not been met with respect to the issue of negligence and resultant damages for unnecessary pain and suffering.

The Court in support of its position went on to quote from the case of *Meiselman v. Crown Heights Hospital*, 285 N.Y. 389, wherein a hospital was found liable for the acts of its doctors in discharging a patient prematurely, the Court of Appeals holding that no medical expert was required to testify as to what was obvious to a layman of ordinary common sense. It recognized the usual rule that ordinarily expert medical opinion evidence, based on suitable hypotheses, is required when the subject matter to be inquired about is presumed not to be within common knowledge and experience and when legal inference predominates over statement of fact to furnish the basis for a determination by a jury of unskillful practice and medical treatment by physicians. But it went on to say that where the matters are within the experience and observation of the ordinary jurymen from which they may draw their own conclusions and the facts are of such a nature as to require no special knowledge or skill the opinion of experts is unnecessary.

The trial court in the instant action then stated: "Had an x-ray of the plaintiff's right leg been taken as directed, it would have revealed the fracture. The average layman knows that a fractured knee is painful, that it should be guarded, that it requires prompt attention and treatment, that it should be put into splints or a cast or immediately immobilized."

The Court then ruled that: "Without expert medical testimony, a finding is amply warranted that the defendant's employes were guilty of negligence as the plaintiff charges. Hospitals must shoulder the responsibility borne by everyone else. They are subject to the universal rule of respondiat superior (*Bing v. Thunig*, 2 N.Y. 2d 656). Nor is expert medical testimony required to justify a holding that by reason of such negligence, the plaintiff was subjected to unnecessary pain and suffering."

However, the Court then went on to rule that expert medical testimony was essential to establish an *aggravation* of injuries and the extent thereof. No such proof was adduced in the case and therefore any recovery allowed on that portion of the plaintiff's claim would be founded on mere speculation and surmise, and accordingly damages for aggravation of injuries were disallowed.

The Court held that the plaintiff was entitled to $500 in damages for unnecessary pain and suffering resulting from the defendant-City's negligent conduct and directed that judgment for the plaintiff against the City of New York be entered in that amount.

(*Reeder v. City of New York*, New York Law Journal, January 15, 1960, page 14.)

PRESIDENT'S PAGE

HENRY I. FINEBERG, M.D.

This is my last "President's Page." In my first message in June, 1959, I declared that this page is an excellent way of keeping in touch with the doctors of medicine in the State. I stated that it was my hope to keep my colleagues informed of what is taking place at central headquarters in New York City and that from time to time I would discuss informally matters of importance. I hope that I have fulfilled this promise. I am very grateful to the editor of the JOURNAL and his fine staff, who have assisted me immeasurably in bringing our problems and our thinking before the physicians in New York State.

* * * * *

Although there has been considerable publicity about our 154th Annual Convention and the meeting of the House of Delegates, which will be held in New York City from May 7 through May 13, I would like to stress the fact that this will be one of the finest meetings we have had in some time. The members of the Convention Committee and its subcommittees have been working diligently toward this end, and they are to be congratulated for developing a program which should be of interest to all doctors of medicine.

One of the highlights of the week will be the dinner dance at the Hotel Pierre on May 9. Among the invited guests will be the Mayor of the City of New York, the President of the American Medical Association, the State Commissioner of Health, the New York City Commissioners of Hospitals and Health, and a number of distinguished governmental officials. The past presidents also will be honored.

The speaker of the evening will be Thomas A. Dooley, M.D., whose fame has been spread all over the world. Millions of people are acquainted with his outstanding record. After serving two years in the Marine Corps, Dr. Dooley entered the St. Louis University School of Medicine and was graduated in 1953. He returned to the Navy for an internship and one year later was assigned to the beleaguered city of Haiphong in Communist North Vietnam. He was awarded a number of decorations for his extraordinary efforts in that area.

He returned to the United States in 1956 and became a civilian. With the proceeds from his book, *Deliver Us From Evil,* and with help from pharmaceutical houses, he returned to southeast Asia to build a village hospital in the northern part of the Kingdom of Laos. He came back to America at the end of 1957 after turning his hospital over to the Laos government and wrote a second book, called *Edge of Tomorrow,* in which he described his experiences.

In February, 1958, Peter Comanduras, M.D., and he established MEDICO (Medical International Cooperation Organization). The basic philosophy of this program is to extend medical care to the peoples of the world where no such care is available. Dr. Dooley then returned to northern Laos to build another hospital. During his return to this country in August, 1959, it was discovered that this American doctor in his early thirties had a melanoma of the chest wall—which was removed. The story of this episode, his optimistic outlook on life, and his return to work in Asia have all received great publicity in many lands.

He is coming to the United States in May for a routine checkup and therefore, is, available for our dinner. We have been informed that Dr. Dooley is an individual with a dynamic personality. His talk should be stimulating and educational.

Dr. Dooley's indomitable courage and his spirit of dedicated service have won for him honors from many nations and groups. In 1956 he was chosen one of the ten outstanding men in America by the Junior Chamber of Commerce. He has been the recipient of the Man-of-the-Year award of the Catholic Youth Organization of America, the Christopher Award for literature, and several honorary degrees. Therefore it can be understood why he was selected as one of the world's ten "most admired men" for 1959.

* * * * *

The Legislature of New York State adjourned during the early hours of April 1. Between the time it convened, on January 6, and adjournment, the Legislature approved 1,389 bills. Of these the Governor has already signed 364 into law and vetoed 29 others. There are now on his desk 1,014 bills which must be reviewed and evaluated within thirty days. The number of bills passed this year set a record, beating the previous high of 1,357 passed in 1957. The 1960 session also established a record for the total number of bills considered—8,662, as compared to 8,012 a year ago.

As this article is being written, we do not have a complete compilation of what happened to those bills which were sponsored or supported by the Medical Society. However, we do know this. After many years of striving, a bill to abolish workmen's compensation medical practice committees in counties with populations of over a million passed both the Assembly and the Senate. We are sure that this much sought-after and desirable situation will be of especial interest to those of us in the larger communities. The proposal calling for increases in workmen's compensation specialists' fees also was passed by both Houses. The following bills died in committees: chiropractic licensure, the physicians' lien bill, and the healing arts commission bill. A more detailed account of what took place in Albany undoubtedly will be reported by the chairman of our Council Committee on Legislation at a later date.

* * * * *

We hope that most of you have read the president's report in the April 1 issue of the JOURNAL. A supplementary report will be submitted to the House of Delegates on the morning of May 7.

We believe that all of you should remember that the House meets during the first three days of the convention, from May 7 through May 9. Members of the Society should take the opportunity to listen in on our deliberations and see the House in action.

Henry I. Fineberg

MEDICAL COMMUNICATIONS DAY—MAY 14

See program on pages 1502 and 1503

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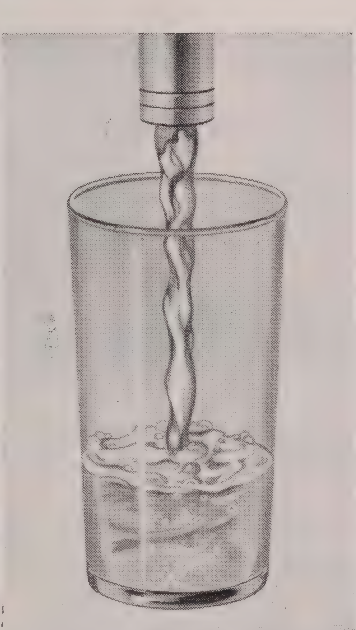

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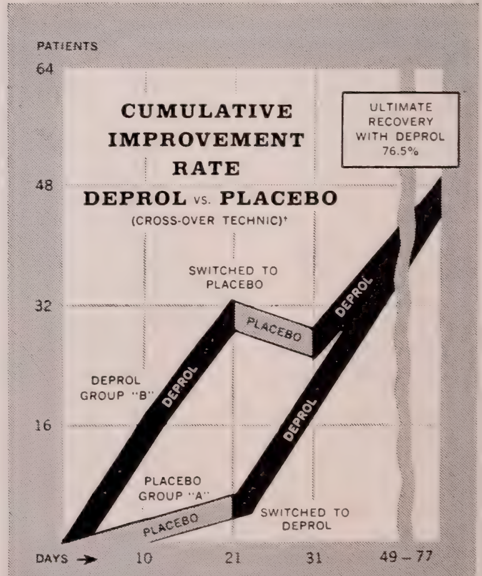

†Ref.: McClure et al. (Am. Pract. & Digest Treat. 10:1525, Sept. 1959)

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INDICATIONS AND RESULTS

Moderator

FRANCIS W. O'DONNELL, M.D., BUFFALO, NEW YORK, *Thoracic Surgeon, Millard Fillmore Hospital and Deaconess Hospital*

Panelists

J. MAXWELL CHAMBERLAIN, M.D., NEW YORK CITY, *Attending Surgeon in Charge of Thoracic Surgery, Roosevelt Hospital; Assistant Clinical Professor of Surgery, College of Physicians and Surgeons of Columbia University*

EDGAR P. MANNIX, JR., M.D., BROOKLYN, *Director of Surgery, St. Francis Hospital and Sanatorium, Roslyn; Chief Attending Thoracic and Cardiovascular Surgery, Brooklyn Hospital*

CHARLES P. BAILEY, M.D., PHILADELPHIA, PENNSYLVANIA, *Former Director, Bailey Thoracic Clinic; Chief of Cardiopulmonary Division, Albert Einstein Medical Center; Present Chairman, Department of Surgery, New York Medical College, Flower and Fifth Avenue Hospitals*

JERE W. LORD, JR., M.D., NEW YORK CITY, *Visiting Surgeon, (Fourth Division), Bellevue Hospital; Professor of Clinical Surgery, New York University Post-Graduate Medical School*

Introduction

FRANCIS W. O'DONNELL, M.D.: The program you are to hear is by four experts with overlapping interests and overlapping fields. I am sure that the questions in one field could be answered by the other gentlemen as well. We have J. Maxwell Chamberlain M.D., Edgar P. Mannix, Jr., M.D., Charles P. Bailey, M.D., and Jere W. Lord, Jr., M.D.

Without further ado we shall call on Dr. Chamberlain who will speak to us about the surgery of valvular heart disease.

In Valvular Heart Disease

J. MAXWELL CHAMBERLAIN, M.D.: The part that I have in this program is probably the least important, and you will have to

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, General Sessions, May 12, 1959.

wait for your dessert. This will be, for the most part, a quick review.

To establish the operative indications and results is extremely difficult in some valvular diseases while in others it is relatively simple.

I shall start out with the mitral valve because it is perhaps of the greatest historic significance. Whatever I say about this valve, Dr. Bailey can elaborate on, I am sure.

MITRAL VALVE.—The indications for mitral valve surgery concern the patient's inability to carry out his normal activities because he is restricted by his incapable heart, and very often he has been in cardiac failure once or twice. The hearts of such patients may be fibrillating, and the patients may have had peripheral emboli; they may have had hemoptyses. The latter symptoms usually are late, later in the course of the disease than the surgeon would prefer for optimal results.

Mistakes in judgment can be made in two directions. I have found that these patients sometimes are asymptomatic because they have adjusted to their diseased hearts. This is sometimes to the surgeon's disadvantage, since he becomes aware of a far advanced lesion only at operation.

I have made the mistake also of discovering normal valves in patients whose restrictions suggested advanced mitral disease. In spite of their confinement, history of rheumatic fever, and classic signs and murmurs, I have been amazed to palpate normal valve leaflets. The symptomatology and physical signs alone may be very deceiving.

The results of surgery in mitral stenosis depend a lot on the condition of the valves, as all surgeons know. Sometimes we are heroes and sometimes we are not; but if the valve is a good valve and the annulus is large, then the surgeon usually is a hero.

There are exceptions, however: when the myocardium is poor, the duration of disease long, and the patient too old. Then, regardless of the fact that we may have a good mechanical valve, the patient's postoperative course may not fulfill our expectations.

Furthermore, we are not always accurate in our estimation of mitral regurgitation prior to surgery; and if the element of regurgitation is greater than we anticipated, or if during the operation the element of regurgitation is increased, then the result may not be as good as we expected.

I wish to stop for a moment here to say that I am one of the few people in the United States who has great faith in the right-sided approach to the mitral valve. I was forced to use the right-sided approach a few times in the beginning for reoperations or because of some other factor. You will find additional pathologic conditions in the heart when the right-sided approach is used.

Many times now when experienced cardiologists refer patients to surgery, because of the systolic murmur we debate prior to the operation about whether or not regurgitation is a greater factor than stenosis. At operation (and this has happened often enough now so that I am very sure that the right-sided approach is the best solution to this problem) you will find a pure mitral stenosis with no mitral regurgitation at all but with regurgitation of the tricuspid valve due, of course, to pulmonary hypertension, compensatory enlargement of the right heart, and, finally, to dilation of the tricuspid annulus.

I mention this only because in the past, using a left-sided approach, we have described an excellent mechanical result at the time of operation, but six months later our medical confreres have found that the patient has not reached a state of improvement consistent with our description of the operation. I have an idea that many of these patients have an associated tricuspid regurgitation to account for the inconsistent clinical picture after a satisfactory mitral operation.

Now, a word about mitral regurgitation. Davila and Nichols developed a closed operation for mitral regurgitation. Neither of these procedures has been very successful in the hands of other surgeons. So, at the present time, I think all cardiac surgeons should feel that if regurgitation is a predominating element in mitral disease, an open-heart cardiac bypass is the procedure of choice.

There is still some indecision as to whether or not the mitral valve should be approached from the right side or from the left side, and I am not qualified to tell you which is the better approach. I believe that Dr. Bailey likes the right side, and others may prefer the left side. Perhaps in their discussions they will mention the merits of both approaches.

In mitral regurgitation plastic valves are being tried experimentally. It is not entirely experimental in human beings since the procedure is in the developmental stage now. Probably there is a solution and I will talk more about that in reference to the aortic valve.

Some surgeons have tried to reduce the size of the annulus by reefing the mitral ring, using an open-heart approach to open the atrium on the left side, in a fashion similar to Davila and Nichols' method. Probably some type of plastic material or other substitute will be the solution.

PULMONARY VALVE.—For the pulmonary valve we have to consider stenosis and regurgitation. Stenosis usually is of the congenital type. I would judge from a recent meeting in Los Angeles that our cardiac surgeons are about equally divided in their opinions as to the proper approach to this problem. Some surgeons believe that all cases should be done under hypothermia. Others feel just as firmly about using a bypass procedure. Conrad Lamb, M.D., uses normal thermic conditions.

Mahoney prefers to use hypothermia and perfuses the coronary arteries. This is also, I believe, part of the routine at Johns Hopkins.

Many of us prefer hypothermia for this problem, using either a bilateral incision or a simple sternal splitting incision. I prefer the latter because very often it can be accomplished without opening either pleural space, and this makes the postoperative convalescence a little easier.

The patient with infundibular stenosis, of course, is a big problem. If we are sure that the valvular stenosis is pure, then perhaps hypothermia is sufficient; but if infundibular stenosis is present, I believe that a bypass should be used for the patient.

Regurgitation in the pulmonary valve does not seem to be very significant. In fact, the Brock and earlier procedures which we often did left a patient with considerable regurgitation. Although we prefer not to have it, nevertheless, in almost all cases we produce a certain amount of regurgitation by correcting the stenosis, and it is very well tolerated.

TRICUSPID VALVE.—Let us consider the tricuspid valve. Tricuspid stenosis is relatively uncommon and usually coexists with rheumatic mitral or aortic disease, a factor that is appealing for the right-sided mitral approach. Tricuspid regurgitation usually is due to a pathologic condition that is distal to the tricuspid valve, either in the pulmonary valve or infundibulum or in the mitral valve. If the pathologic condition is corrected distal to the tricuspid valve, then very often the resultant reduction in the size of the right heart will make the regurgitant element less significant.

AORTIC VALVE.—The aortic valve is next. Just by way of review, we have congenital and acquired aortic stenosis and subaortic stenosis. There are two schools of thought concerning congenital lesions. One prefers to treat these under hypothermia and even to attempt a subaortic stenosis with hypothermia.

In Los Angeles recently in a panel similar to this one, Effler, who is very much in favor of bypass for these lesions, said, "Well, we thought it was all right to use hypothermia in these cases but found it sort of like kissing an ostrich, you had to be quick." Perhaps in the majority of cases of congenital aortic valvular disease the surgeon can use hypothermia successfully because the left ventricle is still a good left ventricle; but in acquired aortic stenosis, the left ventricle, the keystone to the successful application of cardiac surgery, usually is in poor shape and every precaution is necessary to protect not only the left ventricle but also the right ventricle from overdistention or from prolonged anoxia. The bypass procedure probably is a better procedure if the surgeon is hoping to sculpture the valve, to repair it in such a way that he will have improved the stenosis and not created an intolerable regurgitation.

Not all cardiac surgeons will agree with this approach. Glover still uses the transventricular approach, and his good results in a large series of cases have caused him not to change his method. Fifty per cent of his patients are still working. Seventy-five per cent of the entire series were improved. His mortality rate is extremely low, about 7 or 8 per cent. It is hard to ignore figures by a pioneer of Glover's type, and it is rather frustrating for those of us who don't have the volume that these early pioneers had. In all probability there is still a good place for the transventricular approach.

When the surgeon approaches the aortic valve using any of these procedures, especially with the bypass, and he has time to work, efforts usually are made to remove the calcium. In Sweden Crawford and his colleagues had trouble in removing the calcium without producing holes in the valves, and so they have developed a crushing clamp which allows them to crush and pulverize the calcium, feeling that in this way they get the mobility of the valve which is desired without having to repair holes or tears in the valves.

Another method of management, depending on the findings at the time of operation, is to do a resection of one of the leaflets and convert the valve into a bivalve instead of a tricuspid one. All these maneuvers depend on the findings at the time of operation. Silastic valves, popularized mostly by Lillehei, is a silastic material, as I understand it, and can be bonded with Ivalon quite well. Now, silastic cannot be sutured to the ring but Ivalon can, and fibroblasts will grow into it. By bonding the two together, it is possible to simulate a human valve and then to sew the Ivalon to the aortic ring. This procedure may have a promising future. Silastic, apparently, will take a tremendous trauma.

That brings me to aortic regurgitation. About all I can say is that the Hufnagel valve apparently has not stood the test. It is not used widely throughout the United States. Surgeons now prefer to bypass, and although there is always a stenotic element, there is also always a regurgitant element. Aortic stenosis and regurgitation probably should be considered together. The future surgical management will probably be with a bypass technic.

Diseases of Both Mitral and Aortic Valves.—One other point concerns diseases of both the mitral and the aortic valves. None of us had very much experience with such conditions. I believe that it is best to use the transventricular method to open the aortic valve, hoping not to cause regurgitation, and then to open the stenotic mitral valve as a second maneuver, thus maintaining the low morbidity and mortality which now exist when the condition is handled in this fashion.

Dr. O'Donnell: The panel has decided that they'll have each man speak for about fifteen minutes. If you'll write any questions and bring them up, we'll be happy to ask any one of the panelists any question you would like.

The next speaker is Edgar P. Mannix, M.D., who is going to talk about open-heart surgery for congenital cardiac septal defects.

Open-Heart Surgery for Cardiac Septal Defects

Edgar P. Mannix, Jr., M.D.: The field of open-heart surgery is only six years old, since the first successful open-heart operation for cardiac septal defects was done in 1954. During the ensuing years enough data have been accumulated from various centers throughout the United States to allow us to formulate some concepts concerning indications and results. I would like to point out, however, that because this field is only six years of age, changes occur very rapidly, and what appears to be a contraindication today may in the relatively near future constitute an indication for open-heart surgery.

The concepts which are offered to you this afternoon are based on a knowledge of the experiences of other cardiac surgeons as well as on an analysis of our own experience in operating on 91 patients using open-heart technics for congenital defects.

The type of patient for whom open-heart surgery is indicated is usually one for whom there is no effectual medical treatment other than treatment of congestive heart failure and perhaps palliative therapy. Because of this belief, we have adopted an aggressive policy in accepting poor-risk patients. In other words, our own personal philosophy has been that, unless there is a specific known contraindication for operation, no patient will be considered too poor a risk for surgery since there is no other known hope for that particular individual. We will discuss some patients who fall into this poor-risk category who have survived operation and have shown excellent results. Of course, there have been some patients in such a group who have failed to survive.

Listed are our indications for open-heart surgery in congenital lesions. Our discussion this afternoon is limited to cardiac septal defects:

1. Ventricular septal defects
    - Isolated
    - Associated
2. Atrial septal defects
3. Endocardial cushion defects
4. Tetralogy and pentalogy of Fallot
5. Aortic stenosis
6. Pulmonic stenosis
7. Anomalous pulmonary venous drainage
8. Mitral stenosis and insufficiency

Relative contraindications at the present time include the following:

1. Single ventricle
2. Ebstein's disease
3. Truncus arteriosus
4. Tricuspid atresia
5. Transposition
6. Isolated interventricular and interatrial septal defects with predominant right-to-left shunts

Although there has been some experimental work done in attempts to correct these defects the results have been poor. I use the word relatively because I believe that these conditions will probably be satisfactorily corrected in the future.

The results of open-heart surgery are conditioned to a large extent by the following factors and perhaps by others of less importance: (1) age, (2) pulmonary hypertension, (3) congestive heart failure, (4) complexity of the lesions, (5) presence or absence of right-to-left shunts in isolated septal defects, (6) accuracy of preoperative diagnosis, (7) accurate complete correction of the defect, (8) pre- and postoperative care, and (9) the skill of the surgicomedical team.

In regard to the age of the patients, we and others have found that if the patient is under the age of three years, the results of open-heart operations are associated with a considerably higher mortality. This does not mean that such operations are not indicated, but what it means is that if patients can be carried beyond the age of two to three years their chances of surviving operation are greater. It also means that many of the most severe lesions may require correction before the patient reaches two or three years of age.

The presence of significant pulmonary hypertension exerts a great influence on the results of open-heart surgery. For example, recently Cooley[1] reported a large series of cases in which he had no deaths when interventricular septal defects were closed between the ages of two and fifteen years, provided the pulmonary artery pressure was normal or only moderately elevated. The results are similar to our own smaller series.

A previous history of congestive heart failure is certainly not a contraindication, but generally speaking those people who have had repeated bouts of congestive heart failure constitute poorer risks.

The complexity of the lesions depends on the presence of various associated intracardiac defects along with interventricular or interatrial septal defects. Cardiac septal defects with other associated intracardiac lesions require comparatively longer operations and there is a greater likelihood of surgical or other complications. Patients with multiple defects are poorer risks generally. The results in this group are not as good as they are with simpler isolated septal defects.

The presence of a right-to-left shunt in isolated septal defects is related primarily to pulmonary hypertension associated with advanced pulmonary vascular obstructive disease. Attempts to correct such lesions have generally produced poor results.

The accuracy of the preoperative diagnosis is, I think, less of a significant factor, but it does add somewhat to the surgeon's difficulties if at operation the preoperative diagnosis has been found to be incorrect. This has happened rarely in our experience.

Accurate, complete correction of the defect is very important. In this respect, I should like to point out that an appreciable number of our patients have had more than one septal defect. It is very important that additional defects be discovered, and it is not always as easy as it might seem especially if cardiac arrest is employed. We have had 2 patients in whom an additional smaller ventricular septal defect was present and went undiscovered.

The pre- and postoperative care and the skill of the surgicomedical team are more or less self-explanatory.

Material and Methods.—Our study of the operations at the St. Francis Hospital and The Brooklyn Hospital employing the open technics and dating from 1955 encompasses a total of 91 open-heart operations of all types with 22 deaths, an over-all mortality of 24 per cent. Of this group, 74 operations were performed on cardiac septa; 20 of these were performed on atrial septal defects using hypothermia, and 54 were performed on atrial septal defects and various types of ventricular septal defects using a pump oxygenator. The latter group included a large number of very complex lesions. The over-all mortality of these 74 patients was 25.6 per cent.

In regard to atrial septal defects of the secundum type, the following table (Table I) is pertinent.

TABLE I.—Atrial Septal Defects of Secundum Type

Defects	Number of Patients	Deaths	Mortality (Per Cent)
Isolated	29	2	6.9
With anomalous pulmonary venous drainage	7	1	14
With pulmonic valvular stenosis	2	0	0
Total	38	3	7.9

Swan[2] has just reported 100 cases of atrial septal defects of the secundal type with an 8 per cent mortality, and Cooley[1] has just reported 90 patients of whom 6 failed to survive, giving a mortality rate very similar to our own. Seven of our patients also had anomalous pulmonary venous drainage and 2, both with right-to-left shunts, had pulmonic valvular stenosis; but in the presence of pulmonic valvular stenosis that right-to-left shunt fails to have the same significance it would have had if the pulmonic stenosis had not been present. These lesions are definitely operable and good results can be obtained.

I should like to emphasize the fact that the deaths which we had occurred early in our series. I think at the present time it is unlikely that we would accept any of these patients for operation. I refer to a quixotic attempt on our part to save a fifty-four-year-old woman who had chronic right heart failure with a predominant right-to-left shunt. I believe that at the present time the other 2 patients would probably survive operation. One had a lower nephron nephrosis associated with severe hemolysis occurring with our first pump oxygenator case. We have not had that problem since

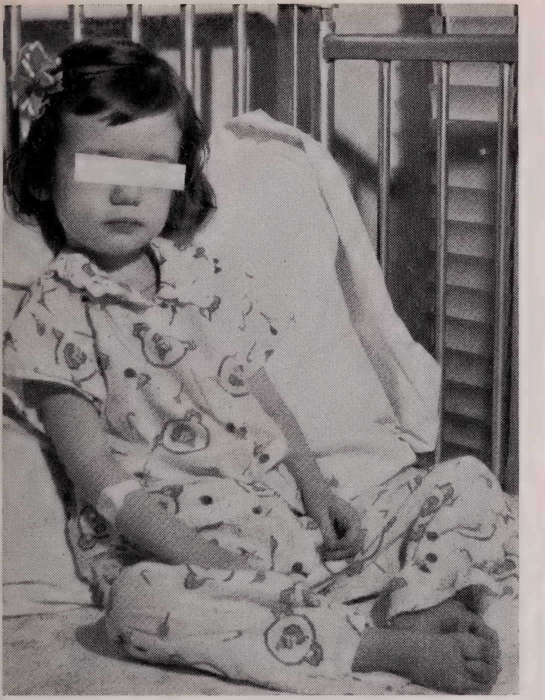

FIG. 1. Atrial septal defect with anomalous pulmonary venous drainage.

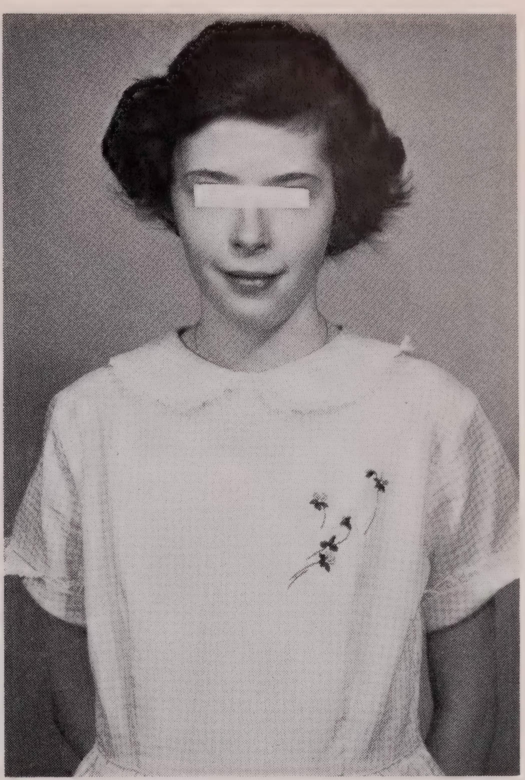

FIG. 2. Atrial septal defect with rheumatic heart disease.

TABLE II.—PATIENTS WITH ISOLATED VENTRICULAR SEPTAL DEFECTS

Pulmonary Arterial Systolic Pressure	Number of Patients	Deaths	Mortality (Per Cent)
Below 40	8	1	12
Above 40	9*	3	33
TOTAL	17	4	23

* In 8 cases the pressure was over 60.

then. The other patient presented a technical problem relating to correction of the anomalous pulmonary venous drainage. Our experience, therefore, would verify the concept that at the present time the operative mortality in the correction of atrial septal defects of the secundum type using open-heart methods should be under 5 per cent.

We have classified endocardial cushion defects into two groups. These are: (1) the atrium primum defect which, in our experience at least, has always been associated with defects of the mitral valve of some significance; and (2) the atrioventricularis communis defect.

Of our 8 patients we had 5 deaths. Two of these had additional cardiac lesions. Recently Cooley[1] reported 13 patients with atrioventricularis communis defects with only 7 survivors. It has been the general experience of surgeons that these are very difficult defects to correct without a high mortality rate. On the other hand, the outlook otherwise is very poor for these patients and the chances of extended longevity is very dim indeed. Therefore, there may be a clear-cut indication to proceed with operation in any given case.

The classification of the ventricular septal defects is very important because of the prognostic difference between the isolated ventricular septal defect and those associated with multiple lesions. In patients with isolated ventricular septal defects, our experience is summarized in Table II.

FIG. 3. Endocardial cushion defect plus low-lying muscular ventricular septal defect.

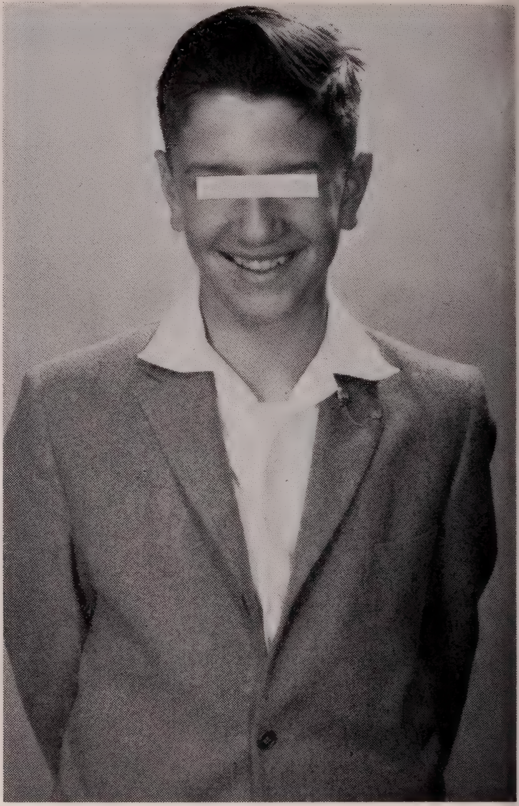

FIG. 4. Ventricular septal defect with recently healed bacterial endocarditis.

Note that if the pulmonary arterial systolic pressure was 40 or less, we lost only 1 of 8 patients and that was in our first patient using a bubbler-type oxygenator. In all other 53 open operations for septal defect, we have used the disk-type oxygenator. Generally we feel that if the pulmonary artery pressure is normal or only slightly elevated, the risk of closing isolated ventricular septal defects is very small indeed. If, however, the pulmonary artery pressure is greatly elevated, then the risk goes up appreciably. If there is a predominant right-to-left shunt, then the risk is prohibitive.

In a small series of 11 patients we have had only 4 survivors among those with associated defects (patients with ventricular septal defects and a number of additional intracardiac anomalies). The best results were in the group with tetralogy of Fallot, with 4 patients operated on and 1 death. The other cases included some very bizarre associated lesions including transposition with pulmonic stenosis, pentalogy with absent left pulmonary artery, and atrial septal defects and patent ductus.

I would like to point out the fact that those children who are underweight and have atrial septal defects do remarkably well. One boy who was eleven years old gained 30 pounds in one year after an interatrial septal defect was closed. The later results in patients with atrial septal defects have been excellent with 2 exceptions, and those were in older patients who had congestive heart failure preoperatively and had a protracted convalescence but who eventually improved and at the present time are doing very well.

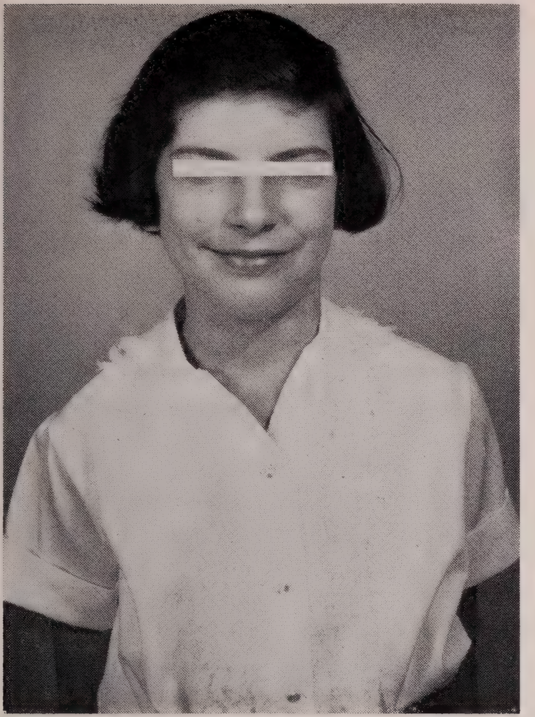

FIG. 5. A thirteen-year-old girl weighing 46 pounds at operation with two ventricular septal defects, severe pulmonary hypertension, and marked kyphoscoliosis.

FIG. 6. Ventricular septal defect with preoperative congestive failure. Equalization of pulmonary and systematic pressures.

SELECTED CASES.—We wish to close this discussion by presenting a few selected cases very briefly. These are postoperative photographs of some of our patients who presented relatively complex problems.

Figure 1 illustrates a little girl with an atrial septal defect and anomalous pulmonary venous drainage. This is a picture taken one week after correction of the lesions. She has done very well.

Figure 2 shows a girl with both rheumatic heart disease (rheumatic valvulitis but no significant mitral stenosis) and an atrial septal defect. She was in almost continuous congestive heart failure for months prior to operation. This is the only child whose weight has remained stationary in the year since she has been operated on, and the explanation is obvious. She has lost her edema fluid. This picture was taken recently. She is much improved at present.

Figure 3 is that of a boy who had an atrioventricularis communis defect, and, in addition to that, he had another ventricular septal defect in the muscular portion of the septum. He has improved considerably and has returned home.

Figure 4 is of a boy who is the only patient in our series with a small ventricular septal defect on whom we have operated. Up to the present time we have not operated on small asymptomatic ventricular septal defects, since such patients may live to an advanced age. The same concept has prevailed up to this time in our selection of patients with atrial septal defects. This philosophy has excluded automatically a certain number of patients who would constitute excellent operative risks. This boy is an exception. The reason we operated on him was that he developed bacterial endocarditis, and it required prolonged hospitalization to sterilize his blood stream. His physician and I thought this was an adequate reason for proceeding. This picture was taken three months after operation.

In Figure 5 is shown a thirteen-year-old girl who had two ventricular septal defects, one about 3 by 3 cm. and the other 1.5 by 1.5 cm. in diameter. The pulmonary arterial systolic pressure was 90 and she weighed 46 pounds at the time of operation, having marked kyphoscoliosis. In the three months since operation she has gained 8 pounds.

The six-year-old child in Figure 6, who had had heart failure several times before operation, had equalization of the pulmonary and femoral arterial pressures (about 100 mm. Hg). A large ventricular septal defect was present. This picture was taken approximately two months after her return home following surgical correction. She has had an excellent result.

I would like to conclude simply by saying that I think that the indications for open-heart operations will certainly broaden as time passes, and the very complex lesions which at the present time are difficult to repair with a reasonable mortality rate will come under control.

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Revascularization Procedures in Coronary Artery Disease

Charles P. Bailey, M.D.*: The complacency of the profession toward the finding of a definitive solution to coronary artery disease, a number one medical problem, is, to us, appalling. Certainly this disease is not an insoluble problem and it would appear that an acceptable answer should be forthcoming if but a small portion of the men, money, and materials that have been expended on military problems and space research were applied in this field. In the past the treatment of coronary artery disease has been viewed with attitudes varying from meek acceptance to complete defeatism. The disease is basically of metabolic origin and it is felt that the final answer will be found in this realm of research. The effects, however, are mechanical and often fall within the scope of surgery.

There have been four approaches to the problem of coronary artery disease and although the topic of our presentation encompasses but one of these perhaps it is worth while to mention them. First, there is the medical control of atherogenesis. At the moment this is a very controversial subject and lies beyond the scope of this paper. Such factors as heredity, diet, exercise, sleep, and dissipation are said to influence the blood lipid level which in turn determines, at least to some degree, the rate of development of coronary atherosclerosis. Second, one must face the fact that the coronary blood flow is impaired. It is here that the surgeon comes into contact with the patient and it is in this group of patients that we are concerned with the indications for and the results of revascularization operations. Third, the physician must aid the patient in regulating the burden of the heart by advising him regarding a proper routine of work, rest, and relaxation while he is controlling the diet. In addition certain cardiac drugs such as digitalis and nitroglycerin may be indicated. Fourth, the patient must be so controlled as to prevent specific cardiac complications such as heart failure, acute coronary occlusion, and sudden death.[1]

Revascularization of the Myocardium.—Many surgical procedures have been proposed and tried clinically in coronary artery disease, either to augment the intercoronary arterial collateral system or to add a new source of blood supply from an extracardiac source.[2-9] The term revascularization has been applied to nearly all of them, usually without incontrovertible objective evidence of accomplishment. Therefore, we have limited this discussion to the two types of procedure in which radiographic demonstration of the patency of the vascular pathways of the myocardium is feasible.

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* With William M. Lemmon, M.D., as coauthor.

Intramyocardial Implication of the Left Internal Mammary Artery.—It was shown in 1946 by Vineberg[10] that the proximal bleeding end of the mobilized and divided left internal mammary artery could be implanted within the thickness of the left ventricular wall without hematoma formation. This technic has been extended in the laboratory by Chardack.[11] It has been shown experimentally that following implantation of this artery into a nonischemic heart intimal proliferation and medial thickening of the implant will reduce progressively and finally obliterate the lumen.[12] However, it also has been shown experimentally that implantation of the artery into an ischemic heart wall is followed regularly by the formation of communications with the existing terminal arterioles. These observations of Vineberg[13] and Bakst[14] have been confirmed in the animal laboratory by Sabiston and Blalock.[15]

Selection of Patients for Internal Mammary Artery Implantation.—Subjects below the age of fifty-five years with well-marked anginal syndrome in the presence of electrocardiographic evidence of coronary artery disease (insufficiency) should be considered as possible candidates for an internal mammary artery revascularization procedure. These patients should have no medical condition that precludes thoracotomy. Individuals who have progressed to a state of status anginosus usually are not satisfactory surgical risks for coronary artery operations. However, the historical evidence of one or more heart attacks does not necessarily contraindicate surgery. We feel that the most important single study in the evaluation and selection of candidates for this operation is the demonstration by coronary arteriography of complete or incomplete obstruction(s) in the distribution of the left coronary artery.[16] The chief benefit from the implantation of the left internal mammary artery is in the replacement of diminished flow from the anterior descending branch of the left coronary artery. Vineberg[17] has reported the loss of 2 patients from occlusion of the right coronary artery despite his procedure, and this occurred eight months following an initially satisfactory result in 1 of our own operated patients.[18]

In order to justify the choice of the Vineberg procedure, the coronary arteriogram should show evidence of extensive involvement of the anterior descending branch of the left coronary artery and perhaps also of the left circumflex branch. In other words these vessels should present such a diffuse pathologic process that endarterectomy would not seem to be feasible technically.

Results: Demonstration of Surgical Accomplishment.—The difficulties encountered in postoperative evaluation of subjects who have undergone any type of revascularization operation is well recognized and thoroughly documented.[19,20] Postoperatively congenital and other types of acquired heart disease are re-evaluated relatively easily through cardiac catheterization and radiologic measurement of the diminution in chamber size. While postoperative exercise tolerance studies may provide some evidence of the effectiveness of an internal mammary artery implant, there are some patients who show improvement for a few months, only to lose it later. The psychologic element in coronary artery disease is great and it is not unusual for subjects to report marked subjective relief of a temporary nature following any type of treatment. For this reason it is preferable to to defer a considered opinion of the results of an operation for at least six months.

For the past several years we have been attempting to devise more objective methods for the evaluation of patients with coronary artery disease. With our present technics, coronary arteriography is not invariably satisfactory. In any case it can be useful only when correlated with all other pertinent clinical and laboratory studies. For this reason we are attempting to develop an improved method of contrast visualization of the coronary artery tree.

In the case of the patient who has sur-

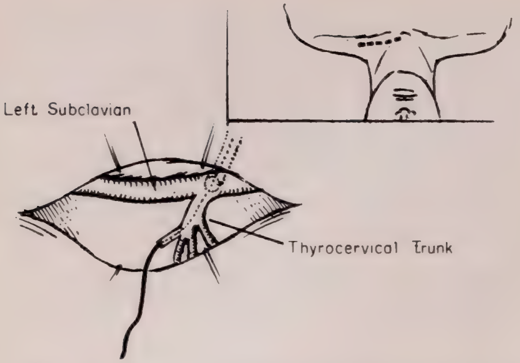

FIG. 1. Diagram showing surgical exposure of thyrocervical trunk in root of neck. Care is exercised to avoid injury to phrenic nerve. A small catheter is threaded through an expandable branch into origin of internal mammary artery and dye is injected while filming takes place. A patent implant is evidenced by visualization of contrast material in the myocardium in x-ray film.

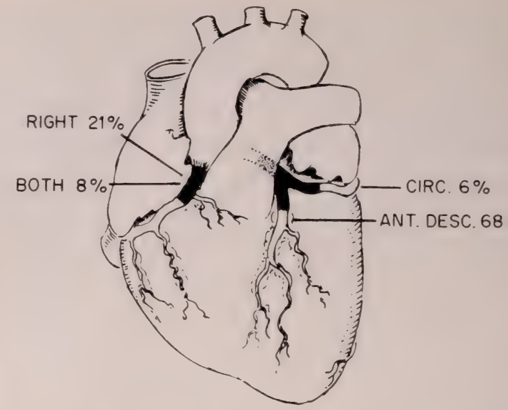

FIG. 2. Location and incidence of atheromatous lesions of coronary arteries. Septal branch also is subject to involvement but is not indicated. Characteristically the minute arterial branches are uninvolved thus providing suitable "run-off" pathways.

vived a Vineberg procedure, there are several obstacles to satisfactory visualization of the implanted vessel. Until now all evidence pertaining to this question has been derived from animal material or autopsy examination. Angiocardiography and aortography have been proved unsatisfactory. A technic has been devised by one of us (W.M.L.) for demonstration of the patency and functional status of the implanted artery. Briefly this consists of operative exposure on the x-ray table, under local anesthesia, of the thyrocervical trunk as it arises from the left subclavian artery. Through an incision in it or an expendable branch a medium-sized catheter is threaded into the internal mammary artery which originates posterior and inferior to the thyrocervical trunk. With the patient in the lateral or left anterior oblique position 10 cc. of highly concentrated radiopaque material are delivered under pressure in one or two seconds while serial filming takes place (Fig. 1). Although our experience with this new method is limited we are confident that this objective test will aid considerably in establishing the value of this operation.

As a base line in establishing the operative mortality in a series of internal mammary implantations Dana and Ohler[21] have shown that the mortality is approximately 7 per cent in patients with coronary artery disease undergoing general surgical operations. The operative mortality of the Vineberg operation in properly selected patients has been reported at 5.8 per cent. However, in the group of patients with angina decubitus the operative mortality rate has been recorded at 45 per cent.[17] Autopsy examination of the hearts in decubitus cases usually reveals generalized fibrosis and replacement of the myocardium. Evidently patients must be considered for operation early in the course of their disease if maximum benefit and a low operative risk are to be achieved.

Within six months of operation 80 per cent of the surviving patients may be expected to return to work and to be either free of pain or improved significantly in this respect. In patients with angina decubitus only 30 per cent of the survivors will return to work and only 35 per cent will report less pain.[17]

CORONARY ENDARTERECTOMY OR THROMBOENDARTERECTOMY.—There are several peculiarities about coronary atherosclerosis which seem to render the disease process amenable to direct surgical attack. The lesions tend to begin within the first centimeter and nearly always on the myocardial aspect of the anterior descending branch of the left coronary artery. The disease next most frequently involves in segmental fashion the right circumflex and then the main left coronary artery. In approximately 80 per cent of cases the process is limited to the left main coronary artery or its two divisions. In the remainder the lesions affect the right coronary artery or a combination of the right coronary and the anterior descending branch of the left coronary artery (Fig. 2).[22] Strangely enough the process is restricted to the visible portions of the coronary tree except the septal branch of the left coronary artery which may be involved even though it is deeply placed. The muscular and minute arterial vessels remain essentially uninvolved thus assuring adequate "run-off" passageways. Operation on a coronary artery distal to a site of occlusion does not lead to reinfarction of the already ischemic and variably fibrosed myocardium. Arteriotomy at a point beyond such an obstruction usually reveals only a feeble flow of blood and produces little to no disturbance in the monitored electrocardiogram. In experimental animals intimectomy of the coronary arteries without the aid of postoperative anticoagulant therapy nearly always will lead to thrombosis.[23] However, with the administration of fibrinolysin or effective anticoagulants the vessel remains patent and reintimization occurs within three weeks.[24]

Some physicians have questioned the desirability of re-establishing the blood flow to the area of ischemic muscle. It would seem possible to derive a logical answer from clinical experience with similar lesions in other areas. Anoxia of a leg produces pain or claudication, but removal of an arterial obstruction and re-establishment of normal blood flow brings about dramatic relief of the symptoms and may restore full functional capacity to the limb.

It is logical to assume that a similar response would be obtained by restoring normal coronary blood flow to the ischemic heart muscle. It should be preferable to have an excellent blood supply to a previously ischemic area than to have the area constantly in need of additional arterial blood and to be dependent for survival on the minute intercoronary arterial anastomoses which are built up as a natural response to the diminution in the normal source of supply.

Selection of Patients for Coronary Thromboendarterectomy.—It should be understood that there is always a period of uncertainty as to its final place of usefulness during the early development of any operation. Our report[25] of the first operative survivals from attempts at this procedure is less than three years old. Since the contraindications to an operative procedure are easier to establish than the indications let us consider them first and then proceed toward the criteria for selection of patients for this operation.

Contraindications to Coronary Endarterectomy or Thromboendarterectomy.—At the moment it is believed that the following are absolute contraindications to coronary endarterectomy or thromboendarterectomy: severe enlargement of the heart (indicative of massive irreversible destruction of the myocardial muscle fibers), the presence of congestive heart failure, a diastolic gallop rhythm, and a history of recent myocardial infarction.

In addition to the absolute contraindications there are other findings of major importance which may contraindicate operation of this nature in an individual case. The impairment of cardiac function as indicated by a Grade II or greater cardiac enlargement (radiographically) or a history of two or more severe bouts of cardiac infarction may constitute sufficient evidence to defer surgery. Conduction defects of a serious nature or a history of previous episodes of congestive heart failure likewise may rule out the procedure. It is questionable whether it is justifiable to perform endarterectomy on the coronary artery of a subject

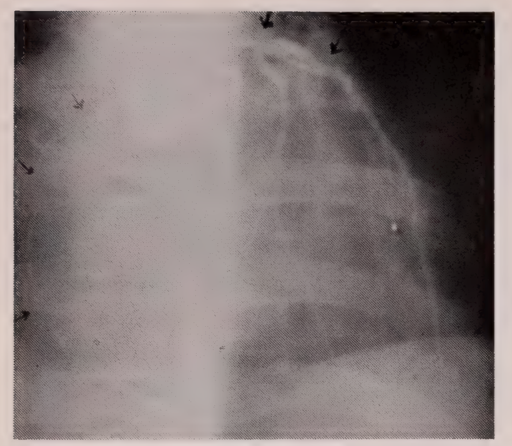

FIG. 3. Preoperative coronary arteriogram obtained by employing large bore catheter and 50 cc. of 70 per cent Hypaque; acetylcholine arrest controlled by use of external pacemaker in thirty-seven-year-old white male, patient 12. Note complete occlusion of right coronary artery and narrowing and irregularity of left anterior descending and left main coronary arteries. Normal condition of left circumflex confirmed at operation.

aged sixty years or over. The presence of uncontrolled diabetes, hypertension, or severe pulmonary disease may contraindicate surgery. Angina decubitus usually denotes an advanced state of myocardial degeneration but might well be based on critical narrowing of but a single arterial segment.

Indications for Coronary Endarterectomy or Thromboendarterectomy.—It is felt that at this period in the development of coronary endarterectomy the procedure should be reserved for well-demonstrated localized segmental lesions of one or more major divisions of the major coronary arteries. Preferably the patients should be under sixty years of age, should have distressing angina pectoris, and should not present a history of more than one myocardial infarction. The patient must be judged capable of withstanding a major thoracotomy. With the development of acceptable methods of coronary arteriography it is deemed essential to have an adequate study of this type prior to operation (Fig. 3).

Three basic technics have been utilized for the performance of coronary endarterectomy or thromboendarterectomy. The first method was retrograde curettage of the vessel by way of an expendable arterial branch (Fig. 4). The second embraced passage of instruments via the opened aortic root and the coronary ostia for antegrade removal of the lesion (Fig. 5). For this procedure it was necessary to employ the heart-lung apparatus. The third and preferable method consists of direct incision of the coronary artery directly over the site of obstruction and removal of the diseased intima and contained thrombus (Figs. 6 and 7). Again, it is essential to use mechanical support of the circulation. While we have used the conventional heart-lung bypass successfully, it is our feeling that the use of the autogenous lung–double-pump bypass of

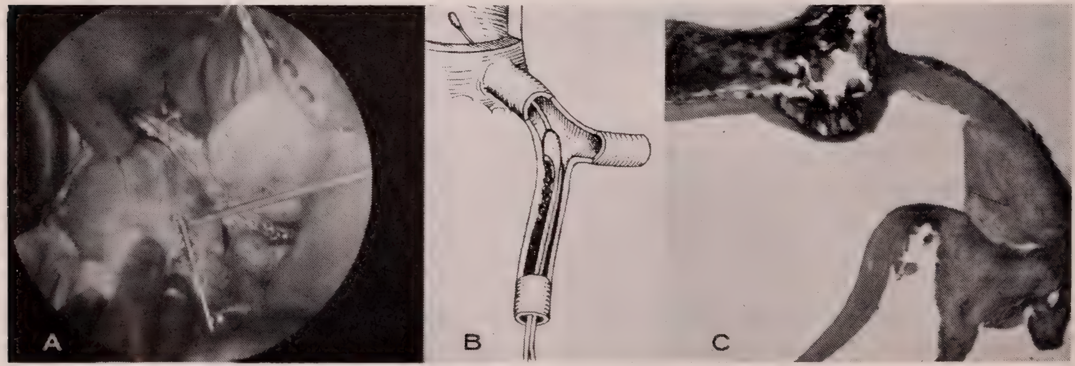

FIG. 4. Retrograde curettage of coronary artery by use of especially designed instruments. (*A*) Semimalleable curet being introduced (Courtesy of the *Journal of the American Medical Association* **164**: 641 (June 8) 1957[25]). (*B*) Reverse cutting cup passed over guide for removal of lesion. (*C*) Histologic section of specimen removed showing atheromatous area (Courtesy of the *Journal of the American Medical Association* **164**: 641 (June 8) 1957[25]).

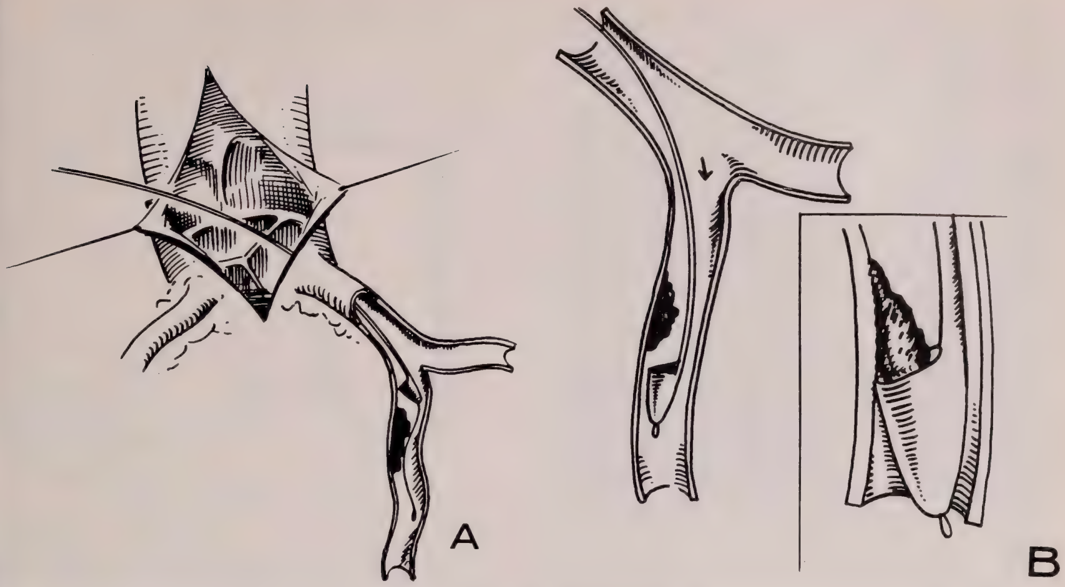

FIG. 5. Second method of performing coronary thromboendarterectomy by opening root of aorta and carrying out antegrade removal of lesion via coronary ostia.

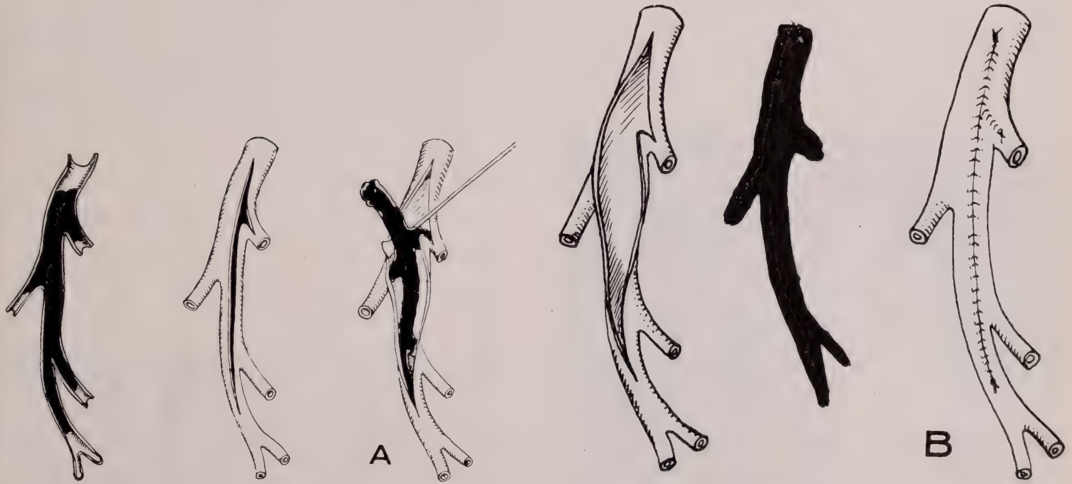

FIG. 6. (*A*) Direct method of endarterectomy of coronary artery. (*B*) Diagram of operation on occluded coronary artery.

Blanco[26] is preferable because of the additional permissible operative time it provides (Fig. 8).

Results of Coronary Endarterectomy at the Bailey Thoracic Clinic.—Twelve patients have been operated on, 9 by the retrograde approach, 1 with the heart-lung machine using the antegrade method, and 2 by the direct technic using circulatory bypass. One patient failed to survive the operation and another died some eight months later from a new massive myocardial infarction. Recently the remaining 10 patients were reviewed, the longest follow-up period being twenty-eight months. Objective (cardiologic) evaluation suggested that 1 was unimproved, 3 showed fair improvement, 3 had received a good result, and 3 had an excellent response from the operation (Table I and Fig. 9). On sub-

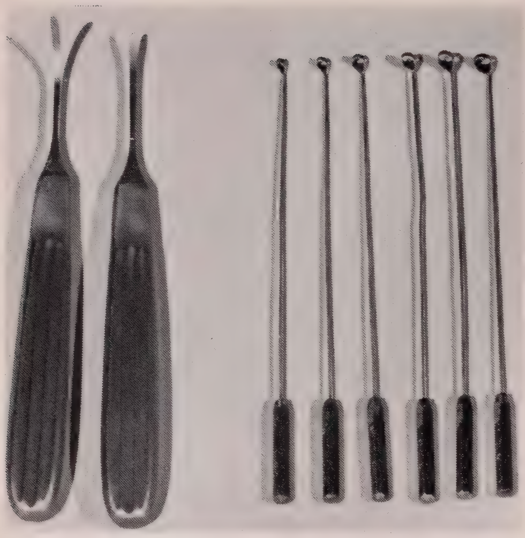

FIG. 7. Lemmon intimal dissector, and loops* for performance of direct coronary artery endarterectomy.

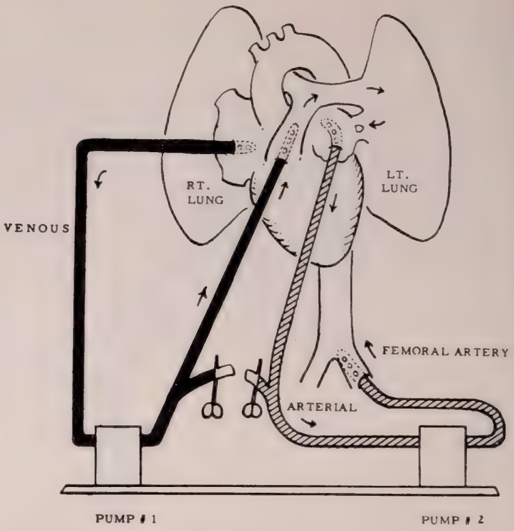

FIG. 8. Cannulations for circulatory perfusion using autogenous lung for oxygenation (Blanco[26]).

jective evaluation, all the patients considered themselves improved or benefited by the coronary endarterectomy even though 2 considered the improvement slight. Four thought themselves moderately better off and 4 reported marked improvement. There were 2 females in the series and the remainder were males. The ages ranged from twenty-eight to fifty-five years.

SUMMARY.—The lethargy of the medical

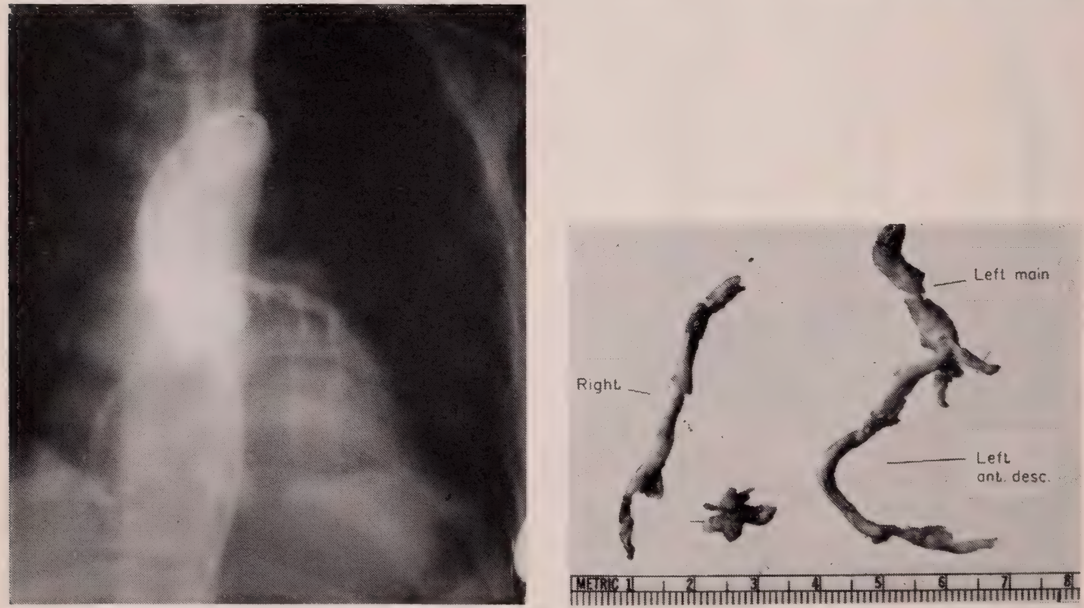

FIG. 9. (A) Postoperative coronary arteriography on patient 12 visualized in Fig. 3. Note improved filling of right and left anterior descending coronary arteries which contained organized thrombi. The left circumflex was found to be normal at operation and was not traumatized. (B) Photograph of specimen removed at operation. Although there was large thrombus within left main coronary artery, it was not completely obstructive.

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* Available from George P. Pilling & Sons Company, Philadelphia.

TABLE I.—RESULTS OF EVALUATION OF FIRST 12 PATIENTS UNDERGOING CORONARY ENDARTERECTOMY

Results	Patients 1	2	3	4	5	6	7	8	9	10	11	12
Subjective												
Worse		*		†								
Same												
Fair	x							x				
Good			x						x	x	x	
Excellent					x	x	x					x
Objective												
Worse		*		†								
Same	x											
Fair			x					x	x			
Good					x					x	x	
Excellent						x	x					x

* Operative death.
† Late death.

profession (and the public) regarding the nation's number one killer remains appalling. Significant progress has been made in the last three years in the surgical treatment of coronary artery disease and the results are encouraging. The number of patients currently receiving surgical treatment for this disease is extremely low compared with the incidence of the condition in the population. At the present time we consider that two types of operation have proved capable of providing revascularization of the ischemic myocardium. Results of the coronary endarterectomy operation over a long term remain to be determined, but the initial results are highly encouraging and suggest a wider application of the procedure.

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In Peripheral Vascular Disease

Jere W. Lord, Jr., M.D.: We can consider anything beyond the coronary artery circulation as peripheral. To outline some of the things that are being done for such conditions, I shall present some examples.

Emboli.—An embolus removed from the terminal aorta is called a saddle embolus. Surgery is indicated with this diagnosis if the patient can withstand an operation. Emboli commonly arise from a fibrillating auricle or from an infarcted left ventricle.

The next question concerns what to do about preventing another embolism. Ideally a mitral commissurotomy should be carried out at a second operation if the patient has tight mitral stenosis. With a recent patient an embolectomy from the saddle area was followed in two months by a mitral commisurotomy, à la Dr. Bailey's first technic. She has done well now for over eight years. Anticoagulants should be used in those whose hearts cannot be corrected surgically, probably for the remainder of their lives.

Aneurysms.—A gastrointestinal series was taken of a patient who came to us in shock from loss of blood into the peritoneal cavity. The x-ray film, taken in another hospital, suggested a pancreatic cyst. At operation an aneurysm of the splenic artery was found. The patient was closed, referred to the University Hospital, and operated on three weeks later. The splenic artery aneurysm was removed by means of hypothermia and by cross-clamping the aorta above and below. These aneurysms should be removed promptly because of their tendency to rupture.

Aneurysms of the renal artery exhibit themselves on the x-ray film as calcific rings. We have operated on 3 of these, hoping to preserve the kidney. All 3 were at the bifurcation or the trifurcation of the renal artery and in all nephrectomy had to be done. Again operation is indicated in such cases because fatal hemorrhage is not infrequent and the patient can live with his other kidney. Reconstructive surgery, however, seems to be hopeless in this particular situation.

An aneurysm in the upper part of the abdominal aorta is often a luetic one. One of our patients was treated as having an acute condition of the gallbladder, when acute abdominal pain developed and a mass was noted. He was closed when the diagnosis was made at laparotomy. Subsequently an aortogram was made. The aorta was cross-clamped above and below through a transthoracic, transabdominal approach using hypothermia. The aneurysm was divided and the aorta was reconstituted with a tangential suture. The result has been satisfactory for over three and one-half years.

Arteriosclerotic aneurysms at the abdominal aorta are usually located below the renal arteries and can be resected easily with the insertion of a plastic prosthesis. Surgery is indicated with this diagnosis in the absence of advanced cardiorenal disease. Unless the patient is almost moribund because of a cerebral, cardiac, or peripheral vascular or renal problem, operation should be undertaken.

In our first 15 patients there were 7 deaths, due to technical problems in 2, to renal failure in 1, to coronary occlusion and stroke in 2, to evisceration in 1, and to a ruptured homograft in 1. In the last 30 there have been no hospital deaths. There have been 2 late ones at eighteen months due to dissecting aneurysms at the junction of the prosthesis and the aorta.

Whereas one had to select patients a few years ago, I think it is fair to say that experience during the past four years has shown that aneurysms can be operated on routinely if there is no strong contraindication to surgery.

Obstructing Lesions.—In regard to obstructing lesions of the aorta and of the iliac arteries, the bypass technics using homografts or prostheses and the direct removal of the obstructive lesion by the insertion of a prosthesis is one favored by some surgeons. However, the work of

Wylie and of Freeman and others suggests that thromboendarterectomy is an excellent procedure in this area. Wylie's follow-ups of five years show about a 10 per cent recurrence with thrombosis of the aorta or common iliac arteries. On the other hand, in the more peripheral areas, the femoral and popliteal, thromboendarterectomy has usually been less encouraging except for Cannon and Barker's experience.

An autopsy specimen of a woman fifty-eight years of age who had intermittent claudication in the buttocks and thighs for thirty years showed a point worth noting: that atherosclerosis is frequently segmental and spotty. This particular woman went from her twenty-sixth year to the age of fifty-six before she was bedridden because of pain, and then she developed gangrenous toes without signs of arterial disease anywhere else. At operation, she was found to have a block of the terminal aorta for about $2^1/_2$ inches and blocks in both common iliac arteries. It was possible to do a thromboendarterectomy, resew her common iliac and aorta on one side and the common iliac on the other, and she did well for over a year when she developed carcinoma of her colon. She was operated on, but died a year later of cancer, twenty-one months altogether after the first operation. The autopsy showed a perfectly normal distal aorta and normal common iliacs where the thromboendarterectomy procedure had been done. A thing of great interest to us was the fact that her external iliac arteries and femorals were apparently normal in spite of the presence of this disease that was recognized clinically as having been present for thirty years. The aorta above to near the arch showed atherosclerotic areas, but this in no way interfered with good function and good pulses in her feet persisting to the time of her death.

AORTOGRAMS.—Aortograms are usually done preceding surgical intervention. I should like to bring to your attention the technic that Dr. Israel Steinberg worked out recently which is an enormous advance both in safety for the patient and safety to the surgeon in the information gleaned. His angiocardiograms by unilateral intravenous injections showing the heart, its chambers, and the thoracic aortic have been superb. On the other hand, his angiocardiograms did not show good contrast of the abdominal aortic or the peripheral arteries. By readjusting his technic by using a simultaneous bilateral intravenous injection of almost the equal bolus of dye and doing it in one half to one second, he now obtains excellent abdominal aortograms and peripheral arteriograms. This is a lot safer than the usual translumbar aortogram and also gives information that is far more desirable because it is so extensive.

The peripheral arterial block in segmental occlusion can be pictured with a translumbar aortogram or can be done just as well by Dr. Steinberg's current bilateral intravenous injection into the arm. In our judgment this condition is treated best by bypass with an autogenous vein graft. If the distance is too long, one can use one of the various types of dacron or the woven teflon. In another case we did a vein graft by bypassing the obstructed segment and it has worked well for over three years.

Just one word about the arterial outflow tract of the upper extremity. We have seen a post-traumatic nonunion of a clavicle which suddenly caused venous obstruction and, four months later, arterial obstruction. At operation it was discovered that the inner fragment had pushed into the artery but had not caused thrombosis. The clavicle was totally removed with the periosteum. It is over six years since that operation and the patient is asymptomatic with good arterial flow and improved venous flow. That's the typical picture after claviculectomy, and with removal of the periosteum regeneration does not occur.

We believe most so-called axillary vein thromboses occur beneath the clavicle, the subclavius muscle, and the costocoracoid ligament. This was pointed out by Lowenberg in his anatomic studies in 1924 and by McCleery and Kirtley in 1951 when they recommended removal of that muscle and the fascia along with sectioning of the anterior scalenus muscle.

A typical angiocardiogram shows, with the arm at 90 degrees abduction, a perfectly normal venous flow at two seconds, six seconds, twenty seconds, and twenty-eight seconds. It was not until twenty-eight seconds that the dye cleared completely in spite of a perfectly normal venous circulation of the arm. Dr. Netter's drawing of this anatomic site shows where the vein is pinched by the costocoracoid ligament, the subclavius muscle, and the scalenus anticus above.

The operation is done to relieve acute axillary venous or chronic thrombosis with continued hypertension in the venous system, and consists in taking out the inner half of the subclavius muscle and the inner half of the costocoracoid ligament and dividing the scalenus anticus.

Question and Answer Period

Dr. O'Donnell: If there are any questions, would you please direct them to the man who is asked.

We had a question given to us for Dr. Bailey. Do you think that the primary arteriogram is essential to make a decision as to surgery for coronary disease?

Dr. Bailey: I think it's absolutely essential. We've seen patients who have been operated on elsewhere, using sundry procedures, and then we took a coronary arteriogram and found perfectly fine filling of all the major branches of the coronary arteries. Evidently there had been some error in diagnosis and, naturally, the patient didn't get any better. I think you've got to be sure you have the disease before you treat it; and if you're going to treat it locally, you ought to know about the condition locally.

Dr. O'Donnell: And for Dr. Lord: Do you think aortography is indicated in all cases of obstructive arterial lesions?

Dr. Lord: Earlier I thought so. During the past three or four years, the answer has been no because of the potentially serious complications in translumbar aortography. We've all seen patients or know of patients who had transverse myelitis, renal shutdown, and gangrene of the rectum. I think that now with Dr. Steinberg's improved technic one can go back to what's ideal for the patient and have this visualization performed with complete safety, with the one exception: Anyone allergic to one of the iodine compounds may suffer just as much as the individual who has a routine intravenous pyelogram.

Dr. O'Donnell: Dr. Bailey, would you read and answer your own question?

Dr. Bailey: Will not coronary endarterectomy increase the chance of a new thrombosis because of the roughness of the inner surface of the coronaries? Does anticoagulant therapy control it?

I'm sure the roughness does tend toward the thrombosis. You cannot do an endoectomy in a dog without getting a thrombosis in that site. However, we are able to control it preferably by plasmin (Actase fibrinolysin). This drug has a great advantage over anticoagulant therapy in the immediate postoperative period in that the patient does not bleed from all the cut surfaces of his wound while you're giving it.

Our idea is to give fibrinolysin for three days, then switch the patient to heparin, and then in a couple of weeks convert to bishydroxycoumarin (Dicumarol). I don't know how long to continue bishydroxycoumarin. In dogs you don't continue it at all. You continue it two weeks and then stop. In human beings my cardiologist thinks we ought to keep it up for six months; some cardiologists think we ought to keep it up forever. I think that if you have to keep it up forever the value of the operation is vitiated, to a degree, because people taking bishydroxycoumarin or other anticoagulants are not quite normal. Probably we ought to keep it up for a reasonable period of time, and six months perhaps may be reasonable.

Dr. O'Donnell: Are there any questions from the floor?

Joseph T. Roberts, M.D.: I may have mentioned it, but I wonder whether in doing the Vineberg type of procedure, Dr. Bailey, you use the internal mammary or one of the larger vessels. With a graft as we've seen and done it seemed that the larger the vessel, and with the end open, the better were the chances for it to stay as an open graft.

Dr. Bailey: I'm sure that's a sound concept. We have, however, used the internal mammary artery ourselves, and have not been entirely happy because we know that at least 25 per cent of the cases then will thrombose. Dr. Vineberg claims only 60 per cent persistent patency with his technic and so this would seem to be a valid objection to the use of that vessel.

Dr. Roberts: The other question was in regard to arteriography. If there is simply a short segmental occlusion, how does the diodrast, or what not, get past that to fill up the vessel? My question is really how do you tell the length or the extent of occlusion beyond the most proximal point?

Dr. Bailey: Well, I can't. I can only tell where the occlusion begins. Sometimes I can't even be sure of that because frequently the thrombi are hollow and the blood runs down the center of them, making a false and smaller lumen, and this then communicates with branches beyond that point.

But there is no real objection to taking out a long segment of intima or a long thrombus. You just have to make another couple of incisions in the vessel.

Dr. Roberts: I might harp briefly on what I said more loquaciously before, namely, it seems to me still that the greatest lesion in this disease is in the small vessels of the coronary artery and that that contributes probably to sledging and sawing at the point where you're doing your intimectomy, and really you're correcting or helping or treating a by-product of the main disease. You can't get your probe down around the small corners, can you?

Dr. Bailey: It's been my experience that the lesions are in the large vessels and that the smaller vessels are open and there's an excellent return of blood flow once you pull the plugs out of them. That I think is the general opinion of most pathologists.

Alfred P. Ingegno, M.D.: What would happen, Dr. Bailey, in the experimental animal if, after you waited for a period during which you could expect that infarction might occur, you cut out that infarcted area or excised it? Would this prevent possibly the terminal event which might occur: the ventricular fibrillation or arrhythmia?

Dr. Bailey: Some time ago when we wrote up our technic of removing ventricular aneurysms we described a series of experimental efforts to do just that in dogs. We ligated the anterior descending coronary artery and when the line of demarkation between the normal and the cyanotic paradoxical muscle was visible, we placed a clamp proximal to the cyanosis, cut away the affected portion, and sewed the heart together, using some Ivalon pledgets so that the soft muscle wouldn't cut through under tension. About 75 per cent of the animals so treated survived, and there was no question but that the blood pressure rose as soon as the clamp was applied and the paradoxical and cyanotic portion of the heart was removed.

However, all the animals did die within a two-week period except 1 in that experiment, and we sacrificed him on the twenty-second day because there was evidence of chronic heart failure. The autopsies showed clearly what the trouble was. The ventricular lumen was so reduced by this procedure, (including the 1 case that was twenty-two days postoperative) that one had a condition comparable to fibroelastosis of the left ventricle or, if you prefer, a constrictive pericarditis affecting the left ventricle, so that the heart had become incapable of putting out much blood per beat.

It seems that the left ventricle has less ability to dilate and compensate than we have imagined in the past. That's why in recommending excision of the ventricular aneurysms we coined the term "ventriculoplasty," indicating that you should take away only the bulge, leaving the rest of the scar there because chambers require a certain minimal capacity and you should not reduce it below its normal size and shape.

Previously Carter and Gordon both have recorded treating experimentally produced myocardial infarction by excision, but I have an idea that their survivals were the usual surgical survival in the acute experiment: If the animals live a couple of days, they are considered survivals, then you sacrifice them. If you let them go a little bit longer you'll find they all go into heart failure. So, I don't think this method is a good approach unless you have a way of replacing the diseased portion of the heart wall.

Dr. O'Donnell: Many thanks to the four excellent panelists, and thanks to all of you.

ANNOUNCEMENT

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A Controlled Study of the Rehabilitation Potential of Nursing Home Residents

EUGENE MOSKOWITZ, M.D., MOUNT VERNON, NEW YORK, JACK J. GOLDMAN, M.D., EVELYN HESS RANDALL, R.N., RUTH I. FOX, M.A., AND WILLIAM A. BRUMFIELD, JR., M.D., WHITE PLAINS, NEW YORK

(From the Westchester County Department of Health, White Plains, and the Department of Physical Medicine and Rehabilitation, New York University–Bellevue Medical Center, New York City)

In 1957 the Westchester County Department of Health was requested by the Bureau of Chronic Diseases of the New York State Department of Health to undertake a survey of the rehabilitation potential of residents in nursing homes within the health district.

During a period of several months, 18 nursing homes were visited and 163 patients were evaluated. After a lapse of one year, a follow-up study of the same patients was conducted to gather clinical and statistical data which might reflect the problems encountered by such a selected domiciliary population living in nursing homes.

Recently, a similar project involving individuals in a county home was described by Moskowitz *et al.*[1] In their study the patients were under close medical supervision including their rehabilitation activities during a two-year period of observation as contrasted with a similar group of patients having the usual medical care rendered in nursing homes without any rehabilitation program.

Method

A preliminary visit was made to each nursing home by the coordinator of the survey, a supervising public health nurse with primary responsibility for the nursing home program. She alerted the proprietor of each home to the nature of the visit and requested that patients be made available for evaluation and discussion. The individuals in this study were predominantly recipients of public assistance. In some instances consent was obtained from private physicians for the use of their patients in the survey. The available medical data were abstracted and catalogued on survey forms which were developed by the New York State Health Department. The form incorporated a functional evaluation of the patient based on a physical profile (PULSES, see Fig. 1) which had been developed previously at Grasslands Hospital.[2] The same procedure was repeated approximately one year after the initial visit.

TABLE I.—AGE AND SEX DISTRIBUTION OF STUDY PATIENTS

Age Group (Years)	Male	Female	Total
Under 45	2	4	6
45 to 49	0	0	0
50 to 54	1	1	2
55 to 59	3	2	5
60 to 64	2	7	9
65 to 69	8	9	17
70 to 74	9	14	23
75 to 79	13	11	24
80 to 84	2	21	23
85 to 89	8	27	35
90 to 94	2	14	16
95 to 99	2	1	3
TOTAL	52	111	163

Table I gives a breakdown of the age and sex distribution of the 163 patients included in this study. It is noteworthy that 68 per cent of the individuals were women; only 13 or 8 per cent were under sixty years of age, and 62 per cent were over seventy-five. These figures reflect the high incidence of the aged in nursing facilities and parallel closely the findings in the county home study.[1]

TABLE II.—MARITAL STATUS OF PATIENTS AT TIME OF INITIAL EVALUATION

Status	Male	Female	Total
Single	22	36	58
Married	6	7	13
Divorced	4	0	4
Widowed	18	65	83
Separated	2	3	5
TOTAL	52	111	163

TABLE III.—SOURCES OF ADMISSION OF INITIAL STUDY GROUP

Source	Number of Patients
Own household	59
Hospitals	58
Other nursing homes	26
Room and board	14
Other	6
TOTAL	163

Table II illustrates the marital status of the group of which 36 per cent were never married, 51 per cent were widowed, and only 8 per cent were classified as still married.

Table III indicates the sources of admission of the patients into the nursing homes: 36 per cent were admitted directly from hospitals and an additional 16 per cent were transferred from other nursing facilities; 48 per cent came directly from their own homes or from other living facilities in the community.

It is significant to note that 64 per cent of the patients had lived in nursing homes for more than one year and 12 per cent had a residence of over five years.

Rehabilitation Potential

An analysis of the rehabilitation potential of the study group revealed that 17.2 per cent had some possibility for improvement in their functional capacity without transfer to a rehabilitation facility. In assessing the rehabilitation potential, it became quite apparent that the major anticipated improvement would be primarily in the activities of daily living and could be achieved within the nursing home.

While 82.8 per cent of the study group did not have any rehabilitation potential, it should be emphasized that they required supportive care. As demonstrated in previous studies,[1,3] many of these patients required a so-called maintenance program to prevent further physical and mental deterioration.

TABLE IV.—MOST FREQUENT PRIMARY DIAGNOSTIC CATEGORIES AMONG REMAINING 93 PATIENTS

Category		Frequency in Patients
Medical and neurologic		
Cardiovascular disease		47
Arteriosclerotic	27	
Hypertensive	20	
Cerebrovascular accident		32
With aphasia	8	
Cerebral arteriosclerosis		14
Diabetes mellitus		7
Diseases of spinal cord		7
Paralysis agitans		6
Peptic ulcer		4
Peripheral neuropathy		2
Cerebral palsy		2
Surgical and orthopedic		
Fractures		19
Osteoarthritis		17
Rheumatoid arthritis		8
Malignant conditions		5

During the year 70 patients were removed from the nursing homes. Of these, 58 had died, 10 were discharged to other facilities, and 2 were returned to their homes. The condition of the remaining 93 patients was evaluated at the end of the year, a comparison being made with their status at the beginning of the rehabilitation program.

Of these 93 patients 42 or 45 per cent were evaluated as being on the maintenance level while 43 were considered purely domiciliary. Eight patients or 9 per cent of the residual group required some form of physical restoration.

Table IV lists the major diagnostic categories among the patients remaining at the end of the one-year study. As anticipated, diseases of the vascular system predominated with 34 per cent classified as residuals of a cerebrovascular accident. Among the surgical conditions, fractures of the hip exceeded all others, occurring in 20 per cent of the group. Many of these patients as well as those with strokes had been transferred to nursing homes after primary hospitalization.

During the one-year period of observation 11 or 12 per cent of the remaining patients required an interval period of hospitalization with a total of 13 admissions for an average stay of fifty-six days. More than half of these hospital admissions were for fractures incurred in the nursing homes. Significantly, 4 individuals sustained hip fractures. This is in sharp contrast to the parallel study reported previously[1] where one hip fracture occurred among 73 residents during a two-year period despite the fact that they participated in an active rehabilitation program.

Condition of Patients

There were significant changes noted in the initial and follow-up physical profiles (PULSES) among the remaining 93 patients. A comparison of the various components of the profile is illustrated in Figure 1. As anticipated, there was a shift in the general physical condition to a lower level. Very little change was noted in the functional status of the upper extremities in marked contrast to the lower extremities which underwent the greatest deterioration. This substantiates the findings of the previously reported study in a comparable group of individuals. The incidence of incontinence increased by almost 50 per cent during this one-year period. This paralleled a deterioration in the mental status which is not entirely reflected in the graphs since the psychotic patients were transferred to mental hospitals and therefore did not appear statistically in the follow-up study.

During the one-year period there were 58 deaths comprising 36 per cent of the group. In the study previously mentioned 31 per cent of 115 patients died during a two-year period.

During the initial nursing home visit considerable time was devoted to a frank and informal discussion with members of the nursing staff including the nonprofessional personnel. Considerable stress was

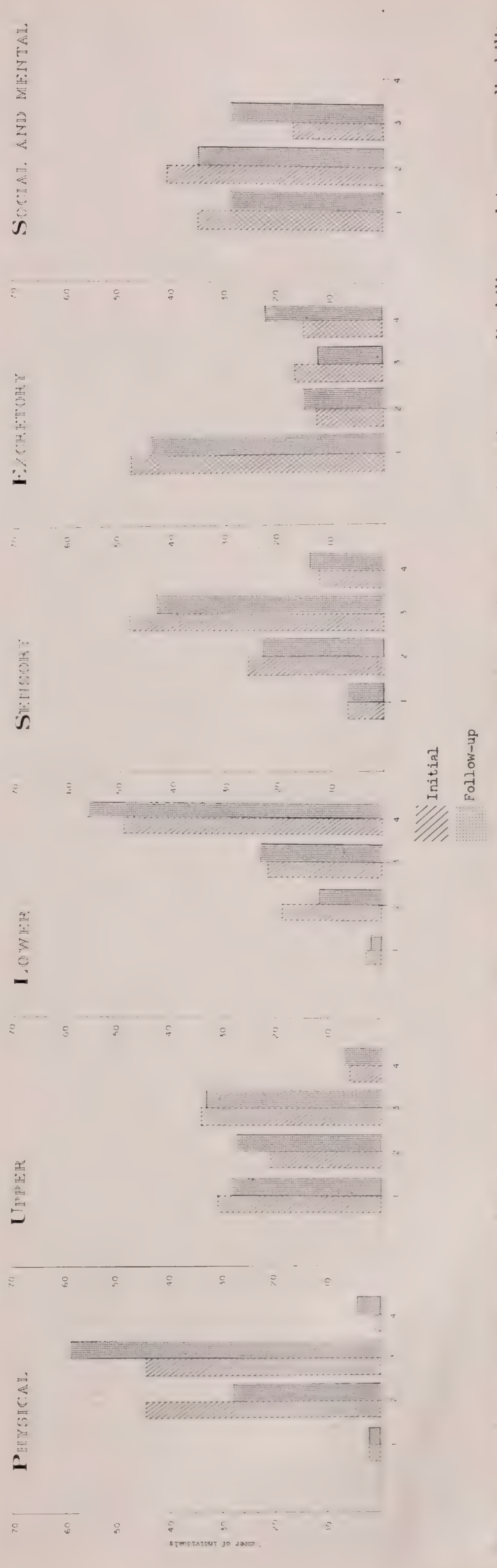

FIG. 1. Initial and follow-up profile ratings of remaining 93 patients: 1—normal, 2—mild disability, 3—moderately severe disability, and 4—severe disability.

placed on the broad concept of the nursing of the chronically ill and aged with particular emphasis on the prevention of deformities, bowel and bladder training, and performance of the various activities of daily living. It was implied that these procedures did not entail the use of specialized physical therapy equipment and personnel but should be considered a part of the over-all nursing care in the home.

Several instances were encountered where joint contractures and other disabling conditions such as decubital ulcers on weight-bearing surfaces prevented the patient from performing at a maximum functional level. From a purely selfish point of view, it was emphasized that such an incapacitated individual constituted an increased burden on the nursing staff and it would be to their advantage to prevent these disabilities from occurring or to recognize them and seek appropriate attention from the attending physician.

Some patients were transferred to nursing homes from hospitals for convalescence from an acute illness. These patients had been seriously ill and were under continuous bladder drainage with a catheter which was usually removed just prior to their transfer to the nursing facility. Unless a definite early effort was made to apply the simple technics of bladder training to these patients they developed "incontinence by habitation," remaining partially or completely incontinent.

There appeared to be some confusion and lack of comprehension as to the problems of the aphasic patient. It was difficult for some nursing personnel to understand how to establish the necessary rapport with such a person and in some cases the impression prevailed that these patients were mentally incompetent and therefore could not be trained to perform their own daily living needs.

While many of the individuals received adequate care and simple rehabilitation activities during the day, there was little carry-over into the evening and night shifts within the nursing homes, so that an ongoing effective program could not be maintained. Particular stress was placed on the need for communication between the various working shifts to establish this continuity of care.

Extensive contractures and deformities due to malposition either in bed or in a wheelchair developed in the lower extremities of several residents and prevented them from being ambulatory and self-sufficient. These superimposed disabilities would lead to bowel and bladder incontinence resulting from the inability to carry out the simple activities of daily living. Others developed adduction and internal rotation contractures of the shoulders as a result of prolonged sitting with their hands at their sides. The women particularly had difficulty in combing their hair. It became quite apparent that the short hairdo among women was a matter of necessity rather than of style.

A rather mild intercurrent illness or minor injury could initiate a decline in the condition of the patient who was permitted unnecessarily to remain in bed or in a wheelchair for a prolonged period of time without any attempt at reactivation. Some individuals were transferred from hospitals to the nursing homes without any communication or understanding of the need for continued mobilization of the patient following his discharge from the hospital. This was particularly true following a hip fracture or a cerebrovascular accident. Although these patients received excellent medical care in the hospital, they were discharged before any appreciable physical restoration program was initiated. It should be the responsibility of the attending physician and the nursing home personnel to activate these patients rather than to maintain them at the level at which they were admitted to the home.

Comment

It should be evident that all of the foregoing activities fall within the scope of good

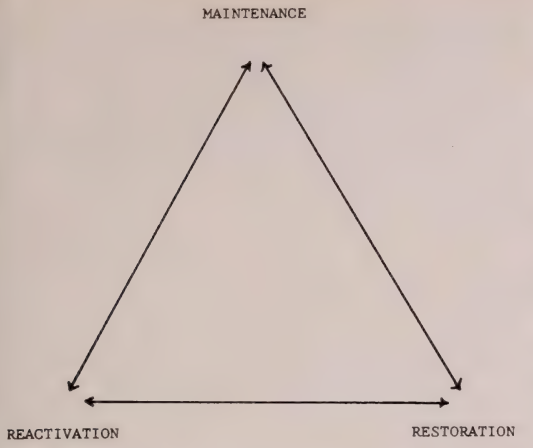

FIG. 2. Schematic representation of the concept of dynamic custodial care.

nursing care. This eliminates the need for specialized technical services with their increased cost to the family or to the community. Costly and complex equipment is unnecessary to assist in performing these simple procedures, and such improvised devices as footboards, pulleys, rolled blankets, bed cradles, and an inexpensive walkerette can be valuable aids providing the nursing staff is familiar with the indications for their use. The attending physician is often so concerned with the medical care of his patient that he forgets to leave a few simple orders for activation. It should be the responsibility of the professional staff in the nursing home to ask the physician for these instructions rather than to be content solely with orders for medication.

It became apparent that the major rehabilitation objective in such a group of patients was an improvement in the activities of daily living without the need for an organized physical therapy program. As demonstrated in previous studies many patients require a so-called maintenance program to prevent physical and mental deterioration. Relatively minor disabilities are sufficient to downgrade these patients, so that the nursing personnel must be alerted to such changes to maintain these individuals at their maximum level. Unfortunately, this aspect of rehabilitation cannot be evaluated statistically. However, its effect becomes quite apparent when one sees the end result of failure to carry out this phase of a rehabilitation program.

One can illustrate this concept of dynamic custodial care with a triangle as in Figure 2. Each angle represents one phase of rehabilitation, with the patient progressing or regressing in either direction. One would refer to the rehabilitation of a patient with a hip fracture or hemiplegia as restoration, the mobilization of an elderly person following pneumonia or congestive failure as reactivation, and the continuing of activity to keep him functioning at his maximum level as maintenance. Obviously, there are constant transitions from one phase to another.

Summary

1. A statistical and clinical analysis of 163 aged, infirm residents observed during a one-year period in 18 nursing homes is presented. The major rehabilitation needs of these patients were primarily to maintain or improve their activities of daily living.

2. These needs could be met largely by simple nursing procedures. A comprehensive educational program directed not only at the professional but also at the attendant and nurses' aide level is vital to pinpoint this concept of "dynamic custodial care" without the use of other paramedical services which would make the program appear complex, expensive, and therefore less desirable.

3. The function and guidance of a county health department in developing such an educational program in nursing homes has been discussed.

4. A comparison of the accident rate in this static group of patients with another similar group participating in a rehabilitation program indicated conclusively that intensive mobilization and activation under proper supervision reduced rather than increased the incidence of hip fractures.

5. The system of disability classification described as a physical profile (PULSES) served as an effective method for the func-

tional classification of the various disabilities encountered in this study.

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Panel Discussion

ALLERGY OF INFANCY AND CHILDHOOD

Moderator

VICTOR L. COHEN, M.D., BUFFALO, *Attending Physician, Children's Hospital; Assistant Clinical Professor of Pediatrics, University of Buffalo School of Medicine*

Panelists

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DOUGLAS E. JOHNSTONE, M.D., ROCHESTER, *Director, Pediatric Allergy Clinic, Strong Memorial Hospital; Senior Clinical Instructor in Pediatrics and Assistant Professor in Radiation Biology, University of Rochester School of Medicine and Dentistry*

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Introduction

VICTOR L. COHEN, M.D.: Four very important topics have been chosen for discussion by this panel. The first topic to be presented will be the "infection" problem, an intruder into the field of allergy which has troubled us all. This problem will be discussed by Samuel J. Prigal, M.D.

The second topic is the pollenosis problem to be presented by Douglas E. Johnstone, M.D., who offers a practical method in the solution of this and many similar problems.

The third and fourth topics to be discussed will be the inhalant problem which will be covered by David Merksamer, M.D., and the pros and cons of early treatment which will be covered by Paul F. de Gara, M.D.

I will now ask Dr. Prigal to begin the discussion.

The Role of Infection

SAMUEL J. PRIGAL, M.D.: The allergist and those interested in allergic disease must shed the limited concept of single causes for the diseases they encounter. Although I am convinced that infection plays a very major role in allergic diseases, it is not usually an exclusive one. There is often an interplay of allergy, infection, and the psyche.[1]

Bearing this in mind, I will concentrate

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on the role of infection since this is my assigned task. I will cover the various roles that infection plays in producing allergic diseases, the nature of the infecting organisms encountered, the contagious aspect of infection in relationship to allergic diseases, the diagnosis of infection, and the therapy indicated.

The Roles of Infection.—It has long been recognized that in allergic diseases of the adult infection plays a major, if not an exclusive, role. In infants and children, on the other hand, the role of infection has been unduly minimized. Although it is true that allergy to foods and inhalants are of greater etiologic significance in the young, infection also plays an important role which needs to be appreciated.

Infection may play one or more of the following roles in allergic disease:

1. It may produce sensitivity to its own products resulting in true bacterial allergy. This, however, is encountered relatively infrequently in allergic practice although it is frequently suspected. It can be demonstrated only by the deliberate induction of symptoms by injection of bacterial antigens since skin testing with bacterial antigens is unreliable.

2. Infection may so alter the allergic state that subclinical allergy becomes clinical.

3. Infection, in a susceptible individual, may enhance the development of allergy to new allergens.

4. Infection may possibly produce "allergic" symptoms by the direct action of potent pharmacologic agents produced by the infective agent. Although this has not been demonstrated clinically, there is some evidence to suggest that at least in the case of the hemolytic staphylococcus this may be true. This organism yields, on extraction, a substance capable of anaphylactoid reaction on contact with guinea pig ileum causing it to contract.[2]

The Nature of the Infecting Organisms.—Almost any type of respiratory infection can initiate asthma. The infection may be either viral or bacterial. Asthma frequently follows pertussis, pneumonia, bronchitis, bronchiolitis, influenza, and so forth. The nonspecific character of the infection acting as the precipitating factor indicates that it is rather the stress of infection which is important and not a specific bacterial or viral organism or its allergens. Although acute infections are important in initiating and producing allergic diseases, particularly of the respiratory tract, it should be emphasized that the common cold and low-grade sinorespiratory infections are more important in maintaining or reproducing asthma.

Based on my observations of patients, the hemolytic staphylococcus (coagulase positive), occasionally in association with a streptococcus, is the most prominent bacterial agent associated with allergic disease.[3] The hemolytic staphylococcus is not only implicated often in respiratory allergy, it may also be implicated in allergic diseases of the skin. It is not possible to be absolutely certain of the role of the hemolytic staphylococcus since it is so ubiquitous and is found so often in the absence of overt disease.

Infection and Contagion.—It must be conceded that with every infection there is a variable degree of contagion. There is evidence that, at least in the case of the hemolytic staphylococcus, there may be a contagious aspect of infectious asthma.[3] Phage typing of staphylococci cultured from members of families in which one or more of the members suffer from infectious (or mixed type) asthma supports this. Some families become "colonized" by staphylococci which may persist for long periods of time, producing a variety of infections in several members of the family.[4] It is the allergic member, however, who develops asthma. In these families it is not uncommon for two or more members to suffer from asthma.

Reinfection in patients may take place not only from contact with carriers in the family but also from chronic low-grade infections commonly ignored in the patient, particularly of the eye, skin, or ear. Phage typing of staphylococci isolated from these sources are frequently identical with those isolated from the nose, throat, or sputum of the patient.

Diagnosis of Infection.—As a rule it is not difficult to implicate infection in a patient with asthma. The history is often revealing. Asthma may have followed an acute respiratory infection. Often there is a preceding history of frequent colds or of bronchitis. (The cold must be differentiated, however, from allergic rhinitis.) The attacks occur more often in winter time and symptoms may be aggravated by inclement weather, particularly when fog or smog is prevalent.

The physical examination may show such overt evidence of infection as fever (a high fever may, however, abort asthma), inflamed membranes, purulent nasal or pharyngeal secretions, enlarged and diseased tonsils, and palpable cervical nodes. The latter are frequently overlooked and yet are diagnostically important since they may indicate a low-grade infection on which an acute episode has been superimposed.

In addition, supportive evidence of infection may be obtained from the blood count and sedimentation rate. These need not be elevated in chronic infections. Cultures from the nose, throat, and sputum are important since they may indicate the type of antibiotic to be employed in therapy and may serve as a source for an autogenous vaccine. The nasal smear may also help to differentiate infection from allergy, or indicate the presence of both.

X-ray examination of the chest in children with asthma should be a routine procedure. Even though the x-ray films are frequently unrevealing, occasionally an undiagnosed infection is uncovered. In the older child a roentgenogram of the sinuses may at times reveal a hidden focus of infection.

Therapy.—Turning now to the problem of therapy, we must recognize that there is a difference in methods of treatment and results achieved in acute and chronic infections. In acute infections broad-acting antibiotics given for a short period of time are highly effective and no bacteriologic studies or inhibition testing may be necessary. With chronic infections, however, cultures and inhibition testing are indicated and the antibiotics are preferably administered as aerosols.[5]

Both acute and chronic infections may exist simultaneously in the same patient. Thus, although adequate antibiotic therapy may control a specific acute infectious episode, the basic problem of the chronic low-grade infection may remain. This frequently involves the hemolytic staphylococcus in which case the development of bacterial resistance may be encountered.

There comes a time, when dealing with a persistent staphylococcic infection, when it becomes impossible to rely on antibiotics alone. It is, therefore, important to correct the underlying allergic state by specific immunologic therapy since this in itself may make the patient less vulnerable to infection. Furthermore, it is necessary, as previously mentioned, to eradicate infection in other sites in the individual and to eliminate or neutralize carriers within the household, although this is not readily achieved. In severe asthma it may be worthwhile to provide suitable chemotherapeutic agents or antibiotics prophylactically throughout the winter, or to initiate antibiotic therapy during the early (viral) phase of the common cold in order to prevent the secondary bacteriologic infection which is the primary cause of the severe allergic state. Additional prophylactic measures include the use of available vaccines against influenza (the newer ones against ~~the common cold are as yet untried~~) and the use of bacterial vaccines, both autogenous and stock.

Although the role of the psyche in its relation to infection is not yet completely established, there is sufficient evidence to indicate on both clinical and experimental grounds that severe disturbance of the psyche may enhance infection as does the underlying allergic state itself. It therefore behooves us again to emphasize the fact that although infection plays such a major role in allergic disease and is probably responsible for the most severe types of allergy, one must not neglect the interplay of allergy, infection, and the psyche.

55 PARK AVENUE, NEW YORK 16

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Comparative Value of Hyposensitization and Symptomatic Therapy in Pollenosis in Children

DOUGLAS E. JOHNSTONE, M.D.: Any physician who assumes responsibility for supervising the medical care of children will, of necessity, see some degree of pollen "hay fever" due to tree, grass, or ragweed pollen in approximately 10 per cent of these patients under fifteen years of age. Some of these children will have such mild symptoms that no therapy of any kind seems indicated. Some will be moderately discomforted by their nose, eye, and throat symptoms so that the physician must prescribe at least some type of symptomatic medication. Some will later contract pollen asthma and subsequently perennial asthma or perhaps perennial allergic rhinitis.

There has long been marked disagreement among the parents of patients and their physicians as to whether such mild symptoms warrant the discomfort and expense of skin testing and hyposensitization injection therapy. Part of the argument stems from the experience of parents or friends of the patient "who took the shots and were not helped at all!" Many physicians agree with this argument. Consequently, a relatively small percentage of such children receive an allergy study or hyposensitization therapy.

The purpose of this study was to pose the hypothetic thesis that hyposensitization therapy is of no value and then to attempt, by means of a controlled study, either to support this thesis or to find evidence to gainsay it.

METHODS.—A plan of the experiment was discussed with a statistician before the study began in order to work out random patient selection procedures and minimize prejudice in evaluating the data. The experimental population was drawn entirely from the pediatric allergy clinic of the Strong Memorial Hospital. The only pollen season studied was the ragweed pollen season. The only pollen extract to be used for hyposensitization therapy was short ragweed.

As each new patient was referred from the general pediatric clinic his allergy history was reviewed, after which routine scratch and intradermal testing with pollens, molds, epidermoids, and foods were performed. The patient's mother was told to which allergens her child reacted and was instructed in the avoidance of these things and in the use of such symptomatic medications as antihistamines, cough mixtures, nose drops and sprays, aminophyllin suppositories, and in some cases steroids. She was asked also to keep a diary-like record of the severity of symptoms, the amounts of medication required, and an over-all subjective evaluation of how well her child did during each ragweed season. In addition, she was asked to report episodes of coughing and to bring her child to the clinic or emergency room if she suspected he had any asthmatic wheezing.

It was decided arbitrarily that each child would be re-evaluated carefully during the

TABLE I.—Relative Air Ragweed Counts During Pollen Season

	Days Pollen Count Exceeded (Granules Per Cubic Yard of Air)		
Year	100	200	300
1955	27	14	12
1956	12	1	6

TABLE II.—Degree of Relief of Hay Fever Symptoms After Treatment

	Group			
	Treated		Control	
Results	Number	Per Cent	Number	Per Cent
Same	30	55	29	50
Worse	2	3	14	25
Better	23	42	14	25
Total	55		57	

TABLE III.—Influence of Hyposensitization on Children With Pollen Asthma Before Treatment

	Group			
	Treated		Control	
Results	Number	Per Cent	Number	Per Cent
Lost asthma on treatment	24	65	5	14
Asthma persisted despite treatment	13	35	30	86
Total	37		35	

TABLE IV.—Influence of Hyposensitization on Children With Pollenosis Without Asthma

	Group			
	Treated		Control	
Results	Number	Per Cent	Number	Per Cent
Did not develop asthma after treatment	18	100	11	50
Developed pollen asthma despite treatment	0	0	11	50
Total	18		22	

1956 ragweed season in an effort to compare the relative effectiveness of therapy. As it turned out, there was relatively little ragweed pollen in the air in the Rochester area in 1956 (Table I). However, it was felt that if this fact tended to minimize symptoms in treated groups, it also meant that any increase in symptoms in the control group would be all the more significant.

At the completion of his allergic study each child was placed in one of two treatment groups on the basis of flipping a coin.

Treated Group.—Treatment of the treated group was begun with a relatively small dose of ragweed pollen, averaging 0.10 ml. of a 1:50,000 dilution of ragweed pollen in Coca's solution. This is equivalent to 2 Noon pollen units of ragweed extract. This dose was gradually increased at weekly intervals until an average dose of 0.50 ml. of between a 1:200 to 1:500 (1,250 to 2,500 Noon pollen units) dilution of ragweed pollen was reached. If a child showed signs of constitutional reaction or had a large local wheal, the dose was reduced arbitrarily by 0.15 ml. and this dose then was kept constant and given every twenty-eight days. During the ragweed season the same dose usually was given weekly.

Control Group.—The control group received weekly injections of buffered saline labeled "pollen mixture-E.F., 1/20,000." A dosage schedule was set up similar to that of the treated group. The true identity of this mixture was known only to me. Adequate follow-up information has been obtained for 112 of the 170 children who were placed initially in one of the two groups. The data on those children form the basis of this discussion.

Results.—Table II summarizes the subjective evaluation by the patients' mothers of the relative severity of the hay fever symptoms in comparison with pretreatment pollen seasons. These data were not subjected to statistical analysis because of their subjective nature.

Tables III and IV summarize the influence of treatment on the prevention or amelioration of pollen asthma. From Table III it may be noted that nearly five times as many patients in the treated group lost their original pollen asthma as compared with the control group. Table IV shows that whereas no new incidence of pollen asthma occurred in the treated group, 50 per cent of the control group developed pollen asthma during the study. Statistical analysis of these data shows that the chance of these results being merely coincidental rather than resulting from the difference in type of treatment in the two groups is less than one in a thousand.

Comment.—The two arguments most commonly used against hyposensitization treatment for mild hay fever in children are, first, that many children as well as adults apparently are not improved by this discomforting injection method, and second, that a large proportion of victims of hay fever have such mild symptoms that allergic study and subsequent hyposensitization injection therapy are not justified practically. The first of these two arguments is substantiated partially by the data in Table II which show that about 50 per cent of the patients of both the treated group and the control group reported that their symptoms were about the same as those in the year preceding the study. These data are highly subjective and so cannot be exposed to critical statistical analysis. As compared with the symptoms of the patients in the treated group it was of interest that about seven times as many of the control group reported their symptoms were "worse," and only about half as many controls said they were better.

However, the data of Tables III and IV offer strong arguments in favor of hyposensitization therapy regardless of the degree of improvement in the hay fever symptoms of nasal discharge, sneezing, and eye signs. Of those children who had pollen asthma as well as pollenosis at the beginning of the study, the percentage of those who lost their asthma on treatment was 4.6 times greater in the treated group than in the control group. The most impressive finding, however, was the data of Table IV. Whereas 50 per cent of the control group developed pollen asthma within four years of the onset of the study, not a single child in the treated group did so. This is the best argument in favor of recommending hyposensitization therapy for children with even mild hay fever, since one cannot predict in advance which child will contract pollen asthma later. The data of Table IV take on even more importance in view of the fact that of all children who developed perennial bronchial asthma between the ages of two and ten years, 88 per cent developed pollenosis before they developed perennial asthma.

It is possible that the children in the treated group would have fared even better if we had included other pollens and mold extracts in our treatment. However, these were omitted deliberately in an effort to simplify the experimental conditions.

In any evaluation of our study it must be kept in mind that the treatment of pollenosis or pollen asthma may depend on the locality. Levin* pointed out that children in areas where the pollen concentration is much higher may require significantly different dose schedules to obtain relief.

One might also ponder the psychologic effect of the injection itself since 14 per cent of the control group lost their asthma. The mothers of these children stated that they felt quite sure that such improvement was "thanks to these injections!"

Our biggest problem in evaluating the data was the subjective bias on the part of some mothers of clinic patients. They appeared to color their information about their child's progress either to make things appear better than they were (in order to "please" the clinic doctor) or to give the impression deliberately that their child was doing worse than he actually was (in order to give vent to some sense of disapproval of the doctor or of the whole clinic routine in general).

It should also be noted that the relatively high incidence of pollen asthma in each of the groups studied certainly exceeds that likely to be found in the general pediatric population. This stems from the fact that only those children in our clinic population who failed to respond to symptomatic therapy or those who seemed particularly ill found their way to our specialized clinic.

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* Levin, S. J.: Optimum dose of pollen in treatment of pollinosis of children, J. Pediat. **41**: 294 (Sept.) 1952.

SUMMARY.—In a controlled study of the effect of hyposensitization on ragweed sensitivity, adequate follow-up was obtained on 112 of 170 children four years after the onset of the study. Of 37 children in the treated group who had pollen asthma as well as pollenosis before the study, 65 per cent lost their asthma at the end of the study compared with only 14 per cent of 35 in the control group. None of the 18 children with pollenosis (but no asthma) before the study developed pollen asthma during the period of the study, compared with 50 per cent of 22 such children in the control group.

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The Inhalant Problem

DAVID MERKSAMER, M.D.: In the causation of allergic diseases of the respiratory system a major part is played by antigens inhaled as dust suspended in the air. Practically all of these dusts are typical protein antigens from animal or plant sources. The possibility of solid material being suspended in the air depends on the particles being of small size and of relatively low density, on the velocity and turbulence of the air currents, and on the humidity of the air. In general, particles of more than 30 microns in radius are removed from the inhaled air by the nasal turbinates or settle in the trachea. Particles of from 10 to 30 microns in radius, the size of most allergenic pollens and mold spores, are largely deposited in the bronchi, while particles of from 3 to 10 microns in radius reach the alveolar ducts. Those of from 1 to 3 microns in radius reach the alveoli, but a large percentage of those of $^1/_2$ micron or smaller are exhaled.

ANIMAL DANDERS.—All fur-bearing animals shed epithelial scales which are of suitable particle size to act as inhaled allergens; therefore any animal to which the child is exposed particularly inside a building, home, or barn must be considered a potential cause of allergic symptoms. Since the dander becomes incorporated in the house or barn dust, direct contact with the animals is not essential for the occurrence of symptoms. In houses infested with rats or mice, the dander of these rodents may cause allergy.

The material inhaled consists of microscopic epithelial scales and not of the visible hair. Since both are shed together, however, the presence of dog or cat hairs on carpets, upholstered furniture, or clothing is presumptive evidence of epithelial dust.

FEATHERS.—Allergy to feathers is extremely common because of the widespread use of feathers and down in pillows, quilts, and upholstered furniture. Goose down is used in the highest grade of these products, but chicken, duck, and goose feathers are used interchangeably in low-grade products. With age the feathers become more brittle and increasing amounts of dust sift through the fabric covers.

FABRICS.—The protein fibers, wool and silk, are potential allergens but play a relatively small part in respiratory allergy. Ordinary woolen fabrics rarely are a cause of respiratory allergy. Rough woolen fabrics such as blankets and sweaters are more apt to cause trouble by harboring house dust than by their own antigenicity.

VEGETABLE SEEDS.—A number of vegetable seeds contain proteins which may act as potent antigens. Among these are cottonseed, kapok seed, and flaxseed. While allergy to these is not very common, the degree of sensitization is apt to be appreciable. Cottonseed may be present in cheap cotton mattresses and upholstery in traces sufficient to cause allergic symptoms, but it is rarely found in the better grade of these products. Since kapok seed is almost invariably present in kapok pillows and mattresses their use should be avoided in the environment of a child allergic to this antigen. Flaxseed is used in toilet preparations and poultices. Mustard seed, while used chiefly as a food, may act as an inhalant when used in mustard plasters.

The dried blossoms of Pyrethrum, a plant botanically related to ragweed, are frequently used in insecticides both in the form of a dry powder and in the form of sprays and aerosols. Since it is quick but transitory in its action, it is often combined with DDT and other slow-acting, persistent insecticides. Pyrethrum is nontoxic but is moderately allergenic and does act as an inhalant in the causation of respiratory allergy.

Orris.—Formerly a common ingredient of face powder and of other cosmetics, orris is used less often in recent years because of its activity as an antigen. It is still included in some brands of cosmetics, particularly those that are imported from France. The use of such preparations by the mother may be a cause of allergic symptoms in her children.

Tobacco.—Another potential allergen, present in most homes but of relatively little importance in pediatric practice, is tobacco. There is no conclusive evidence that tobacco smoke contains significant amounts of the allergen although it obviously acts as a nonspecific irritant in many children with respiratory allergy.

House Dust.—One of the most important factors in respiratory allergy is the antigenic mixture which can best be described as house dust. A large proportion of children with respiratory allergies have exacerbation of symptoms when dust is raised indoors by sweeping or similar activity. Evidence that the exacerbation results from a specific allergy rather than from mechanical irritation is furnished by a positive reaction to skin tests in which extracts of house dust are used. This dust is largely derived from partially disintegrated fibers of fabric, feathers, and other organic materials in the furnishings which are contaminated with the hair and dander of household pets and with a wide variety of mold spores and bacteria. Chemical studies have failed to explain satisfactorily the source or nature of the distinctive antigen or antigens in the dust extract, but the empiric use of extracts of house dusts as allergens in the diagnosis and treatment of respiratory allergies has proved to be of great practical value.

Molds and Fungi.—Among the most important causes of respiratory allergy in children are mold spores. They are present in the outdoor air during the warm months of the year in numbers comparable to, or occasionally even greater than, the number of pollen grains and are present in the air indoors throughout the year. Mold spores are abundant in the upper layers of the soil, dead leaves, and other vegetation, and are also found in hay stacks, barns, and stables. Because of their light weight and minute size, these spores are readily wind-borne and widely disseminated and under proper weather conditions germinate to form new colonies of fungi or molds. When they are present in the atmosphere in significant quantities they may produce allergic symptoms similar to those caused by pollen. In this region the atmospheric mold-spore season begins at about mid-June and continues until about the end of October or mid-November. During this period the spores that are found in the largest quantities in the atmosphere are those of Alternaria and Hormodendrum and the greatest number of these particular spores are usually present in July, August, September, and October. Mold allergy is most frequently seen in children. In the majority of cases the symptoms begin early in life, usually in the first or second decade. Seventy-eight per cent of the patients seen by us were under ten years of age. Seventeen per cent were between eleven and twenty years of age.

The respiratory tract is involved in the symptomatology in practically all cases. Bronchial asthma is most frequently the predominating symptom, occurring either alone or in association with rhinitis. However, rhinitis is often seen without asthma.

Sixty-two per cent of the patients seen by us had asthmatic symptoms. This is a higher incidence of asthma than is usually found in patients with pollenosis. The asthmatic symptoms are usually ushered in by a dry, nonproductive cough which is worse at night and which is followed by the characteristic episodes of dyspnea and wheezing. As a rule, ophthalmic symptoms are not present. In pollenosis, nose and eye symptoms rather than asthma are the most common manifestations.

Most mold-sensitive patients are also sensitive to pollens usually to ragweed. Only 29 per cent of our patients were sensitive to molds alone.

The diagnosis of mold sensitivity can be made from the history in a large percentage of cases. However, a detailed history with particular attention to the age of the patient at the onset of symptoms, the type of symptoms, and the time of the year at which symptoms occur, is most essential. Summer rhinitis or asthma in a child who does not react by skin test to pollen or whose symptoms are not chronologically in accord with the positive pollen reaction is suggestive of mold sensitivity. Frequently mold symptoms begin between the grass and ragweed pollenating seasons and continue long after ragweed pollenation has ceased. These children often have a history of symptoms which last until frost.

Skin tests with mold extracts, performed by the intercutaneous technic preferably, elicit immediate whealing reactions which are important in the diagnosis of mold allergy. However, the most important aids in the clinical and differential diagnosis in mold-sensitive cases are the daily mold spore and pollen counts with which symptoms may be correlated.

Hyposensitization therapy with mold extracts consists of subcutaneous injections administered once or twice weekly prior to the season. The schedule depends on the time when the child is first seen and on the expected date of symptoms. The size of the initial dose is based on the degree of skin sensitivity of the patient as determined by tests with serial dilutions of the mold extract. The usual starting dose is from 0.1 to 0.3 cc. of a 1:100,000 or a 1:10,000 mold extract dilution. Doses are increased by approximately 50 to 100 per cent increments in the weaker concentrations and by smaller increments with the more concentrated dilutions. The usual maximum dose is from 0.1 to 0.5 cc. of a 1:100 mold extract dilution. However, there are many children who, because of their extreme sensitivity, cannot tolerate such a dosage schedule. In these cases smaller initial doses and smaller increments are advisable. During the season the dosage should always be reduced. After a course of preseasonal therapy which has been well tolerated and has proved effective, perennial treatment may be instituted.

Rigid precautions should be taken with mold extract therapy. Constitutional reactions occur frequently because as a group these children have a lower tolerance for mold dosage than for pollen dosage. The symptoms of the constitutional reactions are generally limited to the nasal and bronchial mucous membranes. This is in contrast to the constitutional reactions occurring in pollen therapy which are unusual in children and are characterized by urticaria as an initial and predominating symptom.

Among wind-borne allergens, mold spores are second in importance only to pollen. All children with hay fever should be tested routinely with mold extracts in addition to pollen extracts and careful histories should be taken as to the exact dates of symptoms. The existence of mold sensitivity is a highly important factor in treatment since failure to take this factor into account is often responsible for poor clinical results with pollen therapy.

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Dr. Cohen: Thank you, Dr. Merksamer. This is a very timely matter. I believe that all our allergens should be reviewed at intervals because we find that there are new uses for old allergens and that some of the old allergens have ceased to be important. A paper such as this should be presented periodically in order that we may be kept abreast of the current knowledge in regard to the changes that take place in the relative importance of the various allergens in our environment.

The Pros and Cons of Early Treatment

Paul F. deGara, M.D.: The problem of allergy treatment in general, and the early treatment of allergy in infancy and childhood in particular, depends on the question: Does a youngster "outgrow" his allergies, or will his condition deteriorate unless appropriate therapy is administered as soon as possible?

Textbooks on pediatric allergy,[1-4] as well as pediatric allergists including myself, are in general agreement in recommending early treatment. They all warn against unwarranted hopes that patients will "outgrow" their diseases. Chobot[4] states, "The worst advice that can be given is that the child will outgrow his asthma. More damage has been done by this advice than is generally recognized." Clein,[5] a leading West Coast pediatric allergist says, "Early recognition and proper management of allergic disease in infants and children may modify or prevent major allergic disease in later life. Allergic cripples usually result from neglected allergic problems."

To evaluate the magnitude of the problem the incidence of allergic conditions in infants and children must be taken into consideration. According to recent figures,[6] 5 million children in the United States, or 10 per cent of our young people, have allergies that are in need of treatment. In Glaser's experience,[2] multiple allergies appear to be the rule. In the most recent survey Rapaport, Appel, and Szanton[7] report even higher figures. These authors surveyed 1,095 families which included 2,169 individuals under fourteen years of age. In this age group the incidence of major allergies was as high as 19.54 per cent. It was also found that 80 per cent of the allergic syndromes in this survey started before the age of fourteen years. One should always remember—and I was glad to hear Dr. Prigal remind us of it a short while ago—that there is an interplay usually of allergy, infection, and the psyche.

The exact mechanism of allergic sensitization is not yet fully understood. It is, however, generally assumed that heredity plays an essential role in providing the necessary background for an individual to develop allergic manifestations following exposure to allergenic substances.[8] There are possibly "vulnerable times" in our lives[9] during which we should be protected from undue exposure to highly antigenic substances; infancy repeatedly has been mentioned in this connection. This could be due to "immunologic immaturity"[10] or to changes in the endocrine balance.[11] At any rate, there is no doubt that a definite relationship exists between eczema in infancy and respiratory allergies in older children; a relationship that was labeled by Ratner, Collins-Williams, and Untracht[12] as the "allergic dermal-respiratory syndrome." In reviewing both the literature on this subject and my own experience in private practice as well as in the Pediatric Allergy Clinic of the New York Hospital,[13] at least 50 per cent of those infants with atopic dermatitis later develop upper respiratory allergies or asthma. Glaser's figures[2] go as high as 80 per cent.

Another interesting consideration concerns the reported damaging effect of active allergy on the growth of children and the restoration of proper growth and development following correct and adequate allergic management.[14,15]

In view of these considerations I would suggest the following criteria for early treatment: *essential*—symptoms, history, and physical examination; *corroborative*—laboratory studies, skin tests, and clinical tests. The definite importance of skin tests as corroborative evidence should be emphasized, but their value should not be unduly overestimated.

Prophylactic measures have been recommended for many years for the treatment of allergic diseases. Peshkin[16] was probably one of the first to advocate this idea. These measures may be defined as either passive (avoidance) or active (hyposensitization or replacement). In the management of inhalant allergies, avoidance will often be equivalent to cure, but with definite symptoms caused by seasonal air-borne pollens, molds, or dust, hyposensitization will be essential. Rackemann and Edwards[17] reported an interesting follow-up study after an interval of twenty years on 449 asthmatic children. Of these, 30.7 per cent were cured, 19.3 per cent had no symptoms when avoiding the known allergenic offenders, and 21.4 per cent had no asthma but had other allergic symptoms. A total of 71.4 per cent were thus freed from asthma by prompt and proper treatment. Of the remaining individuals, 24 per cent continued to have mild or moderately severe asthma, 2 per cent had severe asthma, and 2.4 per cent died. In the opinion of these authors, asthma is not outgrown at a certain age and the promptness with which the specific allergenic substances can be found and removed will determine the age of "cure." Similar experiences on smaller groups of children were reported by Jennes[18] of this country, and by Ryssing[19] of Denmark. They are in agreement with our own observations.[20]

The treatment of food allergies and of other allergic conditions again should start with avoidance of all the items which are not essential. Those foods of vital importance must be adequately replaced. In infancy, milk is probably the most important single factor to be considered. Since it has long been known that breast-fed children will escape eczema seven times more frequently than infants given formulas containing cow's milk,[10] this appoach should continue to be recommended strongly.[21] It is unfortunate that for many years this most natural procedure was not as popular with mothers or doctors as it should have been.

Replacement of mammalian milk by nutritionally adequate preparations derived from soy beans has given excellent results, according to Glaser and Johnstone.[22] Judging from personal experience in numerous cases, I have no doubt that this is a most valuable tool in treating atopic eczema caused by sensitivity to cow's milk. They have suggested that every "potentially allergic newborn child," that is, "a child of parents, one or both of whom are allergic or who have had a previous child with allergies," should, shortly after birth, be placed routinely on a soy bean preparation instead of milk. I believe that a definite decision on this question has not yet been reached. In the course of another twenty years more work and follow-up studies such as the report by Rackemann and Edwards[17] may eventually give us the final clue.

Finally, if an eczematous infant reacts to inhalant allergens only by skin tests, I believe that prophylactic measures should be instituted at once. These include the avoidance of contact with the offending agents by placing the child in a low allergic environment where exposure to dust, animal hair, and so forth can be kept at a minimum. However, I would hesitate to recommend active measures, such as hyposensitization to pollens, on the strength of a positive skin test only and in the absence of a history and of clinical symptoms.

SUMMARY.—In summary, the pros of early treatment of allergy of infancy and childhood can be stated briefly as follows: improved physical and mental status, beneficial effect on growth and development, reduced risks of complications, and enhanced chances of cure.

As can be seen there are really only two contraindications for early treatment which require attention. These are possible psychic effects—caused by injections in needleshy youngsters—and economic considerations. The psychic effects caused by injections may be minimized in most instances by skillful handling of the child but there are, no doubt, occasional patients for whom injections are inadvisable. Economic considerations may sometimes be an important factor but as a rule early treatment prevents the development of the crippling conditions which are so expensive to the patient's family and to the community. Every posible effort should be made, therefore, to treat young patients as early as possible.

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Question and Answer Period

Dr. Cohen: At this time we will have the question and answer period.

The first question has been directed to Dr. Johnstone. Would you treat a patient of one to two years of age for ragweed hay fever?

I will ask Dr. Johnstone to reply and if there is any divergent opinion among the panelists I would like to call on them to discuss this problem also.

Dr. Johnstone: I think that if I had the opportunity to treat them I would. I would advise the treatment of ragweed hay fever, but it is really the same question as to whether or not you should treat mild hay fever. I think most people are optimistic in believing that their children are going to get better or that they are not going to contract asthma at a later date. We advise them to have their children treated as soon as possible but not all parents take our advice.

Dr. Cohen: Has the panel any other opinions?

Dr. Merksamer: Well, I don't think a child can have hay fever until the second year of his life. He must go through one year or one season of exposure before he can become clinically sensitive.

Dr. Cohen: For the sake of the question let's assume he has hay fever at this age.

Dr. Merksamer: I would treat him.

Dr. Cohen: All agree; treatment is in order. Dr. Merksamer, do you think children tolerate pollen therapy better than they do mold therapy?

Dr. Merksamer: They definitely do. I can't remember seeing a constitutional reaction to pollen therapy in a child. They can occur but I think they are very rare. But with mold therapy I think they occur very frequently because I have seen any number of them.

Dr. deGara: I agree they are rare but they do occur.

Dr. Cohen: Dr. Johnstone, what do you say?

Dr. Johnstone: I have not seen any constitutional reactions to molds, but I've seen several to pollens. The thing that disturbs me is that I don't know how to predict which children are going to get reactions from pollen treatment. Some children give little or no reaction to ragweed in skin tests but when given a 1 to 300,000 dilution of ragweed extract may have a constitutional reaction.

Dr. Cohen: Dr. Prigal, you'd better decide this. It's getting to be a close problem.

Dr. Prigal: I don't believe that I see as many children as Dr. deGara or Dr. Johnstone do, therefore my opinion may not be as valid or as important as theirs. My over-all impression has been that you see reactions much more frequently from mold therapy than you do from pollen therapy. On the whole there are fewer reactions in children from the use of pollen extract than in adults. Although the incidence of reactions is lower in children than in adults reactions do occur and caution should always be exercised.

Dr. Cohen: I think the consensus is that reactions do occur in children and I would concur with that from my own experience with both pollens and molds. I think we'd better leave it at that; just exercise caution.

The next question is directed to Dr. Merksamer. Do you think that you can have pollen symptoms when the skin test results are negative or when there is a slight reaction at the most?

Dr. Merksamer: Let's break that down into two parts. First I will answer the part concerning a negative reaction. I don't think that clinical pollen sensitivity can exist when a skin test shows negative results. I know that everybody does not agree but that is my opinion.

A slight reaction presents an entirely different story. I think that during the first year that a patient has hay fever he can show a slight reaction or a negative reaction. As time goes on the reaction becomes greater.

In a child, if I see a slight reaction and obtain a positive history I will have to admit that that is a clinical case. I will say, however, that I don't believe that clinical pollen or mold sensitivity exists when negative skin test results are present.

Dr. Prigal: I can't say that I would endorse that and I'm sure that Dr. Merksamer is aware that most allergists will not agree with him on this point. Although I've never polled them, that is the impression that I have. I think there are times when we see patients with true symptoms of pollenosis who do not give a positive reaction to a skin test but who do improve after treatment. You have to deduce that they must be allergic to the pollen.

Dr. Johnstone: I think that the only way to settle many of these questions is by the use of control studies. I don't know yet for sure what it means when children who have shown negative results to tests for ragweed develop symptoms in the ragweed season. They may be among the rare people who cannot form a positive reaction to a skin test for ragweed or they may be sensitive to molds or have some other entirely nonallergic disease.

We read many opinions in the textbooks but I think that the only way to find this out is to do as we are doing in our clinic now; take children in both situations and flip a coin—heads, we treat them and tails, we don't—and then see what happens five years from now rather than to look back in our records over the last twenty years to see what happened. I think this is the only way really to settle this point.

Dr. deGara: Well, I believe that false-positive reactions are much more frequent than false-negative reactions. In other words, if there are definite clinical symptoms as with the pollens and probably molds, we generally have a positive reaction. However, I remember a youngster whom I saw in the clinic, a girl who had definite symptoms to ragweed from the middle of August until the end of September. In testing her we had to use 0.02 cc. of a 10,000 unit to get a positive reaction. We treated her and she improved greatly. This is a case in which we would never have found a positive reaction unless we had used very strong concentrations of ragweed extract.

Dr. Prigal: A point that I meant to mention earlier was that in children, as you've indicated, you may not get a positive skin test during the first year but ultimately you do. I would say that on the whole the skin test is certainly much more of a guide in this case than it would be in an adult where there is a negative reaction.

Dr. Merksamer: Well, I think the important thing to remember is that skin testing is most reliable in respect to inhalants and is not quite so reliable in respect to foods.

Dr. Cohen: I think we can all agree with that.

Dr. Merksamer: But certainly I think that there are on my side many allergists of fine repute who will say that they have not seen a clinical pollen or mold case that showed a negative reaction to a skin test.

Dr. Cohen: To sum it up I think that the idea is that if you have a patient with a definite history of pollenosis you would ordinarily treat him and note the result. I think that that is the standard practice.

Dr. Prigal, what is the value of stock vaccine or of virus vaccine in the treatment of children with asthma and what is the comparative value of autogenous vaccine in controlling infections and indirectly controlling the asthma?

Dr. Prigal: The answer to this, of course, really entails a discussion of prophylactic therapy. I think vaccines do have a role, but I agree with Dr. Johnstone that we don't have enough control studies really to determine whether or not a stock vaccine is as important as we think it is. We do so many other things at the same time that you really can't say what the vaccines have done. The same holds true for the autogenous vaccine.

On the whole I think that we have overemphasized the value of vaccines. The hemolytic staphylococcus which is, in my opinion, a very important organism when we talk about infection in allergic children, does not produce antibodies readily. At least it's difficult to demonstrate it. So it's my belief that the whole problem of vaccine therapy is still in a state of flux. We all use them, but none of us have really gotten down to the job of investigation with adequate controls.

Now, very briefly on the virus vaccines . . . I think they should be used on those children in whom infection is known to play an important role in the causation of asthma. But you also have to be choosey. Not all of the vaccines that are available are useful. Perhaps the most useful is the "flu" vaccine. The newer ones against the common cold and the adenoviruses are still under investigation and we will have to wait patiently for a final evaluation.

Dr. Cohen: Dr. Merksamer, what is your opinion?

Dr. Merksamer: I think that vaccine therapy most often is nonspecific. I use vaccines occasionally in cases of infection or in cases involving pollens or molds that go into asthma as a result of upper respiratory infections.

Dr. Johnstone: I feel strongly about this.

We did a control study in Rochester a year or two ago on 140 children who had perennial asthma; associated with every infection there was wheezing. We did allergic work-ups on the children and then flipped a coin. Heads they would get vaccines and tails they would not. Both groups did quite well as compared with the children who got just saline solution and nothing else. It made no difference whether we did or did not use the vaccine. We broke down the vaccine group as follows: All receive stock vaccine; in addition, one third received an autogenous vaccine made from cultures taken from the bronchi, the sinuses, or the throat; another third received ambotoxoid in addition to the first two vaccines. None of the vaccines seemed to make a difference. When these children were generally well treated allergically, they could then have "flu" or other infections and not get asthma. Therefore, if infections are important, and I think they are in the untreated child, they take on less importance in the treated child. I personally have stopped treating patients with a vaccine because of the trouble involved with the agent.

Dr. deGara: This whole question has been under discussion for many years. During the war the Army made well-controlled studies on the use of vaccines in reducing the morbidity rate. I think there was no difference between the large groups of young Army men who were treated and those who were not treated. The morbidity figures were almost identical.

However, you will hear from a number of experienced pediatricians, and I think that many of us have had the same experience, that some children seem to do better with the addition of vaccine. So I rarely, if ever, give vaccine per se, but if I treat a child for allergies and that child has a history of frequent infections, I may include some vaccines.

Dr. Prigal: Dr. Johnstone mentioned something which I think was of interest and which should be highlighted; that is that even though you may limit treatment to specific desensitization you will also reduce the incidence of respiratory infections.

Dr. Cohen: Dr. Prigal, this question is directed to you, but will be discussed generally. Do you check the blood serum for hypogammaglobulinemia routinely in cases of frequent infections?

Dr. Prigal: Not as a routine procedure. It is indicated, however, in cases involving frequent and severe infections.

Dr. Cohen: Dr. Merksamer, have you any opinion on that?

Dr. Merksamer: No, I do not.

Dr. Cohen: Dr. Johnstone?

Dr. Johnstone: I don't do them routinely. I only check them when the history seems to indicate it.

Dr. Cohen: Apparently they are done in complicated cases but not done routinely.

Here is a question for general discussion: How do you feel about giving steroids to children?

Dr. Merksamer: To date, I have not treated a child with steroids.

Dr. Johnstone: I can't say that I have never used them. Except in cases of severe poison ivy, however, I rarely use them. We have never used them in our clinic at Rochester.

Dr. deGara: I would not use steroids unless I had exhausted all other means; then I would use them.

Dr. Prigal: I've resorted to the use of steroids in the treatment of only one child.

Dr. Cohen: I believe that the consensus is that steroids are given only as a last resort and preferably to those children who already have had chickenpox. Chickenpox becomes quite a severe disease in many of those cases undergoing steroid therapy.

One last question: Do you use ACTH when giving steroids regularly?

Dr. Merksamer: I can't answer the question since I have had no experience with this.

Dr. Johnstone: Nor can I.

Dr. Prigal: Do you mean only in children or in adults also?

Dr. Cohen: Adults.

Dr. Prigal: I think the tendency today is not to use ACTH routinely although there are other points of view of course. Some believe that after the continued use of cortisone the adrenals are incapable of responding to ACTH. This needs further investigation, however.

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A Pediatrician's View

DONALD PINKEL, M.D., BUFFALO, NEW YORK

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SEVERAL systems of nomenclature have been used for classifying hemangiomas and much conflicting advice has been given about their therapy. Today I would like to present the thoughts of a pediatrician concerning the management of the elevated capillary hemangioma of the skin in infants (Fig. 1). This tumor is called by some "strawberry nevus," "strawberry hemangioma," or "cavernous hemangioma." It may be cutaneous, subcutaneous, or mixed. It usually appears at about one or two weeks of age and grows rapidly for from six to eight months. It may be located on any area of the skin.

Other types of hemangiomas will not be discussed.

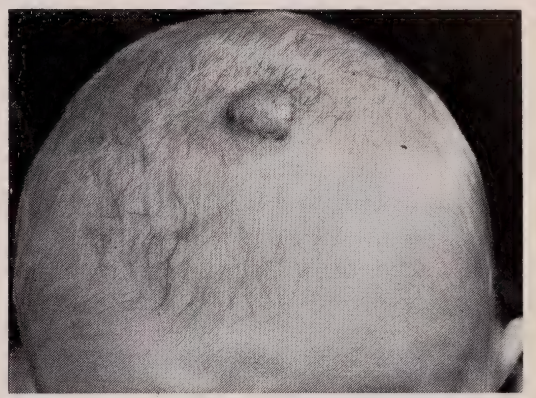

FIG. 1. Elevated cutaneous capillary hemangioma ("strawberry nevus") in the scalp of an infant.

Review of Literature

In 1900 Duncan[1] noticed that elevated capillary hemangiomas appeared usually within two weeks after birth, grew rapidly for several months, and then disappeared gradually. He described the advancing nevus as soft, compressible, and vivid in color. It became firmer when retrogressing and healed from the center.

Lister[2] made a seven-year study of 76 children with 92 "strawberry nevi" that were left untreated. He observed that growth always ceased by the age of eight months and that either no trace at all or merely "a few flecks" remained by the age of five years, except in the case of very large tumors which required additional years for complete absorption. He concluded that lesions which grow rapidly during the early months of life subsequently retrogress and disappear spontaneously, but that those which do not grow actively during infancy are not likely to retrogress on their own.

Walter[3] studied a group of children with elevated hemangiomas over a five-year period (Fig. 2). Those first seen by him in the clinic were left untreated, but an approximately equal number first seen by his associates in the same clinic were given x-radiation therapy in a surface dose of about 380 r. The results in both groups were essentially the same. He found that the larger angiomas all regressed whether treated or not. A survey of previous records at the same clinic revealed that involution of hemangiomas seemed to occur more rapidly at x-radiation doses of 800 r and higher, but that five-year results were the same. No

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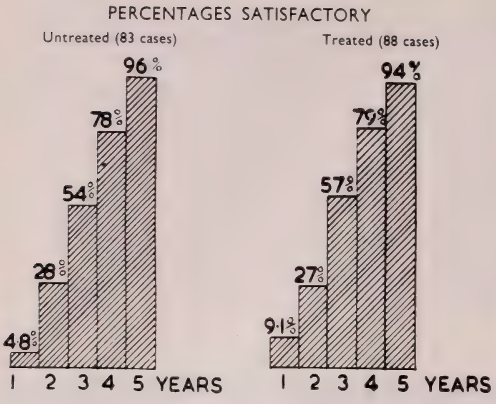

Fig. 2. Course of elevated hemangiomas in infants, untreated and treated with x-radiation. (Reproduced through the courtesy of the editors of the *Journal of the Faculty of Radiologists.*)[3]

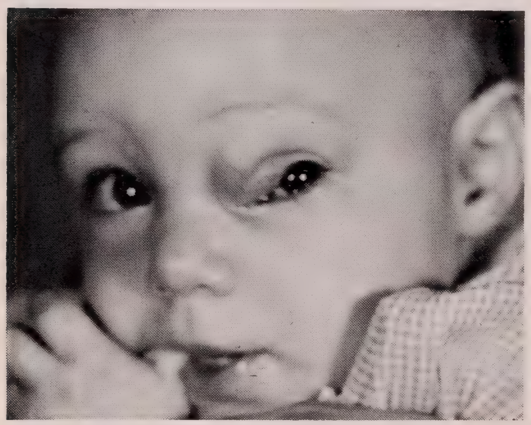

Fig. 3. Hemangioma of the eyelid in an eight-month-old child.

significant difference was noted between the postradiation courses of hemangiomas of children treated in the first year of life and of those treated between the ages of one and five years.

Bivings,[4] recording his twenty-two-year experience with untreated hemangiomas, confirmed Lister's observations. He found an 8.7 per cent incidence in patients first seen under the age of one year and an 0.55 per cent incidence in patients first seen after the age of two years.

Falk and Levy[5] made a five-year follow-up study of 60 patients with 72 hemangiomas. Of the 58 lesions left untreated, only 4 failed to regress. Treatment with radiation in 14 cases resulted in scarring in 12 patients, and a perfect result and no change in 2 patients respectively. They admitted, however, that their radiation methods were poor. In the untreated cases there was no relation between the size of the lesion and the prognosis.

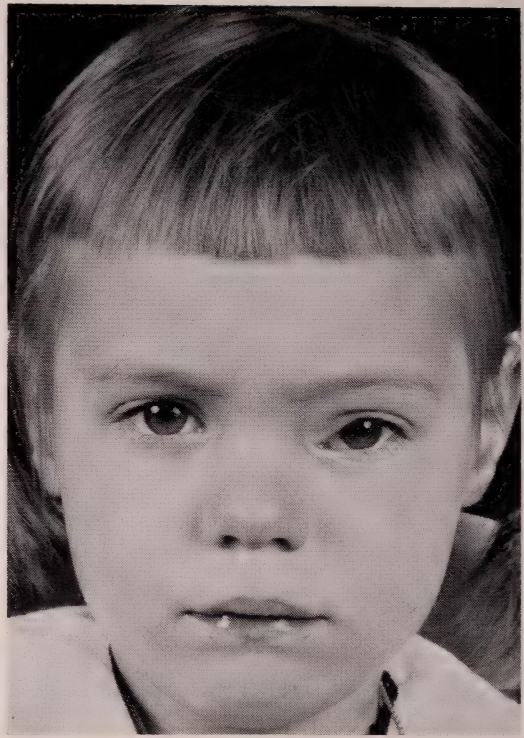

Fig. 4. Regression of hemangioma of the eyelid at the age of two years, nine months (same child as in *Fig. 3*).

All of these investigators considered the cosmetic results in their evaluation. None found evidence of malignant transformation.

Recent Experience at Roswell Park Memorial Institute

During the past three years 55 infants with cutaneous, subcutaneous, or mixed elevated capillary hemangiomas have been seen at the Roswell Park Memorial Institute. In 4 of these infants the tumors were excised surgically because they were entirely subcutaneous and the diagnosis was uncertain.

Recently we have seen 2 children with rhabdomyosarcoma who had been diagnosed at other hospitals as having subcutaneous hemangiomas. Surgical procedures had been delayed and, when finally undertaken, they had consisted of local rather than radical excisions. Both children developed inoperable local recurrences. Soft tissue tumors that are not clearly hemangiomas should be explored, biopsied, and treated appropriately.

The remaining 51 of our patients were left untreated. It is too early to gauge the success of this program now, but nothing has occurred to prompt us to modify it. Figures 3 and 4 illustrate the type of regression which occurs.

Comment

It is always difficult to evaluate therapy in a disease in which spontaneous remissions or cures are common. When one reads the medical literature regarding such conditions, one finds claims have been made through the years for many different treatment methods. It becomes apparent that only through carefully designed studies utilizing placebo or untreated controls can methods of treating such diseases be evaluated honestly.

Several years ago antihistaminic drugs became popular in treating the common cold on the basis of remarkable results in uncontrolled clinical trials. Later a scientific clinical investigation, utilizing placebo and the double-blind technic, proved them to be of no value in this illness.[6] Similarly, the doctrine of pediatricians, stating that mist therapy is beneficial in alleviating respiratory problems of premature infants, has been refuted by recent controlled clinical studies.[7] Many similar examples can be cited.

The elevated capillary hemangioma of infants usually regresses spontaneously. Therefore, to evaluate any proposed treatment, controlled studies are essential. Only one such study, utilizing ionizing radiation therapy, has been reported[3] and it indicated that this modality has no influence on prognosis. It may be that other types of ionizing radiation given in a certain dosage in a certain manner might have some important effect, but as yet no evidence that this is so exists.

Application of dry ice, injection of sclerosing solutions, and ligation of the nutrient artery also have been recommended and widely used. There is no proof that these methods are superior to no treatment at all. Excisional surgery has been employed at times, but no one has considered it a reasonable routine procedure.

Recent studies indicate that infants exposed to ionizing radiation bear an increased risk of developing cancer in later life. Simpson[8] studied 2,380 children who received x-radiation to the mediastinal area during infancy and found that they had a significantly higher rate of thyroid cancer and leukemia than their untreated siblings. Her work has been amply confirmed by others.[9, 10]

Miller[11] reported that children exposed to the nuclear explosion at Hiroshima had an excessive incidence of leukemia, and a higher rate was found in those who had been closer to the hypocenter of the blast. Stewart, Webb, and Hewitt[12] noted that children with cancer had a significantly more frequent history of exposure to radiation than did normal children. Manning and Carroll,[13] and Polhemus and Koch[14] found that this was true in their studies of children with leukemia.

I do not wish to say that exposure to ionizing radiation causes childhood cancer. However, it does appear to increase the risk of cancer, and its imprudent use should be avoided.

Conclusions

The elevated capillary hemangioma of infancy, whether cutaneous, subcutaneous, or mixed, usually regresses and disappears spontaneously during childhood.

No presently used mode of treating this tumor has been demonstrated unequivocally to improve its ultimate prognosis.

Exposure to ionizing radiation during infancy apparently increases the risk of acute leukemia, thyroid cancer, and perhaps other malignancies during later life. Unnecessary exposure should be eschewed.

The following points are recommended:

1. We should try to avoid treating elevated capillary hemangiomas in infants except for taking measures, when indicated, to minimize irritation and to prevent infection.

2. If we believe that therapy is required, we should try to design clinical studies to evaluate objectively its efficacy.

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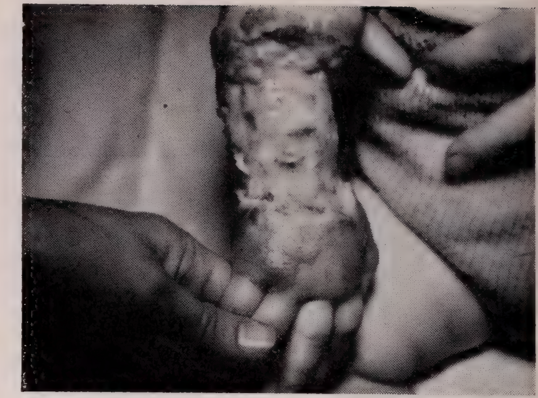

Fig. 5. A deeply ulcerated hemangioma of the wrist of a three-week-old child.

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Discussion

George C. Andrews, M.D., *New York City.*—I want to congratulate Dr. Pinkel on the sincerity and thoroughness of his presentation We dermatologists see the cases that do not involute spontaneously. By the time the patients and parents have waited for the spontaneous involution to occur, the hemangiomas grow to large masses that present serious treatment problems, and the parents are confused and alarmed. Often the parents have consulted 15 or more pediatricians, dermatologists, surgeons, and family physicians before they reach our hands. Almost every day we are confronted by similar cases.

Although Dr. Pinkel is perhaps correct in the statement that the radiosensitivity of an angioma does not change materially with the passage of a few years, that is not the essence of the problem. The fact is that the lesion grows larger in mass and becomes ulcerated and contaminated with infection. It therefore requires far more complicated treatment that would not have been necessary at the beginning. The amount of radiation necessary to cause the disappearance of angiomas in early cases is very small, but after they have grown to massive proportions the quantity of radiation required is often much larger and some scarring may be inevitable because of spontaneous ulceration.

There is a general impression that treatment with gamma-ray radium plaques is especially dangerous because gamma rays are so penetrating. However, the depth dose of these radium plaques is about one-seventh that of the ordinary superficial roentgen rays, and at 2 cm. and at 5 cm. below the surface of the skin the dosage is far less than from x-ray treatment. The rate of delivery of the radiation in the use of radium

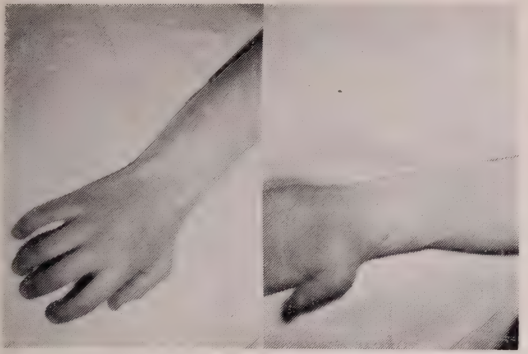

FIG. 6. Two views of the hand of the same child as in *Fig. 5* six months later.

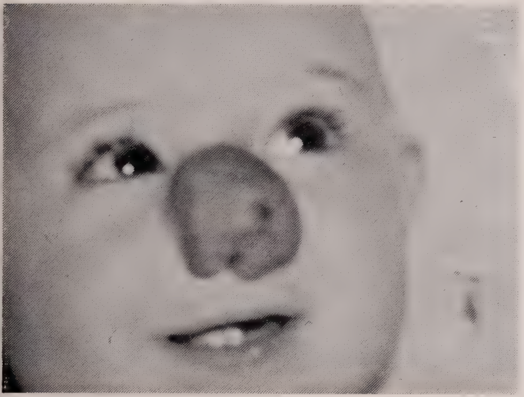

FIG. 7. Hemangioma of the nose in a child.

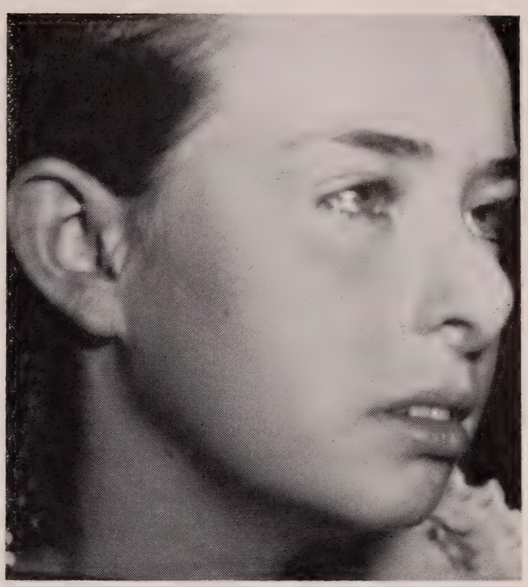

FIG. 8. Aftertreatment picture of the child in *Fig. 7* taken at twelve years of age.

plaques is much slower than from x-ray technic, and the difference in the erythema dose between gamma radiation and the soft x-ray radiation is an important consideration. With the use of the radium plaques the angioma may receive a total of two and one-half erythema doses within the period of one year, whereas with routine x-ray technic the lesion would receive five or six erythema doses within a period of two or three months. Even with grenz rays, where the penetration is minimal, the skin receives a total of 6,000 to 9,000 r which means 20 or 30 erythema doses. I realize that the erythema dose is obsolete in cancer therapy, but in the treatment of benign lesions of the skin it is still the standard of biologic effects. Of course the gonad dose from the use of the radium plaques varies according to location of the lesion, but in lesions about the face and on the hands, forearms, feet, and the upper trunk the dosage is within reasonable limits in the order of milliroentgens. We cannot overemphasize the importance of antibiotic therapy in the treatment of angiomas that are crusted or that are near the body orifices. Most of the unsightly scarring that comes from spontaneous involution is the result of ulceration and infection, and this should be avoided rather than encouraged. When ulceration develops spontaneously, some pediatricians say that it is a good sign and that it will lead to spontaneous involution. My experience is at variance with this point of view and I believe that it is better to prevent ulceration as much as possible.

Two Types of Hemangioma

A hemangioma developed as a dime-sized strawberry mark on the outer aspect of the wrist of a three-week-old child. The parents of the child consulted many doctors and were assured that the hemangioma would involute spontaneously. It grew to enormous extent and became deeply ulcerated (Fig. 5). The child developed a fever, lost his appetite, and was underweight. The parents eventually consulted a highly reputables urgeon in Albany who recommended amputation of the forearm.

When the child was brought to me, the rectal temperature was 101.6 F., the hemoglobin was 40 per cent Sahli (8 Gm.), the red cell count was 2.6 million, and there were granular casts and albumin in the urine. Treatment was started intramuscularly with penicillin, 200,000 units daily. This was continued for six months. The child also received iron orally. After one month the fever was gone and the ulceration looked cleaner. Then radium treatment with gamma-ray plaques was started. The area received 4 radium treatments at five-month intervals. There is a little scarring from the ulceration but there are no radiation sequelae (Fig. 6). The child's hand is the same size as his other hand and he uses it freely.

Another hemangioma case began as a slightly elevated vascular nevus 1 cm. in diameter on the right side of the nose of the two-week-old daughter of a pediatrician. Many pediatricians, dermatologists, and other physicians advised against any form of treatment, saying that a spontaneous involution would take place. The hemangioma grew to unsightly huge proportions and began to form crusts and to break down at the tip of the bulbous portion (Fig. 7). It responded to 4 radium plaque treatments. The aftertreatment picture was taken at the age of twelve years (Fig. 8).

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The Emergency Treatment Cart in a Modern Hospital

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An emergency cart is essential in the modern hospital where diagnostic and therapeutic procedures which may induce cardiorespiratory failure are constantly in progress. Successful treatment of such emergencies has been accomplished not only in operating rooms, but also in x-ray and cardiopulmonary laboratories, in patients' rooms, and even in hospital corridors. It is obvious that a well-organized and adequately supplied emergency cart used promptly by trained personnel can be lifesaving.

Untreated ventilatory or circulatory failure is lethal. In two large series cardiorespiratory failure has been reported to occur from 1 in 2,125[1] to 1 in 1,500[2] surgical procedures performed on patients with normal hearts. It has been recognized more frequently during surgical procedures on patients with heart disease,[3] and is known to occur in approximately 1 in 1,000 cardiac catheterizations.[4] Sudden respiratory or circulatory death has followed the intravenous injection of cardiac glycosides,[5] mercurial diuretics,[6] procaine amide,[7] and radiopaque media for excretory urography or angiocardiography.[8] It has been reported in a technician with Wolff-Parkinson-White syndrome who collapsed in an x-ray darkroom,[9] in a physician who sustained a posterolateral myocardial infarction while leaving the hospital,[10] and in a patient with rheumatic heart disease who developed ventricular fibrillation in her hospital bed.[11] The last 3 of these patients were successfully resuscitated.

Mouth-to-mouth breathing,[12] striking a blow over the precordium,[13] or cardiac puncture[14] may occasionally accomplish restoration of respiration and circulation. If these simple methods fail, thoracotomy with cardiac massage and positive pressure lung inflation by mask or endotracheal tube may be performed if the circumstances permit and if the patient is considered salvageable.[15] Immediate access to the required equipment may be the deciding factor in such an emergency situation.

Essentials of an Emergency Cart

An emergency cart provides the means to institute immediate cardiopulmonary resuscitation or to supplement emergency treatment begun prior to its arrival. If there is a possibility that cardiopulmonary failure might result from a diagnostic test or a therapeutic procedure, the emergency cart could be kept in close proximity to the patient. If interim measures are in use to maintain the patient's respiration and circulation, a mobile emergency cart could be transported quickly to the bedside to permit definitive treatment in an attempt to restore spontaneous cardiopulmonary function.

The desired contents of an emergency cart may be described as respiratory and circulatory.

Respiratory Category.—In the respiratory category, since expired air resuscitation would probably be in progress when the emergency cart arrived, several simple mechanical aids should be available on the cart. These could be interposed between the patient and the operator. Double-ended airways or masks such as those recommended by Elam and Safar[16,17] are examples of such devices. More elaborate equipment should include the means for endotracheal intuba-

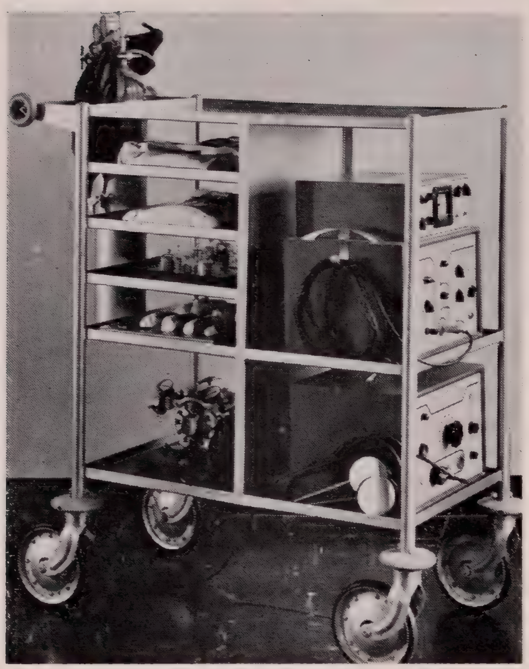

FIG. 1. The Grasslands Emergency Cart. Left from top to bottom: oxygen cylinder, mask and bag, clear top working surface, endotracheal tray, thoracotomy-cardiac massage tray, emergency drug block and ancillary drug block on the same shelf, and electric suction apparatus. Right from top to bottom: pacemaker monitor with cardioscope unit and electric defibrillator with paddles.

tion and bag breathing which will provide 100 per cent oxygen. A suction machine for the removal of obstructing secretions is mandatory.

CIRCULATORY CATEGORY.—In the circulatory category the basic equipment is the thoracotomy knife. Ancillary equipment should include a simple thoracotomy set with a rib spreader. Electrical apparatus should include a pacemaker and a defibrillator. These units are now manufactured by many firms for internal and external use, for monitoring, and for automatic activation. Myocardial stimulants and depressants should be readily available with appropriate syringes and needles for intravenous or intracardiac administration. An auxiliary drug tray should include other medications which might be needed in the emergency situation, such as a vasopressor, digitalis preparations, or anti-arrhythmic agents. The Grasslands emergency cart has been designed in an attempt to meet all these stipulations.

The Grasslands Emergency Cart

The Grasslands cart was constructed* to house and transport all essential equipment and drugs for the treatment of cardiopulmonary failure. Other carts for similar purposes have been described and are in use elsewhere.[1,18,19] This cart has several distinct advantages: (1) It is mobile and light enough for nurses to maneuver quickly, (2) it provides all the essentials in order of need plus some of the newer electrical equipment, (3) it has internal wiring which permits immediate operation of the electrical apparatus when one plug is placed in an outlet, and (4) it has a clear top working surface.

The cart (Fig. 1)† has been in use since 1958. It is constructed of cast iron, painted with aluminum conductive paint, and contains five shelves $4^3/_4$ inches apart with $^1/_4$-inch rims to prevent sliding of equipment during transport.

The five compartments which are on the left in the cart contain in order of use, from top to bottom: (1) the endotracheal intubation equipment, (2) the thoracotomy-cardiac massage tray, (3) the emergency drug block and the ancillary drug block, (4) the syringe and needle block, and (5) the large compartment for the suction apparatus. The drug blocks contain dosages, including concentrations of drugs, directions for dilution, and mode of administration which are noted on the labels beside each ampule to minimize delay when the drug is needed. The contents of the emergency drug block and of the ancillary drug block and the dosages recommended are listed in Tables I and II. The syringe and needle block contains sterile 2, 5, and 10 cc. syringes with 19 gauge 3-inch and 20 gauge $1^1/_2$-inch needles.

There are three large compartments. The

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* Manufactured by the Colson Company, Elyria, Ohio.

† Photograph by Robert T. Duckworth, Grasslands Hospital.

TABLE I.—Emergency Drug Block

Drug	Ampule Size and Contents	Initial Dose
For cardiac standstill:		
Calcium chloride	10 cc. of 10 per cent	200 to 500 mg. (2 to 5 cc.)
Intracardiac Levophed	2 cc. of 0.02 per cent	50 to 75 mcg. base (0.5 to 0.75 cc.)
Adrenalin chloride	1 cc. of 1 to 1,000	0.2 to 5 mg. (0.2 to 0.5 cc.)
For ventricular fibrillation:		
Potassium chloride	2 cc. of 15 per cent	1 cc. in 9 cc. water = 150 mg. per 10 cc. Give 75 to 150 mg.
Pronestyl hydrochloride	10 cc. of 100 mg. per cc.	100 to 200 mg. (1 to 2 cc.)
Procaine hydrochloride	6 cc. of 1 per cent	50 to 100 mg. (5 to 10 cc.)

TABLE II.—Ancillary Drug Block

Drug	Ampule Size and Contents	Initial Dose
Vasopressors:		
Levophed bitartrate	4 cc. of 0.2 per cent	8 mg. (4 cc. in 1,000 cc.)
Neo-Synephrine hydrochloride	1 cc. of 1 per cent	10 mg. (1 cc. in 200 cc.)
Adrenalin chloride	1 cc. of 1 to 1,000	0.2 to 0.5 mg. (0.2 to 0.5 cc.)
Vasoxyl hydrochloride	1 cc. of 20 mg. per cc.	5 to 10 mg. (0.25 to 0.5 cc.)
Ephedrine sulfate	1 cc. of 50 mg. per cc.	12.5 to 50 mg. (0.25 to 1 cc.)
Digitalis preparations:		
Acetyl strophanthidin	1 cc. = 3 cat units	0.6 mg. (0.33 cc. in 10 cc.)
Cedilanid	4 cc. of 0.2 mg. per cc.	(4 cc. in 10 cc.)
Digoxin	2 cc. of 0.25 mg. per cc.	(2 cc. in 10 cc.)
Antiarrhythmia drugs:		
Novocain	6 cc. of 1 per cent	50 to 100 mg. (5 to 10 cc.)
Pronestyl hydrochloride	10 cc. of 100 mg. per cc.	100 to 200 mg. (1 to 2 cc.)
Quinidine gluconate	10 cc. of 0.8 Gm. per cc.	240 mg. (3 cc. in 12 cc.)
Isuprel hydrochloride	1 cc. of 1 to 5,000	0.02 mg. (1 cc. in 10 cc.)
Aminophylline	10 cc. = 0.25 Gm.	(0.25 Gm. in 250 cc.)
Atropine sulfate	20 cc. of 0.4 mg. per cc.	0.4 to 0.6 mg. (1 to 1.5 cc.)
Prostigmin methylsulfate	3 cc. of 1 to 4,000	0.5 to 1 mg. (2 to 4 cc.)
Electrolytes:		
Calcium chloride	10 cc. of 10 per cent	200 to 500 mg. (2 to 5 cc.)
Potassium chloride	20 cc. of 15 per cent	(20 cc. in 500 to 1,000 cc.)
Sodium lactate	40 cc. = 100 mEq.	40 cc. + 50 cc. water = 1 molar lactate (17 to 100 cc.)

largest, $25^{3}/_{4}$ by $15^{1}/_{4}$ inches, houses an internal-external pacemaker monitor with a cardioscope. The second, $13^{1}/_{4}$ by $15^{1}/_{4}$ inches, holds an internal-external defibrillator and paddles. The third, which has the same size compartment as the second, holds a suction machine. The compartments are large enough to accommodate most types of pacemakers and defibrillators and to permit modification of the basic plan according to the dictates of local hospital preference or advances in resuscitative technics.

An oxygen tank is attached in front of the handle of the cart. The over-all dimensions of the cart, including the front handle and tank, are 48 inches high, 46 inches long, and 24 inches wide. There is an encircling rubber bumper around each wheel. The wheels are 8-inch sealed-bearing conductive casters, two rigid and two swivel, permitting great maneuverability. The conductive casters and chain prevent the accumulation of static charge as the cart is rolled, so that it may be brought into an explosive atmosphere. It must be remembered that the pacemaker, defibrillator, and suction are all electrically operated and that if an anesthetic is in progress during the time these instruments are utilized, one of two procedures must be followed: either the electrical apparatus used in the operating room must be elevated to a distance of more than five feet from the floor, or the anesthetic should be converted to a nonexplosive type.

Experience.—Interestingly enough, the emergency cart has proved most useful outside the operating room. During 1958 there were no cardiorespiratory failures in the operating room. During this first year, however, the cart was used in 7 cases on the wards, during a cardiac arrest in the cardiorespiratory laboratory, and it was used twelve times as a monitor in the operating and/or recovery room.

In addition to the 22 instances in which the cart was actually used in 1958, it was kept in readiness during all the cardiac surgical procedures and was immediately available in the operating room suite during all surgical procedures. The monitor unit was not used routinely in our hospital because of the availability of an electronic recorder in the operating room which monitors the electrocardiogram and the electroencephalogram, and which permits recording of intracardiac and intravascular pressures. When such monitoring was needed in two rooms, the monitor-pacemaker on the emergency cart was in the second room.

Comment

The presence of the emergency cart has stimulated intense interest in the subject of cardiopulmonary resuscitation. Teaching sessions for house staff and nurses have resulted. A movie entitled "Just 4 Minutes"* was produced at Grasslands Hospital so that others might be aware of our resuscitation program. A panel discussion sponsored by the Medical Society of the County of Westchester and the Westchester Heart Association aroused considerable enthusiasm on the part of the medical profession of this county. Neighboring hospitals are investigating various types of available electrical equipment and are devising their own emergency carts, modified to meet the specific requirements of their own institutions. Although at present permanent recovery cannot be attributed to the emergency cart, mainly because those patients requiring its services were elderly, poor-risk patients, it is anticipated that such a situation will eventuate if cardiopulmonary failure occurs in a younger, less debilitated patient. The equipment is available, the team is experienced, and a planned program of resuscitation has been devised.

Summary

An emergency cart for ward and operating room use has been in service at Grasslands Hospital for a year. The cart combines the equipment necessary for the treatment of cardiopulmonary emergencies into a mobile unit with internal electrical wiring, simplicity of operation, and a clear top working surface. The availability of the cart has not only provided the means for effective cardiopulmonary resuscitation at Grasslands Hospital, but also has aroused the medical profession of this community to the serious consideration of the problems involved.

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A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

What's New About Thermal Burns

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Some six to seven thousand persons in this country die each year from thermal burns. Half of these incidents occur in the very young, below four years of age, and in the old, over sixty-five. Colebrook *et al.* in 1956[1] reported that the frequency of burns in England and Wales was the same as it was ten years previously. Fifty per cent occurred in children. In 82 per cent of the cases the victims' clothes originally were ignited, and two thirds of all cases occurred in the home.

Prevention

These British authors urge that the textile industry find ways of manufacturing fire-resistant clothing and that fabrics on the market be graded in terms of flammability. They also urge that manufacturers of kitchen utensils design those intended for hot liquids so that they cannot be easily jarred. They recommend that kitchen layouts be planned so that the stove and sink are adjacent to each other to prevent scalding accidents when hot liquids are carried from the stove to the sink.

Wallace[2] feels that the study of the prevention of burns is not only of national but also of international importance and should be encouraged by an authority like the World Health Organization.

Prognosis

The statistics on the mortality of thermal burns is sobering. Moyer in 1956[3] observed that the mortality in major burns, over 50 per cent, has not changed in the past hundred years. Bull and Fisher in 1954[4] stated that the prognosis in medium-sized burns had not improved in ten years. Birke, Liljedahl, and Troell[5] note that at present, in contrast to the past, those inflicted die after the initial stage of burn shock has subsided, chiefly from bacterial complications and general nutritional disturbances.

Clark and Hanson[6] reviewed 93 cases of 20 per cent plus burns (that is, burns involving over 20 per cent of the body surface) treated between 1943 and 1956. The mortality rate increased from 40 per cent during the period 1943 to 1947 to 60 per cent during the period 1952 to 1956. From 1943 to 1947, 69 per cent of the deaths occurred within forty-eight hours of hospital admission. From 1952 to 1956, only 19 per cent of the deaths occurred within the first forty-eight hours. In the period 1943 to 1947, the majority of deaths resulted from shock in the immediate postburn period; in more recent years, infection has been the major cause of death. Blocker[7] relates that in his experience no patient over sixty years of age with a 30 per cent burn or over survived. Pickrell *et al.*[8] warn that in an infant a third-degree burn involving one tenth of the body surface may cause death.

Although statistics reveal an almost uniformly fatal outcome in burns of 70 per cent or more, Kay and Taylor[9] report the successful treatment of an 80 per cent burn, of which 60 per cent was full thickness. It is encouraging to report that in a controlled study in Peru by Markley and coworkers, reported on in 1959,[10] 153 adults with 10 per cent or more burns survived with no deaths in the first two days although given no colloids parenterally.

Schenk[11] repeats the following well-established facts for application in civilian defense planning and in planning a screening technic for mass burn casualties: Few patients with less than 20 per cent burns die, with the exception of respiratory tract burns; in spite of the best possible treatment, few patients with over 50 per cent burns survive. He therefore maintains that 90 per cent of the care, in terms of utilization of professional personnel, supplies including intravenous fluids, and transportation, should be reserved for cases of 20 to 50 per cent body burns.

Estimation of Extent and Depth of Burn

Skerlj and Kulcar,[12] using formulas for common anthropologic measurements, offer some modifications to Wallace's[13] popular and simple "rule of nines." They feel that the type of burn in individuals with approximately the same burned surface areas may vary from 6 to 8 per cent, thus affecting assessment of the fluid requirements. Although the surface area of the body can be mapped with air accuracy, the depth of the burn is far less amenable to estimation.

Jackson[14] maintains that the appearance of the burn and the alteration of sensation in the burned area to pinprick are the best available criteria, although subject to a large degree of error, for determining the depth of the burn. The degree of error is particularly important if immediate excision of the burned wound is contemplated. Bennett and Dingman[15] in testing the accuracy of radioactive phosphorus as an objective means of assessing the depth of a burn injected it into young swine. They feel that the results were sufficiently convincing to justify using this method in estimating human burns.

History of Theories of Physiologic Changes and Treatment in Burn Shock

Shedd,[16] in reviewing the historic landmarks in burn treatment, relates that as early as 1881 hemoconcentration during burn shock was noted in Germany. In 1901 in Italy intravenous administration of saline was being used for the treatment of burns. Sneve in 1905[17] reported a 54 per cent survival in the United States of burns of over 25 per cent for which intravenous saline therapy was given.

In the 1920's Underhill[18] realized the great magnitude of fluid losses in burns, and Davidson[19] observed the phenomenon of change in sodium balance. It is interesting that Davidson's studies of sodium shifts in burn injuries were not appreciated for almost two decades, whereas he was internationally acclaimed for his tannic acid treatment of the burn wound.[20] At present, neither tannic acid therapy nor the toxemia theory of burns on which it was based are popular. Tannic acid has been condemned for its liver-damaging effect and its destructive action on the remaining viable epithelial cells in the burn wound. The toxemia theory has few adherents, since most experts believe that the so-called toxemia is an uncontrolled infectious complication.

Fox in 1944,[21] applying the experimental work of Rosenthal and Millican[22] to human burns, again demonstrated the massive electrolyte shift in burns. Every medical student now is aware of the problem of hypo- and hyper- natremia and kalemia, yet these terms were not in general usage a few years ago. In 1944 flame photometers were novelties, but in the ensuing fifteen years the use of the flame photometer became commonplace.

Wilkinson in 1958[23] ascribed the fluid shift to a local increase in capillary permeability with the collection of an inflammatory exudate in the region of the burn. This exudate causes a shift of extracellular fluid from the uninjured parts of the body, leading to a large increase in the sodium content of the injured tissues and a reduction of it in the normal portions of the body. The rate of the lymph flow from a burned limb may increase up to eight times, indicating a large increase in the turnover of fluid in the injured tissues. Therefore, the burn swelling represents a dynamic and not a static exudate. This exudate diverts extracellular fluid and plasma protein from the remainder of the body and thus educes the volume of the plasma in the intravascular compartment. After severe injury there is some powerful stimulus directly related to the injury which has the effect of rapidly increasing the urinary potassium excretion and, at the same time, causing conservation of sodium. Wilkinson believes that the most likely agent capable of this, according to present knowledge, seems to be aldosterone.

Replacement Fluid Therapy

Jackson in 1958[24] noted that in a severe burn $^1/_2$ L. of plasma may be lost per hour. He feels that this plasma must be replaced, and for this purpose he uses reconstituted plasma with a higher sodium content than normal plasma. Jackson is disdainful of the use of replacement formulas except for emergencies requiring simplification of treatment. He individualizes treatment, on the basis of blood volume, hourly capillary (venous) hematocrit determinations, hourly urine output, and clinical findings (blood pressure, color, restlessness, thirst, temperature, and sensorium reactions). He maintains that treatment by formula may differ 100 per cent from that based on the individual's clinical requirements. Eagle[25] does not consider the popular Evans formula,[26] based on the patient's weight, as useful in children as one based on surface area. He advocates the use of surface area nomograms and offers simple formulas for reference.

There still is considerable disagreement over the ideal replacement fluid to be used in the treatment of burn shock and in the mode of its administration. For fifteen years Rosenthal and his coworkers and adherents have championed massive oral electrolyte therapy.[22] The results of the recent seven-year Peru project[10] have given considerable support to their arguments. Health officials concerned with civilian defense planning and other civilian defense officials, at first staggered by the expected need for complicated intravenous apparatus and materials in the event of mass catastrophe, have been relieved by these results. If oral electrolyte therapy of burn shock is accepted, it will permit civilian defense, Red Cross, and other workers to treat victims of a burn catastrophe with saline dispensed in paper cups.[27]

On the other hand, some authorities, such as Wallace,[2] recommend the transfusion of whole blood, particularly in deep burns. In superficial burns the predominant replacement would be plasma. Wallace warns that delay increases morbidity and may even lead to death. Burke in 1956[28] found concentrated serum albumin very efficacious in the treatment of the Cleveland Hill School fire casualties in Buffalo. He reported difficulties with the use of excessive amounts of whole blood.

Howard *et al.* in 1959[29] reviewed the present status of dextran as a plasma expander. The dextran available commercially at an average molecular weight of 75,000, which has been widely used, is recommended. It is inexpensive and easily obtainable. They noted that at the end of six hours 50 per cent of the administered dextran remains in the circulation. Allergy reactions and bleeding have not been clinical problems. Wilkinson[23] prefers larger-molecule dextran, up to a molecular weight of 225,000, but these preparations are not commercially available.

In the same article Wilkinson counsels against overtreatment by intravenous therapy. In the animal kingdom serious injury is overcome without parenteral therapy and, by inference, the human being's natural protective mechanism against injury can be taxed by the injudicious use of intravenous fluids. In the Peru study it was noted that children did better if given plasma in addition to electrolytes. This result was felt to be due to the nutritional components of the plasma, because of the prevalence of malnutrition in Peruvian children, and to the antibodies in the plasma, which help in the combatting of infection.[10] Casberg *et al.*[30] claim that pasteurizing the plasma prevents homologous serum jaundice.

The efficacy of oral electrolyte administration, despite vomiting by some patients of some of the huge amounts (up to 10 quarts a day) of fluid given, has been shown by many workers.[10,21,22] Gastric dilatation and atony may ensue and must be treated when encountered. Nevertheless, everyone is agreed that fluids by mouth should be encouraged if tolerated. Garbade *et al.*[31] feel that when oral fluids can be prescribed, an oral alkaline solution is best. Plain water, orange juice, and milk are to be avoided during the acute stage.

Most authors agree that getting the fluid into the patient is of prime importance and the mode secondary. A vein cannulated with a polyethylene catheter has been termed the "lifeline" by Artz and Reiss.[32] If the superficial venous system has been thrombosed as a result of thermal injury or repeated cut downs, the deep venous system must be cannulated. Moncrief[33] cannulated the femoral vein with a polyethylene catheter in 91 severe burns with the catheter left in place for up to fifty-one days, the majority for ten days or less. Complications included edema of the lower extremities, either transient or persistent; localized evidence of femoral thrombophlebitis, such as tenderness, heat, pain, and swelling; obstruction of the plastic tubing by clot; and complications revealed at autopsy, such as erosion of the vein wall and thrombosis. The 4 patients who developed extensive septic thrombophlebitis died, the thrombophlebitis undoubtedly the direct cause of death.

Crews[34] recommends the use of separate veins for colloids and electrolytes so that there will be no interruption in the administration of the electrolytes. He stresses that early establishment of hydration and replacement of electrolytes are important in preventing the onset of an abnormal hormonal pattern. This pattern, if allowed to continue, could produce antidiuretic and sodium retention factors, which, once established, may be extremely difficult to control and treat effectively.

Local Treatment

EXPOSURE VS. OCCLUSION.—Wallace in 1949[35] revived the open treatment of burn wounds. Hollman *et al.* in 1956,[36] in a study of exposure and occlusive treatment of burns, conclude that in the open method healing is significantly more rapid and of better quality than in treatment with occlusive pressure dressings. They feel that light, dryness, and the avoidance of heat may be more advantageous in the care of unhealed wounds than most surgeons realize. Wallace advocates the snipping of blisters. Gimbel *et al.*,[37] in a study of the epithelization of blistered burns, concluded that uncapped blister wounds heal better.

Artz[38] maintains that the exposure method unless properly done is really "open neglect." In other words, the exposure method should be a closed method in relation to microorganisms. He recommends the use of occlusive dressings when the exposure method is not applicable. Jackson[24] reports that cases treated with closed dressings and penicillin cream showed less pathogenic bacteria than those treated by exposure. MacGregor and Pfister[39] used a polyethylene glycol ointment (a carbowax) plus antibiotics and pyruvic acid on exposed burns with encouraging results.

As Wallace[2] recapitulates, some regions and burns are better exposed than dressed. They should be kept cool, immobilized, and, whenever possible, elevated. "Exposure is a surgical technic, not a policy of abandonment."

DEBRIDEMENT.—*Enzymatic.*—Shelby *et al.*[40] used dessicated whole pancreas in the local debridement of burns. The pancreas contains proteolytic, amylolytic, lipolytic, and other enzymes. No allergy reactions were noted. The authors felt that the foul odor characteristic of infected wounds was markedly alleviated and that the pancreatic enzymes produced cleaner granulations.

Sautter, Buckwalter, and Ziffren,[41] experimenting with vegetable cathepsins, ficin, papain, and bromelin, found ficin in pyruvic acid with a pH of 3 to be the most effective debriding agent. Salicylic acid (40 per cent concentration) in a hydrophilic ointment applied to the burn eschar twice at twenty-four-hour intervals was effective. No toxic effects from the salicylic acid were noted. Treatment was limited to areas not larger than 5 to 6 per cent of body surface. Howes *et al.*[42] investigated two enzyme preparations made from Clostridium histolyticum, one rich in collagenolytic activity and the other mainly a cysteine-inhibited proteinase.

Surgical.—Meeker and Snyder[43] feel that, since chemical, enzymatic, and total excision of burn slough have not proved satisfactory, debridement of the burn slough with an electric dermatome in separate stages has many advantages. In a series of 12 cases of severe burns the authors followed an aggressive, planned program and concluded that they had reduced the length of hospitalization by 60 per cent.

MacMillan[44] treated a series of 14 patients with burns of over 25 per cent by early excision between the second and fifth postburn days. The defect was grafted at once or within forty-eight hours by autografts supplemented with homografts. He states that the mortality from septicemia would have been 75 per cent if the burns had been treated in a conventional fashion, but in this series only 3 patients died of septicemia, the only deaths in the series.

RESURFACING.—As has been noted, expeditious resurfacing of the burn wound is the sine qua non of modern burn surgery. Where indicated, excision of the burn and immediate skin grafting is desirable. In extensive burns, however, resurfacing depends on two factors: (1) the state of the wound and (2) the availability of donor skin.

Readiness of Wound.—Readiness of the wound for skin grafting ideally is reached when the wound is covered with healthy granulations and shows evidence of spontaneous epithelization of the edges. It is at this time that the wound almost "reaches out" for skin grafts. The patient usually is on the mend, has begun to cope successfully with the organisms that are invariably found in the wound,[45] and can withstand the further trauma of operation. In such cases autografts are ideal and can be mixed with homografts that will "seal" the wound temporarily until further resurfacing with permanent autografts can be accomplished. Large sheets of split skin or stamp grafts can be used as desired.

If the patient takes a little longer to meet the criteria for extensive skin grafting and the granulations become too luxuriant, Macomber, Wang, and Versaci[46] recommend avulsing the granulations with blunt dissection in the areas in which autografts are to be placed, leaving the granulations undisturbed under homografts, and later avulsing both homograft and granulation tissue to complete the autograft resurfacing.

The readiness of the wound for resurfacing probably is the greatest problem in burn surgery. Having gotten the patient by the period of burn shock, balanced his electrolytes, and supported him through the immediate renal and other systemic organ insult, the surgeon invariably has to deal with an infected wound, particularly if the wound is extensive.[45] If the wound can be resurfaced, the infection generally is controllable and the patient will recover, yet the wound cannot be resurfaced until the wound is "ready" to accept the grafts. This is the crux of the problem. Placing a homograft or even an autograft on a wound that is not granulating and receptive to the skin graft is to throw it away.

How then can a wound that is not granulating and hence not ready be made ready? Most important, the patient must be built up systemically so that he is "healing." This requires adequate nutrition and fluids, electrolyte balance, and necessary blood transfusion. Antibiotic therapy usually is imperative. If, in spite of all attempts, the wound still is not granulating and the patient remains critically ill, covering the wound with anything but his own skin is in order. The patient's own skin literally must be hoarded until later. One should not add insult to injury by using a meager supply of the patient's skin in a gambling attempt to "gain some ground." Temporary cover for the burn wound may tide the patient over this crisis and start the healing process, whatever the mechanism.

Skin Supply.—Temporary covers may be composed of bovine embryo zoografts[47] or skin homografts from live or dead donors. The use of cadaver skin homografts has been popularized by McDowell.[48] Kepes *et al.*[49] have shown by tissue culture methods that cadaver skin is viable even if removed as long as thirty-two hours after death. Tessier[50] makes a plea for the creation of hospital skin banks and considers the use of live donors barbarous. Jackson[51] claims a mortality reduction of 40 per cent in extensive burns by skin homografting.

White[52] suggests four ways of increasing the yield of donor skin when it is in short supply: (1) resplitting dermatome grafts, (2) ballooning the donor areas by hypodermoclysis when these areas are concave and hence difficult to cut, (3) cutting crops of grafts, and (4) using special technics for inaccessible areas. Cutting skin grafts into "postage stamps" is routine practice and permits a small supply to spread over a large area since spontaneous epithelization permits much wider covering than do sheets of skin. Scar tissue is a drawback but must be accepted if there is no choice. Nyström[53] cuts very small skin grafts, practically skin particles, for the epithelization of extensive burn defects. This is an old method that has many objectionable features. It, like skin grafting in general, should not be undertaken until the wound is "ready" to accept grafts. The injudicious wasting of skin grafts in an extensively burned patient whose wound is not "ready" and in whom the grafts do not "take" is a tragic error.

There are many machines available today that permit easy and certain removal of skin grafts. For the surgeon unused to skin grafting burn wounds, the removing of split skin grafts is no problem with modern gadgets. However, the timing of the operation and the choice and placement of the grafts are problems that often confound even the most experienced reconstructive surgeon.

Homograft Rejection.—The homograft rejection mechanism is the subject of numerous experiments in basic science. The subject is one of the frontiers of medical research, and on its solution medicine and surgery will enter a new and miraculous phase. Green and Corso[54] explain the homograft rejection phenomenon as an immune reaction of system distribution of either cell-bound antibodies or circulating antibodies or both. Since the lymphocyte is the cell most closely associated with defects in the immune productive mechanism, they skin-homografted patients with lymphomas and found impaired homograft rejection ability. Patients with agammaglobulinemia, severe burns, and uremia have tolerated homografts for prolonged periods. Despite many interesting experiments and observations on the subject,[55–59] the homograft rejection phenomenon remains a mystery.

Nutritional and Emotional Aspects

Nitrogen imbalance is the most characteristic metabolic result of burns. This imbalance mainly is due to two factors: (1) the large amount of protein lost in the burn wound and exudate and (2) the prolonged nitrogen catabolic period that occurs in even moderately severe burns. The second factor arises from endocrine response to trauma and stress.[60] Reiss, Pearson, and Artz[61] calculated that their patients lost a total of 8.2 to 11.7 Kg. of lean body tissue during the catabolic period after a burn.

The problem of replacing the nutritional losses is one of the main problems of burn therapy.[62] Parenteral therapy has been more effective with the introduction of intravenous fat (Lipomul).[63] Werr and Preston[64] investigated the effect of an intravenous fat emulsion on blood coagulation. They concluded that 500 ml. of this form of fat may be given safely to adults for fourteen consecutive days but that a greater amount may cause hypocoagulability of the blood. They maintain that intravenously administered amino acids are satisfactory as a source of nitrogen if the amino acids are spared for building body protein by simultaneous administration of sufficient calories from carbohydrates and fats. It is axiomatic that adequate nourishment cannot be supplied by the parenteral route or even by a nasogastric tube.

Until the patient starts to eat and develops the will to live and the necessary appetite to tip the scales in the direction of spontaneous healing, the problem of infection control and granulation development will not be solved. The will to live—the drive to cooperate in eating and willing submission to the rigor of repeated dressings—are related to the emotional response to the burn. Hardy[65] documented briefly the emotional trauma in this aspect of burn therapy. Hydrotherapy in severe burn cases can be a valuable physical as well as psychologic adjuvant in management.[66]

Other Complications

Itemization.—Moncrief[67] reviewed the complications in 1,000 burns. These are, in part, as follows:

1. System complications: cardiac arrest, thrombophlebitis (as noted previously), homologous serum jaundice, genitourinary complications from too long use of an indwelling catheter, Curling's ulcer, paralytic ileus, acute dilation of the stomach, and renal damage.

2. Local complications: chondritis of the ear, ectropion of the eyelids, deformities of the hand, necrosis of the skull (in scalp burns), and contractures of the limbs.

Burke[28] reported another complication, incident to burns in children: osseous metaplasia in regions removed from the local area of burn trauma.

Ischemia of the extremities with secondary tissue destruction and respiratory embarrassment may be due to unyielding circumferential burn eschars. Relaxation incisions must be made as needed.[68] Craft, McCormack, and Dale[69] reported the successful resuscitation of a severely burned patient who went into ventricular fibrillation during skin grafting. Respiratory obstruction is a dread complication early or late in burn management. Moncrief[70] lists the therapeutic and prophylactic indications for tracheotomy. Failure to observe these indications may lead to death.

Infection.—Uncontrolled infection, in spite of antibiotic therapy and sterile handling of the burn wound, is the dread complication. Connell and Rousselot[71] report that infections accounted for 73 per cent of the mortalities in their series. The hospital staff was found to be carriers of resistant strains of staphylococci while the family and other visitors of the patient harbored organisms less virulent and more responsive to routine antibiotics. Hardy[65] conjectures that infection may constitute the so-called toxemia of burns. Markley *et al.*[72] reported on fatal Pseudomonas septicemia in burned patients and described a characteristic cutaneous metastatic lesion.

Addison[73] points out that tetanus as a complication of burn, although rare, should always be considered. He emphasizes the high mortality in short incubation tetanus infections. He also stresses the necessity for careful control of fluid content, electrolyte balance, early heroic use of muscle relaxants, and control of respiratory complications (including tracheotomy).

HEMOGLOBINURIA AND ANTIDIURESIS.—The presence of hemoglobinuria indicates a severe burn. Dudley, Batchelor, and Sutherland[74] produced a "solute diuresis" with polyvinylpyrrolidone (PVP) and mannitol hexanitrate in 4 patients. The authors feel that rapid intravenous administration of solutes may prevent renal tubular damage by the concentrated pigments.

Solutions of 4 per cent urea have been used by Schlegel and Jorgensen[75] as a solute to promote osmotic diuresis. They feel that urea is less hazardous than mannitol in patients with heart disease. The osmotic diuresis thus obtained is a physiologic means of overcoming the obligatory antidiuresis resulting from the thermal injury. The urea prevents water retention. The authors feel that their treatment with urea is a simple way of regulating hydration, both in the early and late treatment of burns.

They emphasize that the antidiuresis initiated by thermal injury may last for variable periods and recur at periods of subsequent trauma, such as during grafting operations. If a high solute-water ratio is maintained, a sudden outpouring of antidiuretic hormone would be of no serious consequence and overhydration could be prevented throughout the entire course of burn treatment.

RED CELL DESTRUCTION.—Muir,[76] using radioactive phosphorus, traced the destruction of red cells which follows a burn injury. In repeated measurements of the total red cell volume of 25 severe burns it was found that the red cell loss was not dependent on the seriousness of the burn. For some unexplained reason a patient may show a progressive, irreversible loss of red cells, leading to death. Fragility tests were inconclusive.

MALIGNANCY.—Horton *et al.*[77] discussing the malignant potential of the burn scar (Marjolin's ulcer), emphasize the occurrence, although less frequently, of malignant degeneration in recent burn scars. The type of malignancy may be squamous, basal cell, or sarcomatous. Wide excision and possible regional node dissection is the treatment of choice. The authors also discuss the medicolegal and compensation insurance aspects of burn scars in respect to potential malignant degeneration after completion of treatment.

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(*Number seventy-eight in a series of Recent Advances in Medicine and Surgery*)

Medical Society of the State of New York

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CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
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Dyspnea Following Mastectomy

CAREFUL continuous observation of a patient following surgical intervention is important to enable discovery of untoward complications requiring immediate remedial attention. Specially trained personnel in the recovery room is essential. In a previous Clinical Anesthesia Conference* it was shown that disastrous effects may occur when an oxygen supply apparatus is connected to the free end of a nasogastric tube. In the following case a patient's condition was inadvertently aggravated by faulty attachment of another apparatus commonly employed in the recovery room.

Case Report

A sixty-six-year-old woman in essentially good health came to the hospital for excision of a breast tumor. Radical mastectomy was a possibility. She had had no previous surgery and no serious illnesses. Physical examination gave essentially negative findings except for what appeared clinically to be a carcinoma of the left breast. Her arterial blood pressure was 140 mm. Hg systolic and 90 diastolic. Her pulse rate was 84 per minute, and her respirations were 20 per minute. Laboratory findings were essentially normal, with a hemoglobin content of the blood of 12.3 Gm. per 100 ml.

The operation was scheduled for 1:00 P.M. An hour and a half previously the patient was given

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Discussed at a conference held at Bellevue Hospital, New York City, January 4, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

*Clinical Anesthesia Conference: Oxygen-Induced Dyspnea, NEW YORK STATE J. MED. 60: 8 (Apr. 15) 1960.

75 mg. of meperidine hydrochloride (Demerol) and 0.4 mg. of atropine sulfate by intramuscular injection. Her blood pressure before induction of anesthesia was 134/90, pulse rate 80 per minute, and respirations 18 per minute. Anesthesia was induced with 200 mg. of sodium thiopental intravenously, and the patient was maintained throughout the operation with cyclopropane and oxygen in a closed, carbon dioxide absorption, to-and-fro system. The operative and anesthetic courses were uneventful. A left radical mastectomy was performed, and a Sump drain was inserted into the wound. During the procedure the patient received 500 cc. of type A positive blood.

When the patient was brought to the recovery room, at 2:45 P.M., she was in good condition. Her blood pressure was 130/90, pulse rate 88 per minute, and respirations 24 per minute. She had regained her swallowing reflex, and the color of her skin was good. An intravenous infusion of 1,000 cc. of 5 per cent dextrose in half-strength saline was administered. The Sump drain was connected to a Stedman pump. At 3:25 P.M. it was noted by the recovery room nurse that the patient was cyanotic and that her respirations were labored. Her pulse had become rapid (160 per minute), and it was weak and of poor quality. Her blood pressure now was unobtainable, and she had become semicomatose. It also was noted that her face and neck had become edematous. On closer observation this swelling proved to be subcutaneous emphysema with crepitation extending down the left arm and over the abdomen.

Oxygen was administered immediately, first by mask and then by a number 34 endotracheal tube. Cyanosis persisted and vital signs did not improve. An emergency roentgenogram was taken, which showed left pneumothorax with 80 per cent collapse of the left lung. An intravenous infusion of phenylephrine hydrochloride (Neo-Synephrine) was begun, and it was decided to return the patient to the operating room. On disconnecting the Stedman pump it was noted that the pump had been attached backwards so that instead of suction of liquid at the end of the Sump drain, air was being pumped into the wound, causing the subcutaneous emphysema.

In the operating room a number 30 tube was inserted into the left pleural cavity. This resulted in an immediate release of air from the chest. This tube was connected to an underwater drainage apparatus. With the insertion of the chest tube the patient's cyanosis began to clear and her pulse became slower in rate and stronger. Her blood pressure became obtainable at 80/60. The phenylephrine hydrochloride intravenous drip was discontinued, and the patient's condition gradually improved. She was returned to the recovery room at 4:00 P.M. with a blood pressure of 90/70, respirations at 38 per minute, and a pulse rate of 120 per minute. Oxygen administration by nasopharyngeal insufflation was maintained for the next twelve hours.

A roentgenogram of the chest on the first postoperative day showed 85 per cent expansion of the left lung, and by the fifth postoperative day the lung had fully expanded. The subcutaneous emphysema gradually subsided over a period of a week. The patient's convalescence was slow but without further complications.

Comment

In this case there was a double complication in the immediate postoperative period. One complication was an unrecognized pneumothorax, undoubtedly produced by puncture of the pleura during the radical mastectomy dissection. The second one was subcutaneous emphysema due to injection of air into the wound instead of suction of fluid because of backwards attachment of the Stedman pump. Needless to say, immediate steps were taken in the hospital where this occurred to prevent any recurrence by modifying the pump. Such precautions should be taken in other hospitals.

(*Number eighty-six in a series of Clinical Anesthesia Conferences*)

Who would succeed in the world should be wise in the use of his pronouns. Utter the You twenty times, where you once utter the I.—JOHN HAY

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

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Incidents Involving Radioactive Clock Dial Paint and Other Agents

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Radioactive Luminous Clock Dial Paint	$2^1/_2$ years	Male

An inquiry was received from an anxious parent relating to a two-and-a-half-year-old male child who had been playing with an old luminous clock face. Since the mother had observed flakes of luminous paint on the floor near the child, it was suspected that the boy may have ingested some radium. On the advice of the Radiation Unit of the New York City Department of Health, a public health nurse was dispatched to the home to procure urine and stool samples for analysis by the Atomic Energy Commission and New York University radiation laboratories.

Information obtained by the Radiation Unit from the manufacturer of the clock disclosed "the material involved was an insoluble radium sulfate, bound in zinc sulfide, and embedded in an insoluble vinyl adhesive. The radium content for this clock model, a Westclock Bantam number 3 7-E, is less than 1 microgram on the dial and approximately 1 microgram on the combined face and hands."

The Atomic Energy Commission, after analyzing a 200-cc. sample of the urine, which was collected over a four-day period, and a sample of feces reported that the urine produced 1.7 micromicrocuries of radium per liter and that the feces sample failed to reveal any trace of radium. This is indicative of a total body radium burden of 1 per cent, which is considered negligible. The total permissible body burden is considered 0.1 microgram of radium. The maximum allowable radiation from the back of a watch should not exceed 1 milliroentgen per hour. The usual radium content of a watch is about 0.5 to 1 microcurie.

The child appears to be entirely well and suffered no apparent ill-effects. Professor Hanson Blatz, Director of the Office of Radiation Control of the New York City Department of Health, maintains that the mother, in an attempt to scrape off the radium from the dial, theoretically was exposed to a greater hazard than the child who ingested it.

It is of interest that on the date of the occurrence an inquiry was received from James H. Lade, M.D., Special Assistant Commissioner for Radiological Health of the New York State Department of Health, whether any incidents involving radioactive luminous dials had been reported to the New York City Poison Control Center. We were able to report the above incident. Professor Blatz in a letter to Dr. Lade stated:

> . . . The only occasions that I can recall which might be of interest to you were two in which children either had or were thought to have eaten particles of radioactive luminous clock dial paint while playing with discarded clock faces. One recent case was followed up by a prompt urine and feces examination, the results of which we will not have for a week or two.
>
> I have considered the likelihood of harmful effects and have discussed the matter with others. In the case of clock and watch dials, the radioactive material is painted on with a lacquer which is quite insoluble in water. We plan to test its solubility in other body fluids to determine whether there is likely to be any important absorption. Considering the amount of paint that could be taken in out of the total 1/2 to 1 microcurie on the typical clock face, I am of the impression that a relatively small amount would actually be eaten by a child and of that little, if any, would be absorbed. If we obtain a few urine samples of such cases through our Poison Control Center service, we will know much more about it.
>
> We will keep you informed if we receive any more information.

The recent publicity on the radiation hazard of wrist watches resulted from an unusual accident, an incident not normally expected from watches generally used. Although real hazards from this source are not too well documented at present, it is certainly wise for physicians to discourage ingestions of such materials by children.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Insecticide	6 years	Female

This incident was reported following an inquiry from Virginia. The child mistakenly was given a mixture of dieldrin and an organic phosphate as an expectorant in the treatment of a cough of several days duration. She swallowed from 4 to 5 cc. She immediately complained that it tasted like kerosene, but since she had no further immediate ill-effects, nothing was done. Thirty minutes following ingestion the patient vomited and complained of abdominal pain. She was taken to the University of Virginia Hospital emergency room, where her stomach was lavaged with water. On admission to the emergency room the patient had the following symptoms: abdominal pain, nausea, vomiting, sweating, drowsiness, salivation, and diarrhea. Morris A. Lambdin, M.D., of the University of Virginia Hospital, reports as follows:

> . . . Within a very short period of time she became quite weak and drowsy and promptly was brought to the emergency room of the University of Virginia Hospital, where immediately a gastric lavage was accomplished, intravenous fluids were initiated, and a tracheotomy was done. At this time she was producing copious amounts of fluid from the trachea and mouth. She was sweating profusely, was intermittently in a coma, and then became semiconscious.
>
> After emergency consultation with the Poison Control Center in Richmond and in New York, she was started on large doses of atropine, which soon caused a decrease in the amount of secretions, and thereafter there was no serious difficulty. Initially she was given 0.25 mg. of atropine and within three fifteen-minute intervals she was given an additional 0.5 mg., 0.25 mg., and 0.25 mg. respectively. At this point it was realized that with each dose of atropine she attained marked hypertension,

with her blood pressure in the arms recorded at 220/140 immediately after the last dose of atropine. During the first six or seven hours of her stay in the hospital recovery room her blood pressure varied between 140/90 and 220/140. However, as the need for atropine decreased, the hypertension diminished.

Approximately five hours after the ingestion of the poison she voided a great amount, and at approximately this time it was noted that the perspiration had decreased and the salivation had markedly decreased. Also at this time she seemed to respond to stimulation somewhat, and by seven hours after ingestion of the poison she was responsive to stimulation. Intravenous fluids were continued. The pupils remained constricted during this period despite the large doses of atropine. Her temperature initially went up to 103.6 F. but during the next forty-eight hours gradually returned to normal. However, following this, her fever returned to a low degree, and at this time she had mild otitis media with some purulent discharge from the tracheostoma and a purulent nasal discharge. However, without antibiotic therapy she combated this adequately.

Laboratory studies at the time of admission revealed a white cell count of 28,800, with 6 per cent band cells, 89 per cent segmented forms, 3 per cent lymphocytes, and 2 per cent monocytes. The hematocrit was 41. The following morning the hematocrit was 40, and the hemoglobin was 15 Gm. per 100 ml. On the fourth hospital day her white cell count was 17,500 with 84 per cent segmented forms, 12 per cent lymphocytes, 2 per cent monocytes, and 2 per cent eosinophils. The hematocrit was 42. At the end of forty-eight hours the thymol turbidity was 2.5 units and the cephalin flocculation 3 plus. The initial urine specimen showed a trace of albumin with 4 to 6 white blood cells and 30 to 40 red blood cells with 1 to 2 granular casts per high-power field. The next urine specimen showed a 4 plus sugar content; however, this was during intravenous therapy. She continued to have cellular material in the urine and on the fourth hospital day still had a 1 plus albumin, 7 to 10 red blood cells, and occasional fine and coarsely granular casts. At midnight on the day of admission the serum sodium was 131, blood urea nitrogen 35, chlorides 102 (all mg. per 100 ml.), carbon dioxide 19.6 volumes per cent, and total potassium 2.8 mEq. per L. Four days later the sodium was 141, chlorides 94, carbon dioxide 23, and potassium 5.6. The total serum protein was 8.6 Gm. per 100 ml. with an albumin-globulin ratio of 5.3 to 3.3. A throat culture grew a pneumococcus and a Staphyloccus aureus. Sensitivity studies have not been recorded on the chart.

Approximately thirty-six hours after admission, intravenous fluids were discontinued and fluids by mouth were initiated. The diet was gradually returned to regular. A chest x-ray film on the sixth day of hospitalization showed no evidence of pneumonitis. The tracheotomy tube was removed on the sixth hospital day without difficulty, and at that time physical findings were essentially negative with the exception of the purulent discharge from the tracheostoma. There was slight hyperemia and some discharge from the mucous membranes of the nasopharynx, and the tympanic membranes were slightly injected bilaterally; however, they were not bulging. She was discharged on the tenth hospital day to be followed privately.

The organic phosphate insecticides range from highly toxic agricultural products to relatively safe ones for household use. Atropine is the specific antidote. Dieldrin is one of the organic chlorinated hydrocarbon insecticides which in low concentrations is permissible for household use but is highly dangerous in the concentrated form. No fatalities from organic phosphate ingestions reported to this Center have occurred.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Room Deodorant	40 years	Female

We believe that this incident occurred because the label had been removed by the purchaser in order to obtain an exchange premium offered by the manufacturer.

The Center was called for assistance by a woman who had sprayed her hair with a pressurized aerosol room deodorant instead of with one of the hair lacquers. This mistake had occurred because an unlabeled pressurized container was found in the medicine cabinet. Most room sprays in our experience have been of an innocuous nature, and the complainant was informed that a shampoo most likely would solve the problem.

In accordance with the manufacturer's instructions, the label had been removed from the can to obtain the premium. Since this practice is not an isolated one and it was feared that incidents of a more serious nature would result, the following communication was sent to the distributor, who is of national prominence:

> To prevent similar incidents from occurring, it would appear to us more advisable to offer a separate coupon for the exchange purpose or at least to warn buyers of the need to affix another identifying label on the product if the original label is removed.
>
> The practice of requesting labels and thus leaving the original container unidentified is fraught with danger and is most precarious. We strongly urge that you take the necessary steps to rectify this dangerous practice which you are unwittingly encouraging.
>
> In the interest of public health and safety, we urge you to take immediate action.

A reply promptly was received which stated that in future promotions, recommending removal of all identification from a product prior to its use would be avoided. The company also is exploring the manufacturing problems involved in applying identification on the can material. It is puzzling that with all the resources available to such manufacturers, potential hazards of this kind are not foreseen.

This incident illustrates the preventive aspects of a poison control center.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Anorexiant	$2^1/_2$ years	Male

The child obtained the phenmetrazine hydrochloride tablets from a medicine cabinet and ingested three or more 25-mg. tablets. The child exhibited no symptoms until three hours following ingestion, when he became highly excitable, to the extent that he was banging his head against the wall. He was then taken to a hospital emergency room, where no treatment was given but vitamins were recommended. The mother stated that on return from the hospital emergency room the child became progressively worse, behaving like a "mad man." At this time the family physician was called. A sedative was administered, and the child quieted down and went to sleep. After thirty-six hours the patient was completely symptom-free.

Attention is called to one of the disturbing side-reactions to this product, reported in the British *Lancet.** The November 7, 1959, issue of the *Journal of the American Medical Association* contains an abstract of that series of phenmetrazine poisonings.† Evans, the reporting physician, treated 16 patients who had become ill from an overdose of the drug, 12 of whom presumably were addicted to the drug. Of the 16, 9 had symptoms indistinguishable from those of an amphetamine psychosis, such as paranoid delusions, hallucinations, disturbances of affect, and depression. Two patients in the series were disoriented. The entire group recovered after hospitalization of one week. However, 4 had relapses after discharge and began taking the drug again in large quantities.

A case also is reported by physicians from Argyll and Bute Hospital, London, in the August 15, 1959, issue of *Lancet.*** Their patient began taking phenmetrazine in doses of as much as 30 tablets (totaling 750 mg.) per day for depression. The medication was taken for about a week prior to admission to the hospital. On admission the patient was in a state of apprehension and agitation and had both auditory and visual hallucinations. A provisional diagnosis of acute schizophrenia was made. The acute stage, however, completely subsided within forty-eight hours, and it was then that the history of drug ingestion was obtained. Since no other drug had been taken during the period of ingestion, the condition was finally diagnosed as a case of phenmetrazine intoxication with schizophrenic-like symptoms. The authors advocate very stringent control of the availability of such drugs.

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* Evans, J.: Psychosis and addiction to Phenmetrazine, Lancet **2**: 152 (Aug. 22) 1959.

† **171**: 222.

** Devar, M. M., and MacCammond, I.: Phenmetrazine, Lancet **2**: 128.

In addition to the possible psychosis which may follow ingestion of this drug, the question of addiction also must be borne in mind. This is a sympathomimetic drug which now is used widely in the treatment of obesity.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Pipamazine	2 years	Male

This medication had been prescribed for the mother for the relief of morning sickness. The child obtained the tablets from the top of a bureau and ingested five of them, each 5 mg., tablets at 10:00 A.M. He became drowsy, and his mother brought him to Lutheran Medical Center, Brooklyn, where his stomach was lavaged at 11:00 A.M. He was discharged after two days.

Attention again is called to the fact that medications used by pregnant mothers frequently are ingested accidentally by young members of the family. Obstetricians should warn parents about such hazards in prescribing drugs, bearing in mind that iron medications are notable and frequent hazards.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Nicotine sulfate	32 years	Male

In depelting mink $^1/_2$ cc. of 8 per cent nicotine is used as the death-dealing agent. The patient was holding the mink for another worker to inject. The vicious little animal squirmed and the injection inadvertently was given into the patient's left

TABLE I.—POISONINGS ABOUT WHICH INFORMATION WAS REQUESTED FROM THE POISON CONTROL CENTER OVER A RECENT WEEKEND

Product Ingested*	Patient Age†	Patient Sex
Diuretic-cathartic pills	5	F
Infra-Rub (liniment)	3	M
Anticoryza pills	$2^1/_2$	M
Prochlorperazine (tranquilizer-antiemetic)	40	F
Codeine sulfate	3	M
Alano Bath Capsules (detergent)	18 months	. . .
Lysol (disinfectant)	1	F
Dextropropoxyphene hydrochloride	5	F
Cologne	1	F
Naphazoline hydrochloride (topical nasoconstrictor)	1	M
Oil of wintergreen	70	M
Liothyronine	1	M
Barbiturate	22	F
Tip of mercury thermometer	$3^1/_2$	M
Esquire Scuff-Coat (shoe polish; coal tar dye derivative)	$1^1/_2$	M
Bleaching peroxide	2	M
Oil of wintergreen	26	M
Theraderm Shampoo (in eye)	40	F
Guardsman Furniture Polish	14	M
Acetophenetidin-Aspirin-Caffein tablets (96)	19	F
Drano (caustic)	3	M
Drano (caustic)	$1^1/_2$	F
Meprobamate (tranquilizer)	23	M
Meprobamate-benactyzine hydrochloride	26	F
Halo Shampoo	23	F
Carbon monoxide	5	M
Carbon monoxide	3	M
Carbon monoxide	10	M
Antitussive syrup (3 ounces)	10	M
Barbiturate**	31	F
Tincture of benzoin	8	F
Amphetamine	2	F
Methylbenzethonium (for infant skin)	1	F
J.O. Paste (phosphorous pesticide)	4	F
Liquid floor wax	24	F
Aluminum sulfate stick	2	M
Kerosene	$1^1/_2$	M
Phenmetrazine hydrochloride (anorexiant)	2	M
Over-the-counter cough medicine	$2^1/_2$	M
Calamine lotion	2	M
King Pine (soap and pine oil)	1	M
Sleeping pills	37	F
Rose X Bleach (sodium hypochlorite)	7	F
Pin worm remedy	$1^1/_2$	M
Warfarin	$2^1/_2$	M
Clorox	2	M
Eau de cologne	. . .	. . .
Meprobamate	. . .	. . .
Bubble bath	18 months	M
Comet (scouring powder)	7	F

* Ingestion unless other mode of occurrence is indicated.

† In years unless months is indicated.

** D.O.A.

wrist ($^{1}/_{4}$ cc.). Fifteen minutes later the patient began to vomit persistently, had abdominal pains, and went into shock. He was taken to a hospital in shock. The abdominal pains, nausea, and vomiting continued. He was given oxygen, chlorpromazine as an antiemetic, and liberal amounts of fluids orally. The laboratory report indicated that the blood chemistry was normal except for an elevated bilirubin, which returned to normal four days later, at which time the patient was discharged.

All cases of nicotine poisoning, except one of a cigaret ingestion, reported to this Center involving children have been without consequence.

Table I lists poisonings about which information was requested from the Center over a recent weekend. The diversity of the products indicates the complexity of the problems involved in the operation of a Poison Control Center.

(Number fifty-two in a series of Briefs on Accidental Chemical Poisonings)

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SPECIAL ARTICLES

The Art of Interpreting Medicine to the Layman

WALTER C. ALVAREZ, M.D.,* CHICAGO, ILLINOIS

I CAN imagine some physicians saying to themselves as they glance at this title: "Why read that? It does not concern me; I do not write a medical column." That is true. But every day in his office the physician, if he is to be highly successful, must interpret medicine briefly and expertly to the lay people who are his patients. If he is striving to satisfy them, to reassure them, to give them confidence, to inspire them, and to teach them to cooperate intelligently with him in their treatment, he must give each patient some idea of what his trouble is and what can be done at home to relieve it or cure it.

Some physicians who have a gift for doing this soon have a huge practice, while others, who either have no inborn skill in this field or who cannot be bothered to study and learn the art, fail to satisfy their patients and find it hard to build up a practice. Because of this, I think that, even if a physician does not write for the public, he should pay some attention to the art of interpreting medicine to the layman.

Need for Medical Interpretation to the Layman

Often, when I have the impression that a physician friend of mine prides himself on his skill in using long technical words, not only in his writing but in his daily speech, I doubt very much if he is wise. I am sure that he is handicapping himself as he talks to his patients, and I know that he is handicapping himself when he writes an article for a medical journal. He may tell me that he doubts if simple speech is dignified; and occasionally, some friend of mine who edits a medical journal will tell me the same thing. Also, some editors feel that the written word should be decidedly more dignified than the spoken word. I doubt this.

One can find the finest English prose in the world in the King James version of the Bible, and yet its words are mostly of one syllable. I agree with Rudolf Flesch who, after much comparison of hard-to-read material with easy-to-read material, showed that the latter is written largely in short Anglo-Saxon words and in short sentences.

One reason why I hate to see a physician take pride in a technical type of jargon is that soon he is likely to be using it even with his uninformed patients. I will never forget the day when, during a consultation with one of America's greatest physicians, I heard him say to a simple old farm laborer, "Your anasarca and ascites are secondary to the alarming augmentation in the titer of your N.P.N.!"

Speaking for myself, I find that sometimes, when writing for laymen, in spite of all my efforts to keep my words simple and intelligible, I will slip and I will use a word that the average reader does not know. The only cure for this is to have at least one lay person read my copy before it goes out.

History of a Medical Columnist

EARLY TRAINING IN SIMPLE ENGLISH.—Whatever success I have had in writing probably stems first from my parents, both of whom had a gift for expressing themselves clearly and well. My next bit of good luck was the fact that I was brought up in Hawaii where most of the Hawaiians, Japanese, Chinese, Portuguese, and others whom I met every day knew only a few hundred English words. Soon I came to know these words so well that when I talked to our Japanese gardener or our Chinese cook, I used only the simplified idiom that he knew. Years later, I found this old training helpful when, in a big city hospital, I had to take case histories from recently arrived immigrants.

THE BEGINNINGS OF MY MEDICAL WRITING.—Many people ask: "How did you happen to start writing a syndicated newspaper column?" Although I have been writing for the public for only ten years, I have a feeling that my prepara-

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Presented at the Annual Awards Meeting of the Metropolitan New York Chapter, American Medical Writers Association, New York City, December 3, 1959.

* Editor in Chief, *Modern Medicine*.

tion for it began some sixty-five years ago. In those days, as I drove about with my physician father, chatting with him as he made his calls, he would tell me sometimes how distressed he was because he could not help a family afflicted with tuberculosis. The people would not make a move to help themselves because they were so terribly afraid that their neighbors would discover what disease they had. Rather than admit that they had "consumption," they would let some of their children contract it and die.

As my father used to say then, before we physicians could hope to help these people, we would have to educate them. The people would have to be taught that the disease was due to a germ; they would have to be shown how the infection was spread, what the early symptoms were, and how the disease, in its early stages, could be arrested or cured. Along the way, they would have to be convinced that there was no reason for them to be ashamed of their illness.

Similarly, in those days there was no hope of abolishing the constant menace of typhoid fever until the people in many cities could be convinced that their terrible epidemics were due not to the wrath of God but to their willingness to keep drinking the sewage water that came down to them from a city a little farther up the river.

The Need for Educating the Public.—Soon after I graduated from medical school, I became so impressed with the inability of most city dwellers, when seriously ill, to find the specialist they often needed that I promised myself that when I retired from practice I would do something to supply laymen with the necessary information. Another thought I had was that, in sending sick people with rare diseases to an up-and-coming young specialist, I could help him to establish a practice without the usual long waiting period.

How I Got Started on My Medical Column.—In 1950, as I was being retired from the Mayo Clinic, a patient of mine, a publisher, kept begging me for a manuscript that he could use for a book. One day I gave him the manuscript of a talk I had presented entitled "How to Live with Your Nerves." He was so enthusiastic about this that he published it in booklet form and soon sold 120,000 copies. Later it was published in some popular magazines, and it was syndicated in newspapers all over the world. The next thing I knew, Henry Martin, of the *Register* and *Tribune* syndicate, was in my office signing me up to write four columns a week for a group of newspapers, now numbering some 85, in the United States and Canada.

Early Disapproval of Column Writing.—For a while a few physicians protested against my writing for the public, but when I asked them if they wanted all such writing to be done by laymen, they reconsidered and agreed that they would prefer to have it done by dedicated and conscientious physicians. I am happy to say that, with the passage of the years, more and more medical men have come to realize that we physicians must keep supplying the layman with the information he so greatly wants and needs. Now, as I attend conventions, many physicians come up to me to say, "I like the column; it is making for a better feeling between the public and the medical profession; keep it up."

As we all know, opinion in regard to the propriety of a physician's talking to men of the press, or receiving publicity, has changed greatly through the years. Fifty years ago a doctor was likely to be censured if, after a talk at a convention, he answered a reporter's questions. Because of this, many men used to refuse to talk to newspapermen. But soon, when they saw that this sort of discourtesy on their part was giving the medical profession a "bad press," many, like me, decided to take the risks involved and to talk frankly. We decided to be friendly with reporters and to help them get the stories on which, literally, their daily bread depended. In return, I imagine most of us asked the reporters not to play up sensationally some little thing we said so that it would make the front page and thereby greatly embarrass us. As a result of this friendlier attitude on the part of most medical speakers, I think today most reporters and all trained science writers try to be fair. As we all know, the attitude of medical societies has changed so greatly that nowadays, at a meeting, there is a press room where the speakers are asked to meet the reporters. The world does change.

Accepting Medical Criticism.—Today I find that most doctors will forgive me when I say that we are making some mistakes, as, for example, when sometimes we operate unwisely or do certain things without thinking. When a medical "elder statesman" makes a criticism, he can take the sting out of it by saying "*we* do something unwise." Actually, when I say "we are doing wrong," I am only being fair because in my untutored youth I am sure I made all of the mistakes which now, in my seventies, I decry.

Public Desire for Medical Information

Today the desire of the public for medical information is so great that a single issue of one monthly magazine may have as many as four medical articles plus a medical editorial page full of notes about recent scientific discoveries. It is a remarkable fact that a recent edition of the *Wall Street Journal* had on its front page a long report of a medical symposium on the treatment of high blood pressure.

Polls taken by newspapers have shown that most of the readers devour all of the scientific articles printed and then look for more. An amusing statement was made by the owner of a great newspaper who told me that their polls showed that, in reader interest, my column was up just below the funnies! This, he said, was the highest compliment he could pay me!

One reason for the layman's great hunger for medical information is that nowadays so many of us physicians are so rushed that we do not feel always that we can stop to answer a patient's many questions. Scores of the letters that I get each month tell of the writer's distress when, after having been told that he has, let us say, Hodgkin's disease, no one has stopped to tell him what the disease is. He wants to know desperately. Is there any cure? How long can he live with it? Where can be go to get the most expert treatment? Is any research being done on it? Hundreds of people write asking: "Tell me all about high blood pressure," or "Tell me all you know about hardening of the arteries," or "Tell me everything about losing weight and send me a diet."

Writing a Medical Column

Importance of a Warm Tone.—I feel that the tone of a medical column should be warm, with a human touch and an occasional bit of humor, because then the readers will feel kindly not only to the writer but also to the cause of medicine in general.

I think the author should project his character and personality in his writing. When I feel sympathetic toward certain sick people, I say so; when I feel outraged at the behavior of a rapacious quack, I say so; when I receive a letter "taking the hide off of me" and am amused at the writer's vehemence, I may say so; and when I receive a letter that particularly warms my heart, I may tell of my pleasure. People love such human contacts with a writer; soon they feel that they have come to know him and they like this. Often they hunger for more information about him, and this is why occasionally I tell of one of my own experiences with disease or with life. As a result, I receive letters from people who say: "We now feel toward you as we used to feel toward our old family doctor who took us through our measles and mumps and whooping cough, and shared with us some of our joys and sorrows."

The Unwisdom of Scaring People.—Every so often I am distressed when I see an article which I know will produce much unjustified fear. To show how much harm such scarehead articles can do, I need only mention the many papers which have appeared in the last year, all warning our people about the dangers of radiation. Much of this writing has been foolish and it has done such harm that people now tell me that they do not dare let their dentist take x-ray pictures of their teeth! To counteract this sort of thing, every so often I have felt it my duty to quote the reassuring statements of wise old teachers of roentgenology who point out that they have been working around x-ray equipment for forty years, and not only are they still perfectly healthy, but their children and grandchildren are healthy.

When I have to write on multiple sclerosis, I describe only the less severe forms of the disease with the milder symptoms. Why describe the horrors of the rare, malignant form of the malady, with its blindness, paralysis, and dribbling of urine? I will never describe the syndrome of a brain tumor in my column because, if I were to do this, every "worry wart" with an occasional headache or an occasional vomiting spell would be sure she had the disease and would expect to be blind and paralyzed in a week. People beg for information about leprosy, but I would not think of describing the little white patches; a mention of them would send hundreds of thousands of people with vitiligo into paroxysms of fear. They would run to their doctor who would promptly be angry with me.

When, as I sometimes do, I warn people to consult a physician about a lump or a nodule or a mass somewhere, I feel that I must then and there describe lipomas and wens which need not cause concern. Also, I must keep impressing constantly on people the fact that a symptom such as nausea, vomiting, a colicky gas pain, constipation, or "spotting" between menstrual periods need not worry much a nervous and sickly young woman of twenty-two, but it should cause great concern when it appears suddenly and for the first time in a woman of sixty who has always enjoyed excellent health.

Misreading and Misinterpretation.—Soon after one starts to write a column, one learns that thousands of people do not grasp clearly what they read. Even newspaper reporters used to have this trouble. Years ago I wrote in a medical journal that when I questioned 255 persons who, in their middle life, had had a so-called "chronic" appendix removed to cure a neurosis, I found only 2 patients who thought they had been helped. Imagine my distress when the next day in newspapers all over the country I found all of my qualifying words left out. As a result, I was quoted as having said that "appendectomies are useless!" Fortunately, today all the big newspapers have conscientious and well-trained science writers who know the importance of retaining and employing all the qualifying words that a scientist uses in a sentence.

The Need for Giving Hope.—Just as I think we who write for the public should avoid causing needless alarm, so also I think we should, whenever possible, give reassurance and hope. People are so hungry for hope and they are so grateful when they get it. For instance, when I write on multiple sclerosis I usually mention some of the healthy-looking and active housewives I know who have had the disease for fifteen or twenty years; or I will mention the census of patients with multiple sclerosis taken in Rochester, Minnesota. There, as I remember, the neurologists of the Mayo Clinic found that many of the patients had had the disease for twenty-five years, and more than half of them were still up and about and at work.

Why shouldn't we tell people about these encouraging aspects of their disease as well as about the frightening ones? When I am talking about high blood pressure, why shouldn't I tell of the robust man with a systolic blood pressure over 200 mm. who each year for ten years kept dropping in to ask me why he was not getting any symptoms? But I should add here that our desire to give people some hope should never cause us to become sugary and Pollyannaish. That would only cause our readers, both lay and medical, to lose respect for us.

Also, in writing for the public, a man should never make an effort to be merely smart, or clever, or amusing in the sense of being "smart alecky." He should try just to present the facts in such simple English that even a person with an eighth-grade education can understand him. He should not talk down to his readers, but he should give them credit for having intelligence. He can make his article fascinating enough by just filling it with interesting facts.

Choosing Topics.—Many persons ask me how I choose the topics for my columns. First, I report on discoveries which have interested me greatly during the week. I read the official releases and reports from big medical meetings, plus scores of articles in the medical journals, plus new books. I have a trained medical editor who keeps searching constantly through the mass of material which flows into my office each day. She keeps finding excellent subjects for columns. Second, I choose topics which have been suggested by many of the people who write in to me asking for information.

Stressing the Common Diseases.—To interest and help the greatest number of my readers, I feel I should write most often about the commoner diseases and only seldom about the rare diseases, despite the fact that my mail is full of requests for information about the rare diseases. When a person is told that his old father has Pick's disease, he is frantic to know what it is, and usually he cannot find out. Therefore, he writes to a columnist.

Discussion of Other Medical Problems.—Occasionally a newspaper editor thinks I should be writing only about warts, ear noises, postnasal drip, eczema, and arthritis. Many people would doubtless like a column written along the lines of the recent best-seller in which the doctor tells how to cure almost every disease with a mixture of vinegar and honey.

But I could not bear to write such a column. I prefer to tell people not only how to avoid hardening of the arteries, but also how to take better care of their loved ones who are slipping into a psychosis, who are sexually mixed up, who are psychopathic delinquents, who are alcoholic patients, or who are unable to adjust to life. Actually, many editors tell me that my type of column in which a physician chats with his readers about scores of things that interest him is likely to be especially popular.

Avoiding Proselyting.—As often as I dare, I make a plea for some cause about which I feel strongly, such as better and more tolerant and helpful attitudes toward psychotic and insane persons, epileptic patients, and sexual variants. But I do not want to be a crusader or an uplifter, and I am sure that much "crusading" could soon ruin the usefulness of a medical column. I will never forget what an old newspaper man once said to me: "Keep preaching to people about something they don't like, and they will quit reading what you say."

Not Commenting Too Soon on New Announcements.—I soon learned that the medical columnist, in commenting on new treatments, must be careful not to raise hopes that later will be dashed. Often it is wise to wait a while to see if some supposedly great discovery is confirmed. I remember with shame and distress that long ago I wrote up a medication to be taken by mouth supposedly to dissolve cataracts. I thought the story a bit "fishy," but the article was published in such a highly respected scientific journal that I decided to take a chance. In a day or two a learned friend of mine wrote me to say that the author of the article was a jailbird on parole from a state prison! This convict had a curious penchant for pseudoresearch, and he could indulge in this hobby because a wealthy widow supplied him with a laboratory and a medical assistant. Obviously, I could have saved myself much embarrassment by telephoning my ophthalmologic friend before I published the column.

Frequent Admission of Ignorance.—I learn from my mail that what greatly pleases my readers is my willingness, day after day, to admit ignorance about the cause and the treatment of many diseases. Such admissions of ignorance cause people to feel much more kindly not only to the writer but also to the whole medical profession. If there is one thing that people do not like it is a man who thinks he knows it all, or one who thinks he is always right, or who, as they say, "likes to play God." I feel strongly that a medical column would soon lose its value to the cause of medicine if the writer were to try to prove each day that all of us doctors are lovable idealists who never do anything in a selfish or mercenary way. Sometimes we must be willing to admit that not all of us are perfect; many of us are just human.

How Scientists Work and Think.—Occasionally I try to show people how medical discoveries are made and how scientists work and think. So many people take such delight in pseudoscience that I feel a great need sometimes to take a crack at this competitor of ours. I have been told that each month over 2 million Americans read magazines on astrology! They do not realize that this is a survival from the Middle Ages!

I think it best that the writer of a medical column not attack directly the men who practice on the fringes of medicine. Why gain the hostility of men who have a great influence over the masses?

Helping Worthy Causes.—Along the way I like to give a helpful boost to many a worthy cause. For instance, I tell my readers of nationwide societies that have been organized to help patients with certain diseases. I tell people about homes for unmarried mothers; I tell them about Alcoholics Anonymous; and sometimes, I tell them about money drives for worthy medical causes.

Endorsement of Books, Drugs, or Products.—Often the question comes up as to whether or not I should help someone distribute a book, a medicine, or a health gadget. The only time I do this is when the book or gadget obviously could be a great boon to many, to shut-ins or cripples, or when it could help mothers to educate and to take better care of their mentally retarded or deaf or blind children. Often, I can see that a well-written and practical book on the training of a spastic child could help a mother in some lonely ranch house as she tries to teach her crippled youngster to walk and talk, and therefore I will review it. Only rarely will I mention a particular drug because I do not want to encourage self-medication.

The "Problem" of Fan Mail.—Although I keep telling my readers that I cannot read or answer letters, a large mail keeps pouring in constantly, and I am glad of it, for the letters tell me what my readers want to hear about and what they like and do not like about my writing. I have three helpers who look through the letters and bring to my desk each day those few, perhaps 20 or 30, that they think I might answer. The many long letters in which the writer tells about some two dozen symptoms, "female trouble," "catarrh," or "eczema" obviously cannot be answered; who knows what the patient has? Many letters written by psychotic persons run to 30 or 40 pages. Often it distresses me when I cannot send a kindly and helpful answer to some poor soul whom I can visualize sitting in a lonely room, waiting anxiously to get a long letter and a prescription from me, but I just cannot grapple with his complicated problem.

Finding a Good Doctor.—One type of letter which I always try to answer is the very common one sent by a person who asks how he can find a good family doctor or a good specialist of a certain type. A typical letter is the one I received from an old Iowa farmer who wrote that, a while ago, he moved to Los Angeles. Now, living alone in a cheap room and barely existing on a small pension, he is going blind and he does not have the remotest idea how to go about finding an eye specialist who can remove his cataracts. I could not disregard his appeal for help, so I pulled down the directory of specialists, and there I found for him the name of a good ophthalmologist in his neighborhood.

Months ago there came a letter from a woman on a lonely Wyoming ranch who told me her son had epilepsy and that the local generalist admitted that he was at the end of his therapeutic rope, that the drugs he knew well would not control the fits. I wrote and told the woman of an excellent neurologist I know in Cheyenne. A while later I got a letter from the mother saying: "God bless you; the neurologist you recommended prescribed a new medicine which put an end to my son's convulsions." Then I felt happy.

Keeping a Record of Names and Addresses.—If the columnist is to help some of the hundreds of people who write asking him for information, his secretary should keep a handy file of addresses of the national associations which are interested in studying the many diseases. Also she should keep within reach a number of books, the names of which she can give to persons hungry for information about some special problem. For instance, I often tell an alcoholic patients' wife about the book by Free,* an able ex-alcoholic, in which he tells about the several agencies that will help an alcoholic person and his wife and supplies their addresses.

Need for Improvement in Supplying Medical Information.—I used to think that the office staff in our local county medical society office gave people medical information, but the requests that I get in thousands of letters make me doubt if our society secretaries are fully prepared to do this work. Worse yet, lay people do not know that they might turn for help to the office of a county medical society or a county nurse or social service worker. We in medicine must not only arrange for the dispensing of information or help, but also somehow we must now teach the public where they can go to get help.

Summary

Today people have a tremendous desire for medical information, and too often their doctors cannot find time in their busy days to supply this need. Often when a doctor does try to supply it, he uses such long words that the patient does not understand him. Physicians would do well to cultivate a simple rather than a highly technical form of speech. It can make for a greater success in practice; patients will be pleased and satisfied and will cooperate better.

Good medical writing for the layman is much needed. Preferably it should be done by physicians. If people are to feel more kindly toward the medical profession, the reporting must be absolutely honest with many confessions of ignorance.

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* Free, J. L.: Just One More; Concerning the Problem Drinker, Toronto, Coward-McCann; Longmans, 1955.

To preserve a friend, three things are necessary: to honor him present, praise him absent, and assist him in his necessities.—Italian Proverb

Unity and Communication in Science and the Health Professions

CHAUNCEY D. LEAKE,* COLUMBUS, OHIO

(*From the Ohio State University*)

WHAT can one say of the unity of science when it is shattering into so many fragments? What is to be said of a unified approach to the problem of promoting optimum health among all peoples when the health professions split ever wider into specialties, each going its own way? What can one say about communication in science when scientific reports by scientists are becoming stilted stereotypes of conventionalized jargons, unintelligible except to those initiated into them? What can be said about communication among the health professions when separate interests keep them from meeting together and when publications in one health profession are difficult of access to members in another? What can one say about the communication between scientists and the health professions on the one hand with people generally on the other? I will try to say something on these difficult questions, first about unity in science and in the health endeavor and second about communication among scientists, the health professions, and the public.

Unity in Science

There are threads of interrelationships between the multiplying sciences which hold them together lightly as a phase of our current culture. Mathematics remains the basic controlling force toward which all sciences turn in an effort to reach order and to obtain optimum verifiability. The Queen of the Sciences, recognized as such since antiquity, still commands the loyal worship of all who call themselves scientists. It is mathematics which makes astronomy and physics such precise sciences. It permeates chemistry. It offers statistical stability even to the earth and the life sciences. It is beginning to give similar controlled stability to the social and behavioral sciences. If there is any technical unity in science, it is mathematical.

As classical physics evolves into nuclear physics, there is increasing over-all unity between physics and chemistry and often the two disciplines merge in practice, if not in university departments. Ever since the startling manifesto in 1847 by Hermann Von Helmholtz (1821–1894), Carl Ludwig (1816–1895), and Emil DuBois-Reymond (1818–1896) that all living processes are explainable in terms of physics and chemistry, there has been fulfillment of this faith. This tendency is also clear in the earth sciences. Even in the behavioral sciences the inevitable drive toward physical and chemical explanations appears.

Thus, in spite of the apparent fragmentation of scientific endeavor into an indefinite number of separating disciplines, there seems to be an underlying unity in the very order of the universe itself. The fragmentation is a human device for convenience in approach. The danger is that in a too intense study of individual trees we miss the forest. If we are to develop science effectively, this indicates the necessity of keeping in mind always the organizational levels at which we may be working.

Also it is wise to recall that every organizational level has its own "gestalt." This is a proposition which Rudolf Virchow (1821–1902) emphasized for the life sciences over a century ago, but which we are really beginning to appreciate only recently. The study of living processes at cellular levels is a very different matter from that at social levels.

This matter of organizational levels is coming into the picture of scientific effort itself. No longer can an individual scientist expect to make much advance in any particular scientific field. Teamwork is the order of the day. Often the team gets unwieldy, but when it is well managed, as in atomic energy, its results are terrifyingly impressive.

There seems to be a general agreement among scientists everywhere that there is essential unity in the concept of science in regard to purpose, method, and attitude. This is worth considering.

When my revered teacher, Edwin Grant Conklin (1863–1957) was president of the American Association for the Advancement of Science in 1939, he formulated the purpose, method, and spirit of science in a memorable manner. "The purpose of science," he said, "is like that of religion, to find the truth about ourselves and our environment." The method is one of continual skepticism, self-critical and self-corrective, seeking data which are independently verifiable either by experimental reasoning with logical and consistent coherence, as in mathematics, or by observation, tentative explanation, controlled experimentation, and inducible conclusions, as in the life sciences. The attitude of scientists or the spirit of science is the realization that the findings of scientific effort are tentative and relative, that the validity of scientific conclusions rests on voluntary agreement among those who examine the evidence, and that unwelcome truth is better than cherished error. This is a value judgment and gives moral significance to the concept of science. In scientific effort all of this is based on an assumed concern for the welfare of humanity as a whole.

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* President of the American Association for the Advancement of Science.

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To this statement of the purpose, method, and spirit of science, most scientists will give assent. In this acceptance of fundamental principle in science there is a powerful unity. Perhaps it is part of the proposition that we are all part of and at one with the universe. How can we get this idea of the unity in the spirit of science across so that the lay public may have some notion of what science is really about?

Unity in the Health Endeavor

A fundamental unity among the health professions is to be found in the purposes to which all of the health professions are devoted, whether in medicine, dentistry, pharmacy, nursing, veterinary medicine, public health, or such auxiliary health professional groups as clinical technologists, radiation technologists, physical therapists, occupational therapists, medical-social workers, dental hygienists, clinical psychologists, and hospital and public health administrators. The basic purpose in each of these groups comes back finally to the promotion of optimum health for people in general.

This purpose is not always apparent. It is more often assumed than expressed. Each of the health professional groups has gone through phases of development. These begin usually with rather simple and naive concepts. In the long history of the medical profession these concepts were contaminated early with superstition and fear. Later as experience in the recognition of various kinds of disease and in learning how to cope with them successfully accumulated over the centuries, a significant empiric lore which was capable of rational analysis and classification also accumulated. With the rise of scientific exploration of ourselves and our environment, powerful tools became available not only for handling disease in a rational and scientific manner, but also for taking significant steps toward the prevention of disease. As a result of the applications of scientific advance generally, the rise of the scientific method in the health professions during the nineteenth century made preventive medicine and public health possible.

The results of this development in the health professions have been astounding. From relatively crude beginnings, often developed in superstition and fear, there have come great masses of empiric know-how about handling disease, diagnosis, prognosis, and therapy; and then with the application of general scientific advances there has come verifiable knowledge about the etiology of disease. This has made possible both its control and its prevention. We are now beginning to face the consequences of this development in an extraordinary increase in population all over the world with resulting problems in economics, politics, nutrition, and well-being. There is also the added problem of the ever-increasing number of older people in our populations with the difficulties incident to their existence and welfare. Thus we are being forced into the new phase of advance in the health professions, directed toward the promotion of optimum health for all people everywhere.

A recognition of this unity of purpose in our general health endeavor can be extremely important if we will be wise enough to see how we can work together for its effective accomplishment. Fortunately the members of the various health groups speak the same technical language. Unity in their respective endeavors implies getting together to work together better. It is this very unity of purpose in the health endeavor that requires consideration of the most effective communication possible between the various members of the health professions.

Communication in Science and the Health Professions

The communication problems of science are almost overwhelming. Many conferences are debating the difficulties. Many ingenious devices, using the most advanced technologic methods, are being developed for handling scientific information so that it may be satisfactorily indexed, stored, retrieved, digested, and used. The question of "documentation," as it is called, is becoming monumental. It is a highly technical and specialized part of scientific communication, and, as a science writer, one is concerned chiefly that somehow it will work. But it does not; science and medical writers still have to go it on their own and usually alone at that.

The fact that science and medical writers are so effective in interpreting the flood of scientific information which pours forth remains a tribute to their skill, patience, and plain hard work. Science and medical reports are so voluminous that special effort often is made by the interested parties, whether they are governmental agencies or commercial concerns, to arrange public notices for them. This effort has become a big business in itself.

No single person can keep up any longer with advances in any major area of science. No one can get much information by relying on abstracts. There is a desperate need for critical reviews of significant advances in special fields. We need more review and survey writers and more review periodicals. In a scientific effort itself we may find it pertinent to work out some way for the subsidy of especially trained people to devote their scientific careers, at least as they grow older, to the preparation of critical reviews.

We need desperately to train people as interpreters of current scientific and medical advances. These people must learn to write easily and understandingly, translating if necessary the peculiar jargon of contributing scientists into a more readily understandable common language not only for the intelligent public generally but also for the scientists and health workers themselves. We all must learn to appreciate that the interpreter and translator of scientific and medical affairs is just as important in their public utilization as the contributing scientists or health workers themselves.

There are many great science writers. Most of them have come from an active career in science itself. Others come from journalism. All are keen, alert, curious, and skilled with the use of words. Scientists and health workers would be wise to trust them and to work cordially with them.

Outstanding are the well-prepared summarizing accounts of current science and medicine which appear weekly in *Newsweek* and *Time*. The finely illustrated articles in *Life, Look,* and the *Illustrated London News* are very helpful to youngsters and adults alike in understanding current scientific and medical contributions. The publishers of similar illustrated magazines in many other countries have learned that well-prepared science and medical stories are read eagerly by the general public. The popularity of science fiction is startling, and perhaps it is refreshing to think that the avid readers of science fiction have enough sense of play to understand the imagination that scientists must always have if current advance is to be made in our verifiable knowledge of ourselves and the universe.

Scientists and health workers write many fine reviews of their work for fellow scientists. There are outstanding surveys by learned scientists and by staff writers in such periodicals as *Endeavor, Chemical and Engineering News,* the *Scientific American,* the *American Scientist,* and the weekly *Science.* The important point is that these reviews are written in a broad way, not only for fellow scientists generally but also for the more sophisticated public. Even the medical and science digests have a place in reaching a quick reading public.

There is quite an exciting development of wide popular interest in the current surveys of the history of science, particularly those stimulated by George Sarton and carried along so well by Charles Singer and James Conant. Many are appearing conveniently as inexpensive paperbacks. George Sarton's interest in the history of science revolved about his conviction that here was the best way by which the sciences and humanities could be brought together so that cultured people would know something of the purpose, method, and spirit of science, and so that science itself would remain always reasonably humanized. As Sarton understood, the humanities give training in judgment. This is the matter of taste and discrimination which aids so greatly in the fitness of affairs in promoting scientific endeavor and in considering the ways by which scientific findings may best be applied for the human welfare.

Most of us get our first touch of solid communication in science from our teachers. It is always inspiring for us to remember with gratitude what our teachers have so patiently taught us. All of us can testify to the stimulus we have received from attending scientific or health profession meetings. We benefit greatly from the presentation of new information by those who have obtained it. We enjoy the chance to exchange data and opinion in conversation whether in conference or at meals. This direct person-to-person communication is always effective in scientific and medical affairs. Among the workers themselves it stimulates productiveness and advance. Furthermore, it is this person-to-person communication which is most successful in transmitting useful knowledge from the experts to the public.

A pressing problem for science and medical writers is that of selection. What is worth digesting and reviewing so that it may be translated and interpreted for the understanding of ordinary everyday people? The best guide seems to be simply that which is interesting and which seems to have the greatest promise of reasonable application for human benefit.

Another serious problem for medical and science writers is the matter of slant. What kind of biases get into our translations and interpretations? How much are we slanted in our point of view by our own cultural background? How much do we lean toward the point of view expected of us in the society to which we belong? It is here that firm adherence to the purpose, the method, and the spirit of science will help to keep us on a solid basis and to give us the satisfaction of being honest to our standards and ideals.

There has been a warning of the potential dangers of developing a "mythology of science." The pathetic wishes and desires of the uninformed make them expect the impossible of their heroes. There now seems to be a tendency on the part of many people to look on science and medicine as a great collective hero which will solve their problems, fill all their wants, and satisfy all their needs and desires. This is dangerous. We must all realize our individual responsibilities in trying to satisfy our needs.

Too often we use exaggerated and flamboyant phrases like "break-through" or "final answer" or "forever conquering the disease." Let us remember always that whatever truth we may get by scientific study about ourselves and our environment is always relative, tentative, subject to change and correction, and that there are no final answers.

There can be no absolutes and no authority for science. Whatever truth may be obtained by scientific endeavor is relative always to the circumstances under which it has been obtained, and it is subject also to correction as new observations are made. Ralph Gerard frequently sums it up neatly in stating that "Facts are like fish: they don't keep." If we can keep this point of view in mind, maybe we can prevent the development of a mythology of science.

What can we do to improve communication to the public on scientific and medical affairs? An Institute for Medical Communication already is exploring vigorously some aspects of this matter. There are many ambitious plans for television, radio, and taped interviews. There are many excellent television science shows, and many are geared to capture the imagination and interest of viewers from childhood to old age. While it is doubtful that these kinds of shows will ever hold the same sort of attention as is given to whatever current vogue there may be, whether in quiz shows or in Westerns, there is still so much excitement in the historic discoveries of science that these shows can continue indefinitely with a reasonable prospect of success.

An important factor in promoting communication among scientists and health workers is such a service as that inaugurated in *Current Contents.* This service furnishes the title page for many important physiologic, chemical, biologic, and medical journals. It serves almost as an index in advance of what is appearing, so that anyone may know who is doing what and where one may find out about it if one wishes. It certainly is important that we make a major effort to extend and develop an understanding of our scientific indices and make sure that they are available in every library.

Another great advance might be made by working out some system whereby our scientific reviews, our scientific indexes, and our general scientific and medical journals could be distributed freely to scientific and medical libraries throughout the world. This would be simply an extension of the logic of democracy.

Science, freedom, and democracy have many characteristics in common. They are all interdependent. John Locke (1632–1704), the great and wise English philosopher, physician, and psychologist, indicated a major factor in the development of the democratic process. He pointed out that in any given community a reasonable agreement might be reached on public policy decisions if all those in the community were to have access to the same body of sound knowledge. By the words "sound knowledge" he apparently meant verifiable knowledge or, as we call it, "scientific knowledge."

It was an extension of John Locke's idea that prompted Benjamin Franklin (1706–1790) to begin the establishment of free public libraries in American communities. It was in further extension of Locke's principles when Thomas Jefferson (1743–1826) insisted on the establishment of free public schools in our American democracy. One might reasonably expect therefore that the logic of the situation would suggest that the "sound knowledge" obtained by scientific endeavor in American democratic communities should be made freely available to peoples everywhere.

This would be a relatively inexpensive proposition. It might be a lot more satisfying all around than are the tremendous investments we are making abroad in various kinds of material goods for which often the people are totally unprepared. The scientific information we could give to them frequently would at least offer them the opportunity to work out their own destiny with dignity and without feeling that we are patronizing them. As it is now, there are many areas in the world that simply have no idea what the United States is contributing to scientific and health advance because they cannot afford to buy our science and medical journals and books.

There are many ways by which more satisfactory communication on scientific and medical affairs can be developed. Every one of the proposed improvements in scientific and health communication is challenging to science and medical writers. Perhaps with the many new devices now possible in rapid communication we could work out even more effective methods of getting across to the people what would be helpful to them in the way of sound information on scientific and health affairs.

In Prospect

Science is a great adventure. It is the culminative effort on the part of peoples all over the world to get verifiable knowledge about themselves and their environment. There is nothing more important than seeking the truth about ourselves and our environment, even if we do not like it when we find it. It may take time to realize that unwelcome truth is better than cherished error, but the common experience of each one of us is testimony to the wisdom of this judgment. If we can understand that voluntary agreement constitutes the validity of scientific conclusions, then we can all realize how important science is with respect to freedom and democracy. We also may continue to appreciate how necessary freedom is for the advance of science.

With this kind of unity in the purpose, method, and spirit of science, it may be increasingly possible for science writers to get across to the people generally what science is really about. Under these circumstances people may understand that spot science news reporting is not the real thing. Skillful science and health writers may be able to stimulate people to try to learn for themselves on the basis of their own judgment what the significance of scientific and medical findings may be. Thus indeed John Locke's opinion may be justified as to the processes whereby public agreement may be best reached on public policy decisions. An enlightened citizenry is always the best bulwark of democracy.

With essential unity in purpose among health workers there may be increased zest in regard to improved communication among all the different organizations concerned with health affairs. Frank acknowledgement that the promotion of optimum health for all peoples everywhere is truly a worthy purpose for health experts everywhere, no matter what their professional affiliation, may do much to promote unity in effort and a sense of worthy application of talent to the benefit of humanity as a whole. Especially trained writers who are familiar with the science and art of the various health professions can do much to orient the activity of the health professions toward a unified common purpose in promoting optimum health. These skilled writers also can be the ones who can put across to people generally the technical achievements in the health fields that may be individually applied to better health and welfare.

Science and medical writers have an increasingly greater opportunity in interpreting scientific and health advance so that people can understand what it means and what they may do with it for their better health, happiness, comfort, and convenience. It may well be that science and medical writers will be recognized increasingly as being as important socially as the scientists themselves. Those who get knowledge across to the people are as important in our social enterprise as those who may discover it.

Medical Society of the State of New York

ANNUAL DINNER DANCE

in honor of

HENRY I. FINEBERG, M.D., PRESIDENT

Monday, May 9, 1960

GRAND BALLROOM HOTEL PIERRE
61ST STREET AND FIFTH AVENUE, NEW YORK CITY

Cocktails at 7 p.m. ***Gourmet Dinner***
Music by Ben Cutler ***Dress Optional***

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Please send me —— tickets for the Annual Dinner Dance on May 9.

Enclosed please find my check for ———.

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Please attach guest list.

MEDICAL COMMUNICATIONS DAY

Saturday, May 14, 1960

Statler Hilton Hotel ***New York City***

sponsored by

NEW YORK STATE JOURNAL OF MEDICINE

Official publication, Medical Society of the State of New York

and

AMERICAN MEDICAL WRITERS ASSOCIATION
METROPOLITAN NEW YORK CHAPTER

"The Practicing Physician: Transmitter and Receiver of Medical Information"

Morning Session

William Hammond, M.D., Scarsdale, Assistant Editor, New York State Journal of Medicine, *Presiding*

9:00 a.m.—Registration, Washington Room, Mezzanine

9:30 a.m.—Welcome

Herbert T. Wagner, M.D., Executive Director, Medical Society of the State of New York

9:40 a.m.—Panel Discussion: **"The Practicing Physician: Transmitter of Medical Information"**

Robert Turell, M.D., New York City, Associate Editorial Board, New York State Journal of Medicine, *Chairman*

1. **"In a Medical Journal: How to Get Your Paper Published"**

   Robert J. Benford, M.D., Washington, D.C., former editor, *U.S. Armed Forces Medical Journal*

2. **"In a Medical Book"**

   Mr. John L. Dusseau, Philadelphia, Pennsylvania, Editor, W. B. Saunders Company

3. **"To the Public"**

   Theodore R. Van Dellen, M.D., Chicago, Illinois, Medical Editor, Chicago *Tribune*—New York *News* Syndicate; Editor, *Illinois Medical Journal*

4. **"At a Medical Meeting"**

   Ivan D. Baronofsky, M.D., New York City, Surgeon-in-Chief, Mount Sinai Hospital

A question and answer period will follow the four presentations.

12:30 P.M.—Luncheon, Skytop, 18th floor

LAURANCE D. REDWAY, M.D., Ossining, Editor, NEW YORK STATE JOURNAL OF MEDICINE, *Presiding*

Address: JOSEPH C. HINSEY, PH.D., New York City, Director, New York Hospital-Cornell Medical Center

Afternoon Session

RICHARD H. BRASFIELD, M.D., New York City, Vice-President, American Medical Writers Association, Metropolitan New York Chapter, *Presiding—Washington Room, Mezzanine*

2:30 P.M.—PANEL DISCUSSION: **"The Practicing Physician: Receiver of Medical Information"**

RICHARD H. ORR, M.D., New York City, President, American Medical Writers Association, Metropolitan New York Chapter, *Chairman*

1. **"How the Busy Practitioner Can Keep Up"**

   I. PHILLIPS FROHMAN, M.D., Washington, D.C.

2. **"New Communication Methods Promise the Practitioner Help"**

   EDWARD C. ROSENOW, JR., M.D., Philadelphia, Pennsylvania, Executive Director, American College of Physicians

3. **"The Pharmaceutical Industry's Concern with the Problem"**

   AUSTIN SMITH, M.D., Washington, D.C., President, Pharmaceutical Manufacturers Association

4. **"The Medical Society's Concern with the Problem"**

   ALFRED P. INGEGNO, M.D., Brooklyn, Councillor, Medical Society of the State of New York; Chairman, Convention Scientific Program Committee and Publication Committee

A question and answer period will follow the four presentations.

5:15 P.M.—Cocktail Party, Pennsylvania Room, Mezzanine
(*Courtesy Hoffmann-La Roche Inc., Nutley, New Jersey*)

Medical Communications Day

Saturday, May 14, 1960 ***Statler Hilton Hotel, New York City***

Sponsored by NEW YORK STATE JOURNAL OF MEDICINE and American Medical Writers Association, Metropolitan New York Chapter

Registration Fee: $6.00 for members of Medical Society of the State of New York and American Medical Writers Association
$10.00 for nonmembers

Registration fee includes morning and afternoon sessions, luncheon, and cocktail party.

Enclosed is a check (or money order) for ...... for ...... registrations.

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NECROLOGY

Arthur J. Capron, M.D., of Owego, retired, died on February 17 at the age of eighty-eight. Dr. Capron graduated in 1894 from Albany Medical College. He was a consultant in psychiatry at Tioga County General Hospital, Waverly, and the Robert Packer Hospital, Sayre, Pennsylvania. From 1911 to 1948 he owned and operated Glenmary Sanitarium (now Glenmary Nursing Home) and was also one of the owners and founders of the Riverdale Sanitarium, New York City. Dr. Capron was a Fellow of the American Psychiatric Association and a member of the Tioga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herman Charache, M.D., of Brooklyn, died on March 20 in Prospect Heights Hospital at the age of sixty-three. Dr. Charache graduated in 1929 from New York Homeopathic Medical College and Flower Hospital and interned at Cumberland Hospital. He was an attending in surgery at Jewish Chronic Disease Hospital and an associate in surgery at Cumberland and Prospect Heights Hospitals. Dr. Charache was a member of the Kings County Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Daniel S. Cunning, M.D., of New York City, died at his home in Averill Park on March 26 at the age of sixty-seven. Dr. Cunning graduated in 1914 from Albany Medical College. He was a consultant in surgery and bronchoscopy at Manhattan Eye, Ear and Throat Hospital, a consultant in otolaryngology at Mary Immaculate Hospital, White Plains Hospital Association, United (Port Chester), and New Rochelle Hospitals, Englewood (New Jersey) Hospital, St. Francis (Poughkeepsie), and Phelps Memorial Hospital Association (North Tarrytown), an honorary member of the staff at Grasslands Hospital, Valhalla, and a consultant in ophthalmology and otolaryngology at the Norwalk (Connecticut) Hospital. He had served as clinical professor of otolaryngology at New York University. Dr. Cunning was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the American Otological Society, Inc., the American Laryngological, Rhinological and Otological Society, a member and former president of the American Broncho-Esophagological Association, a past president of the eastern section of the American Laryngological Association, and a member of the New York Otolaryngological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Francis Vernon Foster, M.D., of Caledonia, died on February 7 at the age of ninety. Dr. Foster graduated in 1892 from New York Eclectic Medical Institute of Rochester. He was a member of the Livingston County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander Hitlin, M.D., of Brooklyn, died on March 23 in Williamsburg General Hospital at the age of seventy-five. Dr. Hitlin graduated in 1905 from Columbia University College of Physicians and Surgeons. He was a consulting physician at Maimonides Hospital. Dr. Hitlin was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Crane Karl, M.D., of Williston Park, died at his home on March 9 at the age of forty-eight. Dr. Karl graduated in 1938 from Albany Medical College and interned at St. Vincent's Hospital. He was an assistant attending physician at Nassau Hospital, Mineola. Dr. Karl was a member of the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Lederfeind, M.D., of Bronx, died on February 8 at the age of sixty-seven. Dr. Lederfeind graduated in 1920 from New York University and Bellevue Hospital Medical College. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

William F. Mathews, M.D., of Woodside, died at Physicians Hospital in Jackson Heights, on March 14 at the age of seventy-nine. Dr. Mathews graduated in 1904 from Long Island College Hospital Medical School.

Vincent Domeet Moran, M.D., of Buffalo, died on January 27 in the Edward J. Meyer Memorial Hospital at the age of fifty-two. Dr. Moran graduated in 1930 from the University of Buffalo School of Medicine. He was an attending in orthopedics at Edward J. Meyer Memorial and Sisters of Charity Hospitals, and chief of orthopedic surgery at Emergency Hospital. Dr. Moran was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Musser Pearce, M.D., of New York City, died in a drowning accident on March 23 at Sanibel Island, Florida, at the age of fifty-one. Dr. Pearce graduated in 1934 from Harvard University Medical School. He was an attending surgeon in pathology at New York Hospital. Dr. Pearce was a member of the American Association of Pathologists and Bacteriologists, the American Society for Experimental Pathology, the Society for Experimental Biology and Medicine, the American Federation for Clinical Research, the American Public Health Association, and the New York Pathological Society.

William A. Randel, M.D., retired, of Fort Pierce, Florida, formerly of Jamestown, died on February 13 at his home at the age of eighty-two. Dr. Randel graduated in 1899 from New York University and Bellevue Hospital Medical College. He was one of the organizers of the Bronx Eye and Ear Infirmary and former chief of ear, nose, and throat diseases at Mount Vernon Hospital as well as on the staff of Lawrence Hospital, Bronxville, and an attending physician at the House of Correction, Randall Island, New York, and Coxsackie. Dr. Randel was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the Chautauqua County Medical Society and the Medical Society of the State of New York.

Louis Resman, M.D., of Buffalo, died at his home on January 24 at the age of sixty-five. Dr. Resman graduated in 1920 from the University of Buffalo School of Medicine. Dr. Resman was a member of the American Academy of General Practice, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raymond William Sendker, M.D., of Buffalo, died on March 1 in St. Petersburg, Florida, at the age of sixty. Dr. Sendker graduated in 1924 from the University of Buffalo School of Medicine. He was an associate in surgery at Deaconess Hospital. Dr. Sendker was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Sharpe, M.D., of New York City, died in St. Petersburg, Florida, on March 29 at the age of eighty-two. Dr. Sharpe graduated in 1908 from Harvard University Medical School and interned at Roosevelt Hospital. He was director of neurosurgery at Manhattan General Hospital and a consultant in neurosurgery at Gouverneur, Vassar Brothers (Poughkeepsie), and Jamaica Hospitals. Dr. Sharpe was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine.

Vernon J. Snyder, M.D., of Camillus, died in Crouse-Irving Hospital on February 24 at the age of seventy-seven. Dr. Snyder graduated in 1908 from Syracuse University College of Medicine. He was a member of the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander Walker, M.D., of Rochester, died on January 27 in Park Avenue Hospital at the age of eighty-one. Dr. Walker graduated in 1907 from the University of Buffalo School of Medicine. For the last three years he had been medical officer for West Irondequoit elementary schools. Dr. Walker was a member of the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Isidore Wengraf, M.D., of Brooklyn, retired, died on March 6 at the age of eighty-seven. Dr. Wengraf received his medical degree from the University of Vienna in 1898.

Edward Godfrey Winkler, M.D., of Buffalo, died on February 19 at his home at the age of fifty-seven. Dr. Winkler graduated in 1926 from Georgetown University School of Medicine. He was a consultant in gynecology at Buffalo State Hospital, an attending in obstetrics at Millard Fillmore Hospital, chief of gynecology and obstetrics at Edward J. Meyer Memorial and Sisters Hospitals, and a consultant in obstetrics at DeGraff Memorial and Wyoming County Community (Warsaw) Hospitals. Dr. Winkler was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the American Veneral Disease Association, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

MEDICAL NEWS

Dr. Silver Has Ninetieth Birthday—Cassius D. Silver, M.D., Plattsburgh, recently celebrated his ninetieth birthday. A celebration was held on the afternoon of February 4 by the personnel of the Physicians Hospital in honor of Dr. Silver who was the hospital's first chief of staff in 1926 and who served in this capacity until 1953.

Dr. Silver established practice in Plattsburgh in 1900. He still practices for "friends, neighbors, and patients of long standing."

Emanuel B. Schoenbach Memorial Lecture—The eighth annual Emanuel B. Schoenbach Memorial Lecture was delivered at Maimonides Hospital of Brooklyn on April 29. The speaker was Dr. Arthur Kornberg, professor and director of the Department of Biochemistry, Stanford University School of Medicine, Palo Alto, California. The subject of Dr. Kornberg's lecture was "The Chemical Basis of Heredity."

American Board of Obstetrics and Gynecology—Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, part I, and requests for re-examination in part II are now being accepted. Deadline for receipt of applications is August 1, 1960.

Candidates are requested to write to the office of the secretary for a current bulletin in order that they will be well informed as to the present requirements. Application fee, photographs, and lists of hospital admissions must accompany all applications.

After July 1, 1962, the Board will require a minimum of three years of approved progressive residency training to fulfill the requirements for admission to examination. After that date training by preceptorship will no longer be acceptable.

For further information contact: Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

University of Illinois Offers Otolaryngologic Assembly—The University of Illinois College of Medicine Department of Otolaryngology will offer an intensive postgraduate basic and clinical program for practicing otolaryngologists. The compact program of one week of daytime and evening sessions is designed to bring to specialists a wide variety of current advances in management, therapy, and philosophies. Review of basic morphologic features is also included by means of laboratory demonstrations, dissection, and prosection, all augmented by visual aids.

Interested physicians should contact: Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

Broome County Tuberculosis Hospital Closes—Approval of the closing of the Broome County Tuberculosis Hospital at Chenango Bridge, effective March 31, has been announced by Herman E. Hilleboe, M.D., Commissioner, New York State Department of Health.

The hospital, which has been open since 1931, has been operated for the care of tuberculosis patients in Broome County. Tuberculosis hospital for residents of the county will now be provided by the Homer Folks Tuberculosis Hospital at Oneonta. Chest clinic services in Broome County will be continued under county auspices.

Postgraduate Courses in Ophthalmology—The Institute of Ophthalmology of the Americas announces that its third series of postgraduate courses for specialists in ophthalmology will be given from September 12 through November 23.

Among the courses to be offered are: "Advances in Ocular Prosthesis"; Anomalies of Extraocular Muscles, Including Ptosis"; "Biomicroscopy"; "Biomicroscopy Using Near Ultra-Violet, Cobalt Blue and Polarized Light"; "Clinical Bacteriology"; "Clinical Problems of Tear Formation"; "Complications of Ophthalmologic Surgery"; "Contact Lenses"; "Electrophysiology and Applied Physiology of the Eye"; "Enucleation and Evisceration"; "Glaucoma"; "Gonioscopy and Tonography"; "Keratectomies and Keratoplasties"; "Lacrimal Sac Surgery"; "Light Coagulation (Meyer-Schwickerath Apparatus)."

Also: "Low Vision Aids"; "Ocular Biochemistry"; "Ocular Geriatrics"; "Ocular Microbiology"; "Ocular Neuro-Ophthalmology"; "Ocular Photography"; "Ocular Radiology"; "Ocular Therapeutics"; "Ophthalmoscopy"; "Orthoptics"; "Pathology"; "Perimetry"; "Physiological Optics"; "Plastic Eye Surgery"; "Pleoptics and Macular Function Testing"; "Psychosomatic Factors in Ophthalmology"; "Radio-Isotopes in Ophthalmology"; "Recent Advances in Cataract Surgery"; "Refraction"; "Retinal Detachment"; "Surgery of the Orbit"; and "Uveitis."

Catalogs and additional information may be obtained from: Mrs. Tamar Weber, Registrar, Institute of Ophthalmology of the Americas, New York Eye and Ear Infirmary, 218 Second Avenue, New York 3, New York.

The Glorney-Raisbeck Fellowship—The Glorney-Raisbeck Fellowship in the Medical Sciences will be awarded by the Committee on Medical Education of The New York Academy of Medicine for one year of research and/or study in any field of medicine or its allied sciences. The initial award will be for the academic year beginning July 1, 1961. Under circumstances deemed appropriate by the committee, the fellowship will be renewable on a year-to-year basis for two additional years.

The fellowship, which carries a stipend of $5,000, is open only to holders of the M.D. degree who have demonstrated a potential for productivity in research and teaching. In general, preference will be given to physicians from the Greater New York area. Deadline for receipt of applications is September 1, 1960.

Requests for application forms and additional information should be addressed to: Aims C. McGuinness, M.D., Executive Secretary, Committee on Medical Education, The New York Academy of Medicine, 2 East 103rd Street, New York 29, New York.

Course on Electrodiagnosis and Electromyography—The Department of Physical Medicine and Rehabilitation, New York Medical College, will present a course for physicians on "Electrodiagnosis and Electromyography." All registrants will meet in an all-day session on June 6. Thereafter, the group will be divided as follows: Section I will meet June 6 through 10; Section II will meet on June 6, 11, 13, 20, and 27. Section II is designed to accommodate local physicians.

The course will include: "History of Electrodiagnosis," "Physiology and Anatomy," "Electrophysiology," "Electronics," "Techniques," "Application of Techniques in Various Clinical Conditions," "Special Techniques," and "Future Clinical and Research Implications."

For registration contact: Jerome S. Tobis, M.D., Chairman, Department of Physical Medicine and Rehabilitation, New York Medical College, 1 East 105th Street, New York 29, New York.

Summer Courses in Prosthetics—New York University Post-Graduate Medical School will offer a series of two-week summer courses in prosthetics, August 15 through 26, in cooperation with the International Society for the Welfare of Cripples just prior to the Eighth World Congress. These courses will constitute the third international prosthetics course sponsored by the committee on prosthesis, braces, and technical aids of the International Society for the Welfare of Cripples.

Separate courses will be offered for physicians and surgeons, therapists, and prosthetists. The course for physicians and surgeons (#741–1) will cover principles of biomechanics, fabrication, fitting alignment, suspension, harnessing, prescription, and evaluation of lower and upper extremity prostheses. Surgical technics, prosthetic components, performance analysis, and training will be included also.

For further information contact: Dr. Sidney Fishman, Director, Prosthetics Education, New York University Post-Graduate Medical School, 342 East 26 Street, New York 10, New York.

Pioneering Project in Diabetes Research—A University of Rochester medical scientist is working on a pioneering project which may bring about a revolution in the handling, storage, and retrieval of scientific information. Joseph L. Izzo, M.D., a specialist in diabetes at the University of Rochester Medical Center, is working with a handful of other experts throughout the country in bringing together, on magnetic tape, the world's writings on diabetes and subjects related to the disease.

The project is a result of one of the greatest problems facing scientists today—the ever-increasing and sometimes overwhelming flow of printed material in their particular field.

Within a few years, when all of the data is collected, it will be abstracted and stored on magnetic tapes in a machine specifically designed for the undertaking by the General Electric Company. A specialist will then be able to refer to the center for all the available information on a certain aspect of diabetes. If he is interested in working on a certain phase of the disease, he could check with the center to find out how much work already has been done.

American Physicians Art Association—The twenty-third annual exhibition of art works by American physicians will be held June 13 through 18, at the Miami Beach Exhibition Hall and Auditorium. The exhibition will be held in conjunction with the annual convention of the American Medical Association. It will include over 300 works of art in oil, water color, sculpture, crafts, photography, and lithography.

Participants and prospective exhibitors may obtain further information from: Kurt F. Falkson, M.D., 7 East 78th Street, New York 21, New York.

Eaton Medical Department Expanded—The medical department of Eaton Laboratories, Norwich, has been expanded to three divisions. The units are clinical research division, medical research and professional services division, and medical research—international division.

Paul Christenson, M.D., has been appointed director of clinical research. The clinical research staff will consist of Charles Tracy, M.D., Paul Kearns, M.D., and Max Davis, M.D. Two local Norwich physicians, Philip Aronson, M.D., and Richard Hosbach, M.D., will serve as consultants.

Paul Newland, M.D., has been named director of medical research and professional services, with Myles Miller, M.D., and Eric Mueller, M.D., serving on his staff. J. M. Amberson, M.D., has been appointed director of the newly-formed medical research—international division.

Course on Modern Research Methods in Biology and Medicine—The third biannual course on "Modern Research Methods in Biology and Medicine" is to be held by the Massachusetts Institute of Technology July 5 through 15. The course will offer an opportunity for intensified study of important recent advances in electronics and other fields of instrumentation and their application to the fields of medicine and biology.

The special summer program will be of particular interest to medical research workers and biologists as well as to research administrators.

For further information and application forms write to: Dr. James M. Austin, Director of the Summer Session, Room 7–103, Massachusetts Institute of Technology, Cambridge 39, Massachusetts.

Personalities

Awarded

Frank Babbott, M.D., New York City, and John J. Masterson, M.D., Brooklyn, a certificate of distinction from the faculty of the State University of New York Downstate Medical Center for outstanding service to medicine . . . George E. Moore, M.D., Buffalo, the Buffalo Club Medal for his achievements as a surgeon, scientist, and humanitarian . . . Howard A. Rusk, M.D., New York City, the annual Forsythia Award from the Brooklyn Botanic Garden for his "significant contribution to brotherhood, unity, and understanding" . . .

Honored

George A. Burgin, M.D., Little Falls, at a dinner given by the Herkimer County Medical Society, January 30.

New Office

Edward J. Connor, M.D., the practice of general medicine and obstetrics in Troy . . . Albert DeMartino, M.D., the practice of pediatrics in Harrison . . . Ivars Sprogis, M.D., the practice of general medicine in Cold Spring . . . Gene A. Welch, M.D., the practice of general medicine in Ithaca.

Elected

John Beck, M.D., Staten Island, and Charles M. Brane, M.D., Yonkers, as vice-presidents of United Medical Service . . . Roger F. Lapham, M.D., White Plains, to the board of directors of the World Rehabilitation Fund . . . Thomas F. McCarthy, M.D., Bronx, as president of the medical board of the Frances Schervier Home and Hospital . . . William E. Mathews, M.D., Niagara Falls, as president of the medical staff of Niagara Falls Memorial Hospital . . . Charles Mesick, M.D., Spencertown, as president of the Columbia County Board of Health.

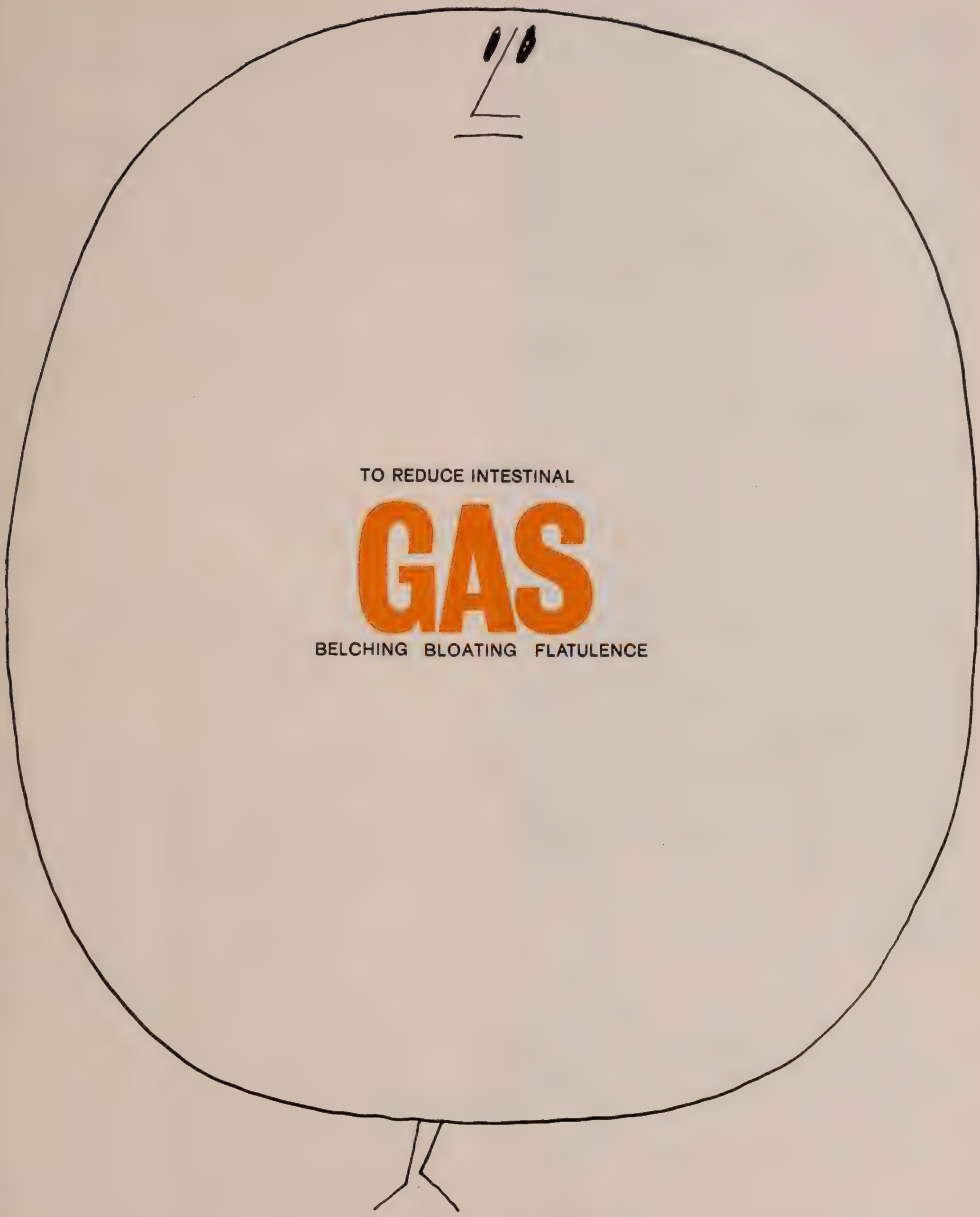
Speakers

Thomas P. Almy, M.D., New York City, the first annual Dean Charles L. Brown Memorial Lecture at the Jersey City Medical Center on April 7 on the topic "Surgical and Medical Implications of Esophageal Studies" . . . Andrew J. Kerr, M.D., Syracuse, on "Cardiac Arrest" before the Jefferson County Medical Society on March 15 . . . John C. Saunders, M.D., Orangeburg, on the topic "Drugs and the Psyche" on March 30 at a special scientific meeting at the Gracie Square Hospital . . . John D. Thomson, M.D., Syracuse, on March 15, before the Jefferson County Medical Society on the topic "Cardiac Arrest" . . . Dorothea E. Worcester, M.D., Nyack, at the January meeting of the Ramapough Business and Professional Women's Club in Suffern.

Appointed

Albert E. Chiron, M.D., Brooklyn, as head of the 1960 drive of Brooklyn physicians for the United Jewish Appeal . . . Stephen S. Elgin, M.D., Owego, to the staff of the Tioga County General Hospital . . . Samuel Frant, M.D., New York City, as a chairman of the physicians' division of the American Red Cross campaign in Greater New York . . . Nicolai Gioscia, M.D., Roslyn Estates, as director of Nassau County Community Mental Health Services . . . Walter Glass, M.D., Great

[Continued on page 1510]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[Continued from page 1508]

Neck, as a chairman of the North Shore physicians' United Jewish Appeal . . . Robert Kelsy, M.D., Franklinville, as medical director of the Department of Public Welfare of Cattaraugus County . . . Warren A. Lapp, M.D., Brooklyn, as a chairman of the physicians' division of the American Red Cross campaign in Greater New York . . . Howard S. Morrow, M.D., Brewster, to the staff of the Cross County Hospital in Yonkers . . . Morris Newberg, M.D., Queens Village, as chairman of the United Jewish Appeal's Queens physicians division . . . Alexander Rosen, M.D., Manhasset, as a chairman of the North Shore physicians' United Jewish Appeal . . . Ross V. Sayers, M.D., St. Albans, as medical director of George A. Breon & Company . . . Burton W. Wilcke, M.D., Rensselaer, as president of the Rensselaer County Cancer Society . . . S. Bernard Wortis, M.D., New York City, as dean of the New York University School of Medicine and Post-Graduate Medical School and deputy director of the center.

MEDICAL MEETINGS

Society of Certified Internists of the County of New York

The next meeting of the Society of Certified Internists of the County of New York (Socicony) will be held on Monday, May 9, at 8:30 P.M., at the auditorium of the New York Medical College, Flower and Fifth Avenue Hospitals, Fifth Avenue and 106th Street, New York City.

The meeting will be open to all Board certified internists and members of the American College of Physicians. The principal speaker will be Herbert Berger, M.D., a founder and president-elect of the New York State Society of Internal Medicine. His subject will be "The Internist and Medical Care Insurance Programs."

SOCICONY recently held its first annual assembly during which the following officers were elected: Seymour Lionel Halpern, M.D., president; John James Mead, III, M.D., vice-president; Jerome Gerendasy, M.D., secretary; Richard S. Marton, M.D., treasurer; and Asa L. Lincoln, M.D., Alfonso A. Lombardi, M.D., Arthur M. Master, M.D., and Harry A. Solomon, M.D., directors.

Thirty-First Annual Meeting of Aerospace Medical Association

The United States Department of Defense has announced that retirement point credits can be earned by reserve Medical Corps officers who attend the thirty-first annual meeting of the Aerospace Medical Association at the Americana Hotel, Miami Beach, Florida, May 9 through 11. This authorization covers eligible physicians who are reserve Medical Corps officers of the United States Army, Navy, or Air Force on inactive status.

The sixth annual Louis H. Bauer Lecture will be presented at the meeting by Dr. Detlev W. Bronk, president of the National Academy of Sciences and of the Rockefeller Institute.

Fifty-Sixth Annual Health Conference

The fifty-sixth annual Health Conference will be held at the Hotel New Yorker, New York City, May 23 through 26. The first general session will be held at 10:00 A.M., Tuesday, May 24, in the Manhattan Center, adjacent to the hotel. Among speakers will be New York State Governor Nelson A. Rockefeller, Norman S. Moore, M.D., president-elect of the Medical Society of the State of New York, and Herman Hilleboe, M.D., Commissioner, New York State Department of Health. George Baehr, M.D., New York City, chairman of the New York State Public Health Council, will preside at the session.

Announcement will be made at the meeting of the winner of the first Empire State Award for Excellence in Medical Reporting.

United Cerebral Palsy Associations of New York State

The United Cerebral Palsy Associations of New York will hold its annual conference at the Garden City Hotel, Garden City, Long Island, June 10 and 11.

On Friday afternoon, June 10, Meyer Perlstein, M.D., attending pediatrician, Michael Reese and Cooke County Hospitals, Chicago, and a former president of the American Academy for Cerebral Palsy, will discuss "The Diagnosis, Classification, and Principles of Treatment of Cerebral Palsy." William Cooper, M.D., medical director, United Cerebral Palsy Association of Nassau County, will chair the session, which will begin at 2:00 P.M.

The program on Friday evening and Saturday will be devoted to vocational rehabilitation, special therapy, education for the cerebral palsied child, and music therapy.

For further information concerning the meeting contact: Mr. Jay Schleichkorn, Executive Director, United Cerebral Palsy Associations of New York State, 220 West 42nd Street, New York 36, New York.

Symposium for General Practitioners on Tuberculosis and Other Pulmonary Diseases

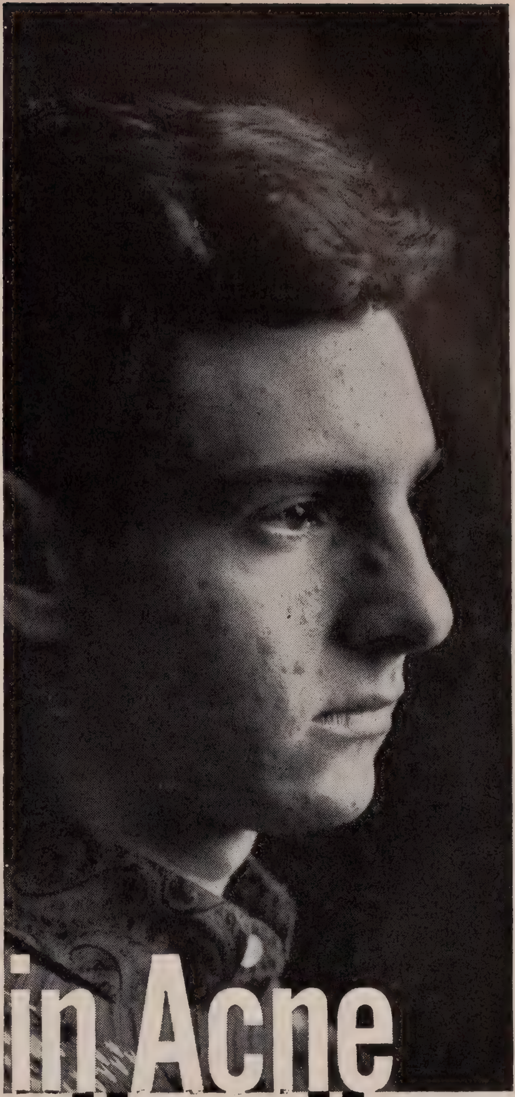
The ninth annual symposium for general practitioners on tuberculosis and other pulmonary diseases will be held at Saranac Lake, New York, July 11 through 15. The symposium is acceptable for 27 hours of category I credit by the American Academy of General Practice.

Since the Saranac Lake region is also an excellent vacation area many physicians will take their families with them. For a pamphlet describing recreational facilities and for further information concerning the symposium write to: Registrar, Symposium for General Practitioners on Tuberculosis and Other Pulmonary Diseases, P. O. Box 627, Saranac Lake, New York.

Association of Military Surgeons of the United States

The Association of Military Surgeons of the United States will hold its sixty-seventh annual convention, October 31 through November 2, at the Mayflower Hotel, Washington, D.C. The theme of the meeting will be "The Military Role in Medical Progress."

For information write to: Association of Military Surgeons, 1726 Eye Street, N. W., Washington 6, D.C.



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1. Smylie, H. G.; Webster, C. U., and Bruce, M. L.: *Brit. M. J.* 2:606, Oct. 3, 1959. 2. Hodges, F. T.: *GP* 14:86, Nov., 1956.

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CONVENTION NEWS

The following information will be of interest to all planning to attend the 154th Annual Convention of the Medical Society of the State of New York, May 7 through 13, 1960, at the Statler Hilton Hotel, New York City.

Doctor's Orchestra Concert

On Tuesday night, May 10, in the Terrace Ballroom at the Statler Hilton Hotel, the Doctors' Orchestra will present a concert, starting at 8:30 P.M.

Organized in 1938 by a group of physicians and dentists who met to play and enjoy music, the Doctors' Orchestral Society of New York meets regularly once a week at Stuyvesant High School, New York City, to play for pleasure and to rehearse for concerts. A varied program of world symphonic music is used by the 60 members from the ranks of medical, dental, and allied professions in the metropolitan area.

Music director and conductor is a professional, Mr. Norman Masonson, who is also founder and music director of the Village Civic Symphony. President and tympanist of the group is Harvey Salomon, M.D., professor of medicine at the State University of New York Downstate Medical Center, Brooklyn.

Projected program for the concert is as follows:

Trumpet Voluntary	*Purcell*
Piano Concerto in D Minor	*Mozart*
Symphony Number 4	*Dvorak*

All persons attending the State Society Convention and all in the area interested are invited to be the guests of the Orchestral Society at this concert.

Dinner Speaker Announced

Guest speaker for the annual Dinner Dance, held in conjunction with the Annual Convention, will be Thomas A. Dooley, M.D., world famous for his medical work in the jungles of Indochina, and cofounder with Peter Comanduras, M.D., of MEDICO (Medical International Cooperation Organization) with headquarters in New York City.

A native of St. Louis, Missouri, Dr. Dooley was graduated from the St. Louis University School of Medicine in 1953 and served a military internship at the U.S. Naval Hospital, Camp Pendleton, California. In May, 1954, while doctor on a Navy ship, he was assigned to the beleaguered city of Haiphong in Communist North Vietnam, where he built refugee camps to care for the hundreds of thousands of escapees seeking passage to freedom. Following his return to the United States in 1956 he became a civilian, but soon returned to Southeast Asia to build a village hospital in the northern part of the Kingdom of Laos.

On February 4, 1958, Dr. Dooley and Dr. Comanduras founded MEDICO, which now has nine medical programs around the world, based on the philosophy of extending medical care to the peoples of the world where no care is available.

Dr. Dooley has been honored by many nations and many groups, including the government of Vietnam, for his work. He also holds the Navy's Legion of Merit.

The Dinner Dance, with music by Ben Cutler's Orchestra, will be held in the new

[Continued on page 1514]

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[Continued from page 1512]

Grand Ballroom of the Hotel Pierre, 61st Street and Fifth Avenue, on Monday night, May 9. The President's Reception will be held in the Parisienne Suite at the Hotel Pierre, preceding the Dinner Dance.

Tickets may be ordered from the State Society office, 750 Third Avenue, New York 17, New York.

Guest Reception

An innovation of this year's Annual Convention will be a guest hospitality room for out-of-State guests of the House of Delegates and the scientific program. From Sunday, May 8, through Friday, May 13, the Pennsylvania Room on the Mezzanine of the Statler Hilton Hotel, headquarters for the Convention, will be open as guest reception room, from 9:00 A.M. to 5:30 P.M. Coffee will be served and, with the cooperation of the Woman's Auxiliary, a host or hostess will be present at all times. This program is directed by Bernard J. Pisani, M.D., chairman of the Guest Reception Subcommittee of the Convention Committee.

. . . Mark Your 1960 Calendar!

Medical Society of the State of New York

154th Annual Convention

May 7 to 13, 1960

Statler Hilton Hotel

New York City

Plan now to save the dates!

Stomach Operations Often Prelude to Anemia

The ulcer patient may be confronted with new trouble after he is wheeled out of the operating room—iron deficiency anemia.

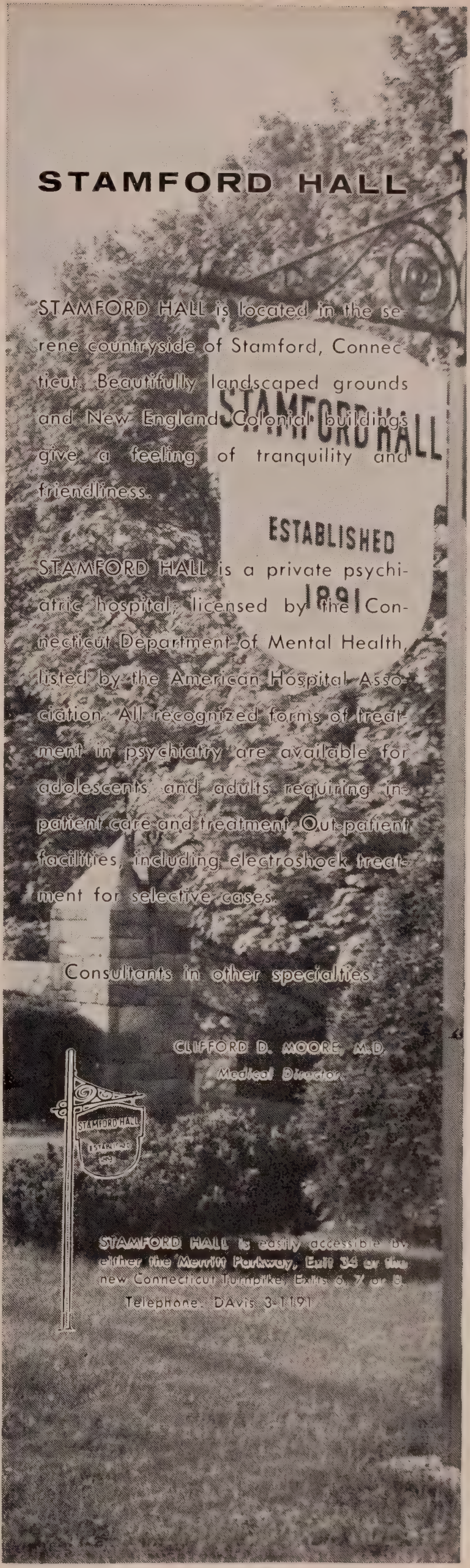
According to an article appearing in *Nutrition Reviews,* published by the Nutrition Foundation, it has long been established that the upper gastrointestinal tract has the body's greatest capacity for iron absorption. Removal of all or part of the stomach thereby reduces the patient's ability to maintain iron levels.

Even when only a small part of the stomach has been removed, there can be difficulty; the entire digestive system may go into an abnormally high-speed cycle, the report stated. The effect is that what remains of the stomach has less than an adequate chance to absorb iron. One of the early investigators, Dr. S. J. Hartfall, observed as long ago as 1934 that the process worked this way: "...the meal simply shot through the stomach stump, which acted as little more than a temporary cul-de-sac in a continuous passage."

Some patients, bothered by the rapid movement of their bowels, also tend to cut down on the amount of food they eat. While this approach eases their annoying condition, it once again gives the system less of a chance to obtain the iron it needs.

A more recent investigator, Dr. P. A. Owren, pointed out in 1954 that the overly fast workings of the digestive system could also lessen the effectiveness of iron pills given to persons shorn of their stomachs. Normal or near-normal utilization of the pills was found to be possible, however, when the patient consumed the pill while lying down.

Posture, speed of the digestive process, and the quantity of food intake do not tell the whole story, however. Some persons suffering from anemia who have undergone stomach excisions are found to eat an entirely adequate amount of iron and show no signs of hasty digestion. Using atomic isotopes of iron as "tracers," recent investigators have found that some of these patients just do not have the ability to absorb iron from their food. The problem can be met successfully, however, by consuming inorganic iron in a soluble form. Even among persons who have lost all of their stomach, iron in this form is adequately assimilated, the report states.



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154th

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References:
(1) Barnes, R. H.: J.A.M.A. *166*:898, 1958. (2) Ressler, C.: J.A.M.A. *165*:135, 1957. (3) Birnberg, C. H., and Abitbol, M. M.: Obst. & Gynec. *11*:463, 1958. (4) Robillard, R.: Canad. M.A.J. *76*:938, 1957.

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BOOKS RECEIVED

(The following books were received during the month of January, 1960)

Handbook of Aging and the Individual. Edited by James E. Birren, Ph.D. Octavo of 939 pages, illustrated. Chicago, The University of Chicago Press, 1959. Paper, $12.50.

A Practical Guide for General Surgical Management. By Julian A. Sterling, M.D. Octavo of 67 pages. New York, Vantage Press, 1959. Cloth, $3.00.

The Medical Clinics of North America. Chicago Number. January, 1960. Diagnosis of Incipient Disease. Joseph B. Kirsner, M.D., guest editor. Octavo. Philadelphia, W. B. Saunders Company, 1960. Published bimonthly (six numbers a year). Cloth, $18 net; paper, $15 net.

The Extremities. By Daniel P. Quiring, Ph.D. Second edition, revised and edited by John H. Warfel, Ph.D. Octavo of 120 pages, illustrated. Philadelphia, Lea and Febiger, 1960. Cloth, $3.25.

The Teen-Age Years. A Medical Guide for Young People and Their Parents. By Arthur Roth, M.D. Octavo of 288 pages. Garden City, N.Y., Doubleday & Company, Inc., 1960. Cloth, $3.95.

The Cigarette Habit: A Scientific Cure. By Arthur King. Octavo of 96 pages. Garden City, N.Y., Doubleday & Company, Inc. Cloth, $2.00.

Anatomy: Regional and Applied. By R. J. Last, M.B. Second edition. Octavo of 741 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $15.

Gestation. Transactions of the Fifth Conference, March 11, 12, and 13, 1958, Princeton, N.J. Edited by Claude A. Villee, Ph.D. Octavo of 262 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $5.75.

Emotional Forces in the Family. Edited by Samuel Liebman, M.D. Octavo of 157 pages. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $5.00.

Clinical Psychopathology. By Kurt Schneider. Translated by M. W. Hamilton. Octavo of 171 pages. New York, Grune & Stratton, 1959. Cloth, $4.50.

The Story of Dissection. By Jack Kevorkian M.D. Octavo of 80 pages, illustrated. New York, Philosophical Library, 1959. Cloth, $3.75.

The Haunted Mind. A Psychoanalyst Looks at the Supernatural. By Nandor Fodor. Octavo of 314 pages. New York, Helix Press, 1959. Cloth, $5.00.

Manual of Applied Nutrition. Compiled by Janette C. Carlsen. Fourth edition. Duodecimo of 134 pages, illustrated. Baltimore, The Johns Hopkins Press, 1960. Paper, $3.00.

The Practice of Clinical Child Psychology. By Alan O. Ross, Ph.D. Octavo of 275 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $5.75.

Introduction to Colposcopy. By Karl A. Bolten, M.D. Quarto of 76 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $7.75.

The Golden Scalpel. A Novel by Seymour Kern. Octavo of 248 pages. New York, The John Day Company, 1960. Cloth, $3.50.

Doctor Strand. By Boris Sokoloff. Octavo of 205 pages. New York, Vantage Press, 1960. Cloth, $3.50.

(The following books were received during the month of February, 1960)

Your Heart: A Handbook for Layman. By H. M. Marvin, M.D. Octavo of 335 pages. Garden City, Doubleday & Company, Inc., 1960. Cloth, $4.50.

The Reluctant Surgeon. A Biography of John Hunter. By John Kobler. Octavo of 359 pages. Garden City, Doubleday & Company, Inc., 1960. Cloth, $4.95.

Encyclopedia of Medical Syndromes. By Robert H. Durham, M.D. Octavo of 628 pages. New York, Paul B. Hoeber, Inc., 1960. Cloth, $13.50.

[Continued on page 1520]

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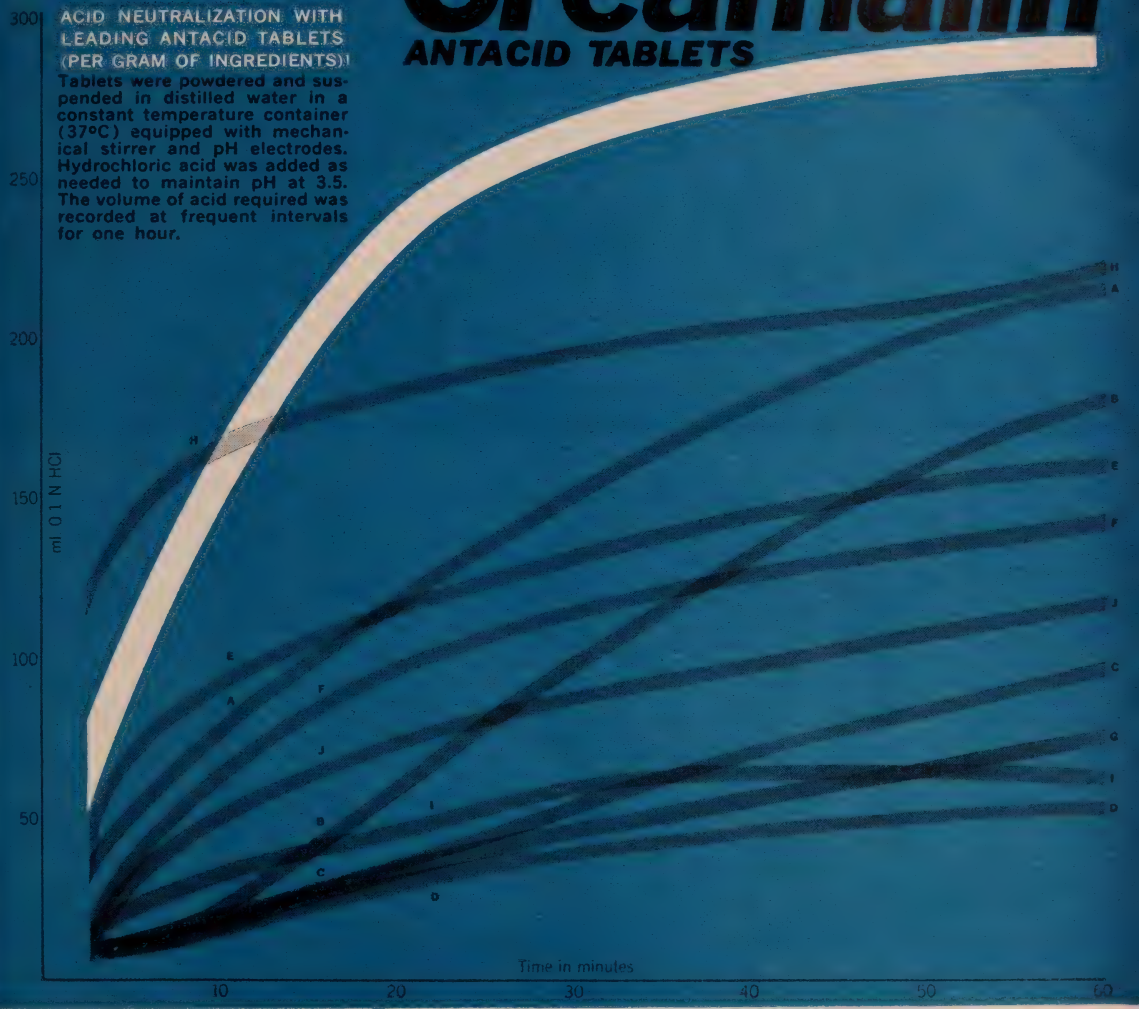

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1. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:380, July, 1959. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: *J. Am. Pharm. A. (Scient. Ed.)* 48:384, July, 1959.

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[Continued from page 1518]

A Doctor Enjoys Sherlock Holmes. By Edward J. Van Liere, M.D. Octavo of 141 pages. New York, Vantage Press, 1959. Cloth, $3.00.

Essentials of Orthopaedics. By Philip Wiles, F.A.C.S. Third edition. Octavo of 576 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $13.

Essentials of Healthier Living. By Justus J. Schifferes, Ph.D. Octavo of 335 pages, illustrated. New York, John Wiley & Sons, Inc., 1960. Cloth, $5.50.

The Older Patient. By twenty-one authors. Edited by Wingate M. Johnson, M.D. Octavo of 589 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Cloth, $14.50.

Leukocyte Antigens and Antibodies. By Roy L. Walford, M.D. Octavo of 182 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $6.00.

Fundamentals of Modern Allergy. Edited by Samuel J. Prigal, M.D. (Sponsored by the New York Allergy Society.) Octavo of 690 pages, illustrated. New York, The Blakiston Division, McGraw-Hill Book Company, Inc., 1960. Cloth, $18.50.

Diagnosis and Treatment of Tumors of the Chest. Editor-in-chief, David M. Spain, M.D. (Sponsored by the American College of Chest Physicians.) Quarto of 371 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $14.75.

Polysaccharides in Biology. Transactions of the Fourth Conference, May 21, 22, and 23, 1958, Princeton, N.J. Edited by George F. Springer, M.D. Octavo of 326 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1959. Cloth, $5.95.

Heritable Disorders of Connective Tissue. By Victor A. McKusick, M.D. Second edition. Quarto of 333 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $12.

Textbook of Otolaryngology. By David D. DeWeese, M.D., and William H. Saunders, M.D. Octavo of 464 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $8.75.

Functional Anatomy of the Limbs and Back. By W. Henry Hollinshead, Ph.D. Second edition. Octavo of 403 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $9.00.

Christopher's Textbook of Surgery. Edited by Loyal Davis, M.D. Seventh Edition. Quarto of 1,551 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $17.

Drugs of Choice 1960–1961. Edited by Walter Modell, M.D. Quarto of 958 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $13.50.

The Surgery of Theodoric: ca. A.D. 1267. Translated from the Latin by Eldridge Campbell, M.D., and James Colton, M.A. Volume Two (Books III and IV). Octavo of 233 pages. New York, Appleton-Century-Crofts, Inc., 1960. Cloth, $5.50.

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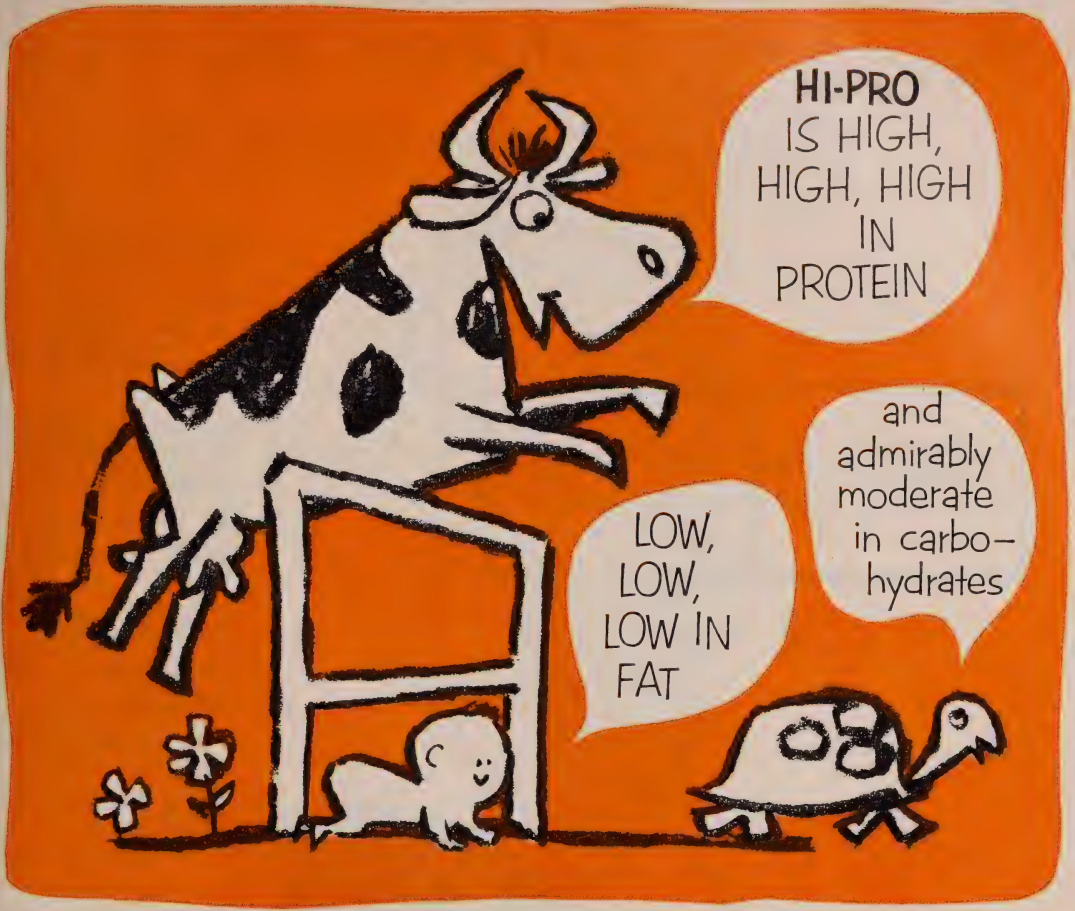
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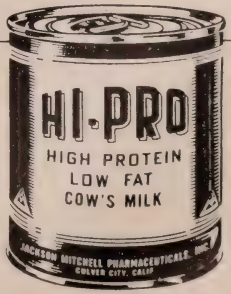
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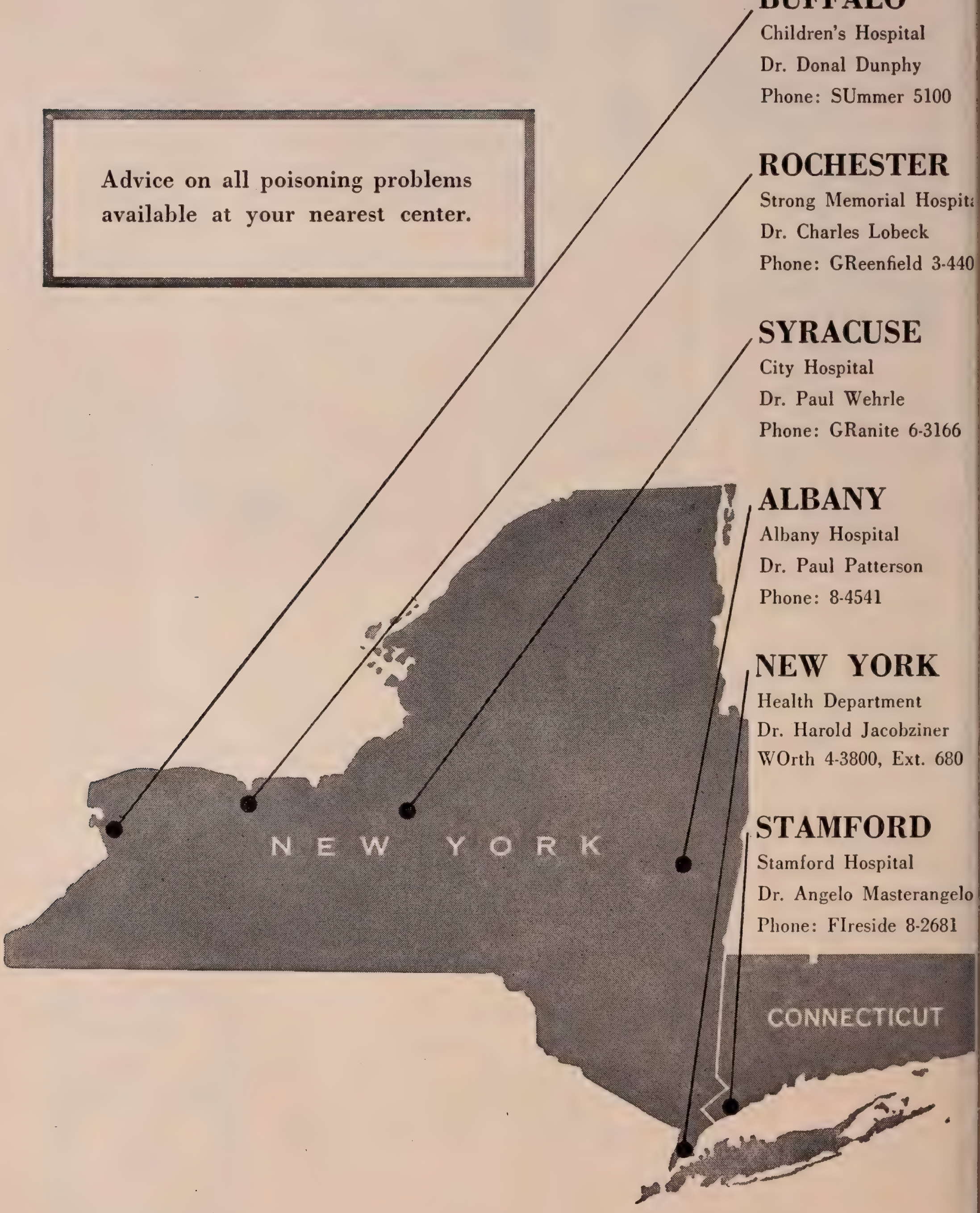

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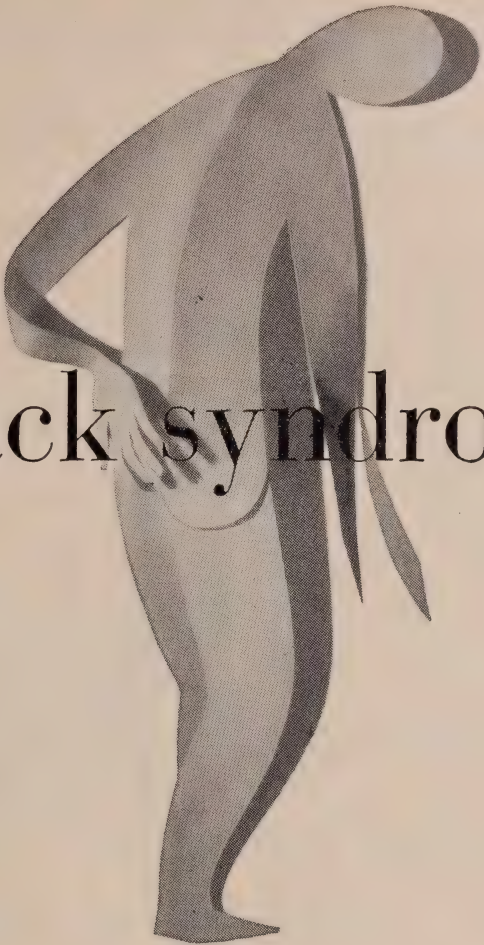

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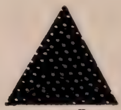

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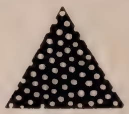

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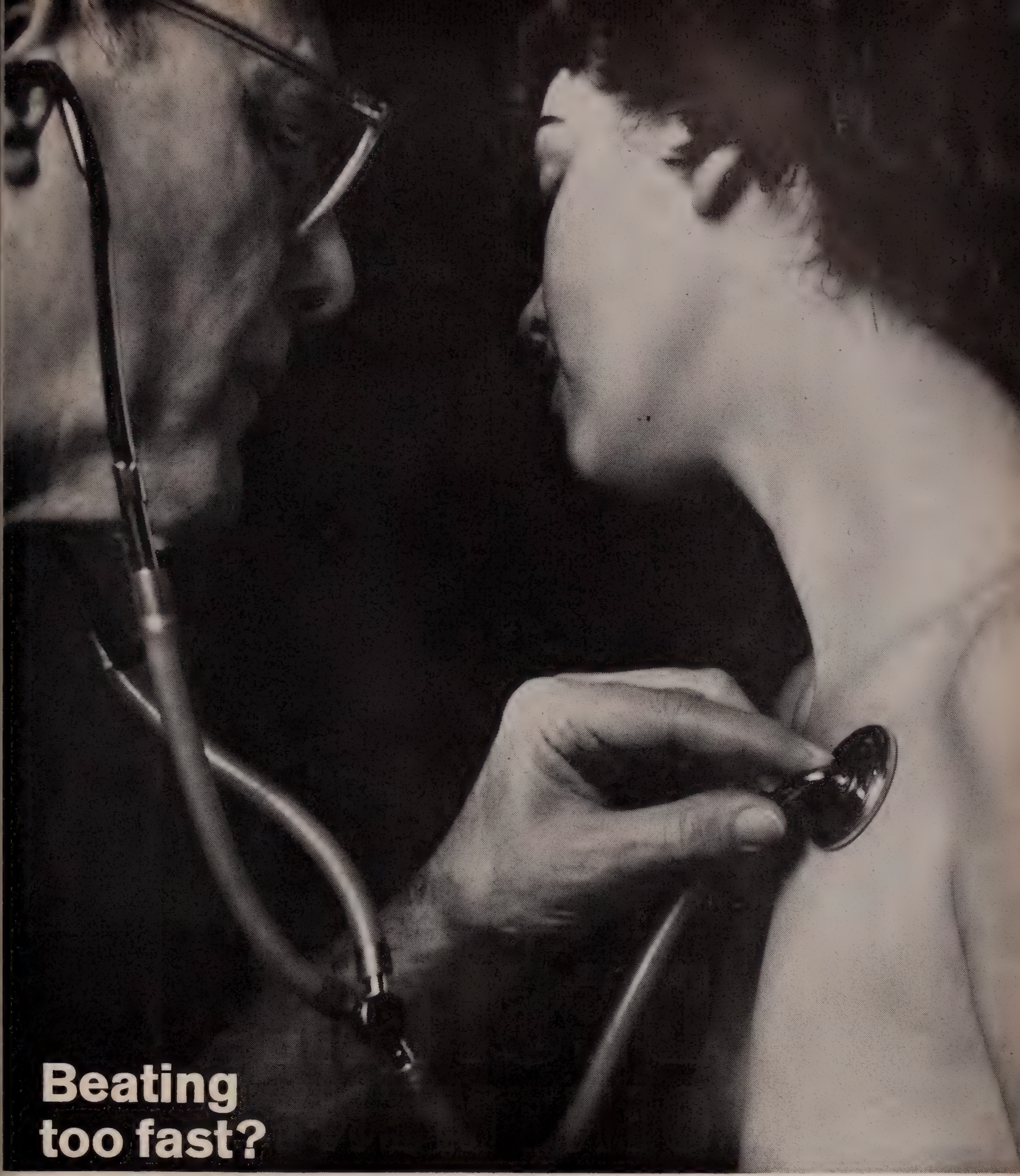

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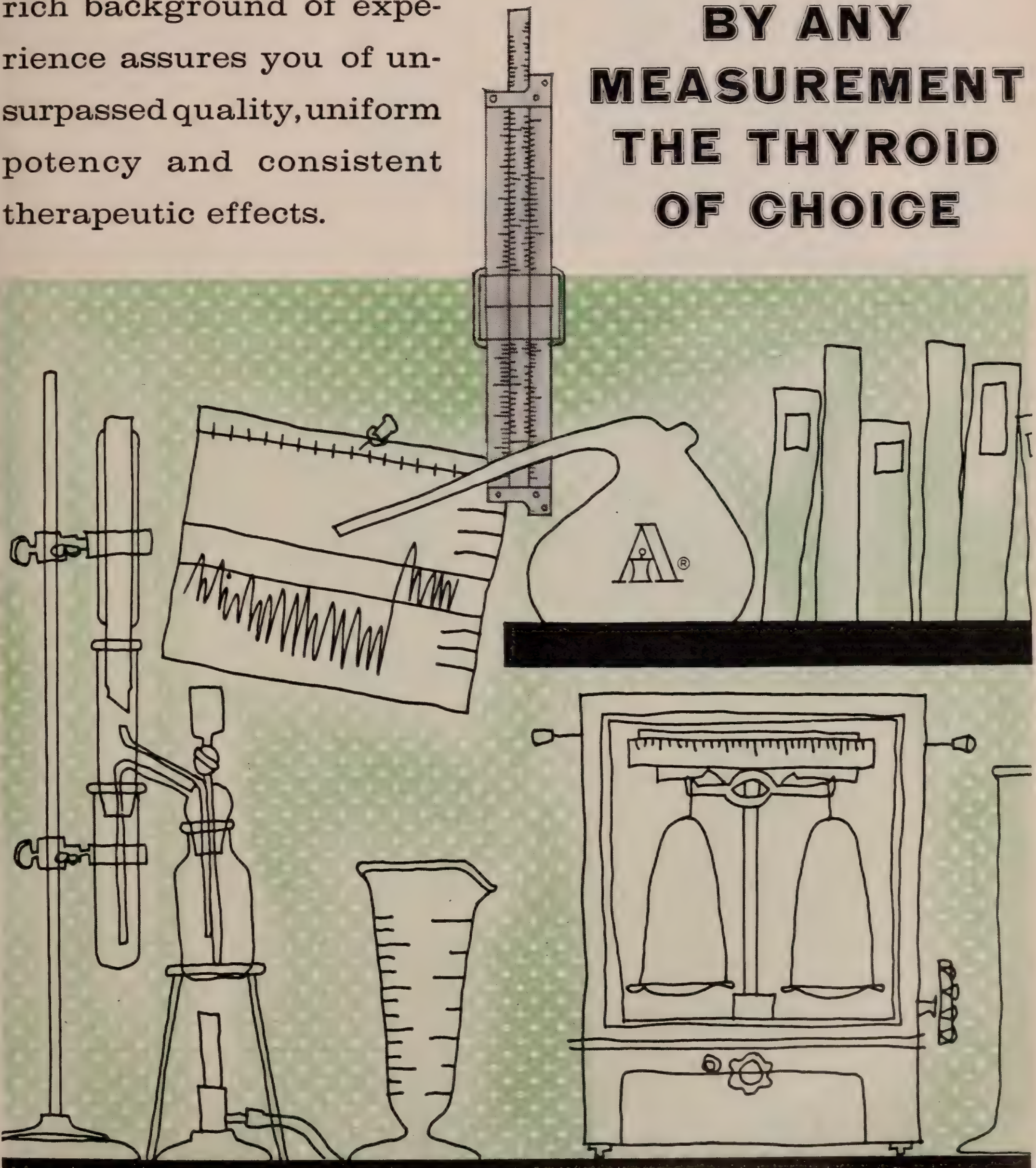

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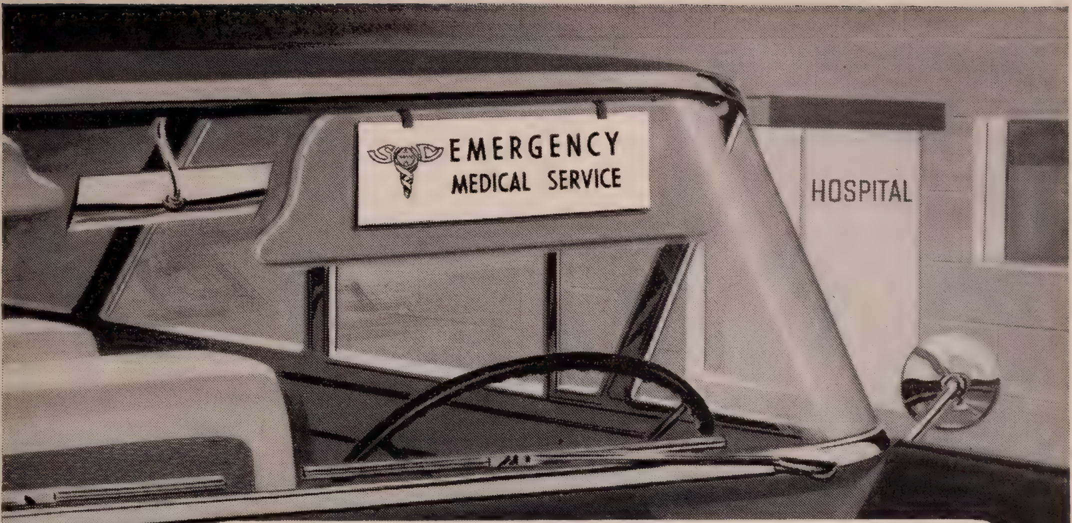

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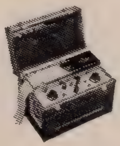

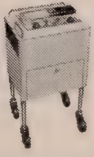

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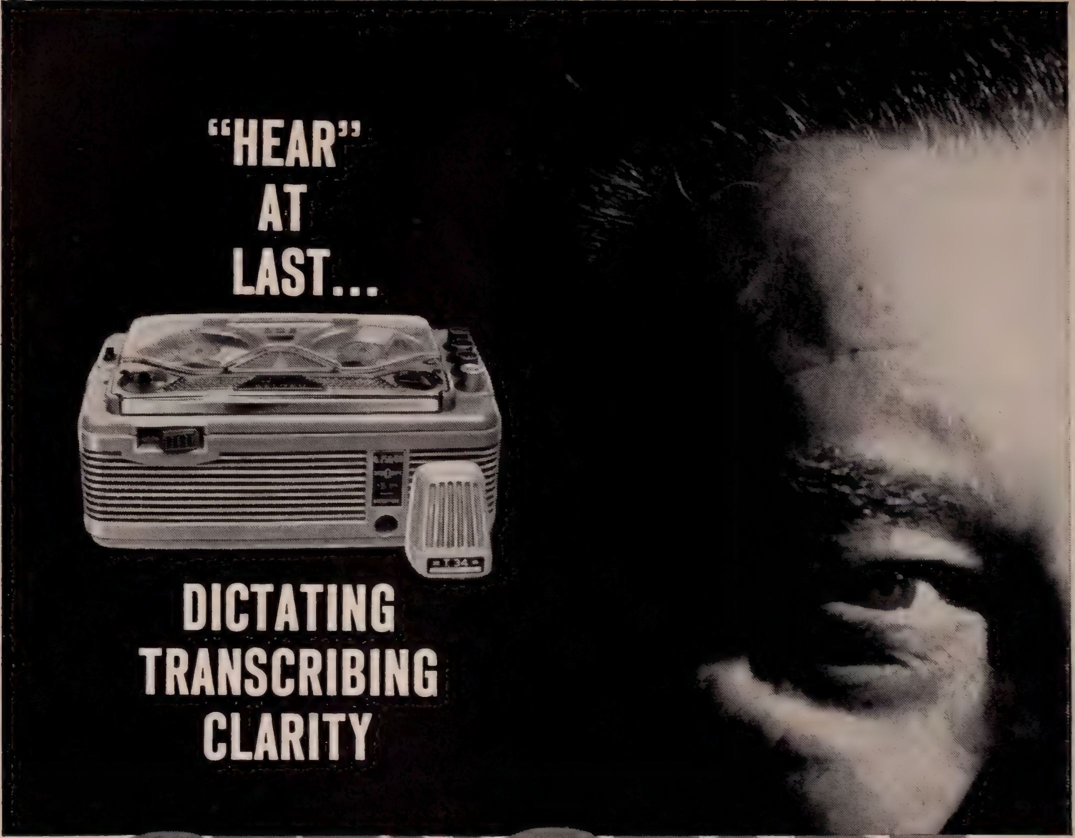

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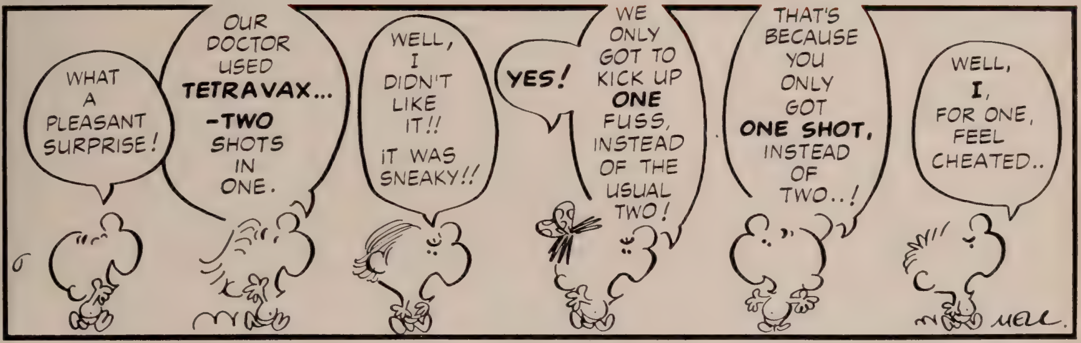
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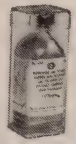

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# of Pyodermas

Gratifying Therapeutic Response

AFUR was found "highly satisfactory in most
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tisfactory results (cured or improved) among
59 patients treated with ALTAFUR for pyodermas.

Virtually Uniform in vitro Susceptibility of Staphylococcus aureus

99.5% of isolates (214 of 215) from patients
with staphylococcal infections—including many
antibiotic-resistant strains—proved sensitive in
vitro to ALTAFUR in tests conducted across the
nation.[3] **99.7%** of staphylococcal isolates (334
of 335) at a large general hospital—including
many antibiotic-resistant strains—proved sensitive
in vitro to ALTAFUR.[4]

Wide, Stable Antimicrobial Spectrum

"Because of its relationship to previously developed nitrofurans, it is anticipated that [ALTAFUR] will retain its original spectrum after longstanding clinical usage."[5] Development of significant bacterial resistance to ALTAFUR has not been encountered to date.[6]

Minimal Side Effects

Side effects are easily avoided or minimized by these simple precautions: 1) *alcohol should not be ingested in any form, medicinal or beverage, during* ALTAFUR *therapy and for one week thereafter* 2) each dose should be taken with or just after meals, and with food or milk at bedtime (to reduce the likelihood of occasional nausea and emesis).

---

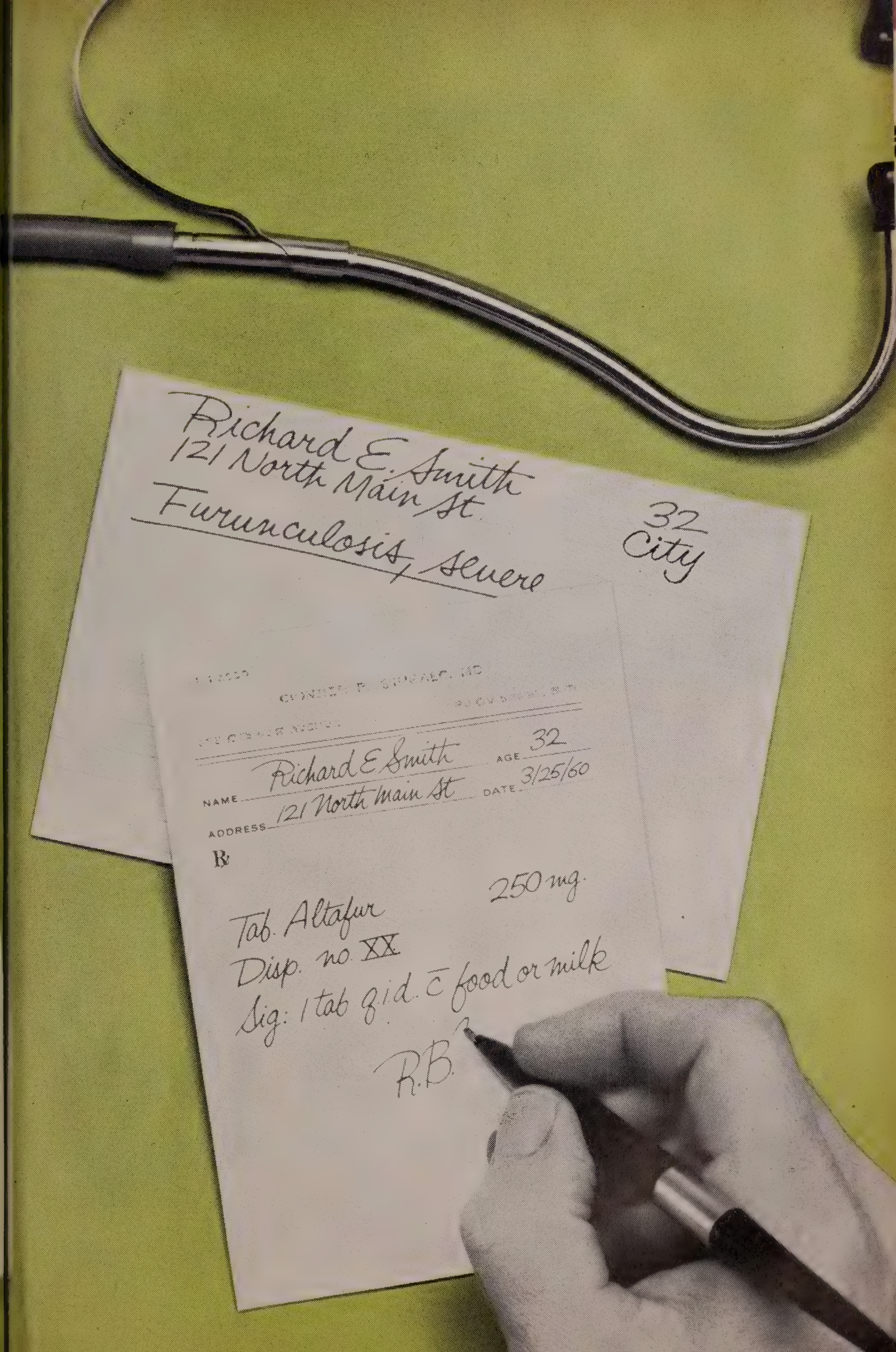
1. Weiner, A. L.: Paper presented at the Conference on Recent Advances in the Treatment of Chronic Dermatoses, University of Cincinnati (Ohio), Nov. 5, 1959. 2. Compiled by the Medical Department, Eaton Laboratories, from case histories received. 3. Christenson, P. J., and Tracy, C. H.: Current Therapeutic Research 2:22, 1960. 4. Glas, W. W., and Britt, E. M.: Proceedings of the Detroit Symposium on Antibacterial Therapy, Michigan and Wayne County Academies of General Practice, Detroit, Sept. 12, 1959, p. 14. 5. Leming, B. H., Jr.: Ibid., p. 22. 6. Investigators' reports to the Medical Department, Eaton Laboratories.

Tablets of 250 mg. (adult)
and 50 mg. (pediatric)
bottles of 20 and 100

Altafur®

brand of furaltadone

NITROFURANS . . . a unique class of antimicrobials
EATON LABORATORIES, NORWICH, NEW YORK



Richard E. Smith
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Furunculosis, severe
32
City

NAME Richard E Smith AGE 32
ADDRESS 121 North Main St DATE 3/25/60

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Tab. Altafur 250 mg.
Disp. no. XX
Sig: 1 tab q.i.d. c̄ food or milk
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all runaway
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promptly,
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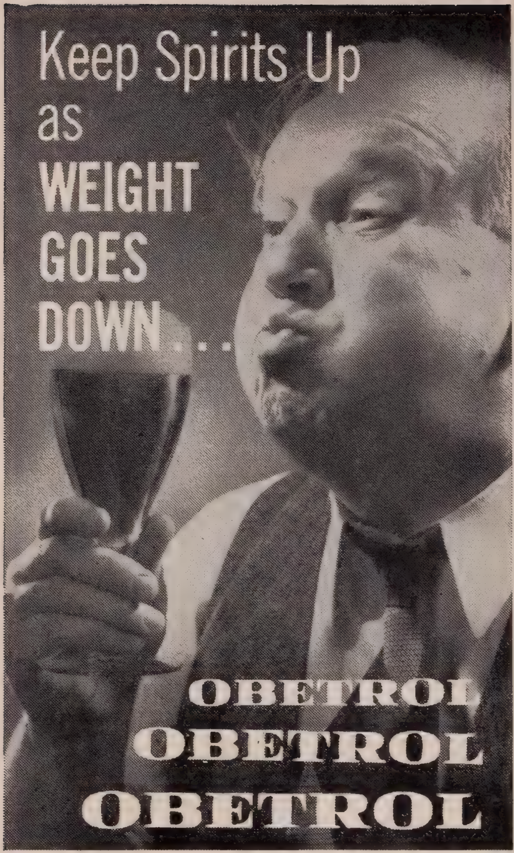

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oral liquid

Following oral dosage of 75 cc. Elixophyllin, mean blood levels of theophylline at 15 minutes[1] exceed those produced by 300 mg. aminophylline I.V.[2]—and therapeutically effective[3] levels persist for hours.[1]

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For 24 hour control: For adults 45 cc. doses before breakfast, at 3 P.M., and before retiring; after two days, 30 cc. doses. Children, 1st 6 doses 0.3 cc.—then 0.2 cc. (per lb. of body weight) as above.

1. Schluger, J. et al.: Am. J. Med. Sci. 233:296, 1957.
2. Bradwell, E. K.: Acta med. scand. 146:123, 1953.
3. Truitt, E. B. et al.: J. Pharm. Exp. Ther. 100:309, 1950.

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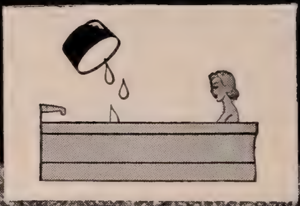
proven successful[1] in
almost every
case of

Skin itch and dryness



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3 **act to measurably increase natural emollient skin oil**

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senile pruritus
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1. *Spoor, H. J.: N. Y. State J. Med. Oct. 15, 1958*

for the tense and nervous patient

proven effective and outstandingly safe

- simple dosage schedule produces rapid, predictable tranquilization without unexpected excitation
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- does not produce ataxia, change in appetite or libido
- no danger of hypotension, depression, Parkinson-like reactions, jaundice or agranulocytosis
- does not impair mental efficiency or normal behavior

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Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; or as MEPROTABS*—400 mg. *unmarked,* coated tablets.
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Miltown®
meprobamate (Wallace)

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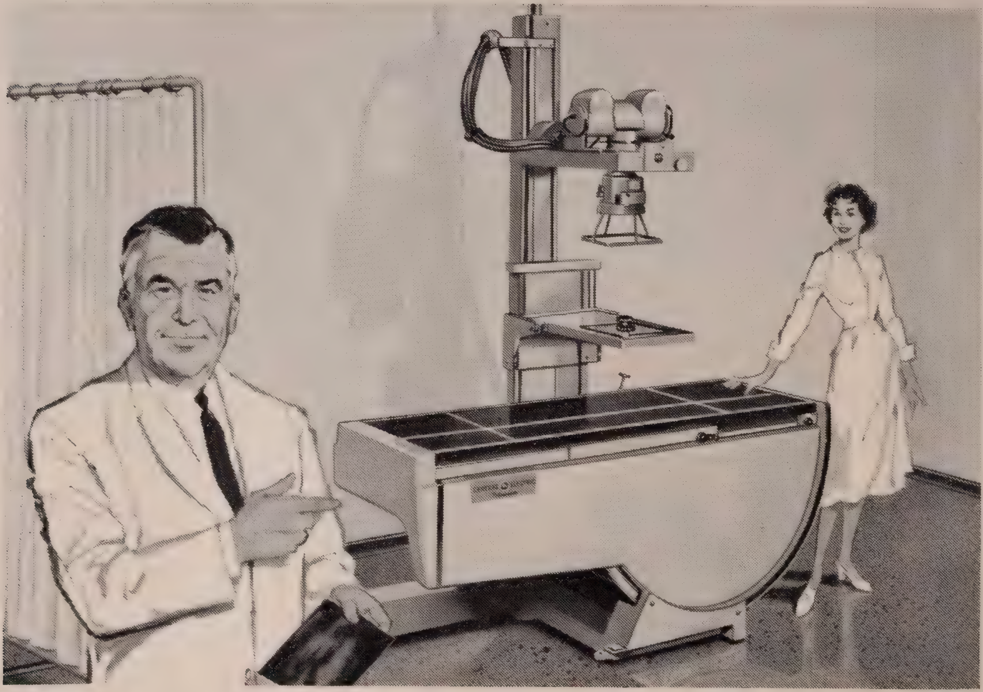

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vascular headaches,
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cephalalgia,
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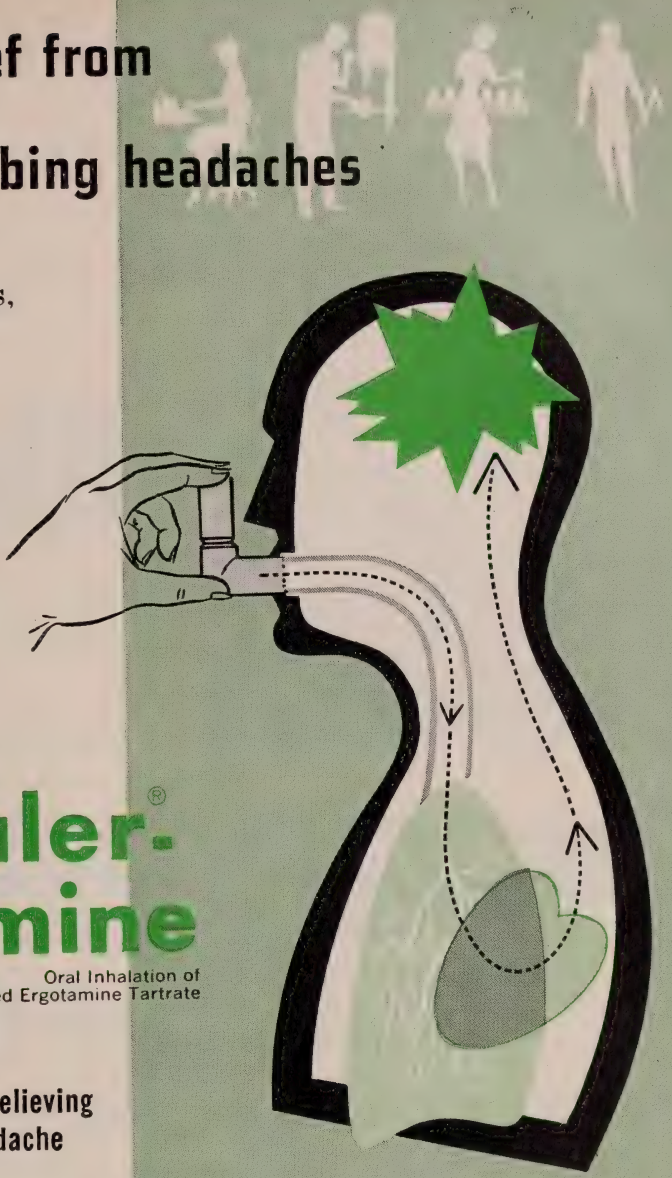
syndromes,
and occipital
neuralgia



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Approximates speed and predictability of relief following ergotamine injection.

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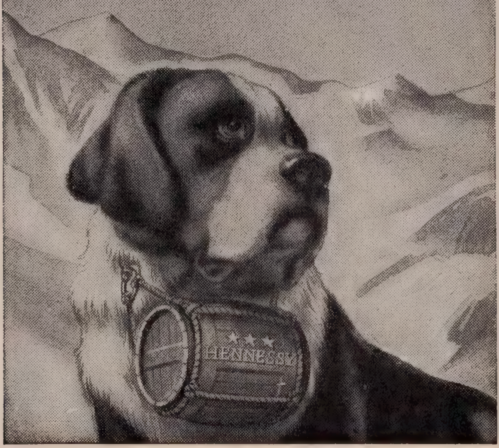

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depresses appetite and elevates mood
- meprobamate
eases tensions of dieting
(yet without overstimulation, insomnia
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in musculoskeletal
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GER-O-FOAM
(aerosol foam)

eases pain, spasm; improves function

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

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a potent thymoleptic...
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Does act effectively in *all* types of depression regardless of severity or chronicity.

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References: 1. Ayd. F. J., Jr.: Bull. School Med., Univ. Maryland *44*:29, 1959. 2. Azima, H., and Vispo, R. H.: A.M.A. Arch. Neurol. & Psychiat. *81*:658, 1959. 3. Lehmann, H. E.; Cahn, C. H., and de Verteuil, R. L.: Canad. Psychiat. A. J. *3*:155, 1958. 4. Mann, A. M., and MacPherson, A. S.: Canad. Psychiat. A. J. *4*:38, 1959. 5. Sloane, R. B.; Habib, A., and Batt, U. E.: Canad. M.A.J. *80*:540, 1959. 6. Straker, M.: Canad. M.A.J. *80*:546, 1959. 7. Strauss, H.: New York J. Med. *59*:2906, 1959.

Geigy, Ardsley, New York

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Geigy

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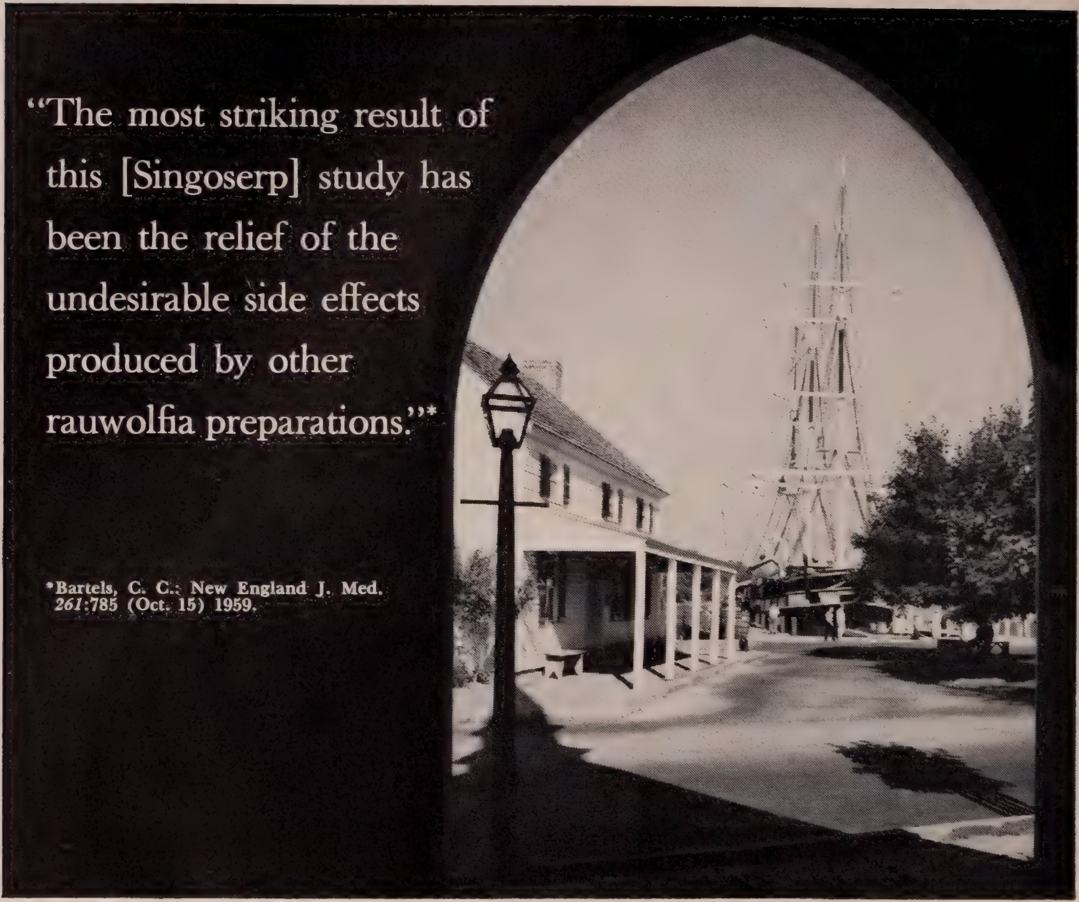

"The most striking result of this [Singoserp] study has been the relief of the undesirable side effects produced by other rauwolfia preparations."*

*Bartels, C. C.: New England J. Med. *261*:785 (Oct. 15) 1959.

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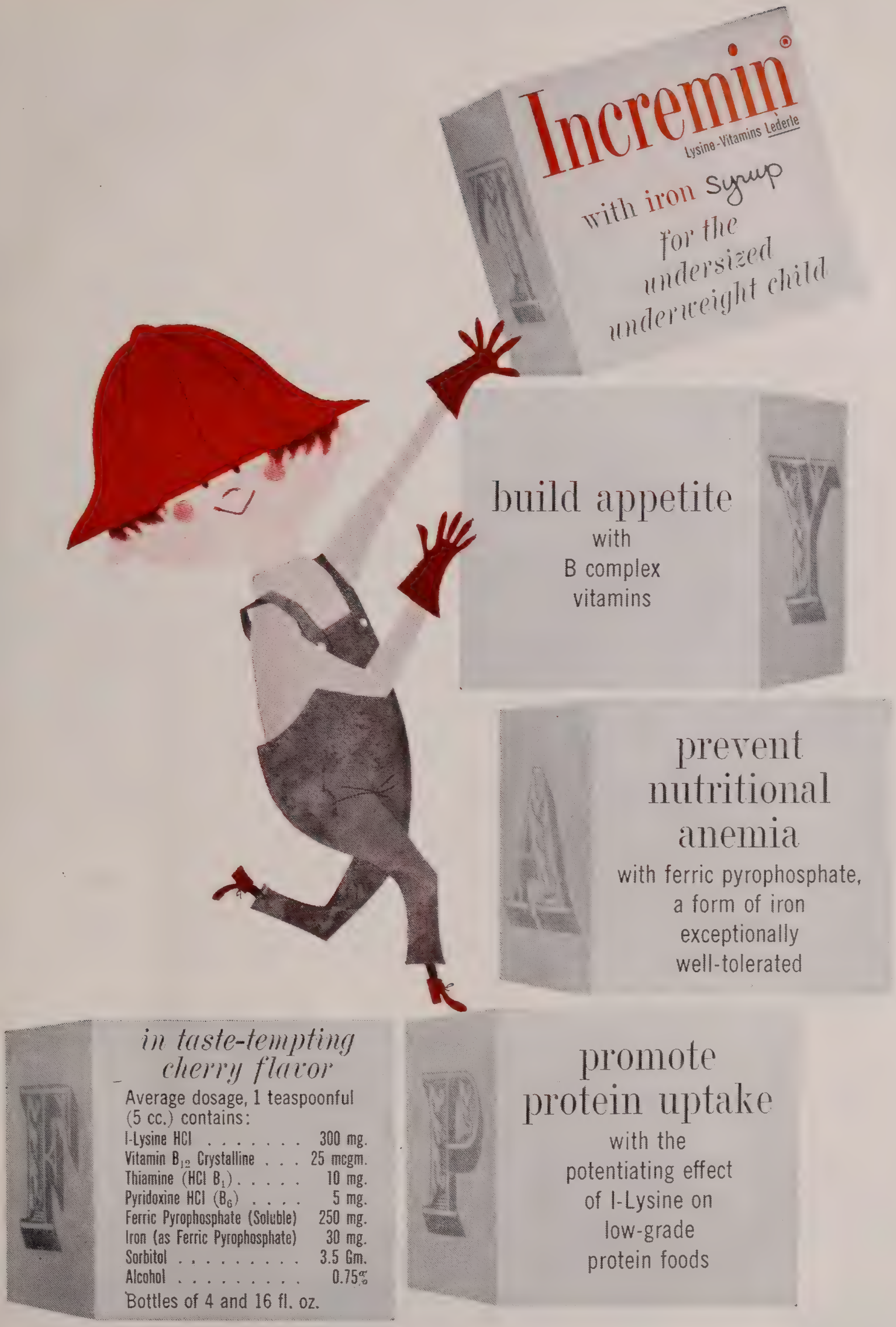
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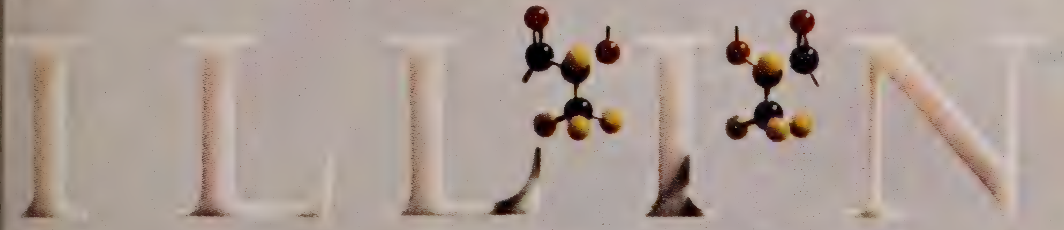

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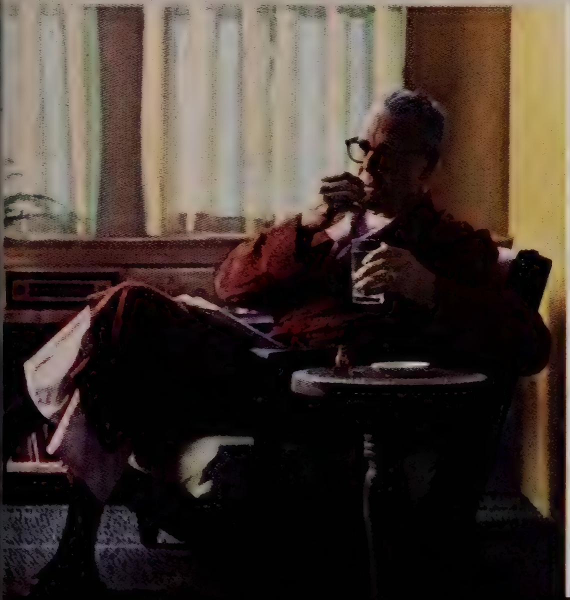

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REES, R. B.; BENNETT, J. H.; GREENLEE, M. R.: Newer Drug Treatment in Dermatology, Cal. Med.; 91:1, July 1959.

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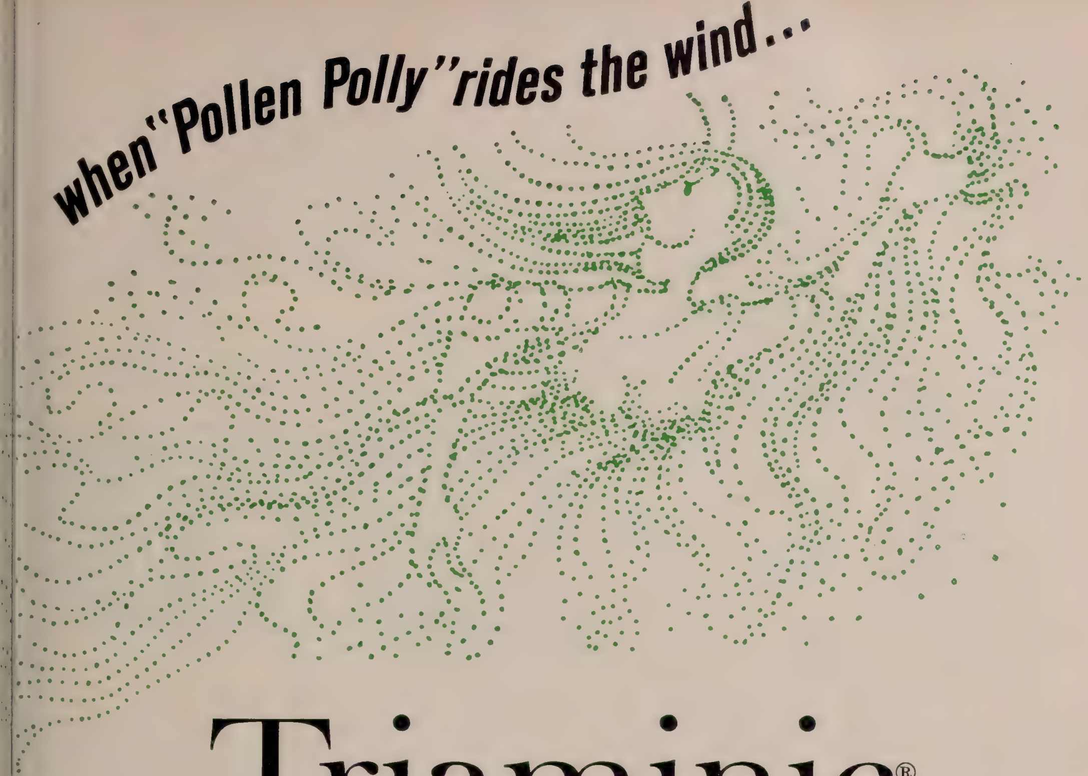
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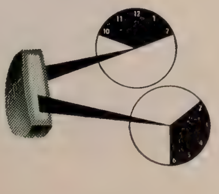

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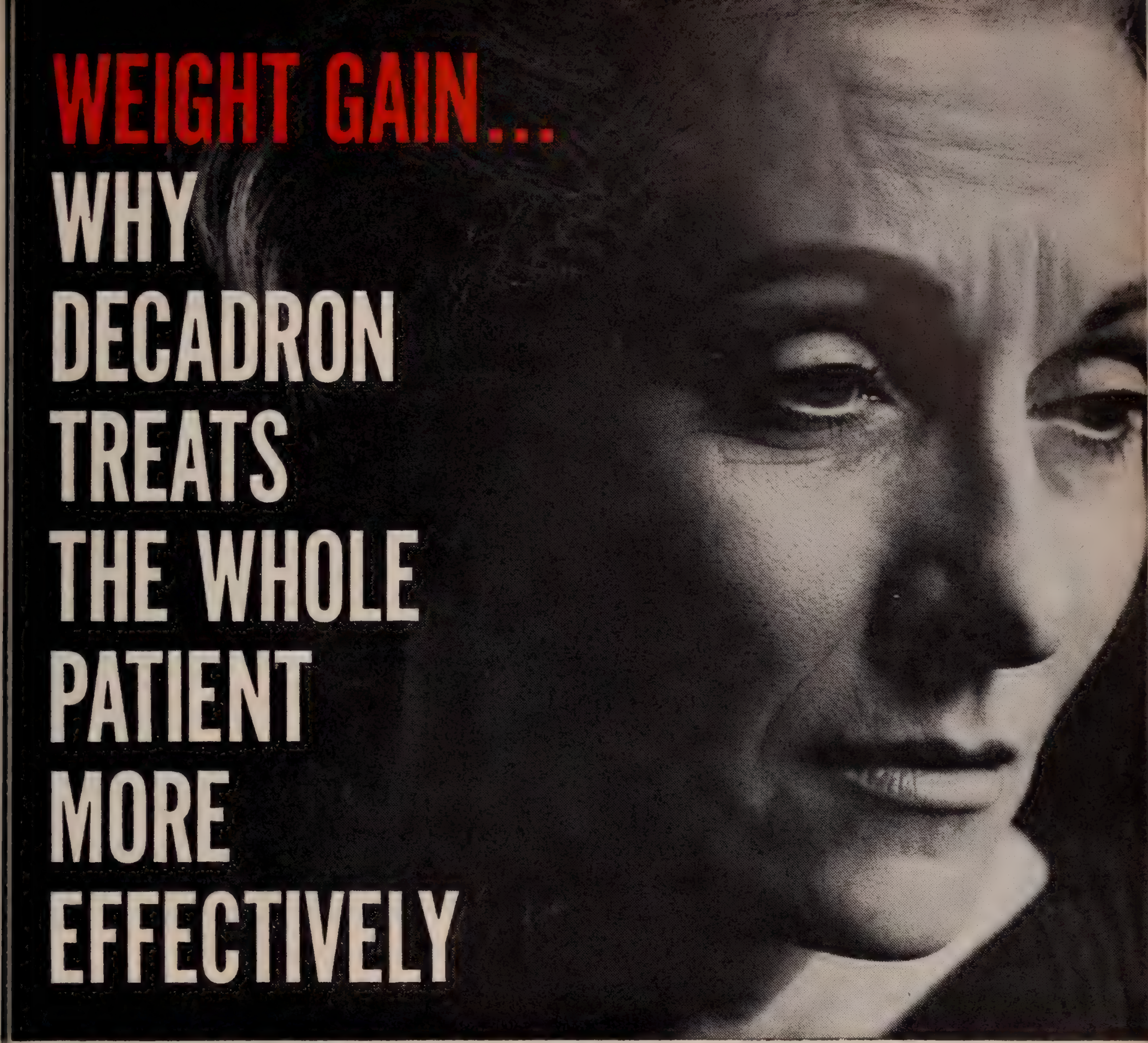

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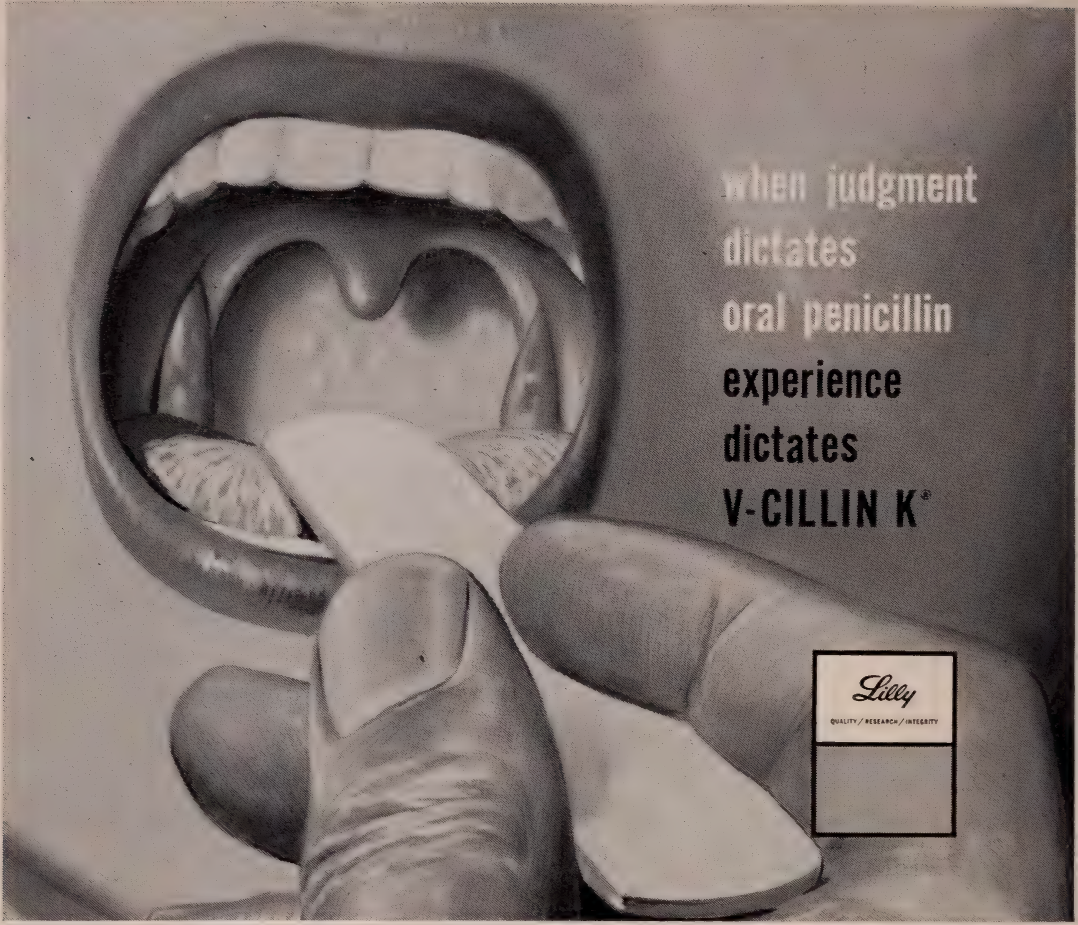

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1. Griffith, R. S.: Comparison of Antibiotic Activity in Sera Following the Administration of Three Different Penicillins, Antibiotic Med. & Clin. Therapy, 7: No. 2 (February), 1960.

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EDITORIALS

"You Are Old, Father William . . . ."

Not so long ago, it seems, old people were just old people, gentle, withering relics of the past typified by Whistler's portrait of his mother. True, they had their problems then, but who hadn't? Some were incapacitated, others spry; some were broke, others solvent; some were happy, some sad.

Now our modern old people, more numerous than before thanks to modern doctors, modern medical science, and modern private enterprise in medicine, have been metamorphosed. From being just old people they have become recently desirable, valuable political assets! Each has a genuine, exercisable franchise; some 15,000,000 potentially purchasable ballots! Purchasable by inducement—not in cash but by "benefits."

Both major political parties are offering bids, the Democrats a Forand-type bill, the Republicans a Javits-type bill. Suddenly the health of the aged becomes the grave concern of others besides the doctors.

Assuredly the old folks have not offered their votes for sale; the most many ask for is the privilege of continuing to work gainfully after sixty-five, not for a pittance but according to their ability to earn and to pay their taxes, employ their own doctors, and buy their own insurance.

In all the election year turmoil over the health of the old who hears any concern expressed over the employers, the business men, the small and large shop operators, and others, men who create employment for the young? In this election year and every year, many thousands of young people will for the first time have fastened about their necks the yoke of withholding taxes, Social Security taxes, rent, state, local taxes, union dues, and the national debt. The young—don't they enjoy the prospect of some forty-seven years of work-filled and tax-ridden pursuit of happiness?

The young people—will they not find it increasingly difficult in this inflation-ridden election year and those to follow to buy bread for themselves and their children? Who cares? Let them eat cake! They are only the young. Will they find in their midst anyone to arise and say in a loud voice to politicians of both parties: Thou shalt not press down upon the brow of youth a crown of aging thorns!

The Physician-Patient Privilege

A decision of the County Court in Kings County in a criminal action summarized the law in New York concerning the physician-patient privilege with respect to "confidential communications" and merits the attention of all concerned with the practice of medicine in this State.

The defendant was charged with manslaughter. His defense was that the blows struck neither caused the death of the victim nor were a competent producing cause of death. He claimed that the victim died of natural causes in a hospital after his admission thereto following the alleged assault.

He requested permission to inspect the hospital records concerning treatment of the deceased before his death and certain portions of the medical examiner's report with respect to his findings and conclusions as to the cause of death. He had retained a pathologist as his expert witness and contended that he could not utilize the services of the pathologist nor properly prepare his defense unless he had access to these records. The district attorney opposed this request asserting the privileged nature of the hospital records and contended that the autopsy report was not available because of the provisions of the New York City Charter.

The Court, in arriving at its decision concerning these records, commented on the origin and history of the physician-patient confidential communication privilege, noting that the privilege did not exist at common law and that New York in 1828 was the first state to adopt a statute recognizing the privilege. It observed that the term "confidential communications" usually pertains only to *narrations* when used in the attorney-client, husband-wife, and priest-penitent privileges, but that the physician-patient statute is much broader. It includes both the *narration* and *physical observation, examination, symptoms,* and *treatment.* Thus under certain circumstances the history of the injury is privileged, but only provided such history is necessary for treatment.

It then went on to state the general rules applicable to the "privilege" in both criminal and civil cases. These are that the physician-patient privilege is applicable to hospital records even though the physician is not called as a witness; that the privilege survives the death of the patient, but that a death certificate is not privileged unless offered to show the cause rather than the fact of death and that an autopsy performed on a corpse is not privileged, since no relationship of physician and patient is deemed to exist; and that the privilege may be waived and, although the statute provides for express waiver, the waiver is ordinarily implied and may be implied by the patient's conduct, such as testifying in detail as to his injury or illness, by voluntarily disclosing his physical ailments or condition or by calling the physician as a witness.

The Court then went on to discuss who may claim the privilege. It pointed out that technically speaking the privilege belongs to the patient and may be claimed only by him, although under the statute there may be a waiver by a personal representative or other party privy in interest in the estate of a deceased patient. A failure to waive in effect is construed as and referred to as a claim of privilege.

The Court stated that "as a practical matter, it is the physician or hospital authorities who in the first instance assert the privilege. Although the statute does not prescribe a rule of professional conduct for the governing of physicians, it is a plain violation of professional propriety to disclose the information from his patient. The assertion of the privilege lasts until expressly or impliedly waived by the patient or his representative."

It is well to note at this juncture that the Principles of Professional Conduct of the Medical Society of the State of New York specifically state that "the confidences which doctors of medicine receive should be guarded with the most scrupulous fidelity and honor." (Chapter II, Section 2)

The Court noted that the physician-patient privilege may be asserted by hospital authorities in instances in which the patients are in no position to do so. It also said that of course if the patient is a party to proceedings, the opposite party cannot invoke the privilege, although a party privy in interest to the patient, such as a beneficiary or assignee of a life insurance policy, may invoke the privilege. Equally true is the rule that a party to a civil case against whom hospital records are offered may not invoke the physician-patient privilege where the patient is not a party to the action.

The Court next discussed the rules concerning the physician-patient privilege in criminal cases. It said that where the defendant is himself the patient, he may claim the privilege or may waive it, expressly or impliedly. The Court held that the converse of this rule is equally true and that the defendant cannot invoke the privilege in a criminal case to exclude physician's testimony or hospital records in situations where the patient was the victim of the defendant's crime. It said "(t)he purpose of the physician-patient privilege is to protect the patient—never shield the criminal."

The Court in ruling on the defendant's request for the records stated that the main issue was whether the People (represented by the district attorney) could under any circumstances invoke the physician-patient privilege. It said that the same reasons which deny to the defendant the right to invoke his victim's privilege also prevent the People, under any circumstances, from invoking the privilege of the complaining victim. The privilege belongs to the patient and the patient alone may claim it. The Court also felt that in a criminal case the People could not withhold evidence which could conceivably disprove or tend to disprove the defendant's guilt. Such withholding might violate due process under both the State and Federal constitutions.

It granted the defendant's request to inspect the hospital records accordingly and also granted him the right to inspect the medical examiner's reports. It based its latter ruling on the theory that although the statute in question provided that only those autopsies where criminality is indicated shall "not be open to *public* inspection," this prohibition would not prevent the Court from making them available to any defendant in a criminal action, since the prohibition was designed to protect the rights of the accused. (*People v. Preston,* 176 N.Y.S. (2d) 542.)—J.R.B.

Changing Times for Medicine

Elsewhere in this issue (page 1641) appears the first of four articles which the readers of this JOURNAL would do well to peruse and ponder.

The attitude of the majority of the American medical profession is apathetic toward government intrusion in medicine. It is the old story, "It can't happen here." It was tried years ago, and they couldn't put it over, etc., etc., ad nauseam.

If we take the trouble to study the course of events in other countries, we shall readily see how once the camel's nose is in the tent, the occupant has to move out.

Each of these papers demonstrates how government intrusion was very gradual, but once started was like the movement of a landslide. It could not be stopped.

Dr. Fellinger (see June 15 issue) states that the old mutual relationship of doctor and patient is disturbed; the doctor loses prestige and the patient tends to look on him not as a counsellor, but as an employe; the patient calls for unnecessary service.

In Sweden, the system has changed from a voluntary one (not one like ours, but one subsidized by the government and covering only part of the population) to a compulsory system involving everybody.

Dr. von Greyerz (see July 1 issue) states that the Swedish government supports the International Labor Organization's Declaration of Philadelphia—complete socialization of medicine for all the world. The program "was put across without due consideration to the views of the medical profession. A bureaucratic monstrosity was the result." One tenth of the doctor's time is taken up by paper work. The doctor is regarded no longer just as the patient's doctor but in part as a civil servant.

Dr. Abel of England (see June 1 issue) warns of the greatest danger of all—"the bureaucratic machine, which by the turning of the screw can do more damage to doctors and to the general welfare of the patients than anything else."

We have always regarded Canada to be as much of a stronghold of private enterprise as is the United States. Now the camel's nose is in the Canadian tent. Dr. Gosse (see page 1641) states, "Present indications in Canada are that the government will not engage all medical care at one fell swoop. Rather do we feel that it will develop the pattern already begun."

We could cite other countries where the loss of freedom in medicine has steadily increased. For example, in Japan the government control has made it nigh impossible for most doctors to make a living.

Can we expect any different story in the United States? Definitely not unless the medical profession wakes up and stops living in a fool's paradise. We are in greater danger of national compulsory heath insurance now than at any other time in the last ten years, and if it comes it will be largely the fault of the medical profession.

Why? Because of the apathy of the profession; the failure to give wholehearted support to and direct the course of prepayment plans, which are here to stay; the unwillingness to work on weekends, holidays, and nights; the failure to curb the chiselers and racketeers in medicine; the tendency among many to put the almighty dollar in first place and humanitarianism in a poor second place.

You reply that some of these charges apply only to 5 to 10 per cent of the profession. True, but 5 to 10 per cent of 240,000 doctors means 12,000 to 24,000 doctors—and that is not a negligible number. Furthermore they are the ones who get the headlines and give the rest of the profession a black eye.

Wherever the government has stepped in, it has steadily increased its control. All government plans operate in the red. Attempts are made to eliminate these deficits by restricting benefits to the patient, restricting the doctor in his mode of treatment and medication, and decreasing his emoluments.

Medicine becomes assembly-lined; its standards deteriorate. Two of the greatest dangers are lack of time for research and a deterioration of the type of individual entering medicine.

Again to quote Dr. von Greyerz, "the danger is that government often makes progress by plucking one leaf of the artichoke at a time. We cannot see the disadvantages until so much of the vegetable is taken that the result is irreparable."

How much of the artichoke is left in this country? Less than many believe. Are we going to sit idly and smugly by until the damage is irreparable or are we going to do something about it?

The answer is not in the hands of a few, but in the hands of *all* doctors. The American system of medicine *can* be protected, but only by the united effort of the whole medical profession.—L.H.B.

Editorial Comment

Pills with Sympathy. Does the modern doctor have too little understanding and sympathy with his patients' problems of illness? The *Westchester Medical Bulletin* has something to say about this.[1]

> Illness is always a terrifying experience. There are always unknowns. The individual's routine is upset. Finances are disrupted. In many instances budgets are knocked out for years. Permanent changes in life may have to be made. Modern hospitals and doctors, with all of their complicated gear and procedure, can compound the fright the sick person is going through. Lack of understanding of what is being done and what is to be expected adds to the confusion. This is the time when a "feller needs a friend" and the doctor should be that friend. Doctors should take time to know their patients, to establish themselves as trusted advisors and guides through all of the complicated business of being ill.
>
> Medicine is under criticism today. We hear on all sides that as doctors we are cold, indif-

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[1] Editorial: Westchester M. Bull. **28**: 20 (Jan.) 1960.

> ferent, and interested only in the individual as a number and as a disease. The older practitioner had very little to work with and the basic knowledge of disease was meager, yet today he is enshrined and glorified. Why? Because his administrations were kindly and given with sympathy. In the modern setting our opportunities to serve mankind are not decreased but multiplied a hundred fold. Human nature has not changed, but the practice of medicine has changed. People in their hours of need still want friends, comfort, and understanding. Let us all revaluate our personal relationship with patients and give our pills with sympathy—though they be of the miracle variety.

We agree that the doctor should certainly be to his patient a guide, philosopher, and friend. We revere the ideals and relationships of the old-time practitioners with their patients. In the bygone days, however, let it be remembered that the pace of life was on the whole less than it is now, that time to explore the problems of the individual usually in his home surroundings was of the essence.

We do not feel that by and large the sympathetic understanding of the modern medical practitioner is necessarily less than in bygone days. The circumstances under which he and his patients live, however, have changed radically. The hospital has come more and more into the picture; improved transportation has caused the physician to see more patients in the same day of twenty-four hours; modern therapy has materially shortened many illnesses. Under these conditions is it not more time that is needed? There is much to be said for the modern physician and we earnestly believe that whatever faults he may have, lack of sympathy is not one of them.

Costs of Health Care. From all indications it would appear that the year 1960 will bring a rather searching inquiry into the cost of health care. The pharmaceutical industry has already been and continues to be under fire. Organized labor is dissatisfied with the costs of health care to its membership. Blue Cross is even now applying for increased rates in this State. Unionization of voluntary hospitals is already on its way. And the over-all cost of living index continues to rise.

Naturally there is public concern about the costs of medical care and yet a usually reliable source[1] says in part: "The most telling statistic we know is that twenty years ago the public spent 4.7 per cent of its disposable income after taxes for medical care (doctors, hospitals, dentists, and drugs). Today it can be shown that 4.6 per cent of this same disposable income goes for this purpose.

"In a word everything has gone up but the percentage cost of treating illness keeps its same relative position."

In terms of dollars the cost of health care is admittedly greater than it was in the past, but then so is the dollar cost of everything else in the economy. Percentagewise health care seems to be reasonably static. But as pointed out in the same article the big difference is that today the public is receiving a "vastly superior product."

We do not believe that this point has been sufficiently publicized. At least it has not been adequately evaluated. Physicians now are better trained, better equipped than in the past; hospitals are better designed, better staffed; new pharmaceuticals and biologicals are constantly being developed and put in service to the public; better insurance against the costs of illness is now available—and because of this betterment in the modalities for health care life expectancy is vastly increased and in-hospital stays are lessened, permitting return to productive work sooner than before.

We can agree with *New York Medicine* that the drug companies, the hospitals, and the medical profession should all work together to explore every avenue to reduce the cost of illness to its lowest possible level "consistent with the new and best knowledge and application of how to do this."

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[1] Editorial: New York Med. **15**: 874 (Nov. 5) 1959.

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(1) Leslie, A., and Simmons, D. H.: Am. J. M. Sc. *234*:321, 1957. (2) Settel, E.: Am. Pract. & Digest Treat. *8*:1249, 1957.

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SCIENTIFIC ARTICLES

What's Ahead in the Hospital Treatment of Tuberculosis

I. D. BOBROWITZ, M.D., NEW YORK CITY

(From the City of New York Department of Hospitals)

During the past decade significant changes have occurred in the institutional treatment of tuberculous patients. To attempt to foresee what is ahead in hospital care, it is essential to examine closely the recent trends and the present hospitalization pattern.* The characteristics of the hospitalized patients related to this varying picture of tuberculosis will be discussed first.

Characteristics of Hospitalized Patients

The age and sex of the hospital population has changed, the major shift being the increase of older male patients. Almost three quarters of our patients are men. Whereas 56 per cent of all patients are over the age of forty-five, two thirds of the men are over forty-five, but only 29 per cent of the women are in this age group. This type of population presents various problems. Older patients present a higher incidence of heart disease, pulmonary insufficiency, and other nontuberculous lesions. The hospital must be geared to the care of these conditions and other infirmities of advanced age with provision of medical, nursing, and ancillary services. These cases are forming an important segment of geriatric medicine. The tuberculosis therapeutic program is influenced since the use of thoracic surgery may be limited because of cardiac complications, pulmonary emphysema, and poor lung function. Antituberculosis drugs may produce toxic reactions in aged persons more frequently and at an earlier stage than in younger patients, and careful laboratory and therapeutic management is required. Homelessness, an unstable family situation, or poor home conditions may be an additional problem in old age. This is of particular importance in patients eligible for discharge. Special domiciliary facilities may be required to satisfy the social, emotional, and economic needs of these patients in addition to their medical requirements.

On hospital admission only 9 per cent of the patients have pulmonary tuberculosis of a minimal degree, 34 per cent are moderately advanced, and 57 per cent are far advanced. It is evident that the minimal asymptomatic, negative sputum case is not often being hospitalized. Three quarters of the patients have tuberculous cavities and in these cavitary cases 70 per cent have multiple cavitations. This preponderance of sick patients with active advanced infectious disease emphasizes the reasons for hospitalization and the need of institutional care. This also is indicated from the fact that advanced cases with multiple cavities are among the most difficult therapeutic problems in tuberculosis. Careful handling is required as such cases may be potential

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* Most of the statistics are from the "1958 Tuberculosis Hospital Survey in New York City" which had the generous support of the New York Foundation and the Albert and Mary Lasker Foundation.

treatment failures.

On admission 60 per cent of the cases have had no other hospitalization for tuberculosis, 20 per cent have had a single prior admission, and the remainder have had multiple admissions. The previously unhospitalized patients are apparently individuals with recently diagnosed or new disease, while the others are principally drug-resistant chronic retreatment cases and those with relapses from tuberculosis. Almost 40 per cent of the patients on admission have had prior antituberculosis drug therapy; the remainder have not. It is probable that the patients with previous drug therapy are the same as those with former hospital care and, in essence, represent failures in treatment for one reason or another. The large group of patients with no previous hospital care or drug treatment presents a challenge and an opportunity. Treatment failures may be reduced with direct bacteriologic evaluation, prompt initiation of appropriate drugs and their uninterrupted use for a sufficient time, performance of necessary surgical procedures, adequate hospitalization, and good aftercare services.

The Problem of Nontuberculous Disease

In almost half of the patients significant nontuberculous disease is present. These conditions include alcoholism, disabling pulmonary fibrosis or emphysema, diabetes, neoplasm, cirrhosis, cardiovascular disease, and pneumoconiosis. The great majority of patients with pulmonary insufficiency or other nontuberculous disease are in need of institutional treatment both for the tuberculosis and for associated conditions. This problem of nontuberculous disease is a very pertinent one. The prevalence of serious nontuberculous conditions in tuberculosis patients and their increasing importance during the past decade is reflected in the cause of death data of this group. The New York City Department of Health reports that in known active cases of tuberculosis (the New York City active register) who died during 1958, 39 per cent had a nontuberculous cause of death. In 1947 only 7 per cent of the deaths were in this category. More and more patients are dying with, and not of, tuberculosis, with the tuberculosis secondary to a significant nontuberculous condition. The tuberculosis hospital must provide much more than just tuberculosis care. The adequate management of these many important associated disorders requires specific facilities, equipment, and personnel. The services of well-trained physicians, nurses, and ancillary staff are needed, and all of the basic clinical and laboratory modalities of investigation and care must be used.

Trends in Surgical Procedure and Collapse Therapy

Definite trends in the use of surgical procedure and collapse therapy have become evident mainly owing to the effective antituberculosis drugs. There has been a drastic reduction, almost to the vanishing point, in pneumothorax and pneumoperitoneum. Thoracoplasty, which had been the most prominent surgical procedure, likewise has shown a considerable drop and now accounts for only 17 per cent of all the thoracic operations. Some of these thoracoplasties are done not as definitive therapeutic procedures but as tailoring operations in combination with resection. A recent survey revealed that thoracic surgery was done in 8 per cent of our patients with operation planned in an additional 6 per cent. This is a decline in surgery compared with a few years ago. This change has been influenced by the increasing number of chronic long-term patients who are not suitable for operation. Resectional surgery is now employed most commonly with lobectomy done most frequently, pneumonectomy and segmental resection used less often. In the past few years lobectomies have numbered more than the total of pneumonectomies and segmentals. These trends are important in determining institutional facilities and staff requirements for surgery.

"Open cavity healing" is a phenomenon

which was not observed in the predrug era. With antituberculosis drugs, particularly isoniazid, up to 10 per cent of the tuberculous cavities reach an "open negative healing" status. In these circumstances a thin "healed cavity wall" persists for many months or years with cultures constantly negative for tubercle bacilli. There are many questions related to this type of lesion which require clarification. Does this represent true pathologic healing? Are there significant complications such as hemorrhage, infection, and spontaneous pneumothorax? What is the incidence of relapse from tuberculosis? What are the indications for surgical removal? Is this compatible with a return to full-time outside activities or work? What is the degree of infectiousness? For how long must antituberculosis drugs be continued if no resection is done? The fact is that this is a distinct lesion and patients are being discharged with "open cavity healing." The designation "inactive with cavitation" classifies such patients with cavities and persistently negative cultures.

The Long-Term or Chronic Custodial Case

The long-term or chronic custodial case has been of increasing importance with 18 per cent of hospitalized patients now in this category. These are patients whose tuberculosis has remained infectious in spite of one or more years of hospital care. The roentgenologic picture shows little change and cavitations may persist. The achievement of an inactive status with the antituberculosis drugs usually is not possible as significant drug resistance is already evident. Definitive surgical treatment is not feasible by reason of age, extent of tuberculous disease, associated conditions, particularly poor pulmonary function or cardiovascular disease, or combinations of such contraindications. The nontuberculous conditions are usually chronic and require long-term hospitalization. Social and economic factors and homelessness are often concomitant problems. Many of the patients are elderly and may be ambulatory or on a modified rest regimen. There is a great need for the development of special programs for these cases. Antimicrobial drugs and essential treatment must be maintained for infectious tuberculosis. Care must be provided for the associated disease conditions. Our efforts in the handling of the pulmonary disability should be intensified with diagnostic units for the evaluation of function and with provision for physical therapy and other treatment modalities. These patients require ample areas for recreational, educational, and group activities and special occupational therapy services, sheltered workshops, or domiciliary facilities. To meet all these needs and achieve an effective program, separate hospital sections would be desirable. Separation from the acute case of good prognosis with rapid improvement resulting from short-term treatment has practical advantages. This would provide maximum utilization of beds where required for intensive short-term care; concentration of efforts for each type of case with better handling of both; and an appropriate medical, social, and hospital environment for the chronic case. This does not mean less attention for the custodial patient but it is a matter of type of care, for the chronic case requires much supervision and treatment.

The Reduced Utilization of Beds

An important development has been the reduced utilization of beds with a sharp drop in the total number of tuberculosis hospital patient days. According to some reports, a reduction to almost half the hospitalization period of the predrug era has been achieved. The shortened stay, due especially to the effective drugs, has been noted particularly in original treatment cases. On the other hand, patients with serious complications or in very advanced progressive stages of the disease who would have died in the predrug era now survive and require prolonged care. Also included in this group would be the chronic-retreatment, positive-sputum, drug-resistant type of case. The point is that the shortened stay has increased the availability of hospital beds.

Because of the reduced bed occupancy, tuberculosis hospitals and services have been closed in many sections of the country. To adjust to this situation some tuberculosis hospitals have been using their facilities for the diagnosis and treatment of nontuberculous pulmonary diseases. Special laws have been passed in several states to change the designation of tuberculosis hospitals to chest hospitals and to permit the admission of nontuberculous patients with conditions such as emphysema, lung cancer, chronic infections, and allergy. In some chest hospitals services for cardiopulmonary physiology and cardiac surgery have been developed. In other words, the trend is toward chest hospital centers, staffed and equipped to handle all conditions of the chest: pulmonary and cardiac, tuberculous and nontuberculous. With a combination of specialists in all clinical and laboratory departments, the most effective and complete type of diagnostic and therapeutic care becomes available.

Utilization of General Hospitals for Tuberculosis

Of the eight municipal tuberculosis hospital services in New York City, only one is a special tuberculosis hospital while the others are part of general hospitals or centers. The utilization of general hospitals for tuberculosis has many considerations and benefits. Modern tuberculosis care requires much more than skilled phthisiologists. Tuberculosis is an integral part of a complete medical and pulmonary disease service. All of the medical, surgical, and specialized clinical departments, as well as the adjunct diagnostic and therapeutic facilities of the hospital, are needed. The effective use of antituberculosis drugs must be guided by careful laboratory studies. The associated nontuberculous conditions and complications so frequently found demand intensive supervision and attention from all the consultative departments available in a general hospital. Over 80 per cent of our patients have a noncustodial type of tuberculosis. The general hospital can provide short-term care for such patients and meet all their needs. The tuberculosis discovered during the admission chest x-ray procedure could be handled and an early determination of the activity of the disease could be made. Direct admission of known tuberculosis cases for immediate treatment of tuberculous emergencies or acute nontuberculous conditions would be possible. Care in a special tuberculosis unit is a practical and safe arrangement. Segregation and education of patients also provides the advantage of preventing the possible spread of disease. A good teaching and training program, which is so desirable, could be developed for visiting staff, professional house staff, students, nurses, and others involved in the management of tuberculous patients. Such education would also help to overcome the false phobias about the disease. With a program of this kind the general hospital also makes an essential contribution in the improvement of community health.

Early Discharge of Patients

Early discharge is another trend in the hospital management of tuberculosis. In this program patients are no longer kept institutionalized until the criteria of inactivity as defined by the National Tuberculosis Association (stable lesions, no cavitation, no tuberculous symptoms, and negative sputum or gastric cultures—conditions that have existed at least six months) have been reached. Instead they are discharged early if roentgenologic improvement has taken place, if there is no demonstrable cavitation except "open cavity healing," if there are no significant symptoms, and if the sputum is negative. Under these conditions patients could be discharged after hospital stays of various lengths with definite saving of time compared with the duration needed to comply with the classification of inactive. Some clinicians have recommended a shorter period of hospital care of a few months, the time necessary to initiate treatment, to determine the early behavior of the lesion, to establish a basic therapeutic regimen, to control the acute symptoms, and to educate the patient. A vast accumulation of data is available which indicates the effectiveness of hospital care for patients until inactivity has been reached. These reports emphasize the decreased case fatality rates, improved clinical results, and low relapse rates. The proponents of early discharges believe that if the antimicrobial drugs are continued at home, the patients remain well and there is no hazard to public health. In comparing patients with early and with standard discharges there are still unanswered problems such as long-term end results, relapse rates, behavior of residual lesions, rehabilitation accomplishments, and adequacy of aftercare. Future experience may indicate the safety and desirability of a wider application of early discharge programs. Aside from medical and surgical needs of treatment, it is most important that in the selection of patients for early discharge consideration be given to the intelligence and cooperative ability of the individual, the assurance of proper medical follow-up, and suitable home and social conditions.

Length of Bed Rest

With the advent of effective antituberculosis drugs, questions have been raised about the indications for and the use of strict bed rest in hospital care of the tuberculous patients. Complete bed rest is usually recommended for very ill, febrile, or symptomatic patients and those with extensive exudative or cavitary disease or progressive relapsing tuberculosis. In the average patient who has no disabling symptoms or fever, only partial or modified rest may be prescribed, and it seems that in many hospitals the trend is toward a more liberal attitude concerning the restriction of physical activity. Hospital patients, especially original treatment cases, are getting well faster with more rapid control of the active tuberculosis than in the predrug era. Thus with the period of active tuberculosis shortened, the duration of the rest regimen may be abbreviated and a lessened degree of rest may be utilized. This regimen could influence the pattern of hospital treatment and lead to expansion of the ambulatory sections, augmentation of recreational and physical therapies on an individual and group basis, and more ward activities and self-care of patients. Heretofore, patients showing improvement would be moved from strict bed rest to partial bed rest and finally to ambulatory areas with a gradual development of daily work tolerance and increasing participation in a regular rehabilitation assignment. Now with earlier ambulation and a shortened hospital stay the hospital rehabilitation phase may be limited. This could influence the long-range and post-discharge rehabilitation plans.

Hospital rehabilitation practices are modified by other factors. The nontuberculous conditions may need particular physical therapies. The aged and chronic custodial patients require less emphasis on vocational rehabilitation and more planning for the special facilities already noted. The tuberculous alcoholic patient is a special rehabilitation problem.

Summary

Significant advances have been made in the management of tuberculosis in the past decade. We are in the midst of a dynamic development of tuberculosis medical care in which the role of the hospital is subjected to many influencing factors. These new hospital trends have been described. The important implications of these data and patterns in relation to the treatment of patients have been discussed.

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Symposium and Panel Discussion

HYPNOSIS IN CLINICAL PRACTICE

Moderator

HYMAN S. BARAHAL, M.D., BRIGHTWATERS, *Acting Director, Pilgrim State Hospital; Associate Clinical Professor of Psychiatry, New York School of Psychiatry*

Panelists

HERBERT SPIEGEL, M.D., NEW YORK CITY, *Faculty, William Alanson White Institute of Psychiatry, Psychoanalysis and Psychology*

WILLIAM E. F. WERNER, M.D., QUEENS, *Director of Obstetrics, Rockaway Beach Hospital; President, Metropolitan New York Chapter of the American Society of Clinical Hypnosis*

ARTHUR SHAPIRO, M.D., BROOKLYN, *Associate Visiting Physician, Kings County Hospital Center; Clinical Associate Professor of Medicine, State University of New York Downstate Medical Center*

Introduction

HYMAN S. BARAHAL, M.D.: Recently there has developed an increasing interest in hypnosis on the part of the medical profession, particularly since the American Medical Association has approved the procedure. The subject has been discussed at many important national and local medical meetings with a great deal of controversy arising over the uses, abuses, dangers, indications, and contraindications of hypnosis in medicine. I assume that the role of moderator at a symposium is that of integrating the presentations and the discussions of the various participants. I hope you will forgive me, therefore, if I step out of this conventional role for a few minutes to introduce the subject to you briefly and to present some of my own feelings and experiences in this field. If these appear to be partially in conflict with the views of the gentlemen who follow me, I can say only that there is no intent to create conflict but rather to help clarify the issues and to avoid oversimplification of a rather controversial subject.

Because of time limitations, only a superficial sketch of the voluminous data on hypnosis can be given. First: What is hypnosis? Historically, hypnosis has been known and practiced for thousands of years, generally as a manifestation of witchery, sorcery, black magic, and other supernatural powers. The first indication of a more scientific approach appeared in the eighteenth century when Mesmer, a German physician practicing in Paris, presented his views on "animal magnetism," and he attributed the phenomenon of what was later called hyp-

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nosis to magnetic influences and to "fluids" passing from one person to another. He was declared a charlatan by a scientific commission set up to investigate his claims. Nevertheless, mesmerism came into vogue during that period.

Modern hypnosis, however, has its roots in the nineteenth century with the work of Braid in England, Charcot and Liebeault in France, and others.

The exact mechanism of hypnosis is not known. Various physiologic and psychologic explanations have been offered but none actually explains thoroughly the sequence of events resulting in the hyper-relaxed suggestible or cataleptic state known as hypnosis. There is not even a standard technic for the induction of the hypnotic state. Some therapists prefer to use hand passes in front of the subject, although this is a rather outmoded procedure. Others prefer to contact the subject's body by hand, especially over the forehead. A common practice is to produce fatigue of the various sense organs, especially in the visual and auditory spheres, by having the patient gaze at a bright or illuminated object or listen to the monotonous repetition of suggestions and/or to the sounds of a metronome. The repeated suggestion of relaxation and sleep is the method most commonly used and can produce such partial effects as heaviness of arms, inability to open hands, heaviness of eyelids, and similar reinforcing reactions. Most hypnotists combine several technics in their practices.

The posthypnotic suggestion has been used extensively to suggest the disappearance of symptoms of disease as well as to produce surgical anesthesia. In hypnoanalysis, hypnosis is used as a means of facilitating the analysis of the unconscious and, therefore, as a useful tool in the psychoanalysis of certain types of patients in whom free association is difficult or impossible to attain owing to unconscious resistance. In hypnoanalysis, dreams can be suggested, memories of early childhood can be brought back through regression to earlier age levels, and a reliving of traumatic experiences can be brought about through crystal gazing or through play activity as well as through automatic writing and similar methods.

Some subjects are able to go into a very deep state of hypnosis referred to as somnambulism during which they carry out commands and often respond in a complicated somatopsychic fashion with a total amnesia for the experience. Others in lighter states of hypnosis respond with apparently complete consciousness and memory of the procedure, yet they manifest the heightened suggestibility necessary for therapy.

Hypnosis has played an important and valuable role academically in offering an ideal method for teaching unconscious activities to students in the medical, psychologic, and nursing professions. It has also proved to be a useful tool in research on mental functioning, both conscious and unconscious, including the investigation of the nature of dreams and of memory.

Despite many fantastic and unwarranted claims, hypnosis has played a lesser role therapeutically. Hypnotically produced anesthesia has been used by some dentists, obstetricians, and surgeons for various procedures including childbirth. There can be little opposition to such use, particularly when standard anesthetic procedures are contraindicated. One must remember, however, that anesthesia that is produced hypnotically is in a sense an hallucinatory experience, though transient. There are many unrecognized borderline schizophrenic persons in the general population and hypnotically produced delusions and hallucinations may be the very stimuli that push such individuals into a more readily expressed psychotic state. That there is such danger is evident not only theoretically but also practically.

It is in the field of the "symptom cure," however, that the greatest danger lies. Hypnosis has been recommended and is used extensively in the treatment of alcoholism, obesity, nail-biting, enuresis, insomnia, excessive smoking, stuttering, stage fright, and many other conditions. These treatments are carried out for the most part not by physicians but by lay people, who are, in effect, practicing medicine. I have a flyer of one of these "treatment centers" with the following appeal to a gullible public: "What benefits can you derive from autoconditioning? Gain self-control and confidence, overcome fears, achieve creative enthusiasm, overcome undesirable habits, alleviate tensions, gain sound restful sleep, increase your work efficiency, use your mental potential, enhance your personality. Private instruction only, geared to your individual needs."

The psychodynamically oriented psychiatrist knows that the emotional or mental symptom is merely a defense reaction against anxiety which, in turn, is based on deep unconscious complicated conflicts. The symptom is often like a crutch to a physical cripple, unsightly and uncomfortable but necessary for the individual's functioning. Removing the symptoms by hypnosis without understanding or treating the underlying conflicts may give a superficial impression of a dramatic cure but may prove disastrous from the point of view of the total situation. Left defenseless, the patient or subject may develop severe anxiety, depression, suicidal preoccupation, or may even escape into the schizophrenic refuge of unreality. Fortunately, many people with such symptoms fail to respond to hypnotic suggestions for any prolonged period of time and continue their precarious neurotic status quo.

Conclusion.—I do not wish my remarks to be interpreted as opposing the medical use of hypnosis. I feel that it offers an unusual tool in the investigation of the psyche and the soma. It also has a legitimate place in medical practice when used by professionally qualified people who understand the psychodynamics involved in the patient's mental functioning and who can anticipate and thereby avoid the danger signals. I feel that its use for entertainment or for symptomatic treatment by nonprofessional people should be opposed strongly by the medical profession. Legislation in this sphere is badly needed.

The Value of Hypnosis in Psychiatric Disorders

Herbert Spiegel, M.D.: When a confused, disoriented woman is unable to recall her own name or to identify lifelong friends, or when a catastrophe evokes a paralysis of a man's legs, or when tic movements of head and hands are so marked as to interfere with eating; and when a therapeutic technic can within a short time recover the lost memory, restore the leg function, and remove the tic movements with a degree of durability that maintains this level of clinical recovery, we are obliged to recognize a potent, impressive, practical, clinical tool that warrants our serious attention.

To witness these remarkable and dramatic changes in some instances is incredibly fascinating. To see the presumably same technic fail with others is both disheartening and baffling. What critical conditions are necessary to achieve hypnosis and what criteria can be used to predict hypnotizability are challenging issues that have yet to be answered. The research potential here is tremendous.

Today we can channel a hypnotic trance, even though it is produced by our as yet poorly understood empirical methods, into effective therapeutic usefulness. This usefulness, however, depends on the way in which the hypnosis is coordinated with the total clinical picture and on the over-all doctor-patient relationship.

Symptom Alleviation.—To prepare for the main thesis of this paper, I offer you a brief case summary that demonstrates what is essentially bad technic. I dare to report freely about this because I was the therapist responsible for what I now regard as a poor procedure. This occurred in 1942 in the Army, when I was first learning about the clinical uses of hypnosis. An infantry man was brought into the hospital with a right arm paralysis. He was hypnotized quickly and the paralysis was removed without difficulty. I am not sure who was more amazed, the patient or the doctor. But I am sure of this, the focus of the treatment was entirely on the paralyzed arm and the alleged "cure" by hypnosis. Other patients in the ward who observed this sudden change were amused and implied that the patient was a "gold brick." He was demonstrated several times to staff personnel with the usual smiles of incredulity or cynical disbelief, the impact of which led to ridicule and even humiliation for the patient. To compound the inexpertness of the conduct of this case he was sent back to the same outfit under the same circumstances, with little understanding of his dilemma, robbed of his symptom, and somewhat disgraced. The inevitable happened. Two days later he was back in the same hospital, same ward, same bed, and same doctor, but there was something new: This time both arms were paralyzed.

By way of this unfortunate example, let us now consider the essential factors in the rational use of hypnosis in psychiatric therapy.

Unless the hypnosis is structured as an adjunct to a well-understood and organized treatment program, it is likely to become a transient, even though interesting, experience with little likelihood of a durable change toward improvement in the clinical picture. As an adjunct it provides the physician with a favorable occasion to exert his influence in at least three aspects:

1. Because of the therapist's attitude and perspective the patient can work toward restoring his previous level of self-esteem.

2. By learning about the aggravating factors leading to the symptom, the therapist may be able to effect some environmental change that will moderate the pressure in the patient's vulnerable area.

3. By recognizing that the symptoms express not only evidence of failure but also the nature of the defense against this failure, the symptom language can be preserved in a modified or attenuated form until enough insight is achieved to make the symptom expression unnecessary.

With this perspective in mind, we can reconsider the preceding case to see what might have been done to offer this man more effective and more durable help. In the first place, a more respectful tone could have been set in the doctor-patient relationship and in the patient-hospital relationship. The vaudeville-like atmosphere that crept into the treatment program could have been avoided by simple preparation. Even though the newness of the experience for the patient, the doctor, and his colleagues partially excuses this error, the therapist could have been more protective of the patient's exposure to comments by other staff personnel if not by other patients. Further, emphasis could have been directed toward the recuperative healthward powers of the patient, where it properly belongs, rather than toward the inferred therapeutic power of the hypnotist. This, in turn, would have helped the patient feel more like a participating part of this clinical alteration, which he is, and thus would have enabled him to win back some of his damaged self-regard. Even if self-esteem is not fully restored, the direction toward this can be established.

In the second place, a more detailed history could have been elicited. This interest in itself aids in the restoration of the patient's self-respect, but more importantly it could have provided the therapist with basic data about the patient's environmental stress which the doctor was in a position to modify. For example, if after eight months of training in an infantry squad a man is still regarded as a clumsy misfit, there is still the possibility that he can be reassigned to some other job within his scope of adequate performance. When hypnosis is used to alter or even to remove the symptom, timing and environmental shift give the patient a significant chance at a new level of adaptation. Even though this new level is less challenging, it gives the patient a chance to adapt with adequacy and without the carry-over of a disability that was provoked by a previous situation.

In the third place, by acknowledging that the symptom complex expresses not only disability but at the same time the capacity to cope with the disability, and also by taking into account that this irrational overstatement can be attenuated appreciably and still serve the function of stating the dilemma, a better result can be effected. One could have changed the paralysis of the patient's right leg to a paralysis of, say, his right large toe, or possibly, by means of posthypnotic suggestion, have indicated that in times of duress there would recur a paralysis of the right big toe. By this kind of specification there is a great likelihood that the circumstances that formerly brought about the total disability of the leg could now be contained within a mere disability of the toe. If enough time and ability were available to examine systematically and to understand the meaning of this disabling symptom, then one could remove the entire symptom by posthypnotic suggestion with more confidence.

In general, the treatment process can be designed in terms of (1) symptom alleviation, (2) attitude alteration, or (3) intensive psychotherapy. One or various combinations of these three approaches are often feasible. But whatever emphasis is adopted, the factors of the doctor-patient relationship as formulated still remain the basic modality of the treatment program.

The case just presented illustrated the symptom alleviation approach.

ATTITUDE ALTERATION.—Attitude alteration focuses the hypnotic direction not so much on the presenting symptoms as on the underlying orientation toward the current stress that evokes the symptoms. For example, a twelve-year-old girl developed an intense fear of dogs and cats. The phobia was so severe that she avoided her usual playtime outside her home with her neighborhood friends. She rationalized this retreat by claiming an increased interest in stamp collecting and school work. However, the anxiety, loneliness, and secondary embarrassment of this withdrawal interfered with her ability to concentrate and her school work deteriorated. Her father brought her into treatment on the advice of her school teacher. The chief complaint was her failure in school performance. Time was a pressing factor. The treatment in this case focused on shifting the fear of cats and dogs to a fear of lions and bears. This idea was implanted hypnotically in a suitable setting.

After she awoke from the trance she had an amnesia for this posthypnotic seed, and according to the structured plan she experienced what she regarded as a new attitude toward animals: She was afraid of wild animals of the jungle or in the zoo but not of domesticated animals like cats or dogs. This new awareness enabled her to overcome her overt fear of cats and dogs but she carefully avoided getting within a block of the zoo. Her anxiety and embarrassment reduced rapidly, she again felt free to play with her friends outside of her home, and she again became able to study with marked improvement in her school work. Although the symptoms were indeed changed here, the treatment focus was directed at her attitude toward the key phobic symptom and relief was obtained without resolving the symbolic meaning of the disability. Instead, she was able to reformulate her phobia in an attenuated form.

INTENSIVE PSYCHOTHERAPY.—Hypnosis as an adjunct to intensive psychotherapy, or so-called hypnoanalysis, is another useful procedure that emphasizes memory recall with emotional revivification. Subtle transference alterations can be effected in conjunction with skillful psychotherapeutic intervention. Elaboration of this technic, however, has been presented elsewhere* and is outside the scope of this paper.

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* Spiegel, H.: Hypnosis and transference: theoretical formulation, A.M.A. Arch. Gen. Psychiat. 1: 634 (Dec.) 1959.

Other clinical entities that have been relieved significantly by symptom alleviation or attitude alteration include amnesia (nonorganic), tics (especially of recent duration: months rather than years), anxiety states, overeating, excessive smoking, phobias, and reactive depressions.

Definition of Hypnosis.—Although a discussion of this kind leads inevitably to speculation about the nature of hypnosis, we can remain within the general context of this conference by considering a working definition of this phenomenon. Hypnosis is an altered state of relatedness that is instigated and actively enhanced by the hypnotist, and it is characterized by an irrational submission into a regressed dissociated state with abandonment of executive control. With the patient in this tractable state the physician is in a privileged and challenging position to help alter or modify the patient's adaptation modalities to a degree that is consonant with his healthward direction and adaptational potential. Even if the hypnotic trance does not evoke any component in the therapeutic setting that cannot also occur in a nonhypnotic setting, it does have at least one advantage, namely, it condenses the time factor considerably. When clarification of data and change of perspective in this setting are reinforced by restoration of self-esteem, environmental modification when possible, and preservation of the symbolic language in an attenuated form until adequate insight makes the symptom expression unnecessary, we have at our disposal an intensive psychotherapeutic procedure in which hypnosis as an adjunct serves to accelerate the course.

Summary.—An adequate doctor-patient setting is essential in establishing a significant change in hypnotizable patients.

This setting enables the therapist to exert a favorable influence toward restoring the previous level of self-esteem, effecting an environmental change, and reducing the overstatement of the symptom language.

Hypnosis as an adjunct can reduce considerably the time period necessary for psychotherapeutic response.

Effective response can be elicited by directing the hypnosis toward symptom alleviation, attitude alteration, intensive psychotherapy with varying degrees of insight, or various combinations of these factors.

The Value of Hypnosis in Obstetrics

William E. F. Werner, M.D.: My topic in this symposium is "The Value of Hypnosis in Obstetrics," but since I am certain that most of you have not had the opportunity to participate in or witness a labor and delivery performed in this state, I must first take time to describe such a delivery as a preliminary to discussing its value.

Permit me to take all of you to an anteroom just off the maternity suite in a local hospital. There we find a woman in labor. Her contractions started about two hours previously at home, and shortly thereafter she entered the hospital and was taken to a prep room for the usual prep and enema. Now she sits in a comfortable chair in the anteroom, and she is accompanied by her husband. With each contraction we watch her automatically put herself into a deep hypnotic trance and remain in the trance for the entire duration of the contraction. Then she opens her eyes, appears completely refreshed, and joins into whatever activities are taking place in the room at that time. From time to time she drinks some fruit juice, and occasionally, if she feels like it, she may eat. If she is a smoker, she may smoke from time to time. The television set may be on and she may be enjoying the television between contractions or, possibly, she is listening to some music on the radio. She is taking part in conversation with her husband, with one of the obstetric nurses, with one of the residents, or possibly with the attending doctor.

This situation proceeds until, suddenly, after an hour or so, she informs whomever happens to be with her at the time that she feels like pushing or bearing down. The obstetric nurse is notified and the attending doctor called. She is taken immediately not to the labor room but to the delivery room where she is advised to relax very deeply and to maintain her state of relaxation until her baby is delivered. With each contraction she works hard: She bears down without any coaxing from the doctor or the nurse and without any advice as to how to bear down. She is reminded that each contraction is lasting only a few seconds, that she will work hard during those few seconds, and that she will then take a nice long rest period between contractions. She is reminded that she will be rewarded for her hard work with a tremendous sense of well-being, of a feeling of a job well done. After some fifteen to twenty minutes she has delivered her baby, probably without forceps and probably without episiotomy, or if one is performed it will be a small episiotomy which will never extend upward into the vagina. She is then awakened to see her baby and to hear the baby's first cry.

After a few moments she is asked to return to this pleasant state of relaxation for the third stage of labor, during which time the placenta is delivered and any repair work which may have to be done is accomplished. This is usually done without any chemo-anesthesia, but occasionally 10 cc. of 1 per cent lidocaine hydrochloride solution (Xylocaine hydrochloride) may be injected subcutaneously in the area of the episiotomy. During this repair, if one has to be done, the patient may hold and admire her baby while she remains in the hypnotic state with her eyes open throughout the entire time the repair is being done. In this manner, by diversion of attention the repair can usually be accomplished without discomfort and without chemo-anesthesia.

Before she is awakened, various posthypnotic suggestions are given as to how she will feel during the succeeding days of her stay in the hospital. She is told that she will void spontaneously, will be able to defecate without enemas, that she will enjoy the nursing care and the food at the hospital, and that if she has sutures they will not disturb her: She won't even know that the sutures are there and her whole stay at the hospital will seem like a pleasant vacation. I think that all of us would appreciate handling a labor patient in this manner. This is becoming a frequent occurrence in the hands of obstetricians who are utilizing the hypnotic trance state for delivery.

Advantages to Infant.—Let us return to the topic of this paper: What are the advantages of such a delivery? In regard to the newborn infant, by the elimination or reduction of pain-killing drugs and anesthesia we are definitely reducing the possibilities of cerebral anoxia in the fetus during labor and delivery. Also, there is experimental evidence which suggests that the vital capacity of the patient in the hypnotic trance state is increased about 50 per cent over that in normal breathing and 100 per cent over breathing during anesthesia. To date there is no controlled series of sufficient duration to tell us whether or not the intelligence quotients of babies delivered to relaxed mothers without chemo-analgesia and anesthesia will be superior, but we do feel that brain damage as evidenced by cerebral palsy and other neurologic defects will decrease as the incidence of cerebral anoxia decreases. In over 175 deliveries performed in this manner, we have not had to resuscitate one infant. Also, fetal morbidity is decreased. We use the Apgar scale for appraising newborn infants at our hospital and most of these babies are rated 9's and 10's within one minute after birth.

A very interesting side light has been the absence of colic in babies born to mothers in the hypnotic trance state. In this series we followed at least 90 per cent of the babies through the first three months of life and not one baby had colic. We feel that a relaxed mother tends to deliver a relaxed baby. The usual comment of our multipara when she is seen several weeks after delivery is "Doctor, this is the grandest baby I have ever had."

ADVANTAGES TO MOTHER.—Now what about the advantages to the mother? To understand these I should first like to say something about the training period which takes place during the last four months of pregnancy. If we accept Read's conclusion that fear produces tension and tension produces pain, what have we accomplished with our hypnotic training? First we attempt to eliminate fear by education. Several times before the birth the patient, while in the trance state, is instructed as to exactly what constitutes labor and delivery. The three stages of labor are described to her, and she is instructed how to participate and react in all three stages. She is assured, in the suggestible trance state, of a comfortable and wonderful experience. During her training she practices the development of anesthesia during the sessions. This reinforces her confidence. She is taught time distortion technics and is shown how these will be used particularly to provide a very comfortable second stage of labor. When she is ready to enter the hospital, she knows that she will not be left alone in some labor room to stare at four walls and wonder what will happen next. She has no fear of being smothered to sleep, as used to be the case in many obstetric anesthesias. She knows that she is going to be an active participant in her labor and delivery. Because of this training and the ultimate labor and delivery which follow, we feel that many advantages are gained.

First, when the patient learns simply to enter the hypnotic trance state, her pain threshold is raised. During early labor when the contractions are not so severe, the patient begins to appreciate the fact that the pain effects of these contractions can be eliminated completely in the trance. This gives her greater confidence in her own ability to handle the rest of the labor. Second, there is complete or partial reduction of chemo-analgesia and chemo-anesthesia in at least 90 per cent of the patients who have trained. Occasionally a patient who has been able to attain only a very light trance, or a moderately good subject who has emotional problems related or unrelated to her pregnancy, may suddenly refuse cooperation and have to be treated as if she were not a hypnotic subject. However, this percentage is very small and in some instances hypnotherapy may be instituted even during labor to convince the patient that she should still attempt to use her hypnotic training. Third, we have seen no evidence of obstetric shock or extreme exhaustion in any of the patients we have delivered in this manner, and we feel that this results at least partially from the elimination of pain. Recovery is greatly facilitated also, probably on the same basis.

The number of rectal and vaginal examinations during labor can be cut down greatly and made much more comfortable for the patient. The trance state can be induced for each examination so that it can be done without any discomfort whatsoever. Because the patient tells us when the expulsive desires begin, it is not necessary to make frequent examinations to determine when full dilatation has occurred. Also, we do not see the situation in which some well-meaning obstetric nurse attempts to have the patient bear down prematurely, since these patients will not attempt expulsive actions before full dilatation has been accomplished. Since the cervix is completely out of the way before the bearing down begins, we can expect a decrease in the incidence of cystocele.

Fourth, in our hands there is a definite diminution in the incidence of operative delivery. The responsive patient cooperates much more fully during the second or expulsive stage of labor. The patient has been trained to relax and to produce anesthesia of the perineum. This eases episiotomy, delivery, and the subsequent repair of the episiotomy. There are no undesirable postdelivery effects as are sometimes seen following general or spinal anesthesia. In premature deliveries particularly, our method is advantageous because in this instance the reduction of fetal anoxia is very important. From our experience, although our series is not controlled, I feel that there is a definite time reduction in both the first and second stages of labor. In the second stage, particularly, there has been an average of from twenty to thirty minutes for primipara patients and from fifteen to twenty minutes for multipara patients between the time the patient tells us that she has the urge to bear down and her delivery. For those patients who have past histories of allergy to anesthetic agents, the method is ideal.

The fact that we allow our patients to eat and drink during the first stage of labor shows that we are not concerned particularly about aspiration of vomitus, because nausea and vomiting are extremely rare in this state and the patient has full reflex control in case vomiting does ensue.

Because with the patient's permission it is possible to transfer rapport, and because previously she has been instructed that the obstetric nurses have been trained to induce and maintain the hypnotic state for her, it is not necessary that the attending obstetrician remain with the patient during the entire labor. In most instances we try to visit the patient shortly after her arrival at the hospital, to stop by to observe her progress occasionally during her labor, and to be present during the entire second and third stages. As we have mentioned before, most patients have had several training sessions, primarily for their education. Faith and confidence have been built up through these strong interpersonal relationships. This relationship, this cooperative venture, which is a very essential feature of hypnosis, is a prime factor in the success of natural childbirth and any other technics for relieving the pain associated with childbirth.

The postpartum condition of these patients alone would justify completely the use of hypnosis in obstetrics. There is no difficulty in voiding and over 90 per cent of patients have bowel movements within forty-eight hours without enemas. Their appetites are good, they enjoy their food, their nutrition is kept up, and recovery consequently is accelerated. They are out of bed in a very short period of time and can attend to all their personal needs. Those who have perineal repairs do not complain of pain in this area, they sit and walk normally, and the wounds heal cleanly and rapidly. By posthypnotic suggestion these women have been conditioned to accept their postpartum stay at the hospital as a very pleasant vacation. On several occasions during rounds we have awakened patients napping in midmorning and have asked why they were sleeping at this hour. Invariably the reply has been, "I always like to sleep late on my vacation."

There are certain ancillary advantages to the patient as well. First, in these days of tension just to be taught to relax becomes very valuable. Many husbands have remarked about the improvement in attitude of their wives toward the family and toward their own pregnancies during the period of training to deliver under hypnosis. Second, many cases of nausea and heartburn can be helped with hypnotherapy. Third, our patients are conditioned to relax when visiting the dentist during their pregnancies. A few of our patients who have aborted in subsequent deliveries have been able to undergo a dilatation and curettage without anesthesia. If these patients require surgery in subsequent years, we will have well-conditioned hypnotic subjects who will undergo surgery in a better frame of mind because of this, probably with a minimum of anesthesia and with the ability to accept posthypnotic suggestions for comfortable and rapid recoveries.

Childbirth under hypnosis can be a very gratifying emotional experience for well-adjusted mothers. We stress the fact that the mother will experience the entire labor and delivery but will be comfortable throughout, that she will develop a tremendous sense of accomplishment and be very well satisfied with her part in the procedure, that she will be proud of herself, and that her husband will be very proud of her and the job she has done so well.

Advantages to Obstetrician.—What are the advantages to the obstetrician? First, the successful use of hypnosis increases his prestige with a well-satisfied patient. Through the interpersonal relationship gained during the training and education period, he becomes very close to his patient. As we have mentioned previously, through increased cooperation, particularly in the explusive stage, many of the complications of position and arrest are obviated. Our incidence of instrumental interference, of rotations, and of midforceps and the difficult types of delivery is definitely diminished.

This procedure should be extremely valuable to the general practitioner doing obstetrics. In many hospitals, particularly in large cities, the general practitioner is limited to episiotomy and outlet forceps. I would estimate that over 95 per cent of patients in our series deliver spontaneously or with the simple procedure we have outlined. It is surprising to see a multipara deliver spontaneously an infant one or two pounds heavier than any she has had before, with or without episiotomy, when previously her delivery for a much smaller infant required an operative procedure. It is surprising to note the expulsive efforts of these patients. Without apparent strain, such as pulling with the muscles of the arm and pushing with the muscles of the legs, these patients bear down solely with the abdominal and perineal muscles and make much greater progress. The perineum attains such a state of relaxation that the baby's head seems to deliver in an almost vertical direction. The episiotomies can be kept moderately small and extension has never been internal, necessitating difficult repairs. The field is dry because capillary bleeding is decreased. The tissue layers seem to stand out as in cadaver dissection, making repair a much simpler procedure.

The training is slightly different for the patient on whom a cesarean section is planned. Focus is directed first toward acceptance of this type of delivery and a proper preoperative attitude is attained. Anesthesia is stressed in the training, and the subjects who attain deep trances may be operated on solely under hypnoanesthesia, occasionally reinforced with small amounts of local lidocaine hydrochloride, 1 per cent solution. Those patients attaining a moderate trance do well with section under normal local infiltration, averaging about 80 to 100 cc. of 1 per cent lidocaine hydrochloride. Both groups accept posthypnotic suggestions for well-being in the postpartum period with elimination of catheterization, enemas, distention, pain and so forth. Recovery is exceedingly rapid as is wound healing, probably because there is no interference with nutrition. These patients are usually able to partake of a regular diet within a few hours of delivery.

Conclusion.—Let me state that since the science of obstetrics came into being we have been looking for a method to deliver mothers of healthy infants in a comfortable state, without inherent damage either to the mother or to the infant. I feel that with delivery under hypnosis we can attain these goals for that large and ever-increasing segment of our obstetric population who are amenable to this form of therapy.

The Value of Hypnosis in Internal Medicine

Arthur Shapiro, M.D.: Hypnosis is a form of therapeutic relationship. Its attributes, uses, and effectiveness depend to an enormous degree on the nature of the therapeutic problem, the therapist, and the patient. It is perhaps not surprising that hypnosis may often be a major instrument in psychotherapy from which the patient expects to emerge with many of his attitudes and some of his behavior modified. Nor is it surprising that the drama of childbirth with its anticipation of overwhelming pain, life-endangering risk, and miraculous gratification may with its help be managed effectively by the obstetrician—the stage manager and director of the performance.

For the obstetrician and the psychiatrist it may often be appropriate and even necessary to use a form of hypnotic relationship which circumvents the critical faculties of the patient and, even if only temporarily, exploits his implicit obedience to authority.

The practice of internal medicine, however, deals with complex and incompletely understood problems. The tools of this specialty are elaborate and varied. Diagnosis is accomplished by careful history taking, meticulous and intimate physical examination, laboratory examination of blood and bodily excreta, and the application of complex machinery. Often treatment is accomplished only after referral to a surgeon or other specialist, and almost always it involves at least the intervention of the pharmacist. The medications prescribed may be powerful and effective, but they are often capable of producing annoying or dangerous side-effects of which the patient must be warned. The therapy is rarely completely and permanently satisfactory, and it sometimes fails entirely. In this context it is difficult for the internist to feel or act like the omnipotent magician that society and his patient expect him to be. That the use of hypnosis seems to place him in a magically superior role makes it at once both attractive and dangerous.

Though the patients of an internist are rarely willing to return to him for frequent visits over prolonged periods of time, the duration of the effect of a single hypnotic session is not longer for him than it is for other practitioners. The internist's patients have among them no higher proportion of individuals capable of easy and profound response to hypnotic induction technics and posthypnotic suggestion. But he does treat a relatively large number of seriously and dangerously ill patients. It is therefore especially necessary that an internist, when he uses hypnosis in his practice, have a clear and definite concept of his therapeutic goals and limitations. Above all he must always be aware of the fact that hypnosis is not a short cut to diagnosis or therapy. Its use is neither a substitute for detailed and extensive knowledge and skill in his own specialty, a source of miraculous cures for otherwise incurable illness, nor a license to practice a specialty for which he is not otherwise qualified.

Hypnotic Technic.—The technics of hypnotic induction are many and varied. In general the choice depends on the personality of the therapist, on that of the patient, and on the purpose of the hypnosis. When hypnosis is used for the purpose of facilitating an otherwise uncomfortable or painful procedure—such as catheterization or intestinal intubation—any relatively authoritarian technic for producing drowsy relaxation and cooperation is likely to be successful since the patient is highly motivated by his need to escape from the unpleasant aspect of the procedure. On the other hand, the induction technics themselves may be interpreted by the patient as being so threatening that he is afraid to surrender control. For this reason it is often useful to suggest to the patient that he may awaken himself temporarily whenever he wishes to do so.

When hypnosis is used in a less urgent treatment setting it is best to begin by explaining to the patient the proposed purpose of the hypnosis. Before the first hypnotic session, the physician asks the patient what therapeutic suggestions he would like to have given to him in hypnosis, and after thorough discussion, an agreement is reached in the waking state as to what will be done in hypnosis. The patient is asked to close his eyes and one of the well-known induction technics is tried.

An experienced practitioner can judge easily whether a satisfactory stage of hypnosis has been reached. In any case I do not believe that it is appropriate to test the depth of hypnosis with procedures not related to the goals of therapy. If sleep is being sought, one does not induce analgesia or catalepsy. If analgesia is being sought, one does not suggest recall of a childhood experience, role playing, or age regression. In general the effectiveness of the procedure is evaluated by observing the direct response of the patient to it.

Many patients go into only very light trances at the first session. When the patient describes what he has actually experienced in response to being told what he was expected to have experienced during the induction procedure, the physician can judge how much and what kind of resistance there is to going into a hypnotic relationship and also how safe it is likely to be to circumvent the resistance.

In general it is wiser to err on the side of too little and too light a hypnotic state than the reverse. If the patient displays bizarre or inappropriate psychologic or physiologic responses to the induction procedure, it is wise to have psychiatric consultation before proceeding further. If, on the other hand, only appropriate reactions are observed, the hypnotic state may be reinduced with the technic modified to make use of the information obtained during the first induction. Now suggestions may be given for deeper relaxation and for more complete concentration on the program of therapeutic suggestion. It is useful to take plenty of time to allow the patient to proceed at his own rate, though often it is suggested to him that he is following the instructions of the physician as given by counting or by repetitious phrases.

It must be emphasized again that the induction of a hypnotic trance may have unexpected effects on the hypnotist as well as on the subject. In the case of the "good subject" the hypnotist is likely to experience unreasonable feelings of satisfaction amounting in some circumstances almost to omnipotence fantasies. On the other hand, with a "poor subject" who goes little or not at all into hypnosis, the physician is apt to experience feelings of frustration, resentment, and hostility to his patient, and these are equally inappropriate in a sound, medical, therapeutic relationship.

Assuming that a satisfactory hypnotic relationship is established, the patient at first is given the agreed-on therapeutic suggestions in relatively general and permissive terms. Such phrases as "if you want to, if you really want to, you will be able to do it without difficulty," "you will accomplish this comfortably and easily because you really want to do it, you will not need to concentrate on it, your own wish will be enough to make you do it," and so forth, may be used freely, monotonously, and repetitiously. Every effort is made to phrase the therapeutic suggestion in such a way that it is to be carried out by the will of the patient aided and supported by the instructions and suggestions of the physician.

At the end of the session the patient is told, while still in hypnosis, that he will be able to remember as many or as few of the suggestions as he wants to, but that they will be effective whether he remembers them or not. He will be able to go into hypnosis again if he wants to, but only if he wants to, and only when the hypnosis is induced for appropriate medical purposes.

As the relationship develops between patient and therapist at subsequent sessions spaced as needed from once a week to once a month, it gradually becomes safe to use more intense, more specific, and more authoritative suggestions; but if at any stage the patient becomes resistant, or displays bizarre or inappropriate responses, it is wiser to retreat.

At all stages the ego of the patient must be supported and bolstered. He is made to feel that he is growing more independent, more competent, more secure, and more in control of his own destiny, rather than submissive to the will of the all-powerful hypnotist. If the patient is willing and able to enter the hypnotic relationship appropriately, it is possible to use this relationship for diagnosis or for the facilitation of medical therapy.

Diagnostic Uses.—For diagnostic purposes a fairly deep state of hypnosis is necessary. When this has been achieved, the patient is told that he will find it easy to perform up to his maximum capacity while the physician observes his behavior closely. The patient with multiple sclerosis, who cannot walk even though only minimal signs of neurologic damage are present, may in response to suggestion walk fairly well. The patient with coronary insufficiency, who experiences pain or dyspnea in response to activity which is inappropriately slight, may experience a marked improvement in work capacity. However, the occurrence of symptomatic improvement under active suggestion is not in itself an indication for hypnotic or posthypnotic suggestion therapy. Rather, it is an indication for psychiatric evaluation and possibly for psychotherapy, with or without hypnosis, as the findings indicate.

In a complex medical diagnostic problem, especially where recurrent acute episodes occur that are not observed by the physician, hypnosis may be used to facilitate the recall of exact symptoms and of the details of the circumstances preceding acute episodes. In some cases it is possible and reasonably safe to use the technic of hypnotic recall and time displacement to re-enact an acute episode in the presence of the physician. Here too caution is necessary, as well as a high index of self-suspicion on the part of the physician, to avoid the inappropriate use of a dramatic spectacle in the guise of a bonafide medical procedure. Before resorting to such spectacular technics psychiatric consultation is probably desirable in most cases.

In general, however, it is not appropriate for an internist to use the hypnotic interview for the uncovering of unconscious personal motivation or conflicts in his patients. Though I am perhaps unnecessarily permissive in allowing my patients to express themselves in the waking state, only rarely do I permit them, while in hypnosis, to talk about anything other than their immediate reactions to the experience. The uncovering of forgotten or repressed experiences or motivations through the use of hypnosis is part of an explicitly psychotherapeutic relationship and had best be left to a psychiatrist. After hypnosis it is important for the internist to make sure that his patient remembers correctly the experience of the interview and especially any posthypnotic suggestions.

ADJUNCT TO THERAPY.—As an adjunct to therapy, the hypnotic relationship may often be used successfully to eliminate some of the psychogenic side-effects of medical therapy. There are many patients who get side-effects such as nausea, headache, bowel disturbance, or insomnia with almost any medication. They usually consider themselves "allergic" and it is difficult to determine how many of these phenomena are iatrogenic. In such cases posthypnotic suggestion will often overbalance the "negative placebo" effect of the medication, and the patient's own need for the medication as well as the continuing relationship with the physician may prolong the effectiveness of the suggestion for clinically useful periods of time.

There are also specific medical situations in which hypnosis is a useful adjunct. In acute intermittent porphyria some of the pain, anxiety, and insomnia may be controlled by hypnosis without having to resort to barbiturates which are toxic or to excessive doses of narcotics with the attendant risk of addiction. In 1 case of Addison's disease, the patient in acute crisis was so tense, anxious, and uncooperative that intravenous salt and hydrocortisone could not be administered. A moderate hypnotic trance and the suggestion of glove anesthesia of the arm up to the shoulder made this life-saving procedure a matter of ordinary hospital routine, when adequate pharmacologic sedation might well have proved toxic or even fatal. The patient in shock after acute myocardial infarction may suffer also from such severe anxiety as to require large doses of narcotics which also may be dangerously toxic. Here too the use of hypnosis for the removal of anxiety so that moderate doses become sufficient may often prove to be a life-saving measure.

A less spectacular but more common use for posthypnotic suggestion is in ameliorating the discomfort and obtaining the cooperation of patients whose treatment requires the prolonged use of intravenous infusion, gastric or intestinal intubation and suction, or the use of an indwelling bladder catheter. After the initial hypnotic induction in such patients, posthypnotic suggestion is maintained with remarkably little reinforcement, often not more than once a day.

The pain and discomfort of patients with advanced and terminal malignant disease is also surprisingly easily reduced by posthypnotic suggestion so that the dosage of analgesic and narcotic drugs may be much reduced and sometimes temporarily eliminated. The remarkable improvement of these patients in appetite, sense of well-being, and ability to sleep without sedation makes one wonder whether the so-called toxic effects of advanced malignant disease may not be due in part to the patient's panic and terror rather than to the biologic consequences of the disease process.

A less satisfactory state of affairs exists with respect to the use of hypnosis in facilitating the acceptance of the restrictions and inconveniences of long-term medical regimens. The acceptance of prolonged therapy with low-calorie or restricted diets often is impeded by the deep-seated needs of the patient to obtain symbolic gratification and to deny the existence or significance of his illness. The prevalence of excessive cigaret smoking among practicing physicians in spite of the overwhelming statistical data concerning its association with increased mortality and morbidity is rather spectacular evidence of the potency of the irrational forces which prevent its abandonment.

In dealing with these problems, the use of hypnosis requires the greatest skill and subtlety. Optimally it should serve as a support for a direct professional statement of the rational basis for the therapy. Hypnosis is useful and safe only as a means of helping the patient to exercise his critical and rational faculties without having to concentrate all his attention on the problem or to become obsessed with it. There are some cases, however, in which excessive or inappropriate eating or smoking is a response to the overwhelming pressure of mass advertising media, and it is in these cases that a relatively direct countersuggestion given under hypnosis may prove spectacularly successful. One must nevertheless be on guard lest an apparently superficial problem be in fact a manifestation of serious psychiatric illness. Symptom removal in such a case may prove disastrous. Whenever doubt exists, psychiatric consultation should precede even permissive symptom removal.

COMMENT.—The medical use of hypnosis is complicated by the fact that both the patient and the physician have unspoken and often unconscious preconceived ideas about the nature of hypnosis. Most of us first saw, heard of, or experienced hypnosis as part of a stage performance or miraculous nonmedical cure. It may seem a simple solution to suggest to the patient in hypnosis a rational and appropriate attitude to hypnosis and its therapeutic use, but unfortunately the patient need not necessarily accept this or any other suggestion completely. Specifically, it is precisely those situations in which magic implications are greatest that the patient is most anxious to have hypnotic therapy and the physician is most strongly tempted to use it. It is in precisely these situations that hypnosis is most likely to be a dangerous and inappropriate form of therapy. The physician using hypnosis must remember always that in doing so he is often communicating directly with unconscious processes in the mind of the patient. His suggestions do not necessarily mean the same thing to his patient as they do to him nor does the patient necessarily accept and obey the suggestions absolutely or completely. If unacceptable, suggestions may be censored, distorted, or displaced as are other ideas communicated to the patient. Only a sound, professional relationship between the physician and his patient can make it a safe and practical therapeutic instrument.

SUMMARY.—Medical hypnosis is a form of therapeutic relationship which may be extremely useful in the practice of internal medicine. It may be used to expedite diagnosis and as an adjunct to medical therapy, but its complexities often require the auxiliary services of a psychiatrist. Thinking of hypnosis in magical terms on the part of the patient, the community in which he lives, and even on the part of the physician, interferes with and complicates the use of medical hypnosis.

A sound professional relationship between physician and patient complemented by the use of the physician's full competence and knowledge of medicine, as well as by the specific skills of hypnosis, will serve to overcome these complications and make medical hypnosis a safe and valuable adjunct to the practice of medicine.

Question and Answer Period

DR. BARAHAL: We have a few minutes for questions from the floor. Please direct your questions to the individual panelists, or to more than one panelist if you so desire. One questioner asks: Dr. Werner, I just wanted to ask how in your obstetric cases you get hypnoanesthesia.

DR. WERNER: There are several methods. The common method is to develop what we call glove anesthesia. The patient develops an anesthesia of the right hand, the area that would be covered by a glove, and then she is taught to transfer it to the other hand or to the cheek, and she is assured that when she goes into labor it can be transferred to the vagina or to the perineum in exactly the same way.

Then we use another method, a technic of diversion. During the course of training we tell the patient to imagine she has a doll in her arms. We put her into a somnabulistic trance and let her admire the doll in her right arm; and she is told that in the third stage of labor, when the repair work has to be done, she will see the baby, and that during that particular time the rest of her body will become completely numb.

I use a little sticker to test whether or not patients are numb over the rest of their bodies. We have found this the easiest way to do it.

There's another good technic for the deeply hypnotized patients, a dissociation technic in which they can actually watch themselves deliver apparently across the room. You describe somebody who looks like the patient on the obstetric table, and she can watch herself deliver over there. And, of course, the patient over there is having the baby and having the discomfort and so the patient lying here doesn't have any. There are many ways it can be done. We use a lot of them.

DR. BARAHAL: Thank you, Dr. Werner. We have this question: I should like to ask Dr. Shapiro what his experience is with ulcerative colitis.

DR. SHAPIRO: I have not myself treated ulcerative colitis as such with hypnosis in any direct attempt to control the symptoms, but I have used hypnosis in this disease primarily for the purpose of getting the patient to accept the necessary restrictions of medical therapy. As you all know, the patient in an acute episode of ulcerative colitis, dying of the disease, is apt to say, "Well, I would rather be dead than eat this awful tasting stuff or let you give me another one of those needles. I've already had enough needles!" and so on. The cooperation of the patient can be secured and nutrition and general function can be improved.

Second, many of these patients are not nearly as much disturbed by actual bowel movements or on a physiologic basis as they are on the basis of their preoccupation with bowel movements and their testing of themselves to see whether or not the stool is there. This can be controlled under hypnosis.

And third, the general levels of anxiety, fearfulness, lack of confidence in anybody, and insomnia are frequent complications which definitely hamper the favorable progress of the disease. I can say that I have found hypnosis a useful tool in the medical management of patients with ulcerative colitis. I don't know of anybody who has used it with success to control diarrhea, bleeding, pain, and fever.

Dr. Barahal: Are there any other questions? or comments? or disagreements? Someone asks this: Dr. Werner, how do you prevent your patients in whom you've induced this hypnotic state from using it in other conditions in which you do not wish them to disguise their symptoms, say in acute appendicitis?

Dr. Werner: I have been told that when you produce anesthesia for one particular type of pain you can alleviate that pain; but acute appendicitis is a progressive disease and whereas you may eliminate the pain of the particular appendicitis that you have at the time, as it progresses the anesthesia that you have instituted will not take care of the progression. Milton Erickson, M.D., president of the American Society of Clinical Hypnosis, told me this and he says he's seen it work for patients. But we've told such patients not to induce hypnosis on their own at any time except in special cases where it would be helpful, such as going to the dentist. If a patient is, for example, going to the dentist, he will ask us about using hypnosis. We then call the dentist and usually find that he uses hypnosis. If he does, it's fine. If he does not, we'll tell him a few signals or cues he might use with the patient, and usually the patient can get himself into a trance with a little bit of help; it's been very successful.

One patient neglected to tell a dentist what she was doing. He thought she had fainted and had a difficult time with her.

Dr. Barahal: May I make a comment on that too? I've had a number of patients on whom I've used hypnosis over a long period of time, and I think we can all agree that the longer you use hypnosis on any individual patient, the greater is the facility with which that particular patient goes into a hypnotic trance. I've had patients who after awhile would go into spontaneous trances, and this is something that has to be remembered. This is a situation where the hypnotist at times does not have full control over the situation.

I believe that Dr. Shapiro would like to comment on this question.

Dr. Shapiro: I agree with everything Dr. Barahal has said. I have one little experience that I can add to this. A patient was experiencing renal colic and several urologists and I and a number of other physicians failed to find any organic basis for it. Since that time she has passed showers of uric acid stones, but at the time we didn't expect this. She was a very good hypnotic subject, and I taught her to control what was thought to be pseudo renal colic with self-hypnosis.

She left town to join her husband and called me long distance one day in a real panic. She had started to have an attack and had given herself suggestions about control of pain. But she wan't very specific: She burned her finger while cooking and didn't know it until she smelled the burning flesh. So the problem is not so simple. Patients can misinterpret these signals, and I think on the whole one should be very careful in selecting those patients who are permitted or who have been taught to do self-hypnosis.

Again, one can't always control the spontaneous occurrence of hypnosis. I prefer, in general, to use as part of the induction technic some relatively specific signaling device such as looking at a particular ring that I have or something of that sort which is not likely to be introduced accidentally into a situation, not because these devices are themselves powerful hypnosis-inducing agents but because they can be reserved for the professional use of the hypnotic trance.

Dr. Barahal: Thank you, Dr. Shapiro.

Remark: I'd like to comment on that. In our teaching of medical hypnosis we teach patients self-hypnosis only for a particular endeavor such as obstetrics. We tell the patients in their mental conditioning not to use these procedures on themselves without the supervision of a professional individual, a physician or a dentist who is properly trained in the field of hypnosis. We have had patients who have tried to use hypnosis for themselves for the alleviation of pain. We remind patients that although they may try to go through with the situation, they are not to place themselves under hypnosis. You all know from Dr. Shapiro that this is fraught with danger.

Dr. Barahal: Of course the question did not so much concern the effect of teaching self-hypnosis to the patient as the patient's developing spontaneous hypnotic episodes without being so directed by the hypnotist. That is the danger. I've often wondered what happens to some of these people who have been hypnotized for entertainment purposes. What happens to them subsequently? Do they ever develop spontaneous hypnotic spells of a similar type? I don't know. I think it probably deserves some study.

Dr. Spiegel, do you have any comments on this particular question?

Dr. Spiegel: I am impressed with the approach Dr. Werner uses in obstetrics. I think it is a very striking example of how the hypnotist can delineate in clear specific terms how, where, when, and under what circumstances hypnosis can be used; and there is relatively little chance that the experience can or will be generalized into other areas because the entire experience is focused around the delivery.

There is a likelihood that in many other areas of therapeutic application the role of hypnosis may become fuzzy, thereby allowing the patient to generalize spontaneously into long-repressed symptoms or phantasy expectations of himself. The safeguard against this is to define carefully and to circumscribe for the patient the specific purpose of the hypnotic intervention. For those not in a deep trance the danger is less because the individual defenses are readily accessible.

I agree with the emphasis that both Dr. Barahal and Dr. Shapiro put on the possibilities of misunderstanding and of confusion.

Thinning Hair in Young Women Does Not Lead to Baldness

Young women whose hair suddenly begins to fall out need have no fear they will be left looking like actor Yul Brynner.

William B. Guy, M.D., and Walter F. Edmundson, M.D., of Pittsburgh, writing in the February *Archives of Dermatology* published by the American Medical Association, said the condition is most likely temporary and can be treated successfully.

They said diffuse cyclic hair loss in women is "rather common" and is entirely different from the permanent hair thinning that occasionally occurs in women in middle or late life.

It occurs in transitory episodes, lasting for several weeks usually. The typical patient is a vigorous, otherwise healthy, woman. Needless to say, the emotional overtones in this situation are great. Some men take the state of their hair seriously. Practically all women do.

This sudden loss of hair is the source of much perplexity because there is no apparent cause. It is probably a physiologic phenomenon. In these people a significant per cent of hairs enter the resting phase simultaneously. When they fall out in a short period of time, the situation causes alarm.

The authors said that the hair that falls out usually is replaced by new hair growth. They have been able to arrest the process by administering corticosteroid hormones.

Experiences with Tympanoplasty

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TYMPANOPLASTY refers to reconstruction of the tympanic cavity by means of a skin graft in patients with chronic otitis media or its sequela. The operation is designed to control disease, to repair the drum, to re-establish the sound conduction mechanism, and to create a closed middle ear space, thereby improving hearing. The introduction of this operation by Wullstein and Zollner [1–7] has opened a new and fascinating field of otologic microsurgery.

Antibiotics for a period of years following World War II seemed almost to have put an end to mastoid surgery, but today we are seeing an increasing number of persistent, chronic draining ears. Systemic or local applications of antibiotics may temporarily dry up sepsis in the chronic otitis, but generally they do not alter the over-all course. Extensive pathologic conditions such as chronic osteomyelitis and cholesteatoma still require radical surgery. Previously this resulted in a deafened ear, but it was considered by the patient and the ear surgeon as a small price to pay for eradication of suppuration and making the ear safe. Unfortunate hearing disability resulted when the patients had bilateral disease. With the advent of the operating microscope, meticulous removal of disease with preservation of the functional elements is now possible. Skin grafting restores the tympanic membrane and makes a new middle ear. Hearing need not be sacrificed.

Considerations

The physiologic principles of the operation are based on the movements of the two windows and their relationship to the hydrodynamics of the inner ear capsule (Fig. 1). Sound waves must not hit both windows simultaneously. Sound transmission to the oval window occurs through the ossicular chain, by a columella effect, or directly to the stapes footplate or window membrane. The drum or baffle must interrupt the phase and afford sound protection to the round window. To function, the round window is contained within the air-filled middle ear space adequately ventilated by the eustachian tube. The defects from chronic otitis may alter this function (Fig. 2).

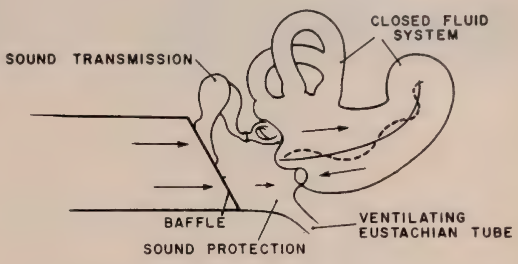
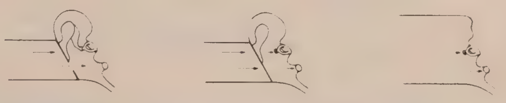


FIG. 1. Physiology of tympanoplasty.


No sound protection

No sound transmission

No sound protection

Sound waves strike both windows simultaneously

FIG. 2. Pathologic defects causing conductive hearing loss.

The indications for the operation include practically all chronic draining ears. No longer do we screen and choose only those with extensive pathologic conditions for surgery. The so-called "benign" central perforation is particularly suitable, as the presence of a skin graft closes over the middle ear space. This prevents irritating drafts blowing through, thereby controlling recur-

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Otolaryngology, May 15, 1959.

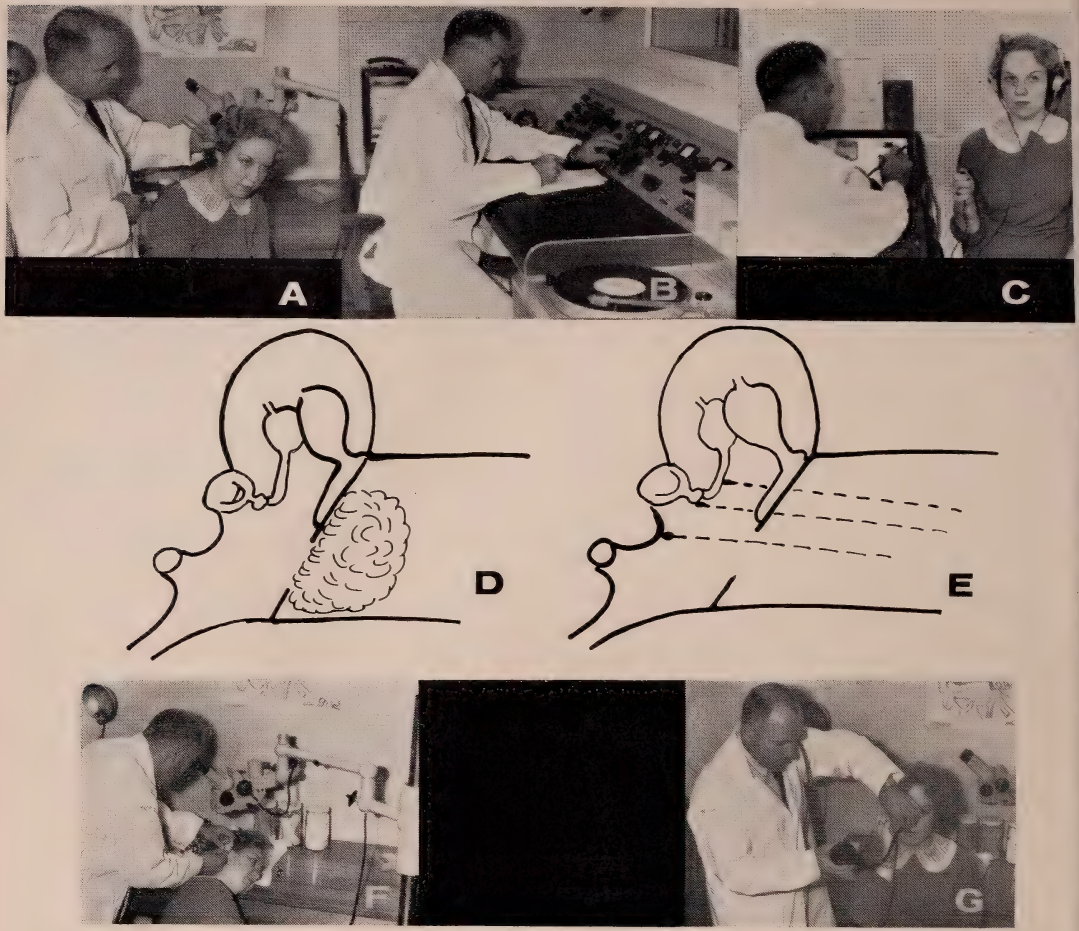


Fig. 3. Preoperative evaluation for successful tympanoplasty. (*A*) Simple measurement of cochlea reserve by tuning forks. (*B*) Speech discrimination testing. (*C*) Pure tone audiometry. (*D*) Hearing test with prosthesis. (*E*) Test with sound probe. (*F*) Examination of ear with microscope. (*G*) Test for eustachian function (politzerization).

ring infection. Without the tympanoplastic technic successful operations could not be performed on these ears. Old dry perforations and large traumatic perforations which cannot be closed by office cautery can be repaired with a graft. Old mastoid cavities with persistent drainage can be made dry and, at the same time, hearing sometimes may be improved. The operation is also successfully applied to congenital malformations of the middle ear and ossicles.

There are very few contraindications. Tympanoplastic procedures should not be attempted when the infection is complicated by an intracranial pathologic condition. They are never successful when the eustachian tube is blocked or when there is no mucosa in the hypotympanum or on the medial wall of the middle ear.

Preoperative evaluation and consideration of a patient as a candidate for successful tympanoplasty is important for good results (Fig. 3). If improvement in hearing is the prime purpose of the operation, the patient must have careful audiologic studies. Without good speech discrimination or satisfactory inner ear function, very little hearing improvement can be expected. Testing the ear with a prosthesis over a perforation indicates continuity of the ossicular chain and good function of both windows and helps prognosticate the success of the operation.

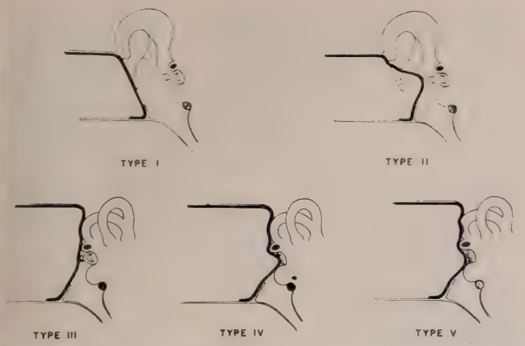


FIG. 4. Classification of five different types of tympanoplastic operation.

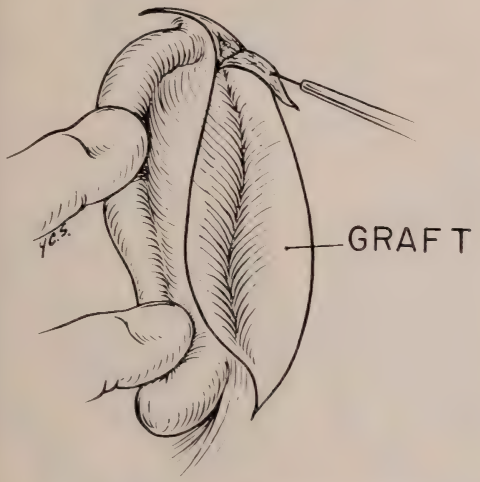


FIG. 5. Incision and removal of graft.

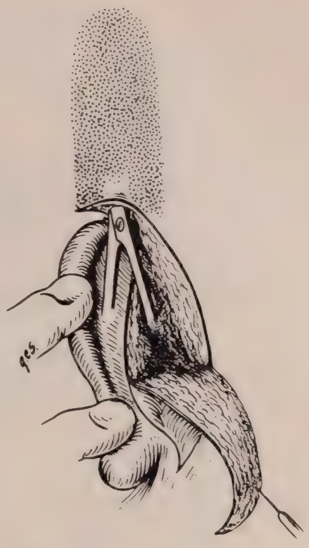


FIG. 6. Pocket undermined for graft.

Zollner[2-4,7] advocates the use of a sound probe applied through the perforation to various parts of the ossicular chain to test its function. The ear should be examined carefully with a microscope to evaluate the remnants of the drum, evidence of destruction of the ossicular chain, and the condition of the mucosa of the middle ear. Eustachian tube patency is checked by politzerization or by x-ray studies with contrast media, but perhaps the most valuable evidence is to have the patient feel the drops in the throat after they have been installed into the ear. Allergies, sinusitis, and septal problems should be controlled prior to surgery. The activity of suppuration is an important factor. An attempt is made to dry up infection by local therapy, but old suppurating ears which will not respond still need surgery. Some surgeons recommend doing the operation in two stages: first, drying up the ear, then at a later date using the graft.

The disadvantage is likely to be increased scarring and fibrosis in the windows. If the graft does not survive when used primarily, the worst for the patient is to regraft at a second stage. Grafts do surprisingly well despite old infection, but it is best never to operate on patients with a head cold or a recent flare-up of activity. Patients with poor cochlea reserve or even total loss of hearing should not be turned down for a tympanoplasty, because the presence of a successful graft will close off the middle air space or the mastoid cavity from the eustachian tube and give a better chance for a dry ear.

Material and Methods

Wullstein[1,5,6] has proposed five different types of tympanoplastic operation, and most ear surgeons now generally agree on and accept this classification (Fig. 4). The type of operation to be chosen depends on the damage to the functional structures of the middle ear from disease or as a result of surgery. One may be able to predict the

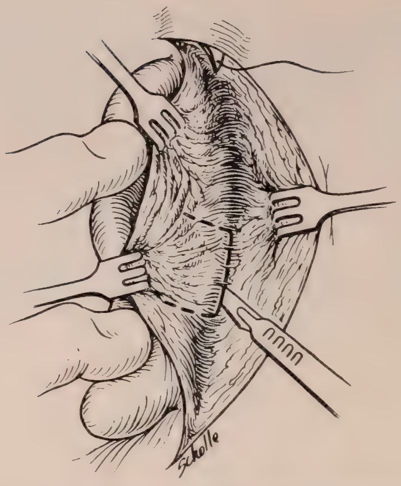


FIG. 7. Rectangular flap to enlarge meatus.

type, but usually it is necessary to evaluate the existing conditions found at operation and then adapt the type most suitable.

All operations are performed by the technic described by Wullstein.[1,5,6] The approach is always postauricular since the graft is included with the incision. An ellipse of skin is removed mostly from behind the concha and partially from over the mastoid cortex (Fig. 5).

The graft is taken at the beginning of the operation. Removing it later causes too much bleeding for the crucial stages when hemostasis is so important. The problem of what to do with the graft after taking it has been a point of considerable discussion. Tympanoplastic operations are extremely meticulous and after removal of the graft considerable time may elapse before the surgeon is ready to place the graft on its bed. Guilford and Wright[8,9] have demonstrated the harmful effects the graft may suffer when it is placed in saline or other solutions. Various preparations have been proposed in which the graft may be kept, but none are ideal.

The author recommends a method for storing the graft in a subcutaneous pocket. The incision is deepened superiorly to the temporal fascia. Then, using curved scissors, a pocket is made directly upward beneath the subcutaneous tissue. This pocket extends above the auricle over the temporal fascia and measures approximately 3 by 6 cm., or large enough to accommodate the graft. A piece of silk is sutured to the pointed end as a marker and the graft is tucked up into the pocket until it is ready for use (Fig. 6).

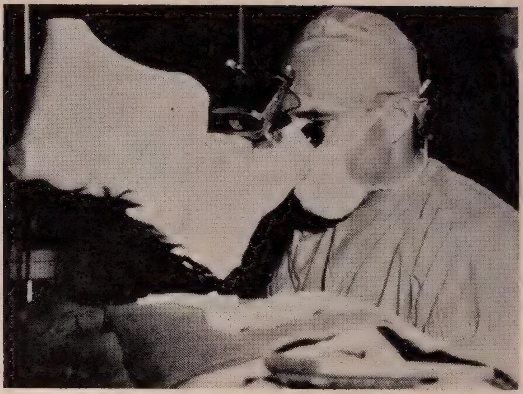


FIG. 8. The operating microscope.

In the pocket, the graft is in the patient's own tissue fluids, which is the best medium possible. It has no chance to dry out. It is kept warm at body temperature. It is safe and out of the incision where it might be traumatized.

During the operation, the graft may even derive beneficial effects from its stay in the pocket. Wullstein[6] has shown that within fifteen to twenty minutes after being placed on a recipient bed there is evidence of nutrients entering a free full thickness graft. Its presence in the pocket at least helps the graft survive over a critical period and perhaps even gives it a little boost prior to its being placed on its permanent less vascular bed.

Having stored the graft away, a rectangular flap is fashioned from the skin of the posterior canal to enlarge the meatus (Fig. 7). The microscope (Fig. 8) now gives a good view of the entire eardrum, and depending on the pathologic condition, a Type I or Type II or a Type III or Type IV operation is undertaken.

In the Type I and Type II operations,

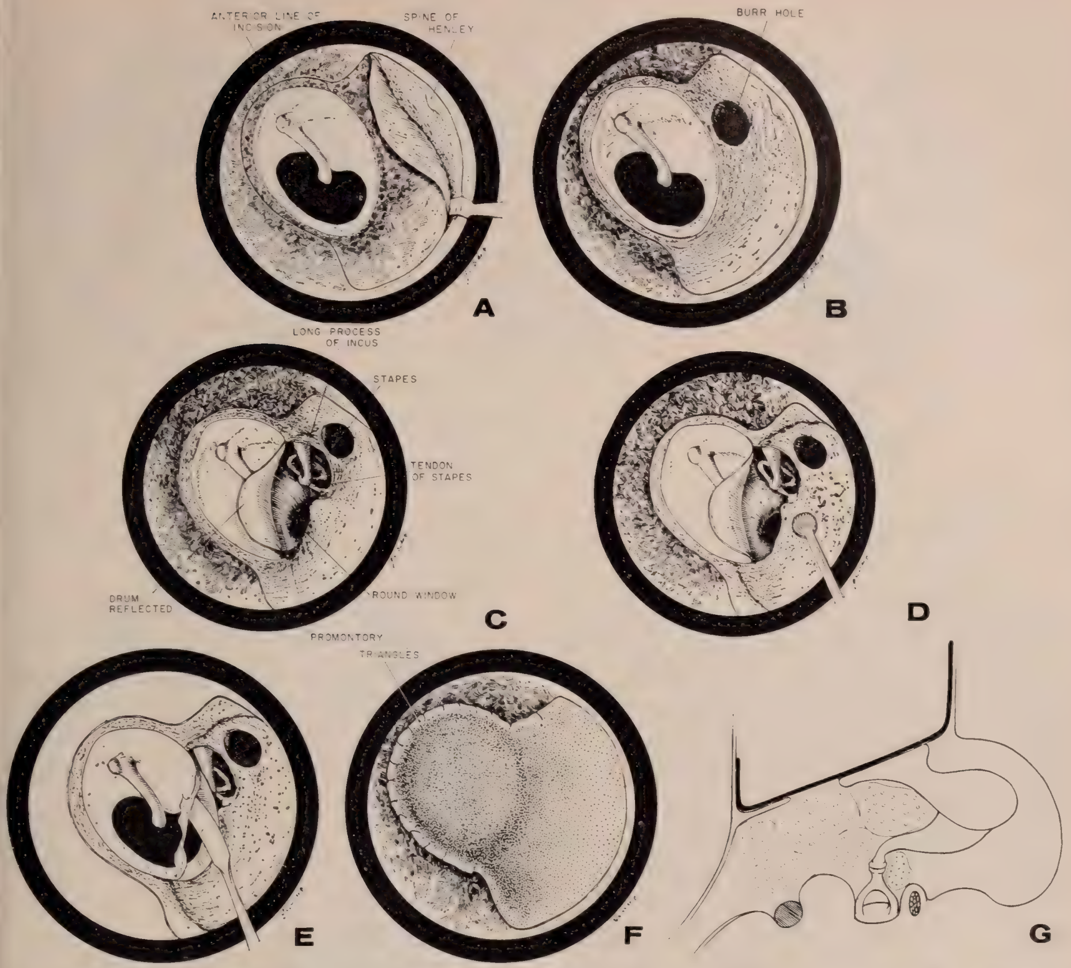


FIG. 9. Tympanoplasty Type I and Type II. (*A*) Denuding skin from bony canal. (*B*) Meatuantrotomy to control antrum. (*C*) Posterior superior rim of annulus curetted to inspect incostapedial joint. (*D*) Enlarging posterior canal wall with burr. (*E*) Removing epithelium from drum. (*F*) Graft. (*G*) Type I classification.

which are basically the same, the skin is removed from the posterior portion of the bony canal down to the annulus (Fig. 9). The posterior bony canal is enlarged with a burr. A drill hole is then placed through the posterior canal wall just above the bridge into the mastoid antrum. Through this window or control hole the mucosa of the antrum can be seen with a microscope to determine the presence of a pathologic condition. The drum is then elevated posteriorly and superiorly and a portion of the bony annulus is removed to inspect the continuity of the ossicular chain. The round window niche, the mucosa of the middle ear, and the hypotympanum are also checked. If disease is found within the mastoid, a simple mastoidectomy may be performed. If there is extensive disease in the middle ear or major defects in the ossicular chain, it may be necessary to proceed to a Type III or Type IV operation.

Not every Type I and Type II operation needs an exploration through the control hole or elevation of the drum. If the ear has been dry for more than a year, it is relatively safe to assume that you will not close over a pathologic condition. If the pros-

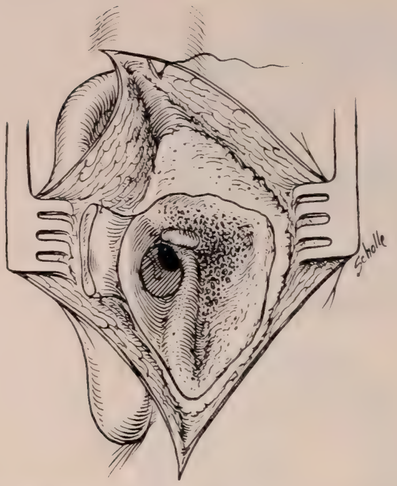


Fig. 10. Mastoid exenteration posterior canal wall taken down.

thesis gives good hearing improvement, the ossicular chain must be intact and both windows must function adequately. In Type I, the ossicular chain is intact whereas in Type II there are minor defects with the graft lying in contact with the incus or head of the stapes.

Many authors advocate myringoplasty for the closure of a perforation rather than a Type I or Type II operation. Tympanoplasty has the advantage of giving better exposure to the entire tympanic membrane. It allows exploration for the control of mastoid diseases and adequacy of the ossicular chain. Adapting the graft may be difficult through an ear speculum or the less adequate exposure than with the tympanoplasty.

The Type III and Type IV operations are designed for extensive pathologic changes in the mastoid and in the middle ear. The mastoid cavity is exenterated, the posterior canal wall is taken down, the bridge is removed, and the facial ridge is lowered almost to the level of the nerve (Fig. 10). Using the operating microscope, disease is then cleaned from the middle ear. The long process of the incus is usually destroyed, but with the bridge down it must be removed anyway. Granulations, polyps, diseased mucosa, adhesive bands, or a cholesteatoma sac are dissected carefully from the stapes, the round window niche, and the hypotympanum.

The utmost care must be used to preserve as much of the tympanic membrane as possible so that it will help support the graft bridge over the hypotympanum. The handle and short process of the malleus are preserved if possible as this offers additional support. The head is often amputated to facilitate removal of disease. The eustachian tube is inspected and if necessary is opened. It must be emphasized that even though it is important to preserve these functional elements, there must be no compromise with the complete removal of all the disease. To close over a focus of disease invites failure. Actually, the Type III and the Type IV operations may be considered

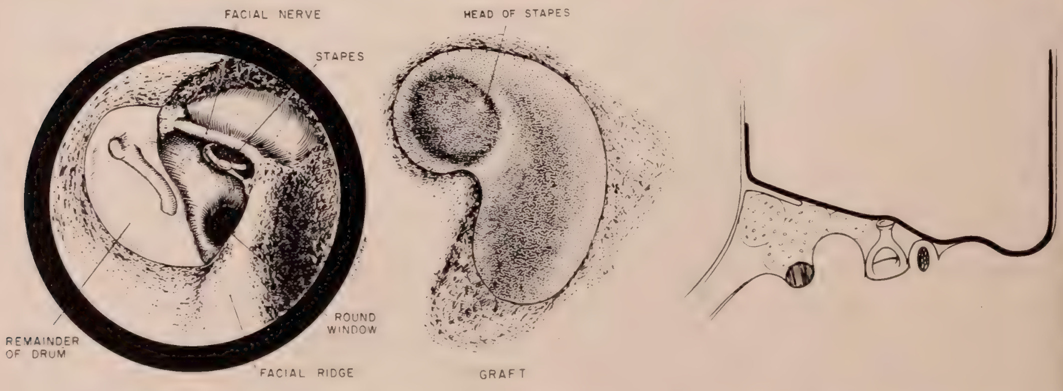


Fig. 11. Tympanoplasty Type III, showing intact stapes, with graft placed from remaining drum in contact with head of stapes to produce sound transmission.

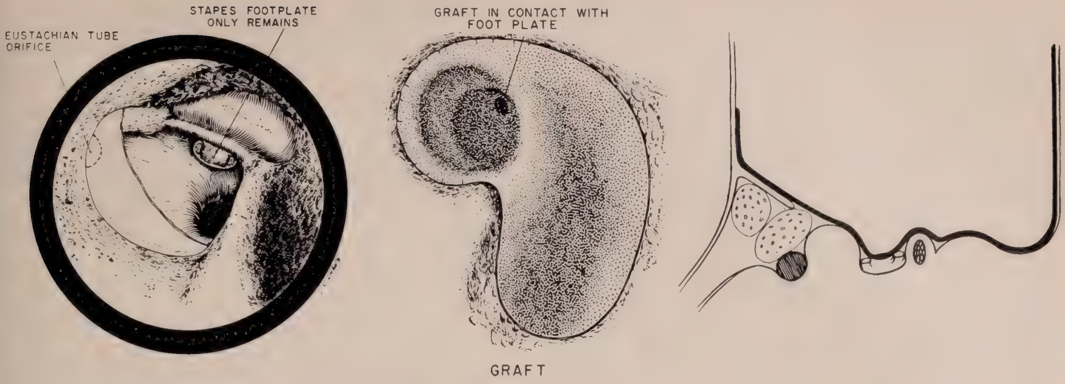

STAPES FOOTPLATE ONLY REMAINS
EUSTACHIAN TUBE ORIFICE
GRAFT IN CONTACT WITH FOOT PLATE
GRAFT

FIG. 12. Tympanoplasty Type IV, production of graft over hypotympanum.

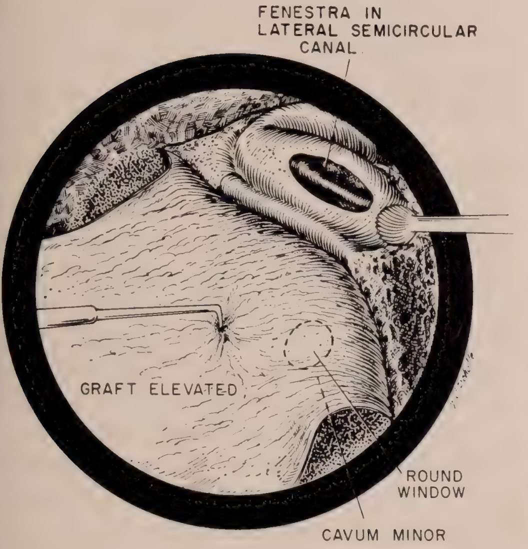


FIG. 13. Tympanoplasty Type V.

conservative radical mastoidectomies with the addition of a skin graft.

A Type III or Type IV operation depends on the stapes. If the stapes remains intact, the graft is placed from the remaining drum in contact with the head of the stapes to produce sound transmission through a columellar effect, a Type III operation (Fig. 11). If the superstructure of the stapes is gone and only the footplate or the oval window membrane is left, the graft is placed in contact with the window which will receive sound transmission directly, a Type IV operation (Fig. 12). The important factor in this Type IV operation is to produce a baffle or graft over the hypotympanum to afford sound protection to the round window. In both Type III and Type IV procedures it is necessary to create a functioning cavum minor or a smaller middle ear. In order to accomplish this, there must be enough mucosa in the hypotympanum and a ventilating eustachian tube so that the graft will not become adherent to the medial wall of the middle ear from adhesions or a vacuum. Without a patent eustachian tube, any operation will be a failure as far as hearing is concerned. Zollner[2–4,7] advocates a small polyethylene tubing from the middle ear down the eustachian tube into the nasal cavity for direct insufflation. The value of this procedure is questionable and has not helped in a few of my cases.

The problem of the mucosa on the medial wall of the middle ear is of equal importance. Where it has been denuded, various graft transplants such as amnion, lip mucosa, conjunctiva, and antral mucosa all have been attempted, but none are really too successful. If at all possible, the best results are obtained from the rotation of a flap of normal mucosa from the eustachian region over into the hypotympanum. House[9] recommends using polyethylene tubing in the hypotympanum to help maintain an air space and allow growth of the mucosa. Perhaps in this instance where the mucosa is poor, a two-stage procedure might be advisable. One can hope the growth of any remaining mucosa may extend out from the eustachian tube and fill the hypotympanum before squamous epithelium grows in.

A Type V tympanoplasty is the second stage of a successful Type III or Type IV procedure (Fig. 13). The cavity in these cases has healed completely with an adequately functioning cavum minor, but hearing is poor. The oval window is probably fixed by fibrosis or even otosclerosis. A fenestration is then performed in the lateral semicircular canal. The results in properly selected cases should be good, but many failures are seen because of a poorly functioning round window. The niche may be bound in fibrous adhesions or may not be included within the ventilating cavity of the hypotympanum.

The graft must be a three-quarter to full thickness of the skin so as to include the two layers of intravascular blood vessels. The graft, in part, bridges an air-containing space with no bed beneath it. Guilford and Wright[10] have shown that the graft lives initially because of the development of an immediate intravascular capillary circulation. Some of the small capillaries at the margin of the graft come in contact with those of the bed. The ideal donor site is the skin from behind the ear. This skin contains a minimum of elastic fibers, thereby minimizing contracture and curling of the graft. It is thin, contains no hair, and it is easy to obtain. Secondary donor sites, used when revising a failure, may be the skin behind the opposite ear, the anterior surface of the thigh, or the inner aspect of the arm. The graft is defatted with sharp scissors, great care being taken not to traumatize it. Before placing the graft, the epithelial surface is peeled carefully and completely from the remaining drum and portions of the canal wall that will become the recipient area.

The placement of the graft is the most important technic in a tympanoplastic operation. It requires a bloodless field best obtained by the use of cautery and adrenalin, and occasionally necessitating a hypotensive anesthetic such as arfonad. Gelfoam, saturated with penicillin and hyaluronidase, is placed in the middle ear for support under the perforation. The graft must be carefully adapted to its bed, cutting small triangles or serrations around the margins to help prevent wrinkles. There must be no blood or bone chips beneath the graft. It must be in good contact with the bed, particularly in the region of the annulus fibrosis where it will receive a good portion of its blood supply. Tiny cotton balls are packed firmly against the graft in this area. In Type IV, the graft should have good contact with the oval window so as to prevent the niche from filling up with dense fibrous tissue. A case where very little drum remains anteriorly necessitates bringing the graft up the anterior wall of the canal. A mixture of gelfoam and small cotton balls is packed into the cavity.

Postoperatively, the packing is removed in from ten to twelve days. The cavity should be kept sterile for as long as possible with a careful technic so as not to introduce secondary infection. Frequent office visits are necessary for careful cleansing of the

TABLE I.—RESULTS OF 92 CASES OF TYMPANOPLASTIC OPERATION*

Type	Number of Patients	Number with Serviceable Hearing†	Serviceable Hearing (Per Cent)	Graft Failures
I	28	21	75	9
II	16	13	81	1
III	31	21	68	4
IV	16	6	37	1
V	1	1	100	0

* Appraisal of 111 tympanoplastic operations:

7 recent postoperative cases not included.
5 cases had 2 operations on the same ear
  1 for revision of Type III to Type V
  4 for revision of failures.
7 cases not candidates for hearing improvement
  3 had perceptive hearing loss
  2 had previous radical mastoidectomy
  1 had otosclerosis
  1 had fixation of entire ossicular chain.

† Serviceable hearing: 30 decibels. Average: 500, 1,000, 2,000 cycles.

cavity. Topical ear drops such as Furacin ear solution or powder may also help keep down the secondary infection. Controlled politzer insufflations at frequent intervals are necessary and help prevent adhesions of the graft to the medial wall of the middle ear. They are particularly important in the Types III and IV operations for maintaining a functioning cavum minor.

Results

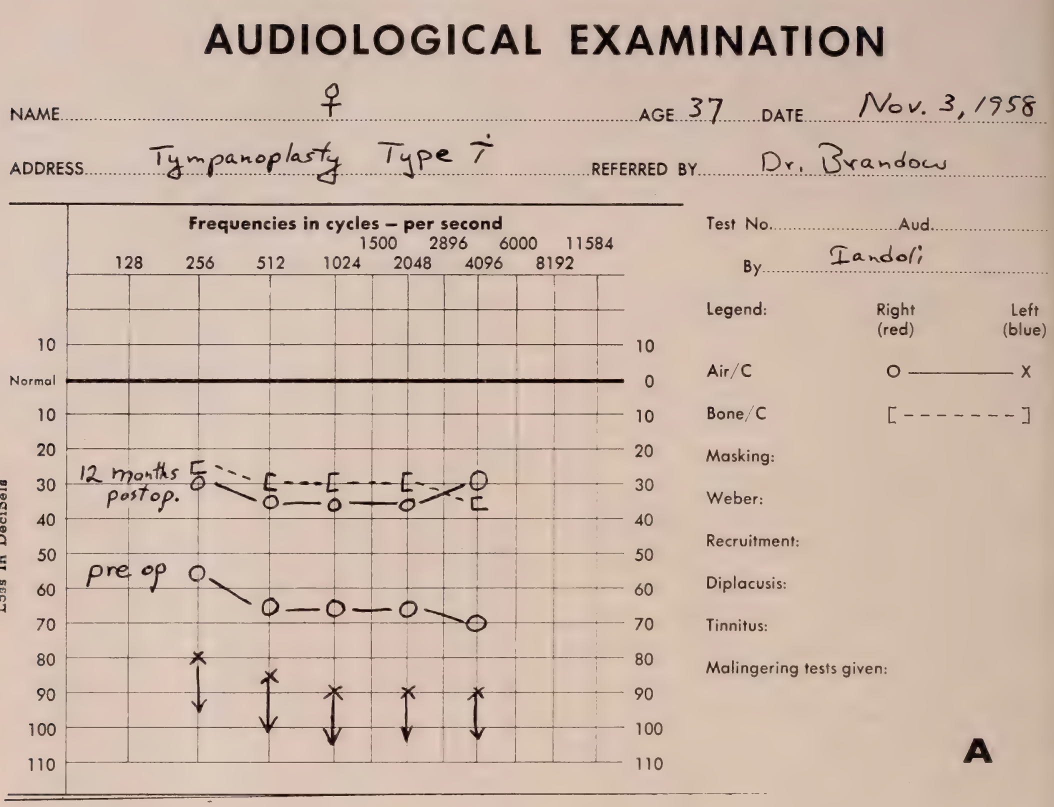
The results presented (Table I) represent consecutive cases of patients with discharging ears or conductive hearing loss from chronic otitis over the past two years. Some of the ears were badly diseased, but none were turned down because they were not considered good candidates for hearing improvement. Four of the graft failures have already been revised successfully and these cases are now included in the successful hearing category. The remainder expect to be reoperated on, which may further increase the percentage. Nine cases represent revision of old mastoid cavities. All of these had successful grafts, but only 4 obtained good hearing. The graft at least closed off the tube and all except one cavity remain dry.

Of course, the success of a tympanoplasty to improve hearing in these cases depends on how well the previous mastoidectomy was done. The classic radical mastoidectomy curets the annulus, the hypotympanum, and the eustachian tube, promoting squamous epithelium to grow in over the medial wall of the middle ear. After this type of procedure, very little hearing improvement could be expected. The same is true of old chronically infected ears with extensive pathologic conditions, but in a few of these hearing can be salvaged. As seen by the results in the Type IV operation where the stapes has been involved with disease, the percentage of serviceable hearing is not too high.

Comment

Tympanoplastic operations have been quite promising with many cases showing considerable improvement in hearing. Enthusiasm for the operation is certainly justifiable, but with experience a number of problems are brought out. The operation is not for beginners in ear surgery. It is not for those in a hurry to get to the office. It requires an operating microscope, and a thorough knowledge of temporal bone surgery is most essential. In dealing with the middle ear and the graft the surgeon must be extremely meticulous and be prepared to spend considerable time to achieve satisfying results. Failures are disappointing but can be revised. Regrafting is more likely to be successful as the presence of the original graft stimulates vascularity in the recipient area.

We must be aware of one particular complication. That is the development of small epithelial inclusion cysts forming beneath the graft. There are a number of factors which may be responsible for this. The very nature of the pathology of cholesteatoma with possible invasion of bone, as described by Rüedi,[11] sometimes makes removal of the entire sac difficult and it is possible to close over a silent focus of disease. However, with high-power magnification and a good knowledge of anatomy, all the disease should be removed. Careless inadequate removal of every vestige of epithelium while peeling the drum may leave a small focus to be buried beneath the graft. The margins of a perforation must be checked carefully for the ingrowth of epithelium to the under surface of the drum. The graft itself is a potential source of trouble. Grafts that are shaved too thin in some areas, cutting through hair follicles, sebaceous glands, or ret pegs may favor the growth of the basement membrane down and out under the deep surface of the graft. This is particularly true in cases of graft failure and where the graft develops a perforation. Usually the small epithelial cysts can be scraped off or marsupialized. However, if these cysts are not properly attended to they may go on to cholesteatoma formation. Each of the failures in the preceding series that was re-



Albany Medical Center

CONSERVATION OF HEARING CLINIC

AUDIOLOGICAL EXAMINATION

NAME ♀ AGE 37 DATE Nov. 3, 1958

ADDRESS Tympanoplasty Type I REFERRED BY Dr. Brandow

Test No. Aud.

By Iandoli

Legend: Right (red) Left (blue)

Air/C O ———— X

Bone/C [- - - - - - -]

Masking:

Weber:

Recruitment:

Diplacusis:

Tinnitus:

Malingering tests given:

vised did show a small cholesteatoma sac beginning beneath the old graft. For this reason, it is important to reoperate on the graft failures. Six other cases to date have developed this problem of inclusion cyst formation. What the long-term follow-up will be remains to be seen. Certainly, in the hands of the casual ear surgeon, it is bound to be high. The need for continued observation after a tympanoplasty becomes apparent.

Fortunately, good results obtained from the operation far exceed any disadvantages. The audiograms of 2 cases both having no hearing in the opposite ear (Fig. 14) illustrate the dramatic hearing improvement and rehabilitation that can be achieved.

Summary

The tympanoplastic operation with the use of a full-thickness skin graft represents an important advance and certainly has increased the scope of otologic surgery. It not only provides for thorough control of disease but also has proved valuable as a means of restoring or preserving hearing. Many more patients are now candidates for operation who previously could not be considered. When considered with the surgery for otosclerosis there is now a chance for improvement for most patients with a conductive hearing loss.

678 Madison Avenue

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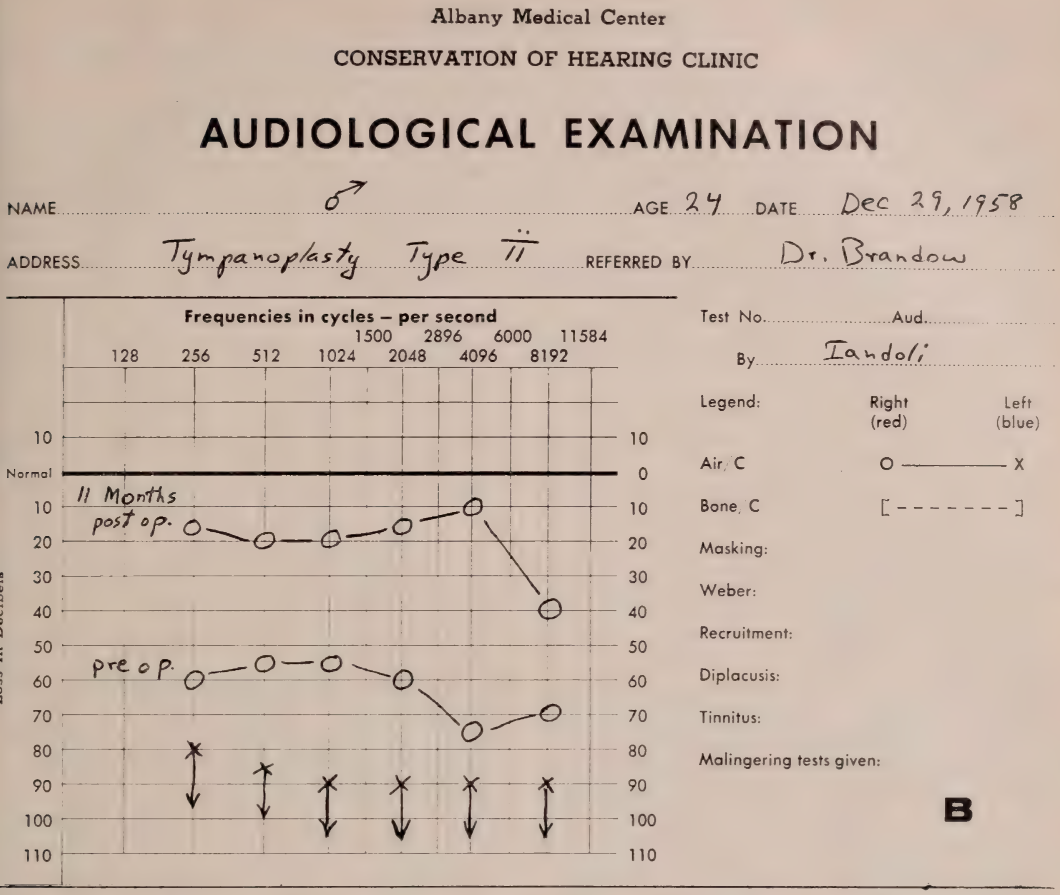

Albany Medical Center

CONSERVATION OF HEARING CLINIC

AUDIOLOGICAL EXAMINATION

NAME ♂ AGE 24 DATE Dec 29, 1958

ADDRESS Tympanoplasty Type II REFERRED BY Dr. Brandow

Test No. Aud.

By Iandoli

Legend: Right (red) Left (blue)

Air C O ———— X

Bone C [- - - - - - -]

Masking:

Weber:

Recruitment:

Diplacusis:

Tinnitus:

Malingering tests given:

FIG. 14. (*A* and *B*) Audiologic examinations. Audiograms of cases, both having no hearing in opposite ear, showing great improvement achieved.

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Discussion

Wesley H. Bradley, M.D., *Syracuse, New York.*—Dr. Brandow has given us a very comprehensive picture of one aspect of the changing situation in otologic surgery today, that is, the surgery dealing with reconstruction of the functional components of the middle ear mechanism following chronic suppuration. As in any situation where we have change and advances, we often tend to emphasize the change and seemingly neglect the pitfalls and the possible complications. Dr. Brandow has not done this. He has mentioned the pitfalls with the advances.

In the first paragraph, he gives his idea of the aims of tympanoplasty, and I would like to read this sentence again: "The operation is designed to control disease, to repair the drum, to reestablish the sound conduction mechanism, and to create a closed middle ear space, thereby improving hearing."

Dr. Brandow has mentioned the eradication of disease, and yet it cannot be emphasized too strongly. In any chronic ear, the eradication of disease is the first thing to be considered. Hearing restoration must definitely be second; it is important, but the ear must first be a safe ear.

I would question one other statement which I think requires clarification, and that is the statement that an ear which has been dry or has not been suppurating for at least a year can be assumed to be a safe ear and can be closed over. I think perhaps this may be a dangerous assumption and could get us into trouble in some instances. I realize in saying this Dr. Brandow means that he is going to examine this ear carefully with the microscope and examine the tympanum completely before covering it over; and yet, we can't assume it. We must examine it! In some of these ears to examine the tympanum thoroughly is technically, as he will agree, a very difficult job.

At the time of the International Congress two years ago, Cawthorne, in the symposium on surgery of temporal bone suppuration, brought out many of these points. Since hearing him I have felt that if a man with his background in temporal bone surgery, a man who has been using the operating microscope for twenty-five years for all his temporal bone work, still has this much of a feeling of caution about the danger of burying epithelium and potential trouble, then those of us whose background is not as great must exercise similar caution.

Dr. Brandow's results are certainly excellent. One comment that I would make is that as in all series of tympanoplasty cases, the difficult ones are the Type IV and Type V cases and in his series you notice the percentage of successful results drops considerably there.

I would mention the possibility in some of these cases of the use of the technic that has been described by Rambo which he has called the musculoplasty operation. We have had some experience over the last year and a half with the musculoplasty-type procedure in such cases, and we have felt gratified in many of these cases that the results have been satisfactory. The one advantage of the musculoplasty procedure here is that since the pedicle muscle flap provides excellent nourishment for the skin that is used you do not have the problem of the graft not taking. The nourishment is so good that the cavity tends to fill in and heal very rapidly. I mention this as a possible addition to this type of surgery.

I think Dr. Brandow's method of storing his graft is a unique little trick. I have not used it, but I certainly intend to try it.

Tympanoplasty is a real advance in otologic surgery, and I do not mean to be pessimistic in mentioning the possible pitfalls. The end results have been very gratifying and some of these patients are the happiest and most grateful patients one could hope to have.

However, I think we must use it judiciously. We must use sound judgment based on a thorough knowledge of temporal bone anatomy. We must also remember the other point Dr. Brandow emphasized, the need of not being in a hurry. Tympanoplasty is often a slow, painstaking job, and it is only with meticulous technic that success is achieved.

I enjoyed this presentation very much and for me, personally, it was both interesting and instructive.

Penicillin Threat in Milk

Penicillin used to treat sick dairy cattle is having one increasingly troublesome side-effect, *Nutrition Reviews* reports: Penicillin traces in milk and cheese can react on human consumers allergic to the antibiotic.

To eliminate the problem the United States Food and Drug Administration is trying to develop a dye which, when added to penicillin used for inoculating dairy cattle, will discolor milk for several days, forcing its discard. Industry is taking the lead in this enlightenment campaign, to prevent negligence at the farm level.

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., EDITOR

Present Status of Management of Appendicitis

FRANK GLENN, M.D., AND BJORN THORBJARNARSON, M.D., NEW YORK CITY

(*From the Department of Surgery, The New York Hospital-Cornell Medical Center*)

The appendix is, as we all know, a vestigial organ with no known function essential to the human being. Appendicitis was present but relatively rare in civilized countries until the end of the nineteenth century, but from that time until the middle thirties of this century a pronounced increase in cases has occurred. There is some indication that since the middle thirties appendicitis has been on the wane.

The reasons for the scarcity of appendicitis until the late 1800's are not fully known. Difficulty in diagnosis and lack of understanding may be a partial explanation. After Reginald Fitz of Boston in 1886 explained that perityphlitis and perityphlitic abscesses were synonymous with appendicitis, the number of diagnosed cases rose significantly. Appendicitis has been found more often among highly civilized peoples than among backward tribes and more often among urban dwellers than in the rural population. Apparently it is not confined to the human species since it is also found in apes in captivity.

Etiology

The first appendectomy that we know about was performed by Claudius Amyand in 1735.[1] This appendix was in a scrotal hernia and had been perforated by a pin which had been ingested, an occurrence which caused a fecal fistula. The role of foreign bodies in the etiology of appendicitis therefore was established early, and occasional cases still may be found in which nuts, pins, kernels, or other ingested particles lodge in the appendix and cause perforation or infection. Pinworms, ascarides, and other helminthic infestations also may cause appendicitis as well as conditions which mimic it. Concretions in the appendiceal lumen formed from fecal matter and mucosal detritus play an important part in the etiology of this disease although their presence does not always prove that they were the cause. Any object which obstructs the lumen of the appendix and prevents the egress of mucus into the large bowel is a possible factor in obstructive appendicitis, which we believe is the largest etiologic group.

Obstruction of the appendiceal lumen leads to the full-blown disease because of interference with the blood supply. As soon as the intraluminal pressure exceeds the capillary pressure, necrosis and breaks in the mucosa occur and the organisms normally present gain entrance into the wall. If the organisms are virulent enough, they will spread throughout the coats of the organ, even with minimal interference with blood supply, and cause the picture of phlegmonous appendicitis, in which perforation has not occurred but the entire organ is swollen, beefy red, and covered with fibrinous exudate. If the obstruction is complete and the wall of the appendix is thin and scarred, as often may be found in old persons,[2] the process of necrosis and perforation may occur with minimal symptoms.[3] This explains why perforative appendicitis comprises up to 70 per cent of appendicitis cases in old age. Concretions or fecaliths more often are found in the old than in the young. Appendicitis in the average adult is a different disease from that in children and the old.[4–7]

Even though we believe that obstruction to the lumen is an important factor in acute appendicitis, we feel strongly that blood-borne infection or local entrance of bacteria does occur without the element of obstruction. The normal flora of the colon and appendix includes anaerobic streptococci, colon bacilli, clostridia, Aerobacter aerogenes, and fusiform bacilli. There is a preponderance of streptococci isolated in cases of appendicitis in the young and colon bacilli in such cases in the old. Mixed infections are more frequent in the old,[7] and this type of infection is more virulent than that in which one type of organism is responsible. Specific infections of the appendix such as tuberculosis or actinomycosis may present themselves in the acute form although they rarely are seen in our civilization.

Diagnosis

The symptoms and signs of appendicitis should be considered in three groups according to age. Although the line of distinction is quite indefinite, there is no doubt that appendicitis shows a very different face in the very young and the very old as compared with the average adult patient. Those of us who have suffered from appendicitis in adulthood are quite familiar with the classic symptoms. Vague epigastric discomfort develops into a gripping, boring pain unrelieved by change in position. In two to three hours the pain shifts to the right lower quadrant. It is accompanied by the "downward urge" but is not relieved by an elimination, and it is soon followed by nausea and perhaps vomiting. There is localized tenderness in the right lower quadrant with guarding and rebound phenomena. This is the classic picture of appendicitis and the way it appears in the great majority of cases in adulthood.

The unusual and abnormal manifestations are seen mainly in the very old and very young.[5] This is attested to by the fact that at present the mortality from appendicitis is almost confined to perforated cases,[8] and these are found mainly in these two groups. The experience in this hospital pretty well coincides with that which exists over the country as a whole. Among our patients over the age of sixty-five who had appendicitis, 70 per cent of the appendixes already were perforated when operated on; children younger than six years of age had an even higher incidence of perforation.

There certainly is no radically different etiology for appendicitis in youth and old age from that of middle age to explain the difference in incidence of perforation. An anatomic factor influencing appendicitis in childhood is the incomplete development of the omentum; in the young child it is not far enough advanced to afford the protection it later gives. The other main explanation for the childhood cases, we believe, lies in the difficulty of evaluation. A young child or an infant cannot give a history and usually is quite resistant to adequate examination. When the children are too young to explain adequately what ails them, the general symptoms appear to apply to a variety of conditions. In our experience the most prominent factor in the incidence of perforation in childhood has been delay in hospitalization.

But how are we to make the diagnosis

earlier? If the child is old enough to give a reliable history, it will be found that it is almost the same as that for adults. If the child is not old enough to give an adequate history but an abdominal affliction is suspected, the examination will have to be conducted so that it yields the most information. Observation and examination findings will establish the diagnosis in most cases if the examination is carried out systematically. The child with appendicitis tends to lie still in bed, sometimes with the knees drawn up, and is unwilling to stand up and walk. If you succeed in making the patient walk, he usually will be bent over to the right with some flexion of the right thigh on the pelvis. Most children love sweets or ice cream, but it is distinctly unusual for a child with appendicitis to accept a lollipop or an ice cream cone or to ask for food in any form. Palpation of the child's abdomen will not yield any information unless the child cooperates. If a conversation can be carried on and the child's attention diverted, useful information may be obtained. Often the child refuses to allow the doctor's hand to be placed on its abdomen. In these situations the same information may be gained by the mother's hand performing the palpation under the observing eye of the physician. Occasionally a child will not allow anyone to come near the involved area but will gladly press with its own hand when directed. If a child presses its own hand deep into the right lower quadrant without signs of discomfort, appendicitis is a rare possibility. Rectal examination often is very helpful for detecting appendicitis in children but should always be done last in order not to upset a possibly cooperative patient.

The diagnosis in old persons is not hampered by the lack of adequate history. In our experience the cause of the severe nature of appendicitis in old persons is not delay in entering the hospital or in seeking medical aid. It seems that the progress of appendicitis in the old person is much more rapid and at the same time is accompanied by less alarming symptoms than usually are found in the average adult. The reason for this, we believe, resides in the nature of the tissues of the organ itself. Arteriosclerosis, fibrosis, replacement of the wall of the appendix with fat, and disappearance of the thick submucosa are frequent findings in appendixes removed incidentally from old persons. The result is that when obstructive appendicitis occurs in this group much less intraluminal pressure is needed to collapse the capillaries and arterioles and cause necrosis of the wall. The violent crampy pain which often precedes perforation in the young person never may be felt by the elderly individual. We have observed old persons who, while hospitalized for other afflictions, develop appendicitis and generalized peritonitis under the eyes of the hospital staff and never complain of more than transient gas pains.

The diagnosis does not have to be difficult to make if the possibility of appendicitis is kept in mind. Although diffuse peritonitis may be present, the history of any pain in the right lower quadrant and direct or referred tenderness in the same area, although often only relative, usually will point to the correct diagnosis. Laboratory procedures can be used for confirmation but hardly ever to rule out what is indicated by the physical findings. Leukocytosis usually is present, but more attention should be paid to the presence of young forms of polymorphonuclears and a shift to the left in the differential count. The absence of leukocytosis is not uncommon in severe intra-abdominal infection in old persons, but increased numbers of young forms of polymorphonuclears practically always are present.

The temperature in children and young adults with appendicitis usually is elevated only slightly in the early stages; therefore high temperatures in the absence of corresponding abdominal findings usually militate against the diagnosis of appendicitis. In elderly individuals, however, no rule of thumb can be applied. Often we have encountered normal temperatures in elderly patients with perforations, and correspondingly high fever is not uncommon in the early stages of the uncomplicated form of the disease.

In the younger age groups the most common affliction to mimic appendicitis is nonspecific mesenteric adenitis. We know of no way by which this disease can be differentiated accurately from appendicitis, for both tend to follow the occurrence of upper respiratory infections and the symptoms usually are the same. In this category are most of the failures in diagnosis, particularly in young patients. The next most common category comprises women in the reproductive period with pelvic inflammatory disease.

When reasonable doubt exists, we believe that it is better to perform an exploration than to procrastinate. In this hospital we find that 80 per cent of those operated on for acute appendicitis do have the disease; thus, 20 per cent of such patients are misdiagnosed. This does not always mean that an unnecessary operation has been carried out since a certain number of the patients who do not have appendicitis are found to have other surgical conditions which may pose as appendicitis. These are: in young males, a perforated duodenal ulcer; in middle-aged women, acute cholecystitis; and in the aged, perforation of the large bowel due to diverticulitis or carcinoma.

Surgery

The mortality from appendicitis is now mainly in the old-age groups, and of these instances, most are among those with perforation. In the years from 1932 to 1958, 134 cases of acute appendicitis in patients over the age of sixty-five were encountered on the ward services of The New York Hospital. About 70 per cent of these patients suffered a perforation when operated on, with a mortality of 6.4 per cent.[9] During the years 1938 to 1958, a little over 600 children ten years and younger were operated on for acute appendicitis at this hospital. The mortality in this group was 1 per cent and the incidence of perforation was 55 per cent. Under the age of two there was a 100 per cent incidence of perforation in males and a 90 per cent one in females.[10]

We use the McBurney incision when the preoperative diagnosis is acute appendicitis. If the appendix is normal and the diseased organ is not accessible or the diagnosis still is obscure after exploration, a different, more generous incision should be made rather than extend the McBurney one.

We believe in drainage, and we use cigaret drains when a perforation has resulted in a localized abscess or peritonitis. This is a debated issue nowadays, since many surgeons feel that in spreading or generalized peritonitis intraperitoneal drains are not indicated. We feel, however, that even when the process is not localized, soilage is heaviest around the stump of the appendix, in the pelvis, and in the right lumbar gutter. We place one cigaret drain in each area to emerge through the wound, which is then closed loosely around each drain. Our incidence of postoperative hernias after drainage through McBurney incisions is about 15 per cent.

When an appendix has ruptured and a localized abscess is present, we prefer to drain as soon as possible. Appendectomy usually cannot be carried out when old and thick-walled abscesses are present, but the patient should be admitted for elective appendectomy about two months later. A longer delay in performing appendectomy often results in the recurrence of the disease, especially in old persons.

Peritonitis

Acute appendicitis still is the most frequent cause of peritonitis. As may be gleaned from the preceding, peritonitis is associated with acute appendicitis in the majority of children under the age of ten and in patients over the age of sixty-five. Mortality in patients with appendicitis is confined almost solely to the groups with peritonitis. To decrease the mortality, earlier surgery should be performed and the treatment of peritonitis improved. It was the opinion of many surgeons fifteen years ago that diffuse peritonitis from a perforated appendix should be treated conservatively, that is, without an operation, and the results in the preantibiotic era seemed to support this contention. Since that time, however, several improvements in the care of these patients have occurred so that in the well-equipped hospital the trained surgeon will find a lower mortality in the surgically treated patients.

The reasons for the former high mortality in generalized peritonitis were poor understanding of the problem and lack of equipment with which to combat the disease. The patient with generalized peritonitis needs care not only of the local condition responsible but also and primarily of all the systems of the body. In the past mortality was high and the prognosis was unfavorable because too much emphasis was placed on the operation and too little on the general care of the patient.

The average peritoneal cavity is estimated to have 22,000 sq. cm. of surface. In generalized peritonitis, absorption of bacterial toxins and loss of fluid and electrolytes occur from this area. The paralytic ileus which follows allows stagnation and escape of intestinal fluid into loops of the bowel. Fluid and electrolytes therefore are lost by vomiting and stagnation in body cavities. The abdominal distention elevates the diaphragm and causes shallow, grunting respirations with atelectasis at the bases. Fever, toxicity, dehydration, and electrolyte derangement cause mental dullness and confusion so that aspiration pneumonia is apt to occur in addition to the other complicating factors.

Our experience with the poorest-risk patients with peritonitis of appendiceal origin has indicated that the most frequent causes of death since 1940 have been pulmonary embolus and cardiac failure. It is of interest that these deaths have occurred in patients who were not suspected of severe cardiovascular disease when they were admitted. We have found that some patients with symptomatic cardiovascular disease have been carried successfully through the siege of appendiceal peritonitis, whereas others considered better risks on admission have succumbed to latent associated disease. This experience indicates the necessity for exact evaluation of the vital systems of elderly patients with peritonitis and for therapy planned to support best and to burden least those organs working with little reserve power.

We believe that present-day therapy of acute appendiceal peritonitis should be concerned primarily with estimating the capacity and reserves of the patient's cardiovascular system. Any indication of impairment should be a warning that every precaution must be taken. An operation should not be carried out until measures have been taken to assess loss of fluid and electrolytes and to replace these. Measures for gastrointestinal decompression should be instituted promptly; usually a tube for nasogastric suction is sufficient, but a Miller-Abbott type of tube occasionally may be indicated later. Antibiotics in the form of penicillin and streptomycin should be given, unless contraindicated, until cultures and sensitivity studies of the peritoneal fluid are made. Once the optimal condition has been achieved, which should not take more than twelve hours, the operation is carried out through a McBurney incision, the appendix is removed, and drainage is instituted.

The immediate postoperative period is the most critical one. The elderly patient always should be given oxygen, and the position in bed should be changed frequently and exercises encouraged. Gastrointestinal suction is maintained until flatus is passed. Hydration, motion, and adequate oxygenation are important in the prevention of pulmonary emboli. Elderly females, who often have some varicosities, should have their legs wrapped with an elastic bandage to improve the circulation in the deeper veins. Constant attention and care from hour to hour, rather than from day to day, are essential for eradication of the remaining mortality from appendiceal peritonitis.

The emphasis in this paper has been on therapy other than bactericidal agents. The antimicrobials, however, are perhaps the single most helpful factor after an operation has been carried out. As a rule, we favor the systemic rather than the intraperitoneal administration of these agents.[11] Recently, neomycin administered intraperitoneally has gained favor in the treatment of peritonitis. It is a helpful agent but should be used with care, and no more than 1 Gm. should be given since sudden death from respiratory failure has been known to result from larger doses.

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(*Number seventy-nine in a series of Recent Advances in Medicine and Surgery*)

New Way of Screening Blood Donors Reported

A new method for reducing the incidence of hepatitis resulting from blood transfusions has been reported.

A "more useful" method of detecting carriers of the liver disease among blood donors was described in the December 26 issue of the *Journal of the American Medical Association.*

The selection of uninfected donors by blood banks is a difficult problem, one reason being that a person may carry the disease-causing virus although he has no previous history of hepatitis and shows none of its symptoms.

The prevalence of hepatitis carriers among the general population is believed to range from one half of one per cent to six per cent. An estimated five million blood transfusions are given in the United States each year and "15,000 to 100,000 cases" of hepatitis can be expected to result, according to the article. These patients are, as a rule, out of work for an average of six weeks and one to five per cent will die.

In a study conducted at the Medical Service and Blood Bank of the Memorial Center and the Sloan-Kettering Institute for Cancer Research, New York City, doctors used a screening test based on increased activity of certain chemical compounds (known as SGO-T) in the donors. This activity appeared to be evidence of impending hepatitis.

The researchers found "a significantly higher incidence of viral hepatitis" among recipients of blood with abnormal SGO-T activity than those who received blood with a normal SGO-T level. They concluded that this test was "a more useful method for detecting silent carriers of hepatitis virus than other tests of liver function previously evaluated."

However, they said "unpredictable variables do not permit us on the basis of this study, to draw definite conclusions about the advisability of discarding bloods with abnormal SGO-T activity." They said they felt that their results did warrant further study to determine whether the method is reliable enough to be instituted as a standard screening measure in all blood banks.

Participating in the study were Nils U. Bang, M.D., Paul Ruegsegger, M.D., Allyn B. Ley, and John S. LaDue, M.D.

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

JANUARY 6, 1960

Discussed by MARDOQUEO I. SALOMON, M.D.

Anuria Three Weeks After Myocardial Infarction

Case History

FURMAN M. JONES, JR., M.D.: A forty-seven-year-old white male was admitted to Knickerbocker Hospital complaining of pain in the left portion of the chest over the precordium, which radiated to the neck and down the left arm. He had had several attacks of this pain over the preceding twenty-four hours. He denied having had similar chest pain previously, and he denied past or present exertional dyspnea, orthopnea, or paroxysmal nocturnal dyspnea. The symptoms on admission were not accompanied by nausea or vomiting, nor was there any back pain. He never had had symptoms referable to the urinary tract, such as dysuria, nocturia, urgency, or frequency. However, for the past three or four months he had noticed pain in both legs on walking, which was particularly accentuated while he was walking upstairs; occasionally, this pain would be located in the right hip. He denied excessive alcohol intake but was a heavy smoker. A fistula in ano had been drained surgically one year previously, and he had been treated for the "great pox" twenty years previously with arsenicals and heavy metals.

On admission his temperature was 99 F., pulse 104, respirations 20, and blood pressure 130/80. He was a well-developed, slightly overnourished white male in moderately acute distress. There was no pallor or cyanosis, but he was sweating profusely and was apprehensive. Examination of the head, eyes, ears, nose, and throat showed findings within normal limits. The neck veins were slightly distended, but the hepatojugular reflux was negative. Respirations were regular, and the lungs were clear. The heart was not enlarged to percussion, but the heart sounds were of poor quality. The aortic second sound equaled the pulmonic second sound. There were no murmurs. The abdomen was soft and obese; there were no palpable organs or masses. Peristalsis was normal in pitch and intensity. The rectal examination was unrevealing. There was no dependent edema in the legs, but the right femoral pulse was weak and the left femoral pulse was absent. The popliteal, dorsalis pedis, and posterior tibial pulses were absent in both legs. The extremities were cool and slightly mottled.

On admission his urine had a specific gravity of 1.026, a trace of albumin, 2 plus sugar, and a rare white blood cell and an occasional hyaline cast in the sediment. The hemoglobin was 15.5 Gm. per 100 ml. The white cell count was 14,250, with 74 per cent polymorphonuclear leukocytes, 24 per cent lymphocytes, and 2 per cent eosinophils. The sedimentation rate was 19 mm. per hour on admission and rose to 82 mm. per hour one week later. A VDRL test result was positive, and the Mazzini one was 2 plus. The serum transaminase was 158 units. The fasting blood sugar was 164 mg. per 100 ml., nonprotein nitrogen 45 mg. per 100 ml., and cholesterol 320 mg. per 100 ml. with 130 mg. esterified. Serum electrolytes were within normal limits. The urine contained Aerobacter aerogenes on culture.

The electrocardiogram on admission was interpreted as consistent with a posterior wall infarction of undeterminable age and a more recent anteroseptal infarction. The electrocardiogram was repeated three days later and was interpreted as showing an acute anteroseptal infarct. A roentgenogram of the chest showed borderline cardiac enlargement and bilateral pulmonary congestive changes.

On admission morphine, bed rest, and anticoagulants were prescribed. On the second hospital day his temperature rose to 101 F. and bilateral rales were heard. At this time a gallop rhythm developed. He was given oxygen, aminophylline, and a combination of the sodium salt of meralluride and theophylline (Mercuhydrin) with good results. For the next three weeks he responded well, with clinical and laboratory evidence of healing. His diabetes was well controlled by diet alone. On the twenty-first hospital day he became constipated and complained of generalized abdominal pain. Only after repeated oil and soapsud enemas over a period of three days was the constipation relieved. The abdominal pain subsided, and there was no distention. However, on the twenty-fourth day of hospitalization he abruptly became anuric, and the anuria persisted. Two days later the nonprotein nitrogen had risen to 129 mg. per 100 ml., creatinine 12 mg. per 100 ml., calcium 8.4 mg. per 100 ml., and phosphorus 6.9 mg. per 100 ml. The serum sodium was 121 mEq. per L., potassium 4.6 mEq. per L., chlorides 85.4 mEq. per L., and carbon dioxide 13 millimols.

A flat film of the abdomen showed a small amount of gas in nondistended loops of the small intestine. There were several small calcified phleboliths scattered in the pelvis but no roentgenographic evidence of intestinal obstruction or urinary calculi. On the twenty-sixth hospital day a cystoscopy was performed. The bladder was normal. A number 4 French ureteral catheter could not be passed more than 2 cm. on the left side. On the right side the catheter passed easily to 15 cm., and a hydronephrotic drip of bloody urine was obtained. The catheters were left in place, and approximately 500 ml. of bloody urine was obtained during the night. A retrograde pyelogram showed good filling of the right pelvis and calyces. Except for slight dilatation of the midportion of the right ureter, no unusual urographic findings were present on the right side.

About two to three hours after cystoscopy and pyelography the patient became dyspneic and developed tachycardia and wheezing. Despite therapy with oxygen, aminophylline, Demerol, and the meralluride combination he failed to improve, and he died the following morning.

Discussion

MARDOQUEO I. SALOMON, M.D.: Before discussing the case, there are two items of information which I should like to have, if they are available. Do we know what the patient's occupation was?

MICHAEL S. BRUNO, M.D.: He was an actor, between engagements at the time of admission.

DR. SALOMON: Was he on anticoagulant therapy at the time of the terminal episode?

DR. BRUNO: Anticoagulants were discontinued on the third day after admission because the patient developed bleeding from the oral cavity.

Dr. Salomon: We are confronted with a case of a forty-seven-year-old white male admitted to the hospital with what appears to be a "classic" case of coronary occlusion. Except for an episode of lues twenty years previously, he had enjoyed good health. He was discovered to have a rather mild case of diabetes mellitus (date of onset unknown) which was easily managed by diet. While in the hospital he seemed to be doing fairly well and "pulling through" on routine therapy for his cardiac catastrophe. However, in the fourth week following admission, he developed diffuse abdominal pain and obstipation. This trouble lasted for three days and disappeared under the impact of, or perhaps in spite of, soapsud enemas. Unfortunately, the respite was brief, for a day or two later he suddenly developed stubborn anuria with rapidly progressing renal failure. Cystoscopy revealed an obstructed left ureter and a surmountable obstacle in the right ureter on catheterization. A retrograde pyelogram was performed. A few hours later the patient deteriorated rapidly, and in spite of energetic therapy he died the following morning.

If we try to concatenate all the clinical and laboratory data into one or perhaps two nosographic entities and one clinical picture, we may say that the patient's illness on admission was a bona fide myocardial infarction due to coronary artery disease. The pains in the chest and left arm, the electrocardiographic evidence, and the evolution of the process make this diagnosis all but imperative. I would add that the discovery of the diabetes strengthens my belief that this was an example of an atheromatous disease. Furthermore, the fact that the abdominal aorta appeared calcified and enlarged on x-ray examination, the history of intermittent claudication for several months before admission, and the absent pulses in one leg and greatly diminished ones in the other all point to functional insufficiency of the terminal aorta—a Leriche syndrome, if you will—and further document the presence of arteriosclerotic heart disease. Does anyone know if he had difficulty in achieving or maintaining an erection?

Dr. Bruno: He was interrogated on this point and denied any loss of libido or difficulties with erection.

Dr. Salomon: Well, actors are notoriously reluctant to admit sexual inadequacy. However, we do not need to postulate any other form of cardiac disease even though esoteric and exotic etiologies have become quite fashionable of late in clinicopathologic conferences. In the course of his hospitalization our patient developed an episode of cardiac defeat, as documented by dyspnea, rales, and gallop rhythm. I shall not ask for elaboration of the description of the chest x-ray film, for it showed only borderline cardiac enlargement and some congestive changes in the lung fields, a picture to be expected under the circumstances.

Let us take one further step in deciphering the puzzle. Specifically, I refer to the right kidney. It was my impression on reviewing the urogram with Dr. Joseph M. Moynahan, who could not be present today, that the tiny shadow in the right ureter represents a nonopaque stone (Fig. 1). If this is so, and Dr. Moynahan seemed amenable to the suggestion, we easily could postulate that this stone was the obstacle that the urologist encountered—but surmounted—in the course of the catheterization. It also could account for the hydronephrosis on that side and for the urinary tract infection indicated by the presence of Aerobacter aerogenes in the urine. Although the contemporary tendency perhaps is to sway from the classic concept of the importance of diabetes in the etiologic background of pyelonephritis,[1,2] I still believe that the patient was afflicted with this malady too.

Before I start to discuss the cause of the obstruction on the left side of the urinary apparatus, let me call your attention to the fact that the flat film of the abdomen shows the presence of a normally placed left

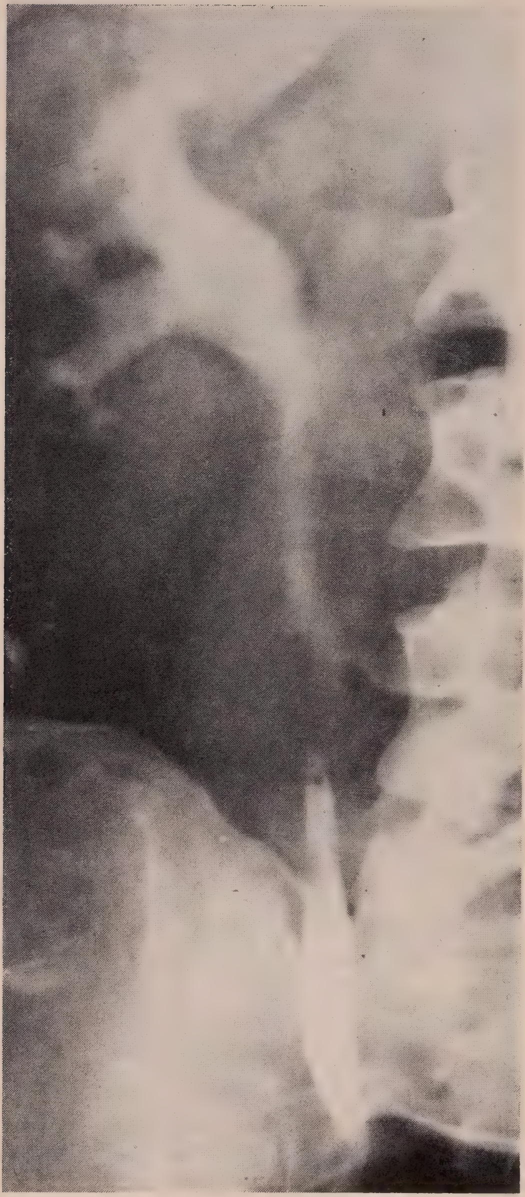

FIG. 1. Excretory urogram showing moderate dilatation of right renal pelvis and ureter. Ureteral filling is discontinuous and there is a small negative shadow at upper portion of filled, dilated lower segment just opposite lower margin of fourth lumbar vertebra.

kidney which is apparently normal in size and shape. There is no aplasia. Hence, we must look for the cause of obstruction either inside or outside the ureter.

Quite certainly, lithiasis is the most common cause of ureteral obstruction. And this man probably had a stone in his right ureter. But in the absence of a history of hematuria, pollakiuria, or dysuria—either prior to the terminal episode or associated with it—I am not too comfortable with this diagnosis as the major cause for his nonfunctioning left kidney. There is nothing to suggest renal colic. How about a ureteral malignancy? We do know, and Riches[3] recently has re-emphasized the point, that pain is a prominent symptom in the squamous variety of ureteral carcinoma. On the other hand, papillary carcinoma of the ureter, which is much more frequent, usually manifests itself by hematuria.[4] How could this be missed for four weeks in the hospital? Therefore, I shall—like Sosman[5] in a similar case—discard the diagnosis.

Now, if we turn to extrinsic lesions obstructing the ureter, we can more or less easily exclude malignancies. There is no clinical or roentgenographic evidence of a retroperitoneal mass such as a lymphoma. The absence of peripheral lymphadenopathy and of splenomegaly and the normal hemogram make Hodgkin's disease or related lesions unlikely. Sarcoidosis or even tuberculosis seems an extremely remote possibility in view of the entire clinical and laboratory picture. The same is true for diverticulitis. An aberrant artery hardly could be expected to cause obstruction at such a low level as the intravesical portion of the ureter.

Recently a syndrome, or group of syndromes, has crept into the medical literature. I refer to three diseases, which perhaps are three subspecies of the same nosographic entity: (1) Gerota's fasciitis, (2) periureteral fibrosis, and (3) massive periaortoperiureteral fibrosis. Most likely they are three points on the continuum of a broad biologic entity, the fibromatoses. Timely reviews and case reports, by Kickham and Colpoys[6] and Hutch, Atkinson, and Loquvam,[7] recently have appeared. Suffice it to say that because no such case was observed (or at least described) before the antibiotic era, the idea has occurred to some writers that it represents an infectious process mollified or modified by our newly acquired antibacterial armamentarium. In this connection, our patient's operation for fistula in ano one year previously can be viewed with more than passing interest. A rheumatic or luetic etiology has been advocated by some. Again, the latter possibility might evoke a mental reservation. Be that as it may, a periureteral desmoplastic process could account for the baffling picture on the left side and the strange segmental dilatation of the lower part of the right ureter. As for an extension of this hypothesis to account for the coronary artery disease, as in the case reported by Reed and Stinely,[8] I do not believe that we have sufficient grounds for it.

Until a few moments ago, when I was informed that anticoagulants were stopped on the third hospital day, I thought that I might advocate a retroperitoneal hematoma—iatrogenic in this case—to account for the obstruction. However, the right ureter is not displaced and the left psoas shadow is distinct. Although I have never seen such a case, nor has Wright,[9] I do not think that a leaking abdominal aorta could account for this picture. So, I am still without an explanation for the obstruction, unless it is due to a stone or to periureteral fibrosis.

How can we explain the abdominal pains and obstipation that preceded the development of the anuria? Were they related to it? A very likely explanation, particularly in a patient with a myocardial infarct, is embolic obstruction of some portion of the mesenteric arterial circulation, possibly from a mural thrombus. Contrary to a widely held belief, mesenteric embolization or thrombosis need not lead to intestinal infarction, for there is abundant collateral circulation in the mesenteric tree. Starzl and Trippel[10] indicate that anything less than massive mesenteric occlusion may lead to lesser degrees of intestinal symptomatology. The symptoms need not be diarrhea, as Starzl and Trippel[10] and Weingarten[11] point out. Parenthetically, even anticoagulants are no guarantee against thrombosis in such cases, as Schlachman[12] proves so clearly. On the other hand, any type of acute urologic disorder can manifest itself by abdominal pains. The case of a prominent urologist who almost misdiagnosed his own renal colic as an intra-abdominal disease is cited by Goodwin[13] as evidence of the masquerading abilities of nephrolithiasis.

Nevertheless, I still am not sure that the abdominal episode and the anuria are etiologically related. Had I not been told a few minutes ago about the discontinuance of anticoagulants, I would now be talking about a subcapsular hemorrhage in the right kidney. But things being as they are, I must look for another culprit to explain the anuria. The most plausible explanation that I can conjure is embolization to or thrombosis in the renal artery occurring three weeks after a coronary occlusion in the presence of a healing myocardial infarct and a severely atheromatous aorta. This would explain the rapid renal failure. The hyperphosphatemia probably triggered his relative hypocalcemia through a parathyroid mechanism. I would specify arterial occlusion rather than venous thrombosis not only because of the patient's arteriosclerosis but also because arterial occlusion might well be presaged by abdominal pain and, as De Wardener[14] states, may be accompanied by initial hematuria; venous thrombosis, on the other hand, would have engendered a nephrosis. If we postulate that the blood found after the stone was bypassed was due to thrombosis, the ensuing renal failure would fit easily into the picture. I shall refrain from an endless discussion of other, less plausible diagnoses that come to mind. I think that what I have said so far could reasonably account for what happened to this patient; to go beyond this would be tantamount to idle speculation.

To recapitulate, I expect the pathologist to tell us that he found: (1) coronary arteriosclerosis with myocardial infarction, (2) severe atheromatous disease of the abdominal aorta, the Leriche syndrome being its physiopathologic counterpart, (3) diabetes mellitus with the usually meager anatomic evidence, (4) hydronephrosis and pyelonephritis of the right kidney, probably with thrombosis of the right renal artery and possibly with a stone in the right ureter, (5) possibly a thrombus in the left renal artery but the old ghost of reflex anuria cannot really be excluded, and (6) periureteral fibrosis, a remote possibility. The anuria developed too suddenly. I do not think that the pathologist will find morphologic evidence of lues; I believe that the patient's episodic invasion by the pale treponema was only an anamnestic feature and a serologic reminiscence.

Benjamin E. Krentz, M.D.: Another possibility in a diabetic person with a urinary tract infection and severe arteriosclerotic disease is bilateral renal papillary necrosis, or necrotizing papillitis. Admittedly, there is no antecedent lower urinary tract obstruction such as an enlarged prostate, but the lesion can develop without obstruction. If this is what the patient had, the ureteral obstruction would be necrotic sequestra from the renal pyramids.

Dr. Salomon: I considered this possibility but excluded it because the diabetes was so mild and easily controlled and the patient did not appear acutely ill prior to the onset of his anuria. Although nobody can profess to have wide experience at first hand with necrotizing papillitis, it is my impression that in the reported cases the patients usually are febrile and toxic with their diabetes out of control either as a result of their infection or as the background for an acute exacerbation of a chronic urinary infection and that their anuria develops later as a preterminal event.

Eric Andreae, M.D.: Dissecting aneurysms of the aorta sometimes can cause anuria if the dissection occludes the renal arteries. Such a lesion would produce, in effect, a clinical and chemical picture equivalent to obstruction of the renal arteries by intravascular thrombi or emboli.

Dr. Bruno: The absence of the usual thoracic symptoms and other clinical and radiologic stigmas would make an aortic dissection rather farfetched.

Dr. Salomon: I am very anxious to hear what Dr. Ober says was the cause of death.

Diagnoses

Clinical.—(*1*) *Myocardial infarction, healing, with mural thrombus;* (*2*) *left renal artery thrombosis(?) with reflex anuria;* (*3*) (*diabetes mellitus*).

Dr. Salomon.—(*1*) *Coronary arteriosclerosis with myocardial infarction;* (*2*) *aortic arteriosclerosis, severe;* (*3*) *hydronephrosis and pyelonephritis, right kidney, with right ureteral calculus* (*?*)*;* (*4*) *thrombosis, left renal artery* (*?*)*;* (*5*) (*diabetes mellitus*).

Anatomic.—(*1*) *Myocardial infarction, apical, with pericardial adhesion and mural thrombosis, healing;* (*2*) *coronary arteriosclerosis with thrombotic occlusion of left descending artery;* (*3*) *cardiac hypertrophy;* (*4*) *pulmonary congestion and edema, severe;* (*5*) *acute suppurative and hemorrhagic pyelitis and ureteritis, bilateral, with right pyonephrosis;* (*6*) *ureteral calculi, bilateral* (*cystine*)*;* (*7*) *thrombotic occlusion of right external iliac artery, organized;* (*8*) (*cystinuria*)*;* (*9*) (*diabetes mellitus*).

Pathologic Report

William B. Ober, M.D.: Before I discuss the autopsy findings, I would like to ask Dr. Andronaco to tell us what he found on urologic examination.

Joseph M. Andronaco, M.D.: I was very pleased to be asked by the medical service to see this patient with anuria because all too frequently the urologic aspects of urinary suppression are overlooked in favor of some more physiologically complex "medical" type of kidney disease. The patient was gravely ill and very apprehensive, not the most suitable candidate for cystoscopy. However, the likelihood of an obstructive uropathy was

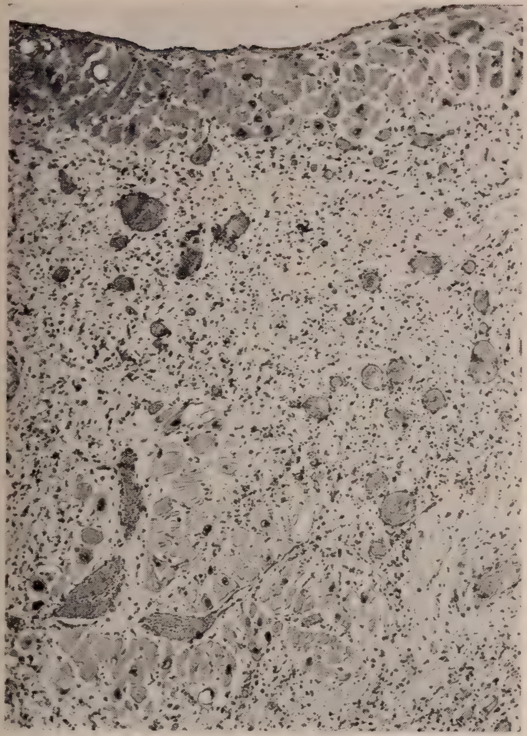

FIG. 2. Microscopic view of portion of left ventricular myocardium showing area of infarct from which most of the necrotic muscle has been cleared, leaving young granulation tissue and light cellular infiltrate between ectatic thin-walled blood vessels. A layer of myocardium just below endocardial surface is spared.

so great that I felt that instrumental examination of the lower urinary tract was mandatory. A number 21 Brown-Buerger cystoscope was inserted into the bladder with ease. There was about 10 cc. of dirty concentrated urine. The bladder mucosa was edematous, but there was no intrinsic vesical lesion. The ureteral orifices were normal in size, shape, and position. There was no urinary efflux from either orifice. On the right side a number 5 French ureteral catheter was inserted for 15 cm., when it encountered an obstruction. Further manipulation enabled the catheter to be passed another centimeter. There was an immediate flow of bloody urine characteristic of a hydronephrotic drip. Three ounces of urine were immediately obtained. On the left side the ureteral catheter could not be passed beyond 2 cm. despite manipulation.

Because of the patient's precarious condition and the fact that we had achieved our objective of promoting urinary drainage sufficiently to relieve the rising azotemia, I felt that definitive diagnostic procedures would have to be deferred. It was evident from this examination that the anuria was due to an obstructive uropathy, the cause of which could not be determined. I considered the possibility of bilateral nonopaque ureteral calculi, but this is an extremely uncommon condition. Even when it does occur, it almost never obstructs both ureters completely at the same time; there usually is enough space around the smaller calculus to permit some drainage.

DR. OBER: I suppose that every pathologist likes to try his hand at clinical diagnosis before starting the autopsy. I will be frank and confess that I was fully apprised of this patient's course even before he expired. On a statistical basis I was willing to go along with the idea of embolization to the renal arteries from a mural thrombus underlying a myocardial infarction although I hoped it would turn out to be necrotizing papillitis, a lesion which confers a singular virtue on a case because of its rarity and the complex variables which enter into its pathogenesis. What we found at autopsy was unexpected.

To be sure, there was a large apical myocardial infarction. It was a "through-and-through" infarct with an adherent pericardium over the anterior surface and a mural thrombus intimately adherent to the trabeculae carnae of the endocardial surface. Microscopically it was consistent with an age of three weeks; most of the necrotic muscle fibers had cleared and much of the cellular exudate had vanished, leaving only granulation tissue and a thin, spared subendocardial layer (Fig. 2). The degree of coronary arteriosclerosis was severe in all three major arteries, and there was an organizing, occluding thrombus in the left descending artery. At one margin of the

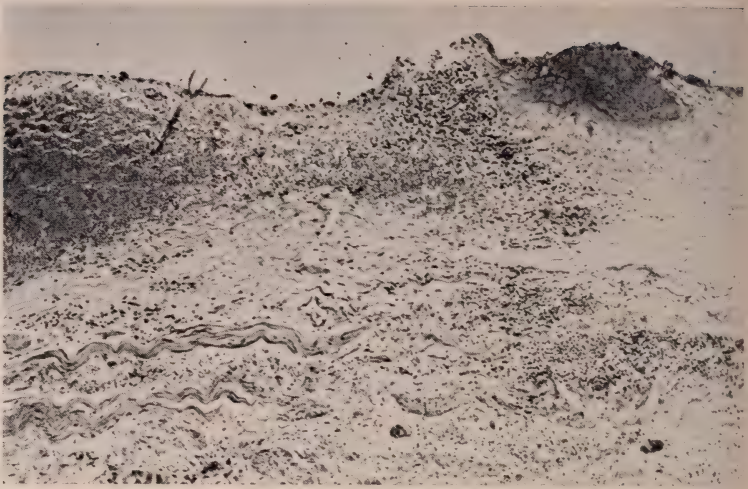

FIG. 3. Microscopic view of portion of right ureter showing denudation of surface epithelium, intense inflammation of wall, focal hemorrhages, and edema.

infarct there was a zone of acute infarction consistent in microscopic appearance with an age of one to three days. The aorta showed a severe degree of ulcerative atheromatous disease with much calcification, and the terminal segment was narrowed but not occluded. The left external iliac artery was occluded completely by an ancient organized thrombus, and the remaining iliac arteries were severely sclerotic. This accounts for the signs and symptoms relating to the lower extremities. I found no gross or microscopic evidence of lues, as Dr. Salomon predicted.

The caprices of arteriosclerosis associated with diabetes mellitus are such that both renal arteries were singularly free of any sign of atheromatous disease, and there was only a rare, trivial nephrosclerotic scar at the outer margin of the renal parenchyma. In contrast, the celiac axis and superior and inferior mesenteric arterial trees showed moderate to severe arteriosclerosis with focal calcification. There were no thrombi or emboli in the renal arteries.

The lungs showed congestion and edema but no pneumonia, infarct, or embolic abscesses. Apart from the lower genitourinary tract, the remainder of the organs showed no significant changes.

The kidneys had a combined weight of 475 Gm., and their capsules stripped with ease. There was no evidence of pyelonephritis in multiple sections of renal parenchyma. The right renal pelvis was slightly distended, and both renal pelves and the upper portions of both ureters were lined by a shaggy, dirty gray-green exudate in which pinpoint evidences of hemorrhage were seen. The peripelvic and periureteral fat

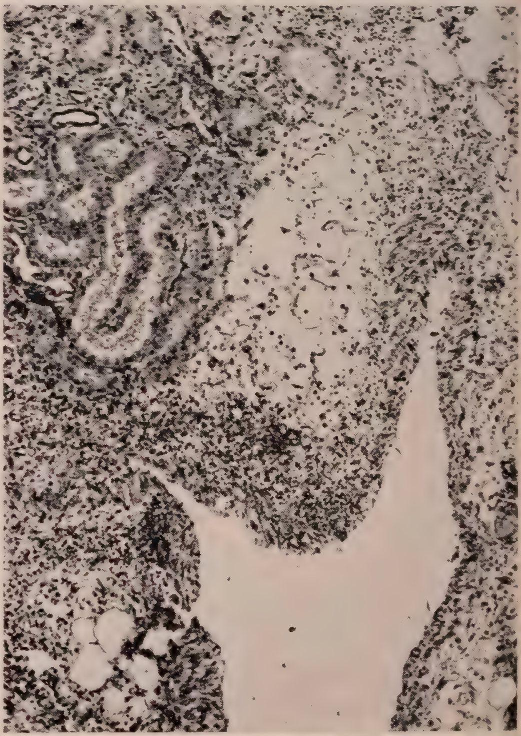

FIG. 4. Microscopic view of tip of renal pyramid projecting into a minor calyx showing edema and inflammatory exudate.

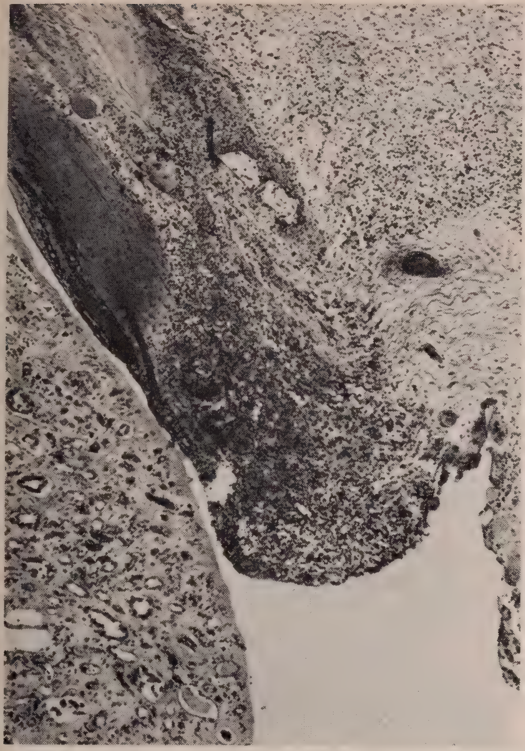

FIG. 5. Microscopic view of tip of renal pyramid projecting into a minor calyx showing suppuration and hemorrhage with necrosis. Adjacent medullary tissue is not necrotic but inflammatory cells are found within and between tubules.

was indurated. Microscopic examination showed a severe degree of acute suppurative ureteropyelitis (Figs. 3, 4, and 5). I have no idea why the renal parenchyma escaped infection.

The left ureter was occluded completely by a 5 mm. calculus located 2 cm. from the bladder, and the right ureter was partly occluded by a 2 mm. calculus 15 cm. from the bladder. In the left ureter there was a firm, slightly adherent blood clot between the calculus and the bladder; this would explain the resistance to catheterization. In the right ureter there was a moderate amount of sanguinopurulent material both above and below the calculus. Both Dr. Andronaco and I feel that had the patient survived a few days longer the 2 mm. stone in the right ureter would have passed. On finding these bilateral ureteral calculi I was much in sympathy with the house staff and today am much in sympathy with Dr. Salomon. I find it difficult to diagnose a single ureteral calculus without some story of renal colic and some degree of hematuria; I think that to predict bilateral calculi without the presence of pain and blood would smack of necromancy.

The two ureteral calculi were soft, tan, and rather friable. Chemical analysis showed them to be composed of cystine; this explains why they were not radiopaque as 95 per cent of urinary calculi are. Cystine calculi are among the rarest types of urinary concretions, about 1 or 2 per cent of all types. They form in the presence of cystinuria, an inborn error of metabolism which has a strong familial tendency. The average person excretes 30 to 40 mg. of cystine daily, but in cystinuria the excretion is increased to levels of 400 to 1,000 mg. The metabolic defect involves improper metabolism of exogenous (dietary) methionine. If one feeds methionine to a cystinuric individual, the urinary excretion of cystine rises sharply, whereas if one feeds such a person cystine, it is properly metabolized to inorganic compounds including sulfates. Although cystinuria may lead to fatal results in childhood by deposition of chalky deposits in various organs including the kidneys, it rarely leads to problems other than urinary calculi in adults. In fact, in many patients the metabolic defect is entirely asymptomatic.

We are left to speculate why this patient elected to develop his cystine calculi at the singularly unpropitious time of his convalescence from a heart attack. He seemed to be nicely along the road to recovery until he developed anuria. Did the bed rest, enforced inactivity, and hospital diet assist in permitting calculi to form? Or are we to implicate the mild urinary tract infection which was present but asymptomatic when he was admitted? Did the presence of diabetes have any influence on the disorder of amino acid metabolism? I don't know enough about cystinuria to answer these simple questions. If I did, I might then be in a position to ask more penetrating ones.

I am glad that Dr. Salomon said that he was interested in the "cause of death." This phrase probably causes the pathologist more insecurity than any other. Although we all have a set of pat verbal formulas which come in handy for filling out death certificates and insurance forms, we really do not know why people die. Did this patient die of his uremia? Did he die of heart failure? Surely there was enough pulmonary edema to account for an anoxic death, but his mode of exitus does not fit this picture.

I am afraid that I can tell only what I saw, not what happened.

Dr. Salomon: Yes, it is hard to be sure of the "cause of death." However, I envisage two possibilities, possibly interrelated. First I suspect a biochemical death because of the renal insufficiency with the disproportion of cations and anions, possibly in line with Welt's[15] concept of an increase in the undetermined acids. Second, in a miopragic myocardium one might speculate on some form of heart block or ventricular fibrillation, albeit no electrocardiograms were taken as the patient expired.

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Americans Are Growing Bigger All the Time

Higher medical and nutritional standards mean taller Americans, and growth, nowadays, is not only being measured generation-to-generation but, actually, from one brother to another. Army recruits back in 1943, for instance, averaged 5 feet and 8.3 inches. By 1946, the average newly-enlisted G.I. stood three tenths of an inch higher. By the closing days of the Korean War, some groups of recruits were topping an average of 5 feet 10 inches.—*Nutrition Foundation*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Postoperative Reflex Hypotension

In previous Clinical Anesthesia Conferences of this series* it was pointed out that arterial hypotension occurring during surgical anesthesia may be due to numerous causes and that it is very important to be able to detect the etiologic factor to treat the various types of hypotension effectively. Arterial hypotension may develop in the recovery room in the immediate postoperative period. In these circumstances it is important also to determine the cause of such a circulatory disturbance to treat it satisfactorily. The following case reports illustrate that in some instances postoperative arterial hypotension may be attributed to some reflex mechanism.

Case Reports

Case 1.—A seventy-five-year-old man had an enlarged thyroid gland for which a thyroidectomy was proposed. Preoperative examination disclosed a hypertension of 190 mm. Hg systolic and 60 diastolic. He was rather plethoric. The hemoglobin content of his blood was 17.1 Gm. per 100 ml., and his white cell count was 6,220 per cu. mm. Urinalysis findings were negative.

For preanesthetic medication he was given Demerol hydrochloride 50 mg. and atropine sulfate 0.4 mg. by intramuscular injection at 10:00 A.M. When he arrived in the operating room an hour later the sedation was considered satisfactory. His arterial blood pressure was 180/80, and his pulse rate was 72 per minute. Anesthesia was induced by the intravenous injection of 100 mg. of sodium thiopental followed by the administration of cyclopropane and oxygen in a closed carbon dioxide absorption circle system. An airway was maintained by the introduction of an endotracheal tube. The operation, which

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* Numbers forty-four (vol. 58) to fifty-eight (vol. 59).

lasted ninety minutes, was completely uneventful, with the patient's arterial blood pressure and pulse rate manifesting no significant changes.

When the patient was brought to the recovery room, at 12:30 P.M., his arterial blood pressure was 170/90 and his pulse rate was 90 per minute. His condition remained relatively good for the next half hour. At that time his blood pressure had diminished somewhat to 140/70 and his pulse rate to 70 per minute. Thirty minutes later his blood pressure was the same as at the last reading but his pulse rate had diminished further to 58 per minute. A half hour later his pulse rate had diminished further to 50 per minute and his arterial pressure was 100/60.

Since his normal blood pressure was 190/60, it was decided to attempt to raise his pressure by the intramuscular injection of 50 mg. of ephedrine sulfate. However, after ten minutes there was no response. A dose of 0.3 mg. of atropine sulfate was then injected intravenously, and within two minutes the patient's blood pressure rose to 156/90 and his pulse rate increased to 96 per minute. These levels were maintained for the next twenty minutes, but at this time it was noticed that cyanosis of his skin began to develop and that he began to have difficulty in breathing.

The patient's dressing had been examined frequently and did not show any sign of bleeding. However, because of the increasing dyspnea and cyanosis, the patient's dressing was removed completely. A large swelling in the neck was observed. The patient was returned immediately to the operating room. Incision of the wound revealed a large hematoma, which was evacuated. This was followed by a return of the blood pressure to 170/80 and of the pulse rate to 76 per minute. Obviously the bleeding had collected over the area of the carotid sinus to cause a carotid sinus reflex.

CASE 2.—A forty-six-year-old man had a large ventral hernia which was repaired by pushing the contents of the hernia back into the abdomen After closure of the skin incision, a tight abdominal binder was applied to help maintain this repair. The patient's physical condition was essentially normal, and his vital signs had remained relatively unchanged throughout the two-hour surgical procedure, which had been accomplished with general anesthesia consisting of induction with sodium thiopental and maintenance with cyclopropane and oxygen in a closed to-and-fro carbon dioxide absorption system.

When the patient arrived in the recovery room, at 12:15 P.M., his arterial blood pressure was 110 mm. Hg systolic and 66 diastolic, pulse rate 72 per minute, and respiratory rate 24 per minute. The patient began to regain consciousness in about fifteen minutes, at which time he became restless. His pulse rate at this time was 68 per minute, but his arterial blood pressure was now 60/50. This persisted during the next fifteen minutes, and the patient complained of severe abdominal discomfort.

The tight abdominal binder was loosened, with immediate relief of discomfort. One minute later the patient's arterial blood pressure returned to 110/70. The wound dressing was maintained by adhesive tape without causing abdominal pressure. The arterial blood pressure was sustained, and convalescence was uneventful.

CASE 3.—A sixty-two-year-old man was brought to the recovery room after having undergone a hemorrhoidectomy under spinal analgesia. His condition appeared good with his vital signs significantly unchanged from his preoperative state. His arterial blood pressure was 152 mm. Hg systolic and 90 diastolic, pulse rate 70 per minute, and respiratory rate 22 per minute. These levels were maintained during the next half hour, and the patient appeared to be comfortable during this time.

As the spinal analgesia wore off, pain became perceptible in the operative area. The patient became pale. His pulse was still 72 per minute, but his arterial blood pressure had diminished to 70/60. The attending surgeon was notified, and he ordered an immediate blood transfusion of 500 cc. Blood was not available immediately since no one had been prepared for an emergency in this relatively minor surgical procedure. Pain and discomfort increased markedly so that 75 mg. of meperidine hydrochloride were injected intramuscularly. As pain subsided about ten minutes later, the patient's color seemed to improve while his blood pressure rose to 120/80. Five minutes later the pressure had risen further to 146/84 while the pulse still showed no change in rate. The blood transfusion was cancelled since it was no longer required.

Comment

In these 3 cases there was development of arterial hypotension which was reflex in nature in the immediate postoperative period.

The first patient manifested an obvious carotid sinus reflex caused by a hematoma over the right carotid sinus area. This case illustrates that administration of a vasoconstrictor drug in such a situation may not result in the usual hypertensive response. Even the administration of 1,500 cc. of blood, as was done in another case,[1] would not cause a return in blood pressure in such a condition. The intravenous administration of atropine sulfate resulted in some improvement, but the improvement would not have persisted. Evacuation of the hematoma is the desired treatment in such an eventuality, and it proved effective.

The second patient seemed to show a celiac plexus reflex caused by application of a tight abdominal binder after reduction of a large ventral hernia. Release of this abdominal pressure resulted in a return of the patient's arterial blood pressure to normal. It is important to point out that the pulse rate usually remains unchanged in such a reflex arterial hypotension. Had the arterial hypotension been associated with tachycardia, another cause should have been investigated, either unrecognized hemorrhage or compression of a large abdominal vessel like the vena cava.

In the third case the arterial hypotension that became manifest with onset of pain in the rectal area following the wearing off of spinal analgesia after a hemorrhoidectomy was attributed to a rectocardiac reflex. In this reflex the afferent portion of the reflex is mediated by the pelvic nerve and the efferent portion of the reflex travels by way of the cardiac vagus.[2] Here again the arterial hypotension was associated with a relatively normal pulse rate. As soon as the sensory portion of the reflex was alleviated by the administration of a narcotic drug, the patient's arterial blood pressure returned to normal.

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(*Number eighty-seven in a series of Clinical Anesthesia Conferences*)

A Retrospective Study of Lung Cancer in Women

The question of whether or not sex differences in lung cancer risk might be reconciled if smoking history were taken into account is explored by these writers. In a controlled retrospective study of 158 women with cancer of the lung their results suggest that mortality from this cause among females approximately parallels results of similar studies among men, and that adjustment for cigaret smoking history brings the sex ratio for lung cancer mortality into close conformity with that for other causes. In this series the largest and only statistically significant effects were associated with smoking history. The scale of relative risks by intensity of cigaret use was greater for epidermoid and undifferentiated carcinomas than for adenocarcinomas. For the former types, all the relative risks, with respect to smoking history and rate of cigaret use, differed significantly from unity at the 0.1 per cent level. These findings largely agree with those of three other similar studies.—*J. Nat Cancer Inst., November, 1958, William Haenszel, Michael B. Shimkin, and Nathan Mantel.*

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

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HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Poisonings Associated with Bizarre Behavior

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Trichlorethylene (in plastic cement)	15 years	Male

The following inquiry was received from the psychiatric division of a city hospital:

> Recently we had an adolescent patient who had formed the habit of sniffing a cloth which had been saturated with polystyrene plastic cement ("airplane glue"). The effects, which are of a transient nature, consist of marked psychomotor excitement, destructive behavior, and screaming followed by profound sleep with subsequent amnesia for the events occurring while he was under the influence of the cement. We have had no previous experience with this type of behavior, and therefore it is difficult for us to determine whether this represents a purely psychogenic effect or whether there is some toxic substance which might be responsible.
>
> We should be very interested to learn what substances could be absorbed through inhalation of this substance, what their physiologic effects might be, and whether you have any reports of similar incidents.

The symptomatology in this case followed the general pattern commonly observed in the administration of anesthetics. Both from our experience and from the literature it would appear that the solvent constituent was trichlorethylene. The sniffing of this chlorinated hydrocarbon is not an uncommon practice among institutionalized individuals and adolescents. Some high school students resort to this practice after experimenting with it out of curiosity.

Inquiries relating to sniffing of plastic cements have been received from the Youth Board and from social workers of the Board of Education. The Chief Probation Officer of San Jose, California, in an inquiry to the New York City Youth Board, related that the practice was rather widespread in his area and that when this product is taken orally or inhaled it produces euphoria and inebriation similar to the same states produced by alcohol. The authorities in California were particularly concerned about possible bone marrow and liver damage resulting from chronic poisoning. In the cases reported to this Center, chiefly in children, no bone marrow or liver damage was observed and all patients recovered completely.

Trichlorethylene comes into the home as an ingredient in spot removers and as a component of children's hobby kits. We believe definitely that trichlorethylene should be identified specifically as a hazardous ingredient on the label. The possession of collapsible cement tubes by adolescents should arouse suspicion.

Incident 2

Toxic Agent	*Age*	*Sex*
Effervescent Salt Combination	63 years	Male

The patient was taking excessive amounts of an effervescent combination of sedative salts for the relief of headaches for about eight months. Three days prior to admission to The New York Hospital he began to manifest bizarre behavior, consisting chiefly of incoherent speech and visual hallucinations. Following admission he was treated with sodium chloride 15 Gm. daily for four days and, since the bromide level remained elevated, with saline administered intravenously for two days. The bromide level on admission was 250 mg. per 100 ml. and then gradually fell; by three weeks following admission it had dropped to 50 mg. per 100 ml. The patient's behavior also improved, and he was discharged twenty-one days after admission.

This effervescent salt preparation still is commonly dispensed over the counter and widely used by patients as a self-medication. It often masks symptoms, thereby obscuring the diagnosis, and creates psychogenic problems. Even after many years of common usage, a new look at some of the over-the-counter medications is indicated.

Incident 3

Toxic Agent	*Age*	*Sex*
Chlorpromazine Hydrochloride	31 years	Female

The patient, who was a sporadic alcoholic and attended Alcoholics Anonymous, was given a supply of these tablets by a lay male member. In a suicidal attempt she ingested 29 tablets. A physician was called, and he lavaged her stomach within ten minutes after ingestion. The only symptoms were drowsiness and dilation of the pupils; the blood pressure did not drop below 95/65. The patient was transferred to a hospital and was discharged symptom-free in three days.

Our reports indicate that massive overdosages with the phenothiazines are far less serious than with the barbiturates.

Incident 4

Toxic Agent	*Age*	*Sex*
Electroplating Solution	35 years	Male

The assistance of this Center was requested by a local hospital in a poisoning incident involving the ingestion of an electroplating solution. A friend of the victim had been found dead from the ingestion of this product (composition unknown at the time of admission) and antidotal information was needed.

The two victims were addicted to wine, and prior to this incident had indulged heavily in wine drinking. While passing a trash container at the door of an industrial plant, they noticed a gallon jug containing a pink fluid which, in their inebriated condition, they mistakenly concluded was wine. An unknown quantity was consumed by them in their apartment. When the ambulance was called, one of the pair already was dead. The survivor was taken to the hospital, and the most important findings on admission were persistent vomiting and shock.

Cyanide was suspected in this case because it frequently is used in the electroplating industry, but the symptoms were not consistent with cyanide poisoning. Since this incident occurred on a weekend, it was not until the following Monday that the composition of the product was ascertained. It turned out to be a solution of cobalt and cadmium. Cadmium in as low as 10 parts per million in food utensils which have been plated erroneously with it is sufficient to cause violent vomiting from food poisoning. Organic food acids such as orange juice are sufficiently strong to dissolve enough of the plating material to cause food poisoning.

The fatality in this case obviously was due to the ingestion of massive amounts of two salts. The survivor was discharged as improved after seven days of hospitalization and supportive therapy. This incident again indicates that industrial plants should empty containers prior to discarding them.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Trolnitrate Phosphate	4 years	2 Males 1 Female

This incident was reported from New Jersey. While in the post office the 3 children obtained from the waste basket sample tablets which the admitting hospital reports had been thrown away by a physician.

The product was trolnitrate phosphate, a coronary vasodilator. The children ingested a total of four 10-mg. tablets. They were taken to a hospital emergency room, where their stomachs were lavaged with tap water. Since the children were symptom-free, they were not hospitalized.

Samples from pharmaceutical houses frequently are sent to physicians. When the mailman on the first attempt does not find anyone to receive the package, a notice is left to claim it at the post office. Not wanting the samples in the first place, the physician in this case instead of discarding them in the office trash basket, as frequently happens, presumably used on-the-spot federal facilities.

TABLE I.—POISONINGS ABOUT WHICH INFORMATION WAS REQUESTED OVER A RECENT WEEKEND*

Product Ingested†	Patient	
	Age**	Sex
Warfarin sodium	2	F
Beechwood liquid detergent	1	?
Blue ink	$2\frac{1}{2}$	M
Lionel train smoke capsules	2	M
Polystyrene cement	1	M
Decongestant nasal mist	2	M
3D roach killer	14	F
Benzine	2	M
Baby aspirin	3	F
Barbiturate	57	F
Sodium nitroprusside tablets	Adult	M
Spic and Span (caustic-detergent)	2	M
Thermometer	5	M
Household paint	17 months	M
Chanel No. 5 (perfume)	15 months	F
Bleach	2	M
Barbiturate	41	M
Camphorated oil	1	F
Iodine	16	F
Fowler's solution and sedative	13	M
Naphthalene ball	2	M
Ammends medicated powder	3	M
Benzine	1	F
Sleeping pills (salicylamide and methapyrilene hydrochloride)	29	F
Denatured alcohol	37	M
Methylene chloride	2	M
Javelle water	14 months	M
Pride furniture polish	40	F
Glass Wax (in eye)	2	M
Epinephrine solution	?	?
Lysol (disinfectant)	6	M
Sage air refresher	2	M
Merbromin	2	F
Pine oil disinfectant	18 months	F
Clorox	2	M
Oil of citronella	4	M
Pride furniture polish	21 months	F
Epinephrine solution	$1\frac{1}{2}$	M
Clorox	3	M
Rodenticide (strychnine)	2	M
Veto deodorant cream (sucked finger smeared with cream)	3	F
Wooden matches, 3 or 4 (chewed)	20 months	M
Phenylephrine hydrochloride $\frac{1}{4}$ per cent	2	M
Nitroglycerine tablets, vial	Dog	?
Baby aspirin, 10, each $1\frac{1}{4}$ grains	$2\frac{1}{2}$	M
Indelible pencil (sucked)	7 months	M
Dro insecticide	$2\frac{1}{2}$	M
Plantabbs, 1	2	M
Baby aspirin, 10 to 15, each $1\frac{1}{4}$ grains	4	M
C.N. Plus, 1 tsp. (disinfectant)	2	M

* Minor events on which complete information is lacking not included.

† Unless other mode of occurrence is indicated.

** In years unless months is indicated.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Lye	$2^1/_2$ years	Male

This incident is cited primarily because of the mode of occurrence and also because of the duration of hospitalization. The patient was being cared for by a neighbor. He was playing with other children without any adult supervision. The children obtained a discarded lye can, it was never determined whether from the garbage or the hall. One of the playmates put an unknown amount of lye in the child's mouth. The patient complained of burning in the mouth and throat and abdominal pains. A family physician was called, who referred the child to a hospital.

The findings on admission were burning in the mouth and throat, a 1 plus acetone in the urine, and a hemoglobin of 11 Gm. in the blood. An esophagoscopy was done. Chemical burns of the mouth were observed. The patient remained in the hospital for five weeks, where treatment included bougienage as well as therapy for the burns of the throat. Following discharge from the hospital the patient was seen in the outpatient department twice weekly.

The public health nurse who visited the home reports that the child was active and of average intelligence and that the mother, who went to work prior to the accident, is now determined to stay home to have her children under her own supervision.

As a result of this Department's concern about lye poisonings, the lye industry is engaged in its own investigation of the mode of occurrence of lye poisonings. It is hoped that this project will lead to an improvement in the present accident picture.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Mushroom	$2^1/_2$ years	Male

Since this report did not come from a physician and it was thought that some of the symptoms might be of interest, the report form was sent to the mother, who did an unusually good job of reporting:

> Following several days of rain this past July, the lawn was "peppered" with mushrooms (toadstools) overnight. Before we had a chance to notice this, our two-and-a-half-year-old son picked one and began to eat it. My husband found him before the whole mushroom had been consumed. We tried to induce vomiting but to no avail. My neighbor and I tried to identify the mushroom but were unsure of the identification and called the Poison Control Center right away. They advised vomiting, and we then took him to the emergency room of the Northern Westchester Hospital, at Mount Kisco, where the medical staff pumped his stomach. They pulled out a goodly amount. There were no after-effects.

Because of the sparseness of detail often noted in physicians' reports, there is loss of much pertinent information which would find constructive use in a program of prevention. This incident involved the ingestion of an uncultivated mushroom. Although there are dire possibilities in the ingestion of mushrooms by children, our cases fortunately have been of a mild nature.

Table I lists poisonings about which information was requested over a recent weekend.

(*Number fifty-three in a series on Briefs on Accidental Chemical Poisonings*)

Silence is the element in which great things fashion themselves.—CARLYLE

CASE REPORT

Fatal Tubular Necrosis During Chlorothiazide Administration

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(From the First Medical Service, New York City Hospital, Elmhurst)

Although there are several reports of nonfatal nephrotoxicity due to chlorothiazide,[1-3] there is no published case of death from acute tubular necrosis in patients receiving this drug. The following report therefore appears pertinent.

Case Report

A fifty-eight-year-old white male, an asbestos worker, was admitted for the first time to New York City Hospital on April 29, 1958, complaining of dyspnea, hemoptysis, and hoarseness of four days duration.

The family history was unremarkable with no evidence of cardiorenal disease. The personal history was noteworthy in that he drank about one pint of whiskey daily for several years. The past medical history and review of systems were noncontributory.

Present Illness.—Approximately seven months prior to admission he noted some swelling of the ankles and was found by his private physician to be overweight at 220 pounds, hypertensive, with a blood pressure of 240/120 mm. Hg, and with some pedal edema. Apparently no further studies were done. Chlorothiazide, 1 Gm. per day, was prescribed and taken until the time of admission. The patient was advised to follow a salt-free diet. At the same time he decreased his food intake voluntarily, and a 40-pound weight loss ensued. Potassium supplements were not given, and the patient did not consult his physician again until the day of admission to the hospital.

One month prior to admission he developed a nonproductive cough. Four days before admission dyspnea developed together with hoarseness, slight fever, anorexia, and occasional vomiting. The cough increased in severity and was productive of purulent phlegm with bouts of frank hemoptysis.

On the day of admission he had several episodes of precordial pain radiating to the neck, he was given an injection of Demerol hydrochloride and was referred for hospitalization. There was no history suggesting a recent hypotensive episode or exposure to a nephrotoxic agent. He claimed that he had been urinating normally.

Physical Examination.—The patient's weight was 175 pounds, blood pressure 174/80 mm. Hg, pulse 100, temperature 99.6 F., and respirations 32 per minute. He was an alert, middle-aged man who was hoarse and slightly dyspneic, although he was not orthopneic. During the examination he vomited recently ingested food. His skin and mucosae were pale. The tongue was dry and coated. A laryngoscopy showed an inflamed larynx with a mucopurulent exudate. The neck was supple with a mobile trachea in the midline. The thyroid was not felt, and there was no adenopathy. The lungs were clear to examination initially. The heart was not obviously enlarged and had a regular sinus rhythm. The heart sounds were of good quality; no murmurs, rub, or gallop were heard. The abdomen was soft, and no masses or enlarged organs were felt. There was no skeletal or costovertebral angle tenderness. The rectal examination revealed a moderate prostatic hypertrophy. There was no edema, clubbing, or cyanosis; the peripheral pulses were normal. The neurologic examination and the ocular fundi showed normal results.

Laboratory Data.—The hemoglobin was 7 Gm. per cent; the red blood cells were 2.7 million per cu. mm.; the hematocrit was 22; the white blood cells were 10,500; and the differential showed a slight shift to the left. The sedimentation rate was 70 mm. in one hour. The urinalysis showed a yellow, clear, and acid urine with a specific gravity of 1.01 and an albumin of 1 plus. The microscopic examination showed from 50 to 60 white blood cells and occasional red blood cells per low-power field; the culture showed negative results. The blood urea nitrogen was 175 mg. per cent; the carbon dioxide was 9 mEq. per L.; the sodium was 139 mEq. per L.; and the potassium was 3.4 mEq. per L.

The electrocardiogram showed a left axis deviation but was otherwise unremarkable; specifically, no evidence of electrolyte imbalance was seen. On admission the chest x-ray film showed negative results with clear lung fields and no cardiac pathology.

Additional studies, including blood sugar, icterus index, alkaline phosphatase, cephalin-cholesterol flocculation, thymol turbidity, albumin, globulin, and serology were all within normal limits. One stool specimen was guaiac positive.

Course.—The urinary output of 650 cc. during the first twenty-four hours diminished progressively to the point of complete oliguria on the fifth hospital day. An irregular fever, with occasional spikes from 102 to 104 F., was present. On the second hospital day respiratory distress with stridor attributed to tracheolaryngitis necessitated tracheotomy; much mucopurulent material was aspirated through the tracheotomy tube, but some dyspnea persisted with suggestive Kussmaul respirations. On the third day he became stuporous and slightly cyanotic. His subsequent course was one of severe uremia, marked by coma, convulsions, and episodes of pulmonary edema. He died on the eighth hospital day with a blood urea nitrogen of 245 mg. per cent. Therapy had included the administration of oxygen, intravenous fluids, blood transfusions, antibiotics, and adrenocortical steroids.

At autopsy "the right kidney weighed 200 Gm., and the left kidney weighed 190 Gm. Both kidneys were pale, flabby, and mottled yellow in color. The capsules were thin and stripped easily. The cortical architecture was obscured diffusely. Microscopically, the striking feature was a marked degeneration of the proximal convoluted tubules with areas of complete necrosis and focal deposition of calcium pigment. The glomeruli showed dilated Bowman spaces with proliferation of the capsular epithelium. There was a marked interstitial inflammatory reaction but no vascular changes were noted. The impression was that of toxic tubular necrosis."

Additional findings were: acute and chronic tracheobronchitis, bronchopneumonia of the right lower lobe, pulmonary edema, moderate passive congestion of the liver and spleen, and benign prostatic hypertrophy.

Comment

Chlorothiazide has been used extensively as a diuretic and an antihypertensive agent. Of the various toxic manifestations referable to the administration of this drug, those already reported in the medical literature are: fatal jaundice, ammonia intoxication, and hepatic coma,[4] acute pancreatitis,[5] blood dyscrasias and a variety of hemorrhagic reactions,[6-8] allergic manifestations,[6] and electrolyte disturbances.[1-3] Two effects are pertinent here: (1) the occasional development of a negative potassium balance due to protracted potassium diuresis, often intensified by concurrent salt restriction, and (2) the rare observation of mild-to-moderate azotemia and/or albuminuria.[1-3] Whether the latter is referable to a pre-existent hypokalemic state or is an independent manifestation of nephrotoxicity is not yet clear. We have been unable to find any report of renal biopsy having been performed in those patients who did develop azotemia and/or albuminuria in which mild evidences of tubular necrosis might have been found. In the present case the combination of prolonged chlorothiazide administration, restricted salt intake, and a normal serum potassium in the presence of severe azotemia suggests that a negative potassium balance was indeed present, although hypokalemic symptoms were absent. The inability to detect the hypochloremic alkalosis or renal tubular vacuolation of hypokalemic nephropathy is not surprising in the presence of such severe uremic acidosis and tubular necrosis as was present in our case.

Other toxic etiologic conditions for the renal lesion were not detected. The severity of the azotemia and anemia on admission and the pathologic findings suggest that the initial insult occurred at least several weeks before admission. The development of striking oliguria only after admission may have been related to the stress of the acute respiratory infection. It is therefore our opinion that the tubular necrosis here is a manifestation of chlorothiazide toxicity.

Summary

We have reported a case of fatal renal tubular necrosis which was attributed to chlorothiazide administration. It is felt that this emphasizes the dangers inherent in the use of large doses of this drug over long periods of time without medical supervision.

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Acknowledgment.—The authors are indebted to James R. Lisa, M.D., of the Department of Hospitals, New York City, and Harvey Mendelow, M.D., Assistant Attending Pathologist, The Mount Sinai Hospital, for review of the slides of the renal lesions, and to Lester Hollander, M.D., of The Mount Sinai Hospital, New York City, for a review of the manuscript.

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Birth Statistics

The baby boom is continuing in the United States and Canada, but in many other countries throughout the world the birth rate has fallen almost continuously from the relatively high levels reached shortly after the end of World War II, it is reported by statisticians of the Metropolitan Life Insurance Company.

Births in recent years have broken all previous records in the United States and Canada, and in Australia and New Zealand as well. In all four countries the birth rate in the last decade has been approximately one third greater than that recorded just prior to the war.

In the United States, births have numbered well over 4 million in each of the past five years; for the period 1947 to 1958 the total exceeded 47 million.

In contrast, many European countries have suffered declining birth rates since the postwar high, although several have halted and reversed the downward trend.

Finland experienced a sharper decrease than any other country in Europe; the rate there fell one third—from 28.0 per 1,000 population in 1947 to 18.5 in 1958. Over the same period, Sweden, Denmark, the Netherlands, and Czechoslovakia recorded reductions of about one quarter. More moderate declines of about one sixth were recorded in France and Norway.

Very likely as a result of improved economic conditions, England and Wales have experienced rising birth rates in recent years. After falling from 20.5 per 1,000 in 1947 to 15.0 in 1955, the rate rose to 16.4 in 1958—higher than the 15.1 rate for 1938, the last prewar year. Scotland shows a similar trend. West Germany also has shown a rising birth rate recently, but East Germany has shown a continuing decline.

Japan is probably the only country in the world to have reduced its birth rate by about one half between 1947 and 1958—from 34.3 per 1,000 population in 1947 to 17.2 in 1957 and 18.0 in 1958.

It is impossible to trace the postwar fertility trend in the Soviet Union because of insufficient data; however, figures released by that country indicate that the birth rate in the Soviet Union is not appreciably different from that in the United States, even though the number of births there is substantially greater because of the larger population.

In many large and populous areas of the world birth statistics are either lacking or so deficient that they are of very limited value. India, for example, reported a birth rate below 25 per 1,000 in 1957, but this is an understatement of the actual situation, resulting from the marked under-registration of births. No reliable figures at all are available for the mainland of China, which is believed to have a population exceeding 650 million.

CHANGING TIMES FOR MEDICINE

AUSTIN SMITH, M.D., *Editor*

EDITOR'S NOTE.—*The following is the first in a series of four articles dealing with government or socialized medicine and its problems in Canada, Great Britain, Austria, and Sweden. These articles will appear in succeeding issues of the* JOURNAL.

*The Government and Health in Canada**

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(*Past President, Canadian Medical Association; Chairman, General Council, Canadian Medical Association* [*1952–1959*])

THE impact of government on health in Canada is a complicated matter, to appreciate which requires some understanding of our Canadian constitution. That constitution is The British North America Act, which dates from 1867. Its anachronistic name was given it at a time when it was believed that Canada was to all intents and geographical purposes part of the continent of North America. Since, then, as you know, America would seem to have shrunken by some odd alchemy of nature to that plot or parcel of land situated between the Mexican border in the south and the 49th parallel or so in the North! That to the North is now just "Canada," in case you did not know!

That Act established and defined the relationship of the provinces to each other and that of the central government to them. Many powers of course went to the central body and certain others were specifically reserved to the provinces, among them health and education. It will not surprise you that a disposition on the part of the provinces to guard their prerogatives and to exercise their rights has given variety to the Canadian scene.

The western half of Canada, as with the United States, is relatively new, as against the eastern half, and the newer and more radical forms of political philosophy are to be found there; at least more social legislation has been adopted there, or the citizens adopted it earlier.

Socialism in the Provinces

MANITOBA.—Beginning at Manitoba, it is seen that our first significant social legislation was adopted there in 1916, a Mothers' Allowance Act. It had other early adventures in social legislation until 1945 when it adopted an act to assist its municipalities in providing better hospital and diagnostic facilities.

SASKATCHEWAN.—Saskatchewan, Manitoba's western neighbor, went to the left and produced a Socialist party, not only for itself but also for Canada. It is known to us as the Cooperative Commonwealth Federation. That party soon became the government of Saskatchewan and has remained so ever since. With missionary zeal it invaded the other provinces, preaching its socialist doctrines. At home, it undertook to socialize many things. Some of them failed, some have been very successful—car insurance for example. In health matters it undertook a variety of experiments, some of which have not been too successful; but, in many, it has pointed the way for some of the major health measures in its own and other provinces, and at the Federal level as well. For example, its comprehensive compulsory hospital insurance program was instituted in 1947 and goes steadily onward. The Federal government provided its hospital care for all Canada only last year. The Cooperative Commonwealth Federation party has sent some good men to our central parliament to constitute our third party, and they have hammered away for health insurance for years, in terms that made them quite popular.

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* This address was given before the Eastern Regional Meeting of the Pharmaceutical Manufacturers Association, New York City, Socio-Economic Development Session, December 9, 1959.

By clever political strategy however—and that you will understand if your best seller, Drury's *Advise and Consent*, is acceptable as a guide—one of our old-line parties, the Liberals, adopted much of the Cooperative Commonwealth Federation socialistic program as its own, gradually implemented much of it, and remained in power for years. In turn the other old-line party, the Conservatives, claiming that the Liberals were not doing enough or fast enough, purloined the socialistic policy, sweetened it up a bit, and went on to victory at Ottawa. Today, then, we have the spectacle of a Tory government, avowedly and historically the party of private enterprise, either initiating or fostering a more socialistic health and welfare program than had its historically more socialistically inclined predecessors; and the Cooperative Commonwealth Federation, bereft of her children, is on the way out! All this of course is an oversimplification of the case. It is factual, but much could be said on the other side to give balance to the picture. It is not all expediency.

ALBERTA.—Let us however look further West. Alberta, again quite independently, produced its socialist doctrines on an entirely different foundation. There it took form under another new party, the "Social Credit Party." That party grew out of religion—new, Alberta-style (or maybe California-style)—and "funny money." In that atmosphere religion alone did not suffice as "the opium of the people," but when it was combined with the promise of a monthly income for every voter for the rest of his or her life, together with the promise of all kinds of socialistic legislation, it was irresistible. The party was swept into power and has not since been repudiated.

In 1920 that province gave itself a municipal hospital plan. In 1928 and again in 1932 it passed laws for the provision of medical care for its people, but in neither case did it promulgate them, and they were later repealed. What Alberta would have done had it remained a purely agrarian province one may only conjecture; but today, floating on oil and gas as it is, its public debt all paid off, and with a different leader replacing the old evangelist, it is the very essence of respectability and of financial orthodoxy; and though it still dispenses religion and still maintains the usual amount of social security, it is as politically conservative as any government we have.

BRITISH COLUMBIA.—In 1936 British Columbia, under one of the old-line parties and after fifteen years of talking about it, passed a bill providing health insurance for that province. Certain provisions of the bill were offensive to members of my profession there and were protested. The men were given the assurance that those provisions would be deleted or modified to meet our views; but history records that the "honorable" minister concerned went away from the conference and piloted the bill through the house in its original form, as though such a promise had never been given. It became law; whereupon our profession in that province agreed by plebiscite, about 99 per cent strong, that they would never work under such an act. In consequence that law was never promulgated, and twenty-four years later it remains there quite inoperable.

In 1949 that province instituted a hospitalization plan. At first it was on a premium basis. That did not work out financially, although premiums were almost doubled above those first imposed. Hospital claims also more than doubled. Finally the premium system was discarded and general taxation and a special sales tax were employed to meet the cost.

Quebec.—Coming East, Quebec is probably the most individualistic of all the provinces. There, Federal grants for Canadian universities have been refused as being Federal interference in provincial rights. Up to now 26 million much-needed dollars have accumulated to the account of those universities and they have not been allowed to accept it. Health matters too have come under a similar inhibitory philosophy although perhaps not as seriously as has education. However with the recent passing of its Premier and the appointment of a new one, face-saving adjustments have already been made respecting those grants. They will be received as if from the province although they derive from the Federal exchequer, and within a year the Canadian hospitalization plan will likely be in operation there too to complete the roster of Canadian provinces having "free" hospitalization. Clearly for Quebec, Nature can be an ally in death as well as in life.

Atlantic Provinces.—When we come to the Atlantic provinces, and in particular to my own province of Nova Scotia, although Cooperative Commonwealth Federation socialism has been well preached to us, the intellectual soil has not been too receptive. We have one of their members to serve as a gadfly in our local parliament, but none now represent us in Ottawa. It would appear that we are a conservative people like those in that other "land of the bean and the cod"; indeed we are the "Bostonians" of Canada. Unlike them, however, we are a relatively poor people. Since most of our ancestry is Scottish, we have of course a special right to speak unto God; but unlike some others that we know, we are not exclusive about it; indeed we take some pleasure in addressing ourselves unto Mammon, as our interest in the Stock Exchange and indeed my presence here today so clearly indicate.

Seriously, however, our conservatism would have seen us bearing our own social burdens with fortitude for a longer time yet; but even with all our endowments it has not been possible for our people to resist those political "gifts"—and I have put that word in quotation marks—which to some spell socialism but which to others still represent the prostitution of proud minds.

Such is a rough sketch of Canada at the provincial level. Let us now look at Canada more as a whole and at the way in which the Federal government came to spread its socialistic cloak about us in a realm originally excluded by the Constitution.

Socialism and the Federal Government

The responsible department of government is the Department of National Health and Welfare; and I want to say at the outset that although that department keeps a set of books for each of its subdepartments I find it difficult to differentiate between "welfare" and "health" in this context. So many things to the contrary notwithstanding, we are satisfied that in spite of its undesirable features "welfare" has made a very significant contribution to "health" in many parts of our country, and I have only to mention tuberculosis to support that view.

To appreciate our present national position we should review some of its history. In 1927 came Federal old age pensions. This program was effected by agreement with the provinces and its special significance is that it was the first entry of the Federal government into provincial territory.

The depression followed and found some

municipalities and even some provinces quite unable to meet their welfare demands. It was necessary for Ottawa to provide aid. To pay the piper and not call the tune was not to Ottawa's thinking and so it undertook to provide legislation that would give it control of such funds. In 1935 therefore an act was passed which provided for an unemployment service and for a contribution to unemployment insurance by the central government. This was quite important legislation of course but also quite invalid, and it was declared ultra vires the British North American Act by our Supreme Court. Five years later by agreement with the provinces, the British North American Act was amended and our unemployment insurance scheme was established constitutionally. This was a modest enough scheme at first but, like everything else that gets socialized, it has steadily expanded until now it can include every employed person with an income of $5,460 or less, except domestics and doctors, and there are no more domestics. It has expanded otherwise too, so that one who works thirty weeks out of two years can have fifteen weeks insurance, and working for two full years, fifty-two weeks insurance—one year off out of three.

Hitler published his *Mein Kampf* in which his plans for Europe were outlined, and nobody paid any attention. At the close of the last war Canada published its *Mein Kampf* in the form of a "white paper." That was and is the Magna Carta of all socialistically minded Canadians and, it would seem, for all succeeding governments as well. By it the government declared its socialistic direction. It undertook "to maintain the levels of employment and income greatly above those ruling before the war . . . and higher standards of living." Among other things, it indicated its readiness to institute contributory old age pensions and health insurance as soon as financial and other arrangements could be agreed on with the provinces. At first that was not too easy for in 1945 a Federal-provincial conference, at which the Federal government presented concrete proposals for a comprehensive national health insurance program, failed of fiscal agreement, and the whole project was deferred. Meanwhile the provinces were going on with their own social programs, as I have indicated.

In 1948 what are known as the Federal health grants were introduced. Specific grants for 10 services, later increased to 13, were for: (1) health surveys, (2) hospital construction, (3) professional training, (4) public health research, (5) general public health, (6) mental health, (7) tuberculosis control, (8) cancer control, (9) crippled children, (10) venereal diseases, (11) child and maternal health, (12) laboratory and radiologic services, and (13) medical rehabilitation.

This made available 421.6 millions of Federal money. Some were outright grants; some were on a fifty-fifty basis with the provinces. These were announced by the Prime Minister as being "fundamental prerequisites to nation-wide Health Insurance." They stimulated considerable activity in the provinces, in the right direction with respect to the improvement of medical services but more especially I think toward surveys: sickness surveys, community hospital needs, and so on.

Position of Organized Medicine

The question may well be asked at this point: Where was organized medicine all this time and what was its attitude? Our records show that we were conscious of a trend as early as 1931, that in 1934 we considered a report on health insurance, and established certain principles to govern our attitude.

In 1935 we considered a report on group hospitalization which appeared to provide a basis for Blue Cross. From then on in practically every succeeding year there is evidence of activity.

In 1949 at a meeting in Saskatoon our most important statement of policy was adopted and proclaimed. It came to be known as the "Saskatoon Declaration."

In it we confirmed our approval of the principles of health insurance and expressed the view that it should be introduced only in stages, beginning with hospitalization. This was contrary to the view of the professionals in the National Health Department, and in some quarters it still is. Because they made it apparent that the success of the new hospitalization scheme depended largely on the attitude of the medical profession it is possible that our statement with respect to introduction by stages had some place in their decision. We would like to think so. Nonetheless we know that a plan for the complete socialization of all health services exists, and we know that within the departments of health are those who would complete it tomorrow.

In that declaration we proposed that whatever phase of health insurance was introduced it should be paid for by premiums, the government paying the premium for those who were unable to pay them for themselves. In this we lost in most of the provinces. The Federal government pays half, the province half, and the province administers it. One or two collect the province's part by a premium, gauged to yield enough to allow the province to pick up the tab for the medically indigent; one or two pay it out of consolidated revenue; and we have been pleased to see that some provinces call their sales tax the "Hospital Tax," so that people may see that they are themselves paying for it, and that indeed it is no "gift."

In our policy declaration too we said that administration should be "by nonpolitical independent commission," and that generally is being followed by the provinces. The policy appeared to be ideal; but getting out of the frying pan of party politics which that ensures is no guarantee that we shall keep out of the fire of the absolute power conferred on those commissions by the law of the land. There is enough of the product of that now to engender some misgiving and to raise the question as to whether or not, when we introduced that idea, we sowed "dragon's teeth." A year or two from now we shall be able to give an opinion "on balance."

Present Status of Hospitalization Plan

It is interesting, and at least gives the devil his due, that when this first effective step toward national health insurance was taken it was taken virtually at the request of the provinces. It was they who asked that health insurance be put on the agenda of the 1955 Federal-Provincial Conference, and I suspect that it was because some of the provinces, with limited taxing ability, had already overextended themselves. Barkis of course was very willin', for at that conference the central government expressed its readiness to support hospital insurance, and at the next session of Parliament, in 1956, provided the legal machinery for its operation. The announcement to Parliament contained this statement: "Only after the establishment of some form of hospital insurance should further consideration be given to what additional steps should be taken." The general over-all pattern of our *Mein Kampf* was not disturbed by piecemeal introduction.

The hospitalization plan agreements with the provinces make standard ward care "uniformly available to all residents of the province," and that has been defined as "persons ordinarily resident in the province." It does not include tourists, transients, or visitors. Canadian citizenship, however, is not a requirement. Citizens of a province taken ill in another province or state receive a per diem allowance from their home province. In the case of my province it is $14. Private or semiprivate patients have the regularly established ward rate applied against their per diem charge. The difference is insurable through Blue Cross or through commercial carriers.

One fly appears in an otherwise fairly satisfactory ointment, to wit: the medical component of the hospitalization scheme. Laboratory and radiologic services were made a part, and that brings in pathologists and radiologists. This has already been giving concern to both my profession and to hospital commissions. The powers-that-be would make those services hospital services, so putting the hospitals in the practice of medicine. We maintain steadfastly that they are medical services and have won legal recognition of that position. Although this has provided ground for conflict, not yet resolved, it should be said that our spirit is that of the fullest cooperation in the hospital scheme and that, generally, relations are good.

Comment

What of the future? Perhaps the best way to answer that is first to establish the trend of events financially. In 1913 public expenditures on health and welfare in Canada at all levels of government was 15.2 millions, Federal share nil. In 1926 it was 88 million, $9 per capita, with the Federal share 50 million. In the fiscal year 1958–1959 it was 2,828 million, $147 per capita, and the Federal share was $2,097, 000,000; and in that period 3 of the 10 provinces had not yet come under the hospitalization scheme! These figures indicate that from 1926 the proportion met by Federal money was 56 per cent while in 1958 the proportion was 74 per cent, and that in a realm excluded by our original constitution.

Will these staggering figures and the much greater ones that will follow on full utilization of the hospitalization plan act as a deterrent to future expansion of those services? Will the fact that some 52 per cent of our people currently carry some form of medical care insurance, of which 47 per cent is voluntary, and that this coverage is being rapidly extended, indicate a lessened urgency and so act to deter socialistic extension? I might as well ask if you expect that the demand for fringe benefits will lessen in your highly industrialized and unionized economy.

No, tomorrow Alexander will be looking for new worlds to conquer, and the speed with which he will find and engage them may well depend on the speed with which Russian ascendency comes to influence popular thought. Present indications in Canada are that the government will not engage all medical care in one fell swoop. Rather do we feel that it will develop the pattern already begun. One way or another about two thirds of the cost of illness is now covered in hospitalization, drugs in the hospital, and that segment of doctors services covered under laboratory and x-ray services. When there is a demand for more, or when it is expedient to offer more, there can be offered more drug coverage and some other segment of medical care. In other words, enough can be offered to appease the socialistic Moloch until the next time.

But the troubles the government has had with the bits of medical service that they tacked on to hospitalization, and which were thought to be easy of inclusion, will be nothing to what will be involved as they get into the realm of our traditional individual relationships. They will also approach with extreme care the manner of putting a value on doctors' services. That is their greatest hurdle. Of course, under certain circumstances all this can be "laid on," but knowing the temper of my people and their current national unity, while they will cooperate in applying insurance principles to insurable things, they will go far to preserve medicine's heritage and tradition.

I have one fundamental misgiving as I project my thinking into the future and it is in respect to a common aspect of modern life: the increasing love of leisure. Regular and sharply limited hours of work, with all the desirable things that that may connote—such as an assured living without the stress of competition and a pension at the end—has a growing attraction for callow young men in all walks of life, not excluding medicine. The number of salaried doctors, necessary enough in our complicated society, has increased greatly, and the better aspects of their life have appeared glamorous to many who are in the day-to-day traditional practice of medicine. To them the distant field looks greener, and to the degree that that is so, to that degree is it erosive.

Can it erode to the place where individualism and free enterprise and adventure, the meat on which most of us were fed, will cease to call men through accomplishment to the joys that we have known? Will state medicine then, with its bribe of security and leisure, constitute for our medical sons the Lorelei song which calls to destruction?

I of course shall not live to see that deterioration, that eclipse of virtue. I assure you I shall not want to.

(*Number one of a series on Changing Times for Medicine*)

Alcoholism Among Executives Believed to be a Serious Problem

There is growing evidence that alcoholism among U.S. business executives is a serious problem, says *Fortune* magazine. Although most corporate managements will flatly deny this, testimony from doctors and psychiatrists who make a specialty of working with alcoholics indicates otherwise.

On the basis of their experience, they say that executives are just as susceptible to alcoholism as anyone else, and possibly even more so.

For one thing, the age at which a man is most likely to be made an executive (thirty-five to forty-five) is roughly the same age at which alcoholism most often reaches the serious stage. As the executive rises and takes on more responsibility, he is subjected to greater and greater stress. The bottle may seem the easiest way to relieve the tension.

Because the stigma attached to alcoholism keeps the alcoholic executive away from his company doctor there are few statistics to go by. Two experts, Mrs. Marty Mann, executive director of the National Council on Alcoholism, and Ruth Fox, M.D., the Council's medical director, think that alcoholism among executives is widespread. "The higher the economic level, the higher the percentage of drinkers," says Dr. Fox.

Another reason why the alcoholic executive is hard to detect is that he may be able to muddle along at half speed for quite a while. Although slowed by a hangover in the morning and four martinis at lunch, he manages to come to the office and get some work done.

Even the out-and-out alcoholic executive may be able to stay on his job for a long time. His mobility and privacy make it easy for him to cover up his drinking. He is often protected by a devoted secretary, sometimes even by higher executives who believe he will straighten out on his own if given another chance.

Although experts do not agree about the relative weight of environment and personality in the causes of alcoholism, *Fortune* says, it is a common observation that people in certain lines of work drink more than people in others. The incidence of alcoholism is high in groups with a tradition of hard drinking, such as advertising, journalism, railroading, and aircraft manufacturing.

SPECIAL ARTICLE

Activities of the New York City Poison Control Center During 1959

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

The New York City Poison Control Center, in addition to its activities in the City, provides services to localities in upstate New York and adjacent states and guidance to foreign health departments. It also receives calls from many other communities throughout the country and in foreign countries.[1] The following is a compendium of its activities during 1959.

Number of Reported Incidents

In 1959, 10,021 poisonings were reported to the Center, as compared with 8,499 poisonings in 1958. For the first ten months of 1959, 8,265 incidents were reported, as compared with 6,410 during the same period of 1958 (Table I).* This does not necessarily mean that there were more poisonings in 1959; it could mean that poisonings are reported with greater frequency than they were previously. Since the establishment of the Center, in 1955, it has received over 30,000 requests for aid. There has been an increase in the number of reports of poisonings due to internal and external medications, household cleaning and disinfectant preparations, and miscellaneous items.

Nature of Incidents and Preventive Measures

FATALITIES DUE TO POISONINGS.—There were 111 fatalities from poisonings in 1959 as compared with 128 in 1958. Of the 111, 16 occurred in children under five years of age, 12 due to lead, 1 to digoxin, 1 to eye drops (atropine), 1 to an aminophylline suppository, and 1 to suffocation from a plastic bag. The highest number of fatalities were reported in the age group of forty-five to sixty-four years, many of which deaths probably were suicides (Table II).

TABLE I.—NUMBER OF POISONINGS REPORTED TO THE NEW YORK CITY POISON CONTROL CENTER DURING 1959* AS COMPARED WITH 1958* ACCORDING TO TYPE OF TOXIC AGENT

Toxic Agent	—Number of Incidents—			
	1959		1958	
Medicinal Products		4,541		3,706
Internal		3,797		3,136
External		744		570
Pesticides		542		452
Rodenticides	123		130	
Insecticides	419		322	
Household Items		1,396		1,068
Disinfectants	173		160	
Detergents	469		301	
Polishes	113		122	
Bleaches	313		228	
Solvents	328		257	
Cosmetics		400		263
Miscellaneous		1,386		921
TOTAL		8,265		6,410

* First ten months.

LEAD POISONINGS.—There was a sharp increase in the number of lead poisonings reported in 1959, 162 cases, as compared with those of the preceding year, 95 cases (Table III). This increase is due, perhaps in a large measure, to an increased awareness on the part of physicians of this problem, better diagnostic technics, and routine testing for lead in children under supervision in child health stations who give a history of pica. Siblings of positive cases (those with a lead content of 0.06 mg. or more per 100 ml. of blood) also are tested and referred for further investigation and possible treatment. Only 1 case was reported in a child older than five years.

Although the number of lead poisoning cases reported in 1959 increased from 95 in 1958 to 162, the number of fatalities from such poisonings decreased from 16 in 1958 to 12 (Table IV). The majority of cases and fatalities were reported from high-risk districts in Brooklyn (Fort Greene, Bedford, Williamsburg, Greenpoint, and Red

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* Throughout remainder of text 1958 and 1959 refer to first ten months of respective year.

TABLE II.—Number of Fatalities from Poisonings Reported to the New York City Poison Control Center During 1959* According to Toxic Agent and Age Group

	Number of Incidents in Each Age Group (Years)							Total Number of Incidents
Toxic Agent	to 5	6–14	15–24	25–44	45–64	65 and over	Unknown	
Lead	12	...	...	...	...	...	...	12
Arsenic	...	...	...	1	...	...	...	1
Barbiturates	...	...	...	6	16	9	2	33
Barbiturate and chlorpromazine	...	...	...	...	1	...	...	1
Denatured alcohol	...	...	...	...	1	...	...	1
Sleeping pills	...	...	...	2	3	...	...	5
Digoxin	1	...	...	...	...	...	...	1
Eye drops	1	...	...	...	...	...	...	1
Penicillin	...	1	...	...	...	...	...	1
Bichloride of mercury	...	...	...	...	1	...	...	1
Carbon tetrachloride	...	...	...	1	...	...	...	1
Narcotics	...	...	3	6	1	...	...	10
Isotex garden spray	...	...	...	...	1	...	...	1
Aspirin	...	...	...	1	1	...	...	2
Salicylate	...	...	...	...	1	...	...	1
J-O paste (pesticide)	...	...	1	2	...	...	...	3
Aminophylline-ephedrine-phenobarbital suppository	1	...	...	...	...	...	...	1
Meprobamate	...	...	1	...	...	...	...	1
Meprobamate and unknown drug	...	...	...	...	1	...	...	1
Ammonia water	...	...	...	...	...	1	...	1
Sodium fluoride	...	...	...	...	1	...	...	1
Plastic bag (suffocation)	1	...	...	...	1	...	...	2
Lye	...	...	1	...	...	...	...	1
Cyanide	...	...	...	1	...	...	...	1
?C.N. (disinfectant)	...	...	...	...	...	1	...	1
Muriatic acid	...	...	...	...	...	1	...	1
Shoe dye	...	...	...	...	...	1	...	1
Unknown drugs	...	...	2	12	6	2	2	24
TOTAL	16	1	8	32	35	15	4	111

* First ten months.

Hook) and from the nonwhite and Puerto Rican population; there was no significant sex propensity.

It is hoped that the educational program directed toward the medical profession and the public and the regulations in the new Health Code will help prevent lead poisoning. More intensive efforts, however, are needed in the high-risk areas.

SENSITIVITY AND SIDE-REACTIONS TO DRUGS.—A death due to penicillin sensitivity (Table II) highlighted the growing need for curtailment of indiscriminate use of antibiotics and for performing sensitivity tests prior to the administration of penicillin. It should be emphasized that there is a need to accumulate data on instances of side-reactions to drugs since in actuality such occurrences are drug poisonings. The poison control officers were requested to report such incidents and to give the situation the serious consideration it merits. The New York Academy of Medicine was requested to study this problem jointly with the New York City Department of Health. The Public Health Committee of the Academy appointed a subcommittee to study the problem and to make appropriate recommendations relating to the reporting of such side-reactions by practicing physicians.

PLASTIC BAG HAZARD.—As soon as the plastic bag hazard became known, in February, 1959, a directive relating to this hazard was sent to all poison control officers and to other poison control centers. Copies of this directive also were sent to the National Institute of Dry Cleaning. In April the National Safety Council requested information from the New York City Poison Control Center on fatalities in infants and young children due to suffocation from plastic bags. The

TABLE III.—Number of Lead Poisonings Reported to the New York City Poison Control Center During 1959 as Compared with 1958 According to Race, Sex, and Age

Race and Sex	Number of Cases According to Age (Years) Under 2	2	3	4	5	6 and over	Total Number of Cases
				*1959**			
White	8	15	4	1	1	0	29
Male	4	5	2	1	1	. . .	13
Female	4	10	2	. . .	. . .	. . .	16
Nonwhite	22	31	6	1	3	0	63
Male	14	13	4	. . .	2	. . .	33
Female	8	18	2	1	1	. . .	30
Puerto Rican	11	29	21	5	3	1	70
Male	3	13	12	2	3	1	34
Female	8	16	9	3	. . .	. . .	36
Total	41	75	31	7	7	1	162
				*1958**			
White	7	8	3	0	0	0	18
Male	2	4	1	. . .	. . .	. . .	7
Female	5	4	2	. . .	. .	. . .	11
Nonwhite	11	14	13	3	0	1	42
Male	8	8	3	. . .	. . .	1	20
Female	3	6	10	3	. . .	. . .	22
Puerto Rican	10	14	8	1	2	0	35
Male	2	8	3	. . .	1	. . .	14
Female	8	6	5	1	1	. . .	21
Total	28	36	24	4	2	1	95

* First ten months.

TABLE IV.—Number of Fatalities from Lead Poisoning Reported to the New York City Poison Control Center During 1959 as Compared with 1958 According to Race, Sex, and Age

Race and Sex	Number of Fatalities According to Age (Years) Under 2	2	3	4	Total Number of Cases
			*1959**		
White	0	1	0	0	1
Male	. . .	. . .	. . .	. . .	. . .
Female	. . .	1	. . .	. . .	1
Nonwhite	3	3	2	0	8
Male	1	1	2	. . .	4
Female	2	2	. . .	. . .	4
Puerto Rican	0	1	2	0	3
Male	. . .	. . .	1	. . .	1
Female	. . .	1	1	. . .	2
Total	3	5	4	0	12
			*1958**		
White	0	2	1	0	3
Male	. . .	. . .	. . .	. . .	. . .
Female	. . .	2	1	. . .	3
Nonwhite	0	2	5	0	7
Male	. . .	1	2	. . .	3
Female	. . .	1	3	. . .	4
Puerto Rican	0	2	3	1	6
Male	. . .	1	2	. . .	3
Female	. . .	1	1	1	3
Total	0	6	9	1	16

* First ten months.

New York City Department of Health replied that it had alerted poison control centers and physicians about this danger in February and that until the date of inquiry no such deaths in New York City were reported. Several days later (April 27), however, a death reputedly from suffocation by means of a plastic bag occurred in New York City (Table II). This information immediately was relayed to the National Clearinghouse for Poison Control Centers[2] and to the National Safety Council.

In cooperation with the Assistant Commissioner of Environmental Sanitation and the Director of Public Relations of the National Safety Council, the New York City Poison Control Center held several conferences with the Society of Plastic Industries. The industry was requested to conduct an educational campaign warning on the hazard of plastic bags and advising on prevention of suffocation by this means. A brochure on the hazard of plastic bags was prepared by the Society of Plastic Industries with the aid of the U.S. Bureau of Health Education. Two million copies of this brochure were printed in English and several hundred thousand in Spanish. In New York City it was distributed to all child health stations, various clinic services, pharmacies, supermarkets, dry cleaning establishments, and all Department of Welfare recipients. It also was distributed to physicians and dentists for display in their waiting rooms and distribution to patients. A regulation controlling sale and/or distribution of plastic bags was enacted as part of the New York City Health Code, becoming effective on June 15, 1959. The section containing this regulation alerts users to the potential hazard of plastic film bags.

It is gratifying that the comprehensive program of legislation and health education, conducted jointly by industry, the New York City Department of Health, the Chief Medical Examiner's Office of New York City, the Academy of Pediatrics, and the U.S. Public Health Service, is achieving good results. The rapidity and intensity with which this problem was attacked by all concerned is noteworthy.

Attempted Suicides in Adolescents.—The number of reported attempted suicides in young adolescents is increasing. Every case is investigated by a public health nurse and appropriate referrals are made to treatment agencies. A paper on this subject prepared by the Center was presented at the Ninth International Congress of Pediatrics and was publicized widely in the American and Canadian press. This is another example of the function of a poison control center in bringing to the attention of the medical profession and public a situation about which information previously was lacking.

Visits by Public Health Nurses.—Visits by public health nurses to families in need of this service are arranged by the Center. These visits are invaluable. They are utilized to educate families on the prevention of poisonings. In addition, they help to uncover other health problems in the family which require assistance. Prompt referrals to treatment and social agencies in all such instances are made.

Example Case Histories

Case 1.—The Veterans Administration Hospital of Brooklyn requested the Center's help in a puzzling case of a patient with cyanosis who had been hospitalized for over a month and who presumably received no medication at the time the cyanosis appeared. The question of sulfhemoglobinemia and methemoglobinemia was raised by the Center. The inquiring physicians informed us that the test for sulfhemoglobinemia taken at the hospital gave a negative result.

Since the hospital has no facilities for testing for methemoglobinemia, the Center arranged, through the courtesy of the Chief Medical Examiner's Office, for a spectroscopic determination at the research laboratory of the Hospital for Special Surgery, New York City. The presence of sulfthemoglobinemia was confirmed. It was later ascertained that the patient was receiving a sulfa drug. The drug was stopped, and the patient became acyanotic and entirely symptom-free several days later.

This incident is illustrative of the developing additional functions of a modern Poison Control Center.

Case 2.—Advice was requested of the Center by an intern about the treatment of an ingestion of brown shoe polish, probably with suicidal intent, by an elderly patient. The intern objected when advised to consider the use of methylene blue. He stated that a brown, not a blue, shoe polish had been ingested. Apparently he was under the impression that methylene brown would have been a more suitable form of treatment.

We suggested that the police bring the bottle containing the shoe polish to the hospital. It developed that the "brown" shoe polish actually was a variety of black. The company which manufactures this polish was contacted and the true composition was acertained; the polish contained a toluene solution of a basic nigrosine dye. This black dye, an aniline derivative, obviously was the cause of the cyanosis, and the methylene blue advice therefore was justified.

Case 3.—A typical case of poisoning due to the transfer of an insecticide to a household utensil occurred when an exterminator sold a concentrate of chlordane in a cola bottle to a housewife. The exterminator did not have a container for his product;

the housewife supplied an empty cola bottle which he filled with chlordane. Several months later her two-year-old son discovered the bottle under the sink and swallowed some of its contents. He immediately began to foam at the mouth and cry and at once was taken to a nearby hospital emergency room, where his stomach was lavaged. The prompt action undoubtedly was lifesaving, since a solution containing 46 per cent of chlordane could result in a fatality, particularly in a young child.

Case 4.—The ingestion of eye drops (atropine) by a four-year-old child resulted in a fatality (Table II). The medication had been dispensed by a hospital pharmacy with inadequate identifying data. It is believed that the preparation involved was an old one since, owing to the efforts of the Center, procedures in the City with regard to the dispensing of drugs have been improved greatly.

Services Outside New York City

By providing assistance to areas and cities other than New York City and to other states and foreign countries, the New York City Poison Control Center is an example of the expanded scope of the activities of a metropolitan department of health.

The Swedish National Medical Service sent two representatives to observe the operations of the Center prior to initiating such a service in Sweden. Representatives from New Zealand and Australia visited the Center for guidance prior to the establishment of such a service in their respective health departments. Representatives of the Canadian Department of Health and Welfare made a special visit to the Center to observe the follow-up procedures used here. It may be recalled that their initial visit to the Center culminated in the establishment of a poison control center in Canada, in 1956, patterned largely after the New York City Center.

A frantic call for help in an epidemic of methyl alcohol poisoning was received on Sunday, March 8, 1959, from the Military Hospital at Monterrey, Mexico. There were 45 fatalities and about as many nonfatal cases. The Center made some helpful suggestions but was handicapped by the still inadequate state of our knowledge of therapy for this type of poisoning. A letter of thanks from the inquirers of Mexico was received:

> In view of the methyl alcohol poisonings which occurred recently in the city of Monterrey, Mexico, the local doctors came to us for assistance. At that time we made a telephone call to you, and you were kind enough to convey information to the Monterrey physicians, which was extremely helpful. You also took the trouble to call Yale University for further antidote and post-treatment [information]. We wish to thank you for your kindness and cooperation at that moment of need, and please feel certain that everyone connected with this matter feels the way we do.

The New York City Poison Control Center offered its aid to the Council on Drugs of the American Medical Association in the Council's study of drug-induced blood dyscrasias, as reported in the March 1, 1960, issue of this Journal.* The Center's network of poison control officers was requested to report any such incident on a designated form prepared by the A.M.A., which the Center forwards to the Council. This activity is in keeping with the decision made at a meeting of the Poison Control Center Advisory Committee that the problem of drug-induced blood dyscrasias be included in the Center's affairs.

Educational Services

Lectures.—The Center is utilized for the teaching of the types, problems, and control of accidental poisonings to undergraduate and graduate medical and nursing students, public health workers, and physicians. During 1959 the Center provided the following lecture services:

1. Several talks on the causation, epidemiology, and prevention of lead poisoning were presented by the Center as part of the postgraduate program of the New York Academy of Medicine.
2. A program, including field visits, on the activities of the Center was arranged for the students of the Harvard School of Public Health (Maternal and Child Health Section). The faculty members who accompanied the students told the Center that the program had provided a unique and very worth-while experience.
3. A lecture on accidental poisonings was presented at a meeting of the Public Health Committee of the New York County Medical Society. The cooperation of the organized medical profession, particularly with regard to accurate and prompt reporting was requested.
4. Several seminars, including elaboration of case material, were presented to fourth-year

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* **60**: 721.

students of the New York University College of Medicine and to a group of students of the Cornell University School of Medicine.

5. A similar program was arranged for students of the Bellevue School of Nursing.

6. An increasing number of requests for talks on the prevention of accidental chemical poisoning were received from medical staffs of voluntary and city hospitals. All such requests were complied with.

Exhibits.—The Poison Control Center Exhibit* was shown at the annual meeting of the American Public Health Association. Great interest was shown by those in attendance, and several hundred individuals at each session requested special information relating to accidental poisonings. Requests were also received from the American Academy of General Practice, the American Medical Association, and the American Academy of Pediatrics to display the exhibit at their 1960 annual conventions.

With the help of the Bureau of Health Education attractive posters were prepared and distributed for display to the public.

Printed Material.—Every issue of the New York State Journal of Medicine carries a report on the Center's activities in the form of reports of incidents reported to the Center.† Reprints were distributed to all poison control officers and to all poison control centers in the country. Considerable favorable comment relating to this series was received from many practicing physicians and medical organizations.

Many technical notices relating to poisonings and their management and control were widely distributed during the year. With the help of the Bureau of Health Education attractive pamphlets were prepared. These were widely distributed to the public. A paper on the causation and control of accidental chemical poisonings, presented at the annual meeting of the American Medical Association, Section on Pediatrics, is published in the *Journal of the American Medical Association.*[3]

Publicity

The activities of the Center were widely publicized nationally over radio and television. Several articles on these activities were published in national lay magazines.** The house organ of the American Telephone and Telegraph Company, Long Lines Department, carried an illustrated article on the activities of the Center.

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3. Jacobziner, H.: Causation, prevention, and control of accidental poisoning, J.A.M.A. **171**: 1769 (Nov. 28) 1959.

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* Prepared with the aid of a grant of $2,500 from Mead Johnson & Company, Evansville, Indiana.

† Entitled "Briefs on Accidental Chemical Poisonings."

** *Readers' Digest, The New Yorker,* and *The Saturday Evening Post.*

"Average"—A Misleading Standard

Nutritional science is discovering that "averages" for anything as complex as the human body may not mean very much. One evidence of this comes from a study done at King's College Hospital in London. There scientists checked the daily caloric intake of 63 men of the same age and economic group, all of whom were in good health. They found that intakes varied from 1,730 to 5,475 calories a day. A similar study on women showed a range of between 1,172 to 3,202 calories.

Further investigation also showed a wide variance in the amount of caloric energy that different people needed to do everyday tasks, including just sitting.

MONTH IN WASHINGTON

DEFEAT of the Forand bill in the House Ways and Means Committee highlighted developments on the issue of legislation to provide more Federal health care for the aged.

The Committee voted 17 to 8 on March 31 to shelve the Forand bill which would increase Social Security taxes to provide surgical benefits and limited hospitalization and nursing home care for Social Security beneficiaries, except the disabled. However, the issue remained very much alive.

The Eisenhower Administration and Congressmen were separately considering various alternative proposals to provide additional health care for the aged, but outside the Social Security system. The action of the House Committee did not rule out the possibility of Forand-type legislation being brought up in the Senate later this session.

The House Committee vote against the Forand bill came during the drafting of an omnibus measure of revisions in the Social Security program. The Committee voted tentatively to bring physicians under Social Security.

The Committee also favored elimination of the requirement that a disabled person must be fifty years old or older to be eligible for Social Security payments.

Arthur S. Flemming, Secretary of Health, Education, and Welfare, said the Administration was considering a plan for Federal payments to the states to help needy old persons buy private health insurance on a voluntary basis. He said he hoped the plan would be ready for submission to Congress by late April.

Sen. Jacob K. Javits (R., N.Y.) and seven other Republican Senators introduced similar legislation in the Senate. The bill called for the Federal government and states jointly to put up about $1 billion a year to help persons sixty-five years old and older, and their spouses, to buy private health insurance. The coverage would include physicians' care in home and office, diagnostic services, hospitalization, and nursing home care.

Another plan being considered by some other members of Congress would broaden the Federal-State public assistance program to provide more health care for needy older persons.

Both President Eisenhower and Vice-President Nixon reiterated their opposition to any compulsory health plan such as the Forand bill. The President told a news conference that such plans would be a definite step toward socialized medicine. He proposed that medical care for the aged be improved through further development of voluntary health insurance programs.

Vice-President Nixon gave his position in a letter to physicians who had communicated with him about the matter. "The Vice-President, throughout his career as a public official, has consistently opposed and will continue to oppose any compulsory health insurance program," the letter said. "This, of course, includes the Forand bill . . . He believes that the best way to handle the problem of people over sixty-five who do not have and cannot afford health insurance is through a program which will enable those who desire to do so to purchase health insurance on a voluntary basis."

On the other side, three candidates for the Democratic nomination for President—Sens. John F. Kennedy (Mass.), Hubert H. Humphrey (Minn.), and Stuart Symington (Mo.)—said they would push for passage of Forand-type legislation.

The AFL-CIO continued its all-out campaign in support of the Forand bill. Leaders of the labor union repeatedly attacked the American Medical Association for opposing the bill. One of the attacks prompted Louis M. Orr, M.D., Fla., to protest in a letter to AFL-CIO president George Meany against the union's "deliberate distortions of the truth, perversions of the truth, and outright untruths."

Dr. Orr charged that allegations in a political memorandum of the AFL-CIO's Committee on Political Education (COPE) "not only . . . attempt to impugn the motives and competence of the nation's physicians, but they seek to mislead labor's rank and file, the members of Congress, and the American people as a whole. When the A.M.A. opposes any legislative health measure, it does so because its members believe that it would lead to poorer, not better, health care for the people of this country."

Senate Republican Leader Everett M. Dirksen (Ill.) also defended the A.M.A. as well as the Eisenhower Administration, against the attacks when AFL-CIO leaders repeated them in testimony before the Senate Subcommittee on Problems of the Aged and Aging.

Senator Dirksen denounced them as "gratuitous slurs," "stinking statements," "invidious . . . insane

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

charges" which constituted "an absolute disservice to the country."

James A. Appel, M.D., Lancaster, Pa., a member of the A.M.A. Board of Trustees, testified before the Senate Subcommittee that the greatest health problem faced by older people is "their isolation from the rest of society." He said: "The health problems of the aged can only be solved within the context of total health. They involve far more than hospitals or a doctors' care. They involve the older person's other requirements in life, whether these be housing, recreation, community understanding and acceptance, the right to be useful, the courtesy of being treated as individuals, or the opportunity of living as self-reliant, respected members of society."

As for an aged person being denied medical care because of a lack of money, Dr. Appel said emphatically: "Medical care is available to every man, woman, and child in the United States regardless of his or her ability to pay for it. That care is not now denied, nor will it be denied."

MEDICAL MEETINGS

Ninth Annual Ira I. Kaplan Lecture

The ninth annual Ira I. Kaplan Lecture will be held on Thursday, May 26, at 5:30 P.M., in the main auditorium, Alumni Hall, New York University School of Medicine, 550 First Avenue, at 31st Street, New York 16, New York.

The lecturer will be Sidney Farber, M.D., professor of pathology, Harvard Medical School at the Childrens' Hospital, and director of research, Childrens' Cancer Research Foundation. Dr. Farber will speak on "Biologic and Therapeutic Considerations of Cancer in Early Life."

Second Conference on Aphasic Children

The second conference on experimental classes for children with language disorders (aphasic children) will be held on Friday, May 27, at 4:00 P.M., in Junior High School 47, 225 East 23rd Street, New York 10, New York.

The speaker will be Dr. Helmer R. Myklebust, professor of language pathology and psychology and director, Institute for Language Disorders, The School of Speech, Northwestern University, Evanston, Illinois. His subject will be, "Language Disorders in Children—Diagnosis and Training." Chairman of the meeting will be William C. Barger, M.D., school psychiatrist, Bureau of Child Guidance, Board of Education, New York City.

Annual Meeting of The American Neurological Association

The eighty-fifth annual meeting of The American Neurological Association will be held at the Statler Hilton Hotel, Boston, June 13 through 15. Information concerning the meeting may be obtained from: Melvin D. Yahr, M.D., Secretary, The American Neurological Association, Neurological Institute, 710 West 168th Street, New York 32, New York.

Second Annual Oregon Cancer Conference

The second annual Oregon cancer conference will be held on July 7 and 8, in Portland, Oregon, under the joint sponsorship of the Oregon State Medical Society, the Oregon Division of the American Cancer Society, and the University of Oregon Medical School. For further information write to: Mr. Roscoe K. Miller, Executive Secretary, Oregon State Medical Society, 2164 SW Park Place, Portland 5, Oregon.

Conference on Cancer at M. D. Anderson Hospital and Tumor Institute, Texas

A clinical conference on cancer of the female genital system will be held at The University of Texas M.D. Anderson Hospital and Tumor Institute, Houston, Texas, October 21 and 22. The program is under the direction of Felix N. Rutledge, M.D., Section of Gynecology, Department of Surgery, M.D. Anderson Hospital and Tumor Institute.

NECROLOGY

Sigurd Anderman, M.D., of New York City, died on December 17, 1959, at the age of sixty-six. Dr. Anderman received his medical degree from the University of Graz in 1920. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edgar Bieber, M.D., of Dunkirk, died on February 20 at the age of seventy-two. Dr. Bieber graduated in 1911 from Hahnemann Medical College of Philadelphia. He was an honorary physician at Brooks Memorial Hospital, a former health officer of Dunkirk, and a past president of the School Physicians Association of New York State. Dr. Bieber was a member of the Chautauqua County Medical Society and the Medical Society of the State of New York.

Solomon Philip Carp, M.D., of New York City, died on March 22 at the age of fifty-seven. Dr. Carp graduated in 1927 from New York University and Bellevue Hospital Medical College and interned at Mount Sinai Hospital. He was a member of the American Rheumatism Association, the New York Rheumatism Association, the New York County Medical Society, and the Medical Society of the State of New York.

Isidore I. Felner, M.D., of Brooklyn, died on November 10, 1959, at the age of fifty-three. Dr. Felner graduated in 1931 from the University of Edinburgh Royal College of Physicians and Surgeons. He was an assistant attending in gynecology at Unity Hospital. Dr. Felner was a member of the American Academy of General Practice, the Kings County Medical Society, and the Medical Society of the State of New York.

James Francis Flattery, M.D., of New York City, died on March 22 at the age of fifty-eight. Dr. Flattery graduated in 1928 from Cornell University Medical College and interned at Knickerbocker Hospital. He was an attending physician at Knickerbocker and Misericordia Hospitals and an assistant attending physician at St. Clare's Hospital. Dr. Flattery was a Fellow of the American College of Chest Physicians and a member of the New York County Medical Society and the Medical Society of the State of New York.

Joseph Friedman, M.D., of Brooklyn, retired, died on April 4 at his home at the age of seventy-six. Dr. Friedman graduated in 1906 from Long Island College Hospital Medical School.

John V. Grieco, M.D., of the Bronx, died on December 13, 1959, at the age of sixty-three. Dr. Grieco received his medical degree from the University of Naples in 1921. He was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Alfred M. Katzenstein, M.D., of New York City, died on March 11 at the age of eighty. Dr. Katzenstein received his medical degree from the University of Göttingen in 1905. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Irving B. Krellenstein, M.D., of Glendale, California, formerly of the Bronx, died on March 23 in California at the age of seventy-two. Dr. Krellenstein graduated in 1910 from Cornell University Medical College. He was a former associate in gynecology and obstetrics at Lebanon Hospital and an associate in obstetrics at Jewish Memorial Hospital. Dr. Krellenstein was a Fellow of the American College of Surgeons and a member of the Bronx Gynecological and Obstetrical Society, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Francis Larkin, M.D., of Kingston, died in Albany Hospital on February 18 at the age of seventy-four. Dr. Larkin graduated in 1911 from Long Island College Hospital Medical School. He was an attending in surgery at Benedictine Hospital. He had also served on the board of managers of the Ulster County Tuberculosis Hospital and the board of managers of the City Laboratory, was a former police surgeon and city health officer, and at the time of his death was secretary of the executive board of Benedictine Hospital. Dr. Larkin was a member of the Ulster County Medical Society and the Medical Society of the State of New York.

Edward Jay Martone, M.D., of Brooklyn, died on December 5, 1959, at the age of fifty-four. Dr. Martone graduated in 1931 from George Washington University School of Medicine and interned at St. Peter's Hospital. He was an attending physician in general practice at Wyckoff Heights Hospital. Dr. Martone was a member of the American Academy of General Practice, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Daniel McCarthy, M.D., of Brooklyn, died on December 28, 1959, at the age of fifty-three. Dr. McCarthy graduated in 1930 from Queens University Faculty of Medicine, Ontario, and interned at Kings County Hospital. He was an assistant in surgery at Caledonian Hospital. Dr. McCarthy was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Maximilian Meyer, M.D., of the Bronx, died on November 13, 1959, at the age of seventy-one. Dr. Meyer received his medical degree from the University of Erlangen in 1914.

Andrew Harp Montgomery, M.D., of New York City, died on March 18 at the age of eighty-four. Dr. Montgomery graduated in 1901 from the University of Toronto Faculty of Medicine. He was a consultant in dermatology and syphilology at Polyclinic Hospital. The last surviving founding member of the West Side Clinical Society, he had been professor of dermatology and syphilology at the New York Polyclinic Medical School and until his retirement in 1956 had taught dermatology at the New York College of Podiatry. Dr. Montgomery was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology and Syphilology, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charles Rosenheck, M.D., of New York City, died on March 5 at the age of eighty. Dr. Rosenheck was graduated in 1905 from Columbia University College of Physicians and Surgeons. He was a consultant in neuropsychiatry at the Hospital for Joint Diseases and Jewish Memorial Hospital and an attending in neuropsychiatry at Midtown Hospital. Dr. Rosenheck was a Diplomate of the American Board of Psychiatry and Neurology, a Member of the American Psychiatric Association, and a member of the New York Neurological Society.

Abraham Strachstein, M.D., of New York City, died on April 3 at Beth Israel Hospital at the age of eighty. Dr. Strachstein graduated in 1903 from Cornell University Medical College and interned at Beth Israel Hospital. Retired, he had served as instructor and chief of the urology clinic at Cornell Medical College and the Columbia University College of Physicians and Surgeons, and was on the urologic staff of Beth Israel Hospital. Dr. Strachstein was a member of the American Urological Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Paul Waldman, M.D., of New York City, died at the Park East Hospital on April 12 at the age of seventy-seven. Dr. Waldman graduated in 1904 from Long Island College Hospital Medical School. He was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold Layton Walker, M.D., of Elmira, died on March 13 at the Arnot-Ogden Memorial Hospital at the age of fifty-two. Dr. Walker graduated in 1932 from the University of Buffalo School of Medicine. He was a consultant in dermatology at St. Joseph's and Arnot-Ogden Memorial Hospitals. Dr. Walker was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology and Syphilology, the Chemung County Medical Society of which he had also served as secretary, the Medical Society of the State of New York, and the American Medical Association.

Henry Hartzell Waugh, M.D., of Dover Plains, retired, died on October 5, 1959, at the age of ninety-one. Dr. Waugh graduated in 1891 from the Medical Department of Wooster University, Cleveland, Ohio. He had been a senior in surgery at the Brooklyn Eye and Ear Hospital. Dr. Waugh was a Diplomate of the American Board of Ophthalmology, a Fellow of the American College of Surgeons, and a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Davenport West, M.D., of New York City, retired, died on March 29 in Nassau, Bahamas, at the age of seventy-seven. Dr. West graduated in 1909 from Columbia University College of Physicians and Surgeons and interned at Roosevelt and Sloane Hospitals. He was a consulting physician in medicine at Roosevelt Hospital. Dr. West was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical

Society of the State of New York, and the American Medical Association.

Victor Willner, M.D., of New York City and Woodmere, died on March 13 at his home at the age of fifty-one. Dr. Willner received his medical degree from the University of Paris in 1935. He was an associate attending physician at St. Joseph's, Far Rockaway, and Meadowbrook Hospitals, senior clinical assistant in gastroenterology and research assistant in gastroenterology at the Research Laboratory of Mount Sinai Hospital, and an attending in gastroenterology at Long Island Jewish Hospital. Dr. Willner was a Diplomate of the American Board of Internal Medicine (Gastroenterology), a Fellow of the American College of Gastroenterology, a Fellow of the American College of Physicians, and a member of the American Gastroscopic Society, the New York Academy of Gastroenterology, the Nassau County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Mental Disturbances Can Begin at Birth

Psychiatric disturbances can occur in babies from the time of birth, according to an article in the December 26 issue of the *J.A.M.A.*

"Insufficient attention is given to the observation that infants can have psychiatric disorders," three doctors at Mount Sinai Hospital in New York City reported. "From birth, disturbed behavior may occur."

Since a baby's range of behavior is limited, they said, such psychiatric disturbances in infancy are more likely to be expressed as bodily complaints. Furthermore, evidence is accumulating that emotional trauma in infancy may be of critical significance in the development of later psychiatric disorders. Early treatment seems to be the keystone to the prevention of later serious disorders.

The doctors described a case in which it was found that an eight-month-old baby's expulsion of food resulted from mental depression. The baby lost weight and was suffering from severe malnutrition because he regurgitated his food within minutes after being fed. On admission to the hospital, he appeared wasted, chronically ill, and unhappy.

During the first month in the hospital, the baby was given different regimens, but none had any long-lasting success. At this point, psychiatric evaluation was requested. The psychiatrists diagnosed the problem as a reaction resulting from "infantile anxiety neurosis with depression."

Doctors interviewed the mother and found her to be depressed. They discovered that the baby's problem developed after the mother ceased to give him any love or attention. A special nurse was then assigned to the baby to give him constant warmth and attention. After this, the baby gradually ceased to regurgitate and gained weight. He also became more responsive and happy. The mother also was treated through psychiatric interviews.

Two and a half months after he was admitted, the baby was discharged from the hospital. The mother continued to receive psychiatric help, and the baby continued to improve and develop normally.

"This case demonstrates the need for maternal love, fondling, and attention for the well-being and normal development of an infant," the doctors concluded.

"Psychiatric treatment of an infant must involve the mother as an integral part of the baby. When the mother cannot be involved directly in treatment, a mother-surrogate must be supplied since an infant cannot progress without a mother-child inter-relationship.

"We are attempting to develop a 'mother bank' of volunteers who would be able, under supervision, to act as mother-surrogates when needed."

The authors of the article were Myron L. Stein, M.D., Aaron R. Rausen, M.D., and Abram Blau, M.D.

MEDICAL NEWS

Tour to Europe and Israel—A chartered jet-flight tour to Europe and Israel is being cosponsored by the American Jewish Physicians' Committee and the American Friends of the Hebrew University.

The flight will leave New York on July 13. The group will visit Paris, Florence, and Rome and will arrive in Israel on July 25 for a two-weeks stay. Of particular interest will be the dedication ceremony for the new medical school building of the Hebrew University of Jerusalem on August 3. The 20 chapters of the American Jewish Physicians' Committee have been instrumental in raising funds for the new building.

Those interested in this trip should contact: Mr. H. Fischer, National Office of the American Jewish Physicians' Committee, 11 East 69th Street, New York 21, New York. Telephone YUkon 8–8400.

P & S Alumni Association to Hold Dinner in Miami—The Association of the Alumni of the College of Physicians and Surgeons of Columbia University will hold a dinner party on June 15 at the Beau Rivage Hotel, Miami Beach, Florida, during the A.M.A. convention there. Alumni and wives are invited to attend. Tickets may be obtained in advance from the Alumni office at 630 West 168th Street, New York 32, New York, or may be purchased at the registration desk at the convention.

New President for Associated Hospital Service—Announcement has been made of the election of Mr. J. Douglas Colman as president and executive officer of Associated Hospital Service, Inc., New York's Blue Cross Plan. Mr. Colman assumed his new duties on May 1.

New York City General Business Tax Due—New York City Treasurer, Hilda G. Schwartz, has issued a reminder that the New York City General Business and Financial Tax for the calendar year 1959 is due and payable on or before May 15.

The General Business Tax is imposed for the privilege of carrying on or exercising for gain or profit within the City of New York any trade, business, profession, vocation, or commercial activity (other than a financial business), or of making sales within the city. The rate of the tax is two fifths of one per cent on all gross receipts in excess of $10,000 received in and/or allocated to the City of New York for the base period covered by the return. Pursuant to a 1959 amendment, the first $10,000 of gross receipts may be deducted in computing the tax due. The practice of a profession is subject to the New York City General Business Tax, including lawyers, doctors, dentists, accountants, engineers, architects, and others.

The New York City Occupancy Tax Return accompanies all business tax returns. The Occupancy Tax is payable by persons who occupy space for gainful purposes for a period of one month or more prior to July 15, 1960. The rate is one dollar per thousand of rental value up to $6,000. The tax is payable before July 15, 1960.

Assistance in the preparation of these tax forms may be obtained at the following offices of the Department of Finance, Bureau of City Collections: *Manhattan:* 50 Pine Street, New York 5, New York; *The Bronx:* Tremont and Arthur Avenues, New York 57, New York; *Brooklyn:* Room 1, Municipal Building, Brooklyn 1, New York; *Queens:* Borough Hall, Kew Gardens 24, New York; and *Richmond:* Borough Hall, St. George, Staten Island 1, New York.

Central Psychiatric Society Holds Meeting—The Central New York Psychiatric Society held its spring meeting in the new Medical-Surgical Building at Rochester State Hospital, Rochester, on April 7. Michael Kehoe, M.D., instructor and research fellow in psychiatry, University of Rochester, delivered a talk on "Hypnosis in Psychotherapy."

Open Staff Policy at Hospital—Eastview Hospital, a private psychiatric, alcoholic, and addictive patient institution in New York City has announced that it maintains an open staff policy to permit personal physicians to continue treatment of patients after admittance to the hospital. The open staff policy also applies to use of psychiatric facilities for electroconvulsive therapy, electroencephalography, and electrocardiography.

Ruth Kotinsky Memorial Lectures—The Bank Street College of Education will sponsor the Ruth Kotinsky Memorial Lectures from May to November. The theme of the lectures will be the integration of mental health concepts with the theory and practice of the human relations professions.

The lectures are scheduled as follows: May 21, "Religion and Law"; September 24, "Education";

October 15, "Dentistry and Nursing"; and November 19, "Psychology and Community Psychiatry." Earl A. Loomis, Jr., M.D., New York City, will speak on May 21 and Viola W. Bernard, M.D., New York City, will speak on November 19.

There is no admission charged for the lectures. Tickets may be obtained from: Bank Street College of Education, 69 Bank Street, New York 14, New York.

American Medical Golf Association—The American Medical Golf Association will hold its forty-fourth annual tournament at the Diplomat Hotel and Country Club, Hollywood, Florida, on Monday, June 13.

Membership in the Association is available to any member of the American Medical Association and is a lifetime membership. There are no annual dues. Tournament fees are paid by participants at each annual tournament.

Interested physicians should write for an application blank to: John A. Growdon, M.D., 1324 Professional Building, 11th and Grand Avenue, Kansas City, Missouri.

Medical Society in Pennsylvania Initiates New Medical Scholarship Plan—The Montgomery County Medical Society, of southeastern Pennsylvania, has launched a program of scholarships for medical students. They hope that the program will be the beginning of a widespread attempt by physicians to reverse the rapid decline of both quality and quantity of applicants for medical schools.

Alarmed by well-documented reports from leaders of medical education, the Society did a committee study of the situation. It was found that the decline in medical school candidates had reached a serious level. Contrary to general belief, there are only 1.87 applicants for every seat in medical school freshman classes. They found that the pleasant fiction that there are nine or ten applicants for each medical school opening has not been true for thirty years. In addition the number of "A" students applying to medical schools has dropped off sharply. This trend is also shown in the recent rise in medical school "flunk-outs." Academic casualties were 3.4 per cent in 1954-1955 and 5.6 per cent three years later.

The conclusion drawn as a result of the study was that medicine is no longer getting its share of first-class brains in its schools. To alleviate the situation a plan has been drawn up to supply eligible students with scholarships worth $1,000 toward tuition in any American medical school. The only restrictions imposed on the holder of the scholarship is that he maintain good grades and be a resident of the country. The recipient will be urged, but not required, to intern in a Montgomery County hospital and to attempt eventual repayment of the grant.

The Montgomery Society has prepared free information kits for use by other county societies in organizing similar programs. To receive the kit write to: Medical Society Bulletin, Norristown, Pennsylvania.

Work Conference on the Rehabilitation of the Psychiatric Patient—Teachers College, Columbia University, Department of Psychological Foundations and Services, and Fountain House Foundation, Inc., will cosponsor a work conference on "The Psychiatric Patient—His Post-Hospital Rehabilitation and Adjustment," June 27 through July 8.

Sessions will be held at both the Foundation's headquarters, 412 West 47th Street, New York 36, New York, and at the University, 525 West 120th Street, New York 27, New York.

For information and application contact: Dr. Abraham Jacobs, Box 35, Department of Psychological Foundations and Services, Teachers College, Columbia University, New York 27, New York.

New Grant-In-Aid Program for Study of Alcoholism—A new grant-in-aid program, through which relatively small research grants may be arranged quickly for competent scientists working in the field of alcoholism and related subjects, has been announced by the scientific advisory committee of Licensed Beverage Industries, Inc.

In response to the growing need for more scientific information both as to the extent of alcoholism and as to its causes and treatment Licensed Beverage Industries, Inc., is making this program possible through a grant of $500,000 over a five-year period.

Application forms and detailed information may be obtained by writing to: Scientific Advisory Committee, Licensed Beverage Industries, Inc., 155 East 44th Street, New York 17, New York.

Investigatorship Awards Offered—The Arthritis and Rheumatism Foundation offers predoctoral, postdoctoral, and senior investigatorship awards in the fundamental sciences related to arthritis for work beginning July 1, 1961. Deadline for applications is October 31, 1960.

The awards are intended as fellowships to advance the training of young men and women for an investigative or teaching career and are not in the nature of a grant-in-aid in support of a research project.

The program provides for three awards: (1) Predoctoral fellowships which are limited to students who hold a bachelor's degree. Each applicant studying for an advanced degree must be acceptable to the individual under whom the work will be done. These fellowships are tenable for one year with prospect of renewal. Stipends range from

$2,000 to $3,000 per year, depending on the family responsibilities of the fellow. (2) Postdoctoral fellowships which are limited to applicants with the degree of Doctor of Medicine, Doctor of Philosophy—or their equivalent. These fellowships are tenable for one year, with prospect of renewal. Stipends range from $5,000 to $7,000 per year, depending on the family responsibilities of the fellow. (3) Senior Investigator Awards which are made to candidates holding or eligible for a "Faculty rank" such as instructor or assistant professor (or equivalent) and who are sponsored by their institution. Stipends are from $7,000 to $10,000 per year and are tenable for five years.

For further information and application forms write to: Medical Director, Arthritis and Rheumatism Foundation, 10 Columbus Circle, New York 19, New York.

Grant Given for Narcotics Research Facility—A $300,000 grant has been made to the New York State Department of Mental Hygiene for construction of a narcotics research facility by the Division of Research Grants of the National Institutes of Health.

The grant, matched by a similar appropriation of State funds, will go toward remodeling a wing of an existing building at Manhattan State Hospital, Ward's Island into a basic science laboratory devoted to research in drug biochemistry and physiology and in general neurochemistry. The laboratory will be part of the State's first full-time narcotics research unit.

Joint Meeting of Alumni Associations—The first joint reunion of the alumni associations at the Columbia-Presbyterian Medical Center was held in April. Fourteen alumni organizations representing all units of the Medical Center met concurrently, with each association holding its own dinner meeting and social gathering. Included were scientific programs covering all aspects of medicine.

A dinner dance, sponsored by the Alumni Association of the College of Physicians and Surgeons of Columbia University, was held at the Waldorf-Astoria Hotel on the final evening of the meeting.

The alumni organizations which participated in the meeting were: Allen O. Whipple Surgical Society, Alumnae of the School of Nursing and Nursing Staff at the Columbia-Presbyterian Medical Center, The Association of the Alumni of the College of Physicians and Surgeons of Columbia University, The Alumni Association of the Columbia University Psychoanalytic Clinic, Alumni Association of the Institute of Ophthalmology, Alumni Association of the New York Orthopaedic Hospital, Alumni Association of the New York State Psychiatric Institute-Presbyterian Hospital, Anesthesia Alumni Association of Presbyterian Hospital, Association of the Alumni of the Columbia University School of Public Health and Administrative Medicine, Babies Hospital Alumni Association, Neurological Institute Alumni Association, Society of the Alumni of The Presbyterian Hospital, Society of the Alumni of Sloane Hospital, and Squier Urological Clinic Alumni.

Unique Foreign Fellowship Program—A unique fellowship program designed to further medical education by sending future doctors to remote areas of the world has been announced by the Association of American Medical Colleges. The program will enable selected medical students to gain wide clinical experience as well as to assist in the war against disease in the backward areas of the world.

The three-year program, established under a $180,000 grant from Smith Kline & French Laboratories, is open to all medical college students who have completed their third year of study. Scheduled to begin this summer, the program will permit an average of 30 students to participate each year.

Eligible students who are prepared to spend an average of twelve weeks working in foreign locales are urged to submit applications to their respective deans for review. Following initial screening, up to three applications from each school will be forwarded to a panel of physicians who will make up the selection committee for the fellowships.

Personalities

Awarded

Murray H. Bass, M.D., and Harold Neuhof, M.D., New York City, a gold medal from the Associated Alumni of the Mount Sinai Hospital for more than fifty years of medical service. . . Robert B. Hagen, M.D., Liverpool, a citation of merit by the Liverpool Chamber of Commerce in recognition of his thirty-seven years of service to the community.

Retired

Louis F. Knoll, M.D., Brooklyn, after forty-three years of practicing medicine. . .John H. Travis, M.D., New York City, after thirty-eight years of service with the New York State Department of Mental Hygiene . . .George L. Warner, M.D., Sonyea, on May 1, after thirty-seven years of State service.

Honored

Henry I. Fineberg, M.D., Jamaica, at a testimonial dinner April 25 sponsored by the Queensboro Council of Social Welfare. . .David Kershner, M.D., Brooklyn, with a "leadership breakfast" in honor of his past work as a chairman of the United Jewish Appeal's Brooklyn Physicians Division.

New Office

Donald E. George, M.D., for the practice of general medicine in Clifton.

Relocated

Kiyo Tashiro, M.D., from Dolgeville to Rome for the practice of general medicine and surgery.

Elected

J. Burns Amberson, M.D., New York City, as a master of the American College of Physicians . . . Frank C. Maxon, Jr., M.D., Albany, as president of the New York Trudeau Society . . . E. King Morgan, M.D., Brooklyn, as a trustee of the Flatbush Savings Bank . . . Russell H. Wixson, M.D., Niagara Falls, as president of the Niagara County Chapter of the New York State Academy of General Practice.

Appointed

Alexander E. W. Ada, M.D., Bronxville, to the board of directors of St. Lawrence University . . . Alvan R. Feinstein, M.D., New York City, as medical director of Irvington House, Irvington-on-Hudson . . . James Monroe, M.D., Ray Brook, as director of the Ray Brook State Tuberculosis Hospital . . . Charles E. Niles, M.D., West Brentwood, as assistant commissioner for administration in the New York State Department of Mental Hygiene . . . Austin Schoen, M.D., New York City, as vice-president in charge of copy of L. W. Frohlich and Company.

Speakers

Nathan Ackerman, M.D., New York City, at a meeting of the Association for the Advancement of Psychotherapy on April 22 on the topic "Family Dynamics and Family Psychotherapy" . . . Jacob Arlow, M.D., New York City, on March 24, on the topic "Animals and Human Nature" at Albert Einstein College of Medicine . . . Goodwin M. Breinin, M.D., New York City, before the Long Island Ophthalmological Society on April 25 on the subject "The A and V Syndromes" . . . John Caffey, M.D., New York City, on April 28, the Richard A. Rendich Memorial Lecture at the State University of New York, Downstate Medical Center . . . Clara Regina Gross, M.D., New York City, as moderator of the annual conference of the New York Tuberculosis and Health Association . . . Louis M. Hellman, M.D., Brooklyn, at Albert Einstein College of Medicine on March 22 on the subject "Early Home Discharge of the Obstetrical Patient" . . . Horace L. Hodes, M.D., New York City, on April 26, the Bela Schick Lecture at the Mount Sinai Hospital of New York on the topic "Immunity to Viral Infection" . . Edith M. Lincoln, M.D., New York City, on the topic "Isoniazid in the Treatment and Prevention of Tuberculosis in Children" at the annual conference of the New York Tuberculosis and Health Association on April 26 . . . Cyril March, M.D., New York City, on the topic "Skin Manifestations of Internal Disease" on April 19 at the monthly meeting of the Jefferson County Medical Society . . . Richard Marshak, M.D., New York City, on the subject "Radiology of the Small Bowel" on April 4 at Albert Einstein College of Medicine . . . Jerome M. Schneck, M.D., New York City, on March 21 before the American Hypnodontic Society on the subject "Hypnosis in Medicine and Dentistry."

Treatment of Ulcerative Colitis with Topical Hydrocortisone Hemisuccinate Sodium

A study of 16 patients with hemorrhagic proctocolitis or colitis indicates that local treatment with a solution of hydrocortisone hemisuccinate sodium via rectal catheter brought improvement in the majority of the treated patients, while those patients who, for control purposes, had been given an inert solution as a placebo grew worse. In 2 patients who acted as their own controls, the hydrocortisone solution effected a remission, but no improvement took place on the dummy or placebo treatment.—*American Practitioner and Digest of Treatment, June, 1959, Geoffrey Watkinson, M.D.*

BOOKS RECEIVED

(The following books were received during the month of March, 1960)

Diabetes, with a chapter on Hypoglycemia. Edited by Robert H. Williams, M.D. Octavo of 793 pages, illustrated. New York, Paul B. Hoeber, Inc., Medical Division of Harper Brothers, 1960. Cloth, $20.

Cosmetic Surgery: Principles and Practice. By Samuel Fomon, M.D. Quarto of 651 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $27.50.

Recent Advances in Surgery. Edited by Selwyn Taylor, M.D. Fifth edition. Octavo of 500 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $13.

The Whole Truth about Allergy. By Herman Hirschfeld, M.D. Third edition. Duodecimo of 199 pages. New York, Allergy Publishers, 1960. Paper, $0.50.

A Traveler's Guide to Good Health. By Colter Rule, M.D. Octavo of 266 pages. Garden City, N.Y., Doubleday & Company, Inc., 1960. Cloth, $3.95.

Xylocaine, the Pharmacological Basis of its Clinical Use. By Sten Wielding, M.D. Octavo of 146 pages, illustrated. Stockholm, Sweden, Almqvist & Wiksell, (Worcester, Astra Pharmaceutical Products, Inc.), 1959. Cloth, 20k.

The Essentials of Perimetry. By Howard Reed, M.B. Octavo of 192 pages, illustrated. London, Oxford University Press, 1960. Cloth, $10.50.

Fundamentals of Child Psychiatry. By Stuart M. Finch, M.D. Octavo of 334 pages. New York, W. W. Norton & Company, Inc., 1960. Cloth, $5.95.

Your Heart: A Handbook for Laymen. By H. M. Marvin, M.D. Octavo of 335 pages. Garden City, N.Y., Doubleday & Company, Inc., 1960. Cloth, $4.50.

Typical Gynecologic Operations, with Special Consideration of Technical Advantages. By Dr. Siegfried Tapfer. Translated by L. M. Szamek, M.D. Octavo of 81 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $9.00.

Cardiac Auscultation, Including Audio-Visual Principles. By J. Scott Butterworth, M.D., Maurice R. Chassin, M.D., Robert McGrath, M.D., and Edmund H. Reppert, M.D. Second revised and enlarged edition. Octavo of 102 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $6.25.

Glaucoma, Transactions of the Fourth Conference, March 8, 9, and 10, 1959, Princeton, N.J. Edited by Frank W. Newell, M.D. Octavo of 257 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1960. Cloth, $8.00.

Ciba Foundation Study Group No. 3. Cancer of the Cervix, Diagnosis of Early Forms. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Maeve O'Connor, B.A. With 27 illustrations. Duodecimo of 114 pages. Boston, Little, Brown and Company, 1959. Cloth, $2.50.

Ciba Foundation Symposium on Biochemistry of Human Genetics. Arranged jointly with The International Union of Biological Sciences. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. With 60 illustrations. Octavo of 347 pages. Boston, Little, Brown and Company, 1959. Cloth, $9.50.

Ciba Foundation Tenth Anniversary Symposium on Significant Trends in Medical Research. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., Cecilia M. O'Connor, B.Sc., and Maeve O'Connor, B.A. With 41 illustrations. Octavo of 356 pages. Boston, Little, Brown and Company, 1959. Cloth, $9.50.

Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume II. Edited by R. Glen Spurling, M.D., and Barnes Woodhall, M.D. Octavo of 705 pages, illustrated. Washington, D.C., Office of the Surgeon General, Department of the Army, 1959. Cloth, $7.00.

The Medical Clinics of North America. Lahey Clinic Number. March, 1960. Endocrine and Metabolic Diseases and Use and Abuse of Corticosteroid Therapy. Octavo. Philadelphia, W. B. Saunders Company, 1960. Published Bi-monthly (six numbers a year). Cloth, $18 net; Paper, $15 net.

Current Approaches to Psychoanalysis. Edited by Paul H. Hoch, M.D., and Joseph Zubin, Ph.D. The Proceedings of the Forty-Eighth Annual Meeting of the American Psychopathological Association, Held in New York City, February 1958. Octavo of 207 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $6.50.

Massage, Manipulation and Traction. Edited by Sidney Licht, M.D. Volume five of Physical Medicine Library. Octavo of 275 pages, illustrated. New Haven, Elizabeth Licht, Publisher, 1960. Cloth, $10.

Handbook of Neurological Diagnostic Methods. Edited by Fletcher McDowell, M.D., and Harold G. Wolff, M.D. Octavo of 201 pages, illustrated. Baltimore, Williams & Wilkins Company, 1960. Paper, $4.50.

Anatomy: A Regional Study of Human Structure. By Ernest Gardner, M.D., Donald J. Gray, Ph.D., and Ronan O'Rahilly, M.D. Quarto of 999 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $15.

Medical Care of the Adolescent. By J. Roswell Gallagher, M.D., and the staff physicians of the adolescent unit. Octavo of 369 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1960. Cloth, $10.

Principles of Public Health Administration. By John J. Hanlon, M.D. Third edition. Octavo of 713 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $10.50.

Major Activities in the Atomic Energy Programs, January-December 1959. United States Atomic Energy Commission. Octavo of 628 pages, illustrated. Washington, D.C., U.S. Government Printing Office, 1960. Paper, $2.00.

BOOKS REVIEWED

Clinical Scalar Electrocardiography. By Bernard S. Lipman, M.D., and Edward Massie, M.D. Fourth Edition. Octavo of 474 pages, illustrated, Chicago, The Year Book Publishers, Inc., 1959. Cloth, $8.00.

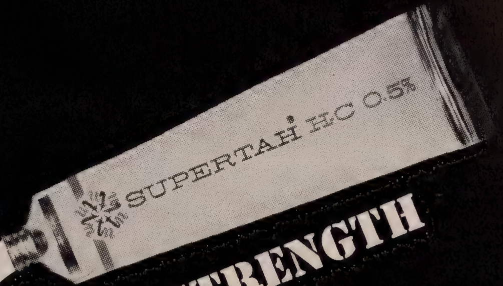
This treatise is a valuable book for the student of electrocardiography. It explains various theories and methods employed at the present time in simple fashion. It is of value to the clinician who wishes to correlate the history, the clinical findings, and the electrocardiogram in the management of the cardiac case. Numerous electrocardiograms are shown describing every type and condition encountered in heart disease. For those interested in a more intensive study of the problem, an extensive bibliography is provided.—SIMON FRUCHT

Anesthesia For Infants and Children. By Robert M. Smith, M.D. Quarto of 418 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $12.

Reading this well-written text is a rewarding experience; for the beginner it will elucidate the fundamentals of anesthesia for pediatric surgery; for the anesthesiologist who infrequently has a pediatric case it will improve his standard of practice. Even the anesthesiologist who devotes most of his time to pediatric cases may profit from reading this encyclopedic work. It covers all aspects of the subject in detail from open-drop ether to hypothermia and open-heart surgery. At the end of each chapter is a complete list of well-chosen references. The chapters follow in logical sequence. The index is comprehensive and permits the book to serve as a reference text which belongs in every medical library. The publishers are to be commended on the binding, the quality of paper, and the fitting use of numerous illustrations. This book is highly recommended as the definitive monograph on pediatric anesthesiology.—SAMUEL BERKOWITZ

Steroids. By Louis F. Fieser and Mary Fieser. Octavo of 945 pages, illustrated. New York, Reinhold Publishing Corporation, 1959. Cloth, $18.

[Continued on page 1666]



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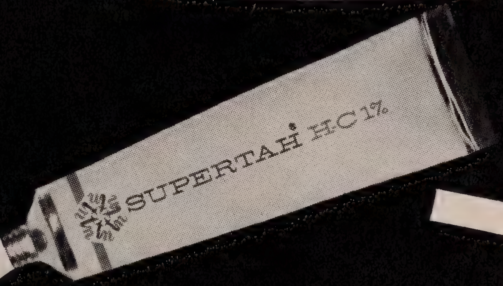

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[Continued from page 1664]

The period in which we live is referred to as the era of antibiotics; with equally good reason one may refer to it as the era of steroid hormones. Both antibiotics and hormones have overshadowed earlier treatment, and both have no therapeutic counterpart in the early decades of this century. Though materials which owed their effect to hormones were in use then, such as thyroid and adrenalin, they were not steroid hormones. And digitalis, though partaking of a steroidal structure is not a hormone. A steroid hormone is a material which has the cyclopentanophenanthrene nucleus; it can be recognized in estrogenic or cortical hormones, in androgens and progestogens, in cholesterol and in other materials.

The present book, a successor to the *Natural Products Related to Phenanthrene* (1949), is devoted to steroids. Among the steroids in therapeutic use explored therein are the vitamins D, dehydrocholic and other bile acids, cholesterol, estrogens, androgens, progestational hormones, and those progestogens having progestational effects as well as the anabolic qualities of androgenic hormones, adrenal corticosteroids, and digitalis glycosides. The strength of the book lies in the detailed probing of the chemistry of those hormones and their many hundreds of derivatives—homologues, analogues, and isomers—with respect to their isolation or conversion, synthesis, physical constants, configurations, and other aspects of structure.

But data are also present on the biologic effects of the various hormones if determined. Potency, differences of absorption and duration of effect, physiologic activity or antagonists are found here for many of the commonly used or newer steroid hormones.

This book is a fountainhead for steroids, preeminent in the chemical aspects, moderate in the biologic facets, but comprehensive, with respect to lending an understanding of the relationship of the nature of hormones. The book is unique—the authors are well known to be among the top authorities on steroids.—Erwin Di Cyan

The Foot and Ankle. By Philip Lewin, M.D. Fourth edition. Octavo of 612 pages, illustrated. Philadelphia, Lea & Febiger, 1959. Cloth, $14.

A book which attains the distinction of reaching a fourth edition is worthwhile and the author has expanded the material as well as added a considerable amount of new knowledge. The changing concepts of etiology and treatment are stressed. Many new technics in surgery are emphasized. Surgical procedures in many disease states are standardized and this especially applies to poliomyelitis. Traumatic surgery in the foot and ankle is very well demonstrated and metabolic disturbances and their foot manifestations are covered in detail.

The author draws from a vast clinical experience and a good deal of teaching background. This is manifested in the book.

The volume is recommended for all physicians and especially for the general practitioner.—Alan A. Kane

Early Diagnosis. Edited by Henry Miller, M.D. Octavo of 400 pages. Baltimore, The Williams and Wilkins Company, 1959. Cloth, $6.50.

The idea behind this collection is a good one. The editor, Henry Miller, M.D., an English neurologist, has asked a panel of eminent British physicians to describe the pitfalls of early diagnosis in a wide variety of illnesses and to tell us how to avoid them. Generally speaking, the papers are skillful and spirited and will be instructive reading for anyone. As might have been predicted from the interests of the senior author, the papers on neurologic subjects are the best.

Although this symposium is stimulating and to be commended, there is very little in it which cannot be found in the larger, up-to-date textbooks which should be in the library of the modern physician.—Milton Plotz

Pulmonary Circulation. An International Symposium, 1958. Sponsored by the Chicago Heart Association. Edited by Wright R. Adams, M.D., and Ilza Veith, Ph.D. Octavo of 316 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $4.50.

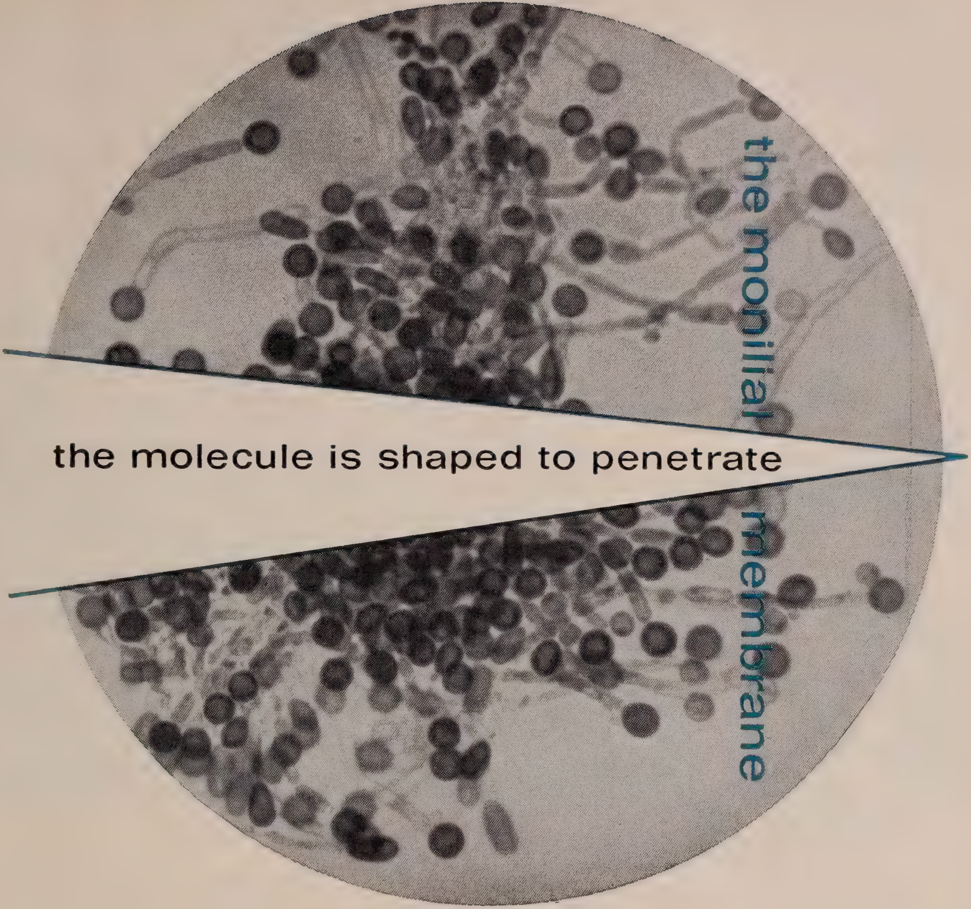
This attractively printed volume comprises the papers presented at a symposium on the pulmonary circulation sponsored by the Chicago Heart Association. The sections include historical development, physiology, pathology, primary lung diseases, and congenital and acquired heart disease. Each of the authors is a recognized authority and there are numerous helpful figures and diagrams. The discussion, often lively, is included after each paper.

Reprinting important seminars in this form calls for high praise. It should be recognized, however, that since it is not a systematic textbook, it may be difficult for the reader to find material which he seeks. The index of such a collection should be very comprehensive; the index of this book is on the skimpy side. Nonetheless, the symposium is practically a compulsory acquisition for any internist.—Milton Plotz

Radiation Therapy. By Walter T. Murphy, M.D. Quarto of 1,041 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $25.

This book on the treatment of cancer emphasizes the indications, technics, end results, and com-

[Continued on page 1668]



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Ortho

*Lapan, B.: Am. J. Obst. & Gynec. 78:1320, 1959.

[Continued from page 1666]

plications of radiation therapy. It is written by a practicing radiologist who for twenty-five years has been radiotherapist at the Roswell Park Memorial Institute in Buffalo, N. Y.

Walter T. Murphy, M.D., has had extensive experience in this field and presents the fruit of his endeavors in a very organized and straight-forward manner. The subject, which is extremely complicated and usually dull, is enriched by the author's successful endeavor to pass on the experience gained throughout years of work in this field.

The reading is made easy by good sized type and simple language. Another fine feature of the book is the use of innumerable drawings and photographs depicting pathology, technics, and apparatus. All in all it is an excellent and a most exhaustive reference, and a work which any man interested in radiation therapy should own.—BERNARD S. POST

A Mount Sinai Hospital Monograph on Systemic Lupus Erythematosus. Edited by George Baehr, M.D., and Paul Klemperer, M.D. Quarto of 84 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $3.75.

This monograph by the Mount Sinai Hospital Group is a thorough symposium covering present knowledge of this puzzling disease.

The subject matter is written in an authoritative and readable manner. An extensive table of references is given at the end of each essay.

The monograph of 84 pages should be in the library of all internists, dermatologists, and general practitioners.—JOHN C. GRAHAM

The Preparation of Medical Literature. By Louise Montgomery Cross. Octavo of 451 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $10.

This book is an extremely practical guide for the physician who is thinking of writing a medical paper or a book. Apparently the author has had long experience in improving or salvaging manuscripts which are less than good because of inadequate planning, for she devotes much space to problems of planning and organization. She is also a firm believer in sound bibliographic technic; even an experienced writer can profit from her chapter on gathering material and the use of sources.

The section titled "Writing the Journal Paper or Book" is probably the least effective part of the book. There are some things which each man must do for himself and unfortunately Miss Cross cannot write somebody else's paper or book. However, her advice on the technic of drafting, revision, and preparation of final copy is born of an editor's long and frustrating experience with poorly prepared copy.

When the author deals with style and styling, her recommendations are conservative, straightforward, easy to follow, and, if followed, will result in maximum communication with minimum words. One cannot cavil at her advice; it is aimed at the nonliterary writer and her message cannot be mistaken. Her chapters on problems of illustration are masterful; her selection of illustrative material for these chapters is superb, and her advice is foolproof. The section on editing shows that she is as penetrating an editor as she is a writer.

It is a pleasure to recommend the book. The inexperienced writer will find it a guide to the perplexed; the experienced writer will pick up a few good points. However, there is no substitute for brains. The book will not write the paper for you.—WILLIAM B. OBER

The Power of Sexual Surrender. By Marie N. Robinson, M.D. Octavo of 261 pages. Garden City, Doubleday & Company, Inc., 1959. Cloth, $4.50.

Marie N. Robinson, M.D., is listed on the dust jacket as being a well-qualified psychiatrist with psychoanalytic training at Flower and Fifth Avenue Hospitals. It goes on to say she has written many popular layman's articles.

This book is easy to read. One may quibble about the technical data and theoretical and philosophic viewpoints from the professional standpoint.

In this kind of book there is always the danger that the patient will only continue to read rather than to get something therapeutic done. This particular book expounds ideas generally agreed to be useful to laymen (women in this case). The author quite properly tells the reader how professional help may be obtained.

This book will probably be worth while to many women who are worried about their sexual responses.—EDWARD L. PINNEY, JR.

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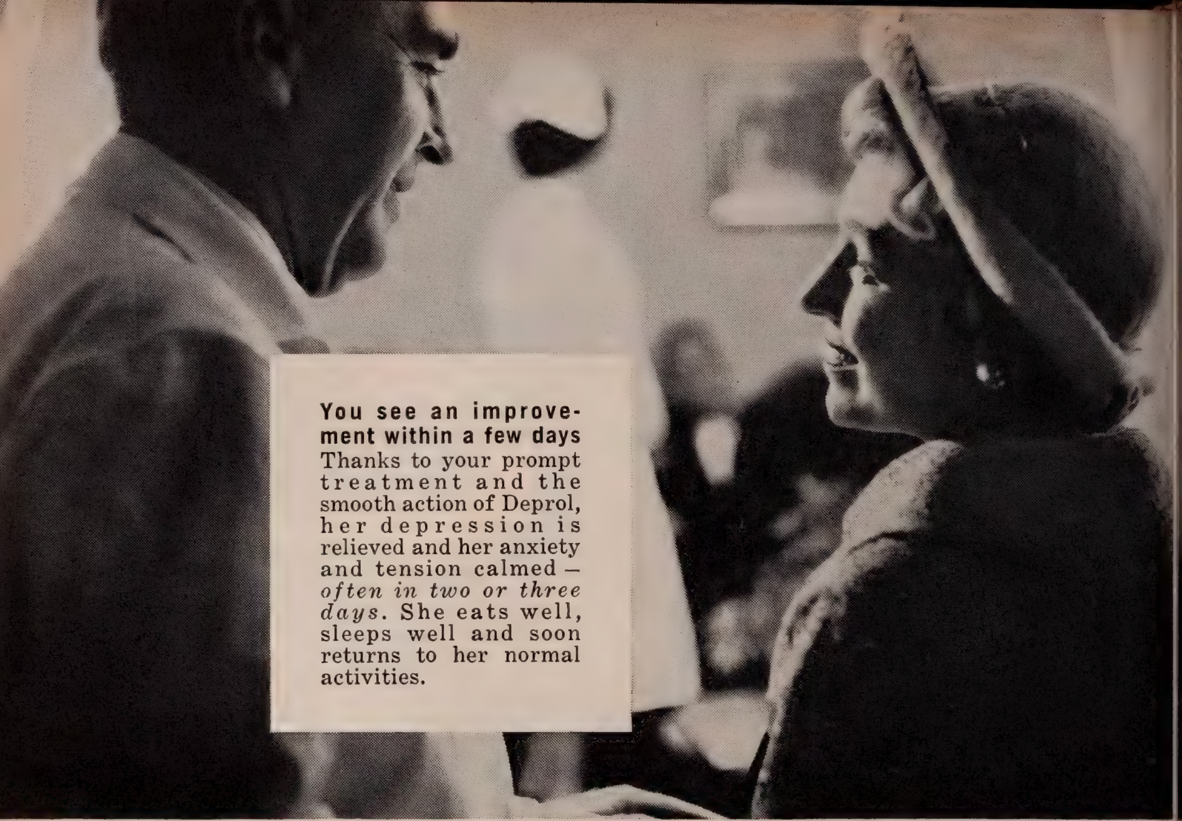

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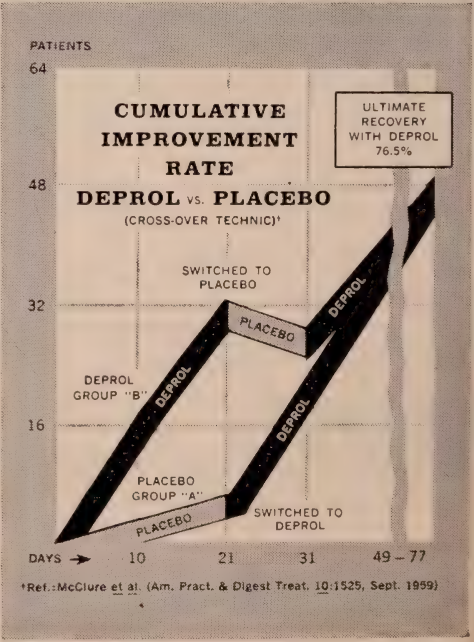

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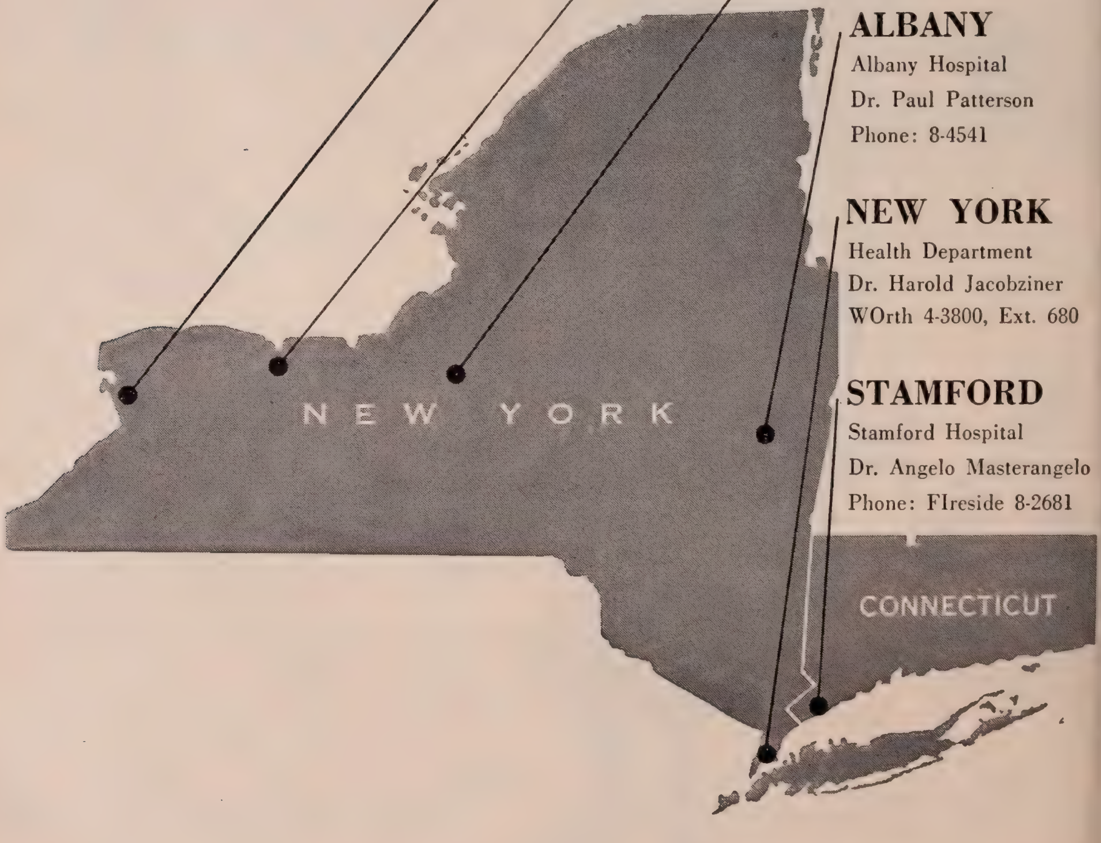

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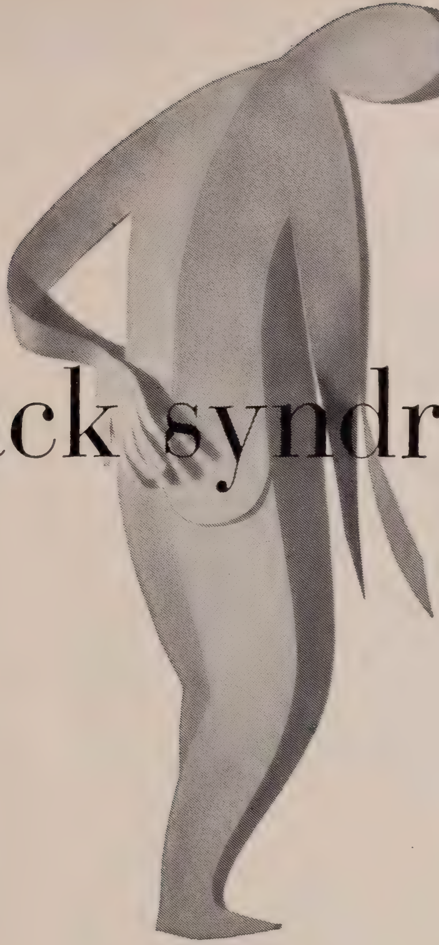

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Bibliography: *(1) Maltby, G. L.:* J. Maine M. A. 48*:257, 1957. (2) Bray, P. F.:* Pediatrics 23*:151, 1959.* 26260

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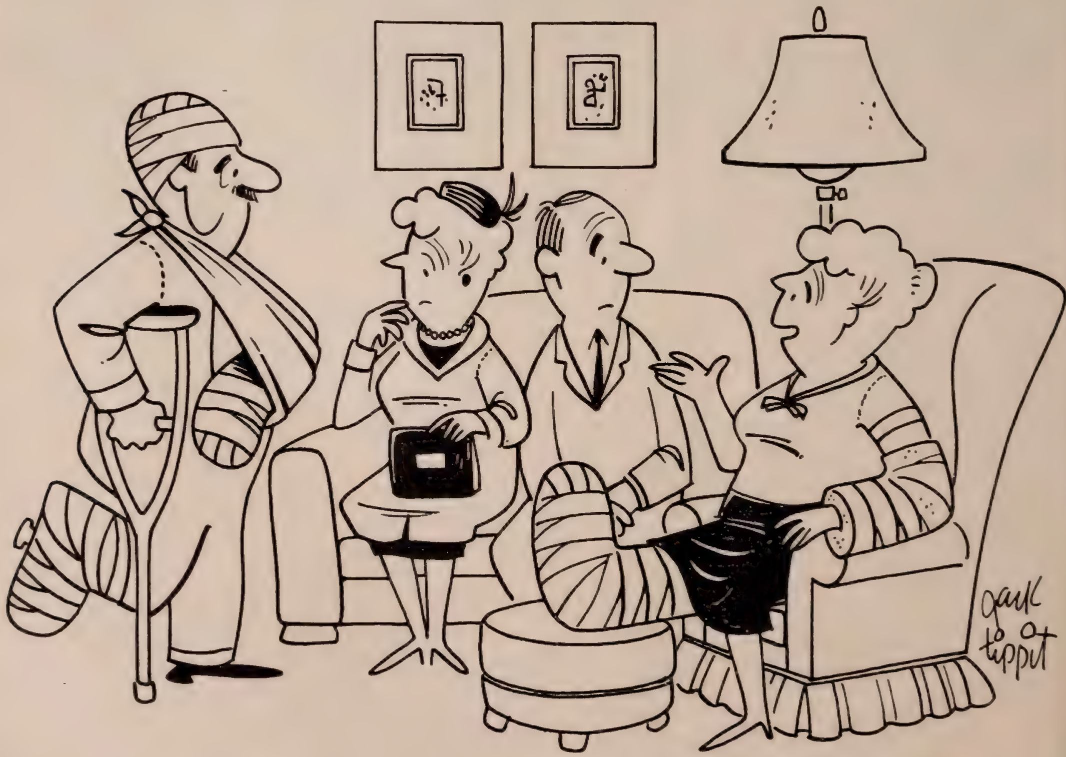

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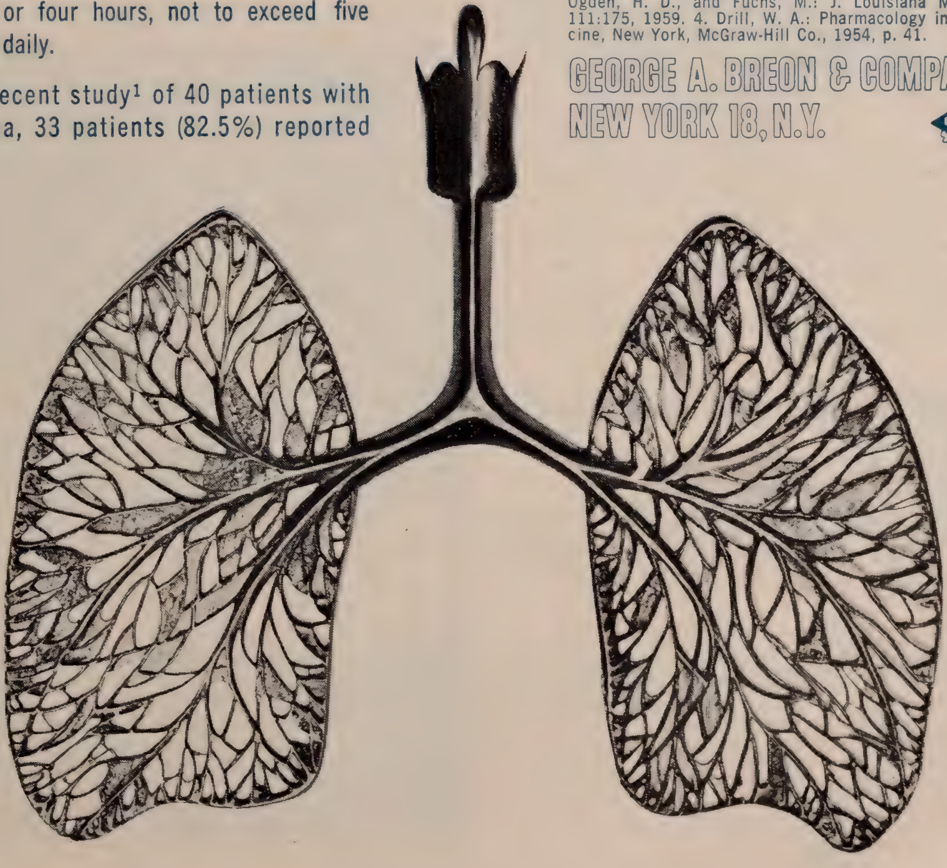

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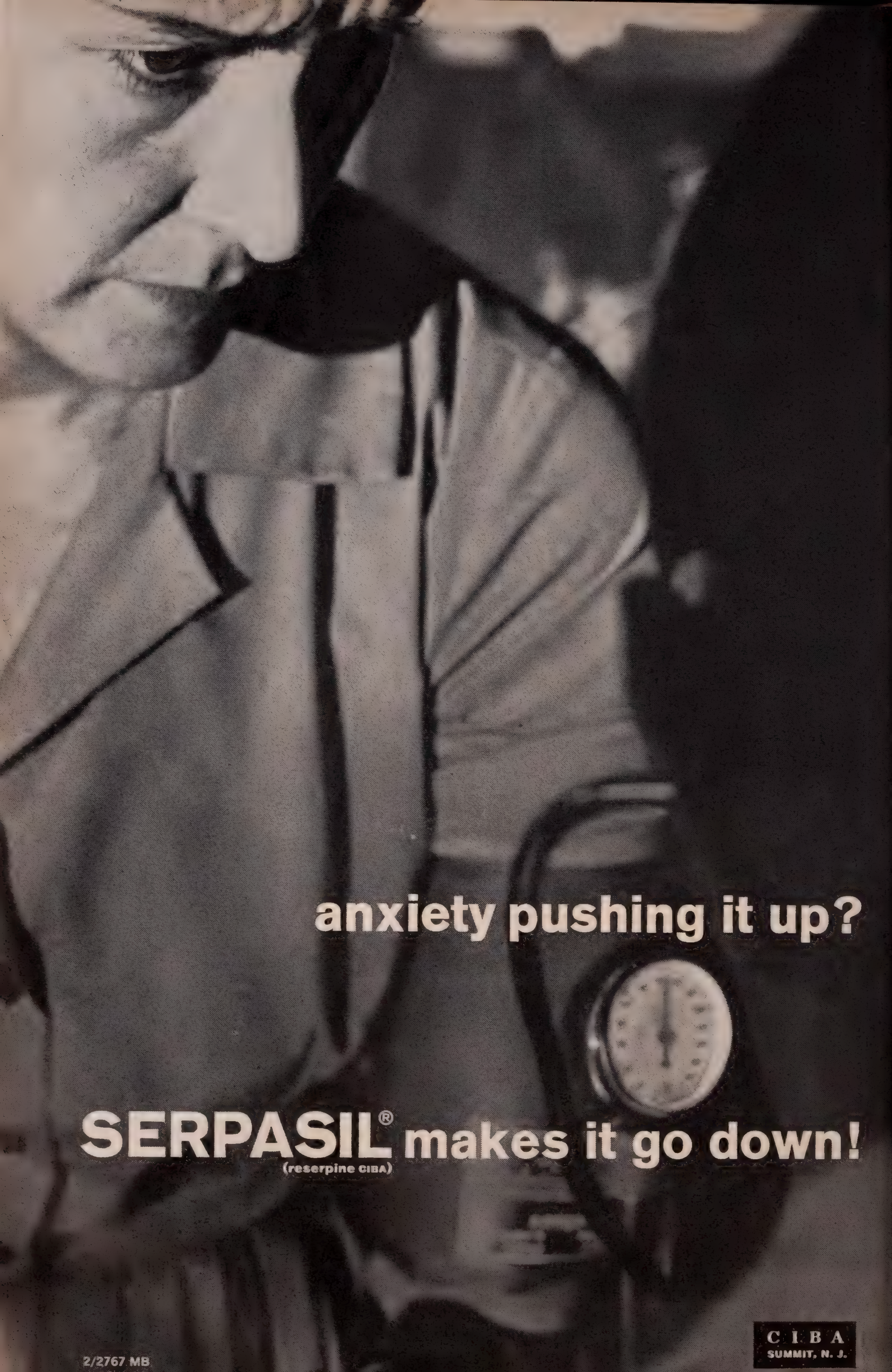
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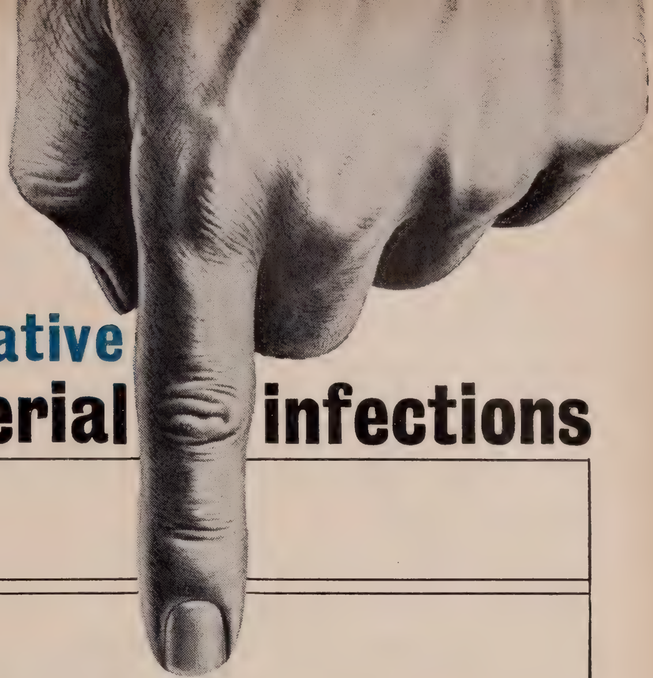

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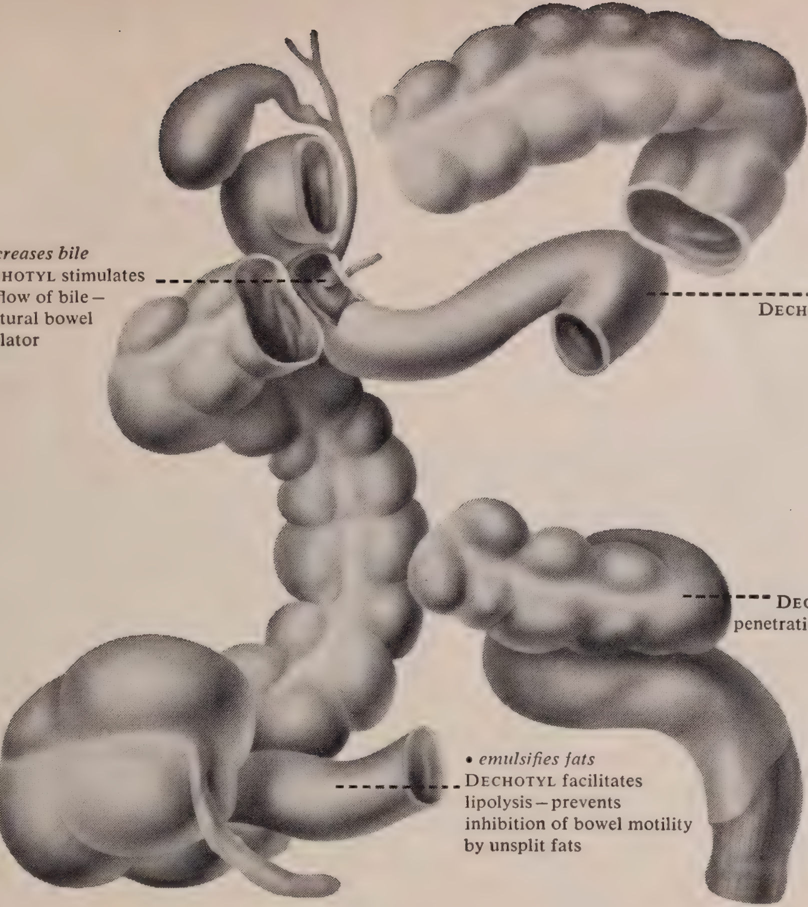

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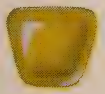

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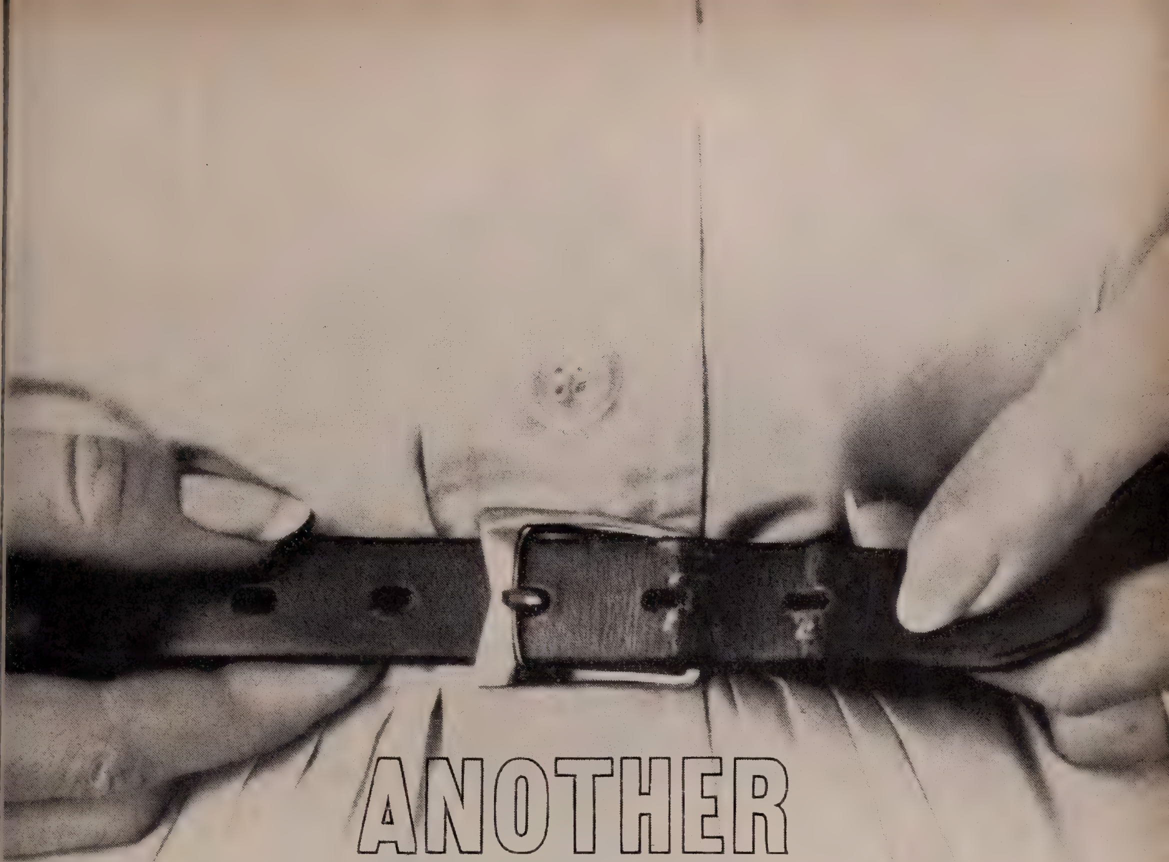

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2. Smith, J. G., Jr.; Zawisza, R. J., and Blank, H.: *A.M.A. Arch. Dermat.* 78:643 (Nov.) 1958.

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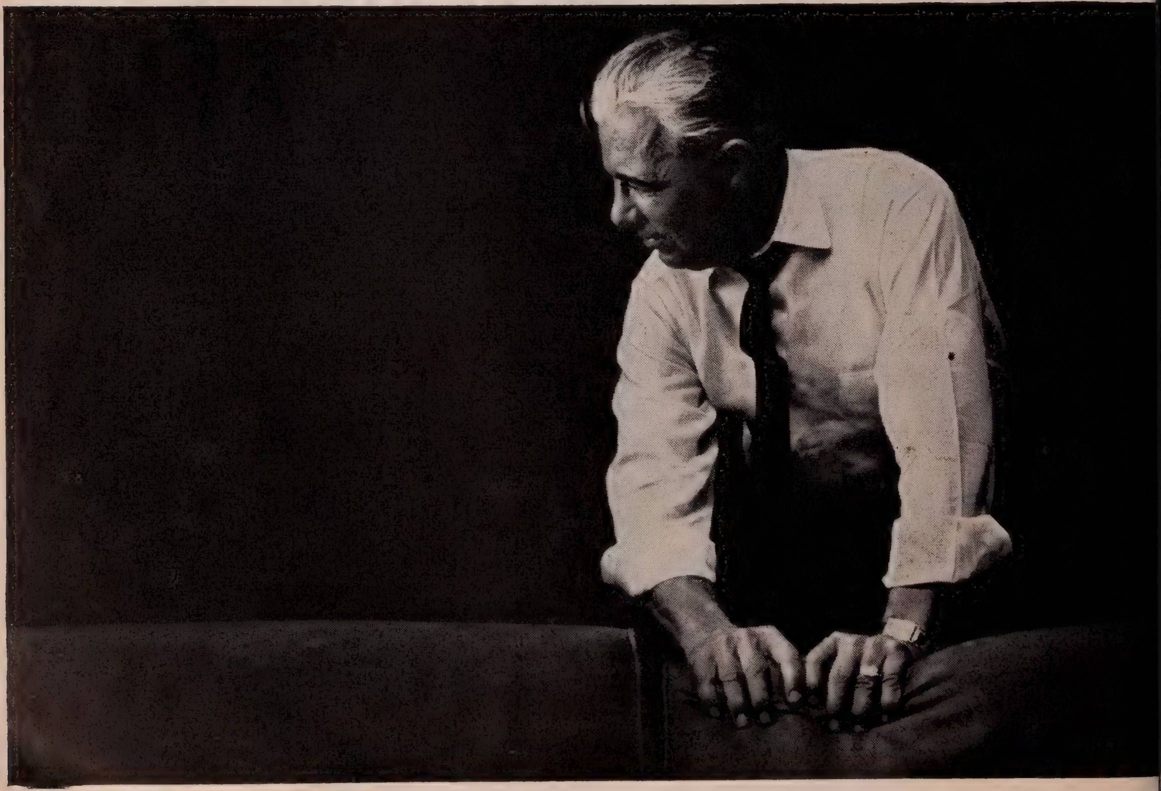

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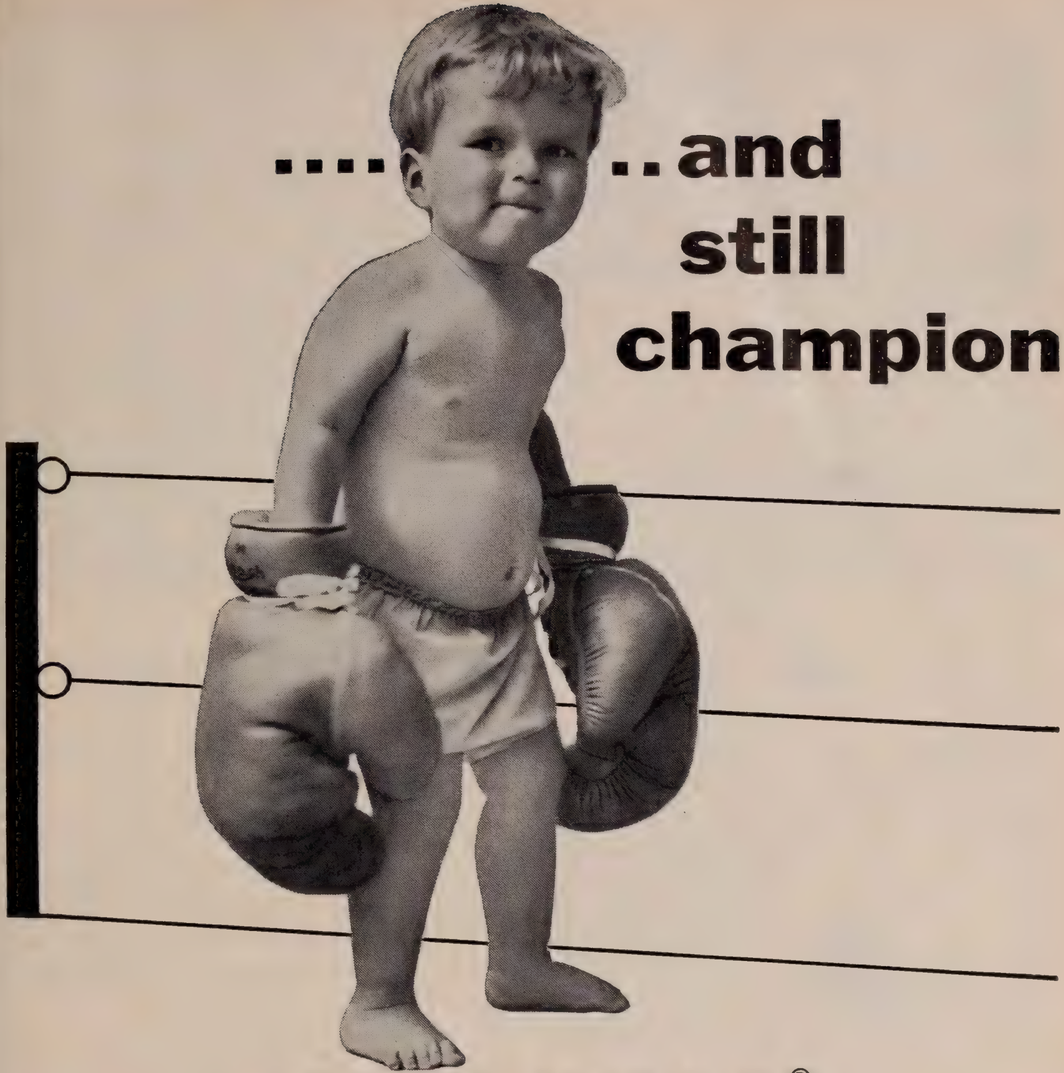

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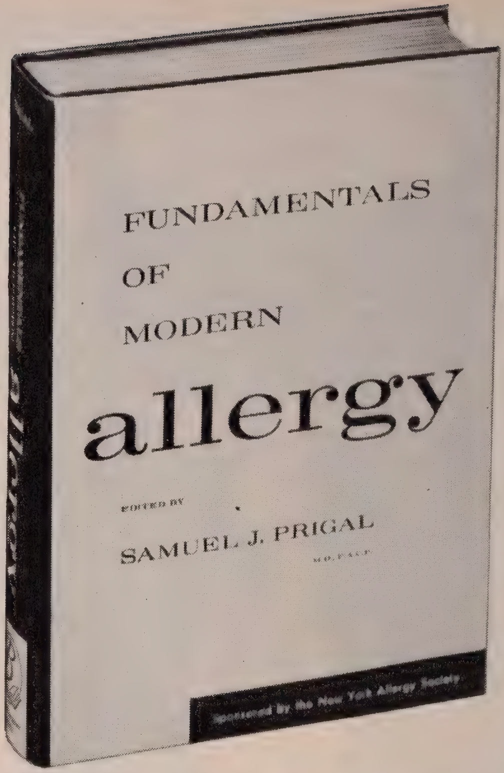

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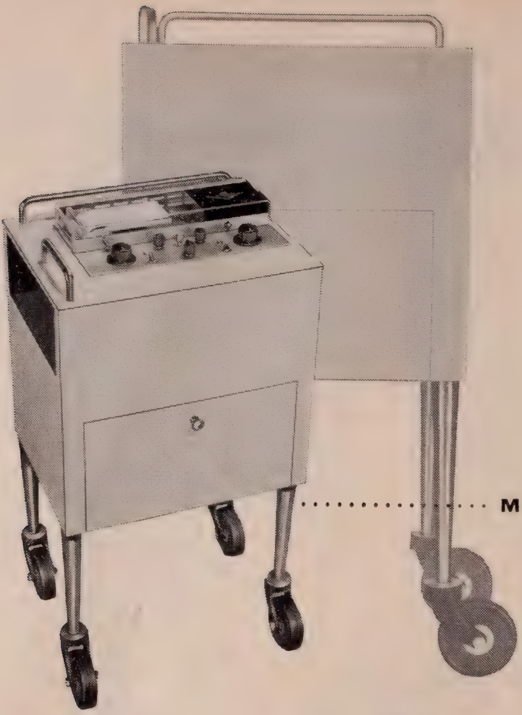

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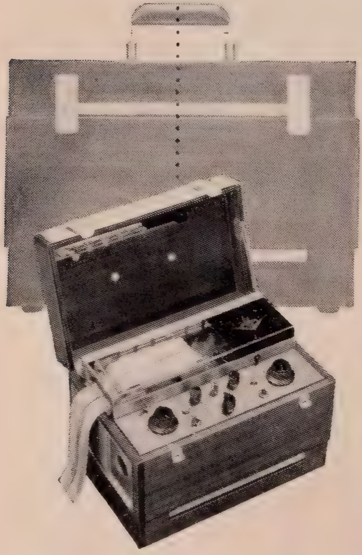

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a new muscle relaxant-analgesic

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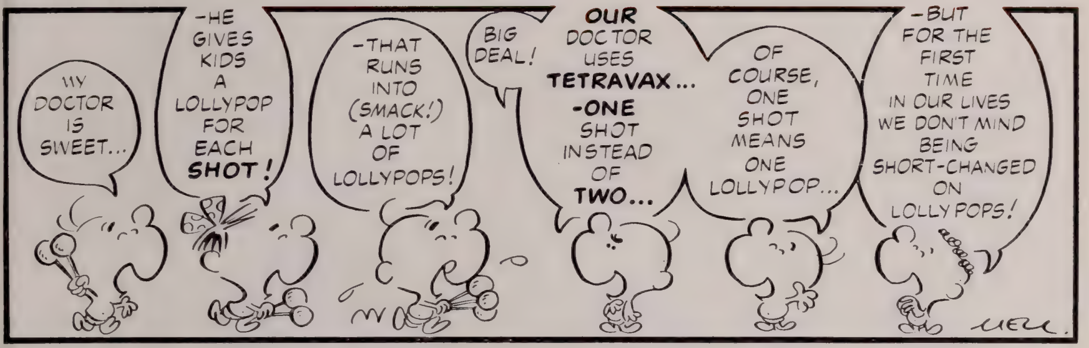
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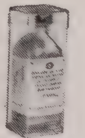

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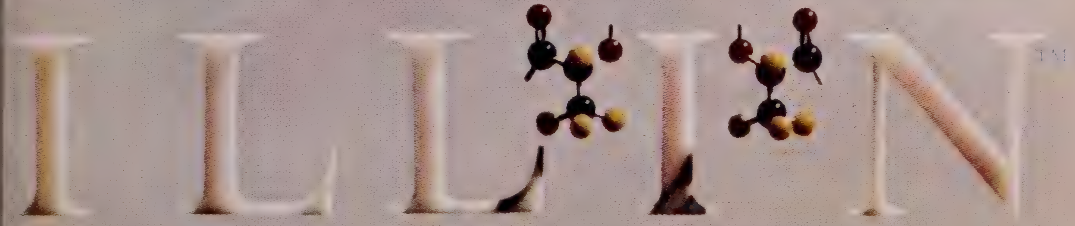

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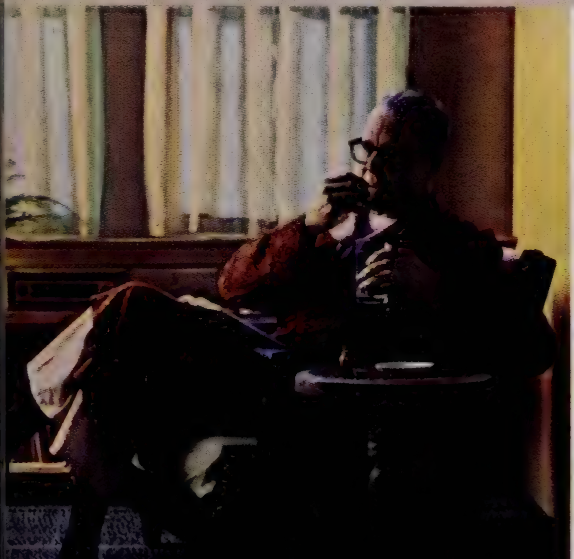

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June 16, 17, and 18, 1960
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Thursday, June 23, 1960
The Holiday Inn

***SPRINGFIELD, MISSOURI**
Sunday, June 26, 1960
The Holiday Inn

***ROANOKE, VIRGINIA**
Saturday, July 16, 1960
The Hotel Roanoke

***SANTA ROSA, CALIFORNIA**
Friday, September 16, 1960
The Flamingo Hotel

***KANSAS CITY, KANSAS**
Friday, September 23, 1960
Battenfeld Memorial
Auditorium

HOUSTON, TEXAS
Saturday, September 24, 1960
The Shamrock Hilton Hotel

DEFIANCE, OHIO
Wed., September 28, 1960
Defiance College

PHILADELPHIA, PENN.
Sunday, October 16, 1960
The Sheraton Hotel

***HARTFORD, CONNECTICUT**
Thursday, October 20, 1960
The Statler Hotel

***GREAT FALLS, MONTANA**
Saturday, October 22, 1960
The Rainbow Hotel

ROCHESTER, NEW YORK
Wednesday, October 26, 1960
The Manger Hotel

CHARLESTON, WEST VIRGINIA
Sunday, October 30, 1960
The Daniel Boone Hotel

SIOUX FALLS, SOUTH DAKOTA
Tuesday, November 1, 1960
The Sheraton-Cataract Hotel

***CHARLOTTE, N. CAROLINA**
Thursday, November 3, 1960
The Hotel Charlotte

***CLEVELAND, OHIO**
Wednesday, November 9, 1960
Pick Carter Hotel

***SOUTH BEND, INDIANA**
Friday, November 18, 1960
The Pick-Oliver Hotel

WESTCHESTER COUNTY, N. Y.
Wednesday November 30, 1960
Westchester Country Club

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TREATS MORE PATIENTS MORE EFFECTIVELY

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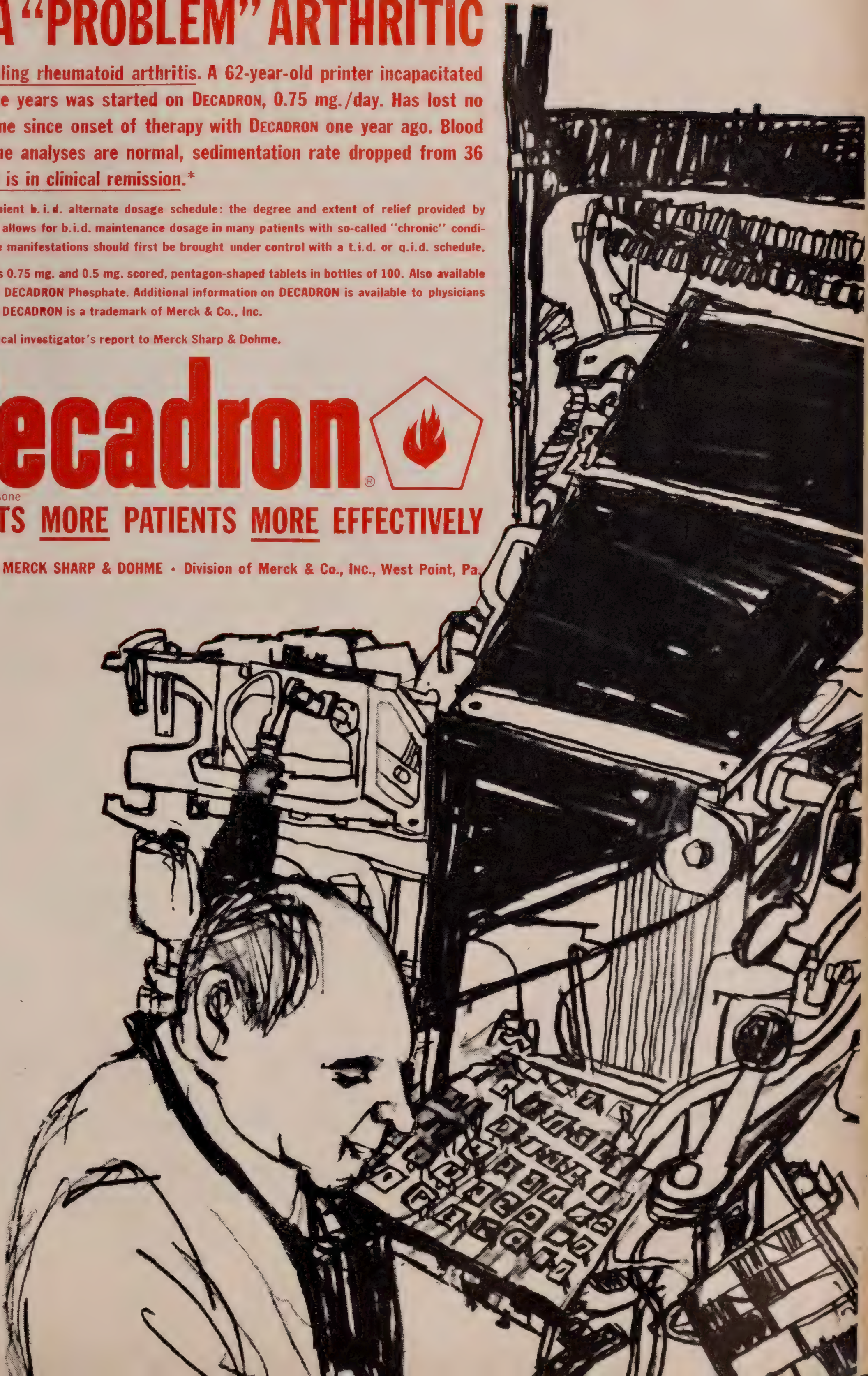

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"...and this morning,
Doctor, my back
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I can hardly move."

there is a way to early,
dependable relief
of his back distress

POTENT—rapid relief in acute conditions

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the pain goes while *the muscle relaxes*

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yes, any rheumatic "itis" calls for
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corticoid-salicylate compound
TABLETS
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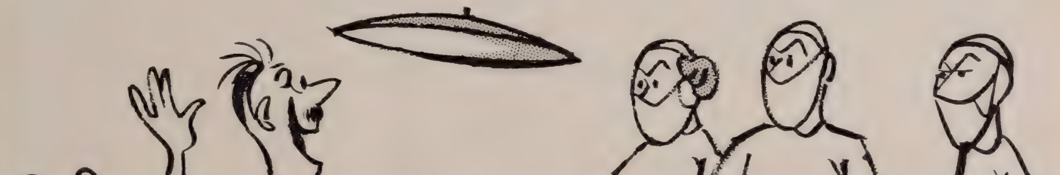

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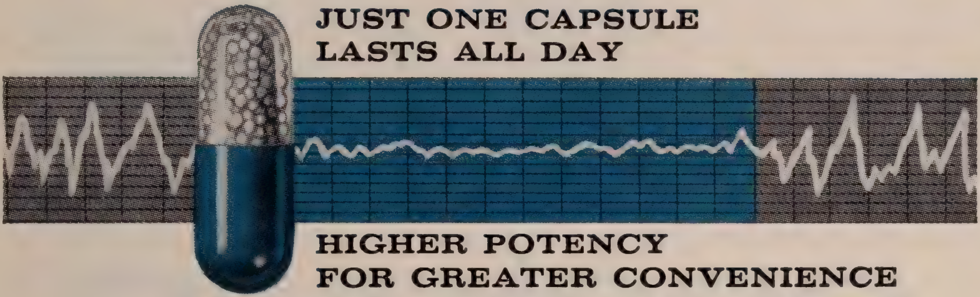

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- does not impair mental efficiency, motor control, or normal behavior

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400 mg. Miltown (meprobamate)
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Both potencies in bottles of 30.

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a new class of drug for the relief of pain

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the first analgomylaxant a single chemical that is both a general non-narcotic analgesic and an effective muscle relaxant

Analexin is a new synthetic chemical[1,2] which produces (1) *analgesia* by raising the pain threshold and thus decreasing perception of pain and (2) muscle relaxation by selectively depressing polysynaptic transmission (interneuronal blockade), abolishing abnormal muscle tone without impairing normal neuromuscular function. The analgesic potency of one tablet is clinically equivalent to 1 grain of codeine; yet, Analexin is neither narcotic nor is it narcotic-related. Its muscle relaxant effect is comparable to the most potent oral skeletal muscle relaxants available.[3,4]

Analexin ***for relief of pain and skeletal muscle tension.*** Each tablet contains 200 mg. of phenyramidol HCl. Dosage—1 tablet every 2-4 hours or as needed.

Analexin-AF ***for relief of pain and skeletal muscle tension complicated by fever and/or inflammation.*** Each tablet contains 100 mg. of phenyramidol HCl and 300 mg. of aluminum aspirin. Dosage—2 tablets every 4 hours or as required.

in low back pain, arthritis and other musculoskeletal disorders . . .

where pain makes tension and tension makes pain

analexin

stops both effectively

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an antihistamine
that is an antihistamine
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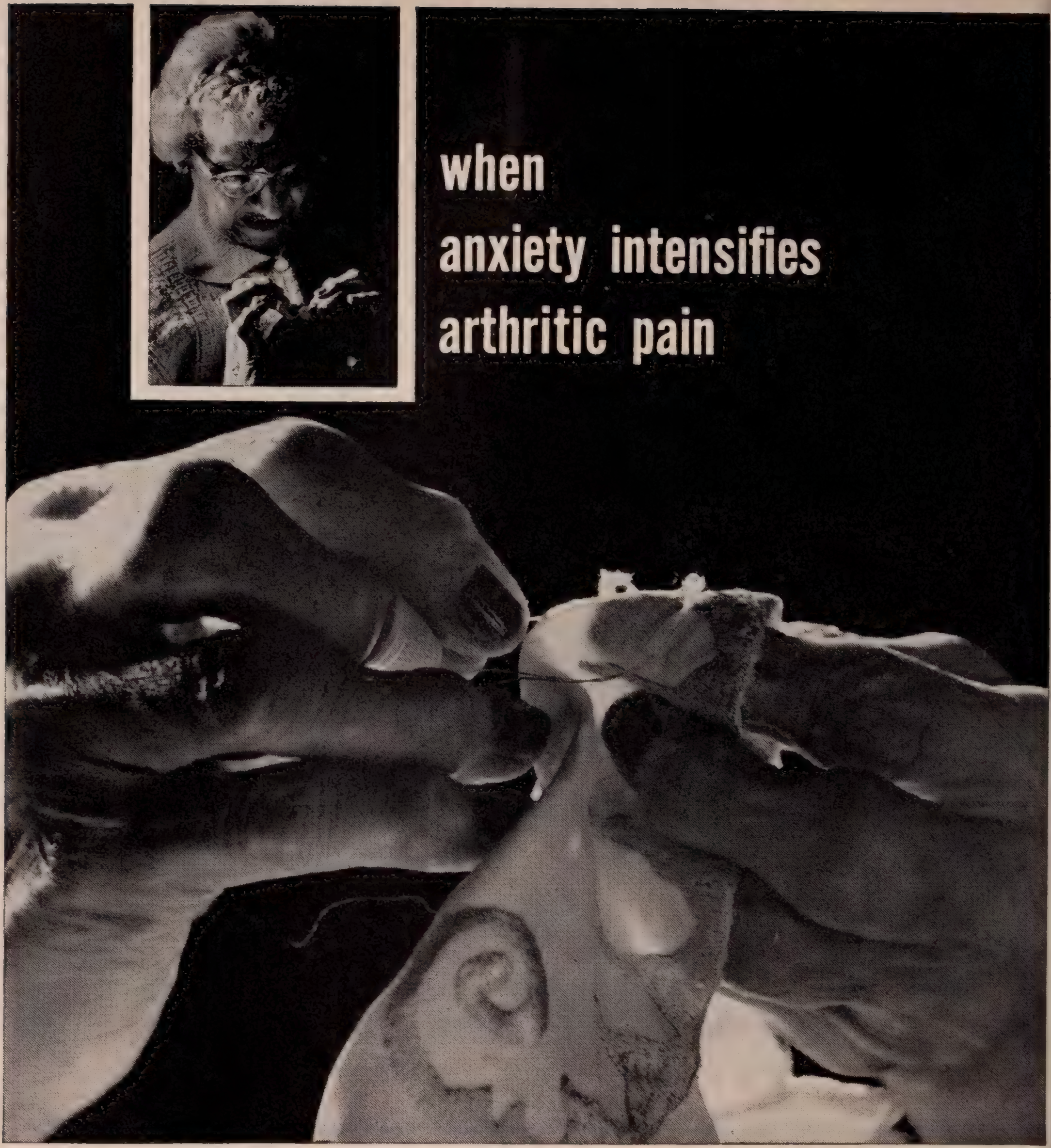

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GENERAL INFORMATION

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EDITORIALS

Space Medicine and the Physician

Almost daily the press carries news of the probing of space by fantastic mechanisms designed to send back to this planet scientific information relating to conditions to be found there. The gathering and interpretation of this vast amount of knowledge is merely the prelude to the ultimate goal of projecting man into interplanetary regions. Once there, traveling at fantastic speeds, man must exist under conditions so different from his ordinary habitat as to seem almost insuperable.

In addition, he must be able to return to earth safely.

The problems facing the physician who must study and condition man to undergo the ordeal of flight into space and return are set forth in an article by Constantine D. J. Generales, Jr., M.D., on page 1741 of this issue, which the editors of the JOURNAL believe will be informative to our readers. Certainly the medicine of the not-so-distant future will be affected by studies that are now being made and projected of man's adaptability, both physically and psychologically, to extraordinary conditions.

We hope that our readers will find the current article of interest and that we may from time to time be able to publish others on this subject.

What Is Required to Prove Malpractice?

On January 25, 1960, the Supreme Court of the United States in clear, unequivocal language restated the basic rules of evidence required to prove malpractice. The principles enunciated with minor variations in language are followed by the courts throughout the entire United States.

The case involved a railroad employe who was injured while shifting various railroad cars for his employer on tracks in a Ford Motor Company plant in Virginia. The lawsuit was brought in a Virginia state court under the provisions of the Federal Employers' Liability Act, and the first cause of action charged the defendant railroad with negligence in requiring the shifting of cars by the plaintiff in such an accelerated time and with such inexperienced help that he was injured in attempting to carry out his instructions. In his second claim he alleged that the physician furnished him by the defendant railroad subsequent to his injury administered improper treatment, thus aggravating his injury, and that the defendant railroad was responsible for such negligence.

The Supreme Court in affirming the action of the trial judge in the Virginia court, who had ruled that the railroad was not liable for any negligence on the part of the physician it furnished the plaintiff employe, said there was not evidence sufficient to support a malpractice recovery. The evidence showed that the physician supplied by the railroad was of unquestioned qualification and treated the plaintiff employe in accordance with his best medical judgment and long practice. The only evaluation concerning his treatment was that of the plaintiff's expert witness, another physician who had treated the plaintiff, who testified that he did not "think that [the treatment] is proper." His opinion was that "a fracture should be immobilized until it is healed sufficiently to bear weight without jeopardy of its healing," and that he "would say that activity would aggravate this fracture in that period."

The Court ruled that this offer of proof of malpractice was fatally deficient. It restated the basic rules applicable to malpractice actions saying:

> Proof of malpractice in effect requires two evidentiary steps: evidence as to the recognized standard of the medical community in the particular kind of case, and a showing that the physician in question negligently departed from this standard in his treatment of plaintiff.

It went on to point out why in this particular case the proof offered was not proper. The plaintiff could not establish his claim of malpractice because "No foundation was laid as to the recognized medical standard for the treatment of such a fracture. No standard having been established, it follows that the offer of proof was not sufficient." (*Davis v. Virginian Railway Company, U. S. Supreme Court, January 25, 1960*).—J. R. B.

Editorial Comment

Life Expectancy in Heart Disease. We learn from *Modern Concepts of Cardiovascular Disease*[1] that insurability of persons with all types of heart disease is becoming increasingly available.

Medicine is hippocratic in its origins, but in practice does not pursue the Greek ideal of excellence. It is an anachronism that perfection is sought in instrumentation and in understanding of disease mechanisms, but that standards applied to the patient are not set as high. Health norms tend to be expressed in terms of the average, which in many important parameters may be considerably in excess of values optimal for health.

Certain disorders, notably those which predispose to cardiovascular disease, such as high levels of blood pressure, weight, and serum cholesterol, are so universally prevalent that they skew averages toward disease-producing levels. Their adverse portent may be revealed most clearly in long-term follow-up studies, such as medico-actuarial investigations. These have made it possible to define norms, not only in terms of the average, but, more appropriately, in terms of the optimum or ideal values—limits beyond which there is associated a measurable adverse effect on present or future health and longevity. In addition, long-term insurance studies have contributed to clinical medicine by clarifying the natural history of various disorders, providing a valuable frame of reference for prognosis and for appraisal of the effect of therapeutic measures on the course of disease.

It has been learned, both from insurance and clinical studies, that prognosis and life expectancy in persons with various cardiac abnormalities are vastly better than was formerly considered to be the case. Until recent years, recognition of heart disease too often meant not only a diagnosis but a sentence, foreboding a sedentary and presumably brief future. However, with improved understanding and therapy, insurability has been offered increasingly to persons with practically all types of heart disease. Suitable adjustments in premiums are made based on mortality experience, that is, the ratio of actual long-term mortality in those with a particular impairment to the over-all mortality of the "standard" population of similar age and sex. In general, substandard insurance contracts are offered where mortality ratios in those with a particular impairment do not exceed 500 per cent; not more than five times as many deaths are expected to occur over a long-term period as occur in the standard population.

Accepting the dismal prognostic view which prevailed clinically until recent years, insurance companies, in the past, avoided underwriting persons with known coronary heart disease. However, a sizable and valuable mortality experience has accumulated by virtue of the disability features which were common clauses in former insurance contracts. Disability claims following attacks of myocardial infarction have provided abundant material for follow-up mortality studies. In addition, reflecting a more optimistic clinical climate, experimental underwriting of persons with known coronary disease has been increasingly undertaken. Early experience has begun to emerge from these studies. Although adequate long-term mortality data are still lacking, a swelling number of clinical as well as actuarial studies suggest that life expectancy in selected groups with coronary disease is so much better than was formerly supposed that insurance contracts may be offered on a sound basis without prohibitive expense.

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[1] Mod. Concepts Cardiovas. Dis. **28**: 565 (Dec.) 1959.

This is indeed encouraging news and a tribute to the forward strides being made by the medical profession in research and therapy.

Challenge to Medical Education. In a recent address, the annual William Henry Welch Lecture, at Mount Sinai Hospital,[1] Robert A. Moore, M.D., president of the State University of New York Downstate Medical Center in Brooklyn, expressed grave concern about the shortage of top-grade candidates for medical school. Calling for a thorough analysis of the plight of medical education, he warned that changes must be made to reverse the trends if the medical schools are to continue to maintain their present standards. If this is not done and if the trends continue, he said, "medicine will deteriorate and we will fail miserably to provide the physicians which America needs."

Dr. Moore backed up his statements with figures. These showed that in the past thirty years, with the exception of the war and postwar years, the percentage of college graduates applying to medical schools has declined progressively from 11 per cent in 1928 to about 4 per cent today. Dr. Moore pointed out this had occurred during a period when the medical schools had increased their enrollment by 1,671 (from 6,457 to 8,128) in response to the need for more physicians.

These figures become even more significant, Dr. Moore continued, when it is noted that only 18 per cent of the students admitted to medical school today have top grades (A averages) in college as compared with 40 per cent ten years ago. While 66 per cent of those admitted are B, or better than average, students, the number of dropouts in the first year of medical school shows that many are not good enough to make the grade.

Stating that there is as yet no evidence that the "flood tide" of college students expected in the next ten years will have its impact on the medical schools, Dr. Moore said that unless there is some reversal of the trend in the academic level of applicants, there will have to be an "agonizing reappraisal" of many plans. Some schools, he said, have projected an increase in the size of classes and there has been talk of establishing new schools. While emphasizing that there is no question of the need for more physicians, he cautioned that the supply of able applicants is uncertain at the moment.

Dr. Moore listed the following as possible reasons for medicine's inability to attract more of the best college graduates: (1) the length of the educational program, which for most medical specialties today is about fifteen years compared with four to eight years in engineering and other sciences; (2) the high cost of medical education; (3) the limited scholarship funds available compared with the other physical or natural sciences; (4) the inflexibility of the program; and (5) the general public misconception that it is difficult to be admitted to medical school.

Concluding with a call to meet this serious challenge to medical education and analyze it as one would a scientific research problem, Dr. Moore suggested as worthy of study the following possible remedies: (1) more active recruitment in the colleges and high schools; (2) a shortening of the total period of preparation to become a doctor; (3) development of more flexible educational programs to give greater opportunity to the abler student; and (4) provision of more scholarship and loan assistance and of better housing at reasonable rates.

---

[1] January 12, 1960.

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SCIENTIFIC ARTICLES

Industrial Noise

Laryngeal Considerations

DAVID W. BREWER, M.D., AND F. BERTRAM BRIESS, SYRACUSE, NEW YORK

(From the Department of Otolaryngology, State University of New York Upstate Medical Center)

This report will deal with our initial studies concerning relationships between laryngeal disorders and industrial noise.

In dealing with a wide variety of voice problems, a growing number of patients indicated loss of time from work due to laryngitis, or they reported that while they were at work their symptoms appeared and increased.[1] Partial relief occurred spontaneously while they were away from work for extended periods, whereas a short period of twenty-four hours made no great difference. An inquiry into working conditions indicated a common denominator, that of noise.

It was of interest that the identical symptoms occurred in patients who did not work in and use their voices in the presence of loud noise. It was also of interest that those patients who related their voice problems to their noisy environment were able to continue their work after appropriate treatment without reappearance of symptoms. This treatment was outlined recently by Briess.[2]

The symptoms referred to are those of frequent throat clearing, a cough, dryness, burning, a raw throat, pressure in the upper-middle chest, swallowing difficulties, a lump in the throat, pain in the side of the neck, neck pain referred to the ear, and posterior neck pain. Usually a husky, breathy, or hoarse voice, often intermittent but frequently persistent, was present. Often these particular symptoms, when not associated with infection or tumor, have been considered as solely psychosomatic but recently they have been implicated also in a specific cause-and-effect relationship with laryngeal muscle dysfunction. The two sources must be assessed carefully.

Additional differential diagnosis included excessive ethanol intake, fumes, smoking, allergy, and endocrine disturbances. Patients with a hearing loss or patients who had been attempting to communicate with a hard-of-hearing family member may give similar histories.

Method

When the patient's history indicated voice difficulties in the presence of loud noise, detection of possible relationships was undertaken in the following manner:

1. Complete ear, nose, and throat examination including audiometric testing. Indirect laryngoscopy indicated normal findings or such abnormalities as superior surface edema, injection, polyp or polypoid involvement, and others.

2. Chest fluoroscopy and radiography with barium swallow if lump-feeling or swallowing difficulties are elicited in the history.

Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Otolaryngology, May 15, 1959.

TABLE I.—Results of the Noise Trial Test*

				Balance Relating to Noise Trial Test										
				(Before Test)					(After Test)					
				Muscle Numbers					Muscle Numbers					
	Patient	Years	Sex	1	2	3	4	5	1	2	3	4	5	Recovery Time
Group 1	1	29	M	0	0	0	0	0	0	0	0	0	+20	30 seconds
	2	28	M	0	0	0	0	0	0	− 40	0	0	0	5 seconds
	3	25	M	0	0	0	0	0	+20	0	0	0	+20	10 seconds
	4	44	M	+60	−100	−60	− 60	+60	−40	−100	−60	− 60	+20	1 hour
Group 2														
	5	64	M	+80	−100	−80	−100	+80	−40	− 20	−80	−100	+80	1 hour
	6	40	M	+20	− 60	Incomplete because of lesion								1 hour
	7	43	M	−20	0	0	0	0	0	0	0	+ 20	0	30 seconds
Group 3														
	8	33	M	+20	− 20	0	0	0	0	0	0	0	0	20 seconds†
	9	19	F	+20	0	0	0	0	0	0	0	0	0	10 seconds
	10	37	M	+20	− 20	−10	+ 10	0	0	0	−20	+ 20	0	30 seconds†
Group 4														
	11	42	M	+10	− 20	0	0	0	0	0	−20	+ 20	0	30 seconds†
	12	40	M	+20	0	0	0	0	0	0	0	0	0	10 seconds†

* Numerical figures represent, on a percentile scale, hyperfunction (+) and hypofunction (−). 0 equals normal function.

† Elevation of pitch by patient improved function of muscle number 2, resulting in balance of muscle numbers 1 and 2.

3. Tape recording of voice during ear, nose, and throat examination.

4. Voice testing including divergence test, cricoarytenoid test, endurance test of thyroarytenoid muscles, and cricothyroid test.

5. Noise trial with recorded noise at 70, 80, 90, and 100 decibels with simultaneous voice recording of test phrases. Only fifteen seconds of noise at each intensity were used.

6. Retesting of voice after noise trial.

The described procedure was followed in the examination of 12 patients.

The same test loop used in sound analysis was played back in continuous fashion while the noise trial test was being made by tape with each of the individuals reported. Care was taken during the testing to hold the patient's head in the face-forward position so as not to introduce predominating unilateral muscle dysfunction or exaggerated bilateral muscle dysfunction with the face looking up or down during phonation.

The clinical voice tests used were as outlined previously by Briess.[3] The divergence test is a combined examination of thyroarytenoid and cricothyroid muscle functions. By using the "o" vowel and varying the pitch from low to high while attempting to maintain a constant volume, a divergence of function or an audible gap in sound production can be noted.

A tape recording illustrates the use of the noise trial test. Huskiness, breathiness, or hoarseness can be heard as the sound level of the noise increases from 70 decibels to 100 decibels. Also there is a crack or audible gap during the divergence test immediately following the noise trial. This gap represents an acute divergence of thyroarytenoid and cricothyroid muscle function. A patient from each of groups 1, 2, 3, and 4 was presented. A breakdown of the groups follows:

Group 1.—Three controls asymptomatic and not exposed to noise in their daily work.

Group 2.—Three controls symptomatic and working daily in the presence of noise.

Group 3.—Three controls formerly symptomatic of causes unrelated to industrial noise and having received treatment.

Group 4.—Three controls formerly symptomatic with a history of working regularly in places with industrial noise and having received treatment.

Table I shows a more detailed evaluation of the four groups.

In making the test tape, the recording was made on a Wollensak Tape Recorder Model T-1500 using the Shure ceramic Model B microphone supplied with the tape recorder. At a microphone distance of 5 feet from a chipping machine the noise level was 120 decibels as compared with the over-all room noise of 68 to 72 decibels. The same tape recorder was used for sound playback with two speakers. A General Electric Sound-Level Meter Model G-2* was used to determine the noise level at the microphone position and also to duplicate the sound level for patient testing. The sound analysis was performed with a Model 300-A Hewlet-Packard Harmonic Wave Analyzer* and indicated that 1,500 cycles was the major component with a lower limit of 60 cycles and an upper limit of 7,000 cycles.

Results

The results may be summarized as follows: All groups complained of symptoms after the noise trial test. Recovery time of patients in group 2, the symptomatic patients working daily in the presence of loud noise, was one hour compared with ten to thirty seconds for controls and treated patients. As a result of the voice tests after test exposure, it was found that response to noise resulted in an effort to increase the voice volume. This effort manifested itself in an increased hyperfunction of a particular pair of laryngeal muscles, most commonly the thyroarytenoids, in the cases presented. This imbalance was further enhanced by a concomitant increase in the subglottic compression with a resultant further increase in dysphonia. The temporary imbalance produced in the noise trial test routinely caused a hyperfunction of posterior cricoarytenoids with a resultant hypofunction of lateral cricoarytenoid muscles and compensatory hyperfunction of interarytenoid muscles. This latter is responsible for the coughing by several patients heard on the tape. It is of particular interest to note that the treated patients experienced not only a relief of symptoms but also the disappearance of visible laryngeal lesions whether associated with a history of noise exposure or not.

Comment

Although the major emphasis in the considerations of the effects of industrial noise has been on hearing, the findings reported herein suggest that further study of voice problems in relationship to noise should be considered.

Problems of the mensuration of possible cause and effect again present themselves for discussion and study by all concerned.

The dearth of highly competent voice diagnosticians, the need for basic research in voice physiopathology, and the dissemination of presently available information among the medical profession is pointed up by our recent experiences in this aspect of the management of voice problems.

Summary

A presentation of laryngeal considerations with respect to industrial noise has been made. Symptoms, signs, differential diagnosis, and present methods of testing have been outlined. A tape recording session demonstrating the noise trial test on control, untreated noise-exposed, treated noise-exposed, and treated unexposed patients has been described.

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1. Brewer, D. W.: Medical aspects of voice therapy, Bulletin N. A. T. S. **9**: 4 (Mar.) 1953.

2. Briess, F. B.: Voice therapy; II. Essential treatment phases of specific laryngeal muscle dysfunction, A.M.A. Arch. Otolaryng. **69**: 61 (Jan.) 1959.

3. *Idem:* Voice therapy. I. Identification of specific laryngeal muscle dysfunction by voice testing, *ibid.* **66**: 375 (Oct.) 1957.

Discussion

Daniel C. Baker, Jr., M.D., *New York City.* —The subject presented by Dr. Brewer and Mr. Briess is a very timely one. It is also dramatic and it is very convincing.

The laryngeal problems arising from industrial noise are largely phonatory, and they have their origin in an individual or group of individuals trying to project their voices over and above a 30-, 40-, 50-, or even 70-decibel level of noise or higher. The noise level at their work is more or less the same. Normal conversation takes place at 20 or 30 decibels. Competition at a noise level of 50 decibels or more means that the individual has to speak at 70 decibels or higher in order to be heard and understood. For the extrovert who likes to talk while at work this means a considerable vocal effort to carry on a conversation. Many workers are not able to cope with this noise level and they get into difficulty and develop hoarseness.

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* Made available through the courtesy of Mr. Richard Putman of the General Electric Company.

From a clinical standpoint the hoarseness is due to changes that are seen on the vocal chords proper. These changes have been described by Dr. Brewer and Mr. Briess in their presentation.

As far as I know, this is the first study that has ever been carried out in an industrial plant. The experiences I have had with regard to speech or phonatory disorders and in a high noise level have had to do with individuals who use a telephone constantly and who want to be sure their voices are heard on the other end. They may be talking in a noisy room, and, as a consequence, they are shouting continually. The taxicab driver or other people who drive cars, possibly with an open window, may experience a rush of air in the side of the ear next to the open window, causing a noise level and making them talk louder. In addition to being a cause of hoarseness, this continuous exposure to a rush of air can, in some instances, cause a loss of hearing in the ear that is next to the open car window. We find similar phonatory disturbances in people who travel by train or airplane and who talk a great deal.

In our big cities we find individuals who are constantly going to cocktail parties and who are competing with the noise that is found at such gatherings. The lack of restraint that is brought about by imbibing alcohol makes these people not only talk a great deal more and louder, but also very often it makes them argumentative.

Tobacco is also a factor because smoking, with the tars and resins, has its effect on the vocal chords.

I am very much intrigued by the concept of muscle action and also by the breakdown of the individual muscles as far as testing and exercise to strengthen these muscles are concerned. In the demonstration that was described, Mr. Briess and Dr. Brewer certainly have illustrated their theory effectively.

However, we all know that there are many different concepts of what takes place during phonation, almost as many concepts as there are speech teachers. A student may be trained by one school, but when he goes out to practice he develops ideas of his own immediately so that there is no universally accepted concept. I have been intrigued with Mr. Briess' concept, and certainly it requires more study.

In people who develop phonatory disturbances hoarseness is as much a progressive condition as is deafness. An individual who becomes hoarse as a result of competing with loud noises should stop competing with such noise, for he is abusing his larynx. What we should all try to point out in the form of education is that when hoarseness begins it should be treated, and that this is the time to give a patient the benefit of vocal therapy or speech therapy. We should not wait until such changes become irreversible.

When the vocal changes do become irreversible, then, of course, surgery has to be performed. The patients should always be given the benefit of vocal therapy. If they do not respond, then the areas of thickening should be removed from the chords. This has a nuisance value, particularly to a patient who has a benign condition. Very often it is difficult to explain to patients that to get a good voice they should undergo either a stripping operation or undergo the removal of nodules or polyps to be followed by vocal therapy. Most of the patients will forego vocal therapy, particularly patients of the working class; but obviously the time to help these patients and then to give them vocal therapy is before they develop irreversible damage to their vocal chords.

I want to congratulate Dr. Brewer and Mr. Briess on an excellent presentation.

Space Medicine and the Physician

CONSTANTINE D. J. GENERALES, JR., M.D., PH.D., NEW YORK CITY
(*Coordinator, Space Medicine Program, New York Medical College*)

> *"Man is a microcosm, or a little world, because he is an extract from all the stars and planets of the whole firmament, from the earth and the elements: so he is their quintessence."*—PARACELSUS, 1493–1541 A.D.

THE possibility of man traveling through interplanetary space has been a very old dream and probably is as old as the science of astronomy itself, going back to the Babylonians and Chinese. In 1500 A.D., Wan Hu, an otherwise obscure Chinese official who was desirous of exploring the heavens, had an ingenious contraption built between two large kites to which a saddle was attached, forming the center of a framework containing 47 strategically situated rockets that were fired by 47 coolies. Wan Hu disappeared noisily, machine and all, into black smoke.

Man's next recording of biologic experimentation without the possible stigma of myth was carried out in 1783. In that year, on September 19, two French brothers, Joseph and Etienne Montgolfier, succeeded in sending up in a hot air linen balloon the world's first live cargo consisting of a sheep, a cock, and a duck. The aerial trip took place before the Court of Versailles. The balloon rose to a height of 1,500 feet and eight minutes later settled down two miles distant from the point of departure. All returned safely. However there was one unrelated mishap of a minor nature. Not so well padded as the duck, the cock, feeling a little chilly in the open gondola and seeking woolly warmth, suffered injury from a kick by the sheep, who apparently resented the intimacy.

This feat created great enthusiasm for human ascent and, following the rescinding of a shortlived order by Louis XVI that no human life was to be imperiled by such fool nonsense except it be that of a convict, volunteers became numerous. A physician, François Pilatre de Rozier, in October, 1783, after several captive flights up to 330 feet, having proved to his satisfaction that "the air up there was not poisonous," ascended with a companion, Marquis d'Arlandes, on November 21 of that same year. Thus was man launched on his first trip into space! Flying over Paris they landed safely in the midst of windmills. That evening only the Marquis was in the happy position to appear before the Academy and report on that first ascent. The intrepid physician was sans redingote which was carried away in shreds by the assembled crowd of souvenir hunters.

On December 1, 1783, Professor Jacques Charles, a well-known physicist, ascended in the first hydrogen-filled balloon made of silk and coated with elastic gum. The balloon carried a barometer and thermometer to a height of 9,000 feet and covered a distance of three miles in one-half hour. This performance is notable for the first recording of a clinical disorder, that of an earache on the right side which Professor Charles experienced on descent. Possibly, as we are in a position to know today, the diagnosis was an aero-otitis due to a blocked eustachian tube caused presumably by some minor upper respiratory ailment.

Again it was a physician, an American, John Jeffries, M.D., who financed and accompanied Jean Pierre Blanchard on the first balloon crossing of the English Channel. During this harrowing experience all ballast, such as oars, rudder, worn outer garments, trousers, and a bottle of brandy had to be tossed overboard in the chilly January of 1785. The clamor and ovations created by this successful trip were matched only

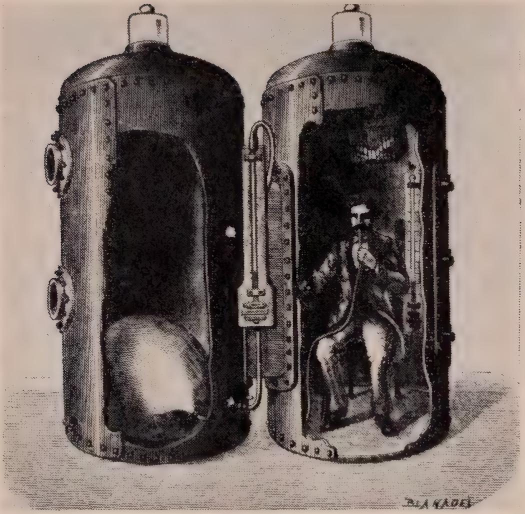

FIG. 1. Paul Bert (1878) in his altitude chamber breathing air enriched with oxygen.

by Lindbergh's transatlantic flight in a powered heavier-than-air machine one hundred forty-two years later. Unfortunately during that same year Dr. Rozier, goaded by political reasons and against his better judgment, tried the Channel in the opposite direction and lost his life. This was the first air casualty.

In 1793 Blanchard came to America and made the first successful flight with his little black dog as passenger, covering the 15-mile distance from Philadelphia over the Delaware River to nearby Woodbury, New Jersey, in forty-six minutes, while George Washington looked on.

In passing, the town of Lowell, Massachusetts, home of the writer, is worthy of mention as the location where in 1850 a new attempt, the first in the United States, of steering a balloon by means of paddles was conducted by a Mr. Taggart.

As early as 1660 Robert Boyle, the philosopher and chemist who gave the first reasonable explanation of the barometer in 1666, studied with minute accuracy the behavior of various animals in a decompression chamber. He continued his experimentations and writings until his death in 1691. His fourteenth and last publication in 1692 was titled, *The General History of Air.*

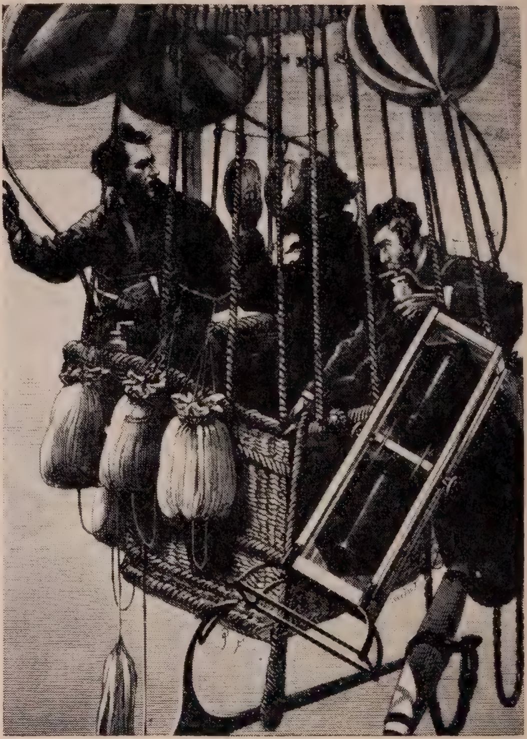

FIG. 2. The famous flight of Tissandier and his two companions, Sivel and Croce-Spinelli in 1875. Sivel is dropping ballast, Tissandier reading the barometer, and Croce-Spinelli is holding his oxygen respirator.

In my opinion Boyle deserves in a very special way, far above anybody else, to be regarded as the father of space medicine. In his paper, *Continuation of Observations Concerning Respiration,* published in 1670, he presented the first account of aeroembolism. This was before the discovery of oxygen by Priestly and Steele in 1774.

Jourdanet, on the basis of his *Aerotherapie* published in 1863, is credited with having first advocated the use of oxygen in the inspired air to counteract the effects of acute altitude sickness. It was Paul Bert, however, in 1871, who first demonstrated that such treatment was effective. He conducted many experiments on the effects of reduced atmospheric pressure and oxygen and proved the increase of the amount of hemoglobin of the circulating red blood cells in higher places or elevations (Fig. 1).

In 1873, Gaston Tissandier and two scientists, Sivel and Croce-Spinelli, rose to a height equal to that of Mount Everest, 8,840 meters or 29,000 feet, in the gondola of their balloon "Zenith" (Fig. 2). When the balloon landed, only Tissandier was alive. He just barely survived and was said to have been sickly the remainder of his life. No doubt the state of hypoxia bordering on anoxia left some irreversible damage to his brain cells. Those cells, it was found out much later, are extremely sensitive to the paucity of oxygen in the cerebral circulation. The noteworthy fact of this special event was that oxygen was carried for the first time, having been made available in three balloonettes with respirators attached. However, the oxygen was never used. Due to the small capacity of the containers, it was decided not to begin its utilization until the need for it was felt. On account of the lack of timely awareness and proper judgment, that need did not become manifest to the passengers until they were helpless and powerless to manipulate the respirators. The fact that such a situation may arise is today general knowledge in aviation medicine circles, especially to those who have experienced oxygen starvation in high altitude simulators.

Goethe, the poet-scientist, in the first part of *Faust* wrote of "flying with fiery exhaust above the earth," and Jules Verne in *From the Earth to the Moon*, described with unusual cleverness and foresight a lunar journey originating close to Cape Canaveral in Florida. Thus, these two followed the innumerable lesser literary giants who earlier had expressed similar dreams.

Therefore that first step toward higher altitudes, the prelude to the exploration of the distant vertical frontiers, brought about recognition of the principal cause of abnormal symptoms and dangers to life, diminished partial pressure of oxygen in the inspired air, not the mechanical effect of total pressure changes as was originally thought.

Scientists were somewhat unmindful of various condemnations on the part of religious groups believing in reward and punishment. Man has no business in the air; he belongs on the ground. If he meets death in the air or crashes from a height, it is the will of God. However, if he drowns while swimming in water which is a rearrangement of the atoms of oxygen of the geosphere and the atmosphere and of hydrogen common to interplanetary, interstellar, and intergalactic spaces, then no organized ecclesiastical voices against swimming arise. Yet what is the rationale of God's punishing us in space anymore than he would on earth? If some believe He wishes to punish man on an individual basis or on a genocidal scale (and that would indeed be medieval thinking transplanted into modern society) then that is their special privilege. Be that as it may, there is room to relate a passage from Bertrand Russell in his *Unpopular Essays.*

"When Benjamin Franklin invented the lightning rod, the clergy, both in England and America, with enthusiastic support of George III, condemned it as an impious attempt to defeat the will of God. For as all right thinking people were aware, lightning is sent by God to punish impiety or some other grave sin—the virtuous are never struck by lightning. Therefore, if God wants to strike anyone, Benjamin Franklin ought not to defeat his design; indeed to do so is helping criminals to escape. But God was equal to the occasion, if we are to believe the eminent Dr. Price who was one of the leading divines of Boston. Lightning having been rendered ineffectual by iron points invented by the sagacious Dr. Franklin, Massachusetts was shaken by earthquakes which Dr. Price perceived to be due to God's wrath at these iron points. In a sermon on the subject he said, 'In Boston are more iron points erected than elsewhere in New England and Boston seems to be dreadfully shaken. Oh, there is no getting out of the mighty hand of God.' " To quote Bertrand Russell still further, "Apparently providence gave up all hope of curing Boston of its wickedness for, though lightning rods became more common earthquakes in Massachusetts have remained rare. Nevertheless, Dr. Price's point of view, or something like it," concludes Bertrand Russell, "was still held by one of the most influential men of our times. When at one time there were several bad earthquakes in India, Mahatma Gandhi solemnly warned his compatriots that these disasters had been sent as a punishment for their sins."

Science, all science, is a realistic approach at least to understand nature, if not to imitate her, to study life in particular as well as the universe as a whole. All this takes time and hard work. The world was not built on miracles, although belief in miracles has, in some form or another, shaped man's behavior. This leads me to ask, "What is a miracle?" To the true scientist a miracle does not exist. The following definition is the best I can give without consulting a dictionary; it satisfies me, it may or may not meet general approval: "A miracle is man's interpretation of a phenomenon that under no circumstances defies natural law but whose inductive and deductive logical and scientific explanation is still forthcoming." Along this line of reasoning should one proceed in the study of space problems.

In the attempt to explore the heavens, first the balloon, then the airplane were tried; both were atmosphere bound. The airplane, in addition, is dependent on oxygen for its combustion. The rocket engine, on the other hand, is self-contained. To overcome the pull of terrestrial gravity, immense technical problems had to be overcome. Only in this century, due to highly developed technology, is man's dream slowly and painstakingly being realized.

One of the great scholars in this century is K. I. Tsiolkowsky, formerly a Russian teacher. His work in 1913 was fundamental to the solution of today's technical rocket problems. He wrote then, "Mankind will not stay on the earth forever, but in the pursuit of the world and space will at first timidly penetrate beyond the limits of the atmosphere and will conquer all the space around the sun."

As an indication that man's mind in general may be maturing, new concepts in this direction were technically advanced independently in other countries. In the United States, for example, Dr. Robert H. Goddard in 1920 published a paper, "A Method of Reaching Extreme Altitudes." At that time he stated the desirability of placing a magnesium flare on the moon by means of a rocket. He was a professor of physics and a very modest man. Few people paid any attention to him at the time, a typical attitude of delayed acceptance of new ideas and concepts. Hermann Oberth of Transylvania, a German with Roumanian citizenship, in 1923 wrote "Die Rakete zu den Planetenraumen," (The Rocket Into Interplanetary Space). In Austria, Eugen Sänger and Baron Guido von Pirquet added valuable ideas. G. A. Crocco led Italian research experimentation in the early 1930's. In this period, a technical treatise, "L'Astronautique," by the French engineer-aviator, Robert Esnault-Pelterie, appeared.

The mass ratio and increase in exhaust velocity in the multistage rocket and artificial satellites was recognized and further elaborated on. Also in 1931, original in the field of medicobiologic research, the acceleration (G factor) was recognized as a serious problem in rocketry (if the rocket was to be manned), by Wernher von Braun and this author while students in Zurich (Fig. 3). We subjected mice to high acceleration, first on an improvised bicycle wheel. Later that year I continued these experiments on a large centrifuge in Paris at the Hôpital St. Louis. Although the work was crude in the face of today's refined methods, the very high G's over the many minutes of exposure brought scientific evidence for the first time as to what damage to the unprotected living organism one might expect. This damage was evidenced by autopsies and paraffin histologic slides. Some revealed cerebral hemorrhage, pulmonary atelectasis, hemo-

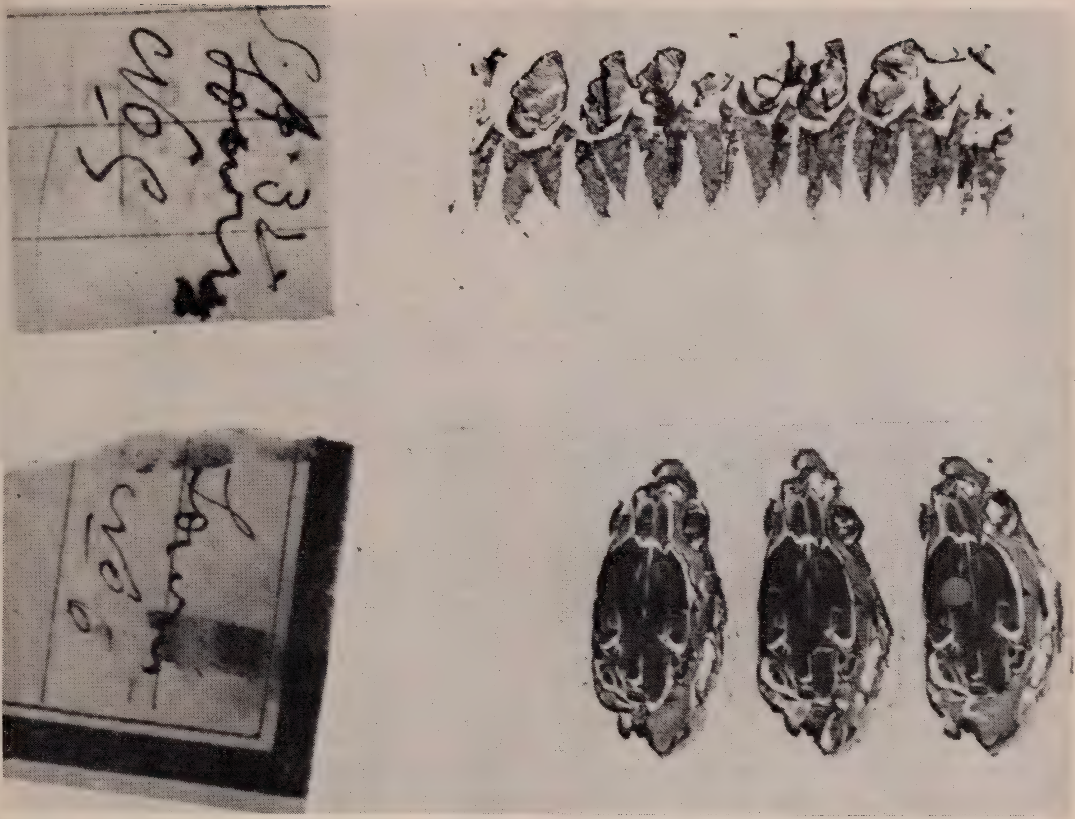

FIG. 3. Historical slides of skull and brain, lungs and heart of two mice (souris 5 and 6) that succumbed at an acceleration of about 220 G's. Experiments were performed with Wernher von Braun during student days in Zurich in 1931, utilizing an improvised centrifuge, and later continued alone in Paris, 1931 to 1932.

thorax, avulsion of liver and spleen, rupture of the heart, subretinal hemorrhage, dislocation of the eyeballs, and so on. The work was not published at the time. It was not until twenty years later that researchers in this and other countries verified these results.

Medical and physiologic research has been undertaken by the United States Army, Navy, and Air Force installations in various parts of this country and in other nations as well. Ten years ago the School of Aviation Medicine in San Antonio, Texas, founded a Department of Space Medicine. Recently private enterprise has shown active interest. Aviation firms now in friendly competition with government agencies receive financial support from official Washington. Boeing, Republic Aviation, Douglas Aircraft, Martin, Jet Propulsion Laboratories, North American, Lockheed, Fairchild, and many others are active in space research programs. Furthermore, the International Astronautical Federation with 22,000 members representing 27 nations with 37 societies to date is a positive indication of the growing interest in extraterrestrial problems.

In fact, it is difficult today to find one commercial industrial enterprise that is not in one way or another associated with the manufacture, development, and research of one or more of the millions of material details in the field of space exploration.

What does space medicine imply? To attempt to treat the issue involved here, to even give an outline or panorama of events leading up to the time when man is ready to leave his terrestrial habitat, automatically creates inhibitions that border on misgivings. Any inadequacy on my part is to a great

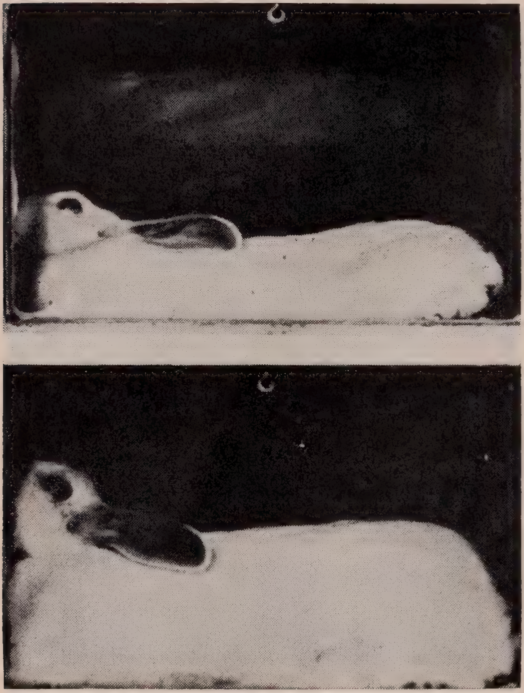

FIG. 4. The distention produced in an experimental animal by the formation of water vapor in the blood and body tissues at altitudes above 63,000 feet. Note increase in size of head, eyes, ears, and entire body of rabbit in relation to hook in ceiling of cage. (*After Armstrong*)

extent due to lack of knowledge—first, of man himself, second, of the universe he occupies, and third, of his relationship to that universe. In these three fields we all share more or less the same ignorance and therefore the mutual lack of this knowledge is our common denominator.

The term "space" has caused quite a bit of confusion because of ill-defined limits or boundaries. At what point of occupying volume above the earth does space really begin? 10 miles, 50, 100, 200, 500, 1,000, 10,000, 50,000, 100,000 miles up? Is it where the earth's gravity ends at a level where it is balanced by the gravitational pull of the moon, sun, and the other planets and the stars? Or is space that part of the atmosphere above the 18,000-foot level of the highest existing human community in the Andes of South America? Or should space begin for man at the 59,000-foot level where complete biologic anoxia occurs and he drowns in his own alveolar water vapor? Or maybe at the boiling point of his blood at 63,000 feet? (Fig. 4) Man, during the period of his own growth and maturing, often creates a term as he would make a shoe or a suit of clothes and then tries to fit his body into it. Originally, he used the word "space" to mean complete emptiness. Yet this space, be it 2,000 miles or 2 billion light years away, has at least one hydrogen atom per cubic centimeter, not counting the subatomic or fundamental particles of which there are to date 34 nuclear particles either already found or predicted, consisting of the nucleons, of protons and neutrons, the positrons, the negatrons, neutrinos, mesons, pions, several kinds of lambda particles, K particles, their opposites, and the antiparticles, and, of course, the cosmic rays. This subject of the physics of the upper atmosphere is replete with physical matter, distance, and energies. Antisigma minus-hyperon being the latest.

Space medicine, therefore, can be considered to be an extension of geomedicine, including all the factors man is naturally exposed to in his ordinary habitat, that is, on the surface of this planet, only to a more or sometimes lesser degree. The task of space medicine is to adjust man to space environmental conditions which tear into his constitution, undermine his physical, mental, and psychic potentialities, often at first in the form of undetected, acquired, or inherited weakness. An example of an organic or physical weakness would be a minimal septal defect of the heart which otherwise would not ordinarily have been detected. Unless he is properly adjusted and protected, his survival time can become indeed very short (Fig. 5).

The following factors involving the human element in my opinion cover over 98 per cent of the problems envisaged to date:

Human Factors in Space Travel

ALL-EMBRACING AREAS OF RESEARCH

I. Practical short-term investigations in physiology (plant, animal, human).

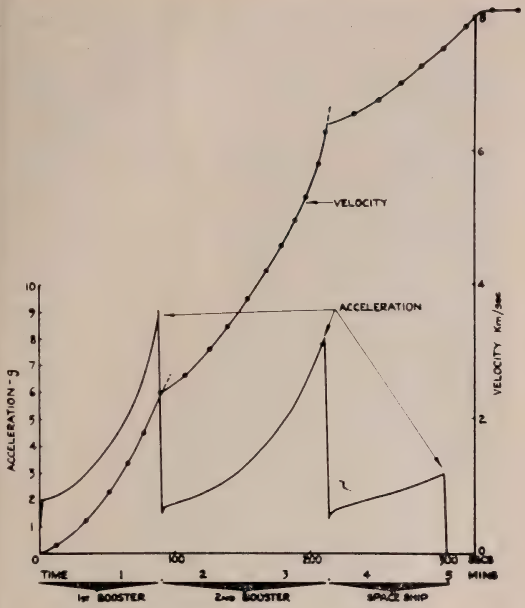

FIG. 5. Diagram showing type of acceleration/time curve which would occur in a space ship reaching a two-hour orbital velocity. (*Courtesy Journal of the British Interplanetary Society, 1959*)

II. Research, medium-range to generation-long in endurance phenomena.

III. Life-long studies of bioectatic possibilities for duration of travel beyond the present life span of man.

EXOGENOUS FACTORS in the field of

1. Acceleration and deceleration.
2. Hypo-, Zero, and hypergravity states.
3. Pressurization, barometric pressure.
4. Vibration.
5. Noise, acoustic.
6. Autogenous and exogenous ambient temperature.
7. Ventilation.
8. Radiation: wave and corpuscular:
   - *a.* electronics: radio, radar
   - *b.* Infrared
   - *c.* Ultraviolet
   - *d.* Alpha, beta, and gamma rays
   - *e.* X-ray (hard and soft)
   - *f.* Cosmic, including solar, galactic, and extragalactic corpuscular radiation.
9. O_2-N_2-CO_2-H_2O equilibrium.
10. Nutrition.
11. Recreation.
12. Isolation.
13. Sensory deprivation.
14. Physical activity.
15. Interpersonal relationship: procreativity.
16. Duration of flight.
17. Light and darkness.
18. Diseases due to biologic agents, and other causes.
19. Accidents:
   - *a.* Body trauma
   - *b.* Surgical emergencies
   - *c.* Decompression
   - *d.* Other causes.
20. Waste disposal versus conversion.
21. Time dilation (clock paradox).

ENDOGENOUS RESPONSES in the field of

1. Neurologic and mental states:
   - *a.* Sensory
   - *b.* Motorneural
   - *c.* Psychomotor
   - *d.* Emotional and mental stability.
2. Respiration.
3. Alimentation.
4. Hemopoiesis.
5. Cardiovascular system.
6. Endocrinology.
7. Dermatology.
8. Metabolism.
9. Genetics.
10. Reproductive creativity.
11. Sleep-wake cycle.

Thus one may begin to appreciate the magnitude of intensive knowledge necessary for man's travel, comfort, and survival in space. Returning to earth without landing on some planet will certainly be an outstanding performance, but it is obviously one part of man's plan. His scientific curiosity will not rest until he actually lands and returns to his terrestrial home. Man, aware that his desires are unlimited, may one day "infect" the entire universe. This dream need not concern us for a few generations, providing of course that conditions on this earth are amenable to further research. I do not say this facetiously. Even though we have not attempted to reach Mars, the most welcoming planet, judged from the earth, it is estimated that about 5 per cent of the 100 billion stars of our galaxy represent suns with satellites, a small percentage of which could well be inhabited by some form of self-supporting life.

In helping fulfill some of man's urges and desires, bioectatic (a term I have coined, meaning life-extending) studies will certainly help increase his longevity further and further by organ and tissue implants, transplants, and alloplastic replacements. For example, in speaking of automobiles we admire and still wonder without ridicule at some Daimler, Duryea, or Benz of 1890 vintage that has by proper upkeep and replacement the same desirable qualities it had seventy years ago. With a little compressor or even a rocket booster almost invisibly installed one of them could well challenge a modern Mercedes or a Ferrari on any turnpike. As a clinical application of the new applied science of miniaturization in modern medical instrumentation we already have small transistor pacemakers that have been installed inside the chest and can regulate the heartbeat for ten to fifteen years without external wiring.*

It may appear that I am wandering far afield on the subject of space medicine but I can assure you that with computers and all kinds of microelectric and radio appliances in the field of telerimetry man, whether or not he is interested in space, can look optimistically into the future.

As a consequence of applied progress in technology one can easily see that new disciplines in this relatively new field of endeavor are being formed out of biology, physiology, physics, chemistry, engineering, and applied medicine. The department of biology, for example, is now legally "married" to physics, forming biophysics; the union of physics with astronomy is astrophysics; biology and astronomy, astrobiology; biology and navigation, bioastronautics. Terms like biodynamics presuppose knowledge of biology, physiology, chemistry, physics, and engineering. Psychophysics, molecular biology, astroecology, biomathematics, biogravics, radiobiology, and bioastrophysics are just a few such plural "marriages" in nomenclature comprising a group of four-score departments of scientific knowledge. In these disciplines there is definite overlappingl, ogical because knowledge in itself is not compartmental.

Aviation medicine, meanwhile, has elevated itself officially in this country into space medicine. The Aero-Medical Association proudly graduated on its thirtieth anniversary last April 27 in its Los Angeles conference to the Aero-Space Medical Association. Participants from France, Germany, Switzerland, National China, Holland, Belgium, Canada, Spain, and many South American countries took part in the symposium and discussion. There was even a French doctor who flew in from the Belgian Congo.

Submarine medicine, geomedicine, and space medicine can be considered the three integral parts of what we can call holomedicine (ολοδ—meaning all, entire). Consequently, space medicine as well as submarine medicine can only be as strong as the knowledge gained from orthodox geomedicine.

In the field of biodynamics man recognizes the elementary forces of inertia, momentum, potential and kinetic energy, gravity pull, acceleration, and deceleration, all of which he experiences daily in driving his automobile. The ordinary person does not think in terms of G's even if he should have a serious accident. The G factor is the force or pull exerted by the earth on any body or mass with an accelerative force of 32.2 feet per second per second representing one G at sea level. As is known, this force on the moon is one sixth of that of the earth due to its lesser density and mass. In positive acceleration the force is acting, with respect to man, from the head to the feet on the longitudinal axis. Obeying the laws of simple hydrostatics, the circulation is impaired for two reasons; one, the hydrostatic effect of the positive acceleration on the intracarotid blood pressure opposes the pumping action of the heart; second, the hydrostatic effect on the venous blood below

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* Minute transistors, smaller than a match head, implanted in tooth cavities for electromechanical studies are an electronic contribution of space dentistry.

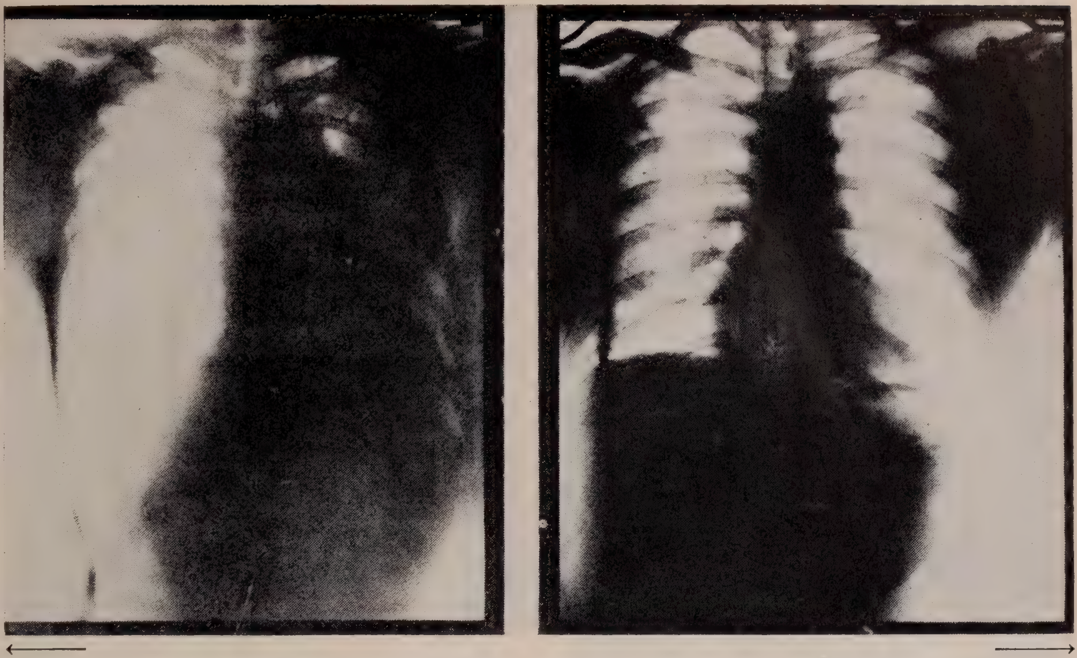


FIG. 6. Roentgenography of lateral organ displacement in a young man exposed to a hypergravic state of 6 G's. Arrows designate direction of accelerating force. Biodynamics affect the normal orthogravic functions of respiratory organs, circulatory systems, excretory and secretory organs and glands, the gastrointestinal tract, skeletal and nerve systems. Research into the altered physiology of the cell under hypergravic and hypogravic conditions is needed.

the level of the heart impairs the return flow to the right heart with consequent reduction in cardiac output. Grayout or blackout, classically called "amaurosis fugax," is the result of excessive positive acceleration between 4 and 6 G's above which loss of consciousness occurs through emptying of the cerebral blood vessels. On the other hand, negative acceleration occurs when the acting force acts from foot to head, thereby causing the blood to rush to the brain, creating a so-called "redout" at about 4.5 G's. Whereas in the former some protection is possible by increasing abdominal muscular pressure voluntarily or through anti-G devices, there is no prophylaxis in the much more serious negative acceleration. One speaks of positive and negative transverse G's when the accelerative force acts through the chest anterioposteriorly or posterioanteriorly. Much greater forces can be withstood in this position; especially in the anterioposterior (Fig. 6).

It is interesting to know that jumping down from a height of 1 foot produces a force of 5 G's, 2 feet 9 G's, 3 feet 12 G's, 4 feet 16 G's, and the impact on the brain is greater than when the same force is applied gradually as in a plane or rocket. On May 16, 1958, at the Holloman Air Force Base in New Mexico, Captain Eli Beeding attained 83 G's for 0.04 seconds (Fig. 7) and later a chimpanzee withstood 247 G's for 0.001 of a second in decelerating experiments with minimal reversible effects.

Speaking of vibration, if the front wheels of one's automobile are out of balance while traveling at high speeds, one might easily guess what would happen. Similarly, vibrations of over 16 cycles per second created in the initial firing of a rocket are usually fatal to a test animal or man unless special measures are taken.

We are aware of excessive ultraviolet ray reaction; protection here is no great problem. Through experiences with x-ray and natural and induced radioactivity, man has

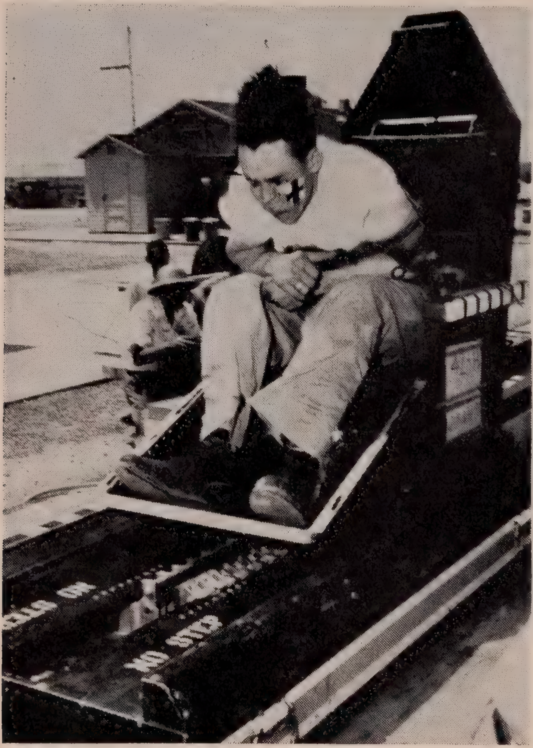


FIG. 7. Deceleration experiments at Air Force Missile Development Center, Holloman Air Force Base, New Mexico, in 1958: "Slight discomfort in paralumbar muscles, mild frontal headache that persisted for hours" were experienced by the subject.

Front-facing record in 1954: Colonel John Stapp was exposed during 1.4 seconds to a plateau of 25 G's with rate of onset of 600 G's per second and suffered only supra- and infrapalpebral hemorrhages.

Back-facing record in 1958: Captain Eli Beeding was subjected within 0.1 second to a plateau of 83 G's with a rate of onset of 5,000 G's per second and survived a gradual onset of syncope lasting less than ten minutes without residual injury.

Such studies throw valuable light on the biodynamic tolerance of man during re-entry into the resisting atmosphere from space.

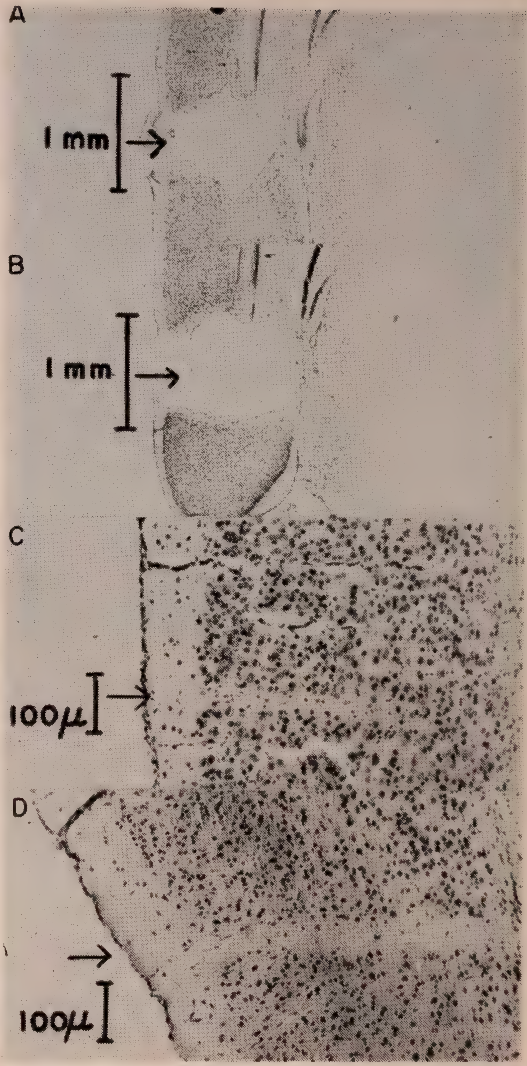


FIG. 8. Frontal sections of visual cortex of mice irradiated with deuteron beams. The arrows indicate the direction of the beam. (*A*) 1-mm. beam, 30,000 rad, 24-day survival; (*B*) 1-mm. beam, 60,000 rad, 24-day survival; (*C*) 0.025-mm. beam, 1.1×10^6 rad, 6-day survival; (*D*) 0.025-mm. beam, 1.1×10^6 rad, 48-day survival. (*Courtesy Brookhaven National Laboratory, Upton, New York, reprinted from Science, December 25, 1959*)

learned to control these or to protect himself against them to a great degree. It is a different matter with high energy cosmic rays that originate within and possibly without our galaxy. These particles reach the order of 1.0×10^{19} electron volts, each 10^{13} greater than the energy supplied by fission of an atom bomb explosion measured particle for particle. Not only are they a threat to man but they are capable of disintegrating certain metallic crystalline structures of a space ship over a prolonged period of time, as well as synthetic material such as rubber and plastic compounds, by bombardment of their constituent atomic nuclei causing star formation and secondary radiation on contact.

The solar flares occurring in eleven-year cycles, which cause such havoc with radio communications (as in 1958) present a real danger to the space traveler on account of the multifold increase of ionizing radiation, composed of both corpuscular and wave elements, primary and secondary, such as alpha particles, electrons, protons, neutrons, deuterons, gamma, hard x-rays, ultraviolet, and possibly other undetected components. One must be aware that once beyond the protective influence of the earth's atmosphere, such radiation as may penetrate into the inhabitable quarters of a cosmic vehicle can have short- and long-range damaging effects on both the animate and inanimate.

It is of interest to note that it has recently been shown at the Brookhaven National Laboratories (Fig. 8) that a high energy beam of deuterons, 1.1×10^6 rads, through a small opening of 25μ, produces a less pronounced radiogenic lesion in the visual cerebral cortex of a mouse than a weaker dose, 3×10^4 rads through a larger aperture of $1{,}000\mu$ (Fig. 9).

Cavitation and destruction of ganglion cells occur with the 25μ, 75μ, and $1{,}000\mu$ whereas vascular disturbances in the form of plasma exudation, hemorrhages, and edema in much larger radiation areas are probably the result of damages from secondary rays. This secondary and less powerful radiation, probably consisting of protons, neutrons, mesons, pions, and others, are results of star formation evolved when the primary particles collide with the constituents of the cells of the cortex. The high energy cosmic rays, on the other hand, up to 1.0×10^{19}, may go through tissue without causing any significant histopathologic damage.

Another interesting and vital aspect of the effect of ionizing radiation is the knowledge gained by animal experimentation of the depressant effect on antibody formation. For example, primary antitetanus response is severely depressed by rather low-dose whole-body radiation. More research is necessary to study the nature of the changes of decreased immunologic response. The loss of antibodies is very serious to animal and human life. If space travel is to be made safe, we must be prepared to meet the challenge either by proper shielding, increase of the body's defense mechanisms, particularly of the reticuloendothelial system, or both.

At the present time the food problem has reached a three-month duration level with a not-too-satisfactory solution of solid waste disposal for that period. True, man may utilize his own urine for drinking purposes, a thing which the Germans first did during their World War II African campaign under Rommel. But the problem of recovering the moisture emitted from the lungs and skin and neutralizing it in the close ecologic system of the space ship for prolonged periods of time, remains unsolved. The point can be reached where, after a certain interval, man has no more water to drink because he hasn't enough urine to purify. We speak of dehydrated foods and drinking out of squeeze bottles. This is fine, but little thought, if any, has been given to achieving normal elimination. Physical activity, particularly in the absence of day-night cycle, together with the other factors listed are not yet solved. What would happen to articulations and adjoining muscles if held immovable days and weeks on end? The danger of muscular atrophy could not be prevented by faradic-galvanic stimulation of the extremities. This would help promote circulation but would not prevent stiffening and approaching ankylosis.

Little is known with regard to weightlessness, the state of hypogravity. Weightlessness or the agravic state does not exist in the universe due to the various ubiquitous gravitational forces that always prevail. The dog Laika, the first space traveler to circumnavigate the globe, was in such a hypogravic state for about seven days with no untoward ill-effects except for an increased telemetered respiratory rate and tachycardia due to accelerative forces that ceased after burn-out of the last stage.

It has been proved that gravireceptors, present in the trigone of the bladder, trigger the release of the sphincter when acted on by the weight of the urine. To pass urine from a filled bladder, with the weight of the urine being zero, will require therefore special training on the part of the individual, and this physiologic principle under abnormal conditions will involve all other excretory and secretory organs that may be dependent on pressure for release of their contents; for example, gallbladder, stomach, and some endocrine glands. The question of distention and its dangers become obvious in the state of weightlessness.

It took man nine years to increase a voluntary state of weightlessness for human beings from 30 seconds to 64 seconds, achieved during the coming out of a Kepplerian trajectory. We have not even guessed at all the problems in this new very important field of hypogravic, let alone found a solution for prolonged periods. There will always be more or less a danger of aspiration of fluids into the lungs during the weightless state and the possibility of developing aspiration pneumonia. When a larger space ship is built, permitting the individual to move around, he would have to hold on to specially built guide ropes or bars, or use shoes with durable suction cups or with magnetized soles. Should he feel like sneezing or coughing, he will have to brace himself and hold tightly to some support to prevent serious body injury, for the escaping particles from his respiratory tract have an exhaust velocity of about 400 meters per second and would force him backwards or upwards like a small rocket. Of course, all these difficulties with the state of almost zero-gravity can be overcome if we decide to build a space vehicle in the shape of a large wheel and set the whole assembly spinning slowly. One could then create a gravitational effect of $^1/_6$ G as on the moon, thus eliminating all difficulties and unknown problems in relation to this subject.

Very recent experiments with humans have shown that if an individual has been exposed to a hypogravic state close to zero by being submerged with unlimited freedom of motion in water, certain gross changes have been noticed on his resuming the natural 1-G state. These early observations are as yet not conclusive; they involve chiefly the musculoskeletal system.

There is a flabbiness and atrophy of the muscles; radiography of the bones is similar to that found under conditions of prolonged bedridden inactivity; increased urinary output of calcium and nitrogenous metabolites occurs. The return from this week-long effortless state to terrestrial gravity conditions requires rehabilitation for the relatively short exposure to weightlessness.

The simplest of motions now requires a great deal of exertion causing early fatigue and creates a great urge on the part of the individual to return to his tank of water. It now becomes evident that after a future successful extraterrestrial journey, keeping the spatial traveler in a state of weightlessness can be severely crippling when he is subjected to the gravitational force of a planet he intends to land on. Under the conditions of his present total pheno- and genotype makeup he must be subjected to proper gravitational stress during flights of any appreciable duration. Inducing such gravitational forces are feasible and will be a principle engineering feat.

In planning space suits, the idea of female passengers has not yet been considered too seriously. They will have to wait for the perfection of large closed ecologic units which no one would dare leave unprepared if the environment on landing should be hostile to life. (Furthermore, celibacy is only a temporary expediency in interplanetary travel.)

In the field of recreation, no serious thought has been given since there has been no immediate need at this time with man still within the confines of the atmosphere. The value of recreation has never been questioned when indicated and it will definitely have its place in space travel. It has been acknowledged that man tires more easily under an environment he is not used to even though the effort required to exert himself under hypogravic states is correspondingly reduced.

The isolation factor is being vigorously pursued both in man and animal. Interesting "marathon runs" up to ten days conducted inside special chambers severely limiting visual, auditory, and kinesthetic senses have produced interesting results but still reveal how much more we have to learn about human behavior under such conditions. Individuals of latent passive-dependent tendencies did better than compulsive subjects. Extremely interesting patterns of human behavior have been shown. Unless hypnosis as a tool is attempted, the individual's mind on terrestrial experiments is comforted by the conscious and subconscious belief that he, the test subject, is on the ground and can terminate the tests at any time he wishes. Candidates subject to hypnosis, even after having been routinely screened, do not present themselves as reliable material for a position of responsibility in operating a cosmic ship. Therefore it becomes evident that the conclusions drawn from human performance tests within the sphere of accustomed environmental influences cannot have the same degree of dependability as if they were really carried out in space under conditions of questionable return. The so-called "break-off phenomenon," whereby an individual suffers a transitory psychosis-simulating episode, is basically motivated by the fear of never returning again to the earth, thus endangering his own life and interfering with the safety of the ship. This abnormal situation is not predictable.

Numerous attempts are underway to eliminate the various senses in the belief that this may help the space traveler face new situations. Among these may I mention unilateral and bilateral utricular nerve resection in animals (cats) has been attempted with some degree of success. Any surgical approach to the solution of the problem of human orientation in space is of academic interest and not the best answer. A similar situation existed in World War I days when the Germans more or less routinely carried out paracentesis to prevent aero-otitis media in their flyers which could have been caused by a possible blocked eustachian tube. This practice was later abandoned.

Light and darkness in reference to the space vehicle will assume increasing importance in long distance flights, especially on the approach to the major planets. The diurnal-nocturnal cycle involves biochemistry. This is borne out when the cycle is upset as in the case of certain animals (flying squirrel) and crustaceans (fiddler crab). In the former a phase shift in the rhythm of the daily locomotor activity occurs, while in the latter a delay in the periodic color change phase takes place.

Sleep in the human ordinarily occurs at night and brings forth physiologic rest after activity during the day. Prolonged sleeplessness of over three to four days is usually accompanied by schizophrenia-like symptoms, revealing cortical changes. Nothing yet is definitely known whether or not the damage is irreversible.

Science is in the position to create daylight on a twenty-four-hour basis by placing dust far out into space, which would reflect the sun's rays to the nightside of the earth, somewhat similar to the continuous daytime, as is believed to exist in the case of "ringed" Saturn. In the remote area of the solar system space travelers will not be able to utilize the diminishing weak light rays of the sun to read ordinary print on paper. Along these lines the Russian, Valentin Chervenkov, expects to create a belt of perpetual summer by releasing a fine powder from properly spaced satellites in either the earth's northern or southern hemisphere. Research is in the planning stage by the writer to supply light at all times from another dependable source as needed, regardless of the sun's energy, and for use at such time as man will explore the deeper regions of the Milky Way.

It has been calculated that the moon recedes from the earth at the rate of about 5 inches every one hundred years. There is no danger of its running away, for after a few million years it will start approaching the earth again, due to the earth's constant gravitational force, barring unforeseen events. This is its natural course. However, especially since the influence of the growth of industry, man has been interfering unwittingly with natural phenomena. For example, since the middle of the last century he has created hundreds of billions of tons of carbon dioxide to pollute the atmosphere. Infrared rays coming from the sun are thereby trapped within the atmosphere effecting a rise in the mean temperature and subsequent melting of the ice in the polar regions, thus causing a rise in the ocean level. Cave-ins have already occurred in Long Beach, California, as more and more oil is pumped forth to be consumed by oxidation for man's needs. If man should do something too drastic that would affect the various motions of the earth and its solar orbit, then all the living societies on ground, water, and air might be faced with real trouble.

Many times I have gone on record that contamination of a planet's atmosphere by humans is not so important as the possibility of acquiring an unknown microorganism or virus as a stowaway on the return trip. One can imagine what troubles one would then have! At the time of this writing plans are being made for acquiring physical matter from the moon, Mars, Venus, and their immediate environments.

The danger of meteor and meteorite encounters causing so-called explosive decompression was formerly considered not very great unless the space ship leaves the earth during periods of predictable meteoric showers or ventures along the horizontal solar plane in the asteroid region between Mars and Jupiter. The Whipple bumper, named after the astronomer, has been devised as an external extrametallic shell around the space ship that will absorb the energy of any conceivable particle in size and number ranging up to about $^1/_{16}$ inch in diameter. Otherwise this would melt its way through the main hull causing an almost instantaneous loss of the ship's vital atmosphere that would certainly end in a catastrophe in less than ten seconds! Of course, there is no defense against large meteorites at this phase of engineering. There is some reason to believe that this last danger can also be surmounted in time.

The problem of oxygen supply has been solved for periods of four to six weeks and maybe longer. The answer does not lie in the production of oxygen by algae (although parenthetically I must admit that algae cookies are not bad-tasting food although much over 100 Gm. cause annoying intestinal disturbances) but perhaps in a chemical such as potassium superoxide that has multiple properties in giving off oxygen and absorbing carbon dioxide in the presence of water or humidity. This is indicated in the following equations:

1. $2KO_2 + H_2O \rightarrow 2KOH + 3/20_2$ 9.4 Kcal
2. $2KO_2 + CO_2 \rightarrow K_2CO_3 + 3/2\ O_2 + 43.1$ Kcal
3. $2KOH + CO_2 \rightarrow K_2CO_3 + H_2O + 33.7$ Kcal
4. $KOH + CO_2 \rightarrow KHCO_3 + 33.1$ Kcal
5. $KOH + 3/4\ H_2O \rightarrow KOH \cdot 3/4\ H_2O + 16.57$ Kcal
6. $KOH + H_2O \rightarrow KOH \cdot H_2O + 20.0$ Kcal
7. $KOH + 2H_2O \rightarrow KOH \cdot 2H_2O + 33.8$ Kcal
8. $2K_2CO_3 + 1/2\ H_2O \rightarrow 2K_2CO_3 \cdot 1/2\ H_2O + 15.2$ Kcal
9. $K_2CO_3 + 1\text{-}1/2\ H_2O \rightarrow K_2CO_3 \cdot 1\text{-}1/2\ H_2O + 22.77$ Kcal
10. $K_2CO_3 + H_2O\ CO_2 \rightarrow 2KHCO_3 + 33.8$ Kcal

Reactions of KO_2 with water and carbon dioxide, which are readily understood, are shown above. What actually occurs in a KO_2 bed is somewhat more complicated, with two points being immediately evident: (1.) Water is absorbed without oxygen evolution; (2.) Measured heat releases are not so high as may be suggested by some of the reactions.

The first of these is explained on the basis of hydrate formation as in equations 5, 6, 7, 8, and 9, a happy circumstance which aids in preventing overproduction of oxygen. Apparently this is the best practical method to date of approaching the solution of the O_2-H_2O-CO_2 equilibrium.

In reference to disposal of human or animal waste as well as conversion, many solutions have been offered for the closed ecologic system. Among the many solutions proposed the aerobic and the anaerobic procedures appear feasible. Vitamin B_{12} and other unidentified growth factors are retrieved or formed after combustion and absorption of obnoxious gases in activated sludge along with the presence of all essential amino acids, excepting methionine and cystine. Thus an interesting potential for food supplementation is achieved. In extraterrestrial farming, such time-honored processes as using human fertilizer may become necessary for the space colonist.

A few words must be said about the subject of the clock paradox which somehow has become more than a mathematic enigma during the last fifty years. Since the clock paradox purports the prediction of decreasing the process of aging, it behooves every physician, who otherwise normally thinks in terms of arteriosclerosis, to become acquainted with this theory. For lack of space we must dispense with basic explanations of reference systems.

Several years before postulation of Einstein's special theory of relativity in 1905, Lorentz and Fitzgerald expounded the following formula for explaining the kinematics involved when an object leaves the earth and approaches but does not exceed the speed of light:

$$m = \frac{m^0}{\sqrt{1 - \frac{v^2}{c^2}}}; \quad \frac{\Delta t}{\Delta t'} = \frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$

m^0 = mass of object at rest
m = mass of object traveling at velocity v
v = velocity of moving object relative to the observer
c = speed of light 3 × 10 centimeters per second or 186,000 miles per hour
$\frac{\Delta t'}{\Delta t}$ = time differential between moving object in respect to stationary object

This so-called transformation equation tells us two things: one, that regardless of mass, an object, be it animate or inanimate, increases in size the faster it moves; the other, that time in the moving system will be longer and in a sense dilated.

Experiments in 1939 had shown that electrons traveling at different velocities grew larger in mass the faster they approached the speed of light. The theoretic calculations using the Lorentz formula checked with the experimental values with an accuracy of less than 1 per cent. The time dilation has been attested further in 1941 by the lengthened life of fast mesons and by the frequency reduction in the radiation from rapidly moving molecules.

Let us apply this equation to man. It has been calculated that if one of two identical twins takes off from the earth in a cosmic space ship while the other remains behind, the synchronized clock in the vehicle traveling at let us say 99.5 per cent of the speed of light runs only one tenth of normal speed as observed by the other brother's synchronized clock on earth. This means that time is dilated, and expressed in terms of aging the traveler finds his stationary brother ten years older on returning than when he left him while he himself has aged only one year.

Is this really so? Do "moving clocks go more slowly than stationary ones?" Do moving clocks actually show a shorter elapsed time on return? According to the relativist, who draws no distinction between the cosmic ship and the earth, both clocks in comparison are moving slowly *from each other's point of view* and the elapsed times are not possible. Both observers, the space traveler and terrestrial inhabitant, cannot be right, since each observer in measuring the other's clock finds the other going slower than his own! Any inference that the other brother's clock will show an elapsed time less than his own is erroneous. Fortunately or unfortunately, the special theory of relativity does *not* make possible any consideration of rate of change of velocity, that is, acceleration and deceleration. A satisfactory "unified" theory explaining basic universal phenomena is highly desirable and still to be presented. The special theory of relativity deals only with objects at constant velocity to each other or not moving at all (unaccelerated).

The conditions of space travel as originating from a planet involve naturally starting and stopping of a cosmic vehicle which is essentially an accelerated or noninertial system, while the earth is essentially the opposite, an unaccelerated or inertial system. Failure to take this difference into account and apply the special theory of relativity, inherent in the transformation equation of Lorentz-Fitzgerald, gives rise to the paradox.

Special theory time effects are of the order of 3.5×10^{10} while the general theory time effects are 7.0×10^{10}. Present Cesium atomic clocks have an accuracy of 1.0×10^{10} or one in 10 billion. In the very near future a thousandfold accuracy will be achieved, that is, $1,000 \times 10^{10}$ or one in 10 trillion. (The expression "trillion" as used here is 1 million squared; to our British and German confreres it denotes 1 million cubed.) This is more than ample for testing the validity of the relativity theory.

Any living organism is an open thermodynamic system with the inherent property of giving off energy and receiving energy. Unless one can prove the contrary, the basic axiom stands firm that a biologic system always conforms with any law of physics. This becomes obvious because all matter, animate and inanimate, is composed of molecules, atoms, and elementary particles which in themselves obey the various laws of nature.

Entirely antithetic to the clock "paradox" is the "biologic" clock, that unsolved mysterious internal timing device highly individualistic which determines potential aging and tends to resist life-shortening influences whatever they may be. In the years to follow one may expect very interesting discoveries in this field.

The average physician, acquainted with his electrocardiogram, still is able to count the number of heartbeats per minute on his tracing regardless of the speed of the properly calibrated cardiographic paper. Along this simple way of recording not only the number of heartbeats but also hair and fingernail growth of the space traveler and his terrestrial counterpart will have been found not to have varied when they meet again.

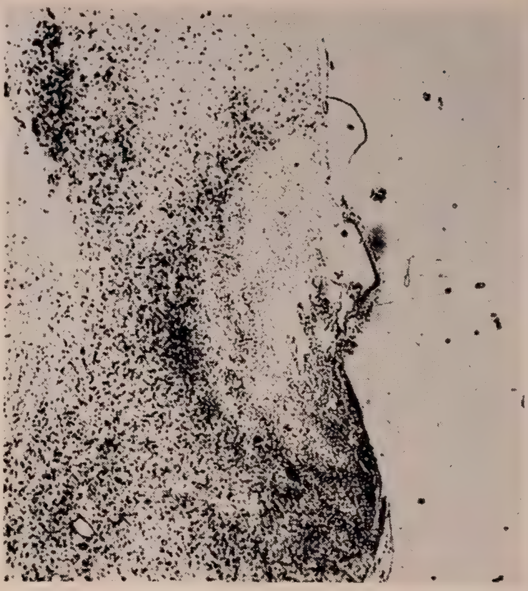


FIG. 9. Sagittal section of rat hypothalamus in the region of the median eminence, showing contours of a deuteron-induced lesion. Dose was 16,000 rad. The edge of the lesion, rich in glial cells, follows the contour of the beam, which was 2.4 mm. in diameter. Rat was sacrificed 135 days after irradiation. From unpublished data of the Donner Laboratory group. (*Courtesy University of California Radiation Laboratories, 1958*)

To treat somewhat facetiously this whole matter of the clock "paradox" which could come up one day between overassertive scientists and inquisitive Congressional committees and could lead to some embarrassment, I am reminded of the following quotation as seen posted in a busy research laboratory: "If you can keep a level head in all this confusion you just don't understand the situation."

Up to now it has been said that the medical profession is the only profession that is constantly undermining its own justification for existence—that is, if everybody remained

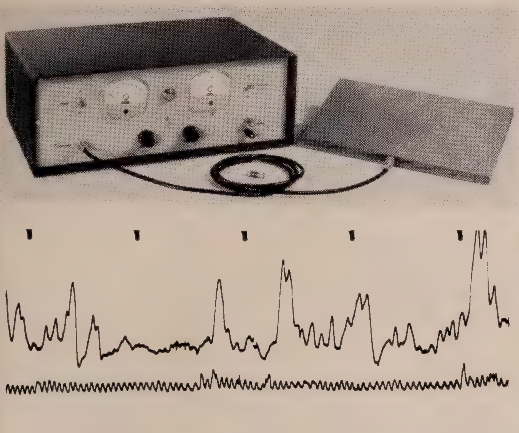


Fig. 10. (*Top*) A 9 by 26 mm. capsule, in center of coil, which includes battery and a miniature bellows capable of transmitting over a period of ninety hours information on the basis of fluctuations in intraluminal pressure of the gastrointestinal tract as a reflection of the motility of the digestive tract. (*Courtesy Airborne Instruments Laboratory, Deer Park, Long Island*)

(*Bottom*) A recording telemetered pressure tracing transmitted to the receiving apparatus shown in top illustration: intervals are one minute, gastrointestinal pressure shows in peaks, respiration is bottom line.

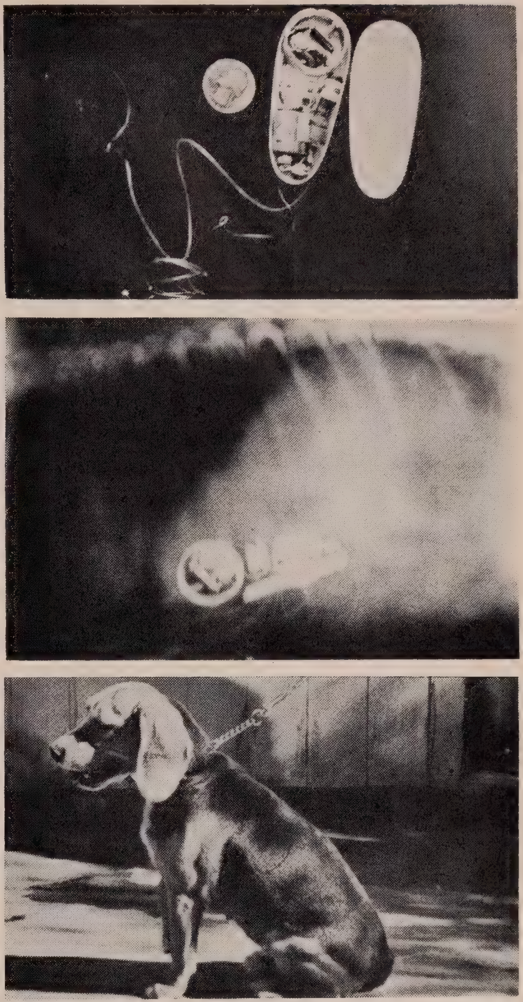


Fig. 11. (*Top*) Transmitter package; (*middle*) x-ray taken four days after surgery; (*bottom*) subject seventy-two hours after surgery. Example of the impact of space science on conventional medicine is illustrated in this clinical application of electronic miniaturization in a dog with transmission of interference-free radiocardiograms. (*From Breckler, Kaeburn, Ettleson, and Douglas, in "Space Canaries," American Rocket Society convention, Washington, D.C., November, 1959*)

healthy there wouldn't be any need for doctors. This rational thinking may have to be somewhat modified in this space age. Medical science becomes more and more an indispensable branch of knowledge for human welfare, quite regardless of pecuniary rewards. An illustration of the impact of space medical science on the orthodox practice of medicine is shown in Figure 10.

At the present level of man's knowledge of himself the following thinking is in order:

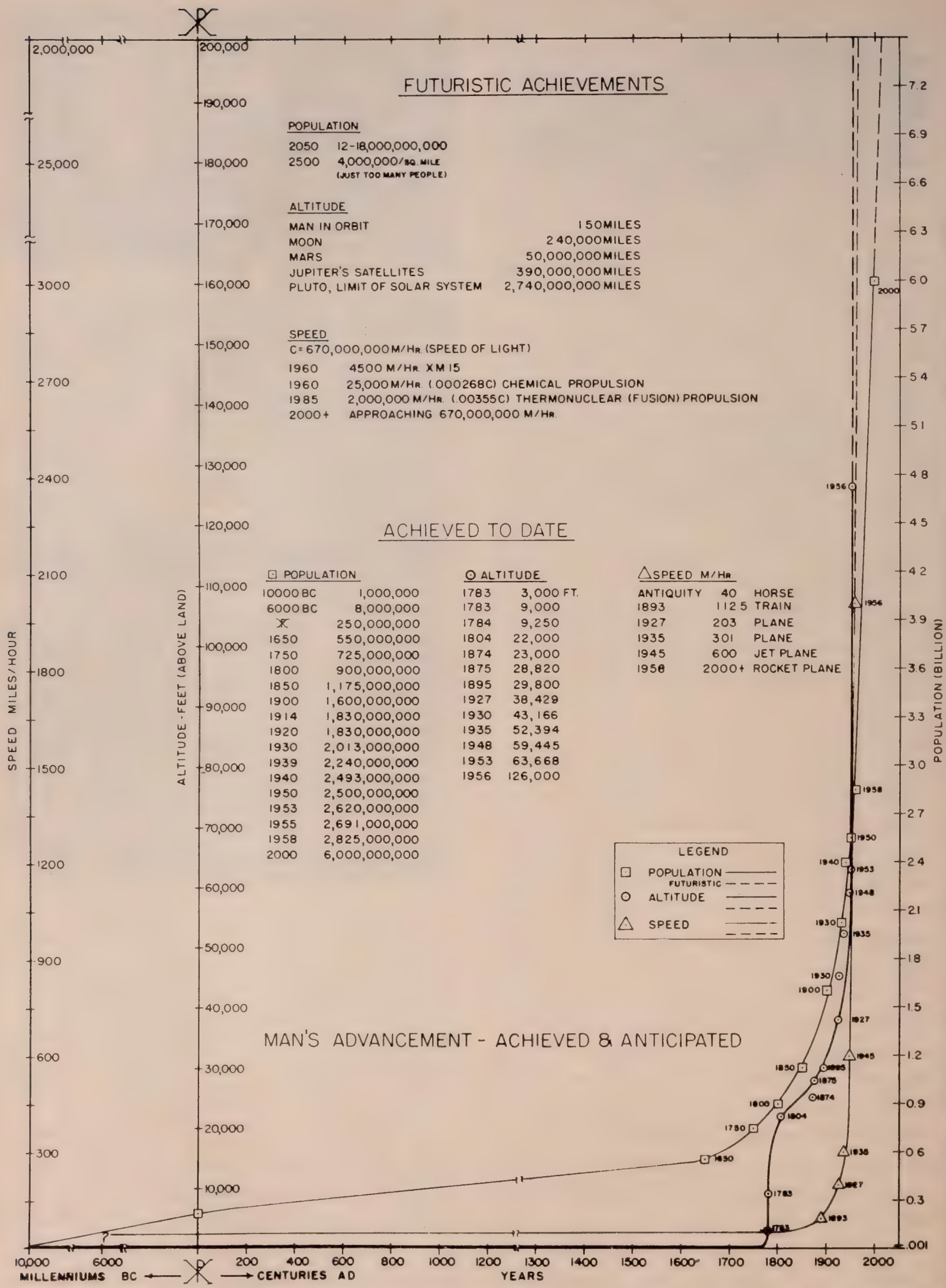
1. Surgery, with the exception of reconstructive technics in congenital malformations and in traumatic conditions as well as body transplants or implants to correct aging, is a noble effort on the part of man to cure a pathologic state which medicine should have alleviated or cured.

2. Medicine, on the other hand, including all specialties and modulations, represents in turn a sincere and genuine effort to effect a cure of an ailment that otherwise could have been prevented.

3. Preventive medicine, although a part of general medicine, is the active and passive approach to maintain good health with or without medication, second to the wisdom of planned parenthood by accepting the biologic principles of applied eugenics.

4. Creation of life by man in any desired form from inorganic matter to meet various conditions.

Therefore it is not too difficult to see, as



FUTURISTIC ACHIEVEMENTS

POPULATION

2050	12-18,000,000,000
2500	4,000,000/SQ. MILE (JUST TOO MANY PEOPLE)

ALTITUDE

MAN IN ORBIT	150 MILES
MOON	240,000 MILES
MARS	50,000,000 MILES
JUPITER'S SATELLITES	390,000,000 MILES
PLUTO, LIMIT OF SOLAR SYSTEM	2,740,000,000 MILES

SPEED

C = 670,000,000 M/HR. (SPEED OF LIGHT)

1960	4500 M/HR. XM 15
1960	25,000 M/HR. (.000268C) CHEMICAL PROPULSION
1985	2,000,000 M/HR. (.00355C) THERMONUCLEAR (FUSION) PROPULSION
2000+	APPROACHING 670,000,000 M/HR.

ACHIEVED TO DATE

□ POPULATION

10000 BC	1,000,000
6000 BC	8,000,000
☧	250,000,000
1650	550,000,000
1750	725,000,000
1800	900,000,000
1850	1,175,000,000
1900	1,600,000,000
1914	1,830,000,000
1920	1,830,000,000
1930	2,013,000,000
1939	2,240,000,000
1940	2,493,000,000
1950	2,500,000,000
1953	2,620,000,000
1955	2,691,000,000
1958	2,825,000,000
2000	6,000,000,000

○ ALTITUDE

1783	3,000 FT.
1783	9,000
1784	9,250
1804	22,000
1874	23,000
1875	28,820
1895	29,800
1927	38,429
1930	43,166
1935	52,394
1948	59,445
1953	63,668
1956	126,000

△ SPEED M/HR

ANTIQUITY	40	HORSE
1893	112.5	TRAIN
1927	203	PLANE
1935	301	PLANE
1945	600	JET PLANE
1958	2000+	ROCKET PLANE

Prepared by Constantine D. J. Generales, Jr., M.D.

FIG. 12. Curves represent man's accelerated achievements and resemble hyperbolas. Comets and meteors traveling over a velocity of 25.18 miles per second prescribe hyperbolic trajectories with an eccentricity $e > 1$. At such velocities these celestial bodies have not been observed to return to our solar system. Where to homo sapiens sapiens?

exemplified in the case of the selection of American and Russian astronauts presumably to be the first men in space, that space medicine is already a highly refined art of preventive medicine embracing knowledge of all the medical disciplines as well as allied fields (Fig. 11).

Who remembers Pierre Berthelot, the famous versatile French physiologist and chemist, who succeeded Louis Pasteur in the French Academy of Sciences, and wrote in the *Journal des Goncourt* on April 7, 1869, of "creating life 100 years from now in competition to God"?

In line with this prophecy and with still nine years to go, Stanley Miller of Presbyterian Medical Center, Philips Abelson of the Carnegie Institute at Washington, D.C., and Pavlovsky and Passynsky of the Russian Academy of Sciences have synthesized 7 of the vital 21 amino acids. They have done this by the interaction inside a glass apparatus, either of an electric spark or ultraviolet rays with ammonia, hydrogen, methane, and water. Each of the substances was common to the earth's reducing atmosphere several billion years ago. A total of 19 organic compounds were formed when other combinations of mixtures including N_2, CO_2, and CO were employed.

We accept the fact that life on our planet originated from its watery component. In geologic reckoning the transition from fish to amphibian to bird comprised about 100,000,000 years from the Carboniferous to the Jurassic periods. If we stop and reflect, man is amphibious; he can spend unaided several minutes without harm under water and hours upon hours on its surface.

Only in the last fifty-seven years or since the invention of the airplane, which is about one two millionth of the time since his emergence from the fish stage, man's aspiration to propel himself into the earth's atmosphere and the fringe of space has become a reality, a surprising leap, for he apparently cannot wait for evolution or adaptation by natural processes to leave his terrestrial habitat (Fig. 12).

Comment

An attempt has been made to give only a panorama of the issues involved in "Medicine in the Vertical Frontiers," popularly known as space medicine, defined as the study of the physiology, psychology, and pathology of life in an extraterrestrial environment. This includes orbital platforms, periods of transit to and from objectives, and inhabitation of desirable planets within and without our solar system (Fig. 13).

A "soft landing"—that is permitting a man to land safely—on the moon will be achieved during the lifetime of the majority of the readers of this JOURNAL. Deep space probes towards the gaseous planet Jupiter and especially Ganymede, one of the 12 Jovian satellites, are seriously being considered at this time.

Inside our own galaxy there are 32 stars within fifteen light years of the sun, alpha Centauri being only 4.3 light years away. Statistically, there are bound to be inhabitable planets in these distant constellations as well as some form of intelligent or lower forms of life. The belief that intelligent life on other planets has the form of homo sapiens sapiens is as nonsensical as to expect such "creatures," if they exist, to speak Greek. To be talking already along such imaginative planes about other "human" cultures finds its greatest appeal among our young people and may serve hopefully a more serious purpose of inspiring future spatial exploration. Whether the American Scientist-traveler or his Russian counterpart first plays host to the other on some distant and strange "shore" is a question of prestige and not of any primary military importance.

Space science and space medicine appear to unite people and nations as strongly, if not more so, than any other heretofore organization.

With its feet firm on the ground and its eyes fixed towards the stars, the human race has an interesting mission still to perform. Space medical science is taking an active part.

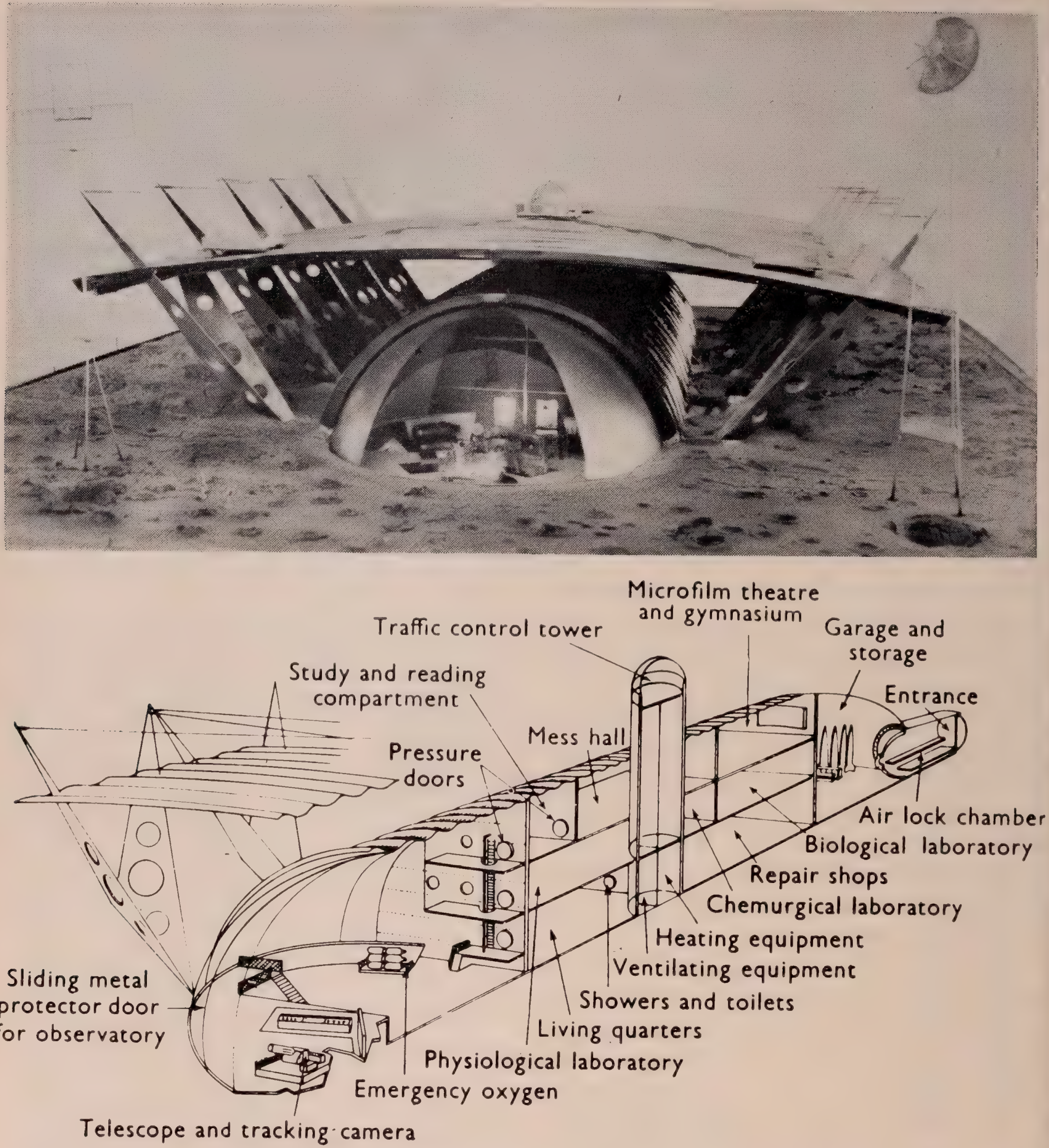

Microfilm theatre and gymnasium
Traffic control tower
Garage and storage
Study and reading compartment
Entrance
Mess hall
Pressure doors
Air lock chamber
Biological laboratory
Repair shops
Chemurgical laboratory
Heating equipment
Ventilating equipment
Sliding metal protector door for observatory
Showers and toilets
Living quarters
Physiological laboratory
Emergency oxygen
Telescope and tracking camera

FIG. 13. A scale model of "Moon Building" revealing entrance through air-lock chamber. The building and shield against meteors would be fabricated of pre-engineered aluminum alloy sheets. The cutaway drawing of interior reveals compartments for research, living quarters, observatories, and others. Pressure doors separate main areas from one another in case of accidental penetration of overhead protective shield by an exceptional meteor. Engineering of the underside of this structure has taken into account the various possibilities of the physical condition of the moon's surface. (Courtesy John S. Rinehart, Professor of Mining Engineering and Director of the Mining Research Laboratories, Colorado School of Mines, Golden, Colorado; formerly Associate Director Smithsonian Astrophysical Observatory, Cambridge, Massachusetts). (*Journal of the British Interplanetary Society*)

Conclusion

Whatever lies in store tomorrow for the human race and our universe can be anybody's guess. Many things that were considered impossible yesterday have today been fulfilled. Time always tells.

As Emerson once said, "Every man is an impossibility until he is born."

BIBLIOGRAPHY: A suggested reading list on the subject of space medicine is available from the author.

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American Medical Association

ANNUAL CONVENTION

June 13 to 17, 1960

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Prophylaxis Against Poison Ivy Dermatitis with Parenteral Alum-Precipitated Pyridine Ivy Extract

PATRICK T. McLOUGHLIN, CAPT., M.C., U.S.A.R.,* ROSEMONT, PENNSYLVANIA

PROPHYLAXIS against poison ivy dermatitis has long been controversial and largely unsuccessful. Kligman[1,2] has reviewed the history of this treatment method and performed many intricate and exacting evaluations of new drugs and prophylactic programs. However, until now the parenteral approach to this problem has remained open to question or has been largely impractical.[1,2]

One possible exception is the material first reported by Strauss and Spain in 1946[3] about the first active ivy preparation in an aqueous solution, an alum-precipitated pyridine ivy extract (Aqua Ivy, AP†), suspended in saline. There have been many reports of purely clinical trials using this material for parenteral prophylaxis and all have reported success.[3–6] In two recent studies[7,8] oral prophylaxis was carried out with success as measured by clinical results and the use of an alcoholic-ivy extract patch test. In the latter a definite decrease in sensitivity was demonstrated. In one parenteral prophylaxis study with this material[2] direct patch tests with pentadecylcatechol ("pdc") were performed and no change in sensitivity was demonstrated.

This present study attempted to hyposensitize known sensitive people with parenteral poison ivy extract utilizing the dry pentadecylcatechol patch before and after therapy as our criterion of effectiveness. Clinical evaluation was secondary since exposure was not strictly controlled.

Materials and Method

The patient group consisted of 24 soldiers, 2 women, and 6 children, all living at various Nike missile bases surrounding New York City. All lived and/or worked in areas where poison ivy was known to be growing abundantly. All subjects were volunteers and had both a history of recent poison ivy dermatitis and a positive reaction to the patch tests on initial testing before treatment. Of the 34 patients entering the program, 32 patients completed it.

The patch tests were prepared in advance by saturating blotter disks with 3-pentadecylcatechol in dilutions of 1 to 1,000, 1 to 5,000, and 1 to 10,000 with acetone as the diluent. The three dried disks were placed on the adhesive strip, and this strip was placed firmly over the deltoid region of the subject's arm. The patch was left in place twenty-four hours and read forty-eight hours after application. Repatching was done immediately on completion of the series of injections and again six weeks after the completion of this series.

The injections were begun during the month of June, 1958, about two months after the poison ivy season had begun. Poison ivy extract injections were made at weekly intervals according to the following schedule:

First week—0.3 cc. of the 1 to 50 dilution.
Second week—0.8 cc. of the 1 to 50 dilution.
Third week—0.5 cc. of the 1 to 5 dilution.
Fourth to tenth week—1.0 cc. of the 1 to 5 dilution.

All injections were subcutaneous.

It was planned to administer a total of ten weekly injections; 17 of the 32 patients received the full course, and 27 patients re-

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* U. S. Army Dispensary, Fort Wadsworth, Staten Island, New York.

† The material used in this program was supplied by the Syntex Chemical Company, Inc., New York City.

TABLE I.—Summary of Raw Data

Patient	Age	Number of Injections	Pretherapy Patch*			Post-therapy Patch*			Six-Week Post-therapy Patch*		
			1:1,000	1:5,000	1:10,000	1:1,000	1:5,000	1:10,000	1:1,000	1:5,000	1:10,000
1	24	10	4+	2+	–	2+	2+	–	2+	–	–
2	27	10	2+	–	–	–	–	–	–	–	–
3	26	10	3+	1+	–	1+	–	–	1+	–	–
4	27	10	3+	1+	–	1+	–	–	1+	–	–
5	11	10	2+	1+	–	–	–	–	–	–	–
6	12	10	2+	1+	–	–	–	–	–	–	–
7	19	10	3+	2+	–	1+	–	–	1+	–	–
8	18	10	4+	4+	2+	3+	2+	–	2+	–	–
9	21	10	4+	3+	1+	3+	1+	–	1+	–	–
10	7	10	4+	3+	–	2+	–	–	2+	–	–
11	40	10	4+	3+	2+	3+	1+	–	–	–	–
12	20	10	4+	2+	–	1+	–	–	–	–	–
13	24	10	4+	2+	2+	–	–	–	–	–	–
14	30	10	4+	4+	–	–	–	–	–	–	–
15	22	10	4+	2+	2+	2+	2+	–	–	–	–
16	6	10	2+	–	–	1+	–	–	–	–	–
17	7	10	2+	–	–	1+	–	–	–	–	–
18	18	9	2+	1+	–	1+	–	–	X	X	X
19	26	9	4+	4+	2+	2+	–	–	1+	–	–
20	28	8	4+	4+	4+	2+	–	–	1+	–	–
21	24	8	2+	4+	–	1+	1+	–	–	–	–
22	32	8	4+	4+	2+	2+	–	–	2+	–	–
23	21	8	3+	1+	–	2+	–	–	–	–	–
24	24	8	4+	3+	2+	4+	1+	–	1+	–	–
25	36	8	2+	–	–	2+	–	–	–	–	–
26	19	8	2+	–	–	–	–	–	–	–	–
27	20	8	3+	1+	–	2+	–	–	X	X	X
28	12	7	3+	2+	–	2+	–	–	X	X	X
29	24	7	1+	–	–	–	–	–	X	X	X
30	19	7	4+	4+	4+	4+	2+	–	2+	–	–
31	23	6	2+	–	–	1+	–	–	1+	–	–
32	24	6	4+	4+	2+	4+	3+	2+	4+	2+	2+

* Patch tests were made as follows—Negative (–): no reaction; 1+: minimal erythema with one or two tiny vesicles; 2+: multiple tiny vesicles or several vesicles, erythema greater than 2 mm.; 3+: multiple vesicles and heavy erythema with reaction confined to disk area (5 mm.); 4+: any more extensive reaction; X: particular patch test not performed.

ceived at least eight injections. As will be demonstrated, there appears to be a correlation between the number of injections and the degree of hyposensitization achieved.

On completion of the injections patch tests were repeated on all 32 patients; six weeks after, completion patches were done on 28 patients.

Results

This preparation has been demonstrated by others to be nontoxic.[6,8] In this study a total of 285 injections were given, and there were no clinical side-effects. Urine and blood studies were not done. More than twenty injections were given during the course of an ivy dermatitis without any untoward reactions or aggravation of the condition. Although 7 (22 per cent) of the patients had a previous history of systemic illness from ivy dermatitis, none of the patients had this illness during or after the prophylactic course.

The results of the study are outlined in Table I. It will be noted that in all subjects but 2 (patients 31 and 32) there was at least one disk which changed from positive to negative. In the 2 patients (6 per cent) without this shift there was some slight but definite decrease within the disks. Therefore they can be classed as fair results.

Seven of the patients (22 per cent) were classified as having had a good result. In these cases the change in patch test reaction

TABLE II.—SUMMARY OF DISK REACTION DECREASES

Patient	Number of Injections	Units of Plus, Total for Three Disks			Unit Decrease	Per Cent Decrease
		Prepatch*	Postpatch*	Six-Week Postpatch*		
1	10	6	4	2	4	67
2	10	2	0	0	2	100
3	10	4	1	1	3	75
4	10	4	1	1	3	75
5	10	3	0	0	3	100
6	10	3	0	0	3	100
7	10	5	1	1	4	80
8	10	10	5	2	8	80
9	10	8	4	1	7	88
10	10	7	2	2	5	71
11	10	9	4	0	9	100
12	10	6	1	0	6	100
13	10	8	0	0	8	100
14	10	8	0	0	8	100
15	10	8	4	0	8	100
16	10	2	1	0	2	100
17	10	2	1	0	2	100
18	9	3	1	X	2	67
19	9	10	2	1	9	90
20	8	12	2	1	11	92
21	8	6	2	0	6	100
22	8	10	2	2	8	80
23	8	4	2	0	4	100
24	8	9	5	1	8	89
25	8	2	2	0	2	100
26	8	2	0	0	2	100
27	8	4	2	X	2	50
28	7	5	2	X	3	60
29	7	1	0	X	1	100
30	7	12	6	2	10	83
31	6	2	1	1	1	50
32	6	10	9	8	2	20

* Maximum possible score equals 12; X: particular patch test not performed.

was from 1 plus to negative or from 2 plus to 1 plus in one or more disks. The remaining 23 patients (72 per cent) had excellent results with a change in patch test reaction from 3 plus or 4 plus to 1 plus or negative or from 2 plus to negative in one or more disks. Fifteen patients (47 per cent) became completely negative to all disks in the patch test. Of the 21 patients with a 3 plus or 4 plus initial reaction to the 1 to 1,000 pentadecylcatechol disk, 6 became negative, 7 became 1 plus, 7 became 2 plus, and 1 remained 4 plus to the same disk. In summary, 94 per cent of the subjects had good or excellent results and 6 per cent had fair results.

Table II, using the 1 plus to 4 plus scale of grading the three patch-disk reactions and totaling the pluses for each set of three disks, attempts to quantitate these results in another way. The percentage of sensitivity loss for each subject is calculated in this table. Grouping the patients according to the number of injections received, the average percentage of sensitivity decrease was as follows:

Injections	Per Cent
10	84
8 to 9	87
6 to 7	63
Over-all average decrease	82

These data suggest that eight injections or more are indicated for maximum hyposensitization.

Clinically, despite a very heavy exposure there were only 12 patients with poison ivy dermatitis. All but 1 case were simply reported by the patients and were considered by them to be too mild for medication. The other case was that of a twelve-year-old boy who usually was affected systemically but who had only a vesicular rash over his arms and face which cleared spontaneously in three days. Of these 12 cases, 7 occurred during the first five weeks of therapy, and only 1 case occurred after the completion of prophylaxis. This patient had only seven injections. It should be noted, too, that every single one of the patients in the group was well pleased with the results of the prophylaxis.

Comment

This study indicates that prophylaxis against poison ivy dermatitis is possible with good results and without the side-effects associated with previous preparations. The hyposensitization was demonstrated by means of controlled patch testing which in many ways is more valid than clinical trials.

While the dry-patch technic is subject to criticism because of the inequality of contact or the uneven distribution of the allergen on the disk, it is unlikely that these drawbacks are significant. These patches have been shown to be quite stable and did not vary in this respect.[9]

This work was coseasonal, a fact which made clinical evaluation more difficult. However, patch test response should not vary owing to this factor alone. It would be interesting to enlarge this study and utilize double-blind technics, following the patients with wet and dry pentadecylcatechol patches and clinical and laboratory exposure to the poison ivy plant. Such work is planned.

It appears that eight or more injections are necessary to achieve satisfactory initial hyposensitization. The matter of booster doses must be studied further. In addition, duration of hyposensitization is as yet not determined. Six weeks after the course of injections hyposensitization apparently is still progressing, possibly owing to the slow absorption of the alum precipitate. Again, more work is needed.

Summary

1. Thirty-two persons with a history and positive patch test for ivy dermatitis were subjected to a six-to-ten-week course of weekly injections of poison ivy extract (Aqua Ivy, AP).
2. Patch tests were done at the beginning and at end of the injection series and six weeks after the series had been completed.
3. Thirty patients demonstrated good or excellent hyposensitization, and 2 patients had fair results.
4. Clinical results were excellent but exposure controls were not rigid.

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Let thy speech be better than silence, or be silent.—Dionysius, the Elder

Biopsy of the Prostate

WILLIAM L. PARRY, M.D., AND JOSEPH F. FINELLI, M.D., SYRACUSE, NEW YORK

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TODAY physicians are confronted more and more with the problem of evaluating nodules of the prostate gland. Generally it is stated that the accuracy of the rectal examination of the prostate for carcinoma is approximately 80 per cent. However, this is true only for the classically stony hard lesions which often have evidence of fixation or local extension. Between the extremes of the classical carcinoma and the benign prostate lies the large group of lesions which are variously termed "questionable," "suspicious," or "equivocal." Unfortunately, in this important group the accuracy of the digital examination even in more experienced hands is no better than 50 per cent. Many urologists want to have greater assurance of the clinical diagnosis before they are willing to subject a patient to an open biopsy which entails a major operative procedure with anesthesia, a hospital stay, and possible surgical morbidity. Because of the uncertainty there is a tendency to wait until the lesion becomes more diagnostic, to employ a therapeutic trial of estrogens which is often misleading, or to follow a patient along with repeated prostatic massages to obtain Papanicolaou smears. Such procrastination may not serve the best interests of the patient.

There has been a need for a technically simple and safe procedure which can be done under local anesthesia in the office or clinic and yet be accurate diagnostically even for early stages of carcinoma. For us the percutaneous perineal needle biopsy of the prostate has been a practical solution to the problem. We have used exclusively the Vim-Silverman needle, particularly the Franklin modification. In our experience this procedure has been valuable.

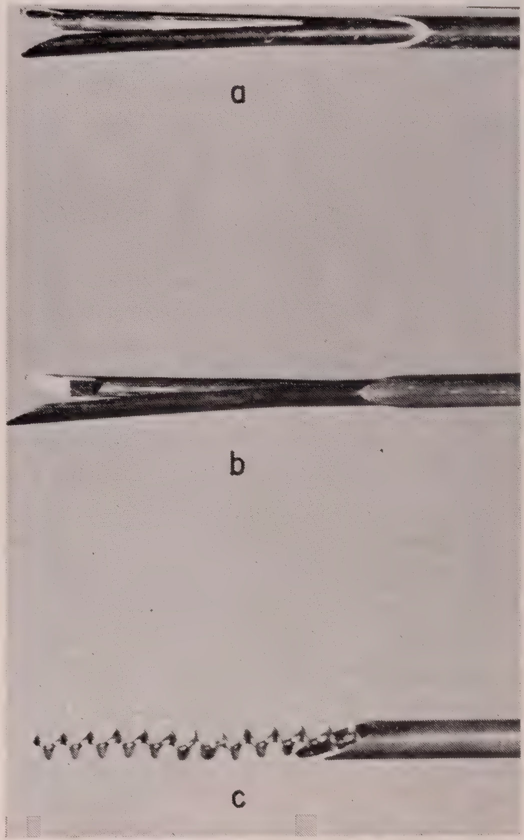

FIG. 1. (*a*) Vim-Silverman needle; (*b*) Franklin modification; (*c*) Biegeleisen modification.

Biopsy Instruments

The Vim-Silverman needle (Figs. 1a and 2a) differs from the Franklin modification (Figs. 1b and 2b) in that in the Franklin modification there is a metallic shoulder attached to each inner blade near the tip, which traps the circumcised cylinder of tissue when the outer sheath is advanced (Fig. 2d). This is of particular value in

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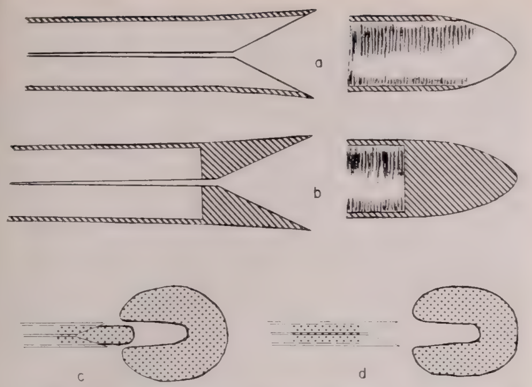

FIG. 2. (*a*) Vim-Silverman needle; (*b*) Franklin modification; (*c*) withdrawal of the needle, causing the tissue to slip out; (*d*) circumcised cylinder of tissue which is trapped when the outer sheath is advanced.

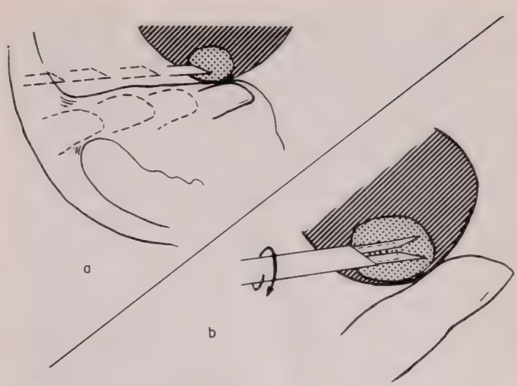

FIG. 3. (*a*) A guiding finger in the rectum following the needle point along its entire course from just within the anal sphincter to the prostatic nodule. (*b*) Withdrawal of the stylet with the inner blades being pushed beyond the needle point well into the nodule.

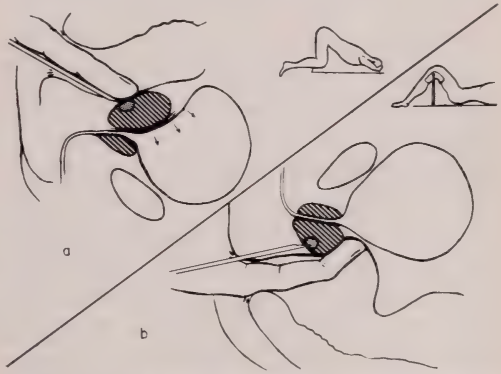

FIG. 4. (*a*) A needle biopsy of the prostate done transrectally showing that the gland has a tendency to move away from the needle. (*b*) The percutaneous perineal approach which offers a distinct advantage in that both the nodule and the point of the needle are kept in contact with the guiding rectal finger, and the gland is fixed by counter pressure while the biopsy is being taken.

the fibrous lesions in which there is a tendency for the tissue to slip out when the instrument is withdrawn (Fig. 2c). Currently we are comparing the Biegeleisen modification (Fig. 1c) of the Vim-Silverman needle with the Franklin modification. The instrument has an auger tip which is screwed into rather than pushed into the nodule. The tissue obtained by this method usually is fragmented and has more distortion histologically. Too few cases have been carried out thus far to make any valid conclusion about the comparative diagnostic value.

Technic

The biopsy technic is as follows: The patient is placed in the ordinary rather than the exaggerated lithotomy position. This affords greater comfort and better relaxation for the patient and eliminates the need for extra assistants to hold the legs back. The needle is introduced not high in the perineal body but only about 1 cm. above the anus, just to the right or left of the midline depending on the location of the lesion. With a guiding finger in the rectum one can follow the needle point along its entire course from just within the anal sphincter to the prostatic nodule (Fig. 3a). The stylet is withdrawn and the inner blades are pushed beyond the needle point well into the nodule (Fig. 3b). Longer cylinders of tissue can be taken by moving both units of the needle forward. The outer sheath is advanced to lock the tissue and then both portions of the instrument are rotated together 360 degrees. The instrument is withdrawn and the biopsy is placed immediately into formalin so that there is the least amount of artefactual change from drying. Additional biopsies are taken in similar fashion.

One can biopsy the prostate with a needle transrectally, but note that the gland has a

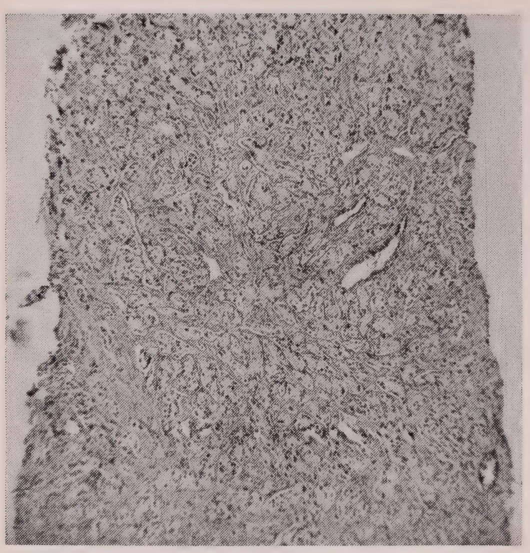

FIG. 5. Adenocarcinoma, small-gland type.

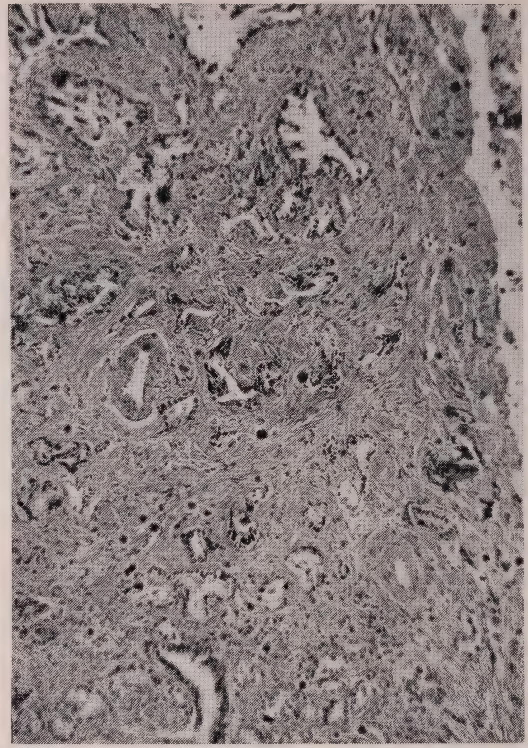

FIG. 6. Adenocarcinoma, mixed small and medium-gland type. Note perivascular lymphatic invasion in the center of the field.

tendency to move away from the needle (Fig. 4a). Particularly for small nodules we feel that the percutaneous perineal approach offers a distinct advantage because both the nodule and the point of the needle are kept in contact with the guiding rectal finger, and the gland is fixed by counter pressure while the biopsy is being taken (Fig. 4b). We grant that a greater amount of tissue can be obtained by an open transrectal biopsy. However, with much less of a procedure for both the patient and the doctor we have been able to obtain sufficient tissue for diagnostic purposes. In most instances two cylinders of tissue were taken, each from a different depth in the nodule. Currently we are taking three specimens, one as close as possible to the prostatic capsule and the other two deeper into the nodular area. The average cylinder measures 1.5 cm. and affords the pathologist six low-power fields for observation. When three cylinders are obtained the pathologist has 18 low-power fields from which to make a diagnosis (Figs. 5 and 6).

Series Presentation

Perineal needle biopsies as described previously have been carried out on suspicious prostatic lesions over the past three-year period. To show the results of this method in one person's hands, we are presenting a series of 66 consecutive cases done over the past year and one-half. In all cases the same individual recorded preoperatively the clinical impression and performed the biopsy.

ANESTHESIA.—Local anesthesia was used in approximately four fifths of the cases. Several of the biopsies were done on outpatients either in the clinic or in the private office.

MORBIDITY.—Four cases had transient hematuria due to penetration of the urethra. There were no complications. On no occasion was there evidence that the rectum or the bladder had been entered. No implantation of tumor occurred along the needle tract in any carcinoma case.

UNSATISFACTORY BIOPSY CASES.—Of the 66 consecutive cases there were 6 in which either the prostatic tissue was not obtained or was not suitable for diagnosis. Two failures occurred early in the series and may have been due to inexperience. Two of the patients had obvious prostatic calculi as shown by x-ray film. Two people did not tolerate the procedure well under local anesthesia and the operator was aware that he had not obtained an accurate biopsy.

Classification of Clinical Impressions.—Clinical impressions were recorded before the biopsy and were judged primarily by the consistency of the nodule and secondarily by the degree of fixation and the irregularity of contour. For the sake of simplicity we have listed the clinical impressions in this report as (1) improbable: nodules that were discrete but their consistency was the same as the remainder of the gland; (2) probable: nodules which were firmer than the remainder of the gland; and (3) strongly probable: stony hard nodules with or without fixation or evidence of local extension.

Improbable Group.—First let us consider the improbable group.

Of 15 patients the clinical impression was 80 per cent accurate. However, note that there was a 20 per cent error by histologic examination. Two of the 3 cases were candidates for a radical prostatectomy. One patient had a radical operation, the second patient did not because of advanced age. The third patient's prostate was evaluated because no site of origin could be found for a metastatic cervical node; the acid phosphatase and metastatic bone survey were normal. Although the nodularity of the gland was not suspicious of carcinoma, a biopsy proved that the prostate was the primary site.

Strongly Probable Group.—The strongly probable group represents those cases with stony hard lesions, the so-called classical carcinoma of the prostate.

Of the 21 cases two thirds of the patients did not have an elevated acid phosphatase or evidence of bony metastases. The clinical impression as expected was highly accurate in this group, being 86 per cent. However, there were 3 patients, a 14 per cent error, who did not have carcinoma as suspected clinically. On histologic examination 2 cases showed fibrosis secondary to prostatitis while the third had fibrosis with prostatic concrements. On the other hand, of the 18 patients who did have carcinoma 6 were candidates for a radical prostatectomy. Three patients had the operation performed; the other 3 had serious medical conditions contraindicating the procedure.

Probable Group.—Let us consider next the probable group that are called clinically "questionable," "equivocal," or "suspicious."

The firm nodules are not of stony hard consistency, but the gland is often asymmetric, or equivocally fixed, or perhaps questionably extended. Generally the acid phosphatase and the bone survey are negative. Some of the patients may have had previous prostatic surgery and the question arises of how much the induration is secondary to operative scarring. On several occasions we have challenged two or three experienced urologists to examine a group of patients with this type of prostate and to record separately their findings. It has been the rule to find disagreement in 50 per cent of the cases among the individual men.

In this group of 24 cases the clinical impression as confirmed by histologic examination was correct in only 42 per cent. This tends to support the general concept that a suspicious prostatic nodule has about 50 per cent chance of being malignant. Jewett[1] reviewed 211 cases of open perineal biopsy for suspicious prostatic lesions and found that 49 per cent of the cases were malignant. Of the 10 patients with carcinoma 4 patients were considered suitable for a radical prostatectomy, and 2 had the operation carried out. The other 2 patients were respiratory cripples. The other 6 cases of carcinoma did not have stony hard lesions, but it was felt after proving the diagnosis that there was local extension and that radical surgery was not indicated. Of the 14 other patients in this group whose biopsies were benign, chronic prostatitis or benign prostatic hyperplasia was found in about equal distribution.

RADICAL OPERATION.—Of the 60 patients in this series with a tissue diagnosis, 31 showed carcinoma.

Twelve of these patients, 39 per cent, were considered candidates for a radical operation for possible cure. Radical prostatectomies (5 retropubic and 1 perineal) were carried out on 6 of the patients (19 per cent). The age group of the radical operations ranged between fifty-nine and sixty-eight years with the average being sixty-three years. Radical surgery was precluded in the other 6 patients because of the advanced age (over seventy) of prognostically poor medical conditions.

BENIGN CASES.—Now the question arises, how accurate is the needle biopsy? Can we accept as valid our results in 29 cases with benign diagnoses? Advocates of open perineal biopsy suggest that a negative finding by needle biopsy in the early lesions is meaningless. We appreciate the fact that carcinoma can be missed by a needle biopsy. However, this is also true for the open perineal biopsy. One large series by Colby[2] suggests that carcinoma was missed in 8 per cent of the cases. From experience with this method we feel that if you can palpate the nodule, then you can maneuver the needle to it and secure a biopsy in most instances. This should be reliable diagnostically when multiple cylinders are taken at different depths in the nodule. Four cases in this series had transurethral resections that yielded benign tissue, yet a subsequent needle biopsy of a nodule gave evidence of carcinoma. If a benign histologic diagnosis was questioned clinically, we repeated the needle biopsy. We reserve the open perineal biopsy for those cases in which satisfactory tissue from a suspicious nodule cannot be obtained by repeated needle biopsies. Although the follow-up period is entirely too short to be conclusive, none of the 29 cases with benign diagnoses have shown clinical carcinoma subsequently. One patient of the group expired and serial sections of the prostate showed no carcinoma. Four of the patients had prostatectomies later for obstruction and there was no evidence of malignancy. Several cases have had negative results with recheck needle biopsies.

Confronted with a suspicious nodule in the prostate, it has been much easier for us to consider carrying out a needle biopsy than to subject a patient to a major open operative procedure. Practically there has been the advantage of backing up a consultation with histologic evidence and settling for the patient and for his referring physician, within a very short time, the status of that prostatic nodule. The value of the perineal needle biopsy is reflected in the increased number of radical prostatectomies being carried out at our medical center. A positive-needle diagnosis has allowed us to choose a retropubic or a parasacral approach for the radical prostatectomy procedure rather than being committed to carry out a perineal operation. This might be of particular value to those urologists who are not trained in perineal surgery.

Summary

In summary we have discussed the value of carrying out a perineal needle biopsy of suspicious prostatic nodules. A series of 66 consecutive cases is reported in which the Vim-Silverman needle, particularly the Franklin modification, has been used exclusively. To show the results of this method in one person's hands, the same individual in all cases recorded preoperatively the clinical impression and performed the biopsy. Most of the cases were done under local anesthesia and no complications were observed. It is suggested that this type of biopsy can be carried out in an office. We are convinced that with experience this is a valuable procedure that is quite simple, safe, and accurate.

Acknowledgment.—Acknowledgment is gratefully made by the authors to Mr. Allen Ayres, medical illustrator and to Mr. Charles Reiner, medical photographer, of the Veterans Administration Hospital, Syracuse, New York.

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Discussion

Imre V. Magoss, M.D., *Buffalo, New York.*—It is a great honor and pleasure to discuss Dr. Parry's and Dr. Finelli's excellent presentation.

Of course I do not agree with everything in their work, and I would like to start my discussion by changing their last sentence as follows: The needle biopsy of the prostate is simple, safe, but not accurate, especially not in early cases.

Carcinoma of the prostate is a disease which produces no symptoms in its early stages, yet it kills thousands of people each year because early diagnosis and appropriate total excisions are rare.

The present standards of detection are so insufficient that less than 10 per cent of the proved cases are operable or curable at the time of the examination. The detection of early carcinoma depends on periodic intelligent palpation of the prostate in men over forty-five plus a high degree of suspicion of any induration, no matter how small, followed by surgical biopsies, keeping in mind that all prostatic nodules are malignant until proved otherwise.

The old and the recent urologic literature contains great numbers of articles describing the virtues and the shortcomings of the different prostatic biopsies, clearly showing that none of them are fully reliable as yet, and we are still in search of a simple and better method to detect early carcinomas. All these variations have shortcomings, and sufficient experience with one of the instruments used seems to be the most important factor for obtaining specimens with any degree of regularity.

The technical simplicity of the needle biopsy is its greatest advantage if the biopsy was obtained from the suspected area and the amount of tissue is sufficient to make a diagnosis. A positive pathologic report is absolutely diagnostic, while a negative report is not acceptable.

In this reported series 66 patients underwent needle biopsy of the prostate, performed by the same person within a relatively short period of time. Very few of us have such an experience with the biopsy needle and naturally our results are poorer. I feel uneasy every time I perform it, knowing that even a repeated negative biopsy will make me hesitant to tell the patient to go home and forget about it. How many times should it be repeated? Needle biopsy of the prostate is an important adjunct in the confirmation of the diagnosis of carcinoma; however, it cannot compete with open perineal biops as a means of ruling out carcinoma. It is preferable to administer estrogens as a so-called "therapeutic test," but it is second best compared with open biopsy.

Dr. Parry divided his study in three groups: improbable, probable, and strongly probable. His 86 per cent accuracy in the strongly probable group is very impressive; however, only 6 patients were found to be candidates for radical procedures. The other 12 patients were evidently far-advanced cases where obtaining tissue from a small nodule was not a problem.

I would prefer to see this study divided as clinically operable and inoperable cases. It might have given more practical information about the usefulness of the needle biopsy in detection of early or curable carcinoma. In the total series 12 patients seem to be clinically operable, which means only 20 per cent of the total.

In our institute during the past five years 34 patients were admitted to the medical service for reasons other than urologic disorders; during the physical examination asymptomatic prostatic nodules were found. All of the patients had open perineal biopsies and 22 of these biopsies proved to be malignant. Three of these 22 patients were inoperable owing to a marked local extension of the lesions. The other 19 patients, or 55 per cent, underwent subsequent radical prostatectomies. All of these patients were asymptomatic and their early small lesions were found during careful rectal palpation.

Knowing the fact that 75 to 80 per cent of prostatic carcinomas arise in the posterior lobe, away from the urethra, a subsequent transurethral resection or a subtotal enucleation of an adenoma does not confirm a previous negative result with a needle biopsy. In my experience, the most effective method of detecting a clinically suspected early prostatic carcinoma is the open perineal biopsy. If a surgeon is familiar with the anatomy of the male perineum, this method is simple, reliable, and almost free of complication.

Our experience stresses the importance of periodic rectal examinations of the middle-aged male. Once a suspicious nodule is found, the combination of direct frozen section biopsy followed by radical prostatectomy, when indicated, seems to us the logical management of the early prostatic carcinoma.

Collegians Mental Problems Are Widely Underrated

The seriousness of mental disturbances among the nation's college students is widely underrated. The myth of the "happy college student" based on the superficial impression that everyone on campus is having a wonderful time may be partly responsible for this misconception, according to Melvin L. Selzer, M.D., of the University of Michigan, Ann Arbor, in an article in the February *A.M.A. Archives of Psychiatry.*

"The over-all impression created has been that the psychic difficulties experienced by college students are not as serious as those that beset the rest of the population," he said. "In general one can readily be left with the impression that college students' emotional disorders are largely situational and transient, with a substantial number suffering no worse than mild adjustment reactions." However, this impression is not borne out by data accumulated at the Mental Hygiene Clinic of the University's health service.

Roughly 8 per cent of the total student body visit the clinic annually. A survey of the students seen by three psychiatrists at the clinic from July 1, 1957, to June 30, 1958, revealed a higher incidence of serious mental disorders than previous impressions issuing from college health services.

Of 506 students interviewed, 35.4 per cent were psychoneurotic, 24.5 per cent had personality disorders, and 21.7 per cent were schizophrenes. Adjustment reactions comprised only 8.3 per cent of the disorders noted. Thus, 81.6 per cent of the patient group fell into the three major psychodiagnostic categories.

While the largest number of students interviewed were diagnosed psychoneurotic, Dr. Selzer said, "many reports practically deny the presence of psychoneuroses among college students."

Previous reports have placed the incidence of psychoses at 2.4 per cent to 8 per cent, he said, compared with 21.7 per cent for schizophrenics the only type of psychoses noted in the Michigan study. The incidence of personality disorders also are "much higher than would be expected on the basis of previous material." The 8.3 per cent whose trouble was diagnosed as adjustment reactions compares with 6 per cent recently reported at an adult community psychiatric clinic.

"There is reason to believe that patients seen by a college health service psychiatrist are diagnostically comparable to patients encountered in any outpatient psychiatric clinic accessible to the general public," he said.

Dr. Selzer said his survey indicates that students at college mental hygiene clinics are often underdiagnosed. "This can be attributed to a number of possible causes. The necessity for the busy therapist to concentrate on the immediate precipitating complaint may have the effect of obscuring the presence of underlying pathology. Other misleading factors may be the patient's youth, intellectual ability, and academic prowess. It may be difficult to accept the idea that members of this group are emotionally ill."

Finally, he said, there is the happy college student myth, the belief that campus life is a series of parties and games attended by a carefree, irresponsible student body. " . . . popular notions do have a way of permeating the institutions affected, and college health services may be no exception," he concluded. "The 'myth' may have played some role in seducing the unwary to accept certain problems as essentially 'social,' or 'academic,' or 'family,' when in reality they represent symptoms of emotional illness."

Symposium

THE POSTGASTRECTOMY PATIENT

Moderator

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Incidence, Intensity, and Duration of Postgastrectomy Symptoms

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IN THE therapy of duodenal ulcer there are two major factors to be evaluated in judging the effectiveness of any surgical procedure. One is its ability to prevent ulcer recurrence, and the other is the incidence, intensity, and duration of symptoms caused by the operation itself. Simple gastroenterostomy leaves the patient quite comfortable as far as side-effects are concerned but fails to protect adequately against recurrent ulcer.[1] The addition of vagotomy to gastroenterostomy has reduced this recurrence rate somewhat, but it still is reported to be as high as 9 to 15 per cent.[1,2] On the other hand, extensive gastric resections protect against recurrent ulcer but are accompanied by many postgastrectomy symptoms.[3] At present the most widely accepted procedure in the therapy of chronic duodenal ulcer is subtotal gastrectomy combined at times with bilateral infradiaphragmatic vagotomy. When combined with bilateral infradiaphragmatic vagotomy the 66 to 75 per cent gastrectomy is a procedure which gives excellent protection against recurrent ulceration but which does produce some undesirable side-effects. These side-effects have been detailed by many authors.[4-9] Unfortunately, there are only a few articles in the literature in which the duration of the symptoms is described.[10,11]

It is the purpose of this paper to report the incidence, duration, and intensity of postgastrectomy symptoms in a large series of patients with two-thirds to three-fourths gastric resection, with an antecolic end-to-side gastrojejunostomy, and with the afferent loop to the greater curvature. This procedure has been done in 441 duodenal ulcer patients. In 217 of these patients a bilateral infradiaphragmatic vagotomy was added. In prior publications[12,13] details of other aspects of this series have been recorded. To recapitulate briefly: The series covered the years 1946 to 1952, the opera-

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TABLE I.—Incidence of Postgastrectomy Symptoms in 390 Patients Followed

Symptom	Number of Patients	Per Cent	Operation	
			Subtotal Gastrectomy	Subtotal Gastrectomy and Vagotomy
Dumping	16	4.0	7	9
Alimentary hypoglycemia	3	0.7	1	2
Dyspeptic symptoms	37	9.5	18	19
Abdominal pain	19	4.9	11	8
Regurgitation	10	2.5	3	7
Diarrhea	27	6.9	8	19

tive mortality was 0.7 per cent, and the follow-up was considered adequate in 390 cases (Table I). The majority of these people were interviewed in person; a few were contacted by letter. There was an 8.9 per cent incidence of gastrojejunal ulcer for gastrectomy alone and only 0.5 per cent when gastrectomy was combined with bilateral vagotomy. The operative per se produced side-effects sufficiently severe to negate the value of the operation in only 5 cases, or 1.2 per cent. One hundred patients (approximately 25 per cent) had complaints of varying types that were attributed to the operative procedure. These symptoms have been classified as the dumping syndrome, dyspeptic symptoms, abdominal pain, regurgitation, diarrhea, and weight loss.

Dumping Syndrome

The group with the dumping syndrome included patients who complained of weakness, fainting, palpitation, sweating, or dizziness with or without nausea or abdominal distress, occurring soon after eating or drinking. The inciting cause was often sweet food or drink. Relief was usually obtained by lying down. Sixteen of 390 patients (4 per cent) complained of this symptom complex which invariably was noted first early in the postoperative period. In 4 patients followed for from five to ten years the symptoms disappeared after one-half, one, two, and three years respectively. In the remaining 12, the symptoms have persisted for the duration of the follow-up period of from one to ten years, a mean of six years. In the later years the symptoms have been mild and controlled by avoiding the inciting cause. The relationship between the persistence of symptoms and vagotomy is of interest. In 3 of the 4 patients in whom symptoms disappeared a gastrectomy alone had been performed while 8 of the 12 patients in whom symptoms persisted had had a complementary vagotomy.

In addition there were 3 patients who complained of a fluttering sensation, of weakness, or of dizziness occurring two hours after eating, which was relieved by ingesting food. In 1, a patient who had had a subtotal gastrectomy and a vagotomy, the symptoms disappeared after five years in a ten-year follow-up. In the other 2 the symptoms have persisted for ten years; 1 of these 2 had had an added vagotomy. These 3 cases are not considered examples of the early dumping syndrome but are instances of alimentary hypoglycemia.

Dyspeptic Symptoms

The category of dyspeptic symptoms includes a large number of symptoms described variously as epigastric distress, discomfort, fullness, pressure, nausea, or belching. They were often noted after too great or too rapid food intake or after the ingestion of milk or milk products. In the majority of patients these symptoms began soon after the operation. In those instances in which the onset of such symptoms was delayed for years and was concomitant with the development of some other condition such as gallstones, or even the recurrence of ulcer at the stoma, the symptoms are not considered side-effects of the operative procedure and have been eliminated from this study.

There were 37 patients (9.5 per cent) in this series, 19 with vagotomy and 18 without, who had dyspeptic symptoms that could be related to the operative procedure. In 7 of these the symptoms disappeared in from one-half to four years. In the other

30 patients (7.7 per cent) these symptoms persisted for the duration of the follow-up period of from three to eleven years, a mean of nine years.

The intensity of these symptoms seemed to diminish with time and many of the patients at subsequent interviews had no complaints, but once they were reminded of their former symptoms they stated that if they "over-indulged" the symptoms still recurred.

Abdominal Pain

In 23 patients no cause other than the operation could be found for abdominal pain. In 4 of these a wire suture in the wound was an easily remediable cause. Of the remaining 19 (4.9 per cent) the pain was variously described as "cramps," "gas pains," or soreness in the epigastrium. The differentiation from the dyspeptic group was at times vague and those patients were placed in both categories. In 9 patients the pain disappeared after varying intervals of from two months to six years (followed four to eleven years) and in the remaining 10 the symptoms persisted for the duration of follow-up of from three to ten years. Of the 19, 11 had gastric resection alone and 8 had gastrectomy plus vagotomy.

Regurgitation

Regurgitation or vomiting occurred in 13 patients. Three are eliminated from this study, 2 because the vomiting began three and four years respectively after the operation and was probably not caused by the operative procedure. The third patient was psychotic and his symptoms were impossible to evaluate. Of the remaining 10 patients (2.5 per cent), 7 with vagotomy and 3 without, 6 eventually stopped vomiting. In 5 patients occasional vomiting occurred after meals within the first year and then stopped completely. In the sixth patient vomiting episodes were so severe and weight loss so marked that the patient was readmitted to the hospital for study. X-ray films revealed no evidence of obstruction and studies for malabsorption were within normal limits. The symptoms persisted with decreasing intensity for two years and then subsided. The patient has been asymptomatic since. Follow-up on these patients was from four to twelve years.

In 4 patients the symptoms have been present for the duration of follow-up, namely one, nine, ten, and ten years respectively. One of the patients with ten years of persistent regurgitation notes simply occasional bitter regurgitation on arising in the morning. The other states that the vomiting is occasionally distressing but has not interfered with his nutrition or activities.

Diarrhea

Diarrhea was attributed to the operation in 27 patients (6.9 per cent). It varied in intensity from an occasional bout of 1 to 3 watery stools a day to severe, disabling diarrhea in a few instances; the latter usually cleared up or became mild within the first six months. Of the 27 cases, 6 had diarrhea for less than six months; in 7 it persisted for from one to four years (followed for from three to ten years) before it ceased. Fourteen patients (3 per cent of the entire series) had recurrent episodes of diarrhea for the duration of the follow-up (up to eleven years). In the group of 13 who cleared, 7 had had gastrectomy alone. Of the 14 who persisted, 13 had had gastrectomy plus vagotomy.

Weight Loss

Weight data are available for 58 of the 100 patients under discussion. Thirty-seven patients regained or exceeded their postoperative weights, and 21 lost 14 to 34 pounds, a mean loss of 20 pounds. In the latter group only 3 patients required special treatment for malnutrition.

Comment

The symptoms observed in this group of patients are undoubtedly due to altered gastrointestinal function resulting from the operation. The loss of a large proportion of the gastric capacity unquestionably is a major reason for some postoperative symptoms, although it is the concensus at present that the actual site of origin of symptoms is the small intestine.[11,14] In addition to the reduced gastric capacity the loss of pyloric sphincter action also certainly plays a role in the causation of the dumping syndrome by allowing a rapid flow of concentrated foods into the small intestine, whatever other physiologic mechanism may subsequently be involved in the production of this symptom complex.

Just what role the diminished acid-pepsin output plays in the production of symptoms is not so clear. It has been postulated that the lack of acid fosters a different bacterial flora which may produce jejunitis or other changes.[11] Perhaps diarrhea is related to this acid loss since some patients seem to be benefited by the administration of dilute hydrochloric acid before meals. The exact mechanism involved in postvagotomy diarrhea is not known. The fact that it occurs in only 6.9 per cent of cases implies considerable individual variation in the vagus control of intestinal function. Rapid and excessive filling of the afferent jejunal loop has been cited for symptoms occurring after the Billroth II anastamosis procedure. Undoubtedly this so-called proximal loop syndrome may exist, but we have not proved it in any of our cases. In 1 patient proximal loop distention was demonstrated on x-ray film but eventually cholelithiasis proved to be the actual cause of symptoms. One may speculate that the excessive filling of the duodenojejunal loop may cause stasis in the biliary tract and be a contributing cause in biliary calculus production. Certainly cholelithiasis and cholecystitis is not uncommon after a gastrectomy for duodenal ulcer.

In view of these extensive changes in gastric function, the surprising fact therefore is not that the symptoms persist but rather that they disappear at all. The explanation for this is probably twofold. The most obvious one is that the patient gradually learns to live with the new, altered state of affairs. He learns which foods and what quantities he may take without incurring symptoms. One must remember that even the dumping syndrome can be produced in the normal individual by an excessive ingestion of hypertonic sugar solution. Certainly dyspeptic symptoms, abdominal pain, and diarrhea induced by dietary indiscretion occur in the unoperated individual. Meurling[11] found in his nongastrectomy patients that more than 10 per cent of them had some sort of postcibal symptoms. In short, everyone watches his diet or pays the price in terms of distressing symptoms, particularly the gastrectomy patient.

The other mechanism accounting for disappearance of symptoms is less clear cut. Temporary symptoms are to be expected within the first few months when the healing processes are incomplete. But even when this early period of healing passes, further improvement occurs which may be the result of some type of adjustment to the altered anatomy and physiology induced by the operation. Perhaps, as time goes on, the gastric remnant dilates and becomes less irritable; perhaps the intestine reacts less to rapid filling and to the presence of food unaltered by the gastric digestive processes; and perhaps the body compensates in some way for the diminished blood volume that is currently thought to be the cause of the dumping symptoms. These adjustments all may occur and probably do to some extent, but it seems most likely that change in the dietary habits is the most important factor in the disappearance or amelioration of postgastrectomy symptoms.

Summary

An attempt has been made to establish the incidence, intensity, and duration of symptoms caused by the operative procedure per se in a series of 441 duodenal ulcer patients treated by a two-thirds to three-fourths gastrectomy to which vagotomy was added in 217. Three hundred ninety patients were followed. Gastrojejunal ulcer occurred in 8.9 per cent of the gastrectomy group and in 0.5 per cent of the gastrectomy-vagotomy group.

One hundred (approximately 25 per cent) of the patients had some symptoms attributable to the operation. There were 16 patients (4 per cent) who suffered from the dumping syndrome, 3 (0.7 per cent) from alimentary hypoglycemia, 37 (9.5 per cent) from a variety of dyspeptic symptoms, 19 (4.9 per cent) from abdominal pain, 10 (2.5 per cent) from recurrent vomiting, and 27 (6.9 per cent) from diarrhea.

In about half of those patients with pain, diarrhea, or weight loss the symptoms eventually disappeared, but in only 4 of 16 of those patients with dumping and in only 7 of 37 with dyspepsia did the symptoms abate completely. The remainder continued to have symptoms for the duration of the follow-up. In most patients the symptoms became milder as time went on, and the reasons for this have been discussed. In about 1 per cent of all the patients the symptoms were severe enough to condemn the operation as a failure.

The result of adding vagotomy to the resection seems to have influenced the incidence of some of these symptoms. It did not alter the incidence or intensity of dumping but in the vagotomized patients dumping persisted longer. Vagotomy did not affect the incidence of pain or the dyspeptic symptoms. Diarrhea was much more frequent (20 to 8) and more persistent (13 to 1) when vagotomy was added to gastric resection. This increase in side-effects induced by vagotomy is more than compensated for by the low ulcer recurrence rate in the vagotomy group, 0.5 per cent as compared with 8.4 per cent. Therefore, the authors advocate gastrectomy and infradiaphragmatic vagotomy as the procedure of choice in the treatment of duodenal ulcer.

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Dumping After Partial Gastrectomy for Duodenal Ulcer[*]

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The term "dumping" is difficult to define. In this discussion we use it to mean an inconstant group of symptoms that patients notice shortly after eating, the commonest of which are sweating, weakness, a desire to lie down, faintness, and nausea. We are not at this time considering the patients whose symptoms come long after eating. We do not rely on x-ray films or other tests to make the diagnosis. Other complaints are at times associated with the syndrome but are not included here either because they happen often as solitary symptoms that are not parts of syndromes or because they happen infrequently. These include sense of fullness after eating a small meal, vomiting, sleepiness, epigastric pain, upper abdominal discomfort ("I am uncomfortable for over an hour if I eat too much"), and excessive nasal discharge.

It can be noted that many of these symptoms have their counterpart in people whose stomachs are intact. People often sweat after eating, especially in hot weather and after taking certain foods. Which of us does not feel uncomfortable if we eat too much? Is the infant dumping when he falls asleep so that he cannot be roused at the end of his bottle? This would be an alarming event if it occurred in an adult. Some of us bore (but do not alarm) our wives when we fall asleep on the sofa after dinner, and dogs can be observed to lie down and sleep after a good meal. The dumper seems to have a lower than normal threshold for being affected by his intake of food, and his response, while not always unlike the normal in kind, is excessive.

There are explanations of the cause of dumping but they leave many things unexplained. Why does it begin so often not when the patient first is allowed a liberal diet after operation but some months or even years later? Why do many patients notice it only at intervals, sometimes without apparent cause but more often after known circumstances, such as eating more than they know they can tolerate, eating when fatigued, or eating before noon? Certainly there are marked individual differences among patients in the ease with which they develop symptoms of dumping when food leaves the stomach and the nature of the factors that bring it on or relieve it; but there are features that are common to many patients, such as the tendency of the rapid intake of hygroscopic fluids to cause dumping.

One outstanding fact is that dumping occurs in neurotic more than in stolid patients. We reviewed the charts of 898 patients[1] who had undergone partial gastrectomy, noting whether before operation (1) no reference had been made concerning their psychologic character; (2) whether they had been noted to be tense, nervous, and so forth; or (3) whether they were described as being clearly abnormal psychologically. Members of the last group had usually been referred to a psychiatrist. By this rough classification 56 per cent of the patients fell into the first category, 38 per cent into the second, and 6 per cent into the third. There were proportionately twice as many unsatisfactory results due to dumping and loss of weight (but not to recurrent ulcers) among the second group as among the first, and over three times as many among the third. The two groups in whom abnormalities of behavior had been noted before operation (44 per cent of the whole) produced over 80 per cent of the dumping. This agrees with the impression we still have in our follow-up clinic.

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The cause of dumping symptoms is not related only to the rate of emptying of the stomach, although it is conceivable that the rate of emptying can be lowered, as Abbott, Krieger, and Levey[2] suggest, to a degree where dumping symptoms will seldom occur. Patients who had undergone gastric resection years before were studied by means of a conventional barium meal.[3] The barium emptied rapidly from their stomachs regardless of the type of anastomosis or the presence or absence of dumping symptoms. In studies not yet published we have so far been unable to demonstrate by x-ray study any difference between the dumpers and the nondumpers in the way in which their stomachs respond to taking either solid food or a barium mixture. The drop in blood volume that may follow the outpouring of intestinal juice as food reaches the intestine may be an accompaniment and not a cause of the dumping symptoms.

Dumping Following Gastric Resections

Our experience with dumping after operation among approximately 2,000 patients is as follows. During the years 1936 to 1945 we were hardly aware that dumping existed among our patients. This was undoubtedly owing both to the infrequency with which patients complained of it and our own failure to inquire specifically into it. Many of these patients are still in our follow-up clinic and we have recently made a point of inquiring of them about dumping. While our findings are not ready for tabulation it appears that whereas dumping was more frequent among the group than we realized, it was with few exceptions mild in degree and readily controlled. In those years we did chiefly Polya-type resections, infrequently removing more than half the stomach. From 1948 to 1953 we did higher resections, as shown by actual measurement of the resected portions of the stomach,[4] employing usually a Hofmeister technic, and the incidence of dumping and loss of weight among our patients rose sharply. The dumping also became severe as well as more frequent more often than it had previously.

Recently we reviewed 327 patients who had had gastric resections, 161 done in the years 1952 to 1956 and 166 done in 1957. All of these patients were asked specifically in 1958, "Do you ever feel faint or break into a sweat after eating? If so, is it bad? Does it happen often?" The patients included 93 with a Billroth I type of anastomosis and 234 with a Hofmeister type of gastrojejunostomy. The incidence of dumping determined in this manner was 28 per cent for the patients with Billroth I resections and 26 per cent for those with gastrojejunostomies. We have not noticed that vagectomy influenced the incidence of dumping one way or the other in either group. In both groups about 6 per cent of the patients had dumping of more than 1 plus severity. We included in the 1 plus category only those patients whose dumping was infrequent, not severe, often attributable to one type of food or circumstance, and usually readily avoidable. Among the 6 per cent group of more severe dumpers, 11 patients were rated at 2 plus, 10 at 3 plus, and 1 at 4 plus. The 3 plus cases were so rated because every day they had to watch their food intake to avoid having symptoms. Breakfast was usually the only difficult meal. The single 4 plus case has symptoms in spite of taking precautions and is the only one who is handicapped severely by her disability, although she is able to keep her job and eat a good varied diet. She weighs 10 per cent below the average for her height and age. There is a clear tendency for dumping to improve with time. Among the 327 patients recently reviewed, 9 of the 11 dumpers rated 3 or 4 plus in 1958 were operated on in 1957. About half of the 327 patients were operated on prior to 1957 and their 3 plus dumpers have shrunk in number to 2 patients.

Comment

The one measure that has helped us most to reduce the incidence of severe dumping is limitation of the proportion of the stomach that is resected to about 35 to 50 per cent. Meanwhile the incidence of recurrent or marginal ulcers is lower than it was previously, probably largely because of the frequent addition of vagectomy to the resection. In the years 1948 to 1953 when we were excising usually an estimated two thirds to three fourths of the stomach, dumping and loss of weight were so frequent and severe that most of our surgeons have turned again to resections of not over 50 per cent. We have no accurate record of the number of mild cases of dumping in those earlier years to compare with our present figures, but the severe cases are recorded and they were then at least six times as numerous in proportion as they are now among our recent cases. Even the 10 patients mentioned previously as being rated 3 plus now suffer little more than an unfortunate inconvenience. All are working, all are eating a normal diet, and all but 1 are of satisfactory weight for their heights, ages, and sexes. The single exception underwent resection not for ulcer but in an effort to alleviate persistent dumping that occurred after a posterior gastroenterostomy, and he has shown little improvement. We have made no effort to control dumping by creating a small stoma. We have not thought that the disability among our patients at present justified taking the risk of causing stomal obstructions that may sooner or later do harm.

Summary

The incidence of dumping that gives symptoms in a group of 327 patients following partial gastrectomy is about 27 per cent. Of this percentage 21 per cent have mild, inconstant symptoms that are readily controlled.

Only 1 patient of the 327 has dumping symptoms that we think interfere seriously with her habits of life or well-being.

The incidence of serious dumping symptoms has decreased strikingly since we stopped removing more than 40 to 50 per cent of the stomach regularly.

The incidence and severity of dumping was approximately the same following gastroduodenostomies and gastrojejunostomies.

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Radiologic Observations with Barium and Food in the Postgastrectomy State

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Various and often conflicting observations have been made in the postgastrectomy state by different investigators using modifications of accepted radiologic technics. On the basis of these rather variegated conclusions, equally assorted surgical procedures have been advocated to prevent or to treat definitively unfavorable sequelae of the primary surgery. In view of the differences of opinion in the radiologic observations and in the operative recommendations, the need for reappraisal of the postgastrectomy state became apparent. Accordingly, a study was undertaken to define more clearly a concept of the range of normal in the structure and function of the upper gastrointestinal tract in the asymptomatic group and to assess deviations from the normal in the symptomatic group.

To gain some appreciation of the evolution of the concepts of the normal and abnormal in the postgastrectomy state it is well to review some of the background material which involved radiologic modalities of investigation. Hertz's frequently mentioned article, which appeared in the American literature in 1913,[1] was concerned with the cause and treatment of certain unfavorable after-effects of gastroenterostomy. In this report, attention was focused for the first time on a concept of "too rapid drainage of the stomach," and such untoward effects as postprandial fullness, diarrhea, decreased food intake, and weight loss were all explained on the physical phenomenon of rapid egress of material from the stomach. Mix, in 1922,[2] formulated the principle of "dumping stomach" from his fluoroscopic observations of a woman incapacitated by vomiting and abdominal pain for a period of two years after gastroenterostomy for ulcerative disease. The rate of gastric emptying and the transit through the small intestine were so markedly accelerated as to suggest a gastroileal communication, and remedial surgery was directed at closing the stoma which, paradoxically enough, was found to be gastrojejunal in location. Although Mix's concept of the "dumping stomach" originally implies rapid gastric emptying, it is significant that his patient's vomiting and intractable pain were accounted for on the basis of this finding, that the therapy was planned about this somewhat unconvincing observation, and that dramatic symptomatic cure followed surgical intervention. From this case the author intuitively arrived at the conclusion that "the stoma should be no larger than the ordinary pyloric opening since nature evidently intended the stomach to keep its contents an hour or an hour and one-half after an ordinary meal."

Eusterman and Balfour, in their published work of 1935,[3] called attention to the "too rapid emptying of the stomach" following gastric resection, an observation made approximately twenty years earlier after gastroenterostomy. In a discussion of the late sequelae of the surgical treatment of peptic ulcer, these authors postulated a causal relationship between the too-rapid emptying of the gastric pouch and a train of symptoms henceforth recognized as facets of the "dumping syndrome." These included nausea, vomiting, epigastric distress, bloating, intestinal uneasiness, diarrhea, a feeling of faintness, diaphoresis, and prostration following the ingestion of food. Emphasis was placed by these authors on the rarity of these symptoms after well-indicated and properly performed surgery. It was observed further that all resected stomachs appeared to empty rapidly although few patients complained of discomfort.

Methods of Study

In the ensuing years, the avenues of radiologic investigation in the postgastrectomy state have continued to provide a variety of data concerned primarily with the alterations in function and morphology of the symptomatic group. For the most part the deductions, contingent on fluoroscopic and radiographic observations, have been based on studies performed with a liquid barium suspension or with a semiliquid meal with barium prepared in a blender. Less commonly used was a standard meal, subjected to mastication by the patient, which served to approximate more closely the physiologic postprandial state. Therefore, a composite examination was evolved for this investigation in which the advantages afforded by both technics were utilized effectively. The initial phase used a standard nonflocculating barium suspension while the second phase was devoted to re-examination beginning almost immediately after the ingestion of a meal consisting of a ham sandwich. All of the studies were performed by one radiologist employing a designated routine and no attempt was made to integrate such examinations into the busy fluoroscopic schedules of the daily routine. Sixty-five cases were subjected to this type of study. The series consisted of various forms of anastomosis, including Billroth I, anterior Polya, posterior Polya, high Hofmeister, and a 50 per cent resection with Hofmeister anastomosis and vagectomy, which had been established for longer than six months.

Concept of Normal

Certain observations in this series appeared to be pertinent in establishing a concept of normal in the postgastrectomy state when it was explored by extended radiologic technics. In response to the ingestion of a heavy, inert liquid suspension, rapid gastric emptying generally occurred as a physiologic concomitant of the various postresection structural arrangements. Even in the supine position, advocated by Hertz to ameliorate postgastroenterostomy symptoms, most often a liquid bolus passed immediately and uninterruptedly from the esophagus through the pouch and stoma and into the adjacent small intestine. When the volume of ingested fluid contrast material was increased, the gastric remnant functioned as a rapidly emptying passive conduit without intrinsic peristaltic activity or more than transient reservoir capacity.[4] Thus, the rapidity of gastric emptying with a heavy liquid medium presented no apparent correlation with the presence or absence of symptoms, the patient's nutritional status, or his capacity to gain weight; similarly, there was no positive correlation with the type of surgical procedure and the rapidity of pouch emptying. Specifically, an extremely rapid rate, frequently classed as precipitous emptying,[5] did not imply a symptomatic postgastrectomy patient.

On the other hand, the analysis of pouch emptying and reservoir capacity through the medium of a masticated meal disclosed a uniformly striking reservoir capacity for particulate matter in spite of rapid emptying with a heavy liquid suspension. This, too, represented a broad spectrum of variation which bore no correlation with the type of anastomosis or status of the patient clinically. When a barium suspension was administered in the presence of particulate matter in the pouch, selective rapid transit of the contrast material through the stoma was observed and, in the course of emptying, some of the particulate matter appeared in the small intestine. Nevertheless, food particles appeared to mix with secretions in the gastric pouch and remain there for varying intervals, a period of one to two hours being relatively frequent in spite of the absence of an anatomic sphincteric mechanism. It is of interest that peristaltic activity was not observed in the gastric pouch even when it was distended with food unless, of course, a low resection had been performed and the distal pars media remained. The only valid concept of pouch size was obtained with masticated food since liquid barium generally cleared the stoma rapidly giving an impression of relative pouch smallness.

Effect of Size of Stoma

Although the size of the stoma has been considered critical in terms of the rapidity of emptying and the reservoir capacity of the pouch, studies with barium and a masticated meal would indicate that the stoma per se does not have a determinative bearing on the function of the gastric remnant. It would appear that the amount passing through the stoma in any given period of time is governed by the volume of material which the small intestine will accept. A rather striking example of the lack of regulatory effect of the stoma is seen in the Polya type of anastomosis in which the wide gastrojejunal opening permits the gastric contents to pass into the jejunal outpouching in the region of the stoma. This tends to increase slightly the reservoir capacity of the pouch. But the effective exit stoma is a function of the efferent jejunal limb, its width, its peristaltic activity, and its capacity to accept material from the gastric reservoir. From the morphologic standpoint, the jejunal pouch opposite the anastomosis is a concomitant of all Polya anastomoses and it is occasionally observed in Hofmeister anastomoses with a wide stoma.

When the stoma had been negotiated, the transit through the proximal small intestine was generally rapid when liquid barium or a meal was employed. However, this was compensated for by prolonged transit through the small intestine distally so that the total transit time through the small intestine was hardly at variance with our concept of the range of normal in patients with an intact gastrointestinal tract. This pertained even when the effect of food stimulation on the small intestine was taken into consideration. Small intestinal transit, as demonstrated by these studies, would tend to indicate that there are no differences which could be related to the type of surgery or the presence or absence of symptoms.

Summary

In the radiologic investigation of the postgastrectomy state with a liquid barium suspension and with a masticated meal, a wide range of variation in function was observed in both symptomatic and asymptomatic patients. When a liquid barium suspension was employed, rapid gastric emptying was a physiologic concomitant of the postgastrectomy state, presenting a wide spectrum of variation which bore no correlation with the type of anastomosis or symptomatic status of the patient. With a masticated meal, reservoir capacity of the pouch was demonstrated in the symptomatic as well as in the asymptomatic groups independent of the type of surgical reconstruction.

Stomal size did not appear to be the critical factor in gastric pouch emptying, and no significant variation was observed in the total transit time through the small intestine to account for signs and symptoms. From the roentgenographic observations, the symptomatic group could not be differentiated from the asymptomatic group and a diagnosis of "dumping syndrome" would not appear to be warranted from observations of the function and morphology of the upper gastrointestinal tract following gastric resection.

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Study of Fat and Fatty Acid Absorption in Postgastrectomy Patients Using Radioactive Labeling[*]

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FAILURE to gain weight is a common and sometimes troublesome symptom in the postgastrectomy patient. In discussing this subject the loss of reservoir function of the stomach is frequently mentioned and clinical data are cited to show the influence of stomal size, the extent of resection, or the

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type of anastomosis. It is also pointed out with increasing frequency that many postgastrectomy patients, particularly those with the dumping syndrome, simply do not eat as much as they did before operation. Such patients are often capable of gaining weight when they are put on a sufficiently high intake diet. These facts are known to all clinicians and the belief is occasionally expressed that the deficient intake is a much more important factor in the failure to gain weight than is any possible physiologic defect in digestion or absorption. Classical balance-type studies usually have shown an increase in fecal nitrogen and fat, thus demonstrating the presence of a defect of some kind. The present study was undertaken to help clarify the mechanism of the defect.

In the last few years several new methods of studying digestion and absorption have become available. One is the use of isotopic tagging of foodstuffs, particularly of fats and proteins. Another is the more or less continuous sampling of intestinal contents at various levels by means of a long small-diameter tube. The latter method ordinarily utilizes not only a test meal for digestion and absorption but also a nonabsorbable substance to permit calculation of dilution effects as well as of absorption. The newer methods are a substantial addition to the standard balance studies since the investigator can sometimes make estimations of the rate of absorption and of the level of absorption rather than only the single determination of the final cumulative difference between intake and output. Recently Lundh[1] has reviewed this subject.

Steatorrhea has been the most consistently demonstrable indication of an absorptive defect in the postgastrectomy patients and the employment of an I^{131} (radioactive iodine)-labeled fat and fatty acid test meal is thus an attractive method with which to study the mechanism of the defect.

Methods

Olive oil has been used as the neutral fat in the present study and oleic acid, which is its principle fatty acid, has also been used. Both fat and fatty acid have been tagged with I^{131} in our own laboratory as previously described.[2] They have then been administered on separate occasions by mouth to fasting subjects and the appearance and concentration of radioactivity in the plasma have been followed by taking frequent samples and employing standard counting methods in a well-type scintillation counter. The amount of radioactivity in the entire circulating plasma volume has been calculated using an assumed volume of $4^1/_2$ per cent of body weight. The final figure for each sampling time has then been converted into a percentage of the dose given. Urine has been collected and the content of radioactivity determined and cumulated to forty-eight or seventy-two hours. In the present studies stool radioactivity was not measured regularly.

A group of 17 patients were studied following partial gastrectomy. All had had surgery for duodenal ulcer and had had approximately two-thirds resections with a Billroth II anastomosis without vagotomy.

A group of 9 patients with total gastrectomies for carcinoma were also studied and these had a variety of anastomotic arrangements. In no case was pancreatic integrity disturbed. The time lapse between operation and study was quite variable and no effort was made to restudy the same patients to determine whether or not the time factor would have played a part.

Results

Table I shows the mean data for the neutral fat and fatty acid studies in the partial gastrectomy group, the total gastrectomy group, and the figures in normal adults in our series. It can be seen that after partial gastrectomy, abnormally low I^{131} plasma content figures were observed following the administration of neutral fat. No definite abnormality was found when fatty acid was given. In the total gastrectomy group the blood levels were low following both neutral fat and fatty acid.

TABLE I.—Plasma Radioactivity Figures at Various Times After Oral Administration of Neutral Fat and Fatty Acid

Test Condition	Number of Patients	Per Cent of Dose Given (Hours After Ingestion)				
		2	4	6	8	24
Neutral fat						
Normal	7	9.0	14.7	11.2	...	3.3
Subtotal gastrectomy	15	6.8	9.1	7.8	...	2.6
Total gastrectomy	7	7.2	7.2	5.6	...	2.4
Fatty acid						
Normal	20	3.5	6.7	8.0	7.1	2.9
Subtotal gastrectomy	10	5.8	6.7	6.6	5.8	1.9
Total gastrectomy	5	4.5	4.6	4.3	3.4	2.0

Comment

A similar study of patients with partial gastrectomy was reported by Shingleton *et al.*[3] who observed a similar depression of blood content figures after a neutral fat meal and relatively normal figures following fatty acid administration. The implication of this combination of results is obvious. The normal blood curves following fatty acid intake would suggest that the intestinal absorptive ability is normal and that therefore the defective absorption following the neutral fat meal is a matter of incomplete enzymatic digestion of the neutral fat. Shingleton[3] was able further to support this conclusion by the demonstration that more nearly normal results were obtained in the neutral fat test when bile salts and pancreatic extract were incorporated with the test meal.

Several possibilities exist to explain poor enzymatic digestion of food in the postgastrectomy patient, and the most likely of these is that the proper timing of enzyme secretion or mixing is at fault rather than the inability of the pancreas to secrete an active enzyme. Thus in the gastrectomized patient the normal stimuli to pancreatic secretion have been tampered with by the rerouting of gastric contents away from the duodenum (in the Billroth II patient) and the rapid discharge of gastric contents (in both Billroth II and Billroth I anastomoses). Thus the stimulus may be absent or either too brief or too weak. Or it may be normal in intensity and duration but may be poorly timed for proper mixing of the enzyme with the food to be digested. The completeness of mixing is also apt to be deficient if the duodenum is bypassed entirely or is traversed too rapidly.

These considerations suggest that if an isotopically tagged meal were introduced through a tube beyond the stomach in an otherwise fasting subject it might be possible in a normal person to demonstrate malabsorption. Tyor, Janssen, and Ruffin[4] carried out such a study and concluded that the intraduodenal introduction of the test meal results in poorer absorption than oral administration. Gobbel and Shoulders[5] found equally good absorption whether the meal was taken orally or introduced intraduodenally. However, when it was introduced intrajejunally malabsorption was demonstrated. Goldstein, Wirts, and Kramer[6] using a fat emulsion were unable to demonstrate any abnormality following instillation at various levels in the small intestine. Thus, studies of this type have not been conclusive but a study of slightly different design and bearing on the same point has been reported by Tyor and Ruffin.[7] They were able to show that a prefeeding of untagged fat, to stimulate enzyme secretion, prior to administration of the I^{131} fat test meal causes the gastrectomized patient to improve his absorption of the test meal. It has been suggested also that hydrochloric acid will do the same thing.[8]

This probably oversimplified concept of inadequate pancreatic enzyme digestion after partial gastrectomy does not extend easily to explain the results after total gastrectomy. Here we found not only abnormal neutral fat absorption but also low plasma levels after fatty acid. The depression of fatty acid absorption was less marked but involved 4 of 5 subjects and is probably valid.

Without further experiments in totally gastrectomized patients speculation as to mechanism is useless. Perhaps an entirely new abnormality is created when the entire stomach is removed or perhaps a combination of effects add up and become significant where they failed to do so in the situation after partial gastrectomy.

Summary

Studies of fat and fatty acid intestinal absorption have been carried out in a group of 26 patients following gastric surgery. The results suggest that the small intestine retains the ability to absorb normally, but that pancreatic enzymatic digestion of neutral fat is defective. Following total gastrectomy the defective handling of neutral fats is even more pronounced than after partial gastrectomy. This difference is unexplained as is the observation of defective absorption of fatty acid in the total gastrectomy group. A possible explanation for the reduced enzymatic digestion is discussed.

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*The Electrogastrogram in Postgastrectomy Patients**

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In recent years attempts have been made to evaluate postgastrectomy symptoms through functional morphologic studies.[1,2] The incidence of recurrent ulceration has been lowered uniformly by the addition of vaginectomy to the gastric resection. However, there has been a persistent incidence of postcibal symptoms which have not been correlated uniformly with anatomic or physiologic states. A combination of some of these symptoms, known as the "dumping syndrome," occurs despite the type of resection, the amount of stomach removed, the size of the stoma, or the emotional setup of the individual operated on.

Arbitrarily we have used a classification of dumping based on that of Pulvertaft[3] and Saikku and Halonen.[4] Four groups are considered:

Group O. Patients who made a rapid adjustment to a regular diet and who have remained asymptomatic.

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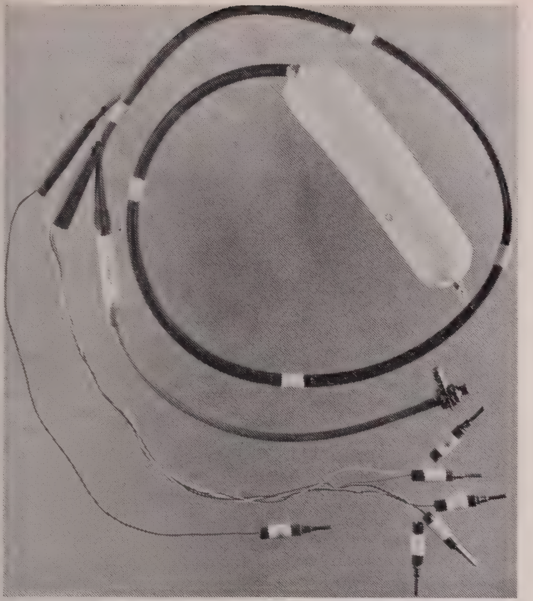


FIG. 1. Triple lumen tube with balloon and six electrodes for obtaining recording of activity of stomach and small intestine.

Group 1. Patients who had minor dumping symptoms for more than one month or who had to forego certain foods to avoid distress. These patients have learned from experience the foods they must avoid and have adopted a certain discipline in living habits that allows them to lead a fairly normal life.

Group 2. Patients with mild to moderate symptoms often relieved by lying down. Such symptoms have compelled the patients to make adjustments in their ways of eating, resting after meals, or other changes in their activities to avoid or control the numerous symptoms.

Group 3. Patients who have become incapacitated to the point of needing continuous care.

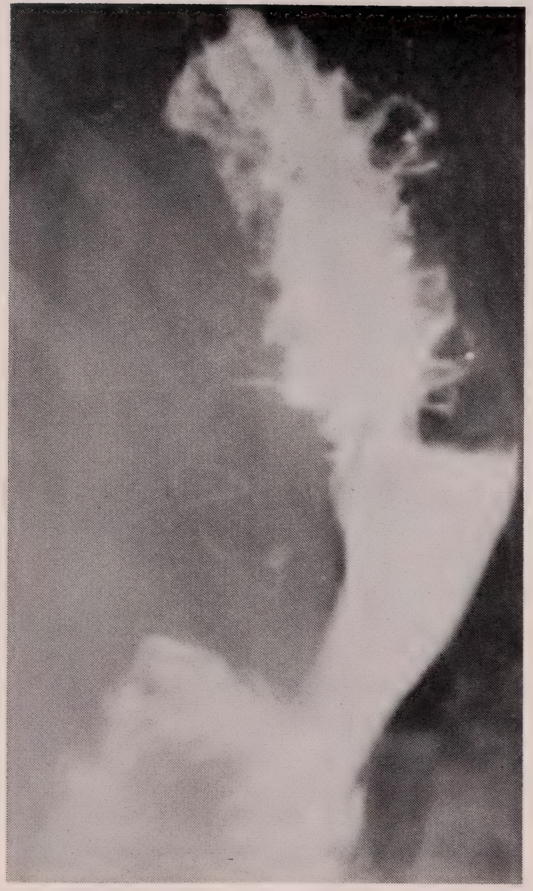
The original papers of Hertz, 1913,[5] and Mix, 1922,[6] described the "too rapid drainage of the stomach" following gastrojejunostomy and demonstrated how one could effect a delay in this rapid evacuation by placing the patient in a recumbent position. These workers suggested that this rapid evacuation might be associated with a large stoma. Other workers have emphasized the phenomenon and most recently Abbott, Krieger, and Levey[7] have demonstrated this relationship. They limit the term "dumping" to describing the rapid emptying of recently ingested material into the small intestine and point out that it need not necessarily imply the presence of specific signs or symptoms. They conclude that after gastric resection the rate of the emptying of the stomach is related primarily to the size and position of the stoma, that "dumping" refers to rapid gastric evacuation which may be associated with (1) anorexia, (2) vasomotor symptoms, and (3) diarrhea. They infer that the internal diameter of the stoma probably should not exceed 2 cm.

Other investigators[8] have related dumping to reactive hypoglycemia subsequent to the initial hyperglycemia due to rapid passage of food and absorption by the jejunum. Others[9] have associated the phenomenon with nervous reflexes caused by overdistention of the small bowel due to the rapid passage. Another school has related the symptoms to reflux of food into the afferent loop and duodenum.[10] There are theories relating to hypopotassemia and others to allergy. The challenging discrepancy in all the theories is that this rapid emptying may take place objectively without any unpleasant symptoms ensuing.

Material and Methods

In our laboratory we have been studying postgastrectomy patients by using a coordinated radiologic and electrogastrographic method and comparing the findings with the clinical symptoms of the patients.[11] The material comprises 54 men and 11 women operated on from twenty-one years to two months prior to the studies. The types of resection included 9 Polya, 13 Billroth I, and 43 Billroth II, with and without vagectomy. In each patient, 50 per cent or more of the stomach was removed.

The method of obtaining recordings of the electrical activity of the stomach and small intestine has been described by us.[11] In brief, a small rubber balloon is mounted



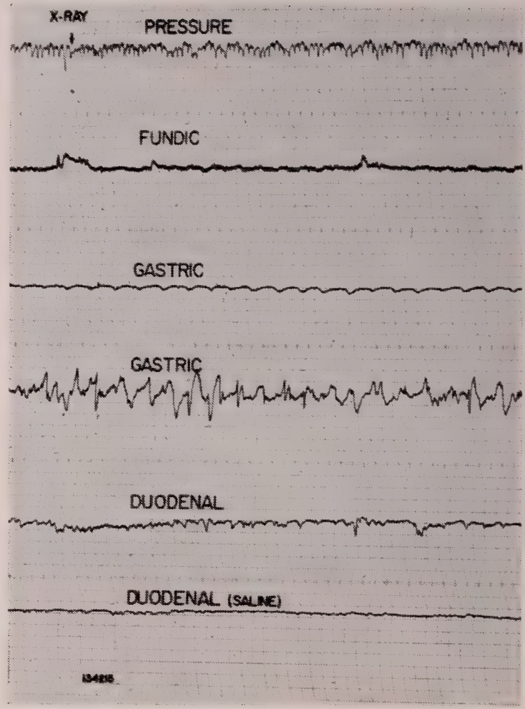


FIG. 2. Status postsubtotal gastrectomy with gastroduodenostomy performed four years prior to radiologic and electrogastrographic studies. No dumping symptoms. Note regular electric pattern.

on a triple lumen tube (Fig. 1). Five silver disks, 4 mm. in diameter, are applied to the balloon in such a manner as to make a 1 mm. contact with the gastric or intestinal mucosa when the balloon is inflated. The electrode leads pass through one of the lumens. A sixth electrode consists of a chloridized silver bead contained in a small glass receptacle filled with saline and plugged with cotton. Electric contact with the mucosa is made through this saline medium. The lead passes through a second lumen. A larger but essentially similar electrode is applied to the forearm. The potentials from several sites are recorded simultaneously with reference to this arm electrode. The balloon is inflated in the stomach or intestine with approximately 100 ml. of air introduced through holes in the third lumen. It is connected to a Statham gauge for recording intraluminal pressure changes.

In our study, the electric output of the Statham gauge was recorded simultaneously with the electrogastrogram. The equipment consisted of a 6-channel Offner amplifier modified with preamplifiers designed to provide the necessary high input resistance, high inphase signal rejection, and low drift. These preamplifiers are interchangeable for pressure measurements using Statham gauges or potential measurements using electrodes. The location of each electrode was established radiologically.

The electrogastrogram, developed by our group, is essentially the recorded measurement of gastric potentials. It has been used in recent years clinically and experimentally in anesthetized and unanesthetized animals. The method has been applied to measuring potentials at various levels of the gastrointestinal tract.

Two types of electrical potentials have

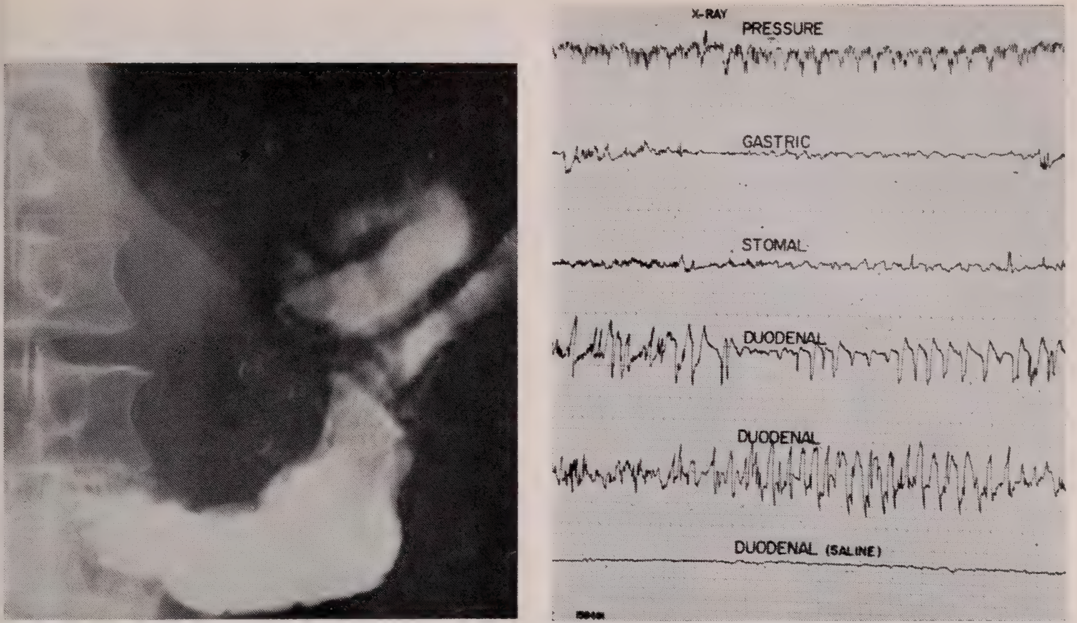

X-RAY
PRESSURE
GASTRIC
STOMAL
DUODENAL
DUODENAL
DUODENAL (SALINE)

FIG. 3. Status postsubtotal gastrectomy with gastroduodenostomy performed four years prior to radiologic and electrogastrographic studies. Patient has mild to moderate dumping symptoms. Note markedly irregular electric waves both in duodenum and in stomach.

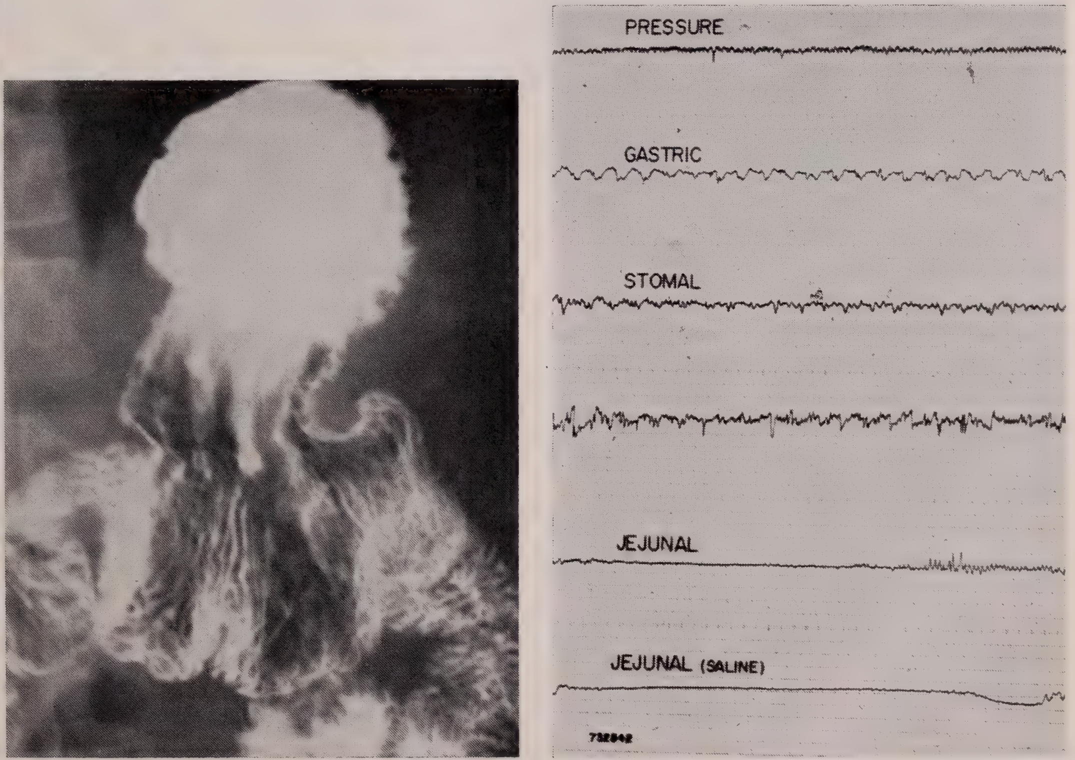

PRESSURE
GASTRIC
STOMAL
JEJUNAL
JEJUNAL (SALINE)

FIG. 4. Status postsubtotal gastrectomy with gastrojejunostomy (Polya) performed thirteen years prior to radiologic and electrogastrographic studies. No dumping symptoms. Note regular electric pattern. Asymptomatic.

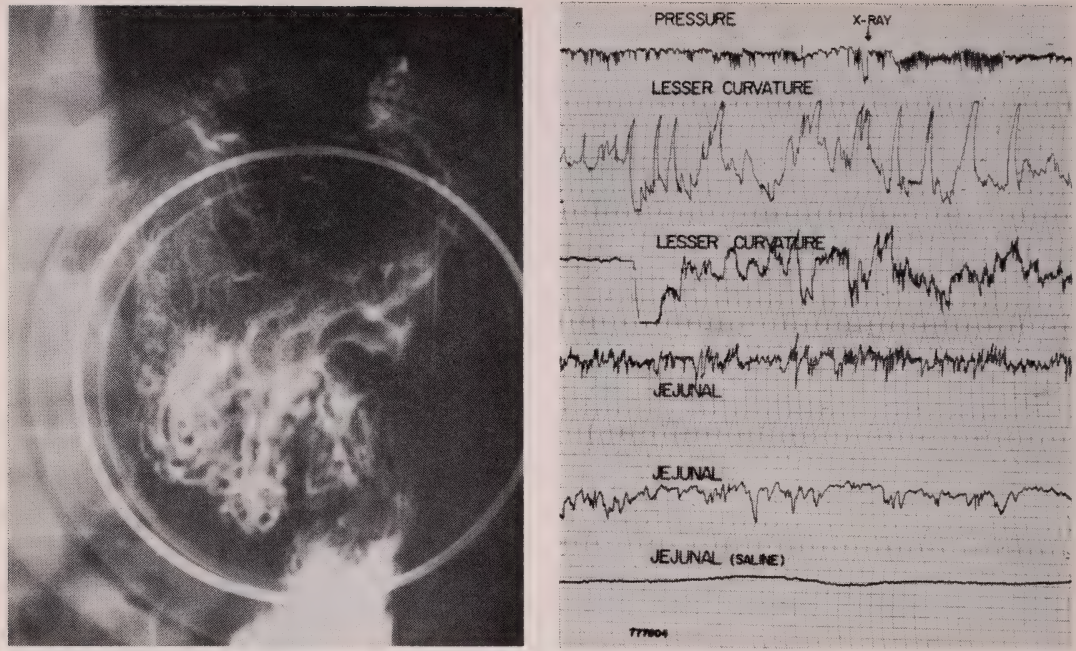


FIG. 5. Status postsubtotal gastrectomy with gastrojejunostomy (Polya) performed twelve years prior to radiologic and electrogastrographic studies. Patient presents mild dumping syndrome. Note irregular electric pattern with high voltage of gastric electric waves.

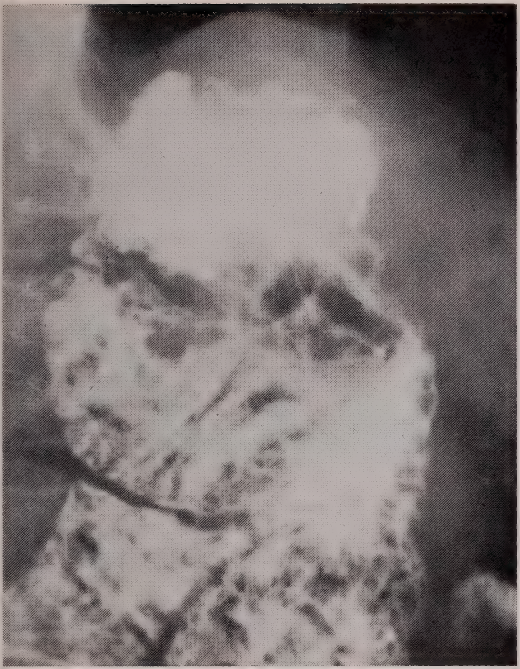
been recorded. With the chloridized silver electrodes and the saline junctions, both in the stomach and on the forearm, a steady potential was recorded corresponding to what is commonly referred to as the D.C. potential. The rhythmic change, measured by all electrodes, is referred to as the A.C. potential. Both forms of potential vary markedly in different sites of the gastrointestinal tract. This variation led us to the development of multichannel potential recorders for measuring simultaneously the electric phenomena in different areas of the gastrointestinal tract. The normal gastric mucosa is always negative with respect to the skin. The A.C. potential of the upper portion of the stomach varies between 18 to 20 cycles per minute, whereas in the antrum it is 3 cycles per minute. The duodenum and jejunum exhibit a rate of 18 to 22 cycles per minute.

Our present hypothesis is that the D.C. potential corresponds to mucosal activity. Experimentally this activity has been modified by anoxia and drugs that affect the vital functions of the mucosa. The A.C. potential seems to be related to the neuromuscular activity of the gastrointestinal tract.

Results

For orientation purposes 6 representative cases (Figs. 2 to 7) are shown demonstrating in each type of anastomosis the lack of correlation between the morphologic findings and the clinical symptoms. However, the electrogastrogram has demonstrated normal patterns in asymptomatic patients and abnormal patterns in symptomatic patients.

Table I summarizes the data on this group of patients. It can be seen that there is an adequate correlation between the clinical and electrogastrographic diagnoses of dumping. In both symptomatic and asymptomatic patients the electrical pattern was not influenced by the type of anastomosis or by vagectomy. Although the basic phenomena are not clearly understood it appears that there is a local disturbance in either the gastric pouch, the intestine, or in both.



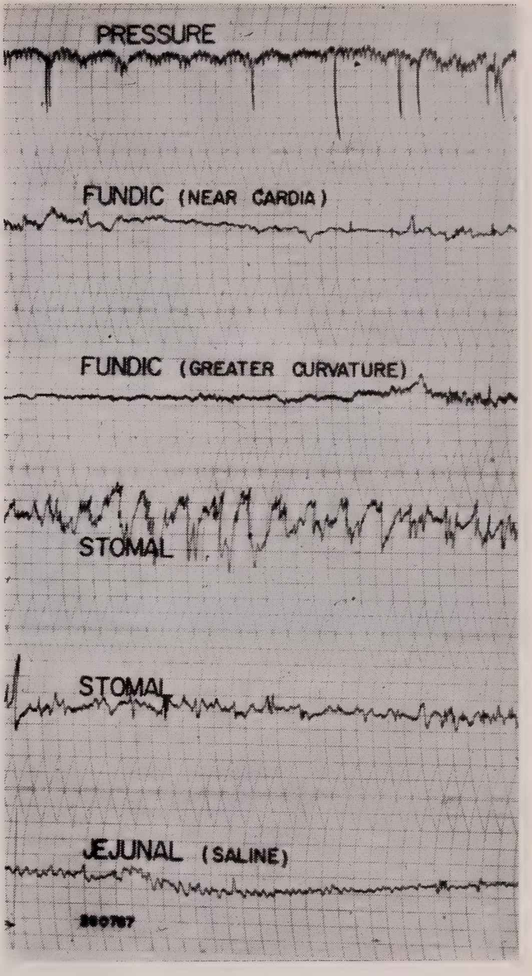


FIG. 6. Status postsubtotal gastrectomy with gastrojejunostomy (high Hofmeister) performed four months prior to radiologic and electrogastrographic studies. No dumping symptoms. Note regular electric pattern.

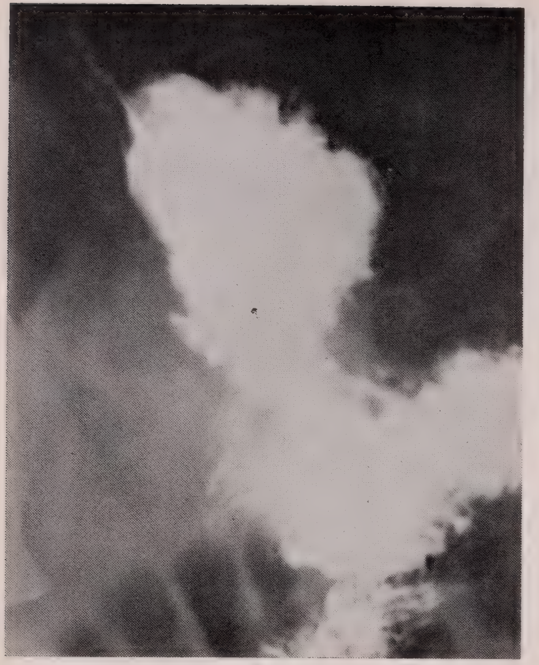
TABLE I.—SUMMARY OF CLINICAL DIAGNOSIS AND ELECTROGASTROGRAPHIC INTERPRETATION

		Electrogastrographic Diagnosis		
Clinical Diagnosis	Number of Patients	Asymptomatic	Moderate Dumping	Severe Dumping
Group 0	53	51	1	1*
Group 1	7	3	3	1
Group 2	4	0	0	4
Group 3	1	0	0	1
TOTAL	65	54	4	7

* This patient with no gastrointestinal symptoms interpreted as "dumper" complained of marked rhinorrhea. The erratic electrogastrogram was interpreted as "dumping."

Conclusion

1. The electrogastrographic findings in 65 patients who underwent subtotal gastrectomy for ulcer have been presented.
2. Patients with the dumping symptoms exhibited irregular electrical activity not found in asymptomatic patients.
3. These criteria were useful in distinguishing other postgastrectomy symptoms from those defined as dumping.
4. The coordinated radiologic studies done by Ralph Schlaeger, M.D., revealed a wide range of variation in function in asymptomatic patients so that specific radiologic criteria for distinguishing the group of symptomatic patients could not be established. There was no correlation observed between altered electrical activity by electrogastrography and the roentgenologic findings in patients classed as dumpers.



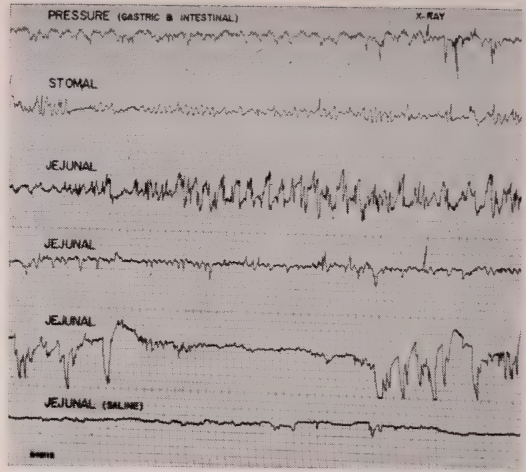


Fig. 7. Status postsubtotal gastrectomy with gastrojejunostomy (high Hofmeister) and vagectomy performed four years prior to radiologic and electrogastrographic studies. Patient presents moderate symptoms of dumping. Note irregular electric patterns.

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Incidence of Eastern Equine Encephalitis

This year's outbreak of eastern equine encephalitis in New Jersey was not the first and only such epidemic reported in this country, according to *Patterns of Disease*, a Parke, Davis and Company publication for the medical profession. In fact, *Patterns* mentions three previous outbreaks, the first of which was in Massachusetts in 1938.

The virus, which is carried by mosquitoes, is usually transmitted to birds—seldom to men or horses.

Thus, though the virus produces a high mortality rate in man, causing death in 2 out of 3 cases, the incidence is relatively low.

Although a vaccine has been developed for prevention of the infection in horses none has been available for man except on an experimental basis. One reason for the delay in the development of a vaccine is the relative rarity of the disease.

Use of a Nasal Decongestant and Antihistamine in Nasal Allergies

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IF IT were possible to provide a drug in such form that its rate of absorption and rate of loss were suitably balanced to a more sustained level of optimum action, a material improvement in therapy would result.[1] With such a purpose in mind research has developed tannates of certain amines which are of low aqueous solubility, but which, in the gastrointestinal tract, will release the base for absorption.[1,2] This release is not dependent on any specific pH, although the rate is greater in the lower pH areas. The addition of polygalacturonic acid to the medium affects an appreciable reduction of this rate. With the tannates ultimately all the components become dissolved individually and the therapeutic amine becomes available totally.

This is the mechanism of action in the Durabond principle providing prolonged therapeutic response while lessening the possibility of side-effects due to an overdosage in the initial higher rate of absorption of the released amines. An expectorant (Rynatan)* acting by this process contains prophenpyridamine tannate, pyrilamine tannate, and phenylephrine tannate. The expectorant suspension, designed for pediatric use, has less phenylephrine tannate per dose.

Methods and Materials

This study, demonstrating the results of therapy in 525 patients with seasonal and nonseasonal nasal allergies, was conducted by the routine indicated by prior clinical evaluations.[2-5] The tablet or suspension was administered every twelve hours in most instances, and in 25 patients it was administered three times daily.

All patients were studied by individual history, laboratory work, skin testing, x-ray films, and physical examinations to make sure of their allergic diagnoses. All but 50 of these patients had been under specific immunizations. These 50 patients

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* Manufactured by the Irwin, Neisler & Co., Decatur, Illinois.

TABLE I.—USE OF EXPECTORANT IN HAY FEVER

Number of Patients	Ages (Years)	Duration of Treatment (Weeks)	Symptomatic Relief E	G	F	P	N	Side-Effects Drowsy	Excitement	Dose Schedule (Tablet or Suspension)
Without prior desensitization 50	4 to 52	4 to 16	...	25	20	5	0	1	1	40 patients 1 tablet twice a day 10 patients 1 tablet three times a day
With prior desensitization 225	4 to 68	2 to 16	135	15	75	10	0	2	...	All patients 1 tablet or suspension twice a day

E—Excellent (asymptomatic)
G—Good (rare symptoms)
F—Fair (asymptomatic about 50 per cent of season)
P—Poor (short periods of relief during season)
N—No relief at all

TABLE II.—EXPECTORANT EVALUATION COMPARED WITH OTHER ANTIHISTAMINES IN HAY FEVER

Comparative Drug	Expectorant Rating Better	Same	Inferior
Pyribenzamine Lontabs (100 mg.)	15	5	0
Chlor-Trimeton Repetabs (12 mg.)	30	8	0

TABLE III.—USE OF EXPECTORANT IN PERENNIAL RHINITIS (NONPOLLINOSIS)

Number of Patients	Dosage	Ages (Years)	Treatment (Weeks)	Symptomatic Relief E	G	F	P	N	Side-Effects Drowsy
204	1 tablespoon every 2 hours	4 to 68	12 to 32	128	52	26	40	4	4
15	1 tablespoon every 8 hours								
31	1 teaspoon every 12 hours								

E—Excellent (asymptomatic)
G—Good (rare symptom)
F—Fair (asymptomatic about 50 per cent of season)
P—Poor (short periods of relief during season)
N—No relief at all

TABLE IV.—EXPECTORANT EVALUATION COMPARED WITH OTHER ANTIHISTAMINES IN PERENNIAL RHINITIS

Comparative Drug	Expectorant Rating Better	Same	Inferior
Pyribenzamine Lontabs (100 mg.)	20	5	0
Chlor-Trimeton Repetabs (12 mg.)	15	2	1

came for treatment during their particular pollen season and had no previous specific treatment. The ages ranged from four to sixty-eight years. Sixty-eight patients were from four to twelve years of age; the remainder were from twelve to sixty-eight years old. All the patients were from our private practice. One hundred and twenty-five patients who did not obtain sufficient symptomatic relief were given other medications for relief from time to time such as nasal sprays or corticosteroids.

The treatment of hay fever patients with the expectorant is summarized in Tables I and II. Symptomatic relief was good or excellent in 185 of the 275 patients, and it was fair in another 90 cases. A comparison of this expectorant with other antihistamines used by 58 patients showed it to be better in 45 instances (Table II).

Table III shows the results of treating patients with perennial rhinitis not due to pollinosis. Infection was the most important etiologic factor in many of these patients. Several patients had nasal polyps and some had asthma, dermatoses, or urticaria, as well as their nasal allergies. No attempt was made to evaluate the effects on their other allergic manifestations. Nasal speculum examinations were made from time to time, always after the expectorant was stopped, to watch for rebound symptoms and signs. Here 180 patients manifested good to excellent relief with a fair response in 26 patients. Thus, 206 of the 250 patients improved, and 44 patients showed poor symptomatic relief or none at all.

Again a comparison of this expectorant with other antihistamines (Table IV) in treating 43 patients with perennial rhinitis showed the expectorant better in 35 instances, the same in 7, and inferior in 1.

Summary

A new antihistamine containing prophenpyridamine tannate, pyrilamine tannate, and phenylephrine tannate, utilizing the Durabond principle which gave a prolonged therapeutic response, was used in the symptomatic control of 525 patients with seasonal and perennial rhinitis. It was compared with other long-acting antihistamines in 101 patients and it was found to give better symptomatic relief in 80 patients, the same relief in 20 patients, and in 1 patient less relief was obtained. Only 7 patients complained of drowsiness, but they experienced the same symptoms previously with other antihistamines.

One patient felt excited and nervous after two days, but when given a different antihistamine without phenylephrine he felt fine.

195 South Main Street

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Overactivity of Adrenal Glands Due to Stress Possible Cause for Excessive Cholesterol in Blood

Stress-induced overactivity of the adrenal glands may be an answer to how the body translates high tension living into excessive amounts of cholesterol in the blood, according to two physician-biochemists at the National Heart Institute in Bethesda, Maryland.

A potent fat-mobilizing pattern of hormone activity has been found in dog experiments by Dr. Eleazar Shafrir, a visiting scientist from Israel, and Dr. Daniel Steinberg, chief of the Heart Institute's Metabolism Section. The pattern involves secretions of the inner core (medulla) and the outer "rind" (cortex) of the adrenal.

Overactivity of both parts of the paired prune-sized gland atop the kidneys has long been known to result from stress. Not noted previously, however, is the combined activity of the gland's "stress" secretions in increasing cholesterol and other fatty substances (lipids) in the blood.

The medullary hormone implicated was adrenalin, long known to be secreted by the inner adrenal during intense emotional excitement and to stimulate the body's mechanisms for coping with threatening situations. The cortical hormone was cortisone, a well-known steroid secreted by the adrenal cortex in response to exposure (heat, cold, etc.), inflammatory conditions such as injuries and infection, and other forms of stress.

Adrenalin injections alone were found by the NHI workers to be capable of raising the blood cholesterol and other lipids in normal dogs. But when the dogs were deprived of their normal cortical secretions (by removing their adrenal glands) this effect of the adrenalin injections was lost. And when cortisone injections were used to "replace" the missing cortical secretions, the fat-mobilizing potency of the adrenalin was fully restored.

The fat-mobilizing action of this combination of adrenal "stress hormones," as seen in dogs, is strong enough to suggest the possibility of a direct cause-and-effect relationship between adrenal overactivity and the rise in blood lipids seen in various studies of men subjected to disturbing emotional experiences or sustained high-level job performance at a forced pace.

The dog studies are now being extended to volunteers at NHI to learn whether the pattern of "stress hormones" that raised the blood lipids of dogs has a similar effect in man.

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Intestinal Polyposis Associated with Mucocutaneous Pigmentation

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(*From the Sections of Medicine, Surgical Pathology, and Surgery, Mayo Clinic and Mayo Foundation*)

When one considers the complexities involved in the embryogeny of the human body, it is a wonder how infrequently aberrations occur in the normal developmental pattern. For generations such anomalies usually have been described and considered as mere curiosities, but such violations of custom, if these abnormalities may be classified as such, frequently reveal information on the normal developmental process which otherwise would be unobtainable. The association of mucocutaneous pigmentation and intestinal polyposis offers an excellent opportunity to study an apparent error of nature.

Historical Background

Seemingly the first reference in the literature to the syndrome of concurrent polyposis and mucocutaneous pigmentation was made by Hutchinson in 1896.[1] His chief interest, however, was the mucocutaneous pigmentation, and he did not recognize the significance of its association with polyps. The syndrome was described adequately for the first time by the Dutch physician, Peutz, in 1921,[2] when 7 instances of the occurrence of the syndrome in a single family seemed worthy of a medical report. Peutz was the first to recognize the significance of the coexistence of intestinal polyps and abnormal mucocutaneous pigmentation, and he discussed the potential hereditary factors.

During the next twenty-eight years only an occasional report of this syndrome appeared in the literature, and the significance of Peutz's early observation seems to have been forgotten or disregarded. In 1949 Jeghers and his coworkers,[3] in an extensive review of the literature, were able to find only 23 unequivocally documented instances of this syndrome. In the last ten years, however, the number of published reports[4,5] of adequate studies of investigations and cases have done much to raise this syndrome from the realm of a medical curiosity to that of a well-recognized clinical entity. Approximately 125 cases of the syndrome of Peutz have now been recorded.

Clinical Features

The Peutz-Jeghers syndrome usually manifests itself in the first, second, or third decade of life. The age of the patient at the time of diagnosis has ranged from four to eighty-two years, with an average age of twenty-nine years. The syndrome has been reported slightly more frequently in females (54 per cent) than in males. It consists of two essential components, mucocutaneous pigmentation and intestinal polyps.

Mucocutaneous Pigmentation.—The first component is mucocutaneous pigmentation, located principally around the orifices of the face and head. The pigment is melanin. Characteristically this pigmentation appears in infancy or early childhood and involves regions that are usually devoid of freckles. The most common locations include the lips and buccal mucosa, although the areas surrounding the nasal orifices, eyes, and ears are not infrequently involved. These pigmented freckles are seen less frequently on the fingers and toes. In the reported cases of the Peutz-Jeghers syndrome the incidence of this abnormal pigmentation according to site is: lips 98 per cent, buccal mucosa 88 per cent, and hands and feet 36 per cent. The incidence of involvement of sites adjacent to facial orifices other than the lips cannot be determined from the descriptions given.

The buccal pigmentation tends to remain constant, whereas a tendency toward fading has been observed in such lesions of the skin and lip. The pigmented areas vary in appearance, from a few, small, brown or grayish freckles to large blotches of dark brown or black pigment. No characteristic microscopic features of the pigment have been documented adequately.

On occasion unusual pigmentation around the lips or other facial orifices with no apparent relationship to this disease may be seen. Such patients usually are not in the childhood group, with the onset of the pigmentation usually noted in adulthood. In the Peutz-Jeghers syndrome, however, a careful history frequently reveals that the first abnormal pigmentation was observed in infancy. The combination of circumoral, labial, and buccal mucosal pigmentation is extremely rare other than in the Peutz-Jeghers syndrome. Not uncommonly a relative of a patient with the complete Peutz-Jeghers syndrome may demonstrate only the pigmentation. Careful follow-up studies in this group are important to ascertain the future development of polyps.

Gastrointestinal Polyposis.—The second component, in all probability the most important feature of this syndrome as far as the patient's health is concerned, is the presence of gastrointestinal polyps. These may be single but characteristically are multiple and may involve any area of the gastrointestinal tract. In some instances the number of intestinal polyps have been so great as to suggest the possibility of another completely unrelated disease, namely familial polyposis of the bowel.

It has been said that the small bowel always is involved, but experience has not proved this to be entirely so. However, 92 per cent of the patients do have polyps located somewhere within the small intestine. The incidence of polyps in cases of the Peutz-Jeghers syndrome according to site in the gastrointestinal tract is: jejunum 65 per cent, ileum 51 per cent, duodenum 15 per cent, small intestine for which details are inadequate for precise localization 11 per cent, colon 36 per cent, rectum 36 per cent, stomach 23 per cent, and appendix 3 per cent.

In a few well-documented cases the only polyps noted at the initial examination were in the colon or rectum.[6] These patients require careful follow-up examinations, since almost invariably polyps will develop in other regions of the bowel. Extraintestinal polyps, such as in the bladder and nose, have been reported, but the incidence is so low that they no doubt are chance occurrences.

Heredity.—Another factor, but apparently not an essential one, concerns the familial or hereditary incidence of this anomaly. The syndrome has been reported in almost all races and ethnic groups. In approximately 45 per cent of the cases a familial history of pigmentation and polyposis can be obtained. In an additional

15 per cent, relatives have the pigment but no proved polyposis. The incidence of sporadic cases without an apparent familial or hereditary background seems to be increasing and is approximately 40 per cent of the known cases.

Although the paucity of available cases has made extensive hereditary studies impossible, genetic evidence suggests that a dominant pleotropic gene is responsible for both the pigment and the polyps. Sporadic instances probably represent new mutations. Present information suggests that offspring of those with this disease have a 50 per cent chance of being affected.

Symptoms.—Recurrent episodes of acute colicky abdominal pain constitute the chief clinical symptom, having been present in 85 per cent of those reported who were afflicted with this syndrome. The pain always was associated with an intussuscepting polyp, and in about one third of these cases a palpable mass was present simultaneously with the pain.

Gastrointestinal bleeding is the second most common symptom. Melena and rectal bleeding occurred in approximately 30 per cent of the patients, and hypochromic anemia secondary to a slow loss of blood from the gastrointestinal tract was seen in approximately 25 per cent. Hematemesis was uncommon (8 per cent). An occasional patient in early childhood presented prolapse of a rectal polyp. On rare occasions no symptoms were present, the diagnosis being suspected on the basis of the abnormal pigmentation.

Pathologic Nature of Polyps: Benign or Malignant?

The most controversial aspect of this syndrome concerns the proper pathologic classification of the gastrointestinal polyps. From the time these polyps first were recognized they commonly have been considered to be premalignant. This assumption appears to be quite plausible when one considers the overwhelming evidence of malignant transformation in cases of a seemingly similar yet entirely different clinical entity, namely familial polyposis of the bowel. The polyps in the Peutz-Jeghers syndrome for the most part have been characterized as benign adenomas; in approximately 20 per cent of the reported cases they have been described as malignant tumors.

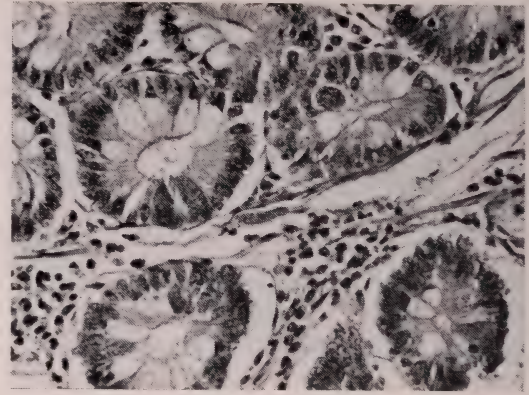

Fig. 1. Microscopic view of section of jejunal polyp showing remarkable glandular differentiation. There are dark granular Paneth's cells, vacuolated goblet cells, and columnar absorbing cells (hematoxylin and eosin stain).

Several inconsistencies in the natural history of this syndrome are worthy of close scrutiny. These include the high incidence of apparently malignant tumors in the unlikely location of the small bowel, the absence of metastasis from this presumptively malignant tissue, and the lack of mortality—commonly associated with malignant disease.

Unfortunately the histologic appearance of these polyps has been mentioned only briefly in the literature. Until recently the original assumption that these polyps were premalignant remained unchallenged. As more material has become available, however, investigators for the first time have been able to collect enough data to appraise this syndrome on its own merits rather than to follow blindly the dictum that all polyps are premalignant. In such a study a precise definition of terms is essential. Probably the basis of much of the confusion rests on the word "polyp." This, in essence, is an anatomic term describing the gross appearance of tissue that projects into a lumen from the mucous membrane. The

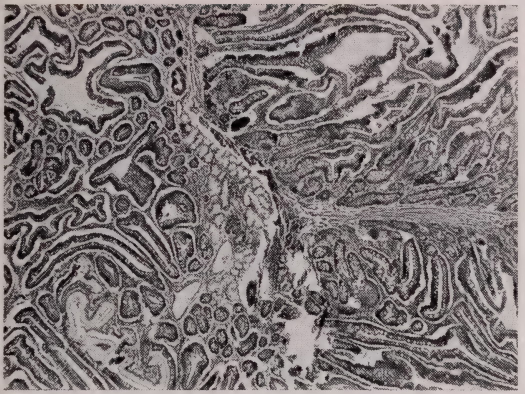

FIG. 2. Microscopic view of section of duodenal polyp showing nest of Brunner's glands (near center of photograph). Note strands of smooth muscle in polyp (hematoxylin and eosin stain).

term gives no information as to the basic histologic features that may be present in such a growth. In reviewing the cases reported as showing malignant transformation, one is impressed by the lack of documentation for such a diagnosis.

The unusual histologic appearance of the polyps in the Peutz-Jeghers syndrome has led recent investigators to suggest that these tissue excrescences are a developmental abnormality rather than true adenomatous polyps. The polyps in this syndrome not only contain all the usual cells of the lining of the involved organ but they are arranged structurally in much the same manner as are the cells and glands of the normal mucosa. Instead of one predominant cell, as usually is seen in the adenomatous polyp of the small bowel, the polyps of the small bowel in the Peutz-Jeghers syndrome contain the three major cells of the normal small bowel—columnar absorbing cells, goblet cells, and Paneth's cells—arranged in number and in relation to the gland structures similar to the arrangement in the normal mucosa (Fig. 1). In this syndrome the duodenal polyps differ from the other polyps of the small bowel only in that the duodenal ones contain islands of Brunner's glands (Fig. 2). The gastric polyps of this syndrome contain not only the predominant three types of cells of the gastric mucosa but also show remarkable differentiation of the glandular structure (Fig. 3). In the colonic and rectal polyps the goblet cells predominate but the darker-staining columnar cells commonly seen in the normal colonic mucosa are also present. Probably a source of confusion in all of these polyps regardless of their location is the frequent occurrence of bands of smooth muscle scattered throughout the polyp (Fig. 2). This occurrence has been interpreted as evidence that the epithelial cells actually have invaded the muscle layers, but in reality these bands of smooth muscle apparently are an integral part of the very mature differentiation of these tissue excrescences. This duplication of the normal histologic characteristics is in sharp contrast to the pathologic picture in ordinary neoplasia, wherein one type of cell is the dominant proliferating unit.

This peculiar histologic appearance of the polyps in the Peutz-Jeghers syndrome, with the multiple cell types arranged with their layer of muscle much as in the normal mucosa, has led to the suggestion that these tumors are developmental abnormalities rather than true neoplasms. The growth disturbance may be similar to that which produces hamartomas of the lung. Another piece of evidence for this assumption has been the finding of small remnants of well-differentiated glandular tissue imbedded within the muscular layer of the gastrointestinal tract in patients with this syndrome (Fig. 4).

Some degree of caution always must be used in managing polyps of the colon. Although the polyps in this syndrome appear to be different histologically from the ordinary adenomatous polyps of the colon, there is no evidence to suggest that patients having them are immune to coincidental development of the ordinary variety of colonic polyp. Careful study should be made of the clinical, roentgenographic, and, when available, pathologic data on colonic polyps before a final plan of treatment is determined.

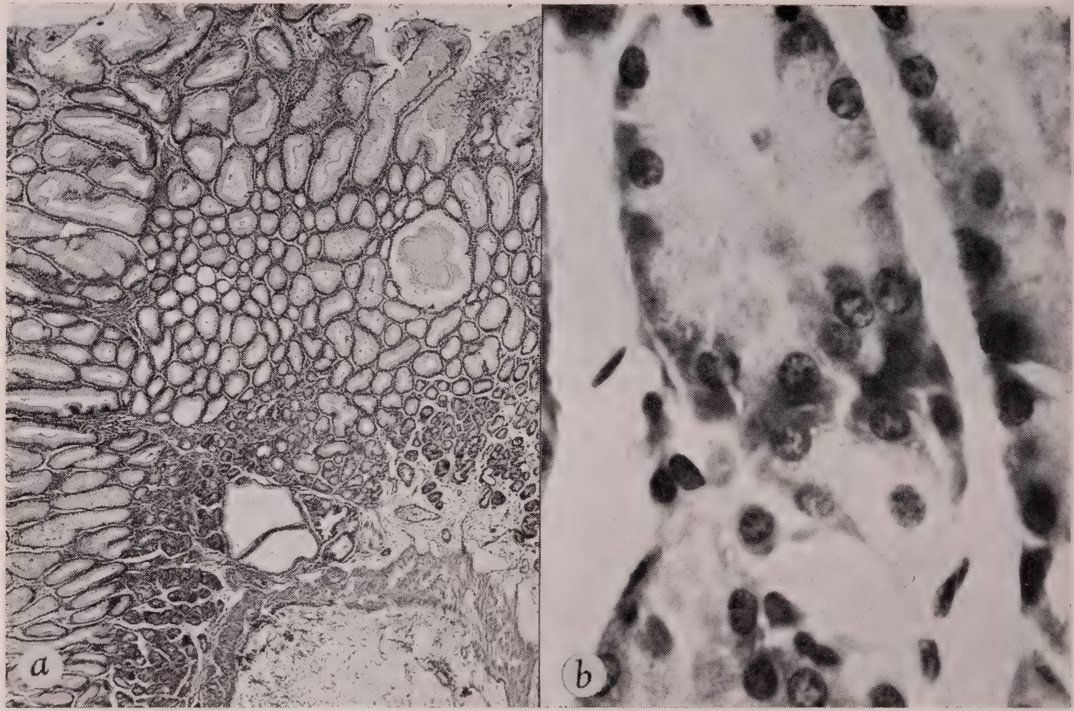

FIG. 3. Microscopic view of section of gastric polyp showing (*A*) normal differentiation of cells and obvious benignancy and (*B*) pale-staining parietal cell (just below center of photograph) (hematoxylin and eosin stain).

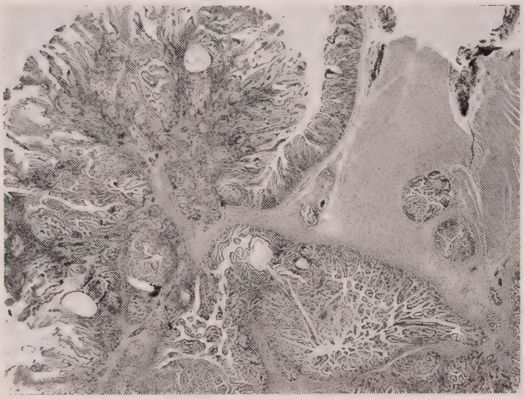

FIG. 4. Microscopic view of section of polyp of small bowel showing well-differentiated glandular tissue imbedded within muscular layer (hematoxylin and eosin stain).

Treatment

The accepted form of treatment for polyps of the Peutz-Jeghers syndrome has been surgical removal. In cases in which intussusception occurs, emergency surgical intervention often is necessary. The choice of the operative procedure is determined best at the time of operation. In instances in which the polyps are localized to a short segment of bowel, resection of this segment with an end-to-end anastomosis is advisable. When several polyps are scattered widely throughout the gastrointestinal tract, they are best removed by polypectomy, that is individually, by means of gastrotomy, enterotomy, or colotomy, as the case warrants.

In some instances the polyps are so numerous that their complete surgical removal is not feasible. Under such circumstances excision of the larger polyps usually alleviates the cause of the immediate intussusception or bleeding, but experience has shown that the smaller asymptomatic polyps which cannot be removed for technical reasons eventually may grow and require future surgical treatment. Multiple surgical procedures are the rule rather than the exception in this syndrome. Moore[7] reports 11 operations on members of one family.

The importance of conservative surgical measures in the removal of polyps of the small bowel cannot be overemphasized. In the past the fear that these polyps are the forerunners of malignant transformation warranted radical resection. The currently available evidence does not substantiate this fear, and therefore extensive surgical procedures to prevent the development of carcinoma do not appear to be justifiable. Careful search of the entire gastrointestinal tract at the time of exploration is essential, since the condition is multiple in about 90 per cent of cases.

Summary

The syndrome of intestinal polyposis associated with mucocutaneous pigmentation, known as the Peutz-Jeghers syndrome, is now a well-established clinical entity. Recent studies suggest strongly that the intestinal polyps of this syndrome are truly a developmental anomaly rather than premalignant adenomas, as they were once considered to be. An understanding of their origin is essential to a rational and proper therapeutic program.

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(*Number eighty in a series of Recent Advances in Medicine and Surgery*)

Number of Young Fathers Are Increasing

Young fathers in our country are increasing rapidly in number, it is reported by statisticians of the Metropolitan Life Insurance Company.

The number of children born in families where the husband is under twenty years of age rose from 40,000 to 106,000, or 165 per cent, between the years 1940 and 1957. Although the relative increase in births diminishes with advance in age of the husband, it was 64 per cent for husbands aged thirty to thirty-four years, and as much as 45 per cent for those forty years of age. Only in families where the husband is fifty-five years or older, have births failed to rise.

The upsurge in births reflects, in part, the earlier age at which marriage now occurs, as well as the considerably increased number of young married couples. During the 1940 to 1957 period, the number of American husbands at ages under forty-five increased by almost one third. Moreover, at the teen ages—where the sharpest rise in births has occurred—the number of married men has increased by about two thirds.

In 1957, births occurred at a rate of 598 per 1,000 in families where the husband was under twenty years of age. In other words, 3 out of 5 families with a teen-age husband had a child during the year. The proportion was about 2 in 5 in families where the husband was twenty to twenty-four years old, and well over 1 in 4 where he was five years older.

CLINICOPATHOLOGIC CONFERENCE

ST. JOSEPH'S HOSPITAL

ELMIRA, NEW YORK

Conducted by JOSEPH F. SHORTSLEEVE, M.D. DECEMBER 10, 1958

Discussed by JOSEPH ROGERS, M.D.,* BOSTON, MASSACHUSETTS

Chronic Indigestion with Elevated Alkaline Phosphatase

Case History

A fifty-four-year-old white male was admitted to the hospital because of indigestion of three to four weeks duration. His first awareness of his difficulty came when he noticed that his cigars tasted different. This was followed in a week or so by occasional mild attacks of nausea and on rare occasions by a small emesis of brownish material without any actual vomiting of food contents. He was aware of weakness and he knew of a 7- to 8-pound weight loss, which he attributed to the anorexia he had experienced in recent weeks. There had been no abdominal pain, jaundice, hematemesis, melena, or change in bowel habits. He was not aware of any change in the appearance of his urine or stools. He denied any past illnesses or operations, and the family history was noncontributory.

He agreed to a brief stay in the hospital for tests. There were no positive physical findings at the time of this admission. His blood pressure was 120/80. The following laboratory data were obtained: Both blood counts and urinalysis findings were normal. The sedimentation rate was 30 mm. in one hour. The bromsulphalein test showed 24 per cent retention. The cephalin flocculation was 3 plus in twenty-four and forty-eight hours. A gallbladder study showed some reduction in the concentrating power of the gallbladder but no calculi. A gastrointestinal series and a barium enema gave negative results.

After two days he was discharged, and he remained ambulatory at home on a low-fat diet. Weekly check-ups at the doctor's office for the next eight weeks disclosed no significant changes in the pattern of his indigestion. He lost another 7 pounds in weight. Because of the lack of improvement he agreed to a longer period of hospitalization for further observation.

At the time of his second admission there were no new physical findings except for evidence of about a 15-pound weight loss since the onset of his illness. There was no jaundice. The liver was not palpable.

The red cell count was 5 million with 15.7 Gm. per 100 ml. of hemoglobin. The white cell count was 7,700, with 78 per cent polymorphonuclears, 2 per cent stab cells, 16 per cent lymphocytes, 2 per cent monocytes, and 2 per cent basophils. The serum cholesterol was 155 mg. per 100 ml. with 71 per cent esters. The total protein was 6.7 Gm. per 100 ml. with 3.6 Gm. albumin and 3.1 Gm. globulin. The serum bilirubin was 0.62 mg. per 100 ml. The bromsulphalein retention was 37.5 per cent. The cephalin flocculation was 3 plus in forty-eight hours. The prothrombin time was 50 per cent of normal. The serum transaminase was 116 units.

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The urine had a specific gravity of 1.015, and there was no albumin or sugar in it. Microscopic examination of the urine showed occasional white blood cells, epithelial cells, rare granular casts, and mucous shreds. A repeat gallbladder study showed nonvisualization of a presumably nonfunctioning gallbladder. Calculi could not be excluded. A gastrointestinal series again gave negative results. A routine chest survey film showed negative findings.

He improved remarkably during a two-week hospital stay. The only medication was multivitamins, and he was put on a high-carbohydrate, high-protein, low-fat diet and bed rest. His appetite improved, and his indigestion became very infrequent and mild. The bromsulphalein retention dropped to 16 per cent. The cephalin flocculation was negative in forty-eight hours. The alkaline phosphatase, however, remained elevated at 20 to 30 units.

For four to six weeks after discharge he continued to improve. His weight remained constant at 130 pounds. He ate better, began to resume his social life, and felt stronger. However, the improvement was not sustained. He once more began to complain of anorexia and weakness and to experience occasional attacks of nausea with small emesis. He began to run a fever of 100 to 101 F. He was readmitted to the hospital two months after his previous discharge.

On the third admission there was no change in his physical findings except for tenderness on palpation over the gallbladder area. The alkaline phosphatase was 25 units. A total protein was 8 Gm. per 100 ml. with 3.6 Gm. albumin and 4.4 Gm. globulin. A procedure was carried out which clarified the diagnosis.

Discussion

JOSEPH ROGERS, M.D.: The patient was a man of fifty-four years who complained of indigestion and that his cigars tasted different. The latter complaint suggests hepatitis. He had nausea and vomited small amounts of brownish material. He felt weak and lost weight in association with anorexia. There was no abdominal pain and no jaundice, and he had not noted any change in the color of his stools or urine. At this point we have no definite clinical leads on the basis of the history. It suggests only a lesion within the digestive tract. We are not told that he drank excessively. He denied any past illnesses or surgical procedures. The family history was negative, as were his physical findings.

On his first admission his sedimentation rate was elevated. The abnormal retention of bromsulphalein and a 3 plus cephalin flocculation suggest parenchymal liver disease. The cholecystogram showed some reduction in the concentrating power of the gallbladder but no calculi. A gastrointestinal series and a barium enema were reported as yielding negative findings. With this level of bromsulphalein retention we can expect nonfilling of the gallbladder so that one cannot deduce from this bit of information that the gallbladder itself was diseased. Could we review the films?

FRED BARTON, M.D.: He had negative results in the gastrointestinal series. Four hours after the barium meal his stomach was almost empty with the meal at the cecum. Here is a four-hour film which shows a normal colon. There were no obvious gallstones.

DR. ROGERS: Is this entirely normal here?

DR. BARTON: I think so. It shows the patient lying down with the fundus pretty well filled, but we considered his gastrointestinal tract as completely normal.

DR. ROGERS: His first cholecystogram showed some filling. Is that correct?

DR. BARTON: Yes, the gallbladder is faintly visualized.

Dr. Rogers: And could you say that it is not enlarged?

Dr. Barton: The gallbladder appears to be within normal limits. A faint reduction in the gallbladder can be caused by a number of factors, including insufficient dye initially, vomiting of some of the dye after it has been ingested, poor absorption of the dye from the gastrointestinal tract, or liver or gallbladder disease.

Dr. Rogers: Thank you very much. One gains, then, no positive assistance at this point. These studies give no indication of a malignant condition in the stomach, small bowel, or large bowel. I neglected to ask Dr. Barton about bone disease, but it did not appear to me that there was any evidence of bone disease on the films available.

Dr. Barton: I saw no evidence to suggest bone disease.

Dr. Rogers: The protocol suggests that the patient was not particularly anxious to remain in the hospital. He stayed only two days. This would tend to militate against the diagnosis of hepatitis because persons with hepatitis usually feel very sick. I think that this is a helpful clinical point in a jaundiced patient. If the patient feels well and does not complain of anorexia, one is more suspicious of an obstructive process. With a diffuse parenchymal disorder such as hepatitis, nausea and malaise are important factors. He remained at home on a low-fat diet. For the next two months he had no additional symptoms but lost 7 pounds in weight. He then submitted to a second period of hospitalization.

Again we find no jaundice, an unpalpable liver, entirely normal red and white blood cell counts with a normal differential, and nothing in the urine. The finding of a rare granular cast probably is not significant. A repeat gallbladder study showed nonvisualization. The gastrointestinal series again gave negative findings. I do not think it necessary to show the negative films again. His chest film was normal.

His cholesterol at this admission was 155 mg. with 71 per cent esters. This, to me, is normal. His total protein was normal with a normal distribution of albumin and globulin. There is perhaps a slight elevation of the globulin fraction. There is no chemical evidence of jaundice, but again the bromsulphalein test showed retention. Evidence of hepatic disease is suggested by the positive cephalin flocculation, the diminished prothrombin time, and the elevated serum transaminase. The elevation of the alkaline phosphatase in the absence of bone disease has to be taken as evidence of an obstructive process.

The patient felt better on a high-carbohydrate, high-protein, low-fat diet and rest. The bromsulphalein retention dropped to 16 per cent. It is hard to know whether one can quantitate the bromsulphalein retention to this degree but, at least, it is radically different from the previous observations. The alkaline phosphatase remained elevated at 20 to 30 units.

He was discharged, felt better for a while, and then had a return of symptoms. He became febrile and was readmitted for the third time. There was no change in his physical findings except for some tenderness on palpation in the right upper abdominal quadrant. The globulin increased to clearly abnormal levels, and the alkaline phosphatase remained elevated.

The data point to a lesion within the hepatobiliary system. We have to explain digestive symptoms, weight loss, evidence of impaired liver function, and a striking elevation of alkaline phosphatase in the absence of jaundice. Could this have been a simple viral hepatitis? His course would be unusual for this disease, with the absence of jaundice, the intermittent symptoms, and his not feeling really sick. There are instances of nonicteric hepatitis, but it seems to me one cannot explain the laboratory findings on this basis. Could this have been a reactivated cirrhosis of the liver? One sees patients with cirrhosis in whom the bilirubin is not elevated, but again it would be unusual to have this degree of elevation of alkaline phosphatase. There is no history of alcoholism and no history to suggest an insult to the liver. At no time was the liver palpable. One would expect a palpable liver at some time. There also is no correlative evidence of cirrhosis—no spider angiomas, no varices, no mention of the testicles, and no comment concerning a change in the hair. We are not told that he had taken any medications such as Thorazine, which has been reported to produce a form of intrahepatic obstructive jaundice. To the best of my knowledge the reported cases all have shown elevation of the bilirubin.

The only disorder that seems to fit the picture is a primary or metastatic neoplasm of the liver. Carcinoma of the gallbladder is a possibility, but there is no mention of a palpable mass. The gallbladder is visualized and seems of normal size. Here again one would expect an elevation of tbe bilirubin. Therefore, I would tend to reject this diagnosis. The negative findings of the gastrointestinal series and the barium enema do not necessarily exclude these organs from being the site of a carcinoma. We know that one can have primary sites so small they escape detection, and it is the initial clinical symptoms due to the metastases that bring the patient to the clinician. A pancreatic carcinoma arising at a site other than the head of the pancreas certainly must be considered. However, I can only say that there is nothing in the protocol that points to the pancreas as the source of carcinoma. Less common metastases would be in the adrenals, kidneys, and testicles.

Of the primary tumors of the liver a hepatoma is more probable than a cholangioma in this instance. Hepatomas occur typically in middle-aged males. However, there was no previous evidence of cirrhosis, a disease which occurs in some 75 per cent of such tumors. This may be a difficult diagnosis to make. A characteristic laboratory finding is the discrepancy between a normal bilirubin and a marked elevation of the alkaline phosphatase in the absence of bone disease. This case is highly suggestive of a primary tumor of the liver. This, I believe, would be my first diagnostic choice.

Abdominal pain is fairly common. In more advanced cases one may hear friction rubs over the liver, and there may be fever. This man did have some temperature elevation on his third admission.

A similar situation may occur in patients with metastatic carcinoma of the liver. Of the possible metastatic sites I would put the pancreas highest on my list and then perhaps the stomach or the rectum.

A procedure was done which clarified the diagnosis. I suspect that this was either a liver biopsy or a laparotomy.

JOSEPH F. SHORTSLEEVE, M.D.: Is there anything further that you would have done in the way of tests to define further a possible primary site of carcinoma?

DR. ROGERS: I do not think so. There are two things one could have done—a liver biospy or a laparotomy. In this situation I think I would favor a laparotomy. If the group taking care of him felt as I do, one would be interested in looking at the pancreas and stomach, which I think would be the more common sites for hepatic metastases.

DR. SHORTSLEEVE: At this point I think it might be best to call on the pathologist. We can discuss the situation at more length after we know his findings.

Diagnoses

Clinical.— (1) *Possible carcinoma of liver;* (2) *possible chronic hepatitis.*

Dr. Rogers.—*Carcinoma of liver, probably primary.*

Anatomic.—*Hypernephroma with liver metastases.*

Pathologic Report

JAMES MITCHELL, M.D.: The procedure was an exploratory laparotomy. Through an opening in the peritoneum there were noted multiple, somewhat soft tumor nodules which were felt throughout both lobes of the liver. There seemed to be some induration in the region of the hepatic ducts, but no definite mass could be detected. The gallblad-

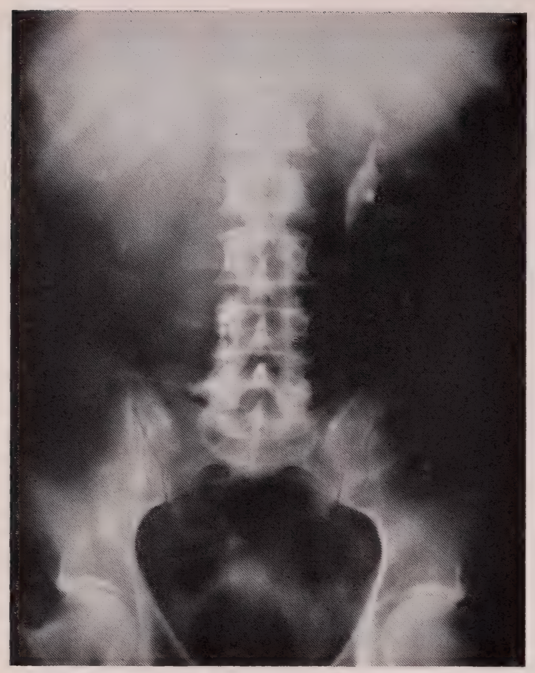

FIG. 1. Pyelogram done after laparotomy of patient with hypernephroma showing some distortion and spreading of calyces.

der was thin. There were no adhesions. A few soft calculi were felt in the ampulla of the gallbladder. The common duct was normal below the junction of the cystic duct. The kidneys appeared to be normal on palpation. The spleen was enlarged only slightly. The pancreas seemed normal. A wedge resection of the liver was done, with the specimen including one of the metastatic tumor nodules. The stomach, small bowel, colon, and pelvis were entirely normal, and no abnormal mesenteric or pelvic glands were noted.

A tissue section of the biopsy specimen of the liver shows the presence of a tumor. It is composed of rather large, very pale, foamy-type cells. The cells have rather large nuclei with prominent nucleoli. When you see these pale, foamy cells the first diagnosis you think of is a metastatic kidney tumor, often called a hypernephroma or a clear-cell carcinoma of the kidney. These tumors can remain small, very often are slow-growing, and metastasize by the blood stream. The patient under discussion is in the usual age group—forty-five to fifty-five. The lesion is most common in males. I agree with Dr. Rogers that this is a rather unusual metastasis for a kidney tumor. We first look to the lungs and bone for metastatic kidney tumors. A pyelogram was done following the histologic diagnosis (Fig. 1).

This patient eventually died of his disease, and autopsy was refused. In the course of his illness he eventually did show bone metastases in the tibias and femurs. I do not know whether or not there were any lung metastases.

DR. ROGERS: The pyelogram was not done until after the laparotomy?

DR. SHORTSLEEVE: That is correct. We did not think of the pyelogram at all until after the laparotomy.

DR. ROGERS: I have been trying to decide whether, given the same situation, I would have asked for a pyelogram, and I think that I would not have asked for one. There is nothing in the urine which suggests a renal tumor. I think that this case presents a fascinating series of events. I had thought that if a primary tumor were to be found, it might have been something in the bowel that was not demonstrable radiographically, but a hypernephroma, I must admit, did not occur to me.

A PHYSICIAN: This was my patient. It is comforting to hear you say that you would not have done a pyelogram. I must confess that I felt somewhat remiss after knowing the pathologic findings. I found one reference in the literature about two days after the operation of a hypernephroma in which the diagnosis was not suspected and a high alkaline phosphatase was the solitary laboratory finding. Does the elevation of the alkaline phosphatase occur with any type of metastatic or primary liver tumor or is it more significantly a finding in certain types of liver tumors?

DR. ROGERS: As far as I know, the elevation of the alkaline phosphatase may occur with any type of liver tumor, mestastatic or primary.

CASE REPORTS

Multiple Intussusception Associated with Embolic Phenomena in the Adult Patient

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INTUSSUSCEPTION has been a well-known clinical entity since antiquity. The treatment of this disease was described by Hippocrates, as well as Paraxagorus of Cos, in 350 B.C.[1] The first complete description was published by John Hunter in 1793,[2] who, in 1789, had defined intussusception as "the invagination or indigitation of a portion of intestine into an adjacent portion."

Intussusception occurs primarily in the first two years of childhood, and only approximately 5 per cent of all patients reported are adults. Multiple intussusception is even more rare,[3] particularly in adults, and only a few cases have appeared in the literature. At Roosevelt Hospital we have had the opportunity of observing in an adult patient the very unusual condition of multiple intussusception thought to be due to the embolization of the small bowel. This patient had rheumatic heart disease and had been subjected to mitral commissurotomy and left auricular appendectomy.

There has been much confusion as to the classification and definition of the various forms of intussusception. The following simple and acceptable classification has been proposed by Thorek and Lorimer:[4] enteric, colic, enterocolic, and retrograde. Multiple intussusception is the term applied to enteric intussusception in which more than two areas of small intestine are involved.

Symptoms and Signs

In infants the cardinal symptoms and signs of intussusception are periodic cramping abdominal pain, vomiting, melena, and a palpable tumor.

Considerable variation from this classic pattern is noted in adults, and symptoms may persist for weeks, months, and even years. Abdominal pain and vomiting are generally present, but melena is noted in less than half of the cases cited in the literature. The presence of a palpable mass is not unusual. Dean and his associates[5] have reported this finding in 42 per cent of their patients at the Mayo Clinic. Constipation and obstipation are also reported occasionally.[6,7] In his review of the surgical management of irreducible intussusception, McLaughlin[8] states that the presence of multiple intussusception contributes to the incidence of irreducibility.

Etiology

In the surgical treatment of intussusception in infants and children, it is frequently impossible to find evidence of any etiologic factor.[9] In marked contrast, an organic lesion is generally demonstrable in adults as the basic cause of the invagination.[10] Various mechanisms have been proposed as the cause of the lesion.

Boyd[11] states that a focus of local irritation, a polypoid tumor for example, causes irregular peristaltic action which forces the upper segment of the bowel into the one below. Anderson[12] feels that a pedunculated lesion, usually a neoplasm, protrudes into the lumen and is caught by the peristaltic waves, thus producing an invagination in the attempt to move the mass along the lumen of the bowel. According to Gross and Ware,[10] benign and malignant neoplasms and Meckel's diverticulum are the most commonly cited causes of intussusception in adults. A case of ileocecal intussusception,

TABLE I.—MULTIPLE INTUSSUSCEPTION IN ADULTS

Author	Year	Sex	Age	Intussusceptions	Etiology
Hektoen[15]	1893	M	56	4-ileal (healed)	Inflammation (?)
Todyo[16]	1938	M	20	10-jejunal and ileal	Condition seen at operation for incarcerated inguinal hernia
Falor[17]	1948	M	Adult	4-jejunal and ileal	Trauma
Jensen[18]	1951	M	24	1-jejunal, 2-ileal and 1-colonic	Multiple polyps
Amesur[19]	1953	F	45	4-jejunal and ileal	Multiple polyps

secondary to enteric lymphosarcoma in a thirty-six-year-old man treated at Roosevelt Hospital in 1950 is an example of a neoplasm as the etiologic factor.[13]

Other etiologic factors have been reported, and these include: ulcers (typhoid, tubercular, dysenteric), gumma; healed gastric ulcer, hypertrophic gastric mucosa, chronic gastritis; chronic ulcerative colitis, megacolon, mobile cecum, strangulated cecal haustration, hypertrophied ileocecal valve; stoma (colostomy, gastroenterostomy); rectal prolapse, visceral prolapse; foreign body (including the Miller-Abbott tube), parasites; peritonitis, diverticulitis, acute appendicitis; adhesions, congenital ileal band; trauma, including stab and gunshot wounds; enlarged mesenteric glands, submucous lipoma of the ileum; and fasting. Henoch's purpura has been found in association with intussusception in a number of patients, primarily children and young adults. Polyarteritis nodosa has also been reported infrequently as the cause of intussusception in adults.[14] Many of these causes are extremely rare and are included mainly for the purpose of completeness. They apply to intussusception of all types, and are generally associated with that of the single variety. Multiple intussusception of the small intestine at necropsy, not uncommon in children, is regarded as an agonal phenomenon.[12] The invaginations are usually of the retrograde variety and are not associated with inflammatory changes.

Of the 18 cases found in a review of the literature, 5 are listed in Table I as authenticated examples of multiple intussusception in adults.[15–19] This table illustrates the fact that the precipitating factors in a single invagination do not differ appreciably from those found in multiple, as well as in compound, intussusception.

The 13 additional cases of multiple intussusception in adults found in the literature are cited either as postmortem observations or with details, incomplete as to age or site, and are therefore not included in the table. Six other cases are cited as two intussusceptions, which in 5 instances were associated with neoplasms, namely, three polyps, one annular carcinoma, and one melanotic sarcoma. The factor in the sixth case was undetermined. Seventeen cases of compound intussusception (that is, one invagination inside another) are cited, 12 of which are examples of double intussusception, 3 are examples of triple intussusception, and 2 are examples of quadruple intussusception. In this last group of 17 cases, polyposis was an associated factor in 5 cases, benign tumor was the factor in 2 cases, a malignant tumor in 2 cases, and Meckel's diverticulum in 2 cases. The etiology was not determined in the other cases.

Case Report

A forty-one-year-old woman entered the Roosevelt Hospital on October, 1955, with a chief complaint of "crampy abdominal pain" of five days duration. She reported that four days prior to admission she began to experience sharp lower and midabdominal pain which soon became cramp-like in nature. The pain was present most of the time and had been of the same intensity since the onset. Nausea, vomiting, diarrhea, constipation, and melena had not occurred, but a low-grade fever had been present for several days. She had been taking digitoxin, quinidine, prednisone, penicillin, and aspirin since her previous admission.

The past history included an episode of acute rheumatic fever in 1941, fourteen years previously. In 1952 the patient noted the onset of dyspnea on exertion and entered the hospital for evaluation. The diagnosis made at that time was rheumatic heart disease, mitral stenosis and insufficiency, aortic insufficiency, and carditis.

During the next four years she had multiple hospital admissions. In 1953, when she entered for pulmonary edema, an episode of cerebral embolization occurred. Pulmonary embolization was suspected, and atrial fibrillation was noted for the first time. Gradual improvement followed routine supportive therapy and the patient was discharged. Five weeks later she was readmitted with a complaint of pain in the abdomen, back, and legs. Oscillometric studies revealed minimal pulsations in the lower extremities. A diagnosis was made of embolization to the aortic bifurcation or to the left common iliac artery, secondary to the mural thrombi in the left atrium. The possibility of mesenteric embolus or a vascular spasm with ischemia of the bowel was suggested. Heparin, Dicumarol, and routine cardiac therapy were administered. The patient improved and was discharged on the nineteenth hospital day.

Later in 1953 she again entered the hospital for cardiac surgery. A mitral commissurotomy and left auricular appendectomy were performed without complication. The postoperative diagnosis was "pure mitral stenosis with no regurgitation." Two further hospital admissions for chest pain followed in 1954, at which time a diagnosis of postmitral commissurotomy syndrome was made. Atrial fibrillation was still present and minimal decompensation was noted also on this occasion.

On admission in October, 1955, the physical examination revealed a well-developed, well-nourished woman in moderate distress, complaining of abdominal pain. Her temperature was 100 F.; blood pressure, 115/75; pulse rate, 82 per minute; and respirations, 16 per minute. The neck veins were flat, and the lungs were clear to percussion and auscultation. The heart was moderately enlarged, and the cardiac apex was in the sixth intercostal space, 3 cm. to the left of the midclavicular line. A Grade III apical diastolic murmur with presystolic crescendo was heard, together with a Grade II apical systolic murmur. A high-pitched Grade II systolic murmur was heard in the aortic area, the pulmonic second sound was louder than the aortic second sound, and a regular sinus rhythm was noted. The abdomen was soft with moderate tenderness in both lower quadrants; there was no rebound tenderness. The liver edge was palpable just under the right costal margin; no other organs or masses were palpable. A trace of pretibial edema was noted, and the dorsalis pedis pulses were recorded as faint.

The laboratory findings were as follows: hematocrit, 43; white count, 7,500 (differential count: segmented neutrophils, 63 per cent; nonsegmented neutrophils, 10 per cent; lymphocytes, 21 per cent; monocytes, 6 per cent); sedimentation rate, 30 mm. per hour; antistreptolysin-O titer, 50 Todd units; and electrolytes, within normal limits. The throat culture revealed a heavy growth of Streptococcus alpha and a light growth of Streptococcus gamma and Diplococcus pneumoniae.

An x-ray examination of the abdomen by means of supine and lateral decubitus films showed a marked gaseous distention of both the large and small bowels. In the lateral film no significant gas or fluid levels were noted. Details of the solid organs were obscure. The findings suggested the presence of an adynamic ileus.

The electrocardiogram was interpreted as showing digitalis effect or myocardial ischemia. The electroencephalogram suggested a convulsive disorder, but no localizing focus was found.

During the patient's hospital stay the abdominal pain continued unabated and became localized, for the most part, in the right lower quadrant. Tenderness on pelvic examination was also felt on the right side. It was considered now that she had an acute condition of the abdomen and that exploratory laparotomy was indicated.

At surgery a recently ruptured graafian follicle was seen in the right ovary, which was still bleeding slightly. In the pelvis there were approximately 100 cc. of bloody fluid. Also present was a region of petechial hemorrhage (several hundred areas, approximately 2 to 3 mm. in diameter) which involved the upper ileum and lower jejunum over an area of about 6 feet in length. Similar areas were noted in the transverse colon. In the involved area of the small intestine there were three small, separate, direct intussusceptions which were easily reduced.

On the first postoperative day the rhythm of the heart was noted to be "irregular," but thereafter it was found to be normal. On the sixth postoperative day the patient experienced a striking episode of confusion and loss of memory which persisted for several days. There were no localizing neurologic signs, and the possibility of cerebral emboli or epilepsy was considered. The pathology report of the biopsies of the small intestine and rectus muscle, taken during the operation, revealed a marked congestion of the serosa and normal muscle of the intestinal wall. The rectus muscle was found to consist of normal striated fibers. The patient was discharged as much improved on the thirty-sixth hospital day.

She re-entered the hospital in September, 1956, because of an intermittent, cramping, upper-abdominal pain of five days duration. There was no diarrhea, melena, or vomiting. Increasing dyspnea on exertion and fatigue were reported. Physical findings were unchanged except for diffuse abdominal tenderness and the presence of an ill-defined, moderately tender mass in the umbilical area. Atrial fibrillation was now noted. Laboratory findings were unrevealing. The patient was given supportive treatment and was discharged on the sixth hospital day after gradual improvement of an "undiagnosed abdominal condition."

In October, 1957, she was readmitted with a chief complaint of lower abdominal pain, associated with anorexia, nausea, and diarrhea of twenty-four hours duration. Hematemesis and melena were not reported. Physical examination revealed no changes except that the abdomen was soft and slightly tender in the lower quadrants. Laboratory findings, including a guaiac examination of the stools, blood cultures, flat plate of the abdomen, gastrointestinal series, and intravenous pyelogram, were all negative. The symptoms abated rapidly, a diagnosis of possible mesenteric embolus was made, and the patient was discharged.

Once again, in December, 1958, the patient returned to the hospital complaining of cramping, diffuse, abdominal pain. The pain, which had started three months previously and had been intermittent, became exacerbated five days prior to admission, and was associated with pain in the back and in the chest. Significant physical findings at this time were tenderness in the right upper quadrant and an extension of the liver 5 cm. below the right costal margin. Tenderness was also elicited in the right midcolon area, and an ill-defined mass was palpated in the left upper quadrant. The heart was fibrillating and a diastolic gallop was noted. The electrocardiogram showed atrial fibrillation, digitalis effect, and possible underlying myocardial damage.

After several days in the hospital, the patient complained suddenly of severe shooting pains in both lower extremities. On examination the legs were cool and no femoral pulsations were found. Immediate surgery was undertaken and a saddle embolus at the aortic bifurcation was successfully removed. The operative report noted the presence of "small infarcts (2 mm.) scattered throughout the small bowel wall." The femoral pulses were palpable immediately after the operation, and a good recovery was made. The histopathology report revealed the saddle embolus to have been a fresh thrombus of the aorta. A biopsy of the rectus muscle showed acute nonspecific interstitial inflammation.

Following her discharge from the hospital, the patient has been maintained on permanent anticoagulant therapy.

Comment

The occurrence of intussusception in an adult can almost always be traced to a specific mechanical cause. Polyps, Meckel's diverticulum, and various tumors, benign and malignant, are the most frequently cited causes.[10] It can be seen readily from the cases that are reported in the literature that multiple and single intussusception results from the same precipitating factors. Since multiple intussusception in adults occurs so infrequently, the cases that have been reported comprise too few a number to warrant statistical analysis.

The case reported in this paper presents two particularly interesting features. Not only is it rare to find multiple intussusception occurring in an adult, but also never before has it been reported in association with rheumatic heart disease in a patient who had undergone mitral commissurotomy and left auricular appendectomy. The etiology of the multiple intussusception in this patient could not be determined fully because conclusive evidence could not be found. However, the salient features of the case permit some postulation as to the formative mechanism of the invaginations.

It is a well-known fact that ischemia of the bowel produces a hyperperistaltic response. Following occlusion of the mesenteric artery, patients experience violent cramps with auscultatory evidence of increased peristalsis.[20] It is our hypothesis that intussusceptions occurred in our patient as the result of an episode of enteric ischemia; hence, in considering the causes of this ischemia, the possibility of embolic origin looms large. The source of the emboli was obviously the left side of the heart with embolization to the superior mesenteric artery or its branches. A careful review of the patient's entire history revealed evidence of past cerebral, pulmonary, and aortic emboli, the last being of the saddle type. It is not significant that fibrillation was absent at the time of the postulated embolization, as it is well known that embolization is particularly prone to occur at the time of conversion to normal sinus rhythm.

The question arises, however, as to why infarction of the bowel did not occur if mesenteric embolization took place. Rosenman and Gropper[20] state that there is not a general recognition of lesser degrees of vascular impairment of the intestine. They emphasize the fact that if favorable events take place, such as the development of collateral circulation before bacterial penetration of the ischemic intestine, massive necrosis will not occur.

Another cause of intestinal ischemia is that of mesenteric vascular insufficiency either as a consequence of arteriosclerosis, or as a sequel to cardiac decompensation, or both. It has been shown that arteriosclerotic changes of the mesenteric arteries can produce vascular insufficiency and anoxia of the intestinal musculature, a syndrome sometimes referred to as intestinal intermittent claudication.[20-23] In many of the cases cited, cramping abdominal pain was present intermittently for weeks, months, and even years. Cardiac failure may, of course, contribute to the occurrence and severity of this syndrome by decreasing further the already impaired circulation. In a recent report Ende[24] suggests that infarction of the bowel may take place in cardiac decompensation, even in the presence of insignificant disease of the mesenteric vessels.

Thus we have postulated the etiology of our patient's multiple intussusception as hyperperistaltic activity following enteric ischemia, and have suggested several possible causes of the ischemia, the most likely being embolization. It is obvious that intussusception does not occur in every case of augmented peristalsis, and no attempt will be made to explain completely its occurrence in this case. However, multiple intussusception at necropsy has been a well-known finding, generally attributable to agonal phenomena.[11]

It is hoped that this report will stimulate the reporting of other cases of intussusception, either multiple or single, of a similar etiology.

Summary

A rare case of multiple intussusception in an adult has been presented with the unusual association of rheumatic heart disease. Hyperperistalsis, secondary to enteric ischemia, as the result of embolization, has been offered as the possible cause of the intussusception. Only 5 other documented cases of multiple intussusception in adults were found reported in the literature, and these are presented in tabular form.

In these cases, as well as in the other cases cited of compound and two intussusceptions, benign and malignant neoplasms are given as the principal etiologic factors. These factors are similar to those found in intussusception of the single type.

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Algae to Feed Humans?

Will overpopulation outstrip the earth's ability to feed mankind? Is it possible that even America, long plagued by food surpluses and where overeating is often called a national sickness, someday will not have enough to go around?

Many modern-day social scientists with one eye on food production statistics and the other on the unending "population explosion" think that the problem may become one of world-wide importance. Some, in fact, refer back to the gloomy 19th century philosopher, Thomas Malthus, who believed that while food production can only be increased on an arithmetic progression, population will bound along geometrically. His only solution: war to keep population in balance.

More recent alternatives include birth control (India's and Japan's widespread campaigns are examples) and research to find new and more efficient sources of food.

One likely food source that the scientists are checking is algae, a simple plant, nearly microscopic in size, normally found in oceans and lakes. In particular, a type called Chlorella seems to offer particularly good prospects, containing up to 58 per cent protein content, as well as an abundance of vitamins A and C. Chlorella, it is noted, however, is low in one of the essential amino acids (the components of protein).

Striving to cope with a basically economic problem, the nutritional scientists are impressed by the fact that one acre of water "sown" with Chlorella could produce about 40 tons of dried high-protein food per year. While, under present conditions, costs for quality control, processing and the maintenance of sanitation would be high, there is no evidence that Chlorella cultivation will not eventually be feasible.

Research indicates that Chlorella has the ability to undergo constant mutation in response to environmental manipulations. Thus, in one case, the scientists developed a Chlorella strain that was 86 per cent fat. Special strains of algae might, then, in the distant future, become one of man's sources of fats and oils.

This line of investigation has had an obvious significance for Japan which has faced the problems of over-population for many years. In fact, Japanese and American research demonstrated long ago that palatable dried powders from Chlorella could be added to bread, ice cream, noodles, and other everyday foods to increase their content of protein, vitamin A, and ascorbic acid (vitamin C).

More recent work in Japan has not matched the early enthusiasm, however. In an experiment with human subjects, it is reported that the smell and taste of the Chlorella were intolerable and impaired the appetite. Another investigation showed that young rats grew poorly when fed dried Chlorella as compared to a group fed casein (a protein derived from milk).—*Nutrition Reviews*

Two Uncommon Salmonella Types

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THE following 2 case reports describe two uncommon Salmonella types.

Case Reports

CASE 1.—A seventeen-year-old white male was admitted with a diagnosis of ulcerative colitis. His past medical history was essentially negative until an appendectomy was performed two years ago at another hospital. Two weeks after this operation he developed diarrhea with 10 to 12 watery, bloody, foul-smelling stools per day. A diagnosis of ulcerative colitis was made at this time. On medical treatment he regained the lost weight and he felt generally well except for occasional diarrheal episodes. One week before his present hospitalization the diarrhea increased together with vomiting and anorexia. His temperature was 100.8 F.

A physical examination revealed a generalized lymphadenopathy. The spleen was palpated below the costal margin, and the liver edge also was felt. During the first week of hospitalization he ran a febrile course with temperature spikes to 102 F. without chills. Blood cultures were negative. He was having up to 10 loose, occasionally bloody, stools per day. A barium enema and a sigmoidoscopy revealed changes of chronic ulcerative colitis. A psychiatric interview revealed that the patient came from an unhappy home where he was being raised by a domineering mother with schizophrenic traits.

The patient was placed on a regimen of Sulfasuxidine, Kaopectate, and a high caloric diet with mineral supplements. A stool culture was taken at this time from which Salmonella siegburg, group H, VI, XIV, XVIII; z_4, z_{23}[1] was isolated. With continued therapy the total number of bowel movements diminished to from 2 to 3 per day, and there was some gain in weight. A stool culture taken ten days later revealed the same enteric pathogen.

It is not clear whether the Salmonella type isolated from this patient has contributed to the disease process, whether it is a secondary invader, or whether it is simply an incidental finding.

CASE 2.—The serotype Salmonella blockley, group C2, VI, VII; k–1, 5,[2] was isolated from the stools of 3 members of a family suffering from gastroenteritis. One of the members, a medical student and the patient described in this report, developed fever, headache, and severe diarrhea three days after a meal which had been eaten also, with no after-effects, by his mother and brother. He was hospitalized, and the major physical finding was an enlarged spleen.

Following the administration of chloramphenicol (Chloromycetin) for eight days, all clinical and physical findings returned to normal. Subsequently he was discharged, but he was kept on a continued treatment of chloramphenicol since the stool cultures were still positive.

The source of infection was the chopped liver which had been prepared by the mother and which also yielded the Salmonella organism. It is of interest to note that over a period of a few years prior to the patient's illness the mother gave a history of intermittent diarrheal episodes. Perhaps she was a carrier of this particular organism, although no culture reports were available to substantiate this assumption.

LEBANON HOSPITAL, GRAND CONCOURSE

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America and defeat cannot be made to rhyme.—ERIC A. JOHNSTON

CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

Sclerotic Vascular Diseases[*]

SIMON RODBARD, M.D., BUFFALO, NEW YORK
(*From the University of Buffalo Chronic Disease Research Institute*)[†]

> *One asks why the vessels in the old acquire great length and become bent, and the coat thickens so much that they close themselves up and stop the movement of the blood, and from this arises the death of the aged, without any disease . . .*
>
> *The vessels, being a sheath to the blood that nourishes the body, are nourished so much the more since they are closer to the blood.*
>
> LEONARDO DA VINCI[1]

IN OUR culture, vascular diseases take a high toll of morbidity, disability, and death. The two most common of these conditions are arteriosclerosis and atherosclerosis.

Arteriosclerosis

Arteriosclerosis is characterized by a generalized, progressive deposition of collagen and calcium in the walls of the aorta and the larger arteries. The resulting rigidity transmits the full force of the pulse wave without the normal damping action of the elastic properties of the vessel. This elevates the systolic arterial pressure; the diastolic pressure, being determined by the arteriolar resistance, is usually unaffected. The heightened systolic tension stimulates the deposition of collagen. This not only strengthens the vessel wall against the danger of rupture, but also generates a vicious cycle, since the vascular rigidity becomes even more marked and a still higher systolic pressure is produced.

The rise in blood pressure contributes also to an increased tendency to develop regional vascular changes. Ultimately, a weak point of a vascular wall may yield and the sequelae of a localized hemorrhage, as in cerebrovascular disease, become manifest. The heightened mean arterial pressure also imposes an increased load on the left ventricle, stimulating its hypertrophy; when this compensation is inadequate, congestive failure results.

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Atherosclerosis

Atherosclerosis is characterized by a process which often underlies occlusion of the coronary vessels and probably of the intracranial vessels. Our concept of the natural history of this disorder derives from the emphasis given to the coronary arteries and the aorta. A dominant viewpoint holds that atherosclerosis is initiated by the infiltration of the vessel wall with lipids.

Vascular Physiology.—The lining of the arterial wall is perfused and nourished by a plasma filtrate which is driven into the intima by the arterial pressure. In this way the intima and inner media, which have no vasa vasorum, are supplied with oxygen, glucose, lipids, and other nutrient materials.[2] Proteins also filter into the vessel wall.[3] When various materials permeate the vessel lining at rates faster than they can be metabolized or exported, they begin to accumulate. This tendency varies from point to point, being greater at the bends in the vessels, as in the arch of the aorta and at the origins of the penetrating branches of the coronary arteries.

The permeability of vessels also varies. Thus, the ground substance of the specific portions of the body may change, under the stimulus of steroids such as the female sex hormones, from a relatively permeable sol to an impermeable gel.[4]

Atherogenesis.—Selective solubilities may also determine the localization of materials. For example, the local deposition of lipid provides a site where the solubility or miscibility of fatty materials is increased.

An excessive infiltration of lipids stimulates the local appearance of macrophages. As these cells develop in a region of superfluous lipid infiltration, an atheroma is formed. Then fibrous connective tissue may be deposited locally. Thereby the plaque becomes progressively sclerotic as the lipid-containing macrophages depart. Subendothelial proliferation in the region of a plaque sometimes may reduce the vessel lumen. Ultimately calcification of the lesion may occur.

Other interpretations of the events leading to these vascular changes also are common. For example, some workers agree with Aschoff[5] that the deposition of fibrin on the arterial lining is continuous and at times it may be accelerated.[6,7] An endothelial layer then covers the deposit, producing a plaque. Finally, metamorphosis of the components of the plaque liberates lipids to form an atheroma. Phospholipids may be synthesized in the arterial wall.[8] Local synthesis of cholesterol is probably negligible.

Ischemia.—Atheromatosis does not lead necessarily to vascular occlusion. It is likely that some lipid infiltrations and plaques regress while others are forming.[9] However, if atheromatosis becomes severe and prolonged, fibrosis and calcification may convert the atheroma to a sclerotic plaque. When the obstruction is partial and the blood flowing into the region is inadequate, the accumulation of metabolic end products in the poorly perfused tissues may generate the sensation of local pain or muscular fatigue with the clinical manifestations of intermittent claudication.[10]

Occlusion.—The modes of occlusion of the arteries are not defined fully. In most cases it is not known whether the obstruction results from a progressive encroachment of an enlarging plaque on the lumen or from a primary thrombus or embolus. The hydraulic forces of the blood stream passing through the partially occluded vessel are capable of producing a lifting tendency which can dissect the intima from the outer media. The displaced vascular lining obstructs the artery and thrombosis follows.[11] When local occlusion occurs and collateral channels are inadequate to maintain the viability of the tissues, infarction is a necessary consequence.

Contributing Factors

Many factors, endogenous as well as exogenous, determine the tendency to atherosclerosis. Stage of life,[12] hormonal status, and hereditary and cultural patterns participate in determining the likelihood of occlusion of the coronary and other arteries.

Age Period.—Arterial occlusion rarely occurs in infants despite the rich fat and cholesterol content of the diet and the occurrence of aortic "milk streaks."

Atherosclerosis presents itself as a disease for the first time at the onset of puberty. In this age period[13] children with grossly disordered lipid and cholesterol regulation manifested throughout childhood in tendinous and cutaneous xanthomata begin to exhibit angina and a tendency to myocardial infarction. Several hundred authenticated cases of coronary disease and death have been reported in such children at this transitional time of life. A similar pubertal predilection to atherosclerosis of the aorta and the coronary arteries is seen in the young chick.[12]

Hormones.—With the onset of puberty, an increased tendency to coronary atherosclerosis becomes manifest in males. A relatively strong hormone-mediated protection is seen in women during the childbearing period. A curious distribution of vascular disease is seen in the sclerotic predisposition of the aorta in women and estrogen-treated cockerels; the coronary arteries remain free of infiltration and sclerosis. The incidence of vascular disease in women climbs steadily at the time of the menopause to the high levels it has already achieved in men of similar age.[14] This menopausal loss of resistance suggests a special role for the feminizing hormones, especially the estrogens. Other evidence supports this deduction. For instance, women with coronary artery disease have a higher incidence of frequent and repeated spontaneous abortions. Furthermore, oophorectomized women have a definitely increased incidence of coronary attacks.

The other endocrine factors also modify the tendency to arterial disease. Diabetes mellitus forfeits the normal protection of the female. The androgens also contribute; orchiectomized men have a reduced incidence of coronary occlusion. Thyroid activity tends to lower the blood cholesterol, but its role in arterial disease is obscure. The tendency of coronary disease to increase with age thus may reflect modified endocrine patterns rather than simple chronology.

Heredity.—The tendency for arterial diseases to occur in familial groupings has led to an emphasis on the hereditary characteristics of these disorders. A number of families have been studied in which idiopathic hyperlipemia is transmitted as an autosomal recessive condition.[13] However, in the vast majority of cases of a high familial incidence it is not possible to differentiate hereditary factors from cultural factors. Since serum lipids increase and the incidence of atherosclerosis rises sharply among immigrants who move from a poverty-stricken environment to one of greater prosperity, it is likely that genetic factors are less important than cultural factors.[15]

Cultural Patterns.—The external environment may contribute to the prevalence of vascular disease through emotional disturbances, physical activity, smoking, diet, and other factors.

Emotional excitement not only raises the blood pressure, but also mobilizes lipids to the circulating blood stream; both factors may enhance the tendency to develop vascular infiltration. On the other hand, habitual physical activity is reputed to lower the plasma cholesterol levels and to reduce the tendency of coronary artery disease to occur. Cigaret smokers show a somewhat higher incidence of coronary disease than nonsmokers. How much of this is owing to emotional tension and how much to smoking itself is not known.

Diet is one of the primary cultural factors which has been associated with high blood cholesterol levels and atherosclerosis, although the significance of the available data is still under discussion.[16] No element of the diet has escaped suspicion including lipids, proteins, carbohydrates, and vitamins. The greatest emphasis at present is on the lipids with special attention to cholesterol.

Cholesterol.—Cholesterol, a water-insoluble sterol, can be synthesized by the cells of all vertebrates. It is present in animal products, the concentrations being greatest in butter, cream, egg yolk, fat, and liver. The enteric absorption of dietary cholesterol into the lacteals is accomplished by emulsification with the aid of bile salts and fats; it can be inhibited by any factor that reduces the process of emulsification. Thus plant sterols tend to form insoluble liquid crystals with cholesterol. Alumina gels modify the gastric secretions, adsorb bile salts, and reduce lipid absorption.[17]

Attitudes on the role of fats have recently undergone rapid change. All fats were indicted a few years ago. Now, however, only the saturated or hydrogenated fats and those of animal origin are considered atherogenic; shortenings and lard are included in this class of foodstuffs. By contrast, the unsaturated fatty acids in corn and saff oils have emerged as presumptive anticholesteremic substances. Linoleic, linolenic, and arachidonic acids are believed by some workers to be the active elements in the unsaturated class; however, many experiments which have been cited to demonstrate the usefulness of the unsaturated fats have been inadequately controlled, since the animal fats and cholesterol were removed from the diet at the time of the tests.

The complexity of the problem is illustrated by the discovery that the plasma cholesterol may be affected by very minor variations in the diet. For example, changes in the daily pattern of the intake are said to affect the regulation of the plasma lipids and cholesterol in animals.[18]

Serum Cholesterol.—The serum cholesterol level in presumptively normal subjects in our society averages about 250 mg. per cent. However, data on populations where coronary disease is uncommon, as well as on experimental animals, suggest that the normal plasma cholesterol levels may be closer to 125 mg. per cent. Thus an average value of 225 mg. per cent may represent a metabolic abnormality of our culture.[15]

Cholesterol is normally solubilized and transported by the serum lipoproteins. These molecules differ in the relative proportions of cholesterol, phospholipids, and triglycerides. They can be differentiated into alpha and beta lipoproteins by salting-out procedures, electrophoresis, or ultracentrifugation. When excessive amounts of cholesterol are ingested by animals, and presumptively by man, the greatest rise is seen in the beta lipoprotein fraction.

Unfortunately, the serum cholesterol has been shown to be an inadequate index of the tendency to the development of coronary artery disease. Indications of this tendency are greater when obesity and high blood pressure are also present. Obesity results from an increased food intake which can include specific atherogenic elements. Hypertension can be assumed to act by increasing the rate of filtration of lipids and other materials into the arterial wall.

Spasm.—The recent focus on lipids and atheroma has diverted attention from the potential role of arteriolar spasm in producing obstructive vascular disease.[19] If the arterioles do not respond normally to the vasodilator metabolites released by muscular contraction, blood flow to that part will be limited. Since blood vessels tend to enlarge with an increased flow and tend to become smaller with a decreased blood flow, the degree of spasm of the arterioles ultimately may control the size of their nutrient arteries.

Therapy

The large number of treatments available for atherosclerosis and coronary disease suggest that none of them has outstanding value.

Diet.—The replacement of saturated fats by unsaturated fats and the use of a low-cholesterol diet followed religiously over a sufficiently long period of time tend to lower the serum cholesterol level. The regression of intimal lipid infiltrations and atheromata will be delayed since body depots must be depleted before the vessels can

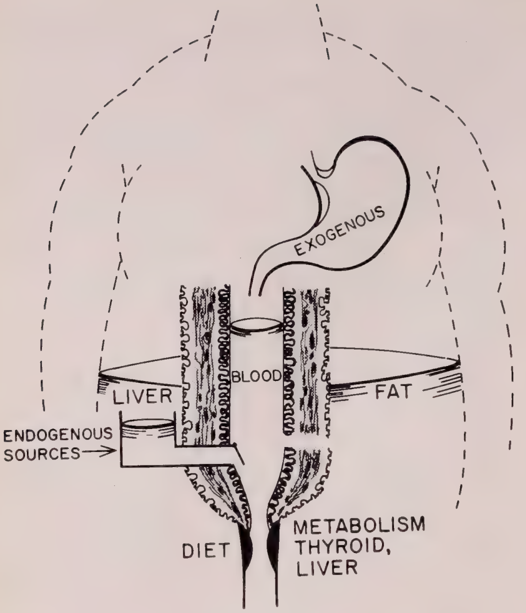

Fig. 1. A sketch suggesting factors which affect cholesteremia and atherosclerosis. Exogenous cholesterol enters the blood via the enteric tract. Endogenous sources are present in the cells of the body, especially the liver. The serum concentration reflects the balance between input and loss. When the level is high, endogenous input is diminished. The concentration of lipids in the blood, suggested in the drawing as a height, is associated with the tendency to vascular infiltration. The blood is also in equilibrium with the cholesterol and lipids in the tissues, especially in the body fat and in the liver. When the amount in these tissues is great, a diminished enteric input may not produce an immediate significant effect because of the influx from the body stores. The loss of cholesterol from the blood is in accord with the metabolic activity, via the liver as bile acids, or metabolism in various glands which form steroids. Loss is also affected by the dietary pattern.

unload (Fig. 1). Fibrous and calcific plaques that have lost the lipid which initiated them can be expected confidently to remain unaffected by such diets. Perhaps this variation in the stages of the vascular condition accounts for the variable results obtained with the therapies being tested.

A variety of vitamins have had their vogues. These vitamins have included pyridoxine and nicotinic acid,[20] and the lipotropic inositol, and choline. Nicotinic acid increases bile acid secretion, enhancing the tendency to degradation of the circulating cholesterol. Long-term feeding to animals of diets deficient in the lipotropes is followed by fatty infiltration of the liver but not of the vascular system; replacement therapy leads to a gratifying recovery. However, the addition of these materials to the relatively adequate diet of man has not been shown to have a significant effect on the blood lipids; it certainly has not been effective in atherosclerosis in animals.

Estrogens; Thyroid. —Estrogens will protect the coronary arteries of chicks[21,22] and presumptively of normal women against hypercholesteremia and atherosclerosis. However, the estrogens have not proved useful in men. Thyroid administration reduces the plasma cholesterol in hypothyroidism; in experimental animals it facilitates the removal of lipids from blood and from atheromata. However, thyroid administration to patients with coronary heart disease appears to increase the severity and frequency of angina.[23]

General Therapy.—The exact role of the coagulation mechanisms in the genesis of atherosclerosis remains undefined.[7] It has not been demonstrated that atherosclerosis or coronary occlusion is due to an increased clotting tendency of the blood. However, anticoagulants are credited with a role in the prevention and therapy of atherosclerotic disease.[24] Heparin, a lipoprotein lipase, clears the blood of tiny fat droplets called chylomicrons. The administration of anticoagulants is reported to increase the rate of recanalization of vessels obstructed by thrombi.

The anticoagulants are a common means of reducing the complications of an infarction but their role in the primary process is still not elucidated. The thrombolytic plasminogen systems[7] are still laboratory curiosities without proved utility in sclerotic vascular diseases.

It is generally conceded that weight loss reduces the tendency to develop coronary disease. Exercise, such as walking, golfing, and bowling, is a practical, highly acceptable prescription. A reduction in blood pressure also may be expected to assist in minimizing the tendency to develop an arterial infiltration. Tranquilizers reduce the patient's awareness of angina; whether they will affect the incidence of coronary occlusion remains untested.

Hope has been raised recently for the ultimate control of hypercholesteremia and possibly even of atherosclerosis by the development and clinical testing of paraphenylbutyric acid derivatives and related antimetabolites. These substances interfere with the normal sequence of cholesterol synthesis and tend to lower the serum level. When these substances have been improved so that desmosterol and related compounds do not accumulate in the blood and liver, a large step may have been taken toward the control of sclerotic diseases.

Surgical Approaches.—The transplantation of vascular substitutes has proved to be of distinct value in some localized peripheral arterial diseases. However, surgical approaches to coronary artery disease remain experimental. Pericardial talcum and coronary sinus revascularization procedures; the implantation of lung, gut, muscle, or mammary artery into the wall of the heart; and the more recent dilatation and curettage of the coronary arteries have their enthusiasts. Carefully controlled data are difficult to obtain. The brief fashion of ligation of the mammary arteries, which was presumed to divert blood to the heart, has been most instructive since a simple skin incision produced as much relief from the angina as did the complete operation.

Outlook.—The extensive research activity in the fields of sclerotic vascular diseases has demonstrated that these disorders are not necessary concomitants of aging. They are specific diseases. When research developments have made further progress, we can anticipate a rapidly increasing control over these disorders.

Summary

Arteriosclerosis is a generalized stiffening of the arterial tree which raises systolic blood pressure and may lead to vascular injury and cardiac overloading.

Atherosclerosis begins as a regional lipid infiltration which may regress and disappear, or which may progress to fibrosis and even calcification. A secondary process, perhaps intramural hemorrhage and dissection, can lead to occlusion and infarction of the vascular bed supplied by an end artery. Intrinsic factors, such as the age period and the hormonal patterns, modify the tendency to coronary disease. Epidemiology suggests that some aspects of this disorder may be determined culturally.

When its precipitating factors become more clearly defined, the disease may be brought under control. For the present, when reduction of serum cholesterol is indicated, this control may be attempted by use of a vegetarian diet without the usual dairy supplements, if this is acceptable. Unsaturated oils may be substituted for saturated fats. The thyroid hormone may be used in therapeutic trials to determine whether or not the serum cholesterol will respond. Surgical approaches remain experimental.

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Cockroach Uses Its Brain in Mating, Reproduction

Cockroaches control their mating and reproduction cycles with their brains. This recognition of intellectuality which would undoubtedly please Archie, the late Don Marquis's famous and highly literate cockroach, was reported to a conference on insect hormones held by The New York Academy of Sciences.

Dr. Franz Englemann, a youthful German anatomist now conducting research at Albert Einstein College of Medicine in the Bronx, has been studying the control of egg maturation in Leucophaea maderae, a large cockroach of African origin now indigenous to many of New York City's slum areas.

Two bodies called corpora allata behind the cockroach's brain (which Dr. Englemann describes as a "proto cerebrum") serve to stimulate its sex glands just as the anterior part of the pituitary or master gland does for humans. As in humans, a hormone does the job, but Dr. Englemann does not know its nature as yet.

At any rate, if you deprive the female cockroach of food, her brain sends a message to the corpora allata which makes it halt the maturation of eggs. With this damping down of hormone production, the female also becomes less responsive to the male and mating.

Dr. Engelmann says his research on cockroach reproduction is just one part of a program at Einstein which is designed to compare the sexual-reproductive mechanisms of various insects, mammals, and other animals.

The two-inch long Leucophaea maderae bears living young. The female produces in her ovaries about 30 eggs every two to three months. These take about three weeks to mature. Meanwhile mating has usually taken place and the male's spermatazoa are conserved in a special sac. There are enough sperm there to fertilize four or five clutches of eggs. The eggs, having matured under the prodding of corpora allata, move down the oviducts, are fertilized, encapsulated and finally released when the young cockroaches are able to start life on their own. The process then begins all over again unless the brain, influenced by factors such as temperature, light, food supply, and so forth, says no.

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the
Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.D., *Editor*

Feeding the Infant

J. FREDERICK EAGLE, JR., M.D., NEW YORK CITY

(*From St. Luke's Hospital*)

Assuming that nature knows best, breast milk must be the standard by which to compare other forms of infant nutrition. In Table I are listed the quantities of protein, fat, carbohydrate, vitamins, and minerals found in 20 ounces of breast milk which might be fed to a one-month-old infant. For comparison similar figures are shown for equal amounts of cow's milk, evaporated milk as it is commonly modified, and finally,

TABLE I.—Comparisons of Milk Compositions per 20 Ounces and Recommended Dietary Allowances for a One-Month-Old Infant Per Day

Components	Breast Milk	Cow's Milk	Evaporated Milk*	Dietary Allowances
Calories	400	400	400	400
Protein	6 to 9 Gm.	19.2 to 24.6 Gm.	14 Gm.	†
Fat	21 to 24 Gm.	21.0 to 31.2 Gm.	15.7 Gm.	. . .
Lactose	39 to 45 Gm.	27 to 30 Gm.	50 Gm.	. . .
Vitamin A	360 to 3,000 I.U.	480 to 1,320 I.U.	480 to 1,320 I.U.	1,500 I.U.
Vitamin D	2.4 to 60 I.U.	1.8 to 26.4 I.U.	200 I.U.**	400 I.U.
Vitamin C	7.2 to 64.8 mg.	5.4 to 5.6 mg.	3.6 mg.	30 mg.
Thiamin	12 to 216 μg.	180 to 240 μg.	120 to 180 μg.	3 μg.
Riboflavin	90 to 480 μg.	600 to 1,560 μg.	600 to 1,560 μg.	400 μg.
Niacin	0.6 to 1.2 mg.	0.6 mg.	. . .	3 mg.
Iron	0.6 mg.	0.24 mg.	0.16 mg.	6 mg.
Calcium	204 to 270 mg.	732 to 1,074 mg.	488 to 716 mg.	600 mg.
Chlorine	258 mg.	600 mg.	. . .	. . .
Magnesium	24 mg.	78 mg.	. . .	. . .
Phosphorus	96 mg.	594 mg.	. . .	. . .
Potassium	330 mg.	1,028 mg.	. . .	. . .
Sodium	90 mg.	348 mg.	. . .	. . .
Sulfur	84 mg.	180 mg.	. . .	. . .
Total Quantity	600 cc.	600 cc.	600 cc.	600 cc.

* As commonly modified: 1 part milk, 2 parts water, and 5 per cent added carbohydrate.
† No recommendation made in 1958.
** Added to evaporated milk.

a tabulation of the dietary allowances recommended by the Food and Nutrition Board of the National Research Council.[1]

Examination of these figures reveals that the recommended allowances of vitamins and minerals exceed, in practically every instance, the amounts which might be taken in by the healthy breast-fed infant. In spite of this, the Food and Nutrition Board states repeatedly that the adequacy of human milk is not questioned. It must be emphasized that these allowances are not minimal requirements recognized to be necessary for the prevention of nutritional deficiencies in the average infant. They are designed to cover the requirements of all individuals rather than of the average individual, and there is no implication that an infant who receives less than the recommended allowances will be malnourished. Since the values for each nutrient are above the minimal level which will prevent deficiency they are considered to provide for increased needs in times of stress or to provide for unusual situations such as prematurity or malnutrition secondary to maternal malnutrition during pregnancy. Finally, there is no implication that these figures represent optimal values.

Although the adequacy of human milk as a complete food is not questioned during the neonatal period it is apparent that this adequacy decreases with the increase in age and body size of the infant. Nature did not intend breast milk to be a complete food for an indefinite period of time. The appearance of specific deficiency states, however, will depend not only on the degree with which daily requirements are not met but also on the amount of nutrient that can be stored. For example, the daily requirements of iron are ten times greater than the amount that can be taken in from breast milk alone. Yet an iron deficiency anemia will not develop for two or three months because of the iron stores accumulated in the liver following the destruction of excess red blood cells present in the infant's circulation at the time of delivery.

A consideration of all these factors has led pediatricians to recommend that all babies, including those who are breast fed, be given 1,000 international units of vitamin D after the first week of life. Since scurvy has been reported on occasion in breast-fed infants, it would also appear wise to administer 25 mg. of ascorbic acid daily, or the juice of one orange. For infants fed an evaporated milk formula, the addition of vitamin C is mandatory since most of the naturally occurring vitamin C in cow's milk is destroyed by the heat used in the preparation of the milk.

There is little evidence that any further vitamin supplementation is necessary or of benefit to the child. However, it is common practice to recommend multivitamin preparations which include all known vitamins and minerals, even those which are not essential. The best that can be said for such practice is that there is no evidence that the use of these vitamins in usual dosage does any harm. Most of the benefit, however, would appear to accrue to the manufacturers of such preparations.[2]

For the infant who is not breast fed, whole cow's milk usually is not a satisfactory substitute. Historically the chief difficulty with cow's milk arose from the ease with which it became contaminated with pathogenic bacteria and its excellence as a culture medium. Although pasteurization, refrigeration, and modern distribution technics have almost eliminated this difficulty, pure cow's milk is still not a satisfactory food for many infants. Formation of a tough curd in the stomach causes indigestion and interferes with absorption. This curd can be modified most easily by heat, which has led to extensive use of evaporated milk. Reconstituted evaporated milk (one part milk and one part water) has been demonstrated to be a cheap, practical formula for most infants.

However, this formula contains concentrations of electrolytes which are three to five times those of breast milk. Premature infants, mature infants with fever, and mature or immature infants during hot weather may be unable to excrete this osmotic load unless additional water is supplied.[3,4] Furthermore, the high phosphate content and the lower calcium-to-phosphorous ratio has been blamed for the higher incidence of hypocalcemic tetany of the newborn in infants fed cow's milk or reconstituted evaporated milk.[5] For these reasons it is considered advisable to dilute evaporated milk with water and make up the resulting caloric deficit with sugar.

Many other modifications of cow's milk have been made in order to eliminate its differences from breast milk, but it is doubtful that there are any significant nutritional advantages for the normal child in any of these preparations. Most commercial preparations are entirely satisfactory nutritionally. Ease of formula preparation is their biggest selling point which is offset somewhat by their increased cost.

It is apparent that the medical profession as a group has been unable to agree as to when solid food should be introduced into the diet since recommendations vary from two weeks to more than six months. Lacking consistent medical advice, mothers have taken things into their own hands and compete with each other to have the youngest baby who is eating solid food. This is to be deplored since there can be no possible nutritional benefit and there may be real hazards.

Particularly distressing is the sensitization of infants. It is well established that the immature gastrointestinal tract can absorb unaltered protein. Glaser and Johnstone[6] have observed that there was frequent intolerance to egg when it was introduced into the diet at three months, but that this was rarely observed when it was introduced after nine months. It is less well established that sensitization to one protein predisposes to sensitization by others. In any event it is ridiculous to expose young infants to allergenic protein when there is no necessity for so doing, particularly if there is a family history of allergy. The best prophylaxis for gastrointestinal allergy is the exclusive feeding of breast milk for at least three months, and longer if the infant is satisfied and thriving.

A reasonable recommendation, supported by most pediatric textbooks, might be that the introduction of solid food be deferred until the fourth month of life or until the infant is not satisfied and thriving with 32 ounces of milk a day.

It should be emphasized that the most common nutritional deficiency in the United States today is iron deficiency anemia which usually appears in the latter half of the first year. Because of the rapid growth and expansion of the red cell mass, even a good diet can barely keep up with the body's need for iron. The iron stores as measured by serum iron and iron-binding capacity are lower during this period of life than at any other time.[7] Marked improvement in the normal infant's hemoglobin concentration with oral iron supplements has been demonstrated repeatedly. Any bleeding, infection, or stress may deplete a minimal reserve rapidly. This has led many pediatricians to prescribe supplementary iron to all children from three months to three years of age.

This situation is commonly aggravated by an excessive intake of milk which is taken to the exclusion of other foods which contain iron. The best approach to this problem is the restriction of milk intake. In no instance should a child consume more than one quart of milk a day, and if he fails to eat other foods on such a regime the milk intake should be cut to 24 ounces. With the intake of milk limited, a child will usually eat cereals (frequently supplemented with iron), eggs, meat, fruits, and vegetables in amounts which will supply adequate iron to maintain hemoglobin. Where intake of these latter substances is small, for whatever reason, iron supplementation should be instituted. In cases where parental reliability is in doubt and it is suspected that oral iron is not being administered, intramuscular iron is probably indicated.*

Finally, it must be remembered that the best stimulus to appetite is hunger. Cajolery, bribery, or threats are poor substitutes and used too frequently in the United States. A reasonable feeding technic which works well is to offer a child very small helpings of food, less than one expects him to eat. A large serving may take away his appetite and will discourage any efforts to "clear his plate." When he finds that it is easy and enjoyable to clear his plate he will ask for seconds. At this point mother has won the battle of the dinner table. At this level of intake all healthy children will thrive. If parents can be made to see that half of all children at a given age are heavier than the other half and can be reassured that the lighter half are just as healthy as the heavy half, they may stop trying to force their children to eat more than they want or need. When that day comes feeding problems in children will disappear.

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* Since submitting this manuscript, Imferon, an intramuscular iron preparation distributed by Lakeside Laboratories, Inc., Milwaukee, Wisconsin, has been withdrawn from the market. This preparation, when injected in repeated massive doses causes cancer in certain strains of rats and mice, although it has not affected other animals or man.

(*Number eight in a new series of Nutrition Excerpts*)

Certain Drugs Can Cause Gout

Certain drugs for treating hypertension should not be given to patients susceptible to gout, a heart researcher has warned.

"For the present, it appears propitious to avoid the use of chlorothiazide and other benzothiadiazine compounds in patients with a history of gout and to suspect the possibility of gout in patients treated with these drugs who complain of aching and painful joints," Leon J. Warshaw, M.D., of the Cardiovascular Research Unit, Beth Israel Hospital, New York, said.

Writing in the February 20 *Journal of the American Medical Association*, Dr. Warshaw said hyperuricemia, an excess of uric acid in the blood and a characteristic of gout, "is a relatively frequent concomitant of chlorothiazide administration.

"Although the mechanism by which chlorothiazide produces hyperuricemia, and the relationship between this hyperuricemia and the clinical manifestations of gout, are not clearly understood, these phenomena are a drawback to the use of this drug, especially in patients with a history of gout," he said.

Dr. Warshaw said a recent report suggesting a relationship between hyperuricemia and coronary artery disease and heart attacks "makes it urgent that the true significance of the hyperuricemia be established."

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
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Postoperative Hypotension Related to Preoperative Drug Therapy

During the past decade a number of new drugs which affect the nervous and circulatory systems have been made available for general medical practice. Corticosteroids, Rauwolfia alkaloids, chlorpromazine derivatives, and chlorothiazide derivatives have proved to be very useful drugs. However, it is important to bear in mind that patients who have been treated with these drugs for a prolonged period of time may develop significant cardiovascular changes when they are subjected to surgical intervention and anesthesia. The following case reports illustrate such effects.

Case Reports

Case 1.—A sixty-one-year-old man was brought to the hospital in acute distress with the diagnosis of acute appendicitis. His physical condition appeared to be good. His arterial blood pressure was 140 mm. Hg systolic and 84 diastolic, pulse rate 88 per minute, and respiratory rate 22 per minute. Examination of his lungs revealed no abnormality. He appeared somewhat pale, and the hemoglobin content of his blood was 11.4 Gm. per 100 ml.

For preanesthetic medication he was given 75 mg. of meperidine hydrochloride (Demerol hydrochloride) and 0.4 mg. of scopolamine hydrobromide by intramuscular injection. An infusion of 1,000 cc. of 5 per cent dextrose in water also was started. An hour later anesthesia was induced with cyclopropane and oxygen in a closed to-and-fro carbon dioxide absorption system. Appendectomy and drainage of a retrocecal abscess were accomplished uneventfully without any change in the patient's vital signs. He was brought to the recovery room in good condition.

However, eight minutes later, as he was emerging from anesthesia, he became pale and cold and had excessive perspiration. His pulse became

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Discussed at a conference held at Bellevue Hospital, New York City, February 1, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

rapid and thready at a rate of 140 per minute. His arterial blood pressure fell to 72/60. It was then learned that this man had been receiving hydrocortisone therapy for rheumatoid arthritis for the past three years. As soon as this fact became known, intravenous administration of 100 mg. of soluble hydrocortisone in 1,000 cc. of 5 per cent dextrose in water was begun. This treatment resulted in considerable improvement and rapid recovery to normal vital functions, a process which persisted with continuing corticosteroid therapy.

Case 2.—A sixty-year-old woman required a biopsy of a breast tumor which appeared to be malignant. Her past history was essentially negative except for the fact that she was known to have arterial hypertension for which she had been receiving a form of Rauwolfia serpentina (Raudixin) for the past two years. In view of a probable malignant pathologic condition, it was deemed preferable not to postpone required surgery.

For preanesthetic medication she was given 50 mg. of meperidine hydrochloride and 0.4 mg. of atropine sulfate by intramuscular injection. Her arterial blood pressure on arrival in the operating room was 180/100, pulse rate 78 per minute, and respiratory rate 18 per minute. Anesthesia was induced with 100 mg. of Surital sodium, and this was followed by the administration of nitrous oxide and ether with oxygen in a semiclosed circle filter system.

During the initial period required for the biopsy there was little change in the patient's circulatory signs. The blood pressure remained at 160/100 with a pulse rate of 72 per minute. The biopsy specimens were reported to reveal a malignant condition, and so surgery proceeded to radical mastectomy. During the next twenty minutes the blood pressure gradually declined to 90/60 without any change in the pulse rate. To combat this relative hypotension, 5 mg. of ephedrine sulfate were administered intravenously. This resulted in a rise of blood pressure to 150/90, which was sustained until the end of the procedure. No blood transfusion had been given since blood loss had been minimal. The patient was brought to the recovery room in apparent good condition with a blood pressure of 150/90 and a pulse rate of 78 per minute.

Ten minutes after arrival in the recovery room, however, the patient's blood pressure had diminished to 88/60 whereas the pulse rate, at 80 per minute, was approximately the same. Although she appeared to be somewhat pale, her skin was dry and warm. The immediate problem was to determine the cause of this arterial hypotension—the surgery, blood loss, postoperative hyperventilation with blowing off of carbon dioxide, or preoperative Rauwolfia serpentina therapy. The patient was observed during the next twenty minutes, but no change in circulatory status occurred. An intravenous blood transfusion of 500 cc. of whole blood was accomplished, but this did not relieve the hypotension. Urinary output, measured by means of an indwelling catheter in the bladder, was considered fair. The patient remained in the recovery room for three more hours. She seemed to improve very slowly with the systolic blood pressure rising to 110 mm. Hg. No further treatment was given, and the patient was returned to her room.

This relative hypotensive level was maintained for three days, and then by the end of the seventh postoperative day it began to return slowly to its preoperative level.

Comment

It is important for the anesthetist and for other members of the surgical team to know what prior therapy a patient has been receiving. Prolonged therapy with corticosteroids can result in hypocorticism. When such patients require surgical intervention, even of a minor nature, they require supplemental hydrocortisone to prevent a crisis of acute adrenocortical insufficiency.

As in the first case report, it is possible that the stress of surgery may not become evident during the period of general anesthesia. This seems to be related to a blocking effect on general anesthesia when surgical stress is imposed in a patient with iatrogenic adrenocortical insufficiency.[1] There is general agreement that any patient who has been receiving any form of corticosteroid therapy for more than a month should have additional hydrocortisone administered during surgery and immediately postoperatively.[2–5]

Patients who have been receiving Rauwolfia alkaloids for treatment of arterial hypertension need particular attention because they may develop serious arterial hypotension during or after surgical anesthesia which may be difficult to overcome.[6] To avoid such untoward effects it is recommended that patients who have been receiving treatment with these drugs and who require an elective surgical procedure discontinue these drugs for at least one week prior to surgery. There is evidence that when anesthesia is administered to individuals who have been on Rauwolfia therapy, bradycardia and arterial hypotension may result. This is owing to a decrease in peripheral resistance, caused by an alteration of the sympathetic-parasympathetic balance by partial suppression of sympathetic predominance at the hypothalamic level.[7,8] In cases of emergency surgery, in which delay is deemed inadvisable, as in the second case report, resulting arterial hypotension and bradycardia are best corrected by vagal blocking drugs, such as the intravenous administration of atropine or oxyphenonium bromide in doses of 0.5 mg. for an adult.[6]

Patients who have been receiving ataraxic drug therapy with phenothiazine derivatives (such as Thorazine, Phenergan hydrochloride, Pacatal, Sparine hydrochloride, Compazine, or Vistaril) also may manifest significant arterial hypotension during surgical anesthesia.[9] It is preferable that such patients also discontinue these drugs preoperatively, but the period of suppression of these drugs need not be as long as that for the Rauwolfia alkaloids; a suppression of two days may suffice.

There is accumulating evidence that patients who are being treated with chlorothiazide (Diuril) also may manifest serious arterial hypotension during and after surgical anesthesia.[10] Currently such observations are being accumulated and evaluated, but until more information is made available the anesthetist should exert care and caution in such types of patients.

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(*Number eighty-eight in a series of Clinical Anesthesia Conferences*)

Exercise Adds Up: You Subtract Pounds

Too many weight-watchers are scared off by the lack of "crash" results in exercise. They rationalize, for instance, that it takes seven hours of log chopping to lose a single pound. However, going at it for only half an hour every day would lead to the loss of about two pounds in a month or 26 pounds in a year.

—*Nutrition Foundation*

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Confusion Caused by Products with Similar Names, and Other Incidents

The following incidents recently were reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
King Pin (Lye)	4 years	Female

The mother related that she had used the product for a clogged bathtub pipe and then had placed the product on the window sill. The child was left unobserved for about a half hour and then was found in the bathroom ingesting the lye. She was taken to the hospital.

The symptoms on her admission were vomiting and burning in the mouth and throat. She was given milk, eggs, and orange juice in the emergency room and later was admitted to the inpatient service, where she remained for ten days. She was treated at the hospital with supportive measures, Meticorten, and Achromycin and made a complete recovery.

There is a widely used product in this area called King Pine, which is a household disinfectant and deodorant consisting of soap and pine oil. Although King Pine is familiar to the intern and resident staffs of many hospitals because of its frequent involvement in accidental poisonings, it sometimes is misidentified for King Pin and vice versa. This is one illustration of the identification problem frequently encountered in emergency rooms, a problem compounded by the language difficulties of many foreign-born interns and patients. This Center has recommended repeatedly that an effort be made to have the incriminating product brought to the hospital while the patient is still in the emergency room awaiting treatment. The Police Department Emergency Service is frequently of great help in such situations.

One of the reasons many of the lye poisonings in this area are milder than those occurring in the South is that concentrated solutions frequently are kept in the Southern home for the purpose of making soap. The child in such a home has the opportunity to swallow larger amounts of the substance and in more concentrated forms.

Incident 2

Toxic Agent	*Age*	*Sex*
Drano (Lye)	3 years	Male

The child obtained a can of Drano which had been placed on the window sill. He dumped it into the sink, added water, and proceeded to wash his face with the solution. His mother heard him crying and rushed to him. The child immediately complained of burning in his eyes and face, and the skin of his forehead and cheeks appeared flushed. It never was determined whether the child also had swallowed any of the product. As soon as the mother learned about the episode she very wisely applied cooking oil to his skin and brought him to the hospital.

On his admission his stomach was lavaged with diluted vinegar in the emergency room, and he then was admitted to the inpatient service. Despite the dire possibilities, the child made an uneventful recovery and was discharged after six days of observation and supportive therapy.

Since fairly adequate warnings of possible injury generally appear on lye containers, the persistence of lye incidents indicates, among other things, a failure in communication with the parent. This points up the need for further exploration of the problem of cautionary labeling. The lye industry currently is carrying out such an investigation locally.

Incident 3

Toxic Agent	*Age*	*Sex*
Cigarets	1 year	Male

According to the public health nurse who visited the home, an ash tray with an unknown number of cigaret butts was left on a table beside the child's crib. In the morning (7:30 A.M.) the mother found the child sucking on the tray, which he had taken into his crib. Two cigaret butts were on the floor. At about 9:00 A.M. the patient became nauseated and at 9:45 A.M. went into coma.

The child was taken to a hospital emergency room, where his stomach was lavaged with potassium permanganate at about 10:15 A.M. The only positive laboratory finding on admission was a leukocytosis of 20,000. After two days of observation and supportive therapy the patient completely recovered.

The development of coma in this case, probably a manifestation of nicotine poisoning, was rather unusual in view of the fact that cigaret ingestion by children generally is not considered to be serious, probably because of the ensuing nausea and spontaneous vomiting. Coma previously was not observed in the many cigaret ingestions reported to this Center. Its manifestation in this instance is noteworthy.

Incident 4

Toxic Agent	*Age*	*Sex*
Sleeping Pills	17 years	Male

The patient ingested 60 sleeping pills (25 mg. of methapyrilene hydrochloride per tablet) with suicidal intent. The reason for the patient's attempt at suicide was frequent arguments with his father because of the patient's failure to find a job. The patient developed convulsions.

He was taken to St. Catherine's Hospital emergency room, where his stomach was lavaged. He was transferred from the emergency room to the Kings County Hospital Psychiatric Division, where a diagnosis of depressive reaction was made. After sixteen hours of observation the patient was discharged as improved but was requested to return for psychiatric consultation.

From one point of view, it is fortunate that relatively "safe" over-the-counter sedatives are available, since suicidal attempts with them are thwarted by their relatively low toxicity and the prompt medical treatment made possible by immediate knowledge of the ingredients. However, although the acute medical phase with these products does not offer great difficulties, the underlying cause must not be taken too lightly and should be investigated carefully. The patient should be referred for indicated psychiatric guidance, since attempts with more dangerous products may be made.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Cleaning Fluid	17 months	Female

The child obtained the product from a cabinet on the back porch. She was taken to a hospital, where her stomach was lavaged with water. Since there were no symptoms except for breath odor, she was observed during the day and then was sent home.

Since the product is a spot remover and its composition was not declared on the label, the possible presence of carbon tetrachloride was a matter of concern to the physician because of the possible development of symptoms and complications. An attempt therefore was made to ascertain the composition of this product. It is distributed by a large automobile company using its own name, but, as so frequently happens, it is prepared by a specialty chemical manufacturer. Considerable time elapsed before the necessary information was obtained. The product contains methyl chloroform and naphtha but not carbon tetrachloride. As a result of the incident the automobile company undertook to obtain information on all the products it distributes (incidentally, no easy task), and the information was sent to this Center.

One of the constructive features of the proposed Household Chemical Labeling Law, supported by the American Medical Association, is the help it would provide in the prevention of such situations since the necessary information perforce would be on the label. Any support of this legislation from organized medicine would be most helpful at this time.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Whiskey	4 years	Female

The child obtained a bottle of a fifth of Scotch whiskey, which had been placed by the mother on the floor of a bedroom closet. The patient ingested three quarters of the contents. She was found unconscious by her mother and was taken to the emergency room of St. Luke's Hospital, Brooklyn, where her stomach was lavaged within forty-five minutes after she was discovered unconscious. After two days of observation and supportive therapy, her recovery was reported as complete.

This incident is of interest because of the large amount of whiskey ingested. This child was judged to be of average intelligence, active, and curious by her mother, an opinion corroborated by the public health nurse who visited the home. According to the public health nurse, the mother was very cooperative and offered information freely. This family, which includes four children, is on welfare. The father is now in Kings County Hospital in critical condition from a blood clot which resulted from a fall during an epileptiform seizure.

It is of interest that none of the children was ever immunized. The public health nurse made an appropriate referral to the nearest child health station for general supervision as well as for immunization.

The widespread danger to children from readily available alcoholic beverages in the home again is emphasized.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Camphorated Oil	1 year	Male

The child was in his crib, which is next to a dresser on which was placed a bottle of camphorated oil. He obtained the bottle and ingested its contents, 4 ounces. When the mother entered the room, fifteen minutes after she had left the child there, she found him convulsing and with an odor of camphorated oil on his breath. She noticed the empty bottle lying next to him.

Immediately the father administered mouth-to-mouth respiration, and the patient was taken to a hospital emergency room, where his stomach was lavaged with tap water. Following the emergency treatment the patient was admitted to the inpatient service, where he remained for twenty-four hours of observation. He then was discharged as improved.

It is gratifying to note that the mouth-to-mouth method of artificial respiration already is an accepted mode of home treatment.

In view of the frequency of and alarming symptoms from camphorated oil poisonings, it is strongly recommended that physicians warn patients to keep camphorated oil, as well as all external medications, out of the reach of children.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Trisodium Phosphate	5 years	Female

The father of the patient is in the floor-waxing business. He brought some floor-wax-removing material into the home and left it carelessly around. The child, who is in the habit of "touching everything she sees," believed the material to be salt and ingested an unknown quantity of it. She had burning in the mouth and throat and was nauseated. The Police Department was called, and it administered first aid. The patient was given vinegar, orange juice, and milk and then was taken to a hospital emergency room. After several hours of observation she apparently recovered.

The "tools of the trade," not only of artisans but also of physicians and pharmacists, frequently are involved in accidental ingestions by children in the home because of careless storage of these products. Trisodium phosphate (TSP), although not a caustic alkali, is strongly alkaline. Floor-wax removers, in general, are composed of alkaline substances and should not be kept with the milder types of detergents.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Roach Powder (DDT)	20 years	Female

According to the report of the public health nurse who visited the home, the patient, who is unmarried, feared pregnancy following an illicit affair and brooded particularly because her boy friend refused to marry her. On the advice of a friend the patient took some DDT powder orally to bring on a menstrual period. She experienced marked burning of the mouth and throat and was nauseated. She was taken to a hospital emergency room, where her stomach was lavaged. She then was admitted to the inpatient service, where she was treated with fluids intravenously and other supportive measures.

The public health nurse found the patient to be of average intelligence. She lives with a girl friend who is separated from her husband. Both of the patient's parents are dead. The nurse referred the patient to a mental hygiene clinic and advised her to look for employment. The patient was not pregnant.

DDT might be added to the long list of ineffective folk-lore abortifacients. DDT in the form of a powdered insecticide was discovered accidentally to be one of the most effective available mouse poisons, but there are limits to its use.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Pyribenzamine	18 months	Male

The mother gave the child her pocketbook to play with. The child opened the pocketbook, obtained fifteen 25-mg. tablets, and swallowed all of them. The patient vomited, became cyanotic and stuporous, and began convulsing. He was taken to Kings County

Hospital, where his stomach was lavaged with saline. On admission to the inpatient service he was in coma. Treatment consisted of supportive measures and sodium Amytal. Despite the alarming symptoms, the patient made a very rapid recovery and was discharged within twenty-four hours of admission.

A similar incident in a younger infant was reported to the Center, but the outcome in that case was fatal. The often-repeated admonition again is made not to give children pocketbooks to play with, particularly if the contents include potent medications.

Incident 11

Toxic Agent	*Age*	*Sex*
Mascara Eye Cream	22 years	Female

The patient is a resident at a State mental institution. The psychiatrist called for emergency information because the patient had ingested a tube of mascara. There were no symptoms at the time of the call. He was informed that none were likely to develop and that dilution and milk of magnesia would be adequate therapy. The patient had suspected that the product was harmless, and she had intended to use the incident as a means of being transferred into a more modern building, where she knew lavage facilities were available.

The medical effects of cosmetic ingestions reported to this Center usually have not been serious.

Cyanate and Cyanide

The following letter was received from a physician:

> We are reading your comments on accidental chemical poisoning in the New York State Journal of Medicine with great interest.
>
> May I add to your list the following item: Robot Gardener, weed and crab grass killer cartridges, produced by Leeds Chemical Products, Inc., Chicago, Illinois.
>
> Active ingredients:
>
> | | |
> |---|---|
> | Potassium cyanate | 64 per cent (!) |
> | 2.4 dichlorophenoxy-acetic acid | 18.4 per cent |
> | Inert ingredients: | 17.6 per cent |
>
> Caution: Harmful if swallowed.
>
> Net weight of the package: 5.5 ounces. This would mean about 3 ounces of potassium cyanate per package. To my knowledge a tiny fraction of 1 ounce is lethal. May I have your opinion?

Although the terminology of modern organic drug products is very complicated and confusing, the simpler terminology of older inorganic products also has its pitfalls. Cyanide, cyanate, cyanamid, and thiocyanate (inorganic and organic) form entirely different compounds. In this instance it is obvious that the physician was confusing cyanate and cyanide. Contary to popular belief, cyanate differs markedly in toxicity from cyanide. Cyanate is alkaline, and this property probably outweighs any immediate toxicity from conversion to cyanide, especially if lavage has been performed. There is surprisingly little valuable information on potassium cyanate. In view of the increasing use of this preparation as a weed killer, it is well to allay the impression that the lethalness of cyanide would be associated with minor ingestions of potassium cyanate. The estimated lethal dose of potassium cyanate is 50 Gm., and the estimated lethal dose of a cyanide is 60 to 90 mg. We have had several frantic phone calls pertaining to the ingestion of a cyanate. In all cases the outcome was favorable. Physicians with German training may be confused especially, because "cyan," or "zyan," is the German equivalent for cyanide.

(Number fifty-four in a series of Accidental Chemical Poisonings)

If the world seems cold to you, kindle fires to warm it!—Lucy Larcom

*Medicine and the Social Revolution in Great Britain**

A. LAWRENCE ABEL, M.S., F.R.C.F., LONDON, ENGLAND

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In recent years Britain has undergone a great social revolution. Hunger, poverty, and the fear of the effects of underemployment and of illness have largely been swept away. A tremendous building program has provided decent houses for many people who previously lived in slums. The standard of living for the vast majority of our people has risen more in ten years than in the previous hundred. The situation was summed up by an aristocratic old lady who lives with her husband, without resident help, in one of the stately homes of Britain, when she said to me recently, "We have lived through a revolution but we still have our heads on our shoulders and we still have our roof over our heads." It has been a bloodless revolution.

One hundred fifty years ago Jeremy Bentham, the great philosopher, conceived that medicine had a duty to society as well as to the individual: that doctors should be concerned more with the public health and less with the relief of individual persons. Professor Sir Arthur Thomson, the immediate past president of the British Medical Association, recently pointed out that in the last century it was the physicians who "far from opposing change, were the leaders in liberal reforms" because they "were ordinary decent men whose work brought them in close contact with the misery of the poor and underprivileged." The physicians themselves were responsible primarily for all the great advances which were eventually established by law: notification of infectious diseases and of the causes of death, the need for greater care of the poor, compulsory vaccination against smallpox, the medical care of school children, the campaign against nefarious secret remedies and abortifacients, and the reform of medical education. Many of these were the subject of bitter controversy but the British Medical Association succeeded in bringing about much-needed reforms.

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* This address was given before the Eastern Regional Meeting of the Pharmaceutical Manufacturers Association, New York City, Socio-Economic Development Session, December 9, 1959.

During the last fifty years it has again been the association of the vast majority of the physicians of Britain which originated reforms: In 1905 they stressed the need for contract practice in many areas, and a few years later they acknowledged "that adequate medical attendance shall be placed within the reach of all members of the community."

Illness was a greater tragedy at the beginning of the century than now. In 1911 national insurance was introduced for home illness only and for only 25 per cent of the workers but not for their families or dependents. The figure was increased to 40 per cent early in World War II. Hospital service was not included. Some hospitals were supported by voluntary donations, some by city taxes. Patients were charged a small proportion of the hospital cost. In voluntary institutions the consultants and specialists were not paid but lived by fees from private patients treated mainly in private clinics, in nursing homes, and in a small number of private beds in a very few of the hospitals. Municipal hospital doctors were paid a small but living wage but did not see any private patients.

The insurance system won general support for two reasons: first, the management and control of professional work and the disciplining of physicians was left in the hands of the profession who exercised collective responsibility; and second, plenty of work remained for a medical man outside the insurance scheme.

But soon after World War I further reports by the British Medical Association stressed the need for the inclusion of dependents of low-income workers and the need for the provision of adequate hospital facilities. Neville Chamberlain's Local Government Act of 1929 led to a great improvement in municipal hospitals, particularly in the counties of London and Middlesex.

The next great reform was foreshadowed in the famous Beveridge Report of 1942 introducing the concept of the welfare state at a time when our Prime Minister was Winston Churchill.

Throughout the many plans and recommendations, however, we physicians called attention to the undesirability of direct government control.

The National Health Service

Cost.—The politicians promised so-called free medical care for the whole nation and for visitors taken ill on our shores. They estimated that it would cost $500 million a year. But within three years it cost $1,200 million and now it costs $2 billion a year. "Free" medical care is costing more than before and has become one of the most expensive items of the budget. Nevertheless, it amounts to a small percentage of what I believe economists these days call the "total national product." The cost of a complete health service for the whole population in Britain now works out at an annual premium of approximately $40 a year per head. About nine tenths of the cost is paid through general taxation and only one tenth through insurance contribution.

With Regard to the Public.—Every person may have his or her own state doctor or may seek a doctor privately; many have both. There is no doubt that the vast majority of the community favors the service because it gives them what they look on as free treatment and because they think illness is divorced from almost all financial worry. The majority of the wealthy and poor alike demand what they call their rights and usually get them. Many insist that the family doctor send them to a hospital where, depending on the nature of their illness, they are seen by a consultant or by a junior member of the hospital staff. There has been an extension of consultant services throughout the country, leading to easier access to all types of specialists nearer the patient's own home.

I know something has been said on this side of the Atlantic about free choice of physician in Britain's Health Service. I would like to make it clear that the patient in our health service has complete freedom of choice of his general practitioner. As for the specialist's advice, the patient always has had to depend on the recommendation of his family doctor. If the patient is too ill to attend a hospital outpatient clinic the doctor can arrange through the National Health Service for a home consultation with a specialist, and the specialist receives a fee for it. Patients admitted to a hospital have no choice of specialist.

Many doctors feel that a patient who seemingly pays nothing for his medical care tends to lose his self respect and that this changes the doctor-patient relationship. Some feel that the patients tend to develop a questioning attitude and that the status of the doctor has been lowered, that he is treated with less respect.

Others feel that patients should have a positive sense of their own responsibility for medical care and suggest that at least a small payment should be made so that patients will realize they cannot get something for nothing. This, it is believed, would deter irresponsible use of the service and go a long way to restore the independence of the doctor. It is also believed that this would give the patient a greater interest in his own recovery and that a small payment would be a useful part of therapeutic treatment. However, all are agreed that there should be no insurmountable financial barrier between any member of the community and the recovery of his health. The difficulty is to decide exactly what is a financial barrier.

The government originally promised that the people of Britain or visitors to our Islands who are taken ill there might have any part or all of the service. However, a patient who consults a doctor privately is not allowed to obtain any free drugs. He must either go to a state doctor as a state patient and have his drugs ordered on a state form, or, if he consults a doctor in a private capacity, he must pay for his own drugs which in effect means that he pays twice. This affects many people who would like private consultation at their convenience or at their own home without waiting in a queue but who think they cannot afford an added burden such as payment for drugs.

That there is a wish for private medical care is exemplified by the fact that there has been a great and rapid increase in the numbers who cover themselves for private medical expenses by provident insurance schemes. The fees payable cover reasonable medical fees for family doctor and specialist and for the cost of a private room in a hospital or a nursing home. Thus, as in your country, the family is assured of private medical care and treatment without hardship.

With Regard to Family Doctors.—Among the benefits claimed for physicians is the fact that they receive a steady income without bad debts and without having to send out a large number of small accounts at the end of each month or quarter. Many feel that this is a great benefit, and as few can afford secretarial assistance it benefits the wives who in many cases were loaded with this practical side of medical practice. However, the rising cost of living and the falling value of money is quickly noticed because the doctor cannot raise his fees but has to wait until protracted negotiations with the bureaucracy produce, or fail to produce, a little more.

Another claimed advantage is that group practice, that is, several doctors working together, has been encouraged and is increasing. A rota system is worked out for night and week-end duties which affords more leisure for the doctors. They are able to leave home for refresher courses at rare intervals and substitutes are paid for.

Another good point which the service was intended to bring about was that physicians would have more time for the care of the health in addition to the illnesses of the people. With the removal of a financial barrier the doctor should be able to see patients earlier in the course of their illness. This is true for the smaller, more intimate, but poorly paid practices, but not for the larger industrial practice with a full list. One doctor recently wrote that people still come in late stages of disease saying, "I know you are so busy, so I did not want to bother you, doctor."

A physician is allowed to be responsible for not more than 3,500 persons (on his list as it is called), although dividing the 22,000 general practitioners into the number of population means that the average number per doctor is 2,250. Many doctors feel that good medical care is difficult with 3,500 persons to attend, which happens in big industrial areas. On the other hand, in small rural communities, a small list carries a much greater proportion of expenses and many doctors suffer financial hardship.

The family doctor receives payment on a sliding scale depending on the number of persons on his list, and averages $3 per person per year. After deducting allowable expenses the average doctor's income is about $6,800 per year before he pays tax. In addition to his state patient, a doctor may treat patients privately, but private practice has diminished so much that it seldom contributes more than 1 or 2 per cent to his income, and rarely as much as 5 per cent.

Among the disadvantages are the facts that all family physicians are paid on the same scale and there is no increased income for the better practitioner. There is, therefore, a threat to natural incentive to improve the quality of medical work. The measure of success is the size of the list. Many feel that too many patients are needed on a doctor's list to produce an adequate income.

Many physicians would welcome an item of service payment as affording a greater incentive than a uniform capitation fee which depends on the size of the list and not on the amount of work done.

In a few areas family physicians have access to a small hospital where they can study their patients and treat them for minor disabilities. These are linked with bigger hospitals and have specialist services available. Unfortunately the number of hospitals available for this aspect of family doctor work is very small and the beds do not amount to more than about 1 per cent of the total hospital beds of the country. Many keen doctors who feel they would like to follow their patients to the hospital and take some part in their daily care complain that they are unable to do so and that there is consequent loss of continuity of treatment.

Many physicians would like to carry out small surgical procedures for their patients but they receive no extra pay for this and so they send many more of their patients to hospitals. The increase in the number of patients referred to hospitals has resulted in long waiting lists especially for the more chronic cases.

Since the National Health Service was put into effect it has been difficult, if not impossible, to change from one town to another, and general practitioners are excluded from all hope of promotion to hospital consultant.

WITH REGARD TO HOSPITAL STAFFS.—All the hospitals, except a handful of religious and masonic ones, are nationalized. This means that specialists have virtually no beds for treating patients except in the state hospitals. Very few of the previously voluntary hospitals had up to 10 per cent of their beds for fee-paying patients. Most, including the municipal hospitals, had none. For the wealthy, and for others who have been thrifty to ensure privacy and the choice of their specialist, a few hospitals offer a diminished number of private beds. Private clinics are very few and so most of the specialist's income is derived from the government. However, all specialists in ex-voluntary hospitals are now paid for work they previously did for nothing. Those in ex-municipal hospitals are paid the same rates as the doctors holding more important positions in other hospitals.

Many consultants believe the profession no longer has the same influence in administering and planning hospital service and complain about excessive infiltration by lay people into hospital management. Also they charge that administrators attempt to run hospitals without physicians, and that medical men are to a large extent excluded from their councils. They feel that appointments to hospital boards tend to be political. No more than 25 per cent of a hospital board consists of doctors. There is a tendency to hand-pick medical advice and for medical representation not to be elected democratically. Members of hospital staffs have very little say in choosing new colleagues.

Pay of Physicians.—At about the time of the inauguration of the service certain reports were accepted by the government and profession alike on the understanding that they formed the Magna Cartas for the future payment of doctors, that medical standards should be preserved, and that remuneration would be adjusted to the changing value of money. The politicians promised that they would carry out these recommendations. What happened to this promise? Within two or three years family doctors complained that the government was underpaying them. The government did not agree but allowed an independent arbitrator to adjudicate; the learned judge found that there should be 100 per cent increase, and this was paid in 1951. Hospital physicians, who almost equal in numbers family physicians, also claimed an increase, but the shock of the family physicians' award was so great that arbitration was, and still is, consistently refused. Although small increases have been made since, the value of money has diminished by about 30 per cent and this increase was claimed two or three years ago. For months the government took no notice and finally set up a Royal Commission to investigate the whole matter. This consists entirely of nonmedical men who are expected to report within the next few months.

Throughout the eleven years of the service all grades of hospital doctors—consultants, senior residents, and interns—have received only between 55 and 65 per cent of what was promised. However, the number of consultants and specialists throughout the country has increased by a third and all have regular pay, a good deal of security of tenure, and a pension at the age of sixty-five. They are, of course, tied to their hospital duties for the proportion of their time their contract covers.

In addition to this work many have to serve on innumerable committees in a voluntary capacity. Many of the most senior and top-grade specialists have to spend long hours arguing with the government, usually with little or no beneficial result.

With Regard to the Hospitals.—One in five British hospitals is one hundred years old and two out of three are seventy years old. Before World War II $50 million was spent a year on new hospitals and major extensions which represented 32 per cent of hospital expenditure. In the first ten years of the Health Service only $30 million was so spent. A year has been spent on improvements and no new general or mental hospital has been built in England or Wales since before the war. Lack of hospital expenditure was, to some degree, dependent on the precarious economic conditions in the few years after the war, but recently the sum has been increased to $60 million.

The suggestions of the profession that hospitals should be grouped have been adopted, and this should have led to an economy of man power, better experience for the specialist, and better care for the patient. Alas, this does not always come about. The state assumed responsibility for providing enough properly equipped hospital beds where they are needed; but in some areas it is more difficult to get into a hospital than before, and in some places there are long waiting lists.

A number of new hospitals are now in the process of being built, but the British Medical Association has recently pressed that these should be speeded up and other new hospitals begun as quickly as possible. The association has pointed out the need for more air conditioning and for more adequate facilities for sterilization and for recovery wards, and maintains that at least one third of the beds should be replaced by new hospitals. Instead of the $100 million promised for two years hence the British Medical Association is pressing for $200 million per annum now.

Drugs.—I feel sure that most of you will agree that in the last twenty-five years there have been more advances in medicine than in the previous twenty-five centuries. Many of these advances are due to the exertions of physicians and scientists in our hospitals and universities, but I would be the first to acknowledge the enormous role which has been played by the scientific departments of the great pharmaceutical houses. Since the introduction of the Health Service the number of hospital beds has decreased by 12 per cent and this is, to some extent, a reflection of the dramatic and pleasing advances in the treatment of tuberculosis and other diseases. The pharmaceutical industry can well take pride in the part it has played in bringing this about.

The pharmaceutical costs of the health service are nearly 10 per cent of the total cost and have risen to over $160 million. At least 10 per cent of this has been spent by the pharmaceutical houses on research work in Britain.

J. H. Dunning, M.D., in his book *American Investment in British Manufacturing Industry* (Essential Books, 1955) pointed out that only 7 of the 24 United Kingdom companies specializing in ethical drugs are British owned. The American invasion springs from the great depth of activity, willingness to take risks, and freedom over financial controls of the United States pharmaceutical industry.

The president of one of your great pharmaceutical companies said, "We feel that whereas the United States programs may be particularly strong in some areas . . . our research colleagues abroad are particularly strong in complementary scientific disciplines . . ." Sir Arthur Thomson recently said, "No one now questions the value of medical treatment and it is important to remember that most of the improvements have been derived from cultivation of basic sciences rather than the development of clinical methods."

The head of the American company also said, "But beyond strengths in individual scientific disciplines is the matter of scientific philosophies, which also differs—slightly but significantly. Therefore, if we can share not only strengths but, in addition, exchange philosophies, both the American and British research functions will be enriched whether or not any specific products are developed."

American firms often employ British scientists to work in the United States. But some Americans are investing in British scientists in Britain, knowing that if they pick the right men results will follow. The Americans are pouring large sums into research and development. One firm alone employs over 700 in Britain and last year spent $12 million for this purpose.

Successive governments, Labour and Conservative, are responsible through the National Health Service cut-price policy for curbing the research potential of the British industry, and now American firms are utilizing British skills. If cheap drugs are a political necessity we may well ask if a government will make amends by allowing tax concessions for research or providing more money for research through other channels.

Conclusions

The basis of a successful health service can be built only on a sound relationship between medicine and the state, and it is this with which we have been wrestling during the first eleven years of the Health Service in Britain. As Sir Arthur Thomson has pointed out, "Most doctors were convinced that medical reform was both desirable and inevitable." They "were anxious lest reform should take such a shape that they forfeit their independence and that the ideals of medicine will be lost." Most doctors are more disturbed about the fate of their profession and the nature of their work than they are about their pay. . . Social policy must influence practice but it must never dominate it and exclude that intimate relationship between a doctor and his patients which is essential to all good clinical work."

Every nation must determine the precise relation of medical practice to society. The medical profession in my country does not wish to wreck the National Health Service. On the contrary it is only keen, hard, energetic labor by the vast majority of practitioners that has made the service work and has improved it, but there is still much to do. It acknowledges that some public organization of medical service in my country is necessary but it wishes decisions on organization to be removed from the realm of politics. For every nation there is the problem of what to do for the portion of the population that cannot afford to pay for full medical care. I feel there must be some form of insurance, voluntary or compulsory, perhaps with some form of state aid or partnership, but I feel that those who can afford to look after themselves should be encouraged to do so. I strongly advise that however much the ordinary citizen is helped financially for medical care he should be asked to make some payment for the services he receives. The big problem is to remove the fear of many that a serious illness or operation will be crippling financially.

I warn you of the greatest danger of all: the bureaucratic machine, which by the turning of the screw can do more damage to doctors and to the general welfare of the patients than anything else. Fortunately in Britain the profession is not completely nationalized but a large proportion of it is, and there seems to be a continual struggle between our profession and the bureaucracy. A sound health service should be based on freedom for the patient and the profession.

I think if Abraham Lincoln were here today he might have used words similar to those he used at Gettysburg:

> It is for us to be dedicated to the great task before us, that we here highly resolve that these professions under God shall have a new birth of freedom, and that freedom of medical care and treatment of the people, by the people, for the people, shall not perish from the earth.

In thanking you once again for the honor you have done me, in inviting me to speak to you, and in listening to me, I am reminded of the words of that great American poet and author, Ralph Waldo Emerson, who in a speech in Manchester, England, one hundred thirteen years ago, said:

> So, gentlemen, I feel in regard to this aged England. . . pressed upon by transitions of trade and competing populations—I see her, not dispirited, not weak, but well remembering that she has seen dark days before; indeed, with a kind of instinct that she sees a little better in a cloudy day, and that, in storm of battle and calamity, she has a secret vigour and a pulse like a cannon.

(*Number two of a series on Changing Times for Medicine*)

Justice is truth in action.—Disraeli

SPECIAL ARTICLE

Health Clinics Could End the Hospital Bed Shortage

ANGELO S. D'ELOIA, M.D., BUFFALO, NEW YORK

(*From the Woodside Laboratories*)

When Edwin L. Crosby, M.D., director of the American Hospital Association, announced recently a new abstract reporting service which would help members to keep informed about the pertinent essentials appearing in current publications, he reflected his organization's growing concern with the problems of overcrowding and of rising hospitalization costs. The association's flexible attitude and interest in new methods to relieve those twin pressures is evidenced by Dr. Crosby's declaration that: "The hospital field is alive with change. Change requires altered patterns of medical practice, of hospital function, of capital financing, and of community planning."

For a long time many hospital administrators have been making conscientious efforts to cope with these major problems within their own limited spheres of influence. For example, in 1958 Costello and Tanaka[1] classified chronically ill patients according to their individual functional needs and then, by adjusting available hospital services to that classification, they were able to reduce the census of the seriously overcrowded St. Louis Chronic Hospital from 1,535 to 1,458 patients and they were able to eliminate a waiting list of 700 patient applicants.

At about the same time Thoms[2] and his Manchester Hospital group attacked the problem by a method which they call "progressive patient care." In substance, this latter plan attempts to adapt the amount and type of hospital service to the degree of seriousness and the changing pattern of a patient's illness. Emotional as well as physical needs are taken into consideration. Although employed successfully by the Manchester group and others, it seems to us that the application of this technic might tend to become limited to those institutions where dedicated leadership and a healthy internal situation can combine to insure its success.

On the other hand, our "health clinic" plan permits a more general and pragmatic approach to the problem. It is based on the theory that modern, relatively inexpensive facilities should be built to accommodate the needs of those who are not seriously ill but who nevertheless may require a certain amount of institutional care.

The Role of the Clinic

The role of these clinics is to supplement but not to duplicate the functions of a general hospital. By absorbing a part of the convalescent and chronic population, they will promote a more efficient and profitable general hospital operation, because the total number of patient-care days can be increased substantially and more productive use can be made of hospitals' special facilities and technical personnel.

Preliminary studies made by our group during the last two years indicate that health clinics can be built entirely without public contributions and the cost can be added to the tax rolls. This could result in making more voluntary contributions available for normal general hospital expansion and for the care of the seriously ill.

Establishing a Clinic

I outlined my "health clinic" plan to a group who met in a suburb of Buffalo in the fall of 1958. The following were present at the meeting: a Buffalo surgeon who was then the president of the medical staff of a large general hospital; a general practitioner; his father, the president of a local bank; a successful pharmacist and business man; a certified public accountant; an executive of the Western New York Blue Shield and Blue Cross Plans; the supervisor of the adjoining town of West Seneca; the senior members of Pfohl, Stoll and Roberts, a firm of architects with a background of successful experience in the construction of modern-type public buildings, including the latest county home for the aged; and an attorney who has since been elected to the office of district attorney for Erie County, but who continues to maintain a friendly interest in the experiment.

The plan as proposed to this original group was judged to be fundamentally sound, legal, financially feasible, and worth the effort it would take to put it into operation. Accordingly, the architects were given a list of hospital services which it was believed could be provided better in a privately owned facility operated by local physicians and business men. The list included: (1) x-ray and laboratory services; (2) convalescent care; (3) senility and chronic diseases; (4) certain minor surgical procedures, such as reduction and immobilization of simple fractures, operative dental procedures, and certain simple operations on the skin, nose and throat, and the genital tract; (5) special diagnostic procedures, such as bronchography, retrograde pyelography, salpingography, electroencephalography, electrocardiography, and nuclear isotope studies; and (6) rehabilitation and physical medicine.

It was firmly understood that all of the services in the list were of the type that could be rendered to patients on a home or outpatient basis. The medical procedures would be limited to those which ordinarily could be done in a private office or in the offices of physicians engaging in group practice. The type of institutional care was limited to the type of patient now acceptable for nursing home care.

Planning of Facility

The instructions were to design a facility, the operation of which would achieve three specific objectives: first, to relieve general hospitals of the burden of providing housing and care for patients not sick enough really to need elaborate or expensive hospital facilities and services; second, to spare those with minor ailments the disturbing emotional experience and possible psychic trauma of enforced close contact with patients who might be painfully or seriously ill; and third, to provide for industry, labor, and the public a pleasant, modern, motel-type institution where a complete physical check-up, including all the necessary laboratory and diagnostic procedures, could be accomplished in a club-like atmosphere; to establish an institution specifically planned so that it would supplement but not duplicate the functions of local general hospitals. In brief, the "health clinic" was to combine a modern nursing home and diagnostic unit.

Taking into consideration the fact that general hospital construction costs in New York State now range between $20,000 and $30,000 per bed, the architects were asked to present preliminary plans that would enable a private group to provide these facilities at a lower cost.

The fundamental design of their preliminary plan is shown in Figure 1. Their projected cost at present is $12,000 per bed. As yet, not enough information is available to the accountant for an accurate projection of operating costs, but his prediction is that these costs will range from $11 to $15 a day, as compared with from $16 to $30 a day for general hospital care.

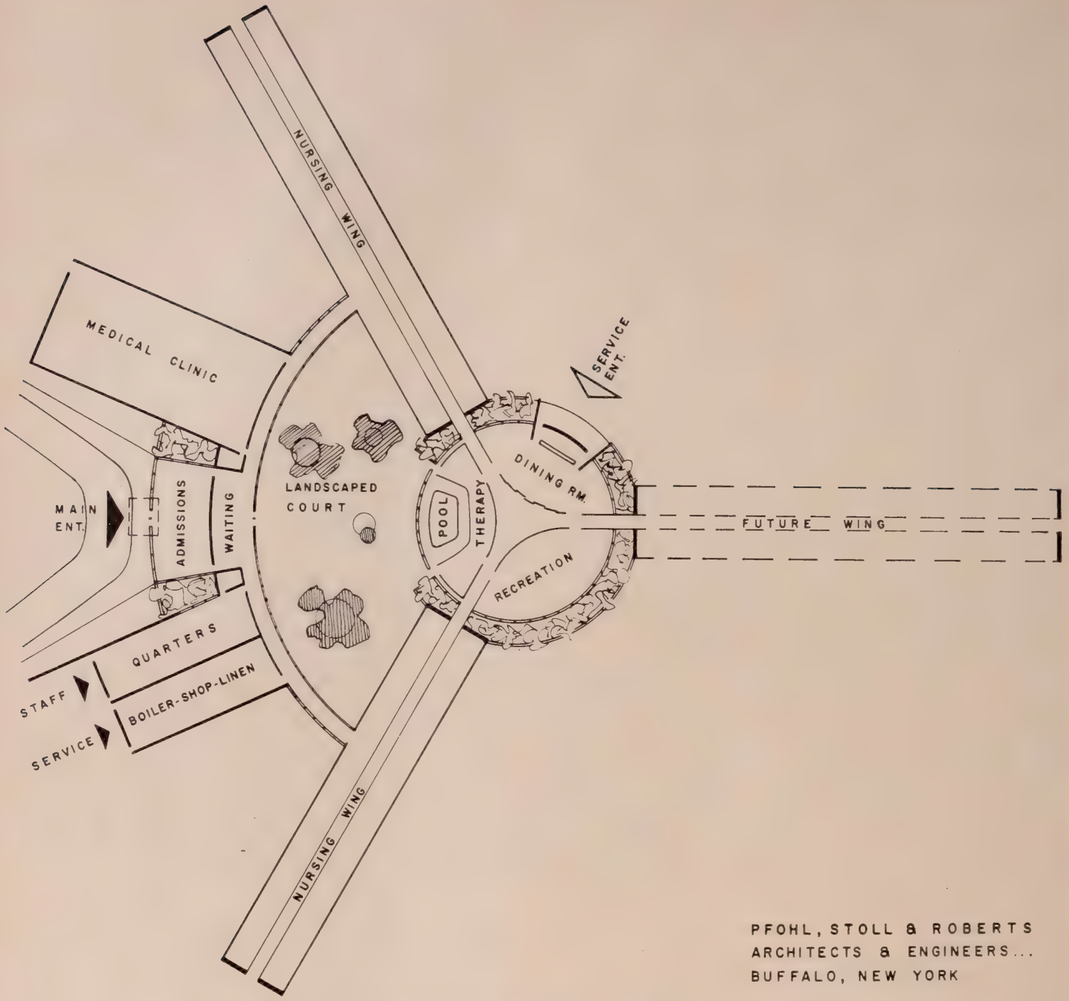
With these rough cost estimates as a starting point, we have set up a small outpatient diagnostic laboratory to serve as a pilot operation for the diagnostic phase of the larger project; and it is now seeking advice and cooperation but not financial assistance from government, community, and private agencies for the institutional phase.

A large tract of land has been purchased at a strategic intersection within easy access from many suburban areas of Buffalo, and the combined know-how of a larger interested group of professional, business, and technical men is being used in the first stage of the experiment now well under way.

Need for Early Publication of Outline

The need for this type of experimentation in the field of medical economics is so urgent that it is receiving a large amount of attention not only from specialists in the hospital field but also from our highest political leaders. But it will take years before any authoritative conclusions can be drawn. In the meantime, important sociologic and political changes will take place. These changes themselves may depend on or be affected by the number and character of the experiments in progress.

Certainly labor is not going to stand by idly. Already the steelworkers have announced that they will not be burdened further by the rising cost of the presently available prepaid medical plans, and the building of their own hospitals and their own underwriting of prepaid plans is under consideration. There is also every indication that industry, the general public, organized medicine, and the associated professions are all restive and will welcome such experimentation.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SERVICE ENT.
DINING RM.
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MAIN ENT.
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FIG. 1. The fundamental design of the preliminary plan of the health clinic.

For this reason, we believe that the early publication of the broad outlines of our experiment, the objectives sought and the technics employed, will serve to promote the free interchange of ideas among all who may be undertaking similar experiments and thereby accelerate the development of a larger coordinated program.

Conclusion

In conclusion, a word of explanation about the title of our project, "health clinic." At this point, it is difficult to judge whether that is the most suitable name, but certainly it has much to commend it as compared with other terms which suggest the idea of disease and chronic disability.

The title "health clinic" is designed purposely to orient the patient, the professional staff and the management to the primary objective of the facility. Good health is not a definite entity with hard and fast limits. For example, who could have evaluated Franklin D. Roosevelt's health status properly or his capacity for work during the epic stages of his career when almost alone he held the destiny of the entire world in his hands. Health is rather the intangible ability of an individual to cope with stress, especially when this stress is brought on by injury or disease. Because it is relative and highly personal, every physical, intellectual, and emotional influence which tends to augment the mobilization of an individual's reactive powers and strengthen his will to get well must serve to improve his health and sense of well-being. Since the facility envisioned will accept only those who are not seriously ill, most of the treatment will be directed toward this end.

Then too, under the broad designation of "health clinic," related experimentation in areas such as preventive medicine, child care, geriatrics, maternity, outpatient psychiatry, and rehabilitation could be encouraged because in each of these areas the idea of continuing or returning health should be foremost and the implication of prolonged disease or deterioration should be avoided strictly.

Finally, we hope sincerely that by the early publication of our aims and objectives, we may invite comments, constructive criticism, or assistance on the part of others with similar objectives, and also we shall be glad to share our future experiences with others experimenting or wishing to experiment in the same direction.

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Knowing Causes Helps Prevent Food Poisoning

The causes of food poisoning—a particular hazard in warm weather—were outlined in the February 27 *Journal of the American Medical Association.* An understanding of the causes is helpful in preventing the illness.

The main cause of food poisoning is bacteria which contaminates the food by multiplying or forming a poisonous substance. When eaten, the food produces acute illness of short duration. Food poisoning caused by staphylococcic bacteria is the most common type encountered in the United States.

When the bacteria is present, only time and the correct temperature are needed to cause an outbreak. At a warm temperature food can become poisoned in five to seven hours in some cases. The foods usually involved in this type of poisoning are ham, cream-filled bakery goods, cheddar cheese, dry skim milk, poultry, and potato salad.

The symptoms of staphylococcic food poisoning—nausea, vomiting, diarrhea, acute prostration, and abdominal cramps—appear within a few hours after the food is consumed.

Another bacteria that can cause food poisoning is salmonella. Salmonellae are abundant in nature and are found most commonly in the intestines of poultry and swine. They are present on the shell of eggs, and when eggs are broken commercially, they find their way into frozen whole eggs, yolks, whites, and in dried egg products. The foods usually involved in salmonella poisoning are inadequately cooked egg products, poultry, or other foods. The symptoms it produces are abdominal pain, diarrhea, chills, fever, frequent vomiting, and prostration.

Several other types of food poisoning can be caused by starch foods inadequately refrigerated and by poultry and meat products cooked and left unrefrigerated at a warm temperature for several hours.

A rare and often fatal type of food poisoning is botulism. In the United States the majority of outbreaks of botulism are related to the consumption of inadequately processed home-canned vegetables of low-acid content such as string beans, beets, and other vegetables. The symptoms are difficulty in swallowing, double vision, difficulty in speech, and difficulty in respiration, followed by death from paralysis of the muscles of respiration.

The article was prepared by G. M. Dack, M.D., professor of microbiology and director of the Food Research Institute at the University of Chicago, as a report to the A.M.A. Council on Drugs.

NECROLOGY

Evelyn V. Berg, M.D., of Great Neck, died at her home on January 25 at the age of fifty-three. Dr. Berg graduated in 1931 from Tufts College Medical School and interned at Philadelphia General Hospital. Dr. Berg was a member of the Nassau County Medical Society and the Medical Society of the State of New York.

Harry Bilmes, M.D., of Brooklyn, died on January 24 at the age of seventy-five. Dr. Bilmes received his medical degree from the University of Montpelier Faculty of Medicine (France) in 1916.

Lucien Melbourne Brown, M.D., of New York City, died on April 15 at his home at the age of sixty-five. Dr. Brown graduated in 1923 from Long Island College Hospital Medical School. Dr. Brown was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Franz Adolph Colmers, M.D., of New York City, died in Stamford (Connecticut) Hospital on April 12 at the age of eighty-four. Dr. Colmers received his medical degree from the University of Erlangen in 1899. At one time he had been medical counselor to the late Queen Eleonora of Bulgaria. Dr. Colmers was a member of the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Nicholas Philip Cosco, M.D., of Middletown, died on March 28 at the age of fifty. Dr. Cosco graduated in 1934 from Syracuse University College of Medicine. He was an associate attending physician and an associate in anesthesiology at the Elizabeth A. Horton Memorial Hospital and a consulting physician at Middletown State Homeopathic Hospital and St. Anthony's Hospital in Warwick. Dr. Cosco was a member of the American Academy of General Practice, the American Public Health Association, the Orange County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry William Dangler, M.D., of Brooklyn, died on March 27 at the age of seventy-eight. Dr. Dangler graduated in 1907 from Long Island College Hospital Medical School. He was a Fellow of the American College of Surgeons and a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Florence Timothy Donovan, M.D., of Wilton, Connecticut, formerly of Staten Island, retired, died on April 25 at his home at the age of seventy-four. Dr. Donovan graduated in 1911 from Cornell University Medical College. He was a former director of surgery and president of the medical board at Staten Island Hospital and a consultant in urology at Sea View Hospital. Dr. Donovan was a Fellow of the American College of Surgeons and a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jack Russell Dordick, M.D., of New York City, died in Beth Israel Hospital on April 22 at the age of forty-seven. Dr. Dordick graduated in 1936 from New York University Medical College and interned at Beth Israel Hospital. He was an associate attending physician in arthritis at Beth Israel Hospital and chief of the arthritis clinic at the Beth Israel Hospital Outpatient Department. Dr. Dordick was a Diplomate of the American Board of Internal Medicine and a member of the American Rheumatism Association, the New York Academy of Medicine, the New York Rheumatism Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William John McMurray, M.D., of Bronxville, died on April 1 at the age of sixty-one. Dr. McMurray graduated in 1924 from the University of Toronto Faculty of Medicine. He was an attending physician at Lawrence Hospital. Dr. McMurray was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Mistretta, M.D., of Brooklyn, died at his home on April 15 at the age of seventy-five. Dr. Mistretta graduated in 1913 from Columbia University College of Physicians and Surgeons. He was a member of the New York County Medical Society, the Medical Society of the State of New

York, and the American Medical Association.

S. John Nilson, M.D., of New York City, died in St. Luke's Hospital on April 25 at the age of seventy-six. Dr. Nilson graduated in 1912 from Columbia University College of Physicians and Surgeons and interned at Lying-In and Bellevue Hospitals. He was medical director emeritus of the America Fore Loyalty Group Insurance Companies where he had founded its Laboratory of Industrial Hygiene and Toxicology. Dr. Nilson was a member of the American Public Health Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anthony Salvatore Puglisi, M.D., of Brooklyn, died on October 25, 1959, at the age of fifty-eight. Dr. Puglisi graduated in 1926 from Boston University School of Medicine. He was an assistant in obstetrics and gynecology at the Lutheran Medical Center. Dr. Puglisi was a member of the Kings County Medical Society and the Medical Society of the State of New York.

Edwin George Ramsdell, M.D., of White Plains, died on April 13 at his home at the age of seventy-three. Dr. Ramsdell graduated in1908 from Columbia University College of Physicians and Surgeons and interned at Presbyterian Hospital. He was emeritus director of surgery and chief of staff at the White Plains Hospital, a consultant in surgery at New York Hospital, Westchester Division, and Mount Vernon, Peekskill, and Lawrence Hospitals. In 1934 he was president of the Westchester County Board of Health and a former president of the American Goiter Association. For his war services he was made a Chevalier of the Legion of Honor and received the Croix de Guerre with Palm. Dr. Ramsdell was a Diplomate of the American Board of Surgery, a Fellow of the American College of Gastroenterology, a Fellow of the American College of surgeons, and a member of the American Goiter Association, the New York Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lewis Byrne Robinson, M.D., of New York City, died on April 24 in St. Luke's Hospital at the age of seventy-four. Dr. Robinson graduated in 1911 from Columbia University College of Physicians and Surgeons and interned at St. Luke's Hospital. He was a consultant in dermatology at Presbyterian and Englewood (New Jersey) Hospitals and an associate clinical professor of dermatology at the College of Physicians and Surgeons. Dr. Robinson was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Charlotte Christine West, M.D., of Little Neck, died on April 4 at the age of eighty-seven. Dr. West graduated in 1894 from Woman's Medical College of Pennsylvania. She was a member of the County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Chester F. S. Whitney, M.D., of Ossining, retired, died on April 13 in Doctors Hospital at the age of eighty-four. Dr. Whitney graduated in 1899 from New York University and Bellevue Hospital Medical College and interned at Bellevue Hospital. For forty years he was with the medical department of the Home Life Insurance Company, retiring as its director in 1940. In World War I he organized an ambulance unit at New York University and in 1924 received a gold Medal of Honor from the French government for "honorable and distinguished conduct." In 1932 he received the New York University Alumni Meritorious Service Medal and in 1958 the University's Presidential Citation. Dr. Whitney was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Surgery Twice as Safe Today

Surgery today is almost twice as safe as a generation ago, according to *Patterns of Disease*, a Parke, Davis and Company publication for the medical profession.

Surgical mortality has dropped from 0.14 per cent in 1925 to 1934 to 0.08 per cent for 1945 to 1954—a decrease of nearly half. Even more dramatic is the reduction in mortality rates for certain specialized operations. In 1956, for example, the mortality rate from the procedure to correct aneurysm of the abdominal aorta was 1.8 per cent—only three years earlier the rate had been 25 per cent.

MEDICAL MEETINGS

American College of Chest Physicians

The American College of Chest Physicians will hold its annual meeting in Miami Beach, Florida, June 8 through 12. Headquarters for the meeting will be the Saxony Hotel.

National Medical Civil Defense Conference

The Council on National Security, American Medical Association, will hold its eighth annual national medical civil defense conference at the Americana Hotel in Miami Beach, Saturday, June 11. The year's conference is being presented by the Medical Department of the United States Navy.

Society of Nuclear Medicine

The seventh annual meeting of The Society of Nuclear Medicine will be held at the Stanley Hotel, Estes Park, Colorado, June 22 through 25. Scientific information will be presented which covers every phase of research, medicine, and surgery as it concerns the use of nuclear phenomena in the diagnosis and treatment of disease. Special emphasis will be given to the diagnosis and treatment of thyroid disease, therapeutic use of radioisotopes, and "tools of the trade."

For information and registration contact: Mr. Samuel N. Turiel, Administrator, The Society of Nuclear Medicine, 430 North Michigan Avenue, Chicago 11, Illinois.

Tri-Service Conference on the Biological Effects of Microwave Radiation

The fourth annual Tri-Service Conference on the Biological Effects of Microwave Radiation will be held at the New York University Post-Graduate Medical school of the New York University Medical Center, 550 First Avenue, New York City, August 16 through 18.

The conference is sponsored by the Air Research and Development Command of the Air Force. It will bring together key researchers in the biologic field and related scientific disciplines with representatives of industry, universities, and various government agencies.

Sixth International Congress of Internal Medicine

The sixth international congress of internal medicine will be held in Basle, Switzerland, August 24 through 27. Principal subjects of the congress will be, "Pathogenesy and Therapy in the Edema" and "Enzymic Regulations in the Clinic." Official languages of the congress will be German, French, and English.

The Hazards of Antibiotic Therapy

One of the chief hazards of antibiotic therapy lies in an attitude and not in the therapy itself. Reliance on antibiotic agents to the exclusion of traditional aseptic practice has resulted in the accumulation of resistant bacteria in the hospital environment until it is dangerous to personnel as well as to patients. Sepsis has actually become an occupational hazard. To illustrate the clinical habits of the staphylococcus, the author presents the case of a woman whose staphylococci were atypical to the hospital environment and thus could be followed as they spread to bedding, to dust cultured from the window sill, to the hospital laundry, and so forth.

In the spread to other patient areas, a number of factors are implicated: the push broom or dry mop which becomes contaminated and carries the organisms to halls and other rooms; air currents from exhaust fans, open fire doors, doors to stairwells left open, air conditioning machines, the bedside water carafe. Cleaning, properly carried out, is an important constituent of therapy. It should be done systematically by trained teams, using mechanical scrubbing machines and vacuum cleaners. It may be expensive: about 85 cents per square foot per year, but it is far cheaper than caring for septic patients. Here are the minimal bacteriologic criteria that should be enforced: operating room, (floor) 0–5 sq. cm.; ward, 5–10 sq. cm.; operating room, (air) 5–10 cu. feet; ward, 10–20 cu. feet; bed rail, 5–10 sq. cm.; soap, sterile; bedside water, comparable to water supply; bedding, 2 mm. zone inhibition.—*Pennsylvania Medical Journal, April, 1959, Carl W. Walter, M.D.*

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Spring Clinical Day—Thomas F. Frawley, M.D., professor of medicine and director of endocrinology and metabolism, participated in a panel discussion at the annual Spring Clinical Day on April 9. Ernest Witebsky, M.D., dean, University of Buffalo Medical School, moderated the panel on "The Expanding Vista of Immunology."

Grants—The National Cancer Institute has awarded $80,165 to be used on research for an unknown factor, either virus or chemical, which may be present in the secretions of patients with lung cancer. The three-man research group engaged in different facets is: Arthur A. Stein, M.D., professor of pathology, principal investigator; Samuel R. Powers, Jr., M.D., professor of surgery, and Dr. Joseph V. Landau, research associate in oncology.

The National Heart Institute has granted $53,360 for a four-year study which will compare heart attacks and blood clotting characteristics in upstate New Yorkers with those in East African natives. The current study will be carried out simultaneously in Albany and East Africa. In Albany will be Dr. Wilbur A. Thomas, Cyrus Strong Merrill professor and chairman, Department of Pathology, and Drs. R. Foster Scott and Assaad S. Daoud, assistant professors of pathology. The African study group will be made up of scientists on the faculty of Makere Medical College in Kampala, Uganda, which is affiliated with the University of London.

Commencement—Herman E. Hilleboe, M.D., Commissioner of the New York State Department of Health, will deliver the address at the 130th commencement exercises. Dr. Hilleboe will also receive an honorary degree of Doctor of Science.

Columbia University College of Physicians and Surgeons

Guggenheim Fellowship—Lester Charles Mark, M.D., associate professor of anesthesiology, has received a Guggenheim Fellowship. He will pursue "Studies of the Effects of Barbiturate Poisoning on Acid-Base Balance and Kidney Function."

New York University Medical Center

Grant—The National Institutes of Health has issued a grant in the amount of $125,000 to study the effectiveness of an injection treatment (hyposensitization) on children allergic to ragweed. Vincent J. Fontana, M.D., assistant clinical professor of pediatrics, will be the principal investigator and consulting with Dr. Fontana will be L. Emmett Holt, Jr., M.D., and Dr. Donald Mainland, chairmen respectively of the Center's Departments of Pediatrics and Medical Statistics.

New York University School of Medicine

Appointed—S. Bernard Wortis, M.D., has been appointed as dean of the School and the Post-Graduate Medical School and deputy director of the New York University Medical Center. Dr. Wortis will continue as professor and chairman, Department of Psychiatry and Neurology.

State University of New York Downstate Medical Center

Awards of Distinction—Three awards of distinction for outstanding service to medicine were presented by the Medical Center at the Centennial Convocation, March 30. The awards went to Jean Redman Oliver, M.D., distinguished service professor of pathology of the State University, John J. Masterson, M.D., president of the Board of Trustees of the Kings County Medical Society, and

Frank Babbott, M.D., former president and trustee of the Long Island College of Medicine, the predecessor institution of the Downstate Medical Center.

Dr. Oliver served as professor and chairman of the Department of Pathology at the Downstate Medical Center and its predecessors for twenty-five years, from 1929 to 1954. He was an outstanding member of the faculty, earning national and international recognition as a teacher and investigator in the field of kidney pathology. He and his co-workers developed a technic of microdissection which, together with the application of other special procedures, enabled them to make observations which form the present basis of kidney pathology in man.

The second award recipient, John J. Masterson, M.D., Brooklyn, is known by his colleagues as the "dean and elder statesman of medicine in Brooklyn." Dr. Masterson was born in Brooklyn, graduated from the Long Island College of Medicine and has been in medical practice in Brooklyn for fifty years. He has been chairman of the board of trustees of the Kings County Medical Society for twenty-five years and a trustee of the Medical Mission Board and a past president of the Brooklyn Catholic Physician's Guild. Dr. Masterson was last year named Catholic Physician of the Year by the National Federation of Catholic Physicians Guild.

Dr. Frank Babbott, who received the final award, was appointed to the faculty of the Department of Pediatrics of the Long Island College Hospital in 1924. He was appointed assistant dean of the College in 1927 and became the first president of the reorganized Long Island College of Medicine in 1931. Forced to resign in 1942 because of ill health, he served as a member of the Board of Trustees until 1950 and as its chairman during most of this period.

Special Lectures—The annual Murray B. Gordon Lecture was delivered on March 7 by DeWitt Stetten, Jr., M.D., Associate Director in Charge of Research of the National Institute of Arthritis and Metabolic Diseases. Dr. Stetten spoke on "The Role of Glycogen in Health and Disease."

A special Sigma Xi Lecture was delivered on March 21 by Professor Stephen Toulmin, Director, Nuffield Foundation Unit for the History of Ideas and John Dewey Professor of Philosophy, Columbia University. The Title of Professor Toulmin's lecture was "William Harvey's Dilemma Over Spirits."

On April 11 L. Emmett Holt, Jr., M.D., professor and chairman, Department of Pediatrics, New York University School of Medicine, delivered the first of a series of special Centennial lectures. His subject was "Protein Economy in the Growing Child."

Postgraduate Teaching Seminar on Pediatric Radiology—On April 28 the Department of Radiology sponsored a Postgraduate Teaching Seminar on Pediatric Radiology. Moderator was John Caffey, M.D., professor of Radiology, College of Physicians and Surgeons, Columbia University. Other participants were: David H. Baker, M.D., chief of radiology, Babies Hospital; John Evans, M.D., professor of radiology, Cornell University Medical Center; Harold G. Jacobson, M.D., chief of diagnostic roentgenology, Montefiore Hospital; Harry Z. Mellins, M.D., professor of radiology, Downstate Medical Center; John E. Moseley, M.D., chief of radiology, Sydenham Hospital; Jerome H. Shapiro, M.D., attending radiologist, Montefiore Hospital. The seminar was held in the Institute of Pathology auditorium of the Kings County Hospital Center across the street from the Downstate Medical Center's Basic Sciences Building.

Appointments—James I. Berkman, M.D., and Thomas G. Morrione, M.D., and David M. Spain, M.D., have received clinical professorships in pathology; John Caffrey, M.D., has been appointed professorial lecturer in radiology, and John B. Manly, M.D., has been made an assistant professor of surgery.

State University of New York Upstate Medical Center

Awarded—The American Medical Foundation has awarded $6,327 for the coming year which will be used for medical education.

Honored—Herman G. Weiskotten, M.D., Dean Emeritus, was one of 17 outstanding citizens honored at New York Medical College's centennial dinner on April 18. Dr. Weiskotten was honored for his important contribution to medical education.

Talent is that which is in a man's power; genius is that in whose power a man is.—James Russell Lowell

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

EDITOR'S NOTE: *Because of its interest not only to the Woman's Auxiliary but also to the members of the Medical Society of the State of New York, we are pleased to publish portions of the inaugural address of Mrs. Milton W. Kogan, Oswego, State Auxiliary president for the coming year, as presented on May 11, 1960, at the annual Auxiliary convention in New York City.*

President's Inaugural Address

. . . For this year 1960 to 1961 the Woman's Auxiliary to the Medical Society of the State of New York has chosen as its theme "Participation."

"We want meaning in our lives!" What most people want, young or old, is not merely security, or comfort or luxury, although they are glad enough to have these, but *meaning* in their lives. If you our leaders do not or cannot offer great meanings, great objectives, great convictions, then our members will settle for shallow and trivial substitutes.

People who live aimlessly, who are satisfied by shoddy experiences, have simply not been stirred by any alternative meanings, ethical values, ideas of social and civic responsibility, or high standards of self-fulfillment. This is a deficiency for which we all bear a responsibility. This is the challenge I offer you this year.

By *participation* in all civic responsibilities, and *participation* in all projects of our Auxiliary either on a national, state, county, or local level, you will be filling the great meaning, objections, and convictions and put meaning into your lives and our Auxiliary.

An important part of knowing your Auxiliary consists of knowing your aims and projects. The annual meeting-fall conference is a two-way path for better understanding for county officers and delegates. It is a chance to get closer to your State chairmen and officers through frank review and discussion of plans, projects, and problems and its interests and desires. At the same time it provides the opportunity to see and know in person the women who are providing the leadership in the Auxiliary.

Of vital importance is a review of the growth of this organization under its past leadership, the advantages and opportunities of those who participate for a deeper understanding of the Auxiliary's capabilities for expanding growth and services to all in the year ahead. If our Auxiliary is to be preserved and further developed, it needs the *participation* of an active and well-informed membership—and the larger the better.

Our number one aim this past year and for years to come is "increased membership." This can only be realized by individual initiative and the *participation* of every member to bring in at least one new member. We also need the cooperation of the Medical Society in organized counties to keep the women active. And, in the unorganized counties, we need to form auxiliaries. By increased membership we could have more force in legislation—working principally with the American Medical Association and the Medical Society of the State of New York in bringing the facts before the public in such matters as the Forand Bill or other forms of socialistic legislation.

This kind of thing is difficult to discuss on unemotional grounds. The proportion of elderly in the population is rising. Medical costs are higher. The community unquestionably has an obligation to care for the indigent aged whether they are well or sick. The fallacy is in proceeding from these premises to the conclusion that it is either necessary or wise for the Federal government to take charge. For one thing, private health insurance for the elderly is becoming increasingly available. . . .There is a choice.

If the government instead of expanding its extravagant spending for socialized medicine and so threatening poverty for all would reduce its spending it could lower everybody's taxes and stabilize everybody's dollar.

Which is to be preferred? More bureaucracy and more taxes, more inflation: or sound money and more money for the individual, the family charity, and the community: Which is the better gift for everyone, including the elderly? It is important to remind the public, too, of how much charity work physicians do.

Medical Economics surveys show that doctors devote at least 10 per cent of their working hours to direct charity services and another 1 per cent to noncharity patients who will never be able to pay their bills.

Basically the Auxiliary program remains the same but re-evaluation must be made with special emphasis on our own medical projects first: Mental health with its "problem for the aged" stands high on the priority list. But we should not lose sight of the fact that we must help secure our own doctors who need aid . . . . How can the public have faith in us if we do not provide for our own by giving to the Physicians' Home?

We need to support our independent and privately owned medical schools . . . by giving to the American Medical Education Foundation.

Recruitment for health careers is very important. More consideration should be given to the capable medical student needing financial assistance.

The Health Poster Contest is one of our best public relations projects. While stimulating health consciousness in our youth it creates in the minds of the children recognition of the importance of preventive medicine and good health, physically and mentally . . . . The parents of those *participating* in our contest will be reminded of their responsibility to their families and themselves in the most valuable asset of all human beings, health.

Today's Health's object this year is to combat misinformation which may be circulated by various political and social interests. Give gift subscriptions from your own county treasury to teachers, professors, and libraries.

At the State Fair we hope to maintain again a booth for the Medical Society of the State of New York at Syracuse, September 2 through 10, with all counties surrounding Onondaga County participating and distributing literature pertaining to all phases of health.

Local participation in cancer, heart, polio, cerebral palsy, and other health drives and the blood banks is a community obligation of every doctor's wife through her auxiliary. She should be a leader in all Civil Defense and Safety programs.

The efforts devoted in adding depth and meaning to the Auxiliary aims and purposes comprise what we believe to be a positive contribution to the continuing healthy development of our individual initiative and *participation.*

Part of *participation* is being part of everything by being enthusiastic, by being informed, by being self-confident, by assuming responsibilities, by making decisions, and by being unselfish in your work.

By *participation* in and through your Woman's Auxiliary to the Medical Society of the State of New York we will be putting meaning into our lives and our auxiliaries.

MRS. MILTON W. KOGAN, *President*

88 West Fifth Street
Oswego, New York

ANNOUNCEMENT

1960 Convention

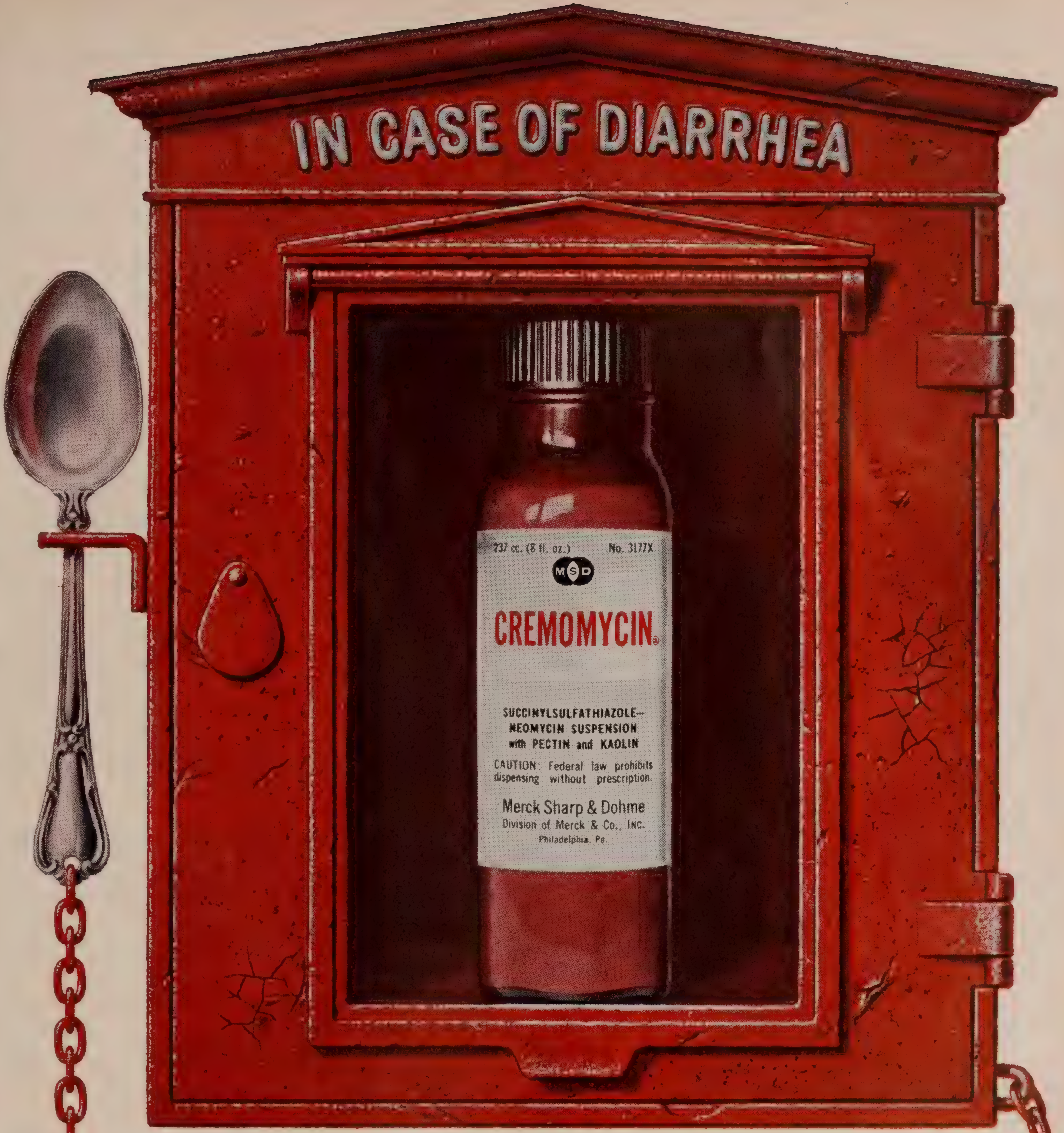
Woman's Auxiliary

to the

AMERICAN MEDICAL ASSOCIATION

June 13 to 17

Hotel Deauville ***Miami Beach, Florida***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MEDICAL NEWS

New York Rheumatism Association Elects Officers—The following New York City physicians were elected as officers of the New York Rheumatism Association at its annual meeting on April 19: Ronald W. Lamont-Havers, M.D., president; Sidney S. Berkowitz, M.D., vice-president; and Albert W. Grokoest, M.D., secretary-treasurer.

Hospital Approved for Residency Training—Gracie Square Hospital, New York City, has been approved for a two-year residency training program in psychiatry by the Council on Medical Education and Hospitals of the American Medical Association.

The 232-bed hospital has 4 full-time psychiatrists and 6 residents in training. Twelve full-time residents are expected to be on the staff in the near future.

Physician Lectures in France—Arthur Briskier, M.D., New York City, was invited by the deans of the Universities of Paris, Bordeaux, Marseilles, and Strasbourg to deliver a series of lectures during April and May dealing with cardio-charting, a universal method of charting the heart auscultation invented by Dr. Briskier, and also with radio and radio-photo transmission for instant consultation at any distance, a method also developed by Dr. Briskier.

Annual Meeting of American Society of Facial Plastic Surgery—The annual meeting of the American Society of Facial Plastic Surgery was held on April 6 in New York City. The meeting featured a symposium on "Methods of Otoplasty." Physicians from the New York area who participated in the symposium were: Herbert Friedman, M.D., White Plains, and Sidney S. Feuerstein, M.D., and Samuel M. Bloom, M.D., New York City. Dr. Feuerstein presented a motion picture on otoplasty.

Among the officers who were elected for the coming year were Samuel M. Bloom, M.D., secretary, and Joseph C. Miceli, M.D., Brooklyn, treasurer.

Plans were made to hold a meeting on July 22 in New York City during the course in rhinoplasty to be given by Irving B. Goldman, M.D., and staff from July 16 to July 29. The program will include various topics on rhinoplasty, from the psychiatric and dermatologic viewpoints; experimental studies on bone grafts and biochemical changes in tissues involved in rhinoplasty.

For further information about the Society contact: Samuel M. Bloom, M.D., Secretary, American Society of Facial Plastic Surgery, 123 East 83rd Street, New York 28, New York.

Course on Ballistocardiogram—The University of Pennsylvania Graduate School of Medicine will present a short course on the ballistocardiogram, June 20 through 22. For information contact: Paul Nemir, Jr., M.D., Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia 4, Pennsylvania.

Plan to Aid Study of Obstetrics and Gynecology—The American College of Obstetricians and Gynecologists has set up a Higher Education Loan Program (H-E-L-P) to enable resident physicians to complete their training in obstetrics and gynecology. Loans up to $5,000 will be made to help physicians through their specialty training period and early practice.

H-E-L-P will start operations with an initial working fund of $36,000 contributed by the American College of Obstetricians and Gynecologists and its district organizations. This will be added to through individual contributions and grants if necessary.

For information write to: Mr. Donald F. Richardson, Executive Secretary, American College of Obstetricians and Gynecologists, 79 West Monroe Street, Chicago 3, Illinois.

Conference on the Rehabilitation of the Mentally Retarded—Teachers College of Columbia University, Department of Psychological Foundations and Services and the Association for the Help of Retarded Children, Inc., will cosponsor a work conference on "Rehabilitation of the Adolescent and Adult Mentally Retarded—Psychological and Vocational Approaches," July 11 through 22. Sessions will be held both at the Association for the Help of Retarded Children, Center and Workshop, 116 East 27th Street New York 16, New York, and at Teachers College, Columbia University, New York 27, New York.

For information concerning the conference contact: Dr. Abraham Jacobs, Box 35, Department of Psychological Foundations and Services, Teachers College, Columbia University, New York 27, New York.

[Continued on page 1854]

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Coolidge, C. W.; Glisson, C. S., and Smith, A. S.:
J.M.A. Georgia **48**:167, 1959.

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[Continued from page 1852]

Eastern Psychiatric Research Association to Conduct World Tour—The Eastern Psychiatric Research Association will conduct a world tour which will include meetings with psychiatric societies in Japan, Thailand, Hongkong, India, and Israel.

Physicians interested in joining the tour should contact: Mr. C. J. Johns, University Travel Company, 18 Brattle Street, Cambridge, Massachusetts.

Physician Visits Chile—Daniel J. Feldman, M.D., New York City, associate professor of physical medicine and rehabilitation of New York University School of Medicine, visited Chile from May 1 through 15 as a guest of the Chilean Society of Rehabilitation in Valparaiso and the Post Graduate Medical School of the University of Chile in Santiago. During his visit Dr. Feldman gave 14 lectures which covered the major aspects of physical medicine and rehabilitation.

Conference on Physical Medicine and Rehabilitation—A conference on physical medicine and rehabilitation was held at the Veterans Administration Hospital, Northport, Long Island, on April 22. The following speakers took part in the conference: Martin Goldner, M.D., clinical professor of medicine, State University of New York Downstate Medical Center, whose topic was "Aging and Chronic Diseases"; Walter Barton, M.D., superintendent of Boston State Hospital, Boston University Medical School, who spoke on "The Rehabilitation of the Aged Mental Patient"; and A. B. C. Knudson, M.D., director, physical medicine and rehabilitation, Veterans Administration, Washington, D.C., whose topic was, "Physical Medicine and Rehabilitation: Contribution in Chronic Illness and Aging."

Latin-American Congress of Physical Medicine Holds Dinner—The eleventh annual dinner of the Latin-American Congress of Physical Medicine was held in New York City on April 28. The dinner was a testimonial to Hans J. Behrend, M.D., and Jerome Weiss, M.D., both of New York City. Cassius Lopez de Victoria, M.D., New York City, executive director of the Congress, presented the physicians with a gold key for their outstanding pioneer work in physical medicine.

Physicians Complete Fifty Years of Service—In May the Medical Society of the State of New York honored those members who completed fifty years of medical practice since the Society's last annual convention.

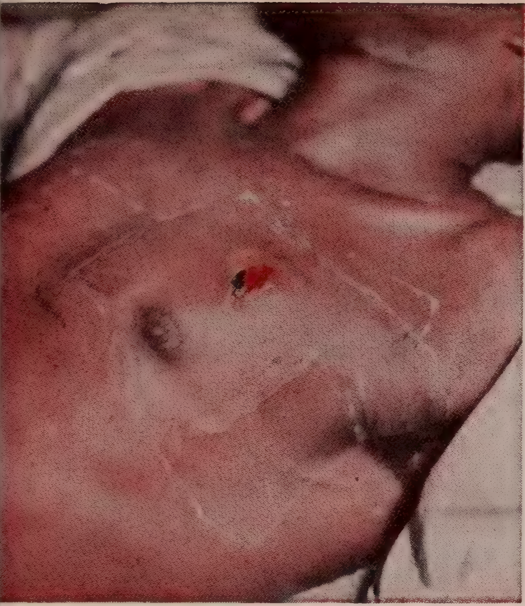
They are listed by counties as follows: *Albany:* William D. Allen, M.D., and Philip C. Hacker, M.D., Albany; *Bronx:* Peter T. Daly, M.D., Isidore H. Goldberger, M.D., Jacob Grossman. M.D., Sigmund Klein, M.D., and Joseph H. Singer, M.D., Bronx; *Broome:* Charles M. Allaben, M.D., and William H. Hobbs, M.D., Binghamton; *Chemung:* Fannie U. Angelicola, M.D., Ethan F. Butler, M.D., and Jesse L. Kinner, M.D., Elmira; *Dutchess:* Charles B. Dugan, M.D., Grand Rapids, Raymond G. Wearne, M.D., Poughkeepsie, and Solon C. Wolff, M.D., Beacon; *Erie:* Clayton W. Greene, M.D., Buffalo; *Essex:* Julius T. Kane, M.D., Lake Placid; *Fulton:* Frank G. Calder, M.D., Johnstown, and William J. Kennedy, M.D., Gloversville; *Greene:* Alfred O. Persons, M.D., Lexington, and James E. Baker, M.D., Spruceton; *Herkimer:* Paul Frank, M.D., Ilion, and Howard C. Murray, M.D., Herkimer; *Jefferson:* Jesse R. Pawling, M.D., Melbourne, Florida.

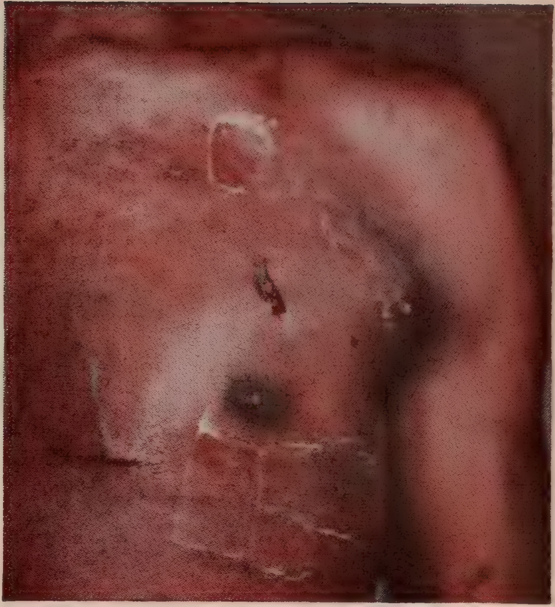
Kings: Alfred G. Beck, M.D., Benjamin M. Becker, M.D., Harold K. Bell, M.D., Valentine V. Bourke, M.D., Charles Breitman, M.D., Grover C. Emery, M.D., Albert B. Fritz, M.D., Boris Jaffe, M.D., Louis E. Klingon, M.D., Jacob Luftig, M.D., Benjamin F. Maggio, M.D., David A. Meiselas, M.D., Eric Reuss, M.D., Max Schultz, M.D., Charles Shookhoff, M.D., John Smith, Jr., M.D., William L. Stone, M.D., Daniel E. Welch, M.D., and Sampson J. Wilson, M.D., Brooklyn.

Monroe: Walter A. Calihan, M.D., Benedict J. Duffy, M.D., William S. Hartigan, M.D., William E. Monroe, M.D., Audley D. Stewart, M.D., and Gilbert H. Welch, M.D., Rochester; *Nassau:* Edwin C. Braynard, M.D., Glen Cove.

New York: Edward E. Best, M.D., Isidore M. Brenner, M.D., Thaddeus K. Dzierzkowski, M.D., Max Elpern, M.D., Gustav Erlanger, M.D., Henry C. Falk, M.D., Raymond J. Gaffney, M.D., Herman D. Godwin, M.D., Harry G. Goldman, M.D., Benjamin Goldstein, M.D., Hyman Goldstein, M.D., Alfred Goodman, M.D., L. W. Gorham, M.D., Selmar Gutman, M.D., Sigmund Hecht, M.D., George F. Hoch, M.D., Herman Horn, M.D., Edward H. Hyems, M.D., Max Jessner, M.D., Harold B. Keyes, M.D., George A. Koenig, M.D., Isidor Kross, M.D., Christina M. Leonard, M.D., Jacob M. Lobsenz, M.D., W. B. Long, M.D., Nathan H. Markus, M.D., Louis Marton, M.D., Gerard L. Moench, M.D., Helen W. Montague, M.D., Arthur E. Neergaard, M.D., Herman Nunberg, M.D., Ignatius N. Olninck, M.D., Vincenzo Pascale, M.D., Arthur M. Reich, M.D., Henry H. Ritter, M.D., Siegfried Schoenfeld, M.D., Emil Schwarzmann, M.D., Josef S. Smul, M.D., Jesse B. Stark, M.D., David A. Swick, M.D., Royal C. Van Etten, M.D., David H. Webster, M.D.; *also:* Abraham J. Beller, M.D., Philadelphia, Pennsylvania, Herbert C. Chase, M.D., Greenwood, Virginia, Moritz Jacobson, M.D., Hampton, Con-

[Continued on page 1856]





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hen brought to the emergency room with stab ound in left anterior chest wall, R. C. was in ock attributed to accumulation of blood in the ricardial sac. The knife had evidently penetrated e myocardium, with severe tamponade resulting. pericardial tap relieved the tamponade and reversed the shock picture. A large subcutaneous hematoma had developed at the site of the stab wound. Parenzyme, 1 cc. daily, was initiated. Under Parenzyme therapy, the hematoma was absorbed after eight days of treatment and R. C. was released to outpatient status.*

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renzyme *Aqueous*—sterile multiple-dose vials conning lyophilized trypsin, 25 mg. plus 5 ml. of aqueous uent. Parenzyme-B—buccal tablet containing 5 mg. psin. Parenzyme *Ointment:* containing 2 mg. crysline trypsin, 6 mg. crystalline chymotrypsin and 2 mg. minoacridine hydrochloride per gram in a specially epared water-soluble base. *Morey, J.: Personal communication.

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[Continued from page 1854]

necticut, Edward J. Kempf, M.D., Wading River, New York, Samuel A. Moss, M.D., Brooklyn, Rudolf Neumann, M.D., Kew Gardens, Charles H. Sanford, M.D., Wilton, Connecticut, Rene A. Spitz, M.D., Denver, Colorado, and Joseph H. Toomey, M.D., Bronx.

Niagara: Harry L. Parker, M.D., Lockport; *Oneida:* James P. Kelleher, M.D., Oneida; *Onondaga:* Wardner D. Ayer, M.D., Clyde O. Barney, M.D., Daniel F. Luby, M.D., Percival K. Menzies, M.D., B. O. Murphy, M.D., Carlton F. Potter, M.D., and Harry A. Steckel, M.D., Syracuse; *Orange:* Walter I. Neller, M.D., Middletown; *Otsego:* John J. McShane, M.D., Springfield Center; *Queens:* Siegmund Loewy, M.D., Elmhurst, Walter J. Norris, M.D., Corona, and Archibald O. Wood, M.D., Far Rockaway; *Rensselaer:* Eugene Connally, M.D., Troy; *Steuben:* J. R. Kelly, M.D., Hornell; *Suffolk:* Norman T. Kirk, M.D., Montauk, William P. St. Lawrence, M.D., Southampton, and Arthur H. Terry, Jr., M.D., Easthampton.

Sullivan: Harry Jacobs, M.D., Hurleyville; *Ulster:* Henry L. Bibby, M.D., Kingston; *Warren:* George Bibby, M.D., Pottersville; *Wayne:* John C. Carmer, M.D., Lyons; *Westchester:* Henri I. Berlowe, M.D., White Plains; William G. Frank, M.D., Katonah, Berton Lattin, M.D., Scarsdale, Clarence A. Read, M.D., New Rochelle, Romeo Roberto, M.D., Yonkers, Alexander D. van Eyck, M.D., Mt. Vernon, and Frank M. Wright, M.D., New Rochelle.

Personalities

Awarded

Howard A. Rusk, M.D., New York City, an Albert Lasker Medical Journalism Award for "his editorial leadership in advancing medical research and public health programs. . ."

Resigned

Melvin B. Goodman, M.D., White Plains, as director of the Westchester Community Mental Health Board.

Appointed

Vincent I. Bonafede, M.D., Sonyea, as director of Craig Colony and Hospital, Sonyea. . .George N. Wise, M.D., New York City, as professor of ophthalmology at the New York University Medical Center.

Elected

John G. Kidd, M.D., New York City, as president of the American Association of Pathologists and Bacteriologists. . .Martin Steinberg, M.D., New York City, as secretary of the Greater New York Hospital Association . . . Howard C. Taylor, Jr., M.D., New York City, as second vice-president of the American College of Obstetricians and Gynecologists.

Retired

Norman Treves, M.D., New York City, as chief of Breast Service at Memorial Center for Cancer and Allied Diseases after thirty-seven years of service.

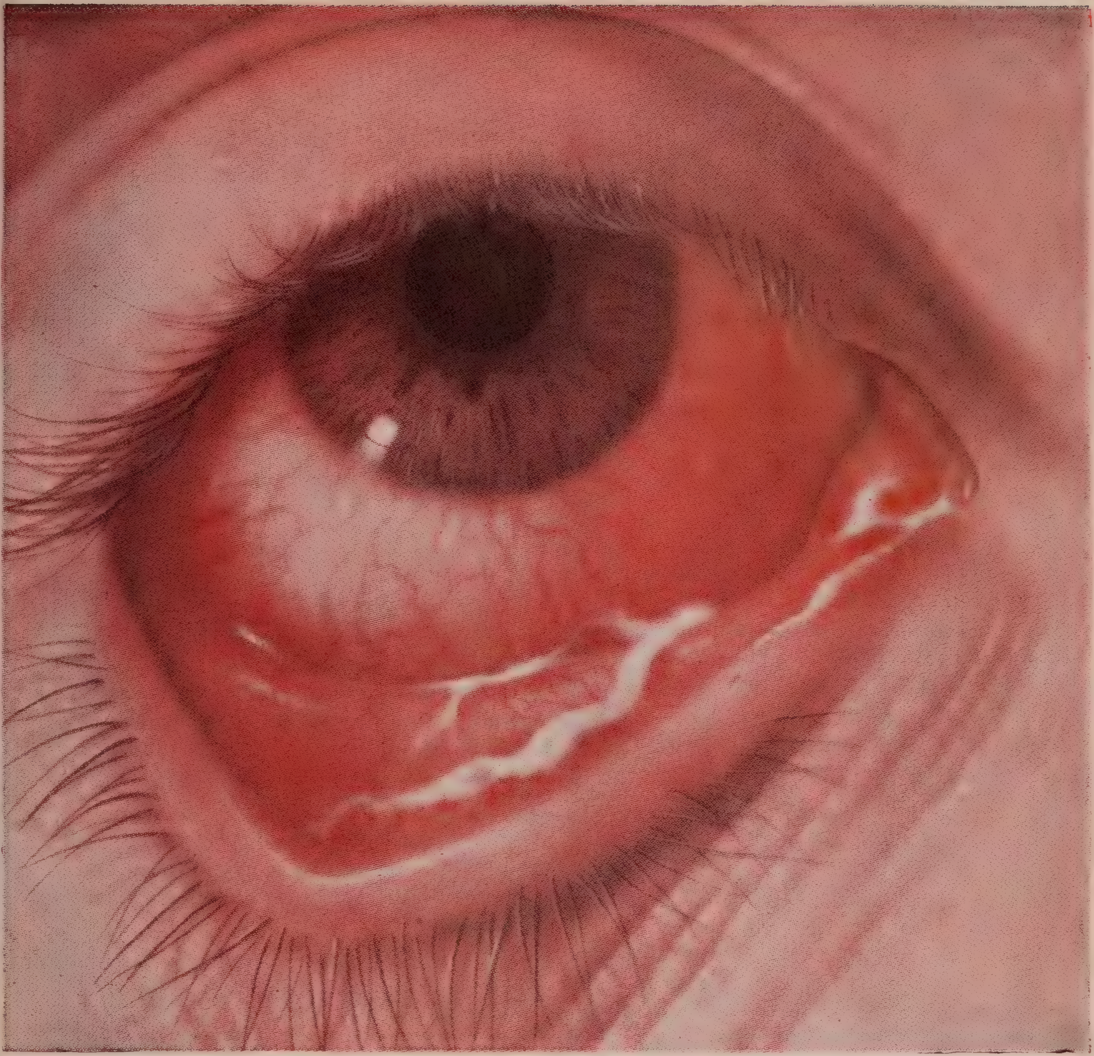
Speakers

Alfred Angrist, M.D., Bronx, on the topic "Endocrine Factor in Endocarditis" at Lebanon Hospital on May 26 . . . Leona Baumgartner, M.D., New York City Commissioner of Health, on April 27 at a luncheon meeting of the State Committee on Tuberculosis and Public Health . . . Milton Rosenbaum, M.D., New York City, on May 5, at the State University of New York Upstate Medical Center College of Medicine on the topic "Importance of Self-Knowledge by the Doctor" . . . Hendrick M. Rozendaal, M.D., and Beverly L. Vosburgh, M.D., Schenectady, on April 26 before the 1960 National Industrial Health Conference in Rochester.

Has the General Practitioner Been Replaced in the Operating Room?

How far has the surgeon replaced the general practitioner in the operating room? According to *Patterns of Disease*, a Parke, Davis and Company publication for the medical profession, the role of general practitioners in surgery is still an important one.

An estimated 44 per cent of general practitioners in the United States perform minor surgery. However, the trend points increasingly to specialized training. Between 1950 and 1958, *Patterns* reports, the total number of physicians in this country increased by 9.5 per cent; full- and part-time surgeons by 26 per cent; and anesthesiologists by 126 per cent. The number of general practitioners decreased by 6 per cent during this same period.



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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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BOOKS REVIEWED

Biological Psychiatry. Edited by Jules H. Masserman, M.D. Octavo of 338 pages, illustrated. New York, Grune & Stratton, Inc., 1959. Cloth, $9.75.

This volume contains the proceedings of the scientific sessions of the Society of Biological Psychiatry held in San Francisco, May, 1958, and is dedicated to its devoted Secretary, George N. Thompson, M.D.

The contents reveal a striking array of leading contributors followed by a pithy preface and dedication by Jules H. Masserman, M.D.

It is composed of five parts: neuroanatomy and neurophysiology, clinical research, psychopharmacological research, drugs and psychiatric therapy, and evaluations and discussions.

Each part is a masterpiece illustrating the scientific approach. A brief review is unable to do justice to each part. The interested reader should regard this volume as a must if he is to appreciate the vanguard of biologic psychiatry to date. Herein one will find succinct presentations of painstaking research and clinical evaluations of the organic bases of psychiatric disorders and their treatment. Evaluations and discussions embrace various special facets of investigation in the light and perspective of total psychotherapy. The multifactorial approach indicates the depth and breadth of complexity toward seeking underlying unity, a quest of "pluralistic monism" envisaged by Adolph Meyer. This volume of proceedings takes its place as a unique contribution and should be found within handreach of the serious student of psychiatry.—FREDERICK L. PATRY

Atlas of Roentgenographic Positions. Two volumes. By Vinita Merrill. Second edition. Quarto of 663 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $32.50.

The author is obviously a person of considerable experience and has brought this to bear in producing for the second time a manual of roentgenographic positioning which is clearly written, well illustrated, and easy to follow. With the exception of the sections on sinuses, facial bones, teeth, chest, and abdominal content where either few or no changes have been made, the text has been revised and expanded to include new positions demonstrated by film reproduction and/or drawings and by references to appropriate literature. These additional references do not appear to have been included in the appended bibliography. The cross index has been expanded.

One may criticize the chest films for poor quality which have not been changed from the previous edition. These are examinations which would not be considered generally acceptable. Little attention is paid to the problems of pediatric positioning and immobilization. With respect to the more complex radiographic procedures such as myelography, angiocardiography, cerebral angiography, and so forth, texts, reproductions, and equipment shown are inadequate.

This atlas remains of outstanding quality, particularly with respect to positioning of the skeletal. The author again wisely refrains from recommending technical factors, leaving this to the discretion and preference of the individual radiologist. Less wisely, the problem of radiation protection is avoided.—SOLOMON SCHWARTZ

The Arterial Wall. Edited by Albert I. Lansing, Ph.D. Octavo of 259 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1959. Cloth, $7.50.

"Although the current fashion is to treat atherosclerosis as a disease of cholesterol metabolism or the manner of its transport, it is reasonable to believe that an appreciation of the biology of arteries will facilitate understanding of the etiology of this disease. This volume represents an attempt to review the data that are currently available on the structure, function, and chemistry of the major components of the arterial wall."

The state of our knowledge on the vasa vasorum, the structure and behavior of vascular endothelium, collagen and ground substance, elastic tissue, mucopolysaccharides, enzymes, lipid metabolism of connective tissue and of the arterial wall is presented. Experts in each field present a chapter and the result is an excellent book. The material is factual and presented with very limited excursions into the realm of theory. For example the question of the existence of intercellular cement is reviewed in the light of electron microscope studies which cast doubt on the existence of such material between the endothelial cells. It is also of interest that the results of investigations presented do not support the concept of passive diffusion or transfer of serum lipoproteins into arterial.

[Continued on page 1860]

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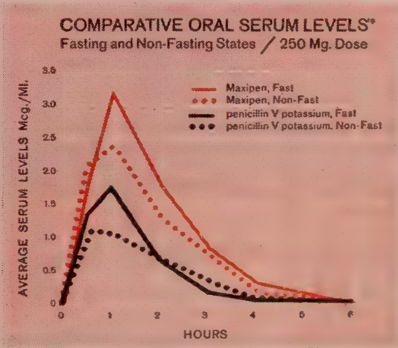
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[Continued from page 1858]

This volume presents the concept of the arterial wall not simply as an interesting anatomic structure but as a part of an important organ system, a knowledge of which is essential for further progress in the understanding of atherosclerosis and aging.—Edwin P. Maynard, Jr.

Hypnosis and Related States. By Merton M. Gill, M.D., and Margaret Brenman, Ph.D. Octavo of 405 pages. New York, International Universities Press, Inc., 1959. Cloth, $7.50.

In the past several years this method of treatment (not as entertainment) has received a renewed amount of attention from practitioners in many fields. This book is one of the few on the subject which attempts to explain the phenomenon of hypnosis from the viewpoint of psychologic ego psychology.

The authors have long been interested in this phenomenon and have written another book on the subject—*Hypnotherapy*. The present volume has resulted from their research work in this field over the past ten years while connected with the Menninger Clinic.

It is not an elementary presentation of the subject but presumes that the reader is already acquainted with the standard literature on hypnosis and the basic theoretic premises of psychoanalysis.

As the result of their investigations on hypnosis and their analytic training they came to the conclusion that hypnosis is a "particular kind of regressive process . . . and that the hypnotic state is an induced psychologic regression."

The book includes the usual chapter on the induction of hypnosis and the posthypnotic period. In addition there is a lengthy discussion of the current psychoanalytic views of hypnosis and the authors' own theory of hypnosis. Related phenomena, such as sleep, trances, brain washing and fugues, are included.

This presentation is rather long winded and verbose at times, which tends to detract from the importance of their research.—Joseph L. Abramson

Master Your Tensions and Enjoy Living Again. By George Stevenson, M.D., and Harry Milt. Octavo of 241 pages. Englewood Cliffs, N. J., Prentice-Hall, Inc., 1959. Cloth, $4.95.

This book is not just another one on mental hygiene for the general public. It is written by a psychiatrist, well known in his field, a former President of the American Psychiatric Association, and his collaborator, a well-known writer on mental health. The happy combination results in a well-written book on happier living in this age of tension.

It is intended to be a practical book based on psychiatric experience which the authors feel will tend to relieve the tensions generated in our everyday living. Those who want key sentences to help them when tension mounts up will find them indeed in this book. Parents will find helpful suggestions in handling trying situations while their children are growing up.

Perhaps some will find the "answers" too pat to suit their taste, but all of us can find something of value in this down-to-earth book. Many will find it worth while reading and rereading some of the chapters and suggestions made by the authors.—Joseph L. Abramson

Christopher's Minor Surgery. Edited by Alton Ochsner, M.D., and Michael E. DeBakey, M.D. Eighth edition. Quarto of 539 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $10.50.

Actually there is no such surgery as minor surgery. All surgery is major. However, the title of this excellent volume has been retained out of respect for its original author. The original book was written by one author. This edition, however, is a compilation of the surgical thoughts of numerous surgical specialists under the editorial eyes of Ochsner and DeBakey.

There are set forth methods and procedures of various surgical conditions of the body. Where possible the author considers those conditions which can be diagnosed and treated in a physician's office. They have done a good service in emphasizing the competent care and management of this group of patients. There is a great need for such a volume especially for the general practitioner.

The excellent chapter on the surgical resident by Boyce is recommended to all interns and residents.

This is the eighth edition of a work which was published originally thirty years ago. Any surgical text which can survive such a period speaks for itself.—Alan A. Kane

Growth Diagnosis. By Leona M. Bayer and Nancy Bayley. Quarto of 241 pages, illustrated. Chicago, The University of Chicago Press, 1959. Cloth, $10.

Normal growth may be observed clinically both by its topographic and physiologic aspects. The phenomena and significance of these less familiar topographic aspects are considered to be the province of the book. Selected segments of developmental data are converted into simple technics for appraising growth which then may be used as a guide when the question of an unusual growth pattern arises.

Part I on methodology summarizes procedures

[Continued on page 1862]

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IN A WIDE RANGE OF
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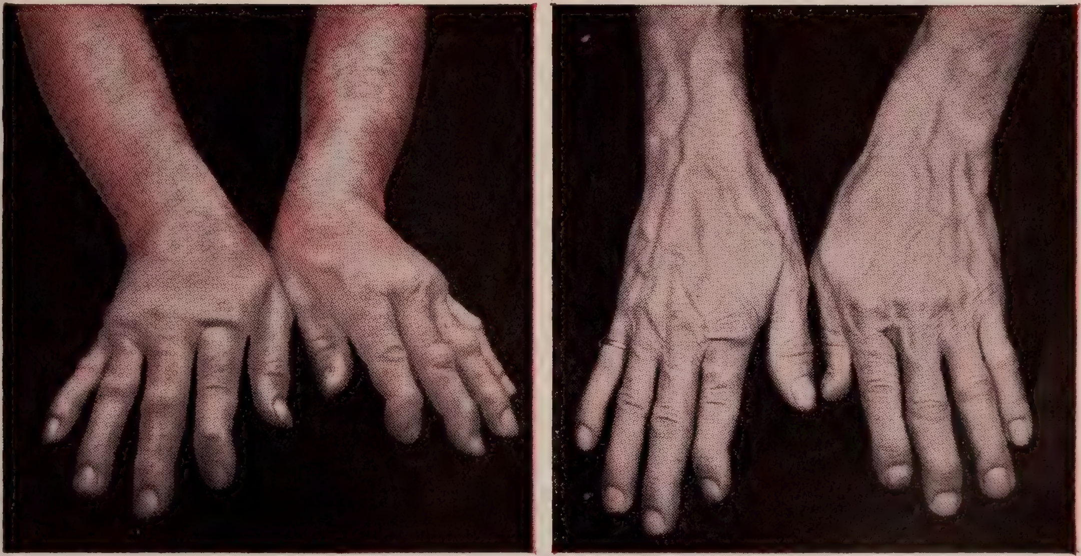

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FURACIN-HC Cream is available in tubes of 5 Gm. and 20 Gm. Fine vanishing cream base, water-soluble.

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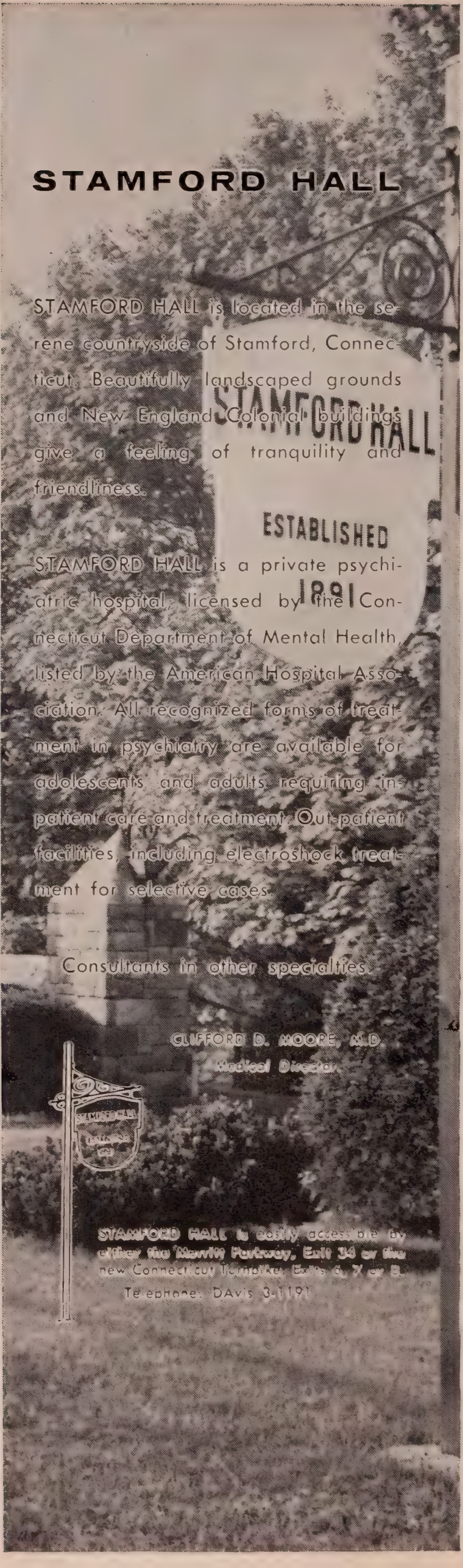

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[Continued from page 1860]

for collecting and analyzing individual growth data, specifically inspection, selected anthropometry, photography, and a special x-ray of the hand and wrist.

Part II deals with case illustrations. Included are studies of the normal child, giantism, dwarfism, obesity, hypogonadism, and female pseudohermaphrodism.

There is an appendix including tables devoted to anthropometric values and height prediction, as well as a good bibliography.

This book is a good practical working guide for the assessment of growth and development from infancy to maturity.—Stanley S. Lamm

Mazer & Israel's Diagnosis and Treatment of Menstrual Disorders and Sterility. By S. Leon Israel, M.D. Fourth edition. Octavo of 666 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $15.

The fourth edition of this text represents a major revision of a previously well-known book. It is written by S. Leon Israel, M.D., who not only has had extensive clinical experience but is also an eminent teacher and authority in the field of obstetrics and gynecology. He is a forceful teacher who presents material with great clarity and these attributes are reflected in the book. Although the author indicates that this edition is intended as a guide for those interested in the diagnosis and treatment of menstrual disorders and infertility, it is practically a textbook on gynecology because of the great number and varieties of pelvic disorders discussed. The book is complete in its discussion of the role of the various endocrine glands in the production of menstrual disorders and sterility, and particularly in the usage of hormones in actual practice. The recent work on progesterone therapy of amenorrhea, cervical and tubal factors in sterility, tuboplastic operations, and gonadal dysgenesis is included. There is little in modern texts to show the predominant role of the hypothalamus in reproductive physiology and this new and fascinating subject is covered well. Three new chapters on the role of androgens, the thyroid gland, and the adrenal cortex in menstrual disorders are added.

It is a practical text with diagnostic procedures and recommended therapies clearly and simply presented. The illustrations are numerous and informative, and the bibliographies are ample. The text is highly recommended to all those interested in this field.—Alexander H. Rosenthal

Principles of Peripheral Vascular Surgery. By S. Thomas Glasser, M.D. Octavo of 410 pages, illustrated. Philadelphia, F. A. Davis Co., 1959. Cloth, $12.50.

[Continued on page 1864]

important new therapy in Peptic Ulcer

cessation of all symptoms and complete healing in 70 out of 78 cases as reported in Postgraduate Medicine (Oct.) 1959

"...chymotrypsin offers a new approach to the treatment of peptic ulcer."

In 54 cases, most of them hospitalized, in which chymotrypsin (Chymar) was used in conjunction with other agents "All of the symptoms disappeared and *complete healing of* the ulcer occurred in 49 (90.7 per cent) of the 54 cases . . . " Average time for cessation of symptoms . . . 6 days; for complete healing . . . 36 days; average follow-up period . . . 12 months. *In 24 cases* in which Chymar was used alone, "Cessation of all symptoms and *complete healing occurred in 21* (*87.5 per cent*) of the 24 cases . . ." Average time for cessation of symptoms . . . 5.8 days; for complete healing . . . 24 days; average follow-up period . . . 25.5 months.

Conclusions: "Because of the excellent results obtained in 78 cases of peptic ulcer . . . I strongly recommend its use as a most valuable adjunct in the treatment of this disease."*

*Mozan, A. A.: Postgraduate Med. 26:542, 1959

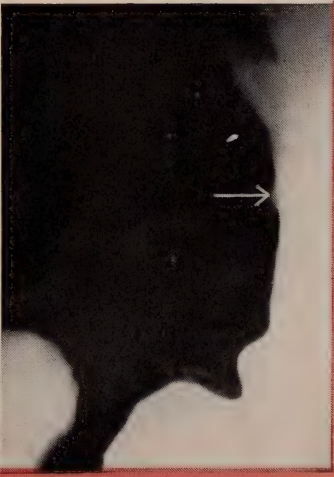
the superior anti-inflammatory enzym

Chymar

chymotrypsin *Buccal/Aqueous/Oil*

controls inflammation, swelling and pai

Pretreatment roentgenogram made on January 26, 1957 shows a large niche on the upper third of the lesser curvature.



Roentgenogram made on February 23, 1957 shows only a slight indentation on the lesser curvature.

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[Continued from page 1862]

The author is an associate clinical professor of surgery at New York Medical College, Metropolitan Medical Center, and Flower and Fifth Avenue Hospitals. He is a Fellow of the American College of Surgeons, and a Diplomate of The American Board of Surgery.

The text presents recent developments in diagnosis and treatment of peripheral vascular diseases from an extensive review of the literature, seasoned by a sound personal interest and background.

Anatomy and physiology of arteries and collateral circulation, and of the sympathetic nervous system, are well discussed.

Symptoms and signs are exceptionally well presented in discussion of diagnosis of the various peripheral vascular disease entities. Clinical tests of circulation and their importance in diagnosis are justifiably stressed, and the bibliography here is especially impressive.

The chapter on sympathectomy presents the many evaluating tests but points out the concensus that few are consistently dependable, and that good results may be anticipated in the majority, or about 80 per cent, if vasomotor activity is clinically evident, and arterial disease not too advanced.

The author has presented the writings of others giving different views on controversial subjects, permitting the reader to draw conclusions.

Surgical technic is not included. As Dr. Glasser states, the medical and surgical aspects of the specialty of peripheral vascular diseases are for the most part inseparable. Therefore, he has presented the various entities in a manner to be of value to practitioners in recognizing and directing treatment of these diseases in accordance with recently accepted concepts.—Ward V. Ceilly

Insulin Treatment in Psychiatry. Edited by Max Rinkel, M.D., and Harold E. Himwich, M.D. Duodecimo of 386 pages, illustrated. New York, Philosophical Library, 1959. Cloth, $5.00.

These proceedings, dedicated to the memory of Manfred Sakel's contribution to psychiatry, of the International Congress on the Insulin Treatment in Psychiatry, held at the New York Academy of Medicine 24 to 25 October, 1958, represent a landmark of thirty years of insulin shock treatment for schizophrenia.

The originator of this epochal discovery, Dr. Manfred Sakel of Vienna, is fittingly honored in the appendix with a copy of his speech at the ceremony in his honor in Vienna, September, 1957. It is a truly scientific and modest digest of the most outstanding "breakthrough" in psychiatric treatment, thanks to the encouragement of Professor Otto Poetzel and his associate Professor Hans Hoff.

The papers presented and their discussants (from many countries) brought forth the pros and cons of insulin shock treatment. This led to an assessment of the value of this form of treatment of psychoses, especially schizophrenia, in a global perspective which compared its results with those of other therapies such as ECT, psychopharmacology, psychotherapy and its ancillary aids.

The contents are divided into four parts: Historical, physiochemical research, clinical research and follow-up studies, and a well-documented appendix and index.

Psychiatrists and others seeking the meat of this conference will carefully digest the pages of this monumental volume. Although this form of treatment is still firmly entrenched and largely regarded as the most effective method of curing schizophrenic patients yet its frequency of utilization has waned in recent years with the discovery of ECT and other forms of convulsive therapy, and more recently the advent of so-called tranquilizing drugs.

This volume affords a unique opportunity to become acquainted with the outstanding research workers and clinicians in psychiatry today. No library is complete without this volume which does much credit to the publishers.—Frederick L. Patry.

The American Academy of Orthopaedic Surgeons, Instructional Course Lectures. Volume XVI, 1959. Edited by Fred C. Reynolds, M.D. Quarto of 334 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $16.

Since 1943 the publication of the instructional course lectures has formed a valuable contribution to the orthopedic literature, presenting as it does a broad survey of the latest developments in orthopedic surgery. Although by the very nature of the project some of the material is repetitious, this volume presents a most thoughtful and discriminating selection of the material presented at the meeting in 1959. There is an excellent comprehensive symposium on athletic injuries, a new concept of the pathogenesis and surgical management of Dupuytrens contracture, and a fresh approach in the treatment of congenital deformities of the foot. Of timely interest, too, is the symposium on the treatment of fresh fractures of the femoral neck with a prosthesis, presented by outstanding authorities who reviewed a vast amount of clinical material. All in all the latest edition to the series does credit to the enthusiasm and discrimination of the instructional course committees and should obviously prove a welcome addition to every orthopedist's library.—Max Rabinowitz

[Continued on page 1866]

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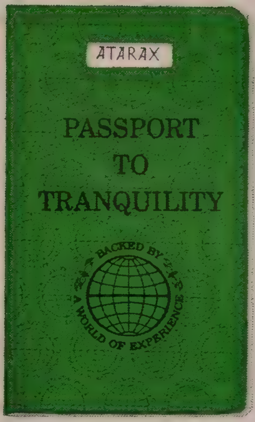

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[Continued from page 1864]

Advances In Psychiatry. Recent Developments in Interpersonal Relations. Edited by Mabel Blake Cohen, M.D. Octavo of 314 pages. New York, W. W. Norton Company, Inc., 1959. Cloth, $4.95.

This series of papers have been taken from the journal *Psychiatry*. The subtitle is "Recent Developments in Interpersonal Relations." The papers are characterized under the categories, "Values and Philosophy," "Psychiatry and Culture," "Schizophrenia," and "Clinical and Therapeutic."

Perhaps the first paper, "The Psychiatry of Enduring Peace and Social Progress" by G. B. Chisholm, sets the tone for the collection and urges more vociferous activity from psychiatrists for social betterment. The other papers generally suggest more activity in the expression of feeling on the part of psychiatrists in investigating interpersonal relations and in treating patients.

The clinical papers have to do mainly with work at Chestnut Lodge and the Enoch and Pratt hospitals. "An Intensive Study of Twelve Cases of Manic-Depressive Psychosis," the final paper, is one of the few careful studies of this syndrone this reviewer has encountered in the recent literature.—EDWARD L. PINNEY, JR.

Pyelonephritis. By Fletcher H. Colby, M.D. Octavo of 214 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1959. Cloth, $7.50.

In a short monograph of about 200 pages Fletcher H. Colby, M.D., former Chief of the Urological Service of the Harvard Medical School and presently consultant to the Massachusetts General Hospital has summarized current knowledge concerning pyelonephritis. While the treatment of acute pyelonephritis is now adequate and standardized, that of chronic pyelonephritis is still an enigma. The only hopeful note is that those kidneys having remedial obstructive lesions can improve if treatment is not delayed too long. The monograph illustrates management by the presentation of typical case reports. The general discussion is concisely presented and also from an everyday practice point of view. No innovations or previously unpublished data is included. The text then can be recommended without reservation to students and all physicians who treat pyelonephritis.—SIDNEY R. WEINBERG

Principles of Disability Evaluation. By Wilmer Cauthorn Smith, M.D. Octavo of 210 pages. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $7.00.

The author is currently Chief Medical Advisor for the Oregon State Industrial Accident Commission and a Fellow of the American Association for the Surgery of Trauma. He has had twenty years of experience in disability evaluation and his stated aim in this volume is to "present and elaborate the philosophy and logic which necessarily must underlie any understanding of disability." This aim is achieved to a remarkable degree and he has produced a work succinctly presented, logically developed, and obviously based on clear, fundamental analysis of broad experience.

Dr. Smith is a man who appreciates the importance of a simple statement of basic principles, and it is likely that his book will become a valuable source for such statements on disability evaluation. In several instances Dr. Smith has identified these axioms by putting them in italics. Two of them, dealing with the concept of permanent disability, are worthy of quotation:

> Adequate time, adequate treatment, and a uniform future course are the practical medical prerequisites of permanence. (p. 55)
>
> The most practical general rule is to consider disability to be permanent whenever there is no convincing medical reason to expect important alteration in the immediate or foreseeable future. (p. 59)

The word "practical," so often used by the author well describes his work. Dr. Smith has included much sound advice to those individuals charged with the complex problem of disability evaluation. He recognizes the wide variance which occurs in disability laws in the several states and points out the importance of becoming familiar with those under which the individual reader must operate. However, since Dr. Smith truly deals in "principles" and does so with basic wisdom and fairmindedness, his book can be recommended to all who deal with the medical (and legal) aspects of disability evaluation.—THOMAS H. ALPHIN

Surgery of the Ear. By George E. Shambaugh, Jr., M.D. Quarto of 669 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $27.50.

The advent of chemo- and antibiotic therapy has ushered in a new concept in otologic operative procedures. This has created a need for a book such as the author has written which has incorporated the latest surgical advances. The volume is made up of four major sections, the one dealing with the surgery of deafness being of greatest interest. The work is well written, concise, and profuse with illustrations and descriptions of operative procedures. This book is intended primarily for the student of otology and those specializing in this field.—SYDNEY SHAPIN

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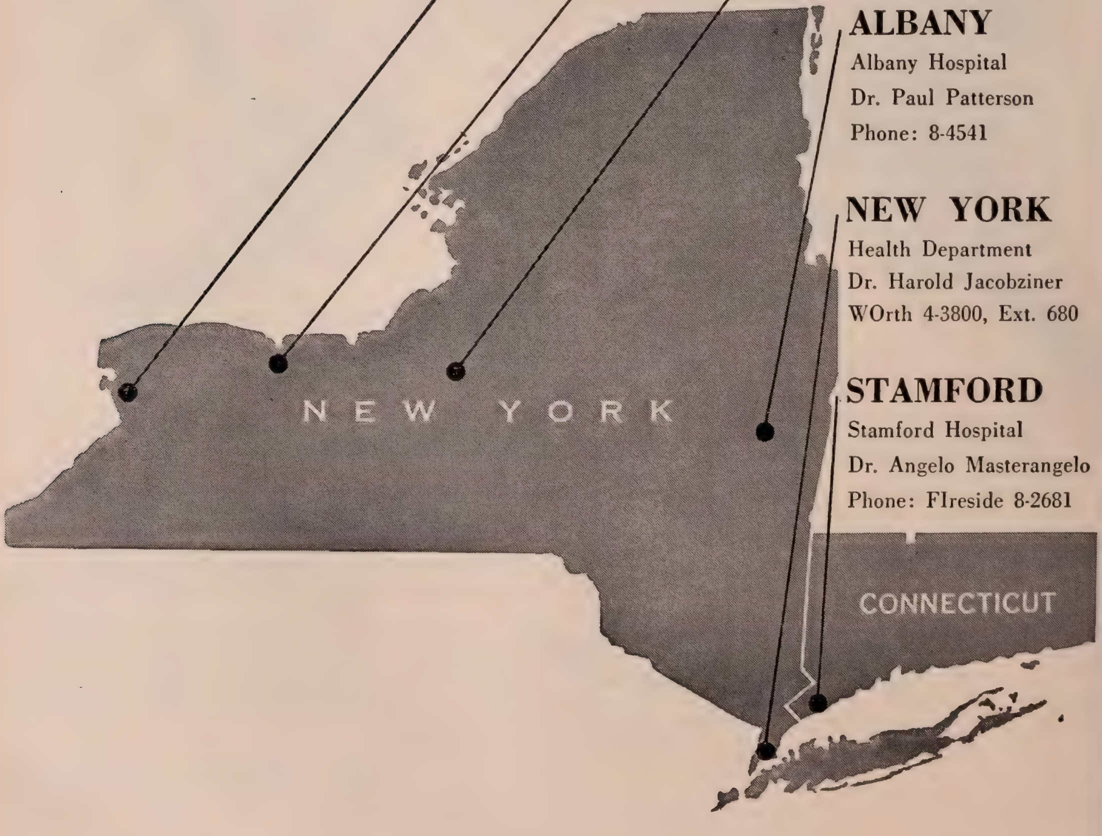

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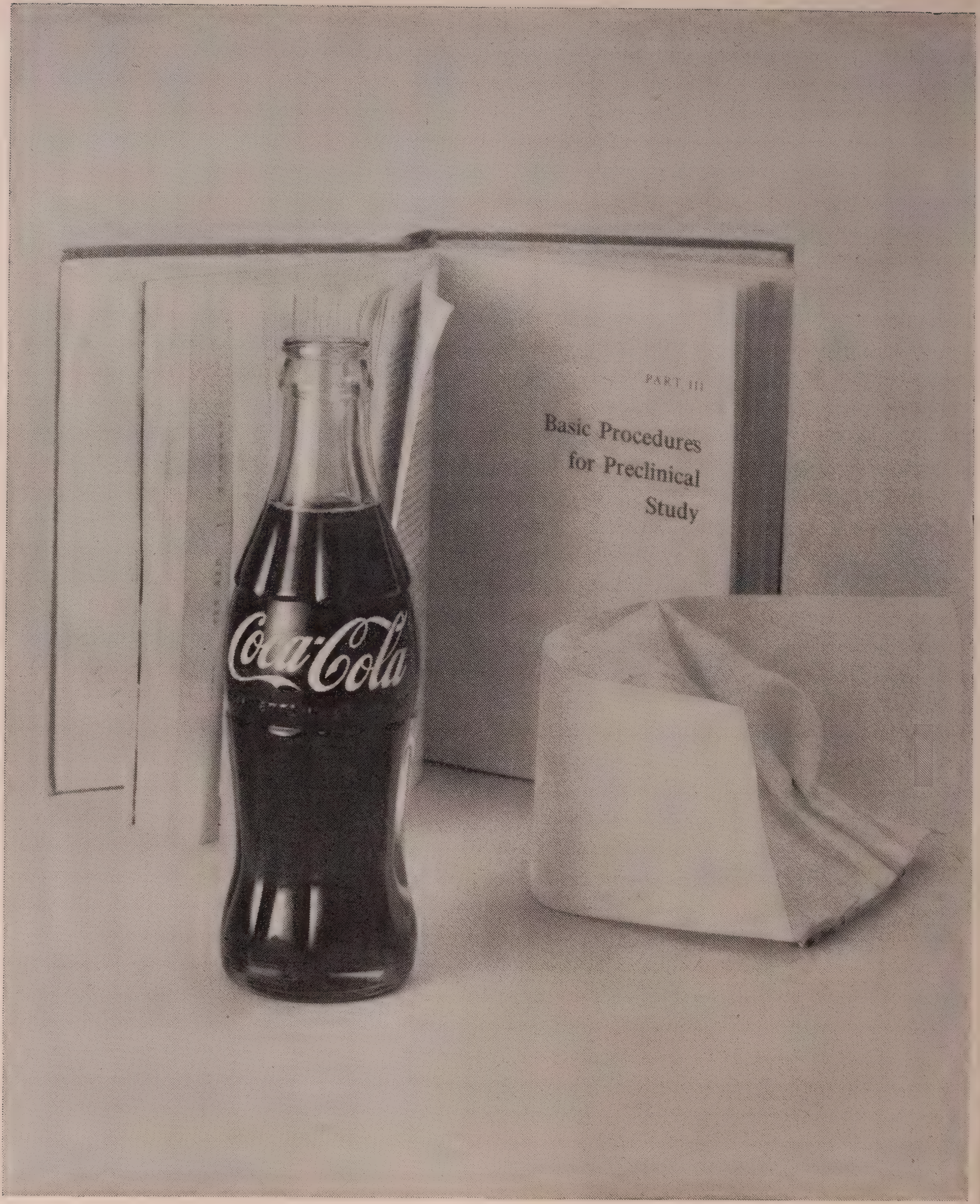
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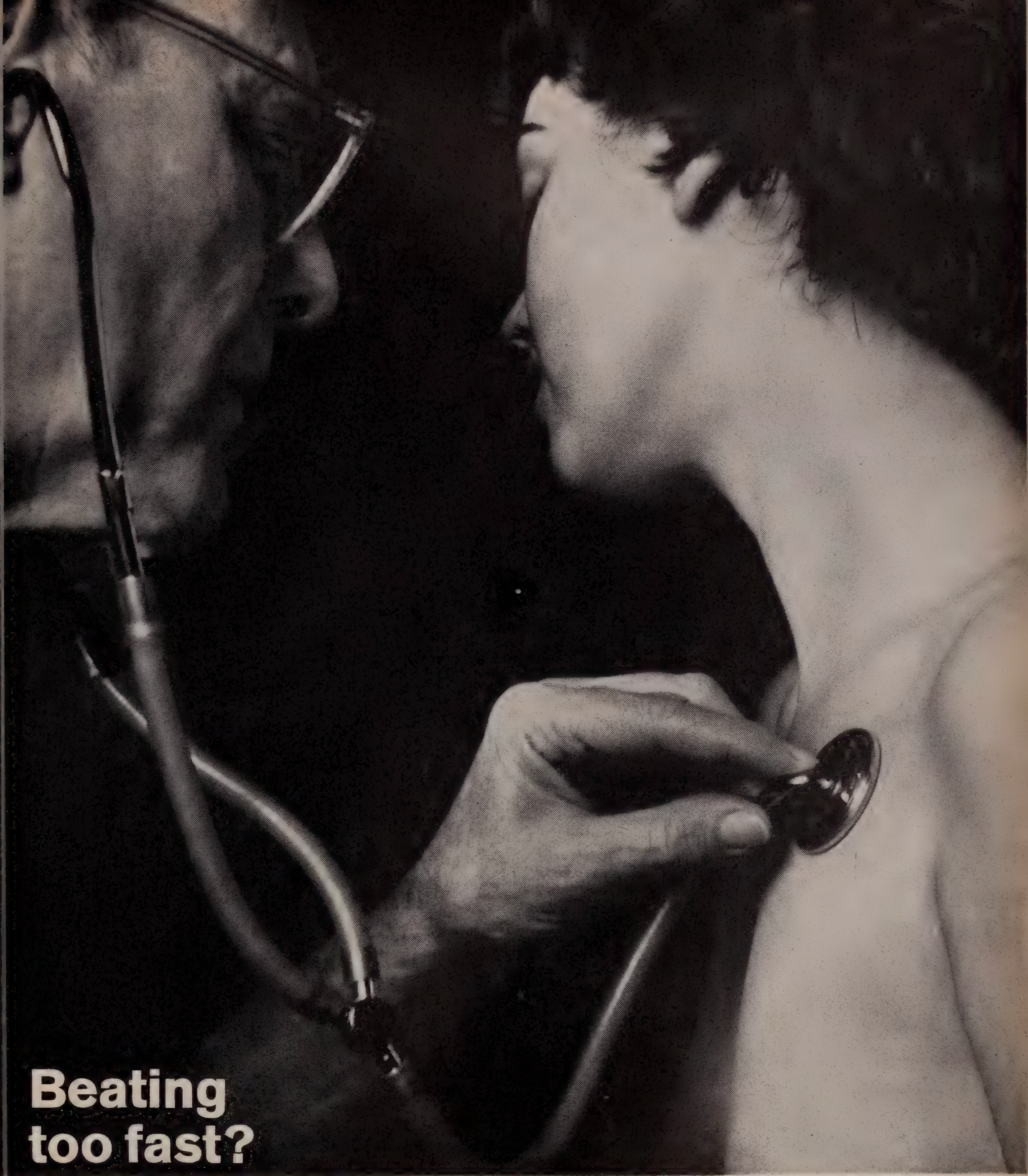

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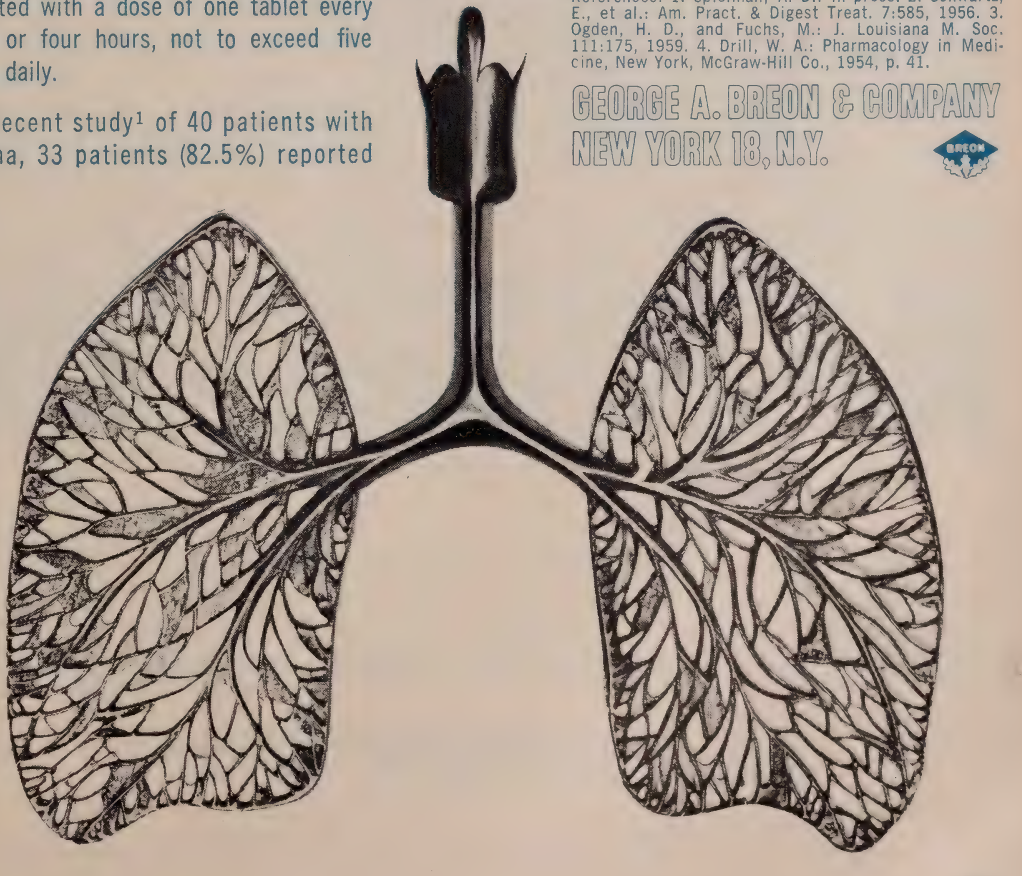

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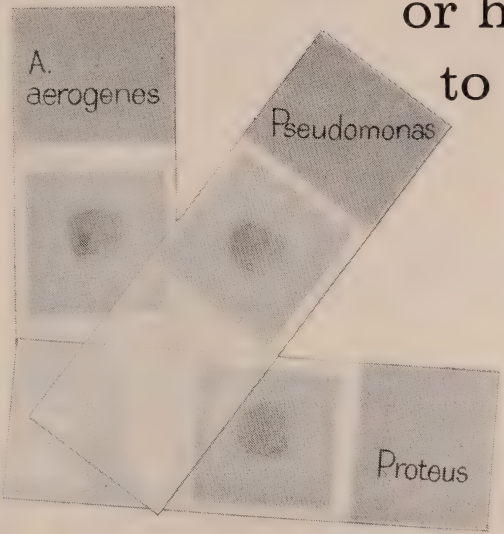

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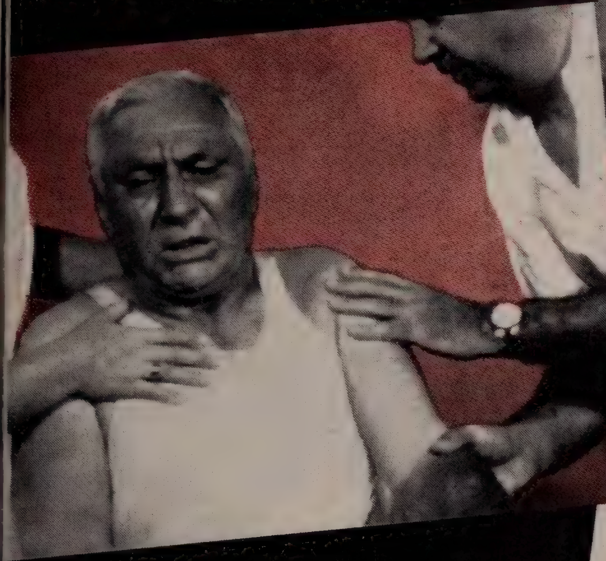

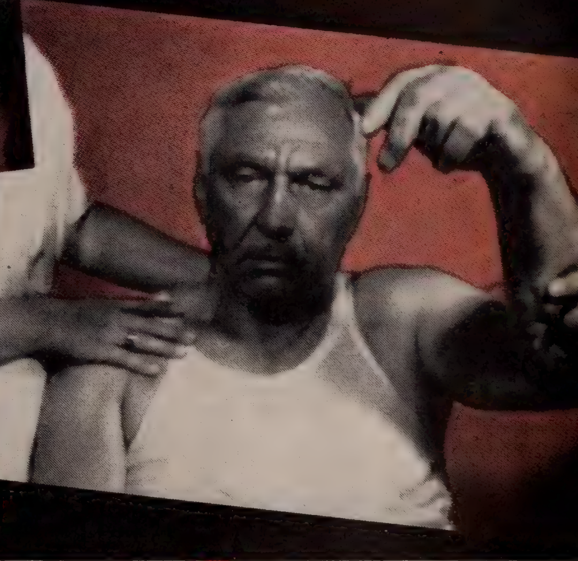

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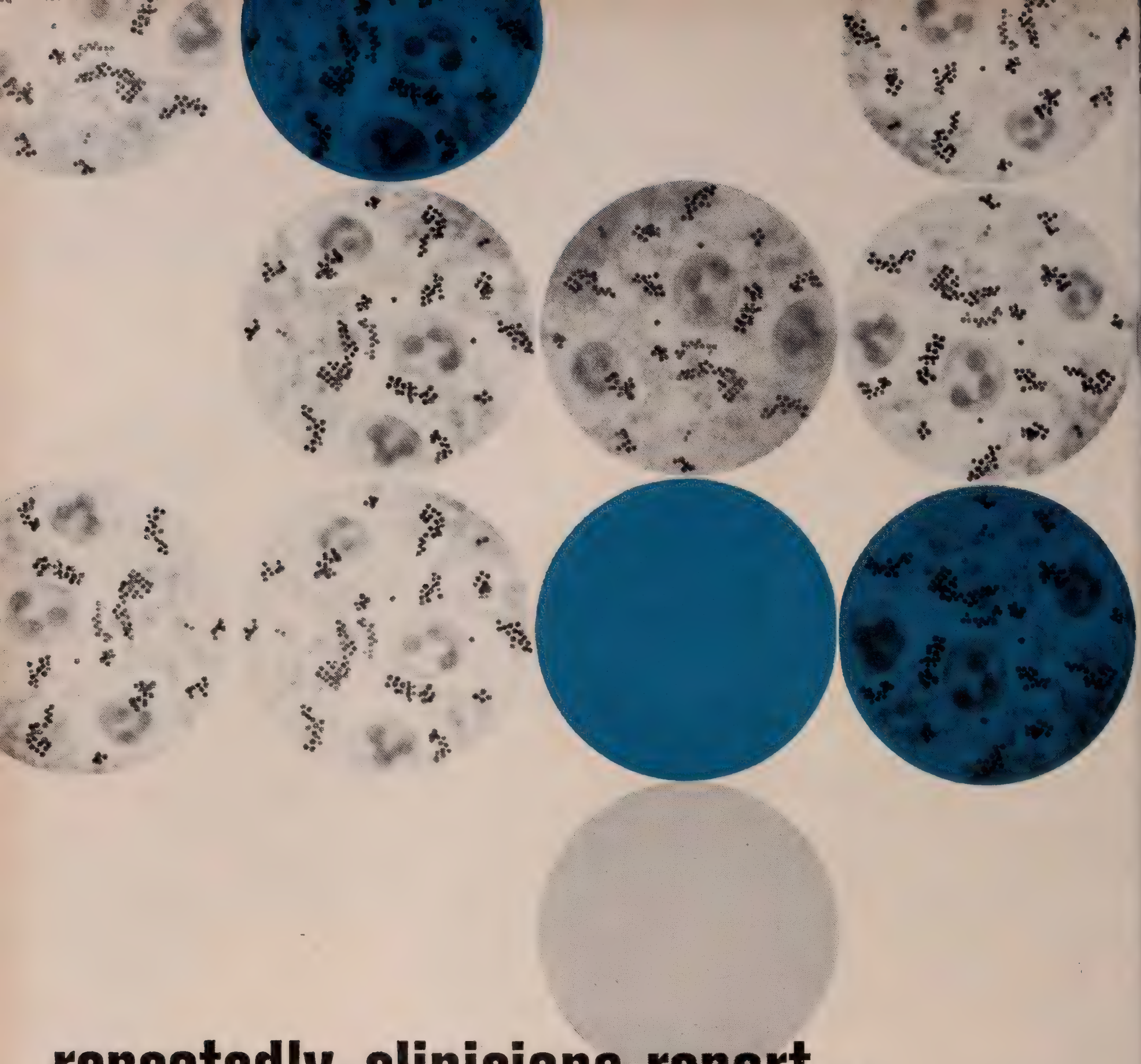

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References: (1) Finland, M.; Jones, W. F., Jr., & Bennett, I. L., Jr.: *Arch. Int. Med.* **104**:365, 1959. (2) Welch, H., in Welch, H., & Finland, M.: Antibiotic Therapy for Staphylococcal Diseases, New York, Medical Encyclopedia, Inc., 1959, p. 16. (3) Nichols, D. R., & Martin, W. J.: *Surg. Gynec. & Obst.* **107**:523, 1958. (4) Knight, I. C. S., & Nolan, B.: *Brit. M. J.* **1**:1224, 1959.

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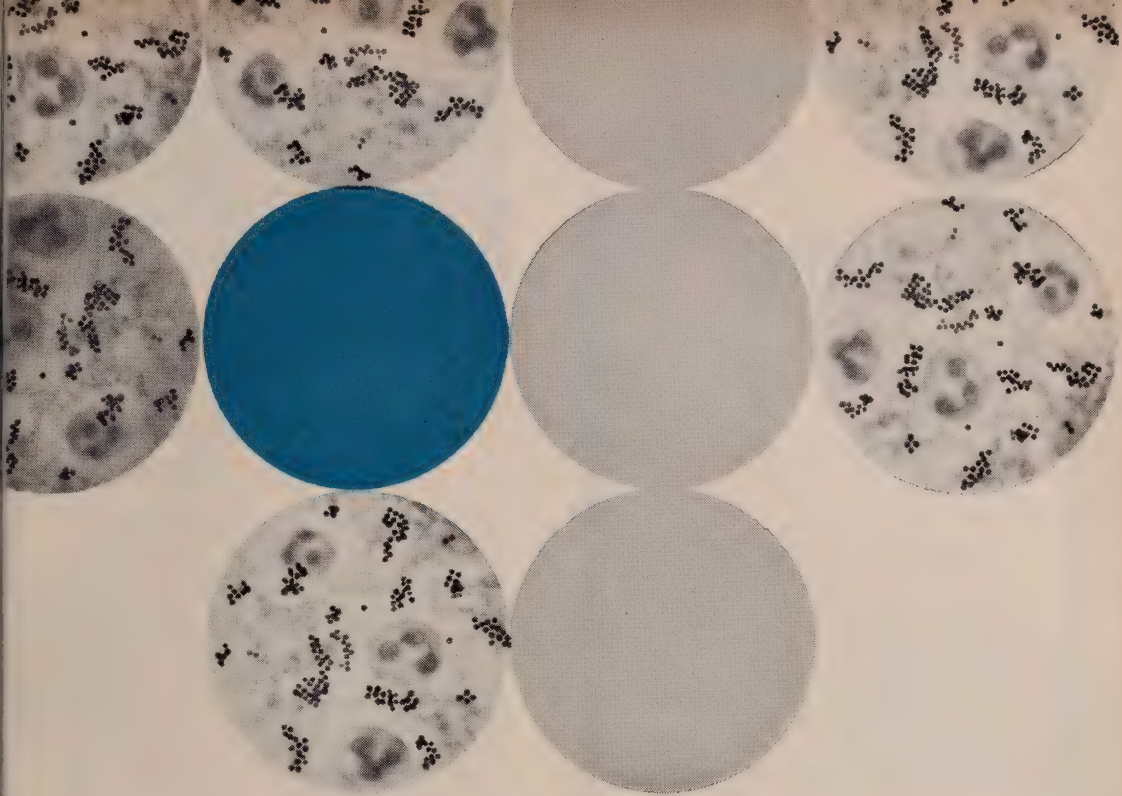

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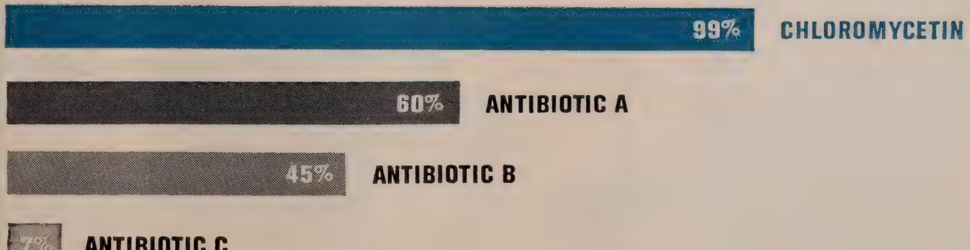

Staphylococcus aureus, coagulase-positive, was isolated in pure culture from 99 of 100 consecutive cases of puerperal breast abscess requiring surgical treatment.

*Adapted from Knight & Nolan[4]

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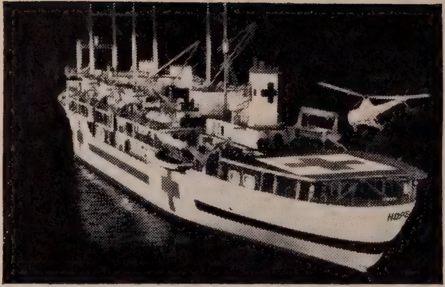

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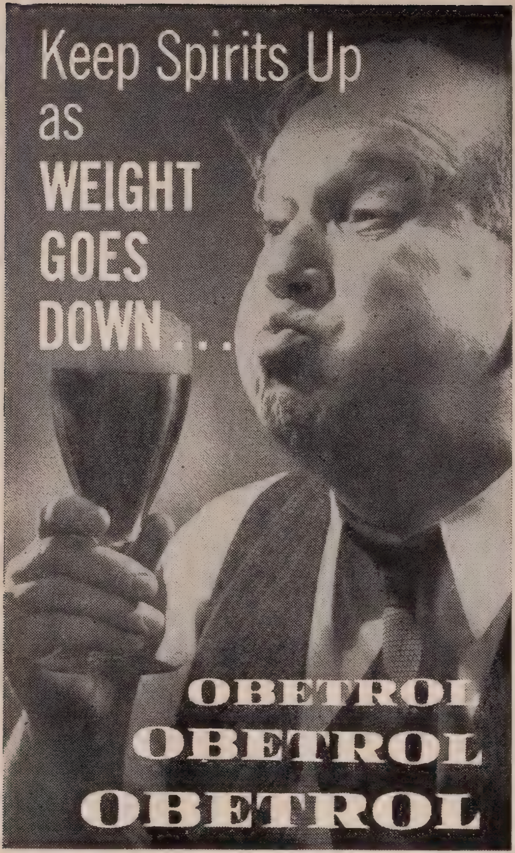

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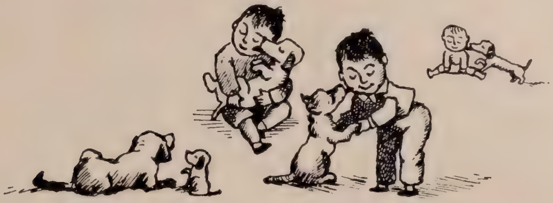
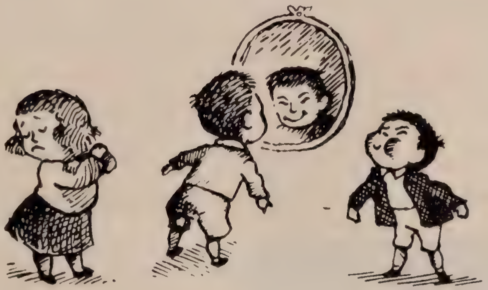


dogs are to kiss people



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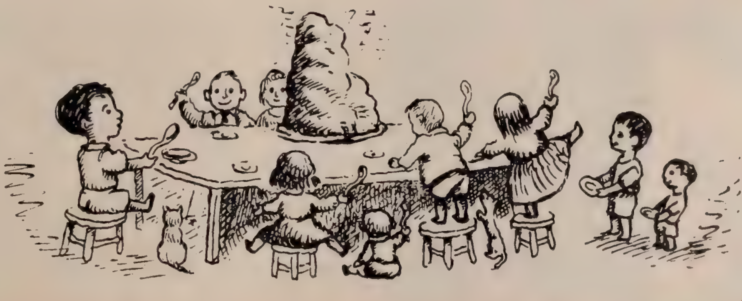

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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

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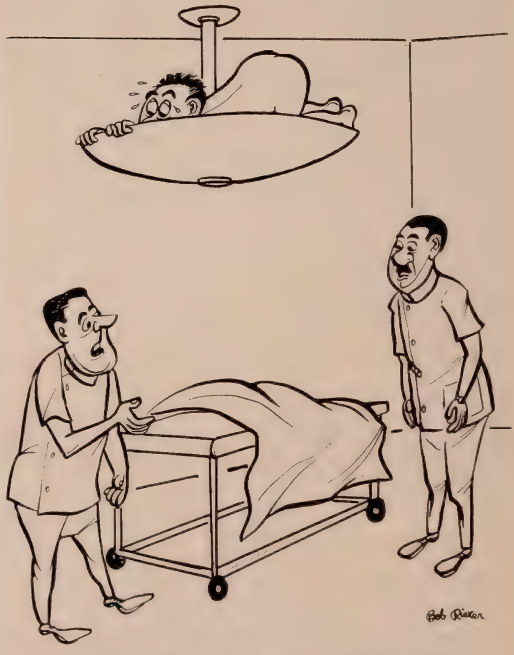

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References: 1. Menger, H. C.: Clin. Med. *4*:313 (Mar.) 1957. 2. Scal, J. C.: Eye Ear Nose & Throat Month. *38*:738 (Sept.) 1959.

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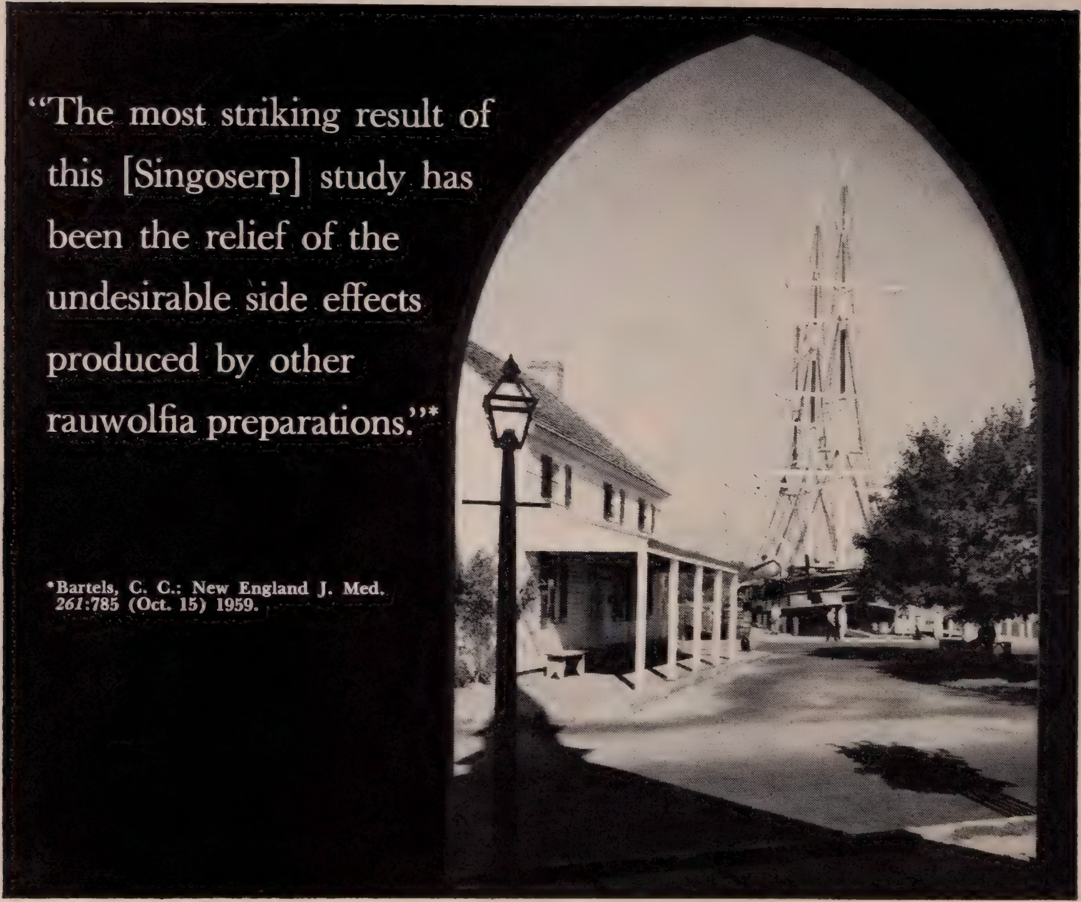

"The most striking result of this [Singoserp] study has been the relief of the undesirable side effects produced by other rauwolfia preparations."*

*Bartels, C. C.: New England J. Med. *261*:785 (Oct. 15) 1959.

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Nasal congestion	7	0
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(Adapted from Bartels*)

many hypertensive patients prefer

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1. Weiner, A. L.: Paper presented at the Conference on Recent Advances in the Treatment of Chronic Dermatoses, University of Cincinnati (Ohio), Nov. 5, 1959. 2. Compiled by the Medical Department, Eaton Laboratories, from case histories received. 3. Christenson, P. J., and Tracy, C. H.: Current Therapeutic Research 2:22, 1960. 4. Glas, W. W., and Britt, E. M.: Proceedings of the Detroit Symposium on Antibacterial Therapy, Michigan and Wayne County Academies of General Practice, Detroit, Sept. 12, 1959, p. 14. 5. Leming, B. H., Jr.: Ibid., p. 22. 6. Investigators' reports to the Medical Department, Eaton Laboratories.

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References: 1. Fabricant, N. D.: E. E. N. T. Monthly **37**:460 (July) 1958. 2. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4. Fuchs, M.; Bodi, T.; Mallen, S. R.; Hernando, L., and Moyer, J. H.; Antibiotic Med. & Clin. Ther. **7**:37 (Jan.) 1960. 5. Halpern, S. R., and Rabinowitz, H.: Ann. Allergy **18**:36 (Jan.) 1960.

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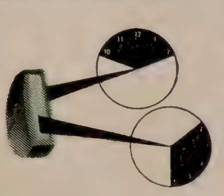

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*Knudsen, E. T., and Rolinson, G. N.: Lancet *2*:1105 (Dec.19) 1959.

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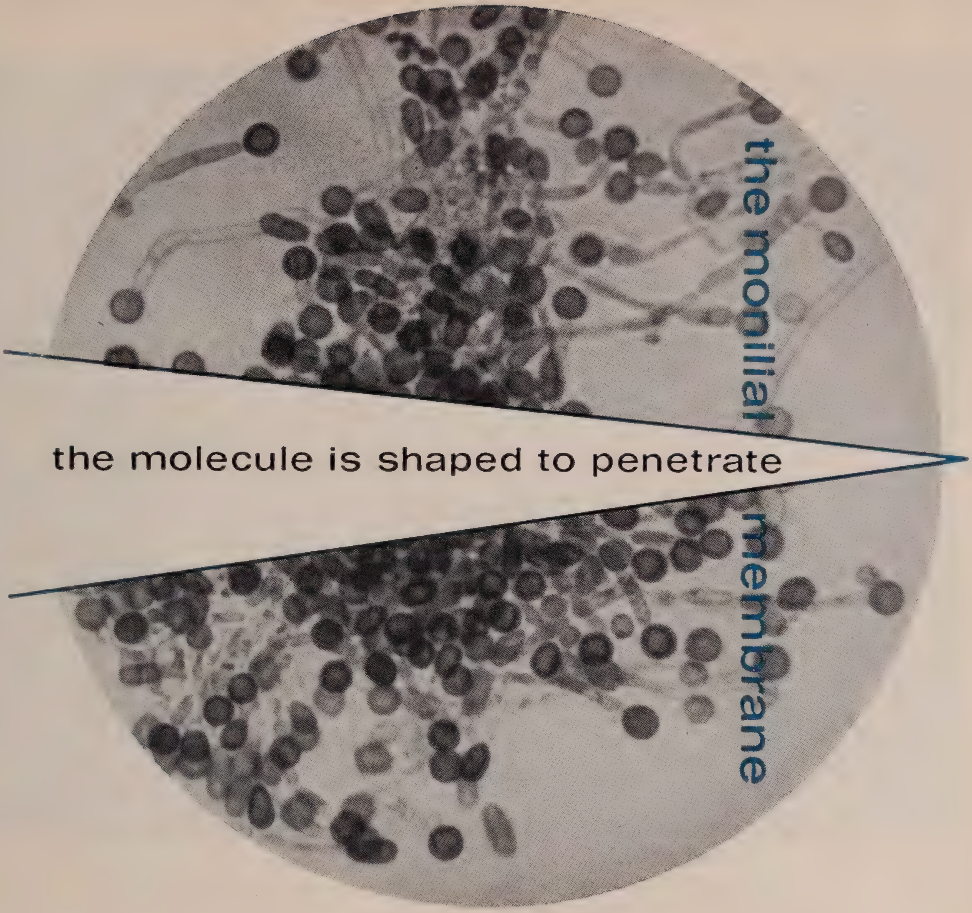

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*Lapan, B.: Am. J. Obst. & Gynec. 78:1320, 1959.

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Evaluation based on life expectancy is extremely difficult because of the peril of maintaining an untreated control group.[1] The doctor, however, can evaluate the symptoms related to the elevated blood pressure. . . . We know that retinopathy may improve, the heart may be reduced in size, the electrocardiogram may improve and in favorable cases the blood urea nitrogen level may fall.[2] These are reasonably objective criteria on which to base one's evaluation of treatment.[1]

On the succeeding page is evidence that Unitensen included in any therapeutic regimen may improve the results in hypertension as measured by a regression of objective clinical changes in a substantial proportion of the patients treated.

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Progress of Objective and Subjective Symptoms in Grades III and IV Hypertension Following Treatment with Unitensen and Unitensen-R

Observations in Patients* Treated up to 2 Years

Observations in Patients* Treated up to 3½ Years

The Course of Subjective Symptoms

Symptom	Number**	Improved	% Improved
Headache	27	21	77.7
Palpitation	20	13	65.0
Angina	15	9	60.0
Dyspnea	17	8	47.0

Number**	Improved	% Improved
43	38	88.0
29	19	65.5
21	16	76.0
27	14	51.0

Objective Changes Following Treatment

Finding	Number**	Improved	% Improved
Funduscopic Changes	41	24	58.5
Enlarged Heart	20	13	65.0
Abnormal ECG	37	10	27.0
Proteinuria	31	12	38.7
Nitrogen Retention	17	6	35.2

Number**	Improved	% Improved
59	38	66.0
35	23	65.7
45	25	55.5
43	27	62.7
28	10	35.7

Left hand charts from Clinical Exhibit "The Ambulatory Patient with Hypertension" presented AMA Convention, San Francisco, June 22-27, 1958, by B. M. Cohen, M.D.

*All patients in this study were initially classified as Smithwick Grades III and IV.

**Expressed as the number of patients exhibiting the symptom recorded.

Right hand charts include patients previously reported who had been continuously maintained on Unitensen and Unitensen-R, plus additional patients later added to the study. From Clinical Exhibit "The Office Diagnosis and Treatment of the Patient with Hypertension" presented American Academy of General Practice, Indianapolis, March 18-19, 1959, by B. M. Cohen, M.D.

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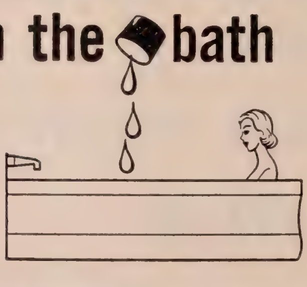

1. Spoor, H. J.: N. Y. State J. Med., Oct. 15, 1958

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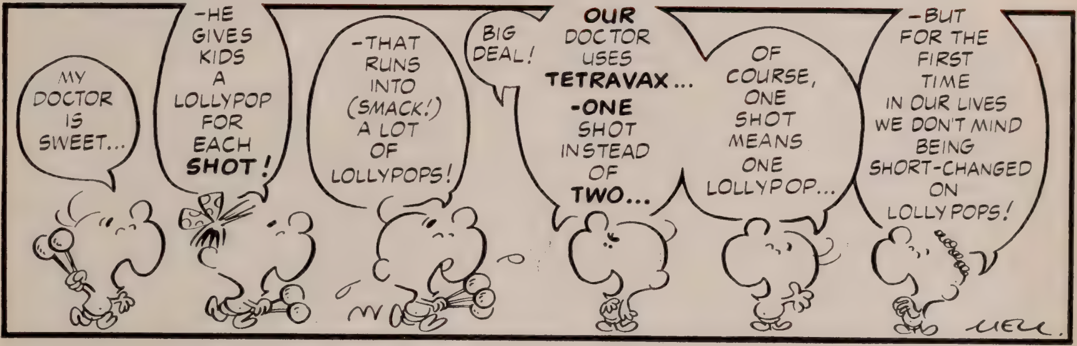
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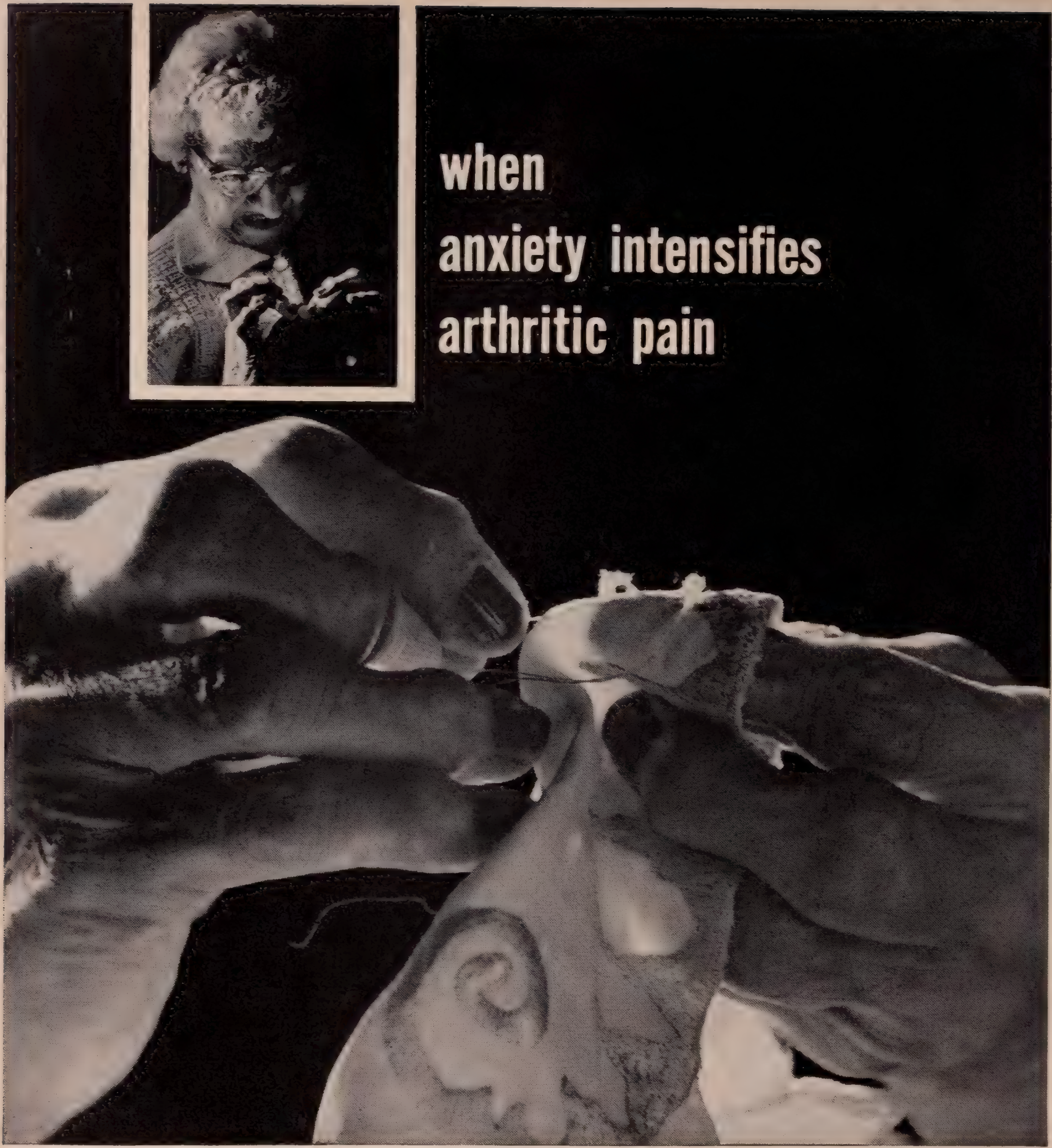

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EDITORIALS

The Treatment of Penicillin-Resistant Staphylococcal Infections

Penicillin is clearly the antimicrobial of choice as the initial therapeutic agent in severe infections caused by penicillin-susceptible staphylococci. The response of such infections to penicillin is commonly satisfactory. On the other hand, the treatment of severe infections caused by penicillin-resistant staphylococci is currently unsatisfactory. There would appear to be four approaches in selecting an appropriate antibiotic regimen.

1. THE ADMINISTRATION OF LARGE AMOUNTS OF PENICILLIN.—The resistance of staphylococci to penicillin is usually associated with the presence of penicillinase, an enzyme which converts penicillin into inactive penicillinoic acid. Such resistance is relative and can be overcome in vitro by increasing the concentration of penicillin in the test system. Recent experimental studies[1] have indicated that some infections due to penicillin-resistant staphylococci can be readily treated with penicillin if the antibiotic is given in large doses. Occasional reports have suggested that massive amounts of penicillin may be effective in treating penicillin-resistant infections in man. It should be emphasized that treatment with penicillin was successful in the experimental studies only if initiated shortly after the onset of infection. When treatment was delayed until the tissue populations were high, penicillin therapy did not modify the infection.

It seems likely that tissue staphylococcal populations are commonly large in patients at the time treatment is started. Under such conditions penicillin may be expected frequently to prevent the spread of infection to distant sites or to uninvolved areas of the same tissue, but cannot be expected to modify established focal lesions in which large numbers of microorganisms produce extensive amounts of penicillinase.

It seems to the writer, therefore, that penicillin is not the treatment of choice in most penicillin-resistant infections. However, if there is a reasonable suspicion of endocarditis, then the administration of large amounts of penicillin remains the initial treatment of choice, usually in combination with another appropriate antimicrobial. The results of such therapy have not been surpassed by any of the newer antimicrobial regimens.

2. THE ADMINISTRATION OF TETRACYCLINES, ERYTHROMYCIN, CHLORAMPHENICOL, AND NOVOBIOCIN ALONE OR IN COMBINATIONS.—Each of these antibiotics is primarily bacteriostatic. They have been shown to be beneficial in many staphylococcal infections. These agents fail frequently, however, to modify the course of severe staphylococcal disease despite the continuing susceptibility of the staphylococcus in vitro. It seems perfectly reasonable to initiate therapy with one or more of these antimicrobials in penicillin-resistant infections, but if beneficial results are not detected after seventy-two hours of treatment or if the clinical condition of the patient deteriorates, one of the newer agents should be added or substituted. Staphylococcal endocarditis is usually not benefited by the administration of these bacteriostatic agents.

3. TREATMENT WITH NEWER ANTIBIOTICS.—Five such agents are available, including vancomycin, kanamycin, ristocetin, sulfadimethoxine, and furaltadone. Vancomycin appears to be the most promising of the five. Staphylococci are thus far apparently uniformly susceptible to vancomycin in vitro. It is administered intravenously in dosage of 1.5 to 4 Gm. daily. Numerous reports have documented its efficacy in severe staphylococcal infections including endocarditis.[2,3] The author's experience has also been favorable although failures

have been noted which were associated with the presence of nondrainable local abscesses or with failure to achieve bacteriocidal levels in the blood. Side-reactions to vancomycin have usually been of minor consequence. Local phlebitis is common, and deafness may occur in patients with renal failure. Drug fever, leukopenia, and skin rash have been observed infrequently.

Kanamycin has also been shown to be of benefit in severe staphylococcal infections.[4] It is absorbed poorly and must be administered parenterally in dosage of 1 to 2 Gm. daily. The antibiotic is closely related to neomycin and has considerable kidney and eighth nerve toxicity. Both renal failure and irreversible deafness have been produced following the administration of small amounts of kanamycin.

It is the author's opinion that vancomycin is preferable to kanamycin because of the significant toxicity of the latter.

The efficacy of ristocetin is unclear. Although some reports have been favorable,[5,6] other authors have observed persistent bacteremia during ristocetin therapy.[7] The drug has considerable hematologic toxicity, and at present cannot be considered a major antistaphylococcal agent.

Sulfadimethoxine (Madribon) and furaltadone (Altafur) have been advertised as potent antistaphylococcal drugs. However, there is thus far no convincing evidence that either of these antimicrobials is effective in severe staphylococcal infections. Until adequate studies are available, these agents should still be considered in the experimental stage, and should not be employed routinely in overwhelming staphylococcal disease.

4. TREATMENT WITH BACITRACIN.—Bacitracin is clearly an effective antistaphylococcal agent, and the majority of penicillin-resistant microorganisms are susceptible to it in vitro. It is administered intramuscularly and is well tolerated by children. Many pediatricians feel bacitracin is the agent of choice in severe penicillin-resistant staphylococcal disease. In adults, the administration of 1,000 units per Kg. is associated frequently with the development of renal pathology. It is the author's opinion that bacitracin should be held in reserve because of the potential nephrotoxicity. If other regimens fail or if the patient shows progressive deterioration, the use of bacitracin should be considered. It is especially useful in staphylococcal meningitis.

In summary, the treatment of severe penicillin-resistant infections can be initiated with one or more bacteriostatic agents, including the tetracyclines, erythromycin, chloramphenicol, and novobiocin. If such regimens fail, vancomycin or kanamycin can be administered. Penicillin is useful primarily in the therapy of staphylococcal endocarditis. Bacitracin should be reserved for the treatment of infections which fail to respond to the other regimens and for the therapy of staphylococcal meningitis. Ristocetin, sulfadimethoxine, and furaltadone are not yet proved as important additions to the antistaphylococcal armamentarium.—D.B.L.

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An Expensive Lesson in the Importance of Keeping Up to Date

A recent decision of the Court of Claims against the State of New York awarding $175,000 to a young farmer shows, in the opinion of the presiding judge of the Court, the necessity for those who manufacture, distribute, and make available to the medical profession drugs and therapeutic products to keep up with modern medical theories and procedures in the field of their endeavors.

On September 1, 1954, the claimant, a twenty-five-year-old farmer, suffered a compound fracture of his right index finger and was treated by his own physician. On September 10, 1954, the physician had the claimant admitted to a hospital where the physician diagnosed his illness as tetanus. The physician undertook therapeutic treatment of the disease by intraspinous administration of tetanus antitoxin manufactured and distributed by the Division of Laboratories and Research of the Department of Health of the State of New York. The intraspinous administration, it was claimed, was made in reliance on and in accordance with a circular published, printed, and distributed by the Division of Laboratories and Research containing instructions and directions for the use of tetanus antitoxin serum and specifically recommending intraspinous administration. The circular, while warning of the danger in the use of the tetanus antitoxin, read in part: "Therapeutic Treatment: The antitoxin may be administered intraspinously, intravenously, and intramuscularly. The intraspinous and the intravenous methods are generally recognized as far superior to the intramuscular for the initial injection. There is considerable difference of opinion as to which is the more effective route. On the basis of reports received on cases treated in the State, combined intravenous and intraspinous administration appears to possess an advantage."

As a result of the intraspinous administration of tetanus antitoxin, it was claimed that the young farmer suffered transverse myelitis and associated damage to his spinal cord and central nervous system causing complete and permanent paralysis and anesthesia below the tenth dorsal vertebra leaving claimant without control of his physical and body functions below that point in his body.

The circular also contained detailed instructions for intraspinous administration and indicated intraspinous administration should precede intravenous administration even where there were indications for proceeding with great caution.

The State in a preliminary proceeding argued that no liability could be asserted for the distribution to physicians and surgeons of an instrumentality of medical treatment developed by the medical profession and in common use by the profession. It relied upon earlier decisions which had relieved the State of liability involving the distribution of pooled blood plasma, collected by the American Red Cross and turned over to appropriate public health agencies following World War II, which was used and resulted in homologous serum jaundice.

The Court rejected this argument, stating that the trials of the earlier actions had established that the dangers inherent in the use of blood plasma were widely known in the medical profession. It pointed out that in the case before it there was no proof as to the knowledge with which the physician is chargeable concerning the use of the tetanus antitoxin. It stated the basic rule in malpractice actions in New York that "A physician is chargeable with that reasonable degree of learning and skill ordinarily possessed by physicians and surgeons in the locality where he practices." It then said that "Here the circular itself is clothed with the appearance of reflecting generally accepted medical practice."

The Court went on to reiterate the fundamental rules applicable to such a situation which include the following:

1. "The manufacture and distribution of an article dangerous to human life and well-being, if improperly used, imposes an obligation to advise of the manner in which the article may be safely used";

2. "Since the obligation to give advice exists it is a necessary corollary that such advice must be given with care. The fact that the instrumentality was distributed only to members of the medical profession for use by them cannot serve to insulate the manufacturer and distributor from liability to the patient as a matter of law."

The State also opposed the lawsuit on the ground that there were in 1954 and are now two schools of thought in the medical profession on the merits of intraspinous administration of tetanus antitoxin. The Court in refusing to accept this argument pointed out that the instructions concerning the administration of the tetanus antitoxin were originally issued in 1941 and were reprinted in 1954 with one minor change not going to their basic premise. The Court found that there was a preponderance of evidence to support a finding that, in the elapsed number of years, medical opinion had changed and that by 1954 the great weight thereof condemned the intraspinous administration of tetanus antitoxin for therapeutic purposes. The Court held that "the State Department of Health, which is manufacturing and distributing and making available State-wide to the medical profession for its use upon the populace agents of immunization against dread disease, must be required to keep up with modern medical theories and procedures in the field of its endeavors." The State of New York has indicated that it strongly disagrees with this decision and will appeal to a higher court. (*Gielski v. State of New York*, 18 Misc. 2d 508, citing 3 Misc. 2d 758.)

—J.R.B.

High Lights of the State Health Commissioner's Annual Report

During 1959, births in New York State reached an all-time high of 363,124, bringing the total population to an estimated 16.5 million. The death rate remained the same as for the last three years at 10.5 per 1,000 population.

Disease of the heart accounted for 43.8 per cent of the deaths, followed by cancer at 17.6 per cent. Although the cancer death rate at 18.5 per 100,000 was the second lowest since 1951, wider use of current knowledge could definitely lower this incidence.

Deaths from tuberculosis receded further. Since 1950 the death rate from tuberculosis has decreased 70 per cent. However, this should be no cause for complacency since a recent upstate study indicates that about 13 per cent of the tuberculous live at home and are without medical supervision.

Analysis of the 1959 national experience with the Salk polio vaccine estimates that 3 doses prevented about 85 per cent of the paralytic cases that would have occurred. The health of aged people is coming into sharper prominence since estimates indicate that the number of persons over sixty-five is expected to reach two million in 1970, which will comprise about 10.7 per cent of the population. Increased effort will be required in chronic disease care and rehabilitation.

Editorial Comment

Heritage and Obligation. Under this title the *Westchester Medical Bulletin** comments editorially on a topic which in our opinion cannot be too often and too emphatically stressed. Especially is this true when the comment is made with such elegance that it clothes an old truth in an attractive new dress. Says the *Bulletin:*

> One of the attributes which most distinguishes man from the rest of the animal kingdom is his ability to communicate not only with his contemporaries, but, through the vast stores of his creations, with the future generations, long after he has passed on. It is this priceless distillate of tragedy and good fortune, anguish and inspiration, which, crystallized, becomes our heritage; and there is no part of life which has not seen the brilliance of the past reflected in itself. Nor can we contemplate our origin without some pangs of pride in this rich treasury of art and science, philosophy and religion, custom and tradition.
>
> But this privilege of heritage implies an obligation to the future that it will not be marred by the present. For, no matter what our wish, we are indeed participants in its creation.
>
> Our nation is at a crossroads of indecision in which the principle of individual responsibility and freedom of choice is challenged. There are those who would sacrifice it on the altar of expediency and would replace this precious birthright with a paternalistic government control and provision from the cradle to the grave. Our legislative friends, imbued with an instinct for sensing what is popular, seem willing to abandon sound principles of economy and individual rights for the proposition that "everybody loves Santa Claus." The great illusion that we can provide something for nothing appears sufficiently attractive on the surface to be flounced about temptingly by the politicians.
>
> A case in point is the recent plethora of bills being introduced in Congress which are, in fact, variations of the Forand Bill. All are aimed at the provision for hospitalization to the elderly beneficiaries of social security; and some include surgical and diagnostic services as well. Fundamentally, they are similar, and in spite of all protestations to the contrary, their ultimate objective is total socialization of medicine.
>
> But to be merely cognizant of these threats is not enough to stem the course ahead. We must abandon the philosophy that favors a status quo, and is antagonistic to all which threatens it. In a world of continuous change, no policy can be expected to remain acceptable indefinitely. It is useless to prove statistically that there is no need for change, when, in fact, the momentum of public opinion is already in the direction of change! There is an anguished cry for new ideas. It is a mixed cry. It is a cry of despair and a cry of warning, which, like the voice in the wilderness, unheeded, leads to calamity!
>
> If the heritage we prize so dearly is to be preserved and enhanced, we must move with the tide of evolution, discarding the useless, and protecting the valued. If our way is to survive, we must rid ourselves of our indifference, our apathy, and our defeatism. Finally, we must destroy that malicious habit, so long indulged in that it has become a trade mark of our pattern of action, namely, the habit of opposition without proposition.

We would be the last to condone "opposition," merely for its own sake in most instances. Yet it is a tried and valuable military tenet that attack is the best defense weapon. For much of its recent history organized medicine and individual physicians have been forced into a defensive position by the press, by legislative bodies, and by the courts of law. We concede that "proposition" should be included among the weapons of defense to continue the military analogy, but "proposition" is frequently a tool of great usefulness at the diplomatic conference table if the invasion is halted or the ambush prevented. The profession of medicine has survived for a long time probably for the reason that though it has lost many battles it has generally won the wars.

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* 28: 21 (Apr.) 1960.

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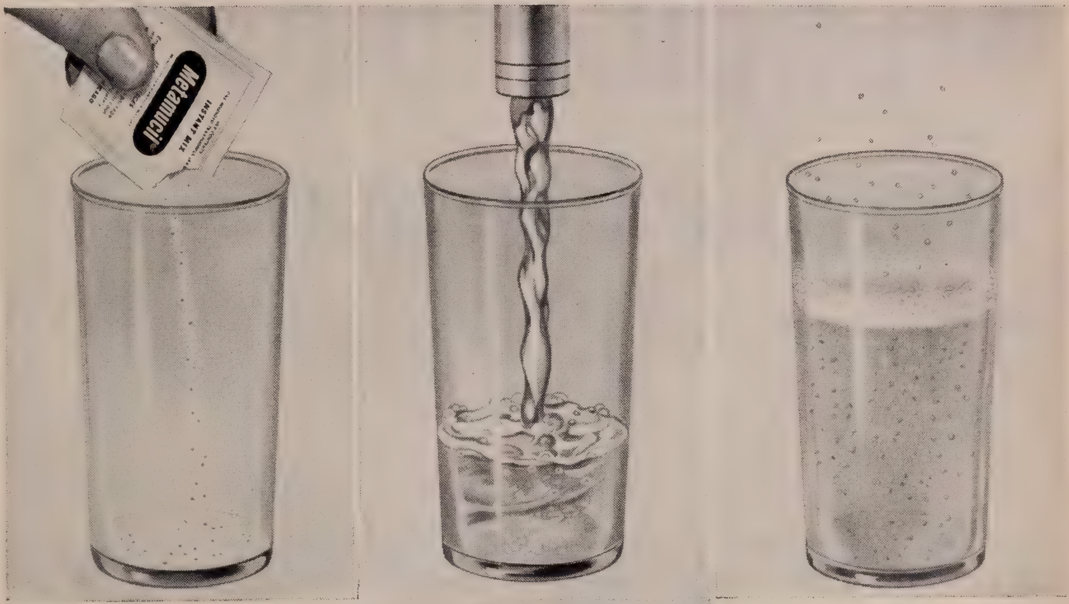

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SCIENTIFIC ARTICLES

Diagnosis of Conditions Simulating Bronchial Asthma

COLEMAN B. RABIN, M.D., NEW YORK CITY

(From Mount Sinai Hospital, New York City, Beth-El and Veterans Administration Hospitals, Brooklyn, and Veterans Administration Hospital, East Orange, New Jersey)

Physicians are warned repeatedly against the overdiagnosis of bronchial asthma. Medical students, internists, and allergists are being reminded constantly that "all that wheezes is not asthma." We are urged to use all means at our command to make certain that the patient who is considered asthmatic does not really have some other important disease.

Nevertheless, it is remarkable that few of the exhortations go further than these generalizations. Rarely is the admonition accompanied by a recitation of the differences that distinguish true bronchial asthma from other conditions. Just how one is to differentiate asthma from other diseases that produce dyspnea does not appear to be set forth clearly. That this is necessary is evidenced by the frequency with which all manner of disease is confused with bronchial asthma in spite of repeated warnings and all of the special methods of diagnosis available to us at the present time.

In all patients presenting with symptoms that appear due to bronchial asthma, it is essential to eliminate the possibility of an obstruction of the trachea or major bronchi by a neoplasm, a foreign body, or a perforated lymph node. It is obvious that the diagnosis of these conditions should be made promptly for they require immediate treatment. Obstruction throughout the smaller bronchi as a result of severe bronchial inflammation, fibrin casts, or pulmonary edema causes manifestations so similar to those of bronchial asthma as to make the differential diagnosis difficult in many instances. Nevertheless, these diseases can be recognized if proper attention is paid to their distinguishing features. Cardiac asthma may be especially difficult to differentiate from ordinary bronchial asthma. It is important to make the differentiation because the treatment of the two conditions is so different. In fact, the therapy employed for an acute attack of bronchial asthma may prove catastrophic if the asthma is cardiac in origin. Severe dyspnea due to diseases of the lungs associated with diffuse interstitial infiltrations often has been attributed to bronchial asthma, but the cause of the dyspnea should be quite evident if a careful examination is performed.

It is the purpose of this paper to call attention specifically to the clinical manifestations, physical signs,* and roentgen findings that are useful in the recognition of the diseases that masquerade as bronchial asthma, and to point out the diagnostic

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Presented at the 153rd Annual Meeting of the Medical Society of the State of New York, Buffalo, New York, Section on Allergy, May 14, 1959.

* Rabin, C. B.: Diagnosis of chest diseases: new or neglected physical signs, A.M.A. Arch. Int. Med., to be published.

studies that are indicated in special cases. The problems will be considered under the headings of obstruction of the air passages, namely the trachea, the main bronchi, and the smaller bronchi throughout the lungs; cardiac asthma; and the diseases that are characterized by diffuse bronchial infiltrations.

Obstruction of the Air Passages

Obstruction of the Trachea.—Fortunately, obstruction of the trachea is uncommon. Nevertheless, most physicians have come in contact with cases treated as bronchial asthma because the real cause of the wheezing and dyspnea had not been recognized until the disease was far advanced or the patient was actually asphyxiated. The error is understandable because of the close similarity of the symptoms and physical signs to those of true bronchial asthma and the absence of any evidence of the tracheal disease on most ordinary films. Yet it is possible to recognize the presence of tracheal obstruction if proper care is taken in the examination.

The loud, noisy respirations heard in tracheal obstruction are different from those of bronchial asthma. The sound heard in tracheal obstruction is typically high in pitch and is as loud or louder during inspiration than in expiration. The sound seems to be made up of a single pitch rather than a concatenation of wheezes of different pitches and intensities, and inspiration is prolonged rather than expiration. These are the characteristics of stridor rather than of asthmatic wheezing. When stridor is heard, tracheal obstruction should be suspected and further investigations should be carried out from this point of view.

It is important to inspect the cervical region during breathing. Inspiratory retraction of the supraclavicular fossae is an indication of difficulty in inspiration and points to the possibility of an organic obstruction to the air passages rather than to bronchial spasm. In children, this may be associated with retraction of the sternum. In bronchial asthma, the difficulty is mainly in expiration. While there may be some retraction of the supraclavicular fossae during inspiration, there is a characteristic fullness in this region during expiration. The changes in the supraclavicular fossae during respiration may be due to obstruction in the larynx. This can be determined easily by laryngeal examination. The supraclavicular fullness during expiration may be due also to acute inflammation of the smaller bronchi, as in tracheobronchitis in children. The distinguishing features of this condition will be discussed later.

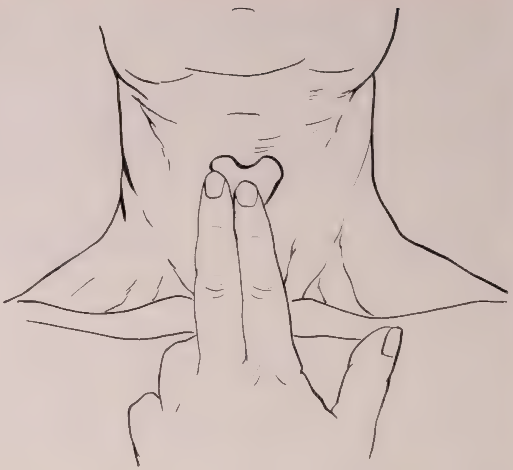

Fig. 1. Palpable rhonchus over trachea and larynx in tracheal obstruction. A palpable rhonchus over this area indicates the presence of obstruction in the larynx or trachea. No rhonchus is felt in asthma if the glottis is open. If a rhonchus is palpable during respiration, the examination should be repeated while observing the larynx to make certain that the vocal cords are separated. If the rhonchus persists and the glottis is open, examination should be made for an obstructive lesion in the trachea.

A most useful sign, which in our experience has proved pathognomonic of tracheal obstruction, is the presence of tactile respiratory fremitus over the larynx in the absence of laryngeal obstruction. The fingers are placed over the larynx and the presence of the fremitus is observed during respiration (Fig. 1). The fremitus is felt during both phases of respiration, although it is more pronounced during expiration.

If fremitus is felt, it is necessary to exclude an origin in the larynx before deciding that it is due to tracheal obstruction. Fremitus over the larynx may be produced by voluntary or spastic approximation of the vocal cords during respiration or by an obstructing laryngeal lesion. It is necessary therefore to observe the larynx while palpating for the laryngeal fremitus. If no laryngeal lesion is observed and the cords are seen to be separated, it is safe to conclude that the fremitus is due to obstructive disease of the trachea.

The wheezing respirations of bronchial asthma are always associated with wheezing rales that can be heard over the lungs. On the other hand, in tracheal obstruction, these rales usually are absent despite the stridulous breathing. The only abnormality to be heard with the stethoscope may be simply an exaggeration, or roughness, of the breath sounds over the sternum. A paucity or absence of wheezing rales in a patient with noisy breathing always suggests tracheal obstruction if the glottis is wide open.

Careful examination of ordinary films made in the usual posteroanterior and lateral projections frequently will disclose the shadow of an obstructive tracheal lesion which almost always is overlooked on cursory examination. The trachea may be seen better in either of the oblique views, particularly if the film is overexposed. It is a wise precaution to make such a film in every case which is suspected to be bronchial asthma.

Examination of the trachea usually is neglected during fluoroscopy, although this procedure is more revealing than ordinary roentgen films even when they are made in the oblique projection. The trachea practically always is well outlined under the fluoroscope if the oblique position is used. It is delineated even more clearly during the act of coughing. The posterior wall of the organ is seen to thrust forward at the onset of each cough and to fall backward immediately thereafter, producing contrast which reveals most obstructive lesions. This form of examination is simple to perform and should be made in every suspected case of bronchial asthma.

Where the type of breathing or the physical signs lead to a suspicion of tracheal obstruction, additional examinations should be made. Bucky films show more contrast and reveal the trachea better, particularly in the oblique view. Sectional radiography demonstrates clearly masses within the trachea. If these examinations are made when they are indicated, few obstructive diseases of the trachea will be missed. Of course, tracheoscopy will disclose abnormalities of the trachea, but the procedure is not required for diagnosis except under special circumstances. The methods outlined above are practically always sufficient. If they should yield information suggesting the presence of tracheal disease, then tracheoscopy definitely is indicated.

Obstruction of the Main Bronchi.—Obstruction of a large bronchus frequently produces wheezing respirations which are easily confused with bronchial asthma. Generally it is taught that the wheezing rales of large bronchus obstruction occur particularly during inspiration, while those of bronchial asthma occur during expiration, and that expiration is prolonged in asthma and not in bronchial obstruction. While this generally is true, exceptions are frequent and may lead to error.

It is to be recalled that the large bronchi also contract during expiration. Although the normal bronchial lumen is not sufficiently narrowed to produce a wheeze during expiration, it may be almost closed off during expiration if there is a partially obstructing lesion. Thus, in the case of a bronchial neoplasm or of a foreign body, a wheezing rale may be produced predominantly or solely during expiration. Expiration then may be prolonged. The wheezing rale which originates on one side of the chest often can be heard over both lungs. It is, therefore, understandable that a partially obstructing bronchial lesion may produce sounds which simulate those of bronchial asthma.

There are two features which distinguish the rales of large bronchus obstruction from those of bronchial asthma. The first is the tonal quality of the adventitious sounds. In bronchial asthma, the rales originate in many of the smaller bronchi throughout the lungs. Their pitch depends on the caliber of the air passages obstructed. Since these vary in size, the rales heard in bronchial asthma are of different pitches. The tone, therefore, is not a pure one. The pitch varies in different portions of the lungs and on succeeding respirations. On the other hand, the rale of bronchial obstruction is characteristically of a single pitch. It does not change with different breaths, and retains the same pitch even when transmitted over the opposite lung.

The second distinguishing feature is the location of the palpable respiratory fremitus (palpable rhonchus). In bronchial asthma the fremitus felt during respiration is either not palpable or may be palpated over both lungs. In an obstruction of a large bronchus the rhonchus is felt regularly only on one side even though it may be audible on both sides of the chest. The presence of a constant rale of a single pitch or of a constantly palpable rhonchus localized to one side of the chest should serve as an indication for bronchoscopy for the detection of an obstructive lesion of a large bronchus.

In every case suspected of bronchial asthma, fluoroscopy should be performed to determine the presence of a unilateral obstructive phenomenon. The lucency and clouding of each lung should be compared during both inspiration and expiration. If either lung should fail to show the clouding that normally occurs during expiration, bronchial obstruction is to be suspected and bronchoscopy performed. The position of the heart, aorta, and trachea should be noted during both phases of respiration. These structures should remain stationary during breathing. If there is a shift to either side, further investigation from the standpoint of bronchial obstruction is mandatory. The movement of the mediastinum is in the direction of the obstructed side during inspiration whether or not partial atelectasis or obstructive emphysema is present.

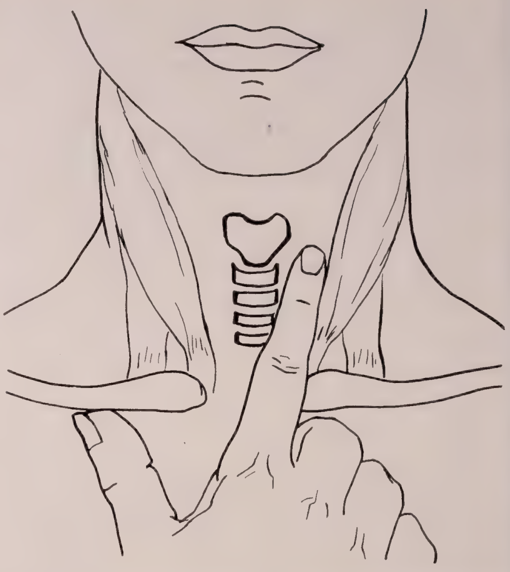

FIG. 2. Measurement of the tracheal-sternomastoid space to determine the position of the trachea. The finger is inserted between the trachea or larynx and the mesial border of the sternomastoid muscle. If the trachea is in the midline, the space is equal on both sides. In the absence of marked shrinkage of the lung or of bronchial obstruction, the trachea should remain in the midline during inspiration and expiration as determined by this method of measurement.

The shift of the trachea during respiration also can be detected on physical examination. The position of the trachea in the lower part of the neck is determined by measuring the space between the lateral border of the trachea and the mesial edge of the sternomastoid muscle with the examining finger on each side (Fig. 2). This is done during inspiration and expiration. Diminution in the width of the tracheosternomastoid space on one side during respiration indicates pendular movement of the trachea (Fig. 3). It has the same significance as the shift of the mediastinum noted on fluoroscopy. The trachea moves in the direction of the side of the obstruction during inspiration

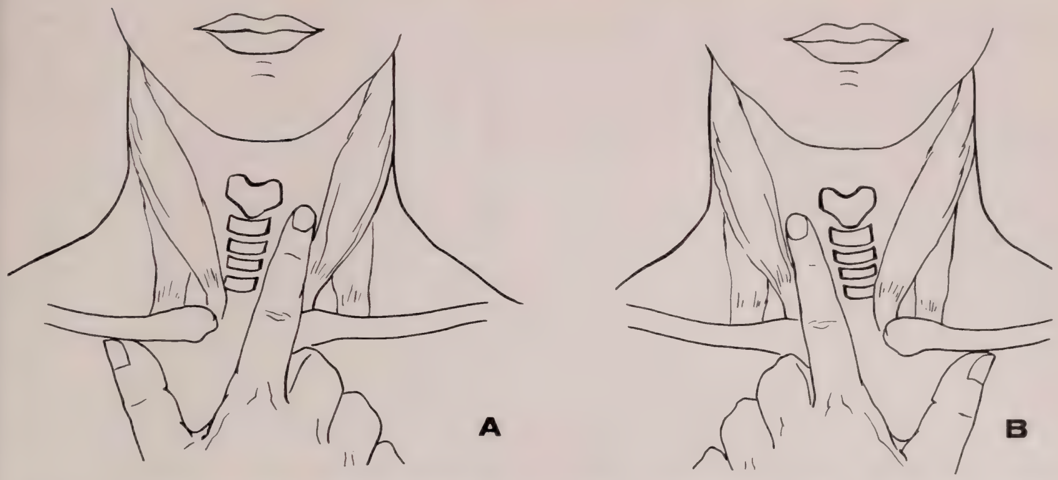

Fig. 3. Pendular movement of cervical trachea due to partial obstruction of the right bronchus. This patient had a bronchial adenoma. The trachea was in the midline during midinspiration. On full inspiration it deviated to the right and on expiration it deviated to the left. (*A*) Inspiration: There is an increase in the width of the tracheal sternomastoid space on the left side. (*B*) Expiration: The trachea is deviated to the left, increasing the width of the space on the right side.

and in the opposite direction during expiration. Similar displacement of the trachea occurs in pneumothorax as well as in unilateral obstructive emphysema. The trachea remains in the midline in both inspiration and expiration in bronchial asthma.

Obstruction of the Smaller Bronchi.—More or less generalized obstruction of the smaller bronchi by bronchial secretion or fluid produces dyspnea and wheezing rales. The clinical picture then is quite similar to that of bronchial asthma. In fact, differential diagnosis between acute bronchitis and bronchial asthma may be impossible when the patient is first seen. The abnormal physical signs, namely, diffuse rhonchi and prolonged expiration, are the same in both conditions. However, the clinical course, the character of the sputum, and other collateral manifestations usually make the diagnosis clear.

In acute bronchitis, the wheezing rales may be caused by purulent secretion, swelling of the bronchial mucosa, bronchial spasm, or by all of these factors. If the rhonchi are due simply to secretion, they disappear after coughing. If they are caused by swelling of the mucosa or by bronchial spasm, they persist. The differentiation from asthma can then be made only from the clinical course, namely, the onset with fever and absence of a previous history of bronchial asthma.

If there is an allergic background, the acute infection, manifested by the sudden onset of fever and purulent sputum, can provoke an attack of asthma which may become chronic. This possibility should always be borne in mind in any case of acute bronchitis associated with wheezing. A careful history should be taken concerning the occurrence of allergic manifestations in the patient and in his family. The nasal mucous membrane should be examined for evidences of allergic rhinitis. If the findings suggest the possibility of allergy, precautions should be taken against the development of a true asthmatic state. The infection should be treated vigorously with antibiotics to eliminate this factor which may result in chronic asthma, and suitable treatment should be given to combat the asthmatic tendency before it becomes ingrained.

Gross examination of the sputum is essential in all patients who appear to have an attack of asthma. One must take note if the sputum is purulent, for this is indicative of infection. A careful search should be made for bronchial casts. The appearance of firm, often-branching, cylindrical masses suggests the presence of fibrinous bronchitis. This possibility should be considered whenever there is eosinophilia in association with asthmatic symptoms. Microscopic examination of the suspected bronchial cast, crushed between the slide and the cover slip and properly stained, shows characteristic whirls of fibrin within which are enmeshed numerous eosinophils. The diagnosis of fibrinous bronchitis is suggested by a history of the expectoration of these firm, cylindrical masses. Sometimes the patient will volunteer the information that he brings up firm material that feels like "noodles" in the mouth. He should be asked specifically if he has ever noted such a sensation. If he has, or if fibrin casts are found in the sputum, bronchoscopy is indicated. The procedure may disclose large bronchi plugged with fibrin masses. The asthmatic symptoms may be relieved by aspiration through the bronchoscope.

Pulmonary edema is often manifested by coarse, wheezing rales throughout the lungs. These together with the dyspnea and cyanosis suggest an asthmatic attack. A hyposensitive individual with coronary thrombosis may complain only of dyspnea and a tight sensation in the chest just as in bronchial asthma. Here again, the examination of the sputum is most important. Grossly it is thin and frothy rather than thick and mucoid. A smear of the sputum often discloses heart failure cells which differentiate the sputum of pulmonary edema from that of bronchial asthma. Where the differentiation between the two is difficult, the determination of the venous pressure may prove decisive.

Cardiac Asthma

It is especially difficult to differentiate between allergic bronchial asthma and cardiac asthma. Cardiac asthma is associated with pulmonary edema, but of a latent variety. The edema is interstitial and the fluid does not obstruct the bronchi as in frank pulmonary edema. The wheezing respirations are due to spasm as in bronchial asthma. The difficulty then is to differentiate a bronchial spasm due to an allergic state from a spasm resulting from congestion and edema of the bronchial walls. The spasm may be relieved by an injection of adrenalin but this carries with it the danger of increasing the load on the left ventricle, the failure of which was responsible for the interstitial edema of the lungs. The importance of differentiating between cardiac asthma and allergic asthma is thus apparent.

The differentiation is made largely through a careful history. Angina on exertion, the presence of hypertension, aortic insufficiency, or crackling basal rales in addition to the wheezing should make one suspect cardiac asthma. Kerley's lines, or diffuse clouding of the lungs, demonstrated on the roentgen film are indicative of cardiac asthma rather than of allergic asthma. The patient should be examined for the presence of hepatojugular reflux, and an electrocardiographic examination should be made. If these precautions are taken the fact that the asthma is of cardiac origin rarely will be overlooked. In case of doubt as to the diagnosis, the determination of the venous pressure and the circulation time will usually resolve the difficulty. If the differential diagnosis cannot be made and emergency treatment is required, aminophylline should be administered intravenously rather than adrenalin. If this fails to relieve the asthma, response to a mercurial diuretic will settle the diagnosis.

Diffuse Interstitial Infiltrations

Dyspnea and wheezing respirations may be associated with diseases characterized by diffuse interstitial infiltrations. If the wheezing is due to bronchial secretion it diminishes or disappears after cough, while the sibilant and sonorous rales of bronchial spasm usually are increased by an induced spell of coughing. Examination after forced coughing should, therefore, be routine whenever bronchial asthma is suspected. In most cases of dyspnea caused by diffuse infiltrations in the lungs, the predominant sign is the presence of fine, crackling rales at the bases or throughout the lungs rather than the wheezing rales of bronchial asthma.

The patient who has bronchial asthma together with pulmonary infiltrations secondary to chronic interstitial pneumonia always has emphysema. The emphysema may not be notable on inspection of the chest, but the lowering of the diaphragm is clearly visualized during fluoroscopy or on the x-ray films. The absence of emphysema in most of the diseases characterized by interstitial infiltrations of the lungs differentiates them from cases of bronchial asthma associated with chronic interstitial pneumonia.

Asthmatic bronchitis may coexist with other conditions characterized by interstitial infiltrations. A common example is silicosis. That bronchial spasm is responsible in part for the dyspnea can be proved by the disappearance of the wheezing rales after the injection of a bronchodilator drug.

Comment

The use of the term "bronchial asthma" is time-honored and I do not think it is going to be changed. Moreover, I think that we get nowhere by calling everything that wheezes asthma. There is no point in saying that a patient has tracheal asthma when he is suffering from tracheal obstruction and is choking to death. The difficulty with breathing and wheezing is evident and to give it the special term "asthma" is wrong, I think. But I agree that when speaking of pure allergic asthma one should say so. In the case of chronic bronchitis with asthma the term "asthmatic bronchitis" is advisable.

The expression "asthmatic bronchitis" may be a poor one but at the same time it is useful. To me it signifies a person who has bronchitis but who has wheezing due to bronchial spasm at the same time. The bronchitis is partly responsible for the respiratory difficulty. I do believe that, in some cases, there is some form of sensitization that produces the difficulty, in which case the term "allergic asthmatic bronchitis" may be applied. Asthmatic bronchitis may occur in neurotic individuals who have more tendency to spasm than do others and, in these cases, allergy may play no part.

Acute bronchitis often is associated with wheezing. The patient himself may complain of it. The family notices it. I do not think there is any point in calling this condition asthmatic bronchitis. It is simply an acute bronchitis which so often is associated with the spasm and secretion that produce an asthmatic type of breathing. However, in the chronic bronchitis associated with wheezing I think it is important to use the term "asthmatic bronchitis." Therefore, when I speak of asthmatic bronchitis I think of a form of chronic bronchitis associated with wheezing.

Summary

1. The differentiation of bronchial asthma from other diseases associated with wheezing and dyspnea still presents a problem.

2. The important conditions to be differentiated from bronchial asthma are obstructive lesions of the air passages, pulmonary edema, cardiac asthma, and the diseases characterized by diffuse pulmonary infiltrations.

3. The decisive physical and roentgen signs, which point to the presence of conditions other than bronchial asthma, are set forth.

4. The indications for special examinations are delineated.

Symposium

COSMETIC ALLERGY*

Moderator

LOUIS MAMELOK, M.D., BROOKLYN, *President, Allergy Section, Medical Society of the County of Kings*

Chairman

HARRY MARKOW, M.D., BROOKLYN, *Chief of the Department of Allergy, Beth-El Hospital*

Cosmetics and the Federal Food, Drug, and Cosmetic Act

Current Trends in Cosmetic Legislation

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Trends in governmental regulation of cosmetics would appear to be an easy enough assignment for discussion, and yet it is an involved and complex area to present fully and adequately.

As you know, the Federal Food, Drug, and Cosmetic Act was passed in 1938. It provided modernized legislation dealing with foods, drugs, devices, and cosmetics. For the first time, Federal control of cosmetics and medical devices was provided, as well as an extension of the labeling provisions for foods and drugs, particularly those dealing with special dietary foods and safety controls for new drugs.

The principal responsibility of the Food and Drug Administration is to provide consumer protection through enforcement of the Federal laws which insure that foods, drugs, devices, and cosmetics are wholesome and unadulterated. These articles must be safe to use, manufactured and distributed under sanitary and controlled conditions, and supplied with truthful and informative labeling. Through continuing enforcement activities by the Food and Drug Administration, the public is assured of the quality of these regulated products and the manufacturers are protected against unfair competition from inferior or dishonestly labeled articles.

The Food and Drug Administration has employed scientific methods to administer the laws it enforces and may be regarded as one of the first crime detection agencies in the government. The suitability of cosmetics for their intended use are measured by contemporary and forward-looking methods of analysis that determine their composition and properties, an important activity engaged in by the analysts associated with this agency. Often their methods of analysis are adopted also by the cosmetic industry and by educational groups.

The Food and Drug Administration is a relatively small governmental agency with a regulatory staff of about 1,360 persons. Much of this increase has come during the past few years. This agency is headed by the Commissioner of Foods and Drugs and has five technical and administrative bureaus with headquarters in Washington and inspectional and analytical staffs in district offices in 17 principal cities. There are two scientific bureaus, namely, the Bureau of Medicine and the Bureau of Biological and Physical Sciences. The latter is comprised of the Divisions of Antibiotics, Cosmetics, Food, Microbiology, Nutrition, Pharmacology, and Pharmaceutical Chemistry.

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* Presented at the Section on Allergy of the Medical Society of the County of Kings and the Academy of Medicine of Brooklyn, December 1, 1959.

Legislative History

The cosmetic provisions have come of age in the twenty-two years since the Act was passed. Yet, we can recall that in 1933 when the proposal was made that cosmetics be subjected to Federal regulation under a bill then pending before Congress, it raised a major controversy. Some well-motivated cosmetic manufacturers were emphatic in their prediction that Federal legislation dealing with cosmetics would ruin the industry.

As expected, there were proponents of legislation who indulged in loud criticism of the practices of the cosmetic industry. Assertions were made that cosmetics were harmful. They pointed out that some eyelash dyes had caused serious eye injury and even blindness. Reference was made to a depilatory which relied on a poisonous thallium salt for its effectiveness. It was asserted that the product not only removed hair but also caused systemic poisoning of the people on whom it was applied. Some types of hair dyes, bleach creams, and a wide variety of cosmetics were attacked.

The proposed legislation was highly controversial also with respect to foods and drugs and was debated by Congress at various sessions for five years until it became law in 1938.

Legal Requirements

The Act defines a cosmetic as any article which is intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied for cleansing, beautifying, promoting attractiveness, or altering the appearance, or for use as a proponent of such articles; it excludes soap.

The basic requirements of the law relating to cosmetics are simple. A cosmetic must be safe for its intended purpose and any claims made for it must be truthful. In the case of coal tar hair dyes, the containers must bear labels stating that patch tests on the user must be concluded before the dye is applied. When coal tar dyes are added to any cosmetic other than a hair dye they must come from certified batches. A minimum of information, such as the name and address of the manufacturer and the quantity of the cosmetic in the package, must be stated.

In the administration of the Act, we have given only minimum attention to cosmetics as a class because of a limited staff. However, the cosmetic laboratories' staff is expected to be increased considerably in the very near future. Soon after the passage of the Act, the cosmetics that were known to be unsafe either were removed from the market or their composition or directions were changed in such manner as to make them safe.

From time to time in the ensuing years products have been marketed which were actually or potentially dangerous. Appropriate and prompt attention has been given to such products as we learned about them. We can point this up by recalling the warning which the Food and Drug Administration sounded about a year ago when disfiguring and sometimes painful injuries to the nails occurred to users of a new cosmetic known as "Ten Day Press-on Nail Polish." The product was removed from the market. At the time we took action, about 700 women had complained to the manufacturer and the agency of injury to their nails by peeling, splitting, and breaking off of the nails. You will recall that this "polish" came in the form of colored plastic strips of different sizes, shaped like nails. The characteristic injuries usually appeared in from two to four weeks after the plastic nails were applied. There was no evidence of permanent injury and the nails apparently grew back normally after this insult to them. A satisfactory and absolute explanation of the mechanism of this reaction has not been forthcoming. This leads us to seek basic information leading to appraisal of dermal toxicity.

Dermal Toxicity

The skin, its appendages, and mucous membranes have a marked capacity to respond to materials applied to them. We recognize that there can be ready absorption with local effects (local toxicity), systemic effects (systemic toxicity), or both. The local effects are characterized as "irritations," a general term to identify essentially allergic eczematous contact dermatitis, inflammation of the mucous membranes, and even corrosive damage. Skin irritation may arise from contact with substances which are primary irritants or from contact with substances capable of inducing sensitizations. We must not lose sight too of the fact that the substance can be both a primary irritant and an allergen.

As we look at the Act we note that at the present time there is no requirement that a formulation intended for topical use as a cosmetic be pretested and studied and the data as to safety be supplied to the Food and Drug Administration, as is required in the case of new drugs. Manufacturers are aware of the risks inherent in failing to pretest their products and are careful to evaluate their findings prior to marketing cosmetics, and yet we encounter alarming situations.

Recently, a home permanent wave lotion was introduced on the market. This product contained a neutralizer solution that was intended also as a shampoo. It was in use only a short time when women began to have severe and painful eye irritation. The severity of the reaction was so marked that the product had to be withdrawn from the market, and public warnings were issued promptly. No permanent damage to users has been described from this product, yet it was responsible for such extensive damage that it was necessary to warn consumers of its potential harm.

Appraisal of Cosmetic Toxicity

As in analytical methods used for determining the composition of all regulated products, chemical analyses are made of cosmetics. In addition, considerable effort has gone into establishing methods for studying the physiologic effects of cosmetics in Food and Drug Administration laboratories. Dr. John Draize, Chief of the Skin Toxicity Branch of the Division of Pharmacology, has designed widely adopted methods for studying quantitatively the effects of products on the skin. In the study of primary irritation of the mucous membrane, the tests are designed to employ the specific mucosa to which the product is to be applied. I shall not attempt to present any of the experimental technics, but I would like to call attention to the section on "Dermal Toxicity" which appeared in the monograph, *Appraisal of the Safety of Chemicals in Foods, Drugs and Cosmetics,* published in 1959 by the Association of Food and Drug Officials of the United States.

In connection with the evaluation of the safety of cosmetics, as with drugs there must be concern not only with the proposed use of the product but also with the influence of environmental factors, such as sunlight. The role of photosensitization in inducing ill-effects with cosmetics has been noted with certain essential oils and lipsticks. Pretesting for such effects should be considered prior to introducing products which will remain in situ for varying periods of time. The possibility of ill-effects from the inhalation of sprays must also be kept in mind.

Coal Tar Dyes in Cosmetics

Apart from the hair dyes mentioned earlier, coal tar dyes used in cosmetics must be from certified batches. For many years, under the provisions of the law, a list of certified dyes was permitted without challenge. However, a closer study of some of the dyes by recently improved methods revealed they had a potentiality for harm not suspected previously. Accordingly, several of the dyes were removed from the list of colors certifiable for use in food, drugs, and cosmetics, although they were relisted for external uses. With further study, on October 6, 1959, an order was issued to remove 17 coal tar dyes, used principally in lipsticks, from the list of colors allowed by the Food and Drug Administration for unrestricted use in drugs and cosmetics. After feeding tests it was shown that the colors used in the cosmetics were capable of harming laboratory animals. The amounts of the colors used in lipsticks which may get into the human digestive tract are much smaller than those used in the animal feeding studies. However, under the Act the government must ban the use of any coal tar color that is injurious to test animals when fed to them, even though its use in smaller amounts might be safe.

The Department of Health, Education, and Welfare has sponsored legislation, now pending in Congress, which would authorize the Food and Drug Administration to set limits on the amount of a color which can be used safely, to specify products in which it may be used, or both. As the law exists now, if a color cannot qualify as completely "harmless," it must be banned altogether for that particular use.

Under the cited order, 13 of the affected coal tar colors may continue to be certified for use only in drugs and cosmetics that are applied externally and do not get into the gastrointestinal tract.

Imports

Each nation must set up its own criteria for controlling the safety, purity, and informative labeling of cosmetics that may be imported. The United States requires imports to meet the same high standards as those set for its domestic products. Coal tar colors used in such cosmetics must be from Food and Drug Administration-certified batches.

Poison Control

The rapid introduction of household chemicals which are not subject to Federal regulation has been responsible for many cases of accidental posioning. This has pointed up the need to revise the Federal Caustic Poisons Act of 1927, also enforced by the Food and Drug Administration. The American Medical Association, which sponsored the original law, has been developing actively a model hazardous substances law to cope with this problem. The manufacturing associations in this field have also drafted proposed legislation. The Food and Drug Administration has participated actively with the medical specialty associations and with departments of public health in the widespread program to establish poison control centers nationally.

Specifically with regard to cosmetics, although they are included under the Federal Food, Drug, and Cosmetic Act, the labeling of cosmetics does not require that they reveal their ingredients. Physicians who treat persons who have accidentally ingested cosmetics are constantly regretful that the contents of the article are not revealed in the labeling.

Adverse Reaction Reporting Program

A program which is just coming into reality with the Food and Drug Administration is the reporting of adverse reactions to drugs. This program, begun as a pilot study participated in jointly by the American Association of Medical Record Librarians and the Food and Drug Administration also has the cooperation of the American Society of Hospital Pharmacists, the American Medical Association, and the American Hospital Association. Although the study has been concerned most intimately with drugs, it is not intended to preclude reporting of unusual and severe reactions associated with the use of cosmetics. We encourage physicians who encounter severe or unique reactions to report such experiences. The agency can be reached quickly through its Washington office or through any of its districts or stations in major cities. This program is in its infancy; however, in this country, with the full cooperation of all who encounter adverse reactions, a major activity can be developed for the health protection of all.

New Legislation

Since the Act is a vital and living instrument, it should be amended to serve the American people best. Many hold that cosmetics should be pretested for safety before marketing. Bills have been introduced into the Congress to provide such safeguards, but the Department of Health, Education, and Welfare has not taken a position with respect to them. It is reasonable to believe that eventually a pretesting of cosmetic ingredients and of finished formulations will be required, with adequate provisions for appeal from adverse government decisions.

Although we have not discussed the problem of extravagant claims for cosmetics, too frequently we encounter flagrant and unwarranted claims made for new and novel cosmetic ingredients which may be essentially worthless. While evidence is developed by the government to reach a sound decision on such claims, the opportunists prosper. Confronted with the situation, competitors may deem it necessary to adopt the new or novel ingredient and possibly to amplify the claims of the originator. Such practices present a challenge to the cosmetic industry for self-regulation and a major enforcement problem for the Food and Drug Administration.

The Food and Drug Administration through its specialized staff maintains vigilant surveillance over the nation's supply of foods, drugs, devices, cosmetics, caustics, and corrosives to assure the protection afforded through the statutes it administers. Only with the public-spirited cooperation of physicians and other professional workers can the public health be fully protected. This agency strives to merit the confidence and cooperation of the cosmetic industry and also of the members of the health professions in protecting the health and welfare with respect to cosmetics.

Allergies to Cosmetic Products

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HYPERSENSITIVITY is the principal factor in cosmetic dermatitis. While any manifestation of cosmetic allergy is of concern, the situation is not critical, and cosmetics as a class remains one of the least harmful of the commodities sold today.

It is estimated that approximately 10 per cent of the population is allergic in some form or other. The incidence of cosmetic allergy within this group is most difficult to estimate accurately. Sulzberger[1] patch-tested 998 patients exhibiting some form of dermatologic disease. Reactions to cosmetics were obtained in 3.8 per cent of those tested. Face creams, rouge, lipsticks, face powders, and eye cosmetics produced the reactions in diminishing order. A report on normal skin is not available.

Hjorth[2] reported that in 25,000 cases of patients with eczematous reactions examined over the course of the last twenty years, only 550 cases (2 per cent) could be ascribed to a cosmetic product as verified by a positive eczematous patch test. Creams, lipsticks, face powders, hair dyes, and nail lacquer in diminishing order accounted for the reactions.

The incidence of cosmetic allergy in people with normal skin can be expected to be substantially below the figures given of from 2 to 3.8 per cent.

An interesting summary covering a major cosmetic company's experience on complaints of reactions to its product is given later. This company's line of cosmetics is very broad covering over 150 products. For convenience the products have been condensed into the categories listed in Table I. The number of reactions given include all complaints of alleged adverse reaction to the use of a specific product. The period of time covers a period of a number of years.

While undoubtedly all reactions were not reported, it is reasonable to assume that the summary includes all of the serious reactions. A total of 448 reactions in 113,601,535 units sold is good testimony to the general safety of cosmetic products.

Depilatories when used in accordance with directions are efficacious and safe. Most depilatories on the market today use calcium thioglycolate in a cream or a lotion base. The pH of such depilatories is approximately 12. Although such depilatories can cause allergic reactions, the main cause of reactions where they occur is probably that of primary irritation.

Pertinent to this subject is the experience of Vestal[3] who reported his experience with the use of a commercial depilatory for presurgical preparation of patients. Over a period of fifteen months 460 patients were prepared for operation by the use of a detergent (pHisoderm or pHisoHex) and subsequent use of a depilatory. This treatment eliminated the use of razors, soap, alcohol, and the usual mercurial agent or other tinctures. No case of adverse reaction occurred.

TABLE I.—REACTIONS COMPARED WITH UNIT SALES

Categories	Reactions	Units Sold	Reactions per 100,000
Depilatories	120	3,146,937	3.9
Special cleansers	53	2,473,927	2.2
Permanent wave lotions	10	722,413	1.4
Hormone creams and lotions	32	3,458,880	0.9
Medicated creams and lotions	21	3,512,394	0.6
Suntan lotions and oils	3	553,459	0.6
Lotions	59	10,980,163	0.5
Eye products	57	11,581,279	0.5
Creams	16	4,277,700	0.4
Deodorants	12	3,900,503	0.3
Hair rinses	13	4,691,128	0.3
Miscellaneous hair treatment products	9	3,427,872	0.3
Shampoos	20	11,563,325	0.2
Makeup	11	9,364,612	0.1
Face powders	6	8,130,966	0.07
Lipsticks	3	13,455,431	0.02
Colognes and perfumes	3	17,703,055	0.02
Nail polish	0	657,491	0.00
TOTAL	448	113,601,535	0.4

Of special interest is the situation with hair dyes. When hair dyes based on paraphenylenediamine were first introduced the incidence of reactions was quite high. There is no question of the severity of a paraphenylenediamine reaction when it does occur. Within the last five years, however, even with the more extensive use of such dyes, the incidence of reactions has become quite low. Improvement in the quality of the raw materials including the peroxide, better quality control, and an education of the consumer in regard to the proper use of such dyes may account for this better record.

Deodorants and Antiperspirants

Deodorants and antiperspirants represent a very important part of cosmetic sales amounting to approximately 50 million dollars at the manufacturer's level annually. Product distinction between deodorants and antiperspirants is disappearing. By appropriate formulation most products today combine the features of both and make claims for both effects. The deodorant effect of such products depends on the presence of antiseptics such as hexachlorophene or aluminum salts to inhibit bacterial growth. Sterile perspiration is generally odor-free, and the breakdown of the perspiration components through bacterial action or extraneous enzymatic action results in the formation of odor.

The metal salts of aluminum, zinc, and zirconium have been used for the purpose of inhibiting perspiration flow. The aluminum salts are particularly useful in having a dual action. Their effective bactericidal action has been demonstrated by Blank.[4] In addition to their deodorant properties, the aluminum salts are effective antiperspirants.

The pH values of 20 per cent solutions of these salts are:

Salt	pH
Aluminum chloride	2.1
Aluminum sulfate	2.8
Aluminum chlorhydroxide	4.2

Aluminum chloride and aluminum sulfate both suffer the disadvantage of irritating primarily because hydrolysis results in an acid condition. In addition, unless properly buffered, they will damage clothing when the clothes are cleaned and subjected to the high temperature of a pressing iron. Aluminum chlorhydroxide in a 20 per cent solution is not a primary irritant and does little damage to fabrics; it is used in most of the antiperspirants sold on the market today.

The theory of antiperspirant action is interesting because of the disagreement as to what occurs. The traditional theory states that the aluminum ion combines with the protein of the skin forming metal albuminates and resulting in an astringent action with perspiration inhibition. In an official action, aluminum sulfate was described as an astringent which caused a swelling that contracted the openings of the sweat glands. Sulzberger[5] working with aluminum sulfate stated that he could find no support for the assumption of astringent action of antiperspirants with consequent narrowing of the sweat ducts. Pillsbury, Shelley, and Kligman[6] indicated that solutions of aluminum salts act as mild epidermal irritants that cause increased keratinization, resulting in the clogging of the sweat duct orifice and a consequent lowering of sweat flow.

Whatever the theory, antiperspirant action can be demonstrated and measured either by a gravimetric method,[7,8] or by a color development method.[9]

A properly formulated antiperspirant using aluminum chlorhydroxide is not an irritant and has little allergenic propensity. Within the last four years a number of deodorant products containing zirconium compounds have appeared on the market. Within this time, more than 60 cases have been reported involving the formation of granulomas in the axillae. In most of these cases, the use of a stick deodorant containing sodium zirconium lactate was involved. It was difficult to understand how compounds of zirconium which had been used extensively in poison ivy treatment could cause such reactions. Shelley and Hurley[10] investigated the problem and succeeded in reproducing the granulomas under controlled conditions. They were able to demonstrate the allergic nature of these reactions involving sodium zirconium lactate by injecting it intradermally into the sensitized subjects and obtaining a strong reaction. The allergic nature of the reaction was confirmed further by Shelley and Hurley[11] by injecting a 1 per cent solution of the salt intradermally and obtaining no reaction in a subject for six months. Subsequently a granuloma developed at the site of each injection, and the subject reacted quickly to new injections of the salt at low concentrations. Prior, Rustad, and Cronk[12] confirmed the toxic and sensitizing nature of sodium zirconium lactate. Both soap and hexachlorophene intensified the reaction of the skin to the zirconium salt.

Of interest is the experience of one manufacturer in marketing an antiperspirant formulation containing a combination of zirconium oxychloride and aluminum chlorohydroxide.[9] A sale of 500,000 units on a test-marketing basis generated a total of 4 complaints, none of which involved granulomas.

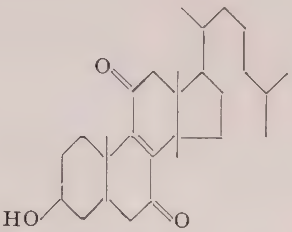
Prior and Cronk[13] reported on the effects of injections of zirconium tetraisopropoxide into albino rabbits. Significant reactions (nonspecific) were produced only when the zirconium compound was combined with hexachlorophene. Percutaneous application of the mixture produced no changes.

Lanolin

Anhydrous lanolin or wool wax, along with the many chemical modifications available today, represents one of the basic raw materials used in both the cosmetic and the pharmaceutical industries. In cosmetics its unique emollient and emulsification properties make lanolin an important constituent of lubricating creams, hand lotions, lipsticks, and related products. In addition, its good penetrant qualities make it most useful as an ointment base for active medicinal ingredients.

Lanolin and its derivatives are not primary irritants and allergic manifestations to its use are small. However, eczematous hypersensitivity has been reported.[14–18] Sulzberger[19] in a controlled series of patch tests using lanolin and the constituents thereof found that 12 of 1,048 (1.14 per cent) subjects with an established history of allergic skin diseases reacted positively to patch tests with pure lanolin. No positive reactions were obtained with lanolin in 120 healthy subjects. Inunction of lanolin on the uncovered skin produced a positive reaction in only 2 of 18 lanolin-hypersensitive individuals. Only 3 of these 18 subjects reacted to 5 per cent concentrations of lanolin and no positive reactions were obtained with 1 per cent concentrations. The aliphatic alcohols of lanolin were found to be responsible largely for the observed hypersensitivity of lanolin. Acetylation or propionlyation of such alcohols reduced or abolished their allergenic capacity.

Everall and Truter[20] demonstrated that the allergenic constituent of lanolin was an alcohol of structure:



They isolated another weakly allergenic compound: 7,11-dioxo-lanost-8-en-3-ol.

The detoxifying action[21] of lanolin is of considerable interest. The addition of adjuvants to diphtheria antitoxin such as tapioca powder increases the yield of antitoxin in horse serum. Guinea pigs injected with diphtheria toxin mixed with lanolin were able to survive forty lethal doses. Lanolin in this respect was far superior to such other adjuvants as calcium chloride, alum, and olive oil.

Another interesting physiologic action is the retardation of a benzypyrene-induced cancer growth by applying lanolin subsequently.[22] Further indication of the lack of carcinogenic activity[23] is shown by the effects of intraperitoneal and subcutaneous injection of lanolin into rats. Such injection did not induce sarcoma, whereas the injection of liquid paraffin and yellow petrolatum did.

Various derivatives of lanolin are used widely in cosmetic manufacture. Such derivatives exhibit better physical properties and unique solubility characteristics. Depending on the product and specific problem, they serve as a superior replacement for lanolin. Generally such derivatives have lesser allergenic properties. A specific example of one of these variations is Lantrol, the liquid fraction of lanolin in which the heavy wax fraction has been removed by a solvent crystallization process. It is superior to lanolin as a skin penetrant and is emollient without the heavy unctuous feeling. This product does not exhibit allergenic properties when tested on subjects sensitive to lanolin.

Other derivatives of value are:

Trade Name	Description
Lanethyl	Alcohol soluble fraction of lanolin
Solan, Lanogel, G-1790	Polyoxyethylene derivative
Lanocerina	Fully hydrogenated lanolin
G-1425, G-1441, G-1471	Polyoxyethylene sorbitol derivative
Isopropylan, Isopropyl lanolate	Isopropyl ester
Modulan	Acetylated ester
Solulan	Ethylene oxide ether
Ricilan	Hydroxyesters made from castor oil and lanolin
Polylan	Polyunsaturated liquid ester of linoleic acid and lanolin alcohols

Orris Root

The allergenic character of orris root is well recognized and documented.[24-28] The orris root of greatest commercial value is the rhizome of Iris pallida. On aging, the root develops a pleasant, woody violet scent. The powdered root has been used in face powders, in sachets, and in dry shampoos. Formerly, an interesting use of the root as such was to aid children in cutting their teeth (rhizoma iridis pro infantibus).

Steam distillation of the root produces the essential oil, orris concrete, in a 0.1 to 0.2 per cent yield. Further processing of the orris concrete results in absolute orris oil. Both oils are of value in perfume manufacture. Reported allergic manifestations are related directly to orris root as such and not to the oil.

There is apparently some misconception in regard to the present-day role of orris root as a raw material in cosmetics. Very little, if any, orris root is used in the cosmetic industry today. Most of the orris root sold today is to manufacturers for use in the adhesives for Band-Aids and back plasters.

Perfume Oils

Dermal reactions from perfume oils generally result from allergic hypersensitivity rather than from primary irritation. There is little definitive work in this field. Klarmann[29] has reviewed this subject exhaustively. The subject is highly complicated by the problems of chemical composition and by wide quality variance even in the same class of perfume oil.

There are approximately 5,000 odoriferous substances in general use today. The approximate concentration of perfume oils used in cosmetics generally is 0.5 per cent, in colognes 4 per cent, and in perfumes up to 20 per cent. Such perfume oils contain 50 or more basic components. In the case of a sensitivity reaction, the pinpointing of a specific perfume oil component as the sensitizer is a formidable task.

Photosensitization is an effect associated with a number of essential oils: neroli, petitgrain, cedarwood, lavender, and bergamot. Berlocque dermatitis has been shown to be caused by oil of bergamot. The dermatitis is manifested by a pigmentation of the skin after exposure to sunlight following application of the perfume oil. The photosensitizing agent in oil of bergamot is not known. Chlorophyll, traces of copper, and psoralens, in turn, have been named as the responsible agents. It is interesting to note that the sensitization occurs with freshly pressed bergamot oil. Purification or aging of the oil eliminates or reduces its sensitizing propensity.

The chemical kinship of the essential oils is such to make the range of oils to which a sensitive person will react quite broad. Keil[30] showed that a number of patients sensitive to oil of citronella were also sensitive to oil of lemon and mutual components of both. Another patient reacted positively to oil of lemon and oil of turpentine. This patient reacted also to alpha- and beta-pinene (chemically related to limonene). An allergenic effect of interest is that of inhalation sensitivity to various citrus oils shown by some.[31]

A recent development of considerable interest is the creation of a series of perfume oils of low-sensitizing potential called Chemoderms.[32] A group of 82 raw materials which were chemically reproducible, especially purified, and screened by patch test to eliminate proved skin sensitizers were used to formulate a series of 10 perfume oils. The low-sensitizing capacity of these oils was established by both patch and use tests.

Hypoallergenic Cosmetics

The term "hypoallergenic" when applied to cosmetics has no definite legal or official status. It was coined as a permissible substitute for the word "nonallergic." "Hypoallergenic" is applied to those cosmetics formulated especially for use by individuals who are sensitive to certain ingredients of cosmetics. There is no standard which measures the hypoallergenic quality of a product. Rather the term describes a specific kind of technical and marketing approach. From a technical standpoint, when a hypoallergenic cosmetic is formulated, raw materials are screened carefully and those with even limited sensitizing capacity are not used. In principle, the resulting cosmetic is less likely to cause an allergic reaction in the user.

A number of companies cater to the specific problems of the allergic woman and aid her in solving her particular cosmetic problem through her allergist or her dermatologist. Where this is so, the term hypoallergenic is meaningful, and a function of value is performed. However, where such products are sold generally to the public, no significant difference exists between such products and those marketed by reputable cosmetic manufacturers. In actuality, the allergenicity in cosmetics thus distributed has been reduced to the minimum.

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Skin Reactions to Cosmetics

Classifications and Diagnosis

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The term "cosmetic" has a very clear statutory definition as stated by the Federal Food, Drug, and Cosmetic Act.[1] The letter of this definition is given with Figure 1. If the skin were a simple solid surface rather than a complex organ making up some 16 per cent of the body weight, the clear legal language of the Act would be adequate for all purposes. But, as can readily be seen from an examination of the cross section of tissue shown in this figure, the human skin, far from being a simple surface, is a functional part of the living body, intimately associated with and dependent on the internal structure, yet giving to this internal structure the tough outer protective layers necessary for the maintenance of life. This living character of the skin makes it necessary to temper the legal definition of a cosmetic with a medical interpretation, for without such understanding there could be no valid separation of the external from the internal bodily functions. Medically, for cosmetic purposes, we can define skin as the epidermis, its cells, or any appendage of the skin in continuity with the cells of these exterior layers. Thence, a cosmetic agent becomes any topically applied material affecting only these tissues.

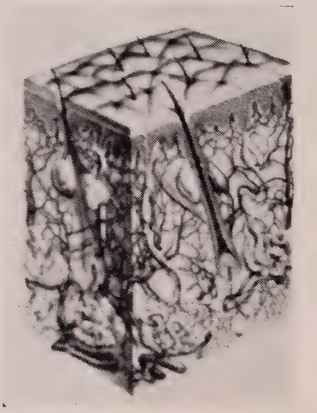

Fig. 1. Cross section of skin tissue. The statutory definition of cosmetics according to the Federal Food, Drug, and Cosmetic Act is as follows: "The term 'cosmetic' means (1) articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body or any part thereof for cleansing, beautifying, promoting attractiveness, or altering the appearance and (2) articles intended for use as a component of any such article; except that such term shall not include soap." By interpretation, if the effect of a topically applied agent is on any part of the skin, its cells, or an appendage of the skin in continuity with it, such as its glands, that effect will not be considered systemic and the product will be classed as a cosmetic.

TABLE I.—DEFINITIONS OF COSMETIC GROUPS

Industry	–Dermatology*– Non-reactive	Active
Skin		
Creams	X	. . .
Soaps	X	. . .
Lotions	X	. . .
Powders	X	. . .
Colors	X	. . .
Hair		
Shampoos	X	. . .
Lotions	X	. . .
Oils	X	. . .
Pomades	X	. . .
Waving agents	. . .	X
Fixatives	. . .	X
Bleaches	. . .	X
Dyes	. . .	X
Dye removers	. . .	X
Nails		
Lotions	. . .	X
Polishes	X	. . .
Colors	X	. . .
Accessories	. . .	X
Hygiene and psyche		
Deodorants	. . .	X
Antiperspirants	. . .	X
Hair removers	. . .	X
Oral preparations	X	. . .
Suntan products	. . .	X
Perfumes	X	. . .
Other aromatic materials	X	. . .
Lipsticks	. . .	X

* X shows under which category each cosmetic is classified.

TABLE II.—STATISTICAL CALCULATIONS; MAXIMUM ANTICIPATED REACTIONS IN GENERAL PUBLIC FROM ANALYSIS OF PROPHETIC PATCH TEST DATA[2]

Test Population (Sample Number of Individuals)	Number of Positive Reactions None (Per Cent)	One (Per Cent)	Two (Per Cent)
30,000	0.01	. . .	. . .
10,000	0.03	0.05	0.06
5,000	0.06	0.09	. . .
1,000	0.3	0.45	. . .
200	1.5	2.2	2.9
100	3.0	4.4	5.8
50	5.8	8.8	
20	13.9	20.8	27.0
10	26.9	38.2	. . .

Nonreactive and Active Cosmetics

For the industry, cosmetic materials fall into groups defined by purpose, as shown in Table I. There are cosmetics for the skin, hair, and nails, and also those for hygiene and psyche. The physician's definition is even more simple. Cosmetics are either nonreactive materials which are products for adornment only or active cosmetics which modify the skin or its appendages. In the first group the physician may expect to see true allergic sensitization reactions only, while in the second group he may see these plus some irritative or structural change to the part that was affected by the particular active ingredient of the agent in use.

A perfectly natural question at this juncture is, why should such a thing as either irritation or sensitization be caused by a cosmetic if it has been pretested adequately for safety before marketing. The answer is straightforward. Complete anticipatory pretesting is a virtual impossibility. Table II shows by statistical calculations derived from prophetic patch test data the difficulties involved.[2] Even if one were to pretest a panel of 30,000 individuals and find no adverse reactions, 0.01 per cent, or 1 in every 10,000 of the general population would be likely to show sensitization. As the sample size is reduced, or the reaction rate increases, the expected sensitizations multiply. Controlled pretesting on very large population groups is an impractical course because of its cost in both time and money, but the industry is constantly striving to improve its prediction procedures. Ideally, a prophetic test should be able to predict from study on a relatively small use panel just what the chances are that someone in the general public who eventually uses a particular cosmetic product will develop a sensitization.[3] By use of patch test technics fairly reasonable estimates of these chances are made.

All patch tests consist of an occlusive patch of test material which is retained on the skin for a definite period at specific intervals. Generally speaking, the more frequent and more traumatic the insult, the greater is the likelihood of a revealing reaction. Accordingly, the tests have evolved with ever-increasing severity to improve their utility. Figure 2 illustrates several of these prophetic patch

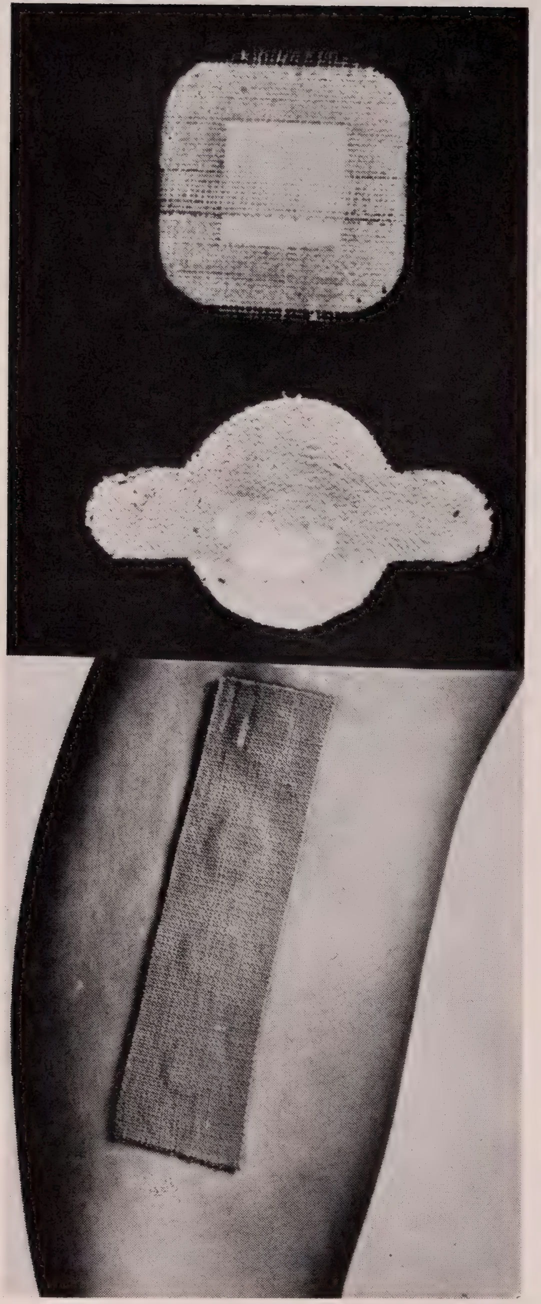

FIG. 2. Prophetic patch tests. (*Top*) Basic repeat insult test done on 200 individuals for two weeks (Schwartz-Peck World War II technic). (*Center*) Multiple insult test done on 50 individuals for seven weeks (Draize-Shelanski adapted from Landsteiner guinea pig technic). (*Lower*) Patch tests combined with use tests done on 100 individuals for four weeks (Traub-Spoor adapted from Schwartz-Peck intact and scarified skin plus daily product use).

tests as they are used in cosmetic pretesting.

TABLE III.—CLASSIFICATION OF ADVERSE CLINICAL SIGNS RESULTING FROM COSMETICS

Cosmetics	Adverse Clinical Signs
Nonreactive	
Cleansing and emollient creams and lotions	Local irritation or allergic sensitization
Face powders and rouge	
Foundation and eye makeup	
Shaving soaps, creams, and lotions	
Wave sets and hair grooming agents	
Bath preparations, soaps, salts, and oils	
Nail lacquer and removers	
Fragrance (component of all)	
Dentifrices	
Active	
Suntan preparations	Photosensitization
Skin lighteners and bleaches	Irreversible change in pigment, systemic toxicity
Lipsticks	Cheilitis, bromacid reaction
Antiperspirants and deodorants	Hydradinitis, granulomatoses
Shampoos and antidandruff preparations	Conjunctivitis, irritation, systemic toxicity
Depilatories	Folliculitis
Bleaches, hair colorings, and dye removers	Hair damage, dye sensitization, systemic toxicity
Permanent waving and straightening	Alopecia and hair damage
Beauty masks	Counterirritation
Eye lotions	May precipitate glaucoma
Fingernail builders	Destruction of nail matrix
Hormone creams	Local edema, no systemic effects

The basic repeat insult test of World War II, when run on enough subjects, is good, but not quite severe enough for cosmetic testing. The multiple insult test is more revealing, but when correctly done it is so traumatic to the skin that one can seldom assemble an adequate panel. Patch tests combined with use tests offer the advantage of repeat insult plus the standardization of the conventional patch and are therefore to be preferred. Pre-existing skin irritation or an allergic state greatly increases the sensitivity of an individual's skin to the patch tests,[4] therefore subjects preferably must be quite normal. Intentional abrasion before application of the patch in some respects mimics the type of response elicited in hypersensitive individuals,[5] and so possibly the difference between the skin response of the eczema-prone individual and that of the more normal individual might be just a matter of antecedent injury.

All cosmetic products on the market presumably have been pretested and are acknowledged to be reasonably safe for their intended use, but we as physicians will continue to see adverse reactions and the day will never come when cosmetic allergy is a matter only of historic interest. Therefore, a classification of the skin reactions caused by cosmetics and some aids to the proper diagnoses of these dermatoses may be helpful.

Diagnosis

Table III is an expansion of the dermatologists' definition of cosmetics. Originally, these were separated into nonreactive and active cosmetics. The table lists the nonreactive cosmetics and their adverse clinical signs and the active cosmetics and their adverse clinical signs.

Nonreactive Cosmetics.—In the first group one can expect to see only local irritation or allergic sensitization, for these materials are the cleansers, the emollient creams and lotions, and the adornment items such as face powders, rouge, eye make-up, hair preparations, and nail lacquers. The principal sensitizer here is the perfume, because fragrance is chemically a fantastic mixture of essential oils, any component of which might produce an allergic reaction in some individual. Cosmetics in the "raw" are totally unacceptable, therefore the fragrance problem will always be present.

Active Cosmetics.—Moving on to the so-called active cosmetics, we find materials that are potent because of an ingredient that is incorporated to "do something." The adverse clinical signs listed usually are produced through more than the desired amount of action, either because of misuse by the subject or because of a specific sensitivity reaction characteristic of the skin of the individual subject.

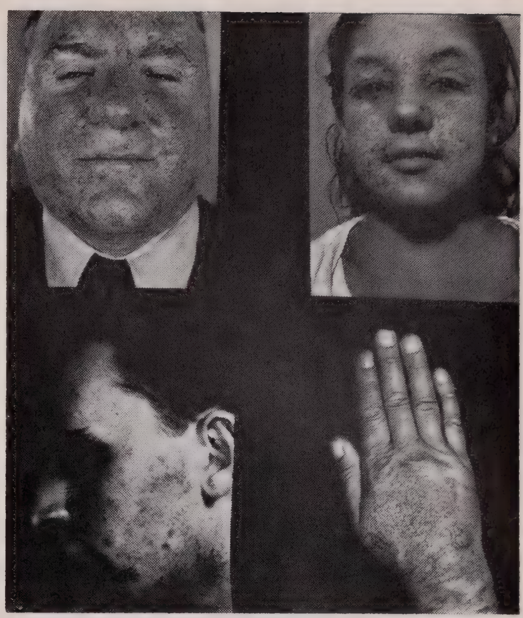

Fig. 3. Direct irritation at site of application.

A more useful classification for purposes of diagnosis would be one based on the site and type of skin reaction produced following application of the cosmetic material. According to this scheme, all reactions listed in Table III can be classified into six groups.

These are: (1) direct irritation at the application site; (2) local sensitization at the application site; (3) sensitization and adverse tissue reaction at the application site; (4) irritation and adverse tissue reaction at the application site; (5) sensitization reactions at the application site and beyond; and (6) sensitization reactions at areas other than the applications sites. The following groups of figures will illustrate these several types of reactions and incriminate the cosmetic agent responsible.

Figure 3 illustrates direct irritation reactions at the site of application of the cosmetic preparation. The culprits were a toilet soap, a cleansing lotion, an aerosol shaving cream, and a hard water hand soap. The diagnosis in each instance can be made clinically if an

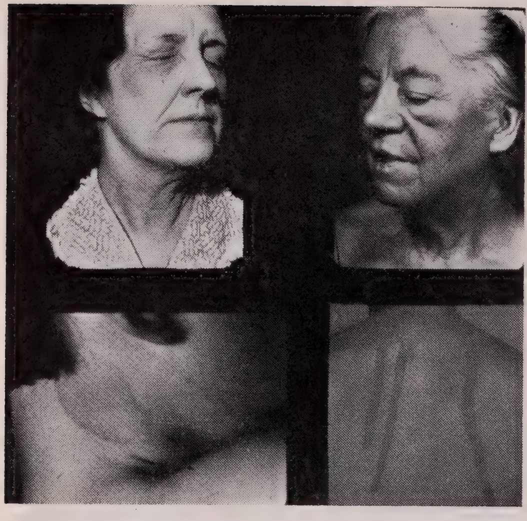

FIG. 4. Local sensitization at site of application.

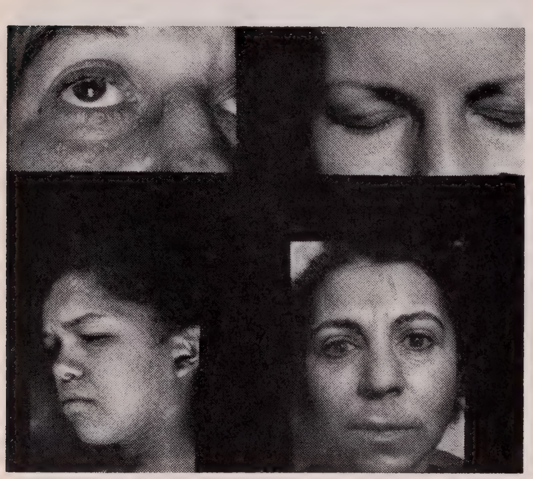

FIG. 5. Sensitization and adverse tissue reaction at site of application.

adequate history of irritation is given soon after the product is used.

Figure 4 illustrates the phenomenon of local sensitization at the site of application. The examples shown are reactions to soap, powder, and perfume. In each instance the culprit was the fragrance.

Clinically, the sharpness of the sensitization pattern and a history of the reaction coming on some time after use suggest the diagnosis. With perfume reactions of this type one usually finds that sunlight exposure was the precipitating cause of the eruption.

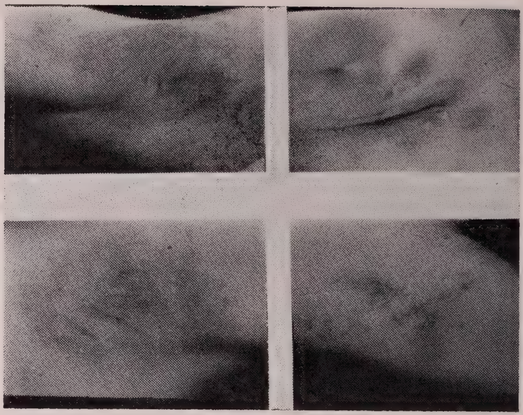

FIG. 6. Irritation and adverse tissue reaction at site of application.

Patch test confirmation of the specific sensitization is practical, but one must remember to add light exposure if that trigger is required.

Figure 5 illustrates sensitization and adverse tissue reaction at the site of application. In the examples shown the offending cosmetics were an eyeshadow preparation, a mascara, a lipstick, and a facial depilatory. These can all be considered sensitization followed by local tissue irritation except in the case of the lipstick. Here the reaction is a true cheilitis brought about by a chemical reaction between the "brom acid" eosin of the lipstick and the protein of the lips. This is the chemical complex that gives bromfluorescein pigments their permanence and this is an example of greater than normal reactivity.

Figure 6 shows the combination of irritation plus adverse special tissue reaction at the site of application. The illustration shows a group of axillary reactions to deodorants. These range from simple irritation through secondary eczematization and superficial infection to a true hydradenitis precipitated by apocrine gland occlusion.[6] This latter reaction all too frequently can follow the use of a heavy ointment in intertriginous areas. The last picture shows the papular lesions produced at the apocrine gland orifices following the use of a zirconium-containing deodorant. This is a true epitheliomatous

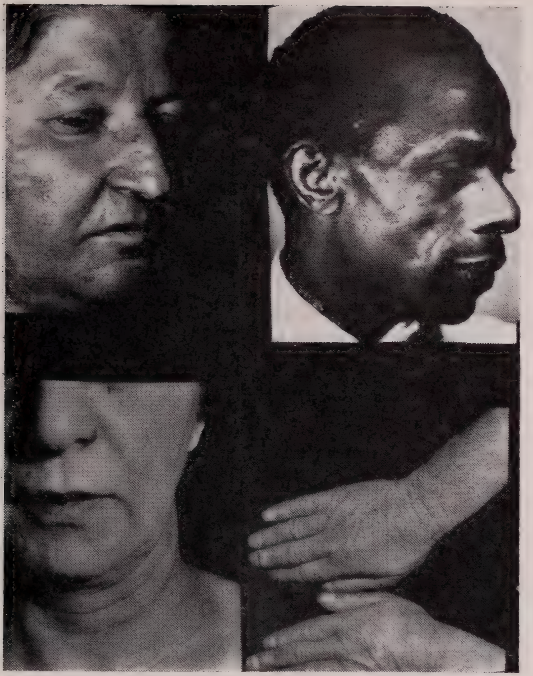

FIG. 7. Sensitization reactions at the site of application and beyond.

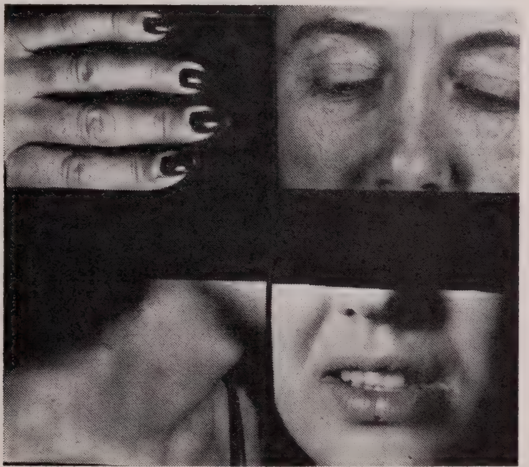

FIG. 8. Sensitization reactions at areas other than the site of application.

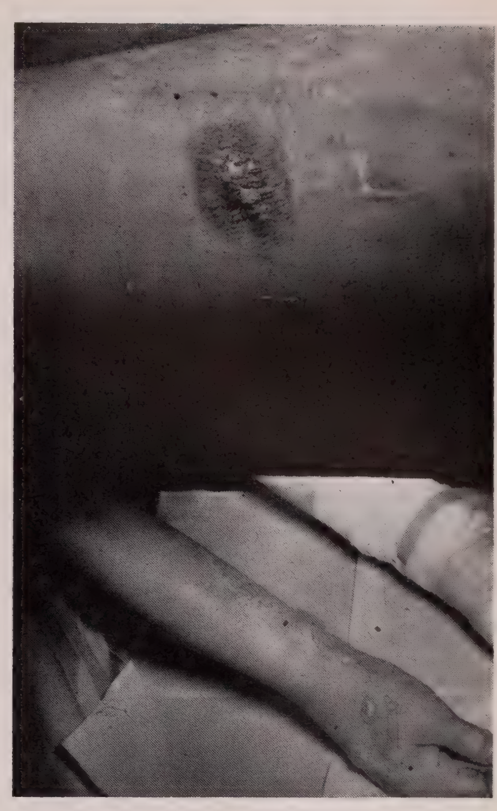

FIG. 9. Diagnosis and treatment. (*Top*) With reasonable index of suspicion, identify suspect and avoid. (*Bottom*) Antiallergic treatment includes treating the existing skin condition, such as with wet dressings for exudative eczema; applying topical corticosteroids; and using systemic antihistaminic agents, with steroids only if necessary.

hyperplasia and the granulomatous lesions take a long while to resolve themselves.[7]

Figure 7 illustrates sensitization reactions found at the site of application and beyond. These reactions are rather characteristic of the hair dyes and their true diagnosis is greatly aided by an honest history of use. Usually a tightness of the scalp, painful only until either the edema subsides or a moist eczema develops, precedes the more widespread eruption. Often the scalp signs disappear entirely, leaving only an apparently nonrelated contact-type eczema, often at some distance from the site of application and not necessarily in continuity with it. Cases of hair dye dermatitis frequently require confirmation by patch test. The agent most frequently incriminated is the paraphenylene diamine dye derivative used in practically all effective hair dyes today.

Figure 8 shows a group of reactions that are of great interest diagnostically because the dermatitis is seldom found at the site of application of the cosmetic but rather at areas distant and superficially not related thereto. The great cosmetic offenders in this group are the nail polishes. Involvement of the nail or nail bed seldom appears and when it does it presents as a mild paronychial inflammation; but lesions on the eyelids, neck, and lips occur very frequently and are almost as frequently misdiagnosed. Again in this instance, the diagnostic patch test is of real value, but one must remember to patch-test the skin and not the nail, for it takes living skin to give a skin reaction.

Summary

Skin reactions to cosmetics of both irritative and sensitizing type cannot be eliminated by pretesting with the finished products. The phenomenon of cosmetic allergy will continue to be seen by physicians. The diagnosis can be made readily if one keeps a reasonably high index of suspicion and recognizes the several types of dermatoses that may be produced and classifies them in terms of their irritative and sensitizing components. The allergenic or irritative component of a cosmetic material may be identified by diagnostic patch tests (Fig. 9).

The best treatment for the dermatoses produced through cosmetic allergy is avoidance of the offending agent. The treatment of a dermatitis of cosmetic cause is the same as that for any other dermatitis venenata.

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Cancer Cells in the Blood: Five to Nine Year Follow-Up Study

While operative manipulation may be an important factor in the fatal spread of tumor cell emboli from richly vascularized tumors involving central veins, this apparently is not true of intestinal carcinomas, where surgical trauma appears to play a minor role. At least this is so indicated by a study of blood samples drawn (1) at the time of operative exposure of the tumor but before any manipulation and (2) after dissection but before ligation of the last vein. At the same time a sample was drawn from an antecubital vein.

The samples were taken from 125 patients undergoing operation for removal of the primary growth. Tumor cells were found in the blood in 61 per cent of the cases. In those surviving five to nine years, 51 per cent had tumor cells in the blood at the time of operation.

The author summarizes his conclusions as follows: (1) Venous spread of tumor cells depends primarily on histologic differentiation of the tumor; presumably tumor cells are disseminated from all grade 3 and grade 4 carcinomas (Broder's classification). (2) Venous spread is to some degree related to local extension of the tumor. (3) In intestinal carcinomas, operative trauma is a minor factor in venous spread of cells. (4) In the majority of patients surviving five to nine years the tumor cells disseminated before and during the operation must have perished in the blood stream.—*Annals of Surgery, April, 1959, H. C. Engell, M.D.*

Anxiety: The Nodal Psychologic Problem in Acute Myocardial Infarction

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> *There is no cure for the body apart from the mind. First, then, and above all, the mind must be treated if the body is ever to be made whole . . .* —PLATO, PHAEDO

THE virtual epidemic of acute myocardial infarction which has prevailed in this country has evoked almost endless discussion of the various facets of coronary arterial disease in both professional and lay publications.

Since the heart is associated with sudden demise, is it any wonder that a variety of psychic manifestations, namely anxiety, may come up to plague us. As Weiss and English[1] state, "Every psychic tendency seeks adequate body expression." No organ of the body is more susceptible than the heart to neurogenic and emotional assault.[2-6]

Anxiety in its various forms is the most common psychologic manifestation to confront the attending physician who is treating acute myocardial disease. Anxiety is a total phenomenon affecting the whole individual. It is a form of fearful anticipation and may be defined properly as a state of heightened tension of such magnitude as to interfere with the normal functioning of the individual. The tendency of this psychic expression to aggravate the course of infarction is well documented. That anxiety may incapacitate by causing psychologic invalidism is a common observation.

It is the responsibility of the physician to determine how much of the distress is due to anxiety. This is not difficult if one is geared to psychosomatic awareness and orientation. Treatment has to be guided by this assessment.

Any acute illness affects a patient's serenity, his ideas of self, and his thought on the manner of living. The response to the disruption of body function by a "coronary attack" is best known to those who have been victims. These patients become apprehensive in regard to the outcome, and if means are not taken to lessen fear, then various psychophysiologic symptoms may manifest themselves.

We must be aware that emotions are part of physiologic function, and that human relationships are obviously significant in any aspect of human endeavor. All of us have a highly emotionized concept of ourselves as functioning individuals.

Waldman and Pelner[7] state that such psychologic vexations are conducive to initiation, aggravation, or perpetuation of somatic symptoms, and in the presence of a diseased heart anxiety is a very serious complication.

It is the aim of this paper to indicate certain overt and covert actions in the patient which will assist the physician to recognize anxiety in its various forms so that he may expose and control it before it can do irreparable harm to the psyche and to the soma. The recognition and handling of such cases then is the theme of this presentation.

Recognition

During the period of incapacity, every patient experiences a period of mourning. This mourning may be denied or repressed. There may be overt anxiety vocalized as dread of the hospital; or the anxiety may be unspoken and exhibited by what appears to be distress or uncooperation. Patients may show this anxiety by a depressed mood or by a regression to infantile habits particularly in eating, speech control, restlessness, and insomnia. Human beings are so constructed by nature that they think, remember, and feel emotions.

The words "heart attack" conjure up in all of us a feeling of fear and worry. Experience has shown that persons whose histories include job or marital instability are less likely than others to adapt easily or well to the attack or to altered function.

Anxiety stems from the threat to life or the fear of living with a damaged heart. Some patients are convinced that they will be physically unable to work. Next to demise loss of independence remains the most alarming prospect, and most patients are determined not to require outside financial support. The fears and misinformation concerning the attack must be dispelled.[8] The all-important educational step begins at the onset of the condition and continues until the patient starts to work. And since this is a chronic condition, these patients require constant care and a psychotherapeutic rein throughout their life spans.[9,10]

Fear and anxiety often are caused iatrogenically. No doubt the physician is basically humane, friendly, and sympathetic. Yet at times, because of the pressure of his practice, he has not had the inclination to learn about the dynamics of human behavior with the result that he is not fully acquainted with the vagaries of human behavior. At times the medical practitioner discusses the facts of the case in the patient's presence forgetting that patients may misinterpret the conversation.

Another source of trepidation in hospitalized patients is the frequent shift of medical and nursing personnel who are attending the patient. Some of this is unavoidable of course, as when it involves the rotation of the house and nursing staff. The patient desires his "own" physician and his "own" nurse. Toward the physician he has a father transference and toward the nurse a mother transference. There is a period in life of entire dependency on others, that is during infancy and early childhood. Since the attack of myocardial infarction and the process of seeking help from the physician represent a re-enactment of this former stage of dependency, it is only natural that many difficulties, feelings, and behavioral reactions met during the early childhood of the patient will be revived and brought to the surface unconsciously during the doctor-nurse-patient relationship. During illness, emotional and behavioral regression may occur. The physician must be aware of this psychologic regression since it represents the recurrence of the dependency aspects of the early child-parent relationship.

If the doctor is to occupy a position of trust and confidence and gain a modicum of omniscience and omnipotence, he should be a kind and sympathetic person with an air of coolness and perception about him as well as project a "take command" attitude. No one respects a submissive and yielding doctor. The most dominating and domineering patient secretly desires that the physician take command, be steadfast, and unyielding. An uncertain or obviously alarmed physician will fail to inspire the confidence which is necessary to offset the always existing psychologic shock. Not only does this place doubt in the patient's mind but also it may result in the unleashing of anxiety.[11,12]

If and when the anxiety is transferred into action, it may result in compulsive stroking, pulling of hair on various parts of the body, pimple squeezing, as well as nail biting. Other actions seen are sniffling and eye blinking. There may be an uncontrollable desire to remove some imagined foreign body from the skin or to obtain relief from some anomalous sensation. There may be respiratory disturbances, the hyperventilation syndrome. Often the patient complains of an inability to breathe or to get a satisfactory breath or to breathe past the upper part of his chest. The resulting increased depth and rate of respiration increases the air exchange markedly. Carbon dioxide derived from the bicarbonate radical in the blood is lost excessively in the exchange leaving residual alkalosis.[13] The patient becomes light-headed, experiences emotional lability, and may even go into tetany and carpopedal spasm which is sometimes confused with a convulsion or paralysis.

Cardiovascular symptoms may be the clue to an anxiety state. From time immemorial the heart has been the seat of the emotions. This organ is one of the primary participants in the anxiety reaction and may show such symptoms as sinus tachycardia, sinus bradycardia, palpitations, arrhythmias, precordial discomfort and pain, and electrocardiographic T-wave directional changes.[14–16] Many anxiety reactions refer to the gastrointestinal system, such as nausea, vomiting, eructations, hiccups, and colon complaints including diarrhea and rectal pain. While anorexia is often a symptom of organic disease, frequently it is entirely functional. Excessively fearful patients generally lose their interest in food. Anorexia also develops in those persons with psychoneurotic tendencies in which it is usually an expression of disgust with a situation. Rejection of food is commonly seen in schizophrenia, particularly of the catatonic type. Commonly in such cases anorexia merges into vomiting as the negativism increases. Vomiting is so easy for some that it serves as an unconscious means of resistance to any undesirable situation.

Dryness of the mouth is one of the most common anxiety manifestations. It is produced by overstimulation of the sympathetic fibers of the salivary glands. Salivation is less common although sialorrhea, probably a precursor of vomiting and indicative of disgust, is at times complained of.

Nowhere in medicine are psychic factors as prominent as in headaches. The vast majority are due to emotional tension and fear. The headache is often the symptom of an inadequate personality under ordinary stress or of an adequate personality under extraordinary stress.[17]

Nervous tension may involve the urinary system and result in bladder irritability or heightened awareness. One of the most common symptoms noted is pollakiuria, the frequent passage of small quantities of urine.

Treatment

Most initial anxiety reactions respond to superficial psychotherapy. Psychotherapy may be defined as an attempt to influence the attitude of the patient in the right direction, to influence the attitude toward himself and toward his mental and physical processes. Whether this therapeutic avenue of approach will consist largely of cooperation and mutual understanding or of persuasion or suggestion will depend not only on the convictions of the physician, but also, perhaps chiefly, on the needs of the sick individual. The astute physician will discern this need quickly and will find an expedient way to give rapid guidance and support.

In employing the psychotherapeutic modality, the first step is the establishment of rapport. To be effective this rapport must be based partially on a certain amount of confidence and respect on the part of the patient. At first, however, this is not too important, since the patient will accept any helping hand. He is obsessed with anxiety, unable to think of anything else, even though he may be highly intelligent. But he is totally unable to utilize his intellect to control his anxious state. Psychopharmacotherapy may have to be used to help control the emotions and to enhance the receptivity of the patient.

It must be stated emphatically that normal emotivity is to be expected, and it is not desirable or necessary to expect a complete loss of emotivity. The emotion is a reaction to disaster, a recoil. The patient comes out of his stunned state and must face a life altered by this catastrophic event. However, with emotional reassurance as a therapeutic modality, the patient can be helped to work through the recoil with a minimum of aftermath.

Quite often physicians who are not geared acutely to psychosomatic orientation and awareness feel that a few words of encouragement or cheer should be enough to minimize the patient's fears. The spoken word is only part of the approach. It is not sufficient merely to tell the patient he is improving; he must be made to feel it. On every occasion sympathy, kindness, encouragement, and genuine concern are given. This accomplishes a type of milieu that helps to relieve stress and permits the development of a common understanding which is the cardinal goal for good rapport. The patient is assured repeatedly that his attack should heal successfully. Individual success is often determined by the stability of the premorbid personality of the patient. At times incompatibility in the personalities of the physician and the patient may obviate any successful therapeutic regimen that is being established.

The second step is aeration or ventilation. No problem can be more distressing than that presented by the patient with acute myocardial infarction who feels that death or chronic invalidism is inevitable. The patient is given an opportunity to discharge and bring out in the open his thoughts, fears, and concerns.

The third step is desensitization. The patient is required to face frankly the traumatic and unpleasant experience of the coronary attack. It is brought about by discussion at frequent intervals. These discussions are repeated until the patient can review the experience without excessive emotional concern.

How much patients are to be told is an individualized prescription. The decision as to whether or not to discuss the exact extent of the infarct depends on an understanding of the patient's personality and emotional makeup. The next of kin is usually told the exact truth. This may be modified depending on the patient's role, for example, if he is the pivotal character on which the family revolves. If he is, the family or next of kin may well break down if given more information than they can absorb at the time. The patient or family may have to be fed piecemeal as they adjust to changing events.

It is important that the patient see the necessity for adjusting to his limitations lest he continue to struggle against insuperable odds. Cultivating the patient's ability to see things objectively is a better policy than merely suggesting or giving authoritarian advice, however effective any of these may be for a time. The harmful effects of fear, apprehension, and despair can be neutralized and even superseded if the positive virtues of courage, patience, and optimism have been inculcated.

Summary

States of anxiety occur with great frequency in patients with acute myocardial infarction. Quite often these states masquerade under the guise of somatic complaints. This condition constitutes a major source of distress to the patient as well as a diagnostic and therapeutic challenge to the physician. Alleviation of anxiety should be of primary concern and possibly second only in importance to the infarct. Assisting these patients to accept themselves and the modification in their way of life does much to prevent personality disturbance. In this way the emotional well-being will be enhanced.

The overt and covert forms of anxiety have been discussed together with therapeutic consideration. We must be in the vanguard of promoting good mental hygiene, supplying emotional reassurance, providing an ideal doctor-patient rapport, and attempting to give the patient insight into his condition. We must keep the patient functioning and thus prevent psychologic invalidism.

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Arteriosclerosis Zooms at Philadelphia Zoo

Arteriosclerosis has jumped ten- to twentyfold during the last forty years among both the birds and animals at the Philadelphia Zoological Garden, according to a report summarized in *Nutrition Reviews.* While many of the conclusions reached in the report should not be considered to be anything more than "inferences," a startling resemblance between conditions prevalent at the zoo and homes and offices could be noted.

The climb in the arteriosclerosis rate began back in 1935 with an "improvement"—the institution of an enhanced, "controlled diet." While rations provided the birds and animals only included 3 to 5 per cent more fat than what they had been receiving, increased circulatory disease rates could soon be observed in autopsies. Compensating "pluses" included lactation improvements, increased longevity, and a bounding birthrate.

Greater energy and more fellow animals (or birds) with which to compete may have been proved to be a dubious blessing, however. Investigators found, for instance, that the new regimen seemed to provoke certain rodents to fight a lot, thus providing a greater number of specimens for autopsy purposes. Physiologic reflections of the new conditions within the zoo included abnormally enlarged adrenal and thyroid glands. Why? The investigators noted that the improved diets had increased life spans of relatively inactive animals, and increased vigor. As a result, they suggested, the health of zoo's inhabitants is now greatly influenced by "social pressure."

One clear indication of how social conditions may influence the rise of circulatory disease, completely apart from dietary considerations, is observed: a group of closely caged chickens, fed a low-fat diet, developed arteriosclerosis. Those receiving a relatively high amount of fat, but who retained their sense of freedom (and thus were also able to get more exercise) showed no arterial trouble.

Anesthetic Complications Associated with Radiation Pneumonitis

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For several years it has been our impression that patients who have received x-ray radiation treatment of the thorax have an increased incidence of respiratory complications during anesthesia and operation.

To evaluate this clinical impression a review was made of all patients on the breast service who developed respiratory complications during the last three years. This service was selected because many of the patients have chest wall radiation after radical mastectomy. Additionally, many of the radiated patients return for further operations such as oophorectomy, adrenalectomy, and any other disease which develops while the patients are under treatment by this service.

Source of Material

Thirty-seven patients on the breast service developed respiratory complications during a three-year period. Of these, 18 patients had received chest wall radiation and 19 had not. About 7 per cent of the patients on the breast service receive preoperative radiation.

In the radiated group the time between chest wall radiation and the subsequent operations varied considerably, ranging from two months to over five years. In 1 patient the time since the previous radiation could not be determined. Only 3 patients who had received chest wall radiation showed no roentgenologic evidence of radiation pneumonitis.

Seventeen of the 19 patients who had not received chest wall radiation had some pathologic condition which could explain the respiratory complication which developed. These conditions were obesity, pleural effusion, increased pulmonary vascular markings, and chronic respiratory infection.

TABLE I.—RESPIRATORY COMPLICATIONS IN RADIATED AND NONRADIATED GROUPS

Respiratory Complication	Radiated	Nonradiated
Bronchospasm	11	12
Coughing	4	11
Laryngospasm	6	9

Prior to the operation all patients were medicated with a belladonna derivative and a narcotic or a barbiturate, or both. To facilitate endotracheal intubation 31 of the patients had a transtracheal block with 5 per cent cyclaine. The primary anesthetic agent varied. Thiopental sodium was used at some time in 10 patients, nitrous oxide and oxygen in 8, nitrous oxide-ether in 9, nitrous oxide-oxygen-cyclopropane in 4, ether-oxygen in 18, and cyclopropane in 15. Muscle relaxants were used in 24 patients.

Results

Although the type of respiratory complication encountered varied, the most common complications were bronchospasm, laryngospasm, and severe coughing. Bronchospasm was divided evenly between the two groups with a slight preponderance of coughing and laryngospasm occurring in the nonradiated group (Table I). A total of 23 patients developed bronchospasm during anesthesia and operation. The operation was cancelled in 4 patients because the bronchospasm was so severe that it resulted in cyanosis and inability to inflate the lung. Two of these patients were in the radiated group and 2 were in the nonradiated group.

TABLE II.—SUCCESSFUL TREATMENT OF BRONCHOSPASM

Method of Treatment	Number of Cases Treated	Radiated	Nonradiated
Removal of the endotracheal tube	3	1	2
Succinylcholine	7	0	1
Isuprel hydrochloride	3	0	2
Benadryl hydrochloride	15	0	8
Ephedrine	1	0	1
Ether	11	1	2
Hydrocortisone	1	0	0
Aminophylline	1	0	0
TOTAL SUCCESSFUL TREATMENT		2	16

In the others the operation was continued even though the response to therapy was unsatisfactory because the surgeon was already committed to the operative procedure.

The primary treatment of the bronchospasm was to change the anesthetic agent to another agent, often ether. On numerous occasions muscle relaxants to relieve a chest wall spasm and transtracheal topical anesthesia to anesthetize the trachea and larynx were administered. No single agent was entirely satisfactory, as shown by the multiplicity of the agents used in these cases. This is true for both the radiated and the nonradiated groups. However, the success with one or more agents was greater in the nonradiated group than in those patients who had received chest wall radiation (Table II).

Comment

Following direct radiation to the chest wall, the syndrome of radiation pneumonitis has been reported in from 22 to 60 per cent of the patients, and 20 per cent of these have residual damage.[1] Tangential radiation, which minimizes the degree of chest wall penetration, has reduced this figure to 7 per cent acute and 1 per cent chronic radiation pneumonitis. Radiation changes consist of an inflammatory reaction, edema, congestion, lymphangiectasis, inflammatory cell infiltration, increased mucous secretion, and desquamation of the bronchial epithelium. Later there is a thickening of the alveolar walls, patchy atelectasis, and vascular changes.[2] Radiation pneumonitis results in ventilatory disturbances owing to the fixation of the parietal pleura, fibrosis, mediastinal fixation, partial immobilization of the diaphragm, and compensatory emphysema on the opposite side.[3] The terminal picture may be that of cor pulmonale and right heart failure.[4] In essence, this is a syndrome with physiologic changes similar to those seen with chronic bronchitis, asthma, and emphysema.

When this technic can be employed, regional anesthesia is the choice for operation on patients who have received chest wall radiation. However, if general anesthesia is necessary, great care and understanding of the process involved is essential to prevent severe respiratory complications. Because of the exquisite irritability of the larynx, the trachea, and the bronchi in these patients, the most fundamental principle is to avoid the stimulation of the mucous membranes of these organs. This means that all instrumentation of the larynx and trachea should be avoided either by transtracheal injection, laryngoscopy, or endotracheal intubation unless absolutely necessary, and then only after the patient has been anesthetized deeply with ether to obtund the irritable reflexes. In contradistinction to what has been mentioned previously, we found no increased irritability following a thiopental sodium induction; in fact, in subsequent cases after the completion of this series we have found that thiopental sodium is a necessary adjunct to a smooth, unhurried induction. As this series shows, this is especially important because the patient who has received chest wall radiation does not respond to the various therapeutic agents which usually correct the bronchospasm occurring during the operation and anesthesia.

Conclusion

An analysis was made of 37 patients on the breast service who developed respiratory complications during anesthesia or operation. Bronchospasm developing in the nonradiated group responded in most cases to some form of broncholytic therapy, but in the postradiated group this regimen achieved little success. In view of this lack of success, great care must be taken in the anesthetization of patients who have had chest wall radiation. Regional anesthesia is preferable, but if general anesthesia is necessary, then adequate measures must be taken so as not to stimulate the irritable laryngeal, tracheal, and bronchial mucosa.

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"Anti-Vitamin" Suspect in Causing Congenital Malformation and Death in Infant

A dramatic case has been reported in which a pregnant woman's consumption of an "anti-vitamin" seems to have caused the malformation and quick death of the child she bore months later.

As summarized in *Nutrition Reviews,* a twenty-seven-year-old mother of six living and normal children succeeded in buying a supply of a potent vitamin B "antagonist," aminopterin, from her druggist. The powerful drug has been used experimentally to kill rat fetuses and, with humans, has sometimes been administered to induce therapeutic abortions.

Beginning the self-prescribed regimen at about the beginning of the third month of pregnancy, the woman was soon thereafter quite sick, "showing symptoms compatible with aminopterin poisoning." Treated at the hospital with vitamin B and liver extract, she recovered and, months later, went on to a full-term delivery.

Weighing less than 3 pounds, her child was seriously malformed and only survived twenty-nine hours. In investigating the case, medical researchers found no evidence of birth abnormalities in either of the parents' families. They also noted that the malformations of the short-lived child showed a very close physical correspondence to a typical nine-week embryo—thus recalling the time when the mother began to dose herself with the "anti-vitamin."

The case, according to *Nutrition Reviews,* indicates that a nutritional "insult" to an unborn baby, if of "appropriate intensity and timing, may be followed by the development of congenital anomalies." The young woman's tragedy also makes clear the importance of consulting with a physician before embarking upon any drastic nutritional regimen, whether severe reducing diets or risky additives.

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Injuries to and Diseases of the Hand and Their Management

Part I

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Many articles describing various injuries to and diseases of the hand and their management have appeared in the medical literature. In this article the current thought on the subject is presented. The first part includes such topics as acute injuries, tendon repair, the burned hand, infections, tendon transference, and Dupuytren's contracture. In the second part, which will appear in the following issue of the Journal, bone and joint injuries, nerve repair, the carpal tunnel syndrome, splinting, anesthesia, reconstructive surgery, rheumatoid arthritis, and malignant conditions are considered.

Acute Injuries

Strict observance of Halstedian principles is mandatory in the treatment of acute hand injuries. Primary healing of wounds treated within six to eight hours following trauma should be obtained provided the injuries are not of the severe, multiple type and that the basic principles of treatment are followed.

It is possible to divide the treatment of acute hand injuries into first aid, preliminary treatment, and immediate hospital treatment. The latter includes assay of the injury, strict observance of the basic principles of operative treatment, and good postoperative care.

In administering first aid and preliminary treatment the basic principles of protection against infection and immobilization in the position of function must be followed. First aid workers and lay persons must be instructed that the use of strong antiseptics such as iodine are no longer advocated in the treatment of these injuries and that coverage with a sterile dressing or with freshly laundered towels and immobilization of the parts constitute the best type of treatment that can be afforded until a physician can be consulted.

Following the patient's arrival at the hospital a preliminary examination is necessary to evaluate the hand injury before the patient is taken to the operating room, but this examination never must be careless with respect to asepsis or cursory with respect to assessing the extent of the injury. The preliminary examination should be done in a clean area, the personnel should be gowned and wearing caps and masks, and the necessary instruments and bandages should be sterile and at hand to protect the wound against further contamination. Assay of the structural damage includes determining the extent of skin loss; the degree of injury to the major vessels, tendons, and sensory and motor nerves; and whether there is associated bone and joint injury. Severe bleeding may require the application of a blood pressure cuff and inflation of it to 280 mm. of pressure to properly assess the degree of damage.

Division of the tendons should be suspected if there is inability to flex the distal phalanx (profundus tendon) or middle phalanx (sublimis tendon). Lacerations over the dorsal aspect of the metacarpophalangeal joint and the inability to extend the fingers indicate severed common extensor tendons. Lacerations on the dorsum near the distal interphalangeal joint may result in an inability to extend the distal phalanx (mallet finger deformity). Anesthesia distal to lacerations in the fingers or palms suggests severance of the digital sensory nerves. Severance of the ulnar nerve at the wrist results in anesthesia of the ulnar side of the palm, fifth finger, and ulnar half of the ring finger. Division of the median nerve at the wrist results in anesthesia of the radial side of the palm, radial half of the ring finger, and all portions of the middle and index fingers and thumb. Lacerations in the region of the divisions of the motor branches median or ulnar nerves requires visualization of these structures at operation to repair them if necessary. X-ray films should be obtained when the history of injury or the examination suggests open or closed fractures.

Some of the details of the operative treatment will be given in the sections on the repair of such specific structures as tendons or nerves. In general, small instruments, fine suture material, gentle handling of tissues, and a thorough knowledge of the proper incisions which provide adequate exposure are required.

The conversion of open wounds to closed ones is of the utmost importance in preventing infection and in obtaining a return of function. If there has been significant skin loss or if there is an avulsing or degloving wound, conversion to a closed wound by skin grafting or by the construction of local, abdominal, or thoracic flaps is required. Probably the most satisfactory method to achieve this is by the use of split skin grafts to cover wounds with extensive skin loss or avulsing injuries. Large, severe, multiple injuries may be treated best by the use of pocket flaps from the abdomen or of pedicle flaps to replace the lost covering tissues. In traumatic amputations or smaller areas of tissue loss, local flaps often are of great value. These include cross finger, thenar, and rotation flaps.

The advantage of shifting full-thickness tissues is that reconstructive surgery, if required, can be undertaken subsequently. However, split skin coverage may be required to cover the donor area when significant shifting of tissues is necessary. A recent report re-emphasizes the value of the cross finger pedicle flap.[1] It is of particular value when there is full-thickness skin loss on the volar aspect of the digits. One of the advantages of this type of repair is that it provides suitable coverage if a tendon graft must be done subsequently. It has been suggested that the flaps be cut somewhat larger than the defect in the event of shrinkage. A split skin graft then is required to cover the donor area.

With respect to vascular injuries, primary suture of the brachial, radial, or ulnar arteries should be attempted. It has been reported that flow may be restored in these arteries, even quite late after traumatic or embolic obstruction, provided the distal vessels are not thrombosed. Should there be loss of substance of an artery, the saphenous vein or another suitably sized autogenous vein may be used for grafting.

The treatment of a rupture of the insertion of the extensor tendon (mallet finger deformity) continues to present a problem. There is disagreement whether open or closed treatment is preferable in early injuries as well as over which type of immobilization is preferable when the closed technic is used. A recent report on intramedullary wire fixation[2] suggests a modification of Pratt's method. In the modified procedure the wire is passed through the distal interphalangeal joint only, rather than through this joint and into the proximal phalanx. It is felt that by this means greater hyperextension of the distal phalanx is obtained and that any painful limitation of motion of the proximal joint is prevented. In this method the proximal joint is maintained in 60 degrees of flexion by means of skin plaster.

In a discussion of this report Bunnell stated that in his experience external splinting to hold the proximal interphalangeal joint in flexion and the distal joint in hyperextension is a difficult and unsatisfactory method, and for this reason he believes that internal splinting alone is the method of choice. He stated that a wire which spans only one joint will migrate but a wire that spans two joints will stay fixed. A precision guide devised by Moreau of Canada may be used to place the wires. For patients with injuries which are over ten days old he advocates the open method of repair and splinting of the finger by means of Kirschner wires.

It is probably true that many of these injuries if seen early will respond satisfactorily to splinting with the distal phalanx in hyperextension. This position should be maintained for a minimum of four weeks. If x-ray films demonstrate a significant avulsion of bone with the insertion of the extensor tendon, it may be advisable to proceed immediately with open operation.

A recent report on the thenar flap[3] gives limited but clearly defined indications for its use. The ideal case is stated as being one in which the finger has lost the skin and pulp of the terminal phalanx but has the major part of the nail and bone intact. A split skin graft is required to cover the donor area and the base of the flap. The base of the flap should be severed on the fourteenth day, and active movement should be encouraged. The donor site for the flap must be selected carefully, and it is emphasized that the flap should lie at right angles to the thenar skin.

A change in the mode of treatment of wringer injuries has been reported.[4] In the revised method, dressings are eliminated except for fine mesh gauze in the web spaces of the hand and axilla. The edema disappeared from one to four days except in 1 case, which required seven days. Areas of necrosis did not progress in size or depth. It is stated that although the disappearance of edema can be hastened by the use of pressure dressings, it is done so at the risk of embarrassment of the circulation. The treatment includes cleansing and debridement, antibiotic administration, tetanus prophylaxis, early skin grafting, aspiration of fluid collections when necessary, and frequent evaluation of the circulation.

Injuries to the hand from homemade rockets[5] are increasing in frequency and usually result in a severely damaged extremity. If possible, the thumb and at least one opposing digit should be preserved. Traumatized digits with little function may serve as a living tissue bank from which valuable skin later can be grafted to severely deformed digits. Tendon repair as a primary procedure in a severely injured hand usually is inadvisable. Internal fixation of bone with Kirschner wires may be utilized for comminuted and open fractures. Digital nerves lacerated in association with the loss of the terminal portions of digits should be transected short of the final tip to prevent painful terminal neuromas. Primary coverage with split skin grafts or flaps is required. After the primary operation and prior to reconstructive procedures it is important to maintain the remaining function and to encourage active motion as much as possible.

Causalgia may follow an injury to an extremity.[6] It presents a picture of red, glossy, cold skin which is painful and sensitive and results in a disabled extremity. The bones may be demineralized, and muscles may appear to be partially paralyzed. Minor causalgias present less severe pain but nevertheless are quite disabling.

It appears that the treatment of choice is sympathetic ganglion blocks since some patients are relieved completely following this treatment. If only partial relief is obtained, a sympathectomy may be indicated. Local infiltration of procaine hydrochloride into the painful area does not appear to be of appreciable value.

Tendon Repair

The problem of immediate repair of lacerated tendons, as opposed to subsequent suture or tendon graft, continues to be a matter of lively controversy.[7,8] Immediate repair of lacerated tendons is contraindicated if too much time has elapsed since injury and if there is associated skin loss, fractures, or crushing injuries. Good anesthesia, adequate facilities, and good assistance are required. There is no problem in effecting healing of the tendon ends; the difficulty is in securing satisfactory motion following immobilization. The classic work of Mason and Shearon[9] on experimental healing of tendons shows that the flexors unite in a period from two and a half to three weeks and that the extensors do so in about four weeks. Good healing requires immobilization without tension on the suture lines. If motion is begun too early, the callus or granulation tissue clot increases in size and may preclude restoration of gliding.

The actual location of the injury to the flexor tendons is of great importance. In general, the sections of the hand in which flexor tendons are located are the zone near the insertion of the profundus tendon, the digital sheath area proper, the palm, and the wrist. The greatest disagreement pertains to primary repair for lacerations in the digital sheath area proper, the so-called no man's land. This is the area in which the two sublimis slips and the profundus tendon lie in the digital sheath and extend from just distal to the insertion of the sublimis tendon at the base of the middle phalanx to the proximal end of the flexor sheath in the palm. Some surgeons feel that primary repair in this zone, even if all conditions are favorable, should never be attempted. Others believe that under favorable circumstances primary repair may be undertaken. It is agreed that the time limit may be extended somewhat for tendon repairs in the palm and wrist.

Disability following median or ulnar nerve laceration at the wrist is severe. Fowler states that following laceration of all structures at the wrist priority must be given to repair of the radial artery, especially if both arteries have been severed, and of the ulnar and median nerves. Following repair of these structures suture of the flexor pollicis longus and the profundus tendons should be attempted. If the sublimis tendons and wrist flexors also are sutured, it becomes apparent that repair of all these structures in a relatively confined space predisposes to adhesions such that satisfactory motion probably will not ensue.

Bell and his associates[10] have reported their experience with the repair of injuries of the hand in children. Of 34 children who received grafts in their fingers, 28 were followed long enough for evaluation. There were 12 excellent and 9 good results. Following the insertion of tendon grafts in the thumb 5 excellent and 2 good results were obtained. Follow-up studies on 13 of 15 children operated on for secondary repair of nerves and tendons of the palm revealed 6 excellent and 6 good results. It probably is true that results following both primary and secondary repair of these injuries in children is superior to those obtained in adults, especially in severe injuries involving joints and other soft tissues.

A careful evaluation of results following primary repair of tendons in the digital sheath area in 16 patients[11] revealed that 43 per cent, or 7 patients, lacked $1^1/_2$ inches or more of touching the distal crease of the palm. In no instance was there complete flexion. Similar studies, as recorded in the literature, show even poorer results. It appears that in any large series of cases secondary grafting will give better results than primary suture of the tendons divided in the digital sheath.

From time to time the problem arises of whether or not to do a primary tendon graft at the time of injury in these cases. In general, it is felt that the results of secondary repair with tendon grafts are superior to those in which a primary graft is attempted.

A report on 27 cases of laceration of the profundus tendon at or distal to the insertion of the sublimis treated by the advancement of the proximal end of the profundus[12] indicates that this method of repair may be quite useful either primarily or as a subsequent operation. Incomplete extension of the involved finger is noted frequently in the postoperative period, but extension gradually increases with the use of the hand. There may be slight hyperextension of the proximal interphalangeal joints of the adjacent unaffected fingers during the first few months postoperatively. This may be due to the relative lengthening of adjacent profundus tendons.

Lacerated extensor tendons at the dorsum of the wrist should be repaired by end-to-end suturing with immobilization of the wrist in hyperextension. If the tendons are cut as they pass under the dorsal retinaculum, a portion is removed to allow free movement of the repaired tendon. If possible, some of this structure should be left to prevent collapse of the tendon on dorsiflexion. A simple mattress suture with splinting in hyperextension is usually sufficient in the division point of the extensor tendon over the metacarpophalangeal joint. The same method may be employed for the extensor tendon over the proximal phalanx. If the lateral bands are cut, they also should be repaired.

Laceration of the extensor tendon at the proximal interphalangeal joint may result in the typical buttonhole deformity, that is, flexion of the proximal interphalangeal joint and hyperextension of the distal joint. Should these deformities be of long standing, it may be necessary to utilize the safety pin splint to stretch the long flexor tendons prior to operative repair. The essential technical points include repair of the central tendon, mobilization, and suture of the lateral bands to the central slip. This prevents subluxation of the lateral bands, which causes the deformity. Occasionally, should there be a defect of the central tendon at the point of division, it may be necessary to utilize a tendon graft.

Spontaneous rupture of the extensor pollicis longus was noted, as reported in the early German literature, to occur frequently in drummer boys, and it thus was known as drummer's palsy.

Subsequently it was shown that spontaneous rupture may be due to chronic tenosynovitis or a roughening of the groove in the radius near Lister's tubercle due to Colle's fracture or arthritis. Spontaneous rupture of tendons may follow blunt trauma because of interference of the blood supply to the tendons.

A case of spontaneous rupture of the extensor pollicis longus eleven months after blunt trauma to the wrist has been reported.[13] There were no associated fractures or arthritic changes of the underlying bones. The authors believe that the tendon was weakened because of impairment of its blood supply. They now treat soft tissue injuries near tendons with immobilization, elevation, and prolonged rest should signs of local inflammation reappear following the initial treatment. Repair of the extensor pollicis longus may be done by direct suture whenever feasible; however, often it is more practicable to suture the distal end of the extensor pollicis longus to either the extensor carpi radialis longus or the extensor indicis proprius.

It is also possible to insert a tendon graft or to suture the distal end of the ruptured tendon to the radius.

The Burned Hand

The process of restoring function in a severely burned hand is complicated by the need for immobilization in preparing it for skin grafting as well as during the period following the resurfacing of the hand. When deeper structures, including tendons and joints, have been damaged, the problem becomes extremely complicated.

Robertson[14] has evolved a method of treatment of severe hand burns which utilizes an initial mechanical cleansing and gentle debridement followed by the application of petrolatum to the surface. A bulky compression dressing is then applied, and this is followed by immobilization on the Mason-Allen splint. The dressing is changed for the first time on the eleventh day following the burn. All obviously necrotic tissue is removed, and the hand again is dressed. This procedure is repeated in forty-eight hours. Four such dressings under anesthesia usually are required. Robertson states that if the procedure is begun on the eleventh or twelfth day, grafting can be performed on the seventeenth or eighteenth day. He believes that the prevention of pain during the dressing changes by the use of anesthesia leads to greater cooperation by the patient when restoration of motion is begun. He advocates thin split-thickness grafts of approximately $^1/_{10,000}$ of an inch. He does not do the initial dressing following grafting until five days after the operation. Limited motion is attempted early. Since the patient does not have a full range of motion at this stage, it appears that no damage to the healing grafts occurs.

With small full-thickness burns it sometimes is feasible to perform early excision which is followed immediately by skin grafting. It is fortunate that the majority of burns occur to the dorsum, where split-thickness grafts usually afford a very satisfactory covering. Following closure of the wound with split-thickness skin grafts it sometimes becomes necessary to use pedicle flaps to obtain sufficient thickness so that reconstructive operations, such as free tendon grafts, may be performed at a later date if necessary.

Kiehn believes that skin grafts should be inspected within twenty-four to forty-eight hours. If a hematoma is present, it should be evacuated, and any small abscesses should be opened and drained. Pressure is reapplied for several days, and motion is started within two weeks after the operation. In hands which are not seen immediately after injury it may be necessary to excise old granulation tissue or constricting fibrous tissue resulting from chronic inflammation and infection.

The problem of deciding whether debridement should be attempted immediately after the burn or within a few days after injury is complicated by the difficulty in estimating the extent of devitalized tissue and by knowledge of the possibility that tissues which might heal and again become functional could be removed. It is for this reason that most investigators advise the use of compression dressings and immobilization until full-thickness areas have become clearly demarcated. Debridement by daily dressings or operative excision and immediate skin grafting then are indicated.

Cannon[15] has reported his studies on the influence of temperature and humidity in the healing of donor areas as well as skin-grafted areas. The skin temperature of donor areas covered by dressings was consistently 2 to 4 degrees (Fahrenheit) higher than that of uncovered donor sites and as much as 10 to 12 degrees higher than that of uninjured skin. It was found that skin covered by dressings averaged a temperature 4 degrees higher than that of the normal adjacent skin. Because of these findings the technic of open grafting was evolved. The author maintains that the method has only limited indications. Limited motion of underlying parts of the fingers or chest wall will not cause displacement of the adherent grafts since the grafts will move with the underlying tissues.

In a detailed discussion of electric burns of the upper extremities Lewis[16] emphasizes the difficulty in estimating the depth of the damage. He feels that a very conservative approach is indicated and that observation must be continued until the extent of the irreversible destruction becomes apparent. Delay in debridement and grafting may prevent serious difficulties such as uncontrollable hemorrhage during premature surgery and may contribute to the preservation of all possible function. As soon as the extent of destruction is accurately ascertained, definitive repair should be instituted.

Infections

The treatment of hand infections is entering a third phase. It was not until Kanavel, by his anatomic, pathologic, and clinical studies, revolutionized the care of hand infections, that a rational form of treatment gained a firm footing. With the advent of chemotherapy and antibiotics there was a decline in the incidence of hand infections. As a result, many physicians have not received the thorough groundwork necessary for the over-all care of such infections. Cases of hand infections now appear to be increasing, possibly owing to an increase in resistant organisms. It therefore becomes mandatory that the cardinal principles of correct treatment be clearly understood.

GENERAL MANAGEMENT.—Rest, heat, elevation, immobilization, adequate fluid intake and nutrition, and early drainage of localized processes, especially in felons and tendon sheath infections, are included in the treatment of hand infections. Antibiotics are of great value in limiting rapidly progressing lymphangitis and cellulitis, and in some cases they may even abort the infection if the therapy is instituted very early. In many cases, however, the patient will require a proper incision and drainage of the infected area.

To treat hand infections correctly, knowledge of the causative organism and its anatomic location is necessary. Incision and drainage, if required, should be instituted early to minimize tissue necrosis and subsequent loss of function. If cellulitis and lymphangitis are present in significant degrees, it frequently is better to defer surgery for a brief period while control of the infection is attempted.

SURGERY.—All such operations should be carried out with utilization of full operating room procedures: a bloodless field, strict attention to asepsis, adequate instruments and assistance, good lighting, and general or regional anesthesia. If the infection is localized in a distal portion of the finger, such as a felon or paronychium, local anesthesia may be used, but this type of anesthesia is strictly contraindicated in instances in which there is any indication of ascending infection or lymphangitis. There is danger of gangrene developing in a digit if the circulation is impaired by injudicious administration of local anesthetics.

Felons require a very adequate incision, usually a midlateral one in the region of the distal phalanx. In general, through-and-through incisions as well as through drains are contraindicated. In the presence of tenosynovitis the tendon sheath must be identified and opened. The digital vessel and nerve must be identified and preserved from injury. If it is felt that drains are required to keep the incision open, it is probably best to use small rubber strips or Vaseline petrolatum gauze for forty-eight hours. The use of iodoform gauze or similar antiseptics is not recommended. Immobilization can be obtained by the use of a plain aluminum splint or the Mason-Allen splint with the hand placed in the position of function, that is, with the wrist in mild dorsiflexion, the finger joints in slight flexion, and the thumb in abduction, opposition, and slight flexion. It is advisable to institute active and passive motion as soon as the infection has been controlled to prevent stiffness in the joints.

TUBERCULOUS TENOSYNOVITIS.—A report on 54 patients with tuberculous tenosynovitis[17] indicates that the disease may be more disabling and more common than is generally appreciated. Swelling invariably is a feature, but it may be preceded for a considerable length of time by an aching feeling or stiffness in the fingers. The signs and symptoms usually are not acute; however, moderate pain usually is present.

Recommended therapy is the institution of streptomycin, sodium aminosalicylate, and isonicotinic acid hydrazide a week before operation and their continuation postoperatively for at least three months. Wide surgical excision of all involved tissues and structures is required. If the tendons are involved, they must be sacrificed. Free tendon grafting may be feasible at a later stage. The return of function postoperatively often is surprisingly good. Even so, patients must be followed carefully for five years or more following operation.

SPOROTRICHOSIS.—Sporotrichosis is an infectious granulomatous disease due to a fungus. The disease occurs in cutaneous and subcutaneous tissues and appears in the upper extremity in the majority of cases. The primary lesion generally is an ulcer on the hand with subsequent secondary nodular and ulcerated lesions appearing in ascending fashion along the lymphatic channels. The secondary lesions may number 3 to 40 or more. Potassium iodide remains the drug of choice for treating the localized lymphatic form. In the systemic type of the disease 2-hydroxystilbamidine may be helpful.[18]

Tendon Transference

A review of the various procedures which have been developed to correct intrinsic muscle paralysis due to involvement of the median and ulnar nerves affords a fascinating study of the functional anatomy of the hand. The principle defect in ulnar palsy is hyperextension of the proximal phalanges due to loss of the flexor component of the interossei and lumbrical muscles. The unopposed pull of the long extensors results in hyperextension of the proximal phalanges at the metacarpophalangeal joint. As a result of the increased tension on the profundus and sublimis flexors and the partial loss of extension of the distal two phalanges due to the intrinsic paralysis, a flexion deformity of the fourth and other fingers also is usually present, a deformity known as clawhand. Full extension of the digits may be accomplished providing the proximal phalanges are stabilized at 180 degrees or less, and this can be demonstrated clinically in patients with the clawhand deformity. Support of the proximal phalanges replaces the flexor action of the interossei, one of the fundamental concepts in reconstructive methodology.

The Bunnell multiple sublimis transplant, in which the sublimis slips are detached near their origin and transplanted through the lumbrical canals into the insertion of the lumbrical in the lateral bands, often produces excellent results in restoring function. Some hand surgeons believe that the operation may fail if the patient has developed a pattern of flexion of the wrist on attempting to extend the fingers since this renders the sublimis transplants ineffective. It is felt that to restore extension in a clawhand deformity of long standing, limitation of excessive volar flexion of the wrist with simultaneous limitation of hyperextension of the proximal phalanges is required.

Fowler has described a procedure in which transplantation of the extensor indicis proprius and extensor digiti quinti is utilized. Each of these tendons is split into two strands, and a slip is passed through each interosseous space anterior to the transverse metacarpal ligament. Each slip then is sutured into the lateral band on the radial side of each proximal phalanx. The procedure is designed to limit extension of the proximal phalanges at 180 degrees or slightly less as well as to give some limitation to flexion of the wrist.

Riordan[19] has devised a tenodesis operation for use in those cases in which there is not sufficient sublimis strength for a Bunnell procedure and in which the extensor tendons are too weak for Fowler's operation. In this technic one half of the extensor carpi radialis longus and one half of the extensor carpi ulnaris are cut approximately one third of the distance above their insertions. These tendons are stripped distally, and each is split into two slips. One slip is routed through each interosseous space and passed to the radial side of each finger. It is placed anterior to the transverse metacarpal ligament and inserted into the lateral band of the extensor aponeuroses, as in the Fowler procedure.

Another procedure designed to correct the hyperextension of the proximal phalanges due to loss of interosseous function is based on the observation that patients who do not develop the clawhand deformity are found to have a congenitally tight volar capsule of the metacarpophalangeal joint.[20] In this operation longitudinal incisions in the palm are used. The proximal portion of the tendon sheaths is opened, and the volar aspect of the metacarpophalangeal joints is exposed. A short flap with a distal base is constructed. The flap consists of the fibers of the transverse metacarpal ligament, the glenoid-fibril cartilage, and the volar capsule. The flap is drawn proximally enough to obtain a flexion of 160 degrees and then is sutured with silk. After the operation the digits are maintained in slight flexion for thirty days.

Excellent results have been reported in a series of 7 patients in which the operation was utilized.[20] The author of that report suggests that the procedure be performed at the time of nerve repair, especially if there has been a serious clawhand deformity, extensive destruction of important nerves, or nerve lesions of long standing. It is essential that any joint stiffness be relieved as much as possible by means of elastic traction prior to surgery. The author of the report has also utilized a simple transverse incision in the joint capsule followed by overlapping to obtain the desired shortening.

Riordan recently has described a modification of his tenodesis operation in which the plantaris tendon is utilized. The long plantaris tendon is stripped and removed. It is folded in two, and each end then is split into two slips, affording a four-tailed graft. The motor in this operation is the flexor carpi radialis, which is transferred from its insertion. Each of the four slips of the plantaris are passed through the interosseous spaces volar to the transverse metacarpal ligaments and then are inserted into the lateral component of the extensor aponeurosis near the proximal phalanx. In this procedure the criteria which have been established for correcting the clawhand deformity are fulfilled: weakening wrist flexion, blocking hyperextension at the metacarpophalangeal joints, furnishing extension of the interphalangeal joints, and augmenting wrist extension.

Brand,[21] of India, has reported the results of detailed studies on patients with loss of interrosseous function due to median and ulnar nerve paralysis caused by Hansen's disease. The Stiles-Bunnell sublimis transfer operation was performed on 150 patients. Brand, after postoperative follow-up examinations of these patients, concludes that the sublimis transfer is the operation of choice in all cases in which there is a significant contracture of the proximal interphalangeal joint which cannot fully be overcome before surgery. He feels that in stable hands with no range of passive hyperextension of the interphalangeal joints a sublimis transfer under moderate tension usually will give a good result, although an operation which avoids the removal of the sublimis tendon results in a stronger and more useful hand. For hypermobile flexible fingers a sublimis transfer is contraindicated because of its tendency to produce the intrinsic plus defect, which results from the transfer of the powerful sublimis muscle into the lateral bands.

To prevent the occurrence of the intrinsic plus deformity Brand has developed an operation in which a four-tailed graft with the extensor carpi radialis brevis as the motor is utilized. The graft is passed to the palm through the interosseous spaces volar to the transverse metacarpal ligaments and then is inserted into the lateral bands. Brand believes that this operation prevents the tendency for hyperextension at the interphalangeal joint and flexion at the distal interphalangeal joint (intrinsic plus deformity) which may follow the use of the sublimis transfer in patients with relatively mobile metacarpophalangeal and interphalangeal joints.

Contracture of the intrinsic muscles of the hand results in flexion of the metacarpophalangeal joint and the distal interphalangeal joint with hyperextension of the proximal interphalangeal joint. The thumb may be flexed at the metacarpophalangeal joint and extended at the interphalangeal joint. This deformity is the opposite of that seen in clawhand due to median and ulnar nerve paralysis and may be due to ischemia of the intrinsic muscles from a tight bandage or cast or following an injury to the arteries in the forearm or upper arm. Other causes of the intrinsic plus deformity include prolonged spasms such as are seen in rheumatoid arthritis or in fibrosis following injuries of various kinds.

A simple surgical procedure for the correction of intrinsic contracture has been suggested.[22] This involves sectioning the oblique fibers (extensor component) of the insertion of the intrinsic muscle at the extensor aponeurosis, with preservation of the transverse fibers (flexor component). It must be emphasized that the procedure requires meticulous execution of technic since undue roughness results in adhesions of the extensor tendon to the bone of the proximal phalanx. It has been stated that this operation is most suitable in mild cases in which there is a minimum of fibrosis so that it is possible to remove the lateral bands distal to the transverse fibers. In those cases in which there has been extensive fibrosis, procedures utilizing stripping of the interosseous muscles or complete severance of the lateral bands may be required.

Several procedures to restore the function of opposition of the thumb following injuries to the median and ulnar nerves have been described. The process of restoring opposition may be complicated by the fact that in long-standing median and ulnar nerve palsies the distal phalanx of the thumb goes into a flexion contracture. Any effective procedure must restore the rotatory-abduction-opposition motion and correct the flexion deformity as well. One of the most useful procedures is a modification of the ring finger sublimis transfer originally described by Royle. The important parts of the technic include routing the transferred tendon over the course of the abductor pollicis brevis, fixation over the exact midpoint of the first metacarpal head, and insertion into the tendon of the extensor pollicis longus just proximal to the interphalangeal joint of the thumb. The sublimis tendon is removed from its insertion in the ring finger and is brought out at the wrist. A fixed pulley is constructed from the flexor carpi ulnaris in such a manner that the direction of pull is in a straight line at the junction of the palmaris longus and the proximal flexion increase of the wrist.

A report on tendon transfers in patients with tetraplegia following injury to the spinal cord between the sixth and seventh cervical vertebrae has been presented.[23] In most of these patients only the following muscles below the elbow are functioning: extensor carpi radialis longus and brevis, brachioradialis, flexor carpi radialis, and pronator teres. Surgical correction is done in two steps. The first operation includes tenodesis, to prevent hyperextension of the metacarpophalangeal joints and clawing of the fingers, and transfer of the tendon of the extensor carpi radialis longus to the long extensors of the fingers and thumb. The tendon of the extensor pollicis longus may be relocated to afford better function. In the second operation the flexor carpi radialis with a palmaris longus graft is used to restore opposition of the thumb, and the pronator teres is transferred to the flexor digitorum profundus tendons of the fingers. The tendon of the brachioradialis is transferred to the flexor pollicis longus. The author reports that the degree of improvement in function following these procedures is such that patients are able to discard special hand appliances and become more independent. He believes that arthrodesis of the wrist rarely should be done in this type of patient.

Tendon transfers for radial nerve paralysis often provide patients with a very satisfactory return of function of the wrist and digital extensors. A recent report is of interest in that it reveals a good result from such an operation performed twenty-four years after the injury to the radial nerve.[24] In this case the pronator teres was transferred to the extensor carpi radialis longus and brevis, the flexor carpi radialis was transferred to the long abductor and thumb extensors, and the flexor carpi ulnaris was transferred to the extensors of the fingers. The author of the report stresses that proper attention to the basic principles of tendon transfers must be observed: suturing with proper tension, directing the pull of the transferred tendons in as close to a straight line as possible, creating a good gliding bed for the tendon, suturing the tendons proximal to the carpal tunnel to allow unrestricted finger motion, retaining one wrist flexor in the case of extensor transfers, and performing the technic with meticulous care. In long-standing injuries a certain degree of fibrosis of the muscles occurs. In the case reported the tendons had undergone a gelatinous degeneration, presumably related to disuse. Inasmuch as a satisfactory result was obtained, it is presumed that the tendons responded to the physiologic stimuli provided by the operative procedure.

Dupuytren's Contracture

The etiology of Dupuytren's contracture continues to puzzle the various investigators in this field of research. A lesion which resembles this disease has been produced experimentally in monkeys following repeated minor trauma to the palmar fascia.

Surgery is the only means of treatment which affords relief. However, evaluating the indications for surgery and choosing the operative procedure may present difficulties. Many patients with mild Dupuytren's contracture suffer little or no disability and may never require operative intervention. On the other hand, it must be borne in mind that surgery affords the best results in the early or moderate cases rather than in the more advanced forms of the disease.

It is possible to consider such operations as falling into the categories of fasciotomy (performed either blindly or under direct vision), local fasciectomy (that is, local resection of bands and nodules), and total fasciectomy. Recurrence or progression of the disease following surgery is not uncommon and is one of the reasons many surgeons prefer a complete fasciectomy if the patient's age, general condition, and occupation make this the operation of choice. It is possible to perform a total or a subtotal fasciectomy by multiple procedures. It may be difficult to decide whether the patient requires skin grafting at the initial procedure or whether those portions of palmar skin directly involved will survive following removal of the adherent palmar fascia. Localized areas of skin necrosis following surgery may be a very troublesome complication. A hematoma following surgery is common, and meticulous hemostasis and a careful compression dressing are required.

In one study of the pathogenesis of this disease the nodule was interpreted as being the essential lesion and the fibrous cords were interpreted as being the result of hypertrophy of fascial bands reacting to intermittent tension stresses. The author feels that the nodules require excision but that the cords do not. He divides reactive fascial cords in the palm by subcutaneous fasciotomy. In the fingers, however, the cords are sectioned by direct vision.

In a report from Scandinavia on 122 operations for Dupuytren's contracture total or subtotal fasciectomy was done in three quarters of the cases. In 10 per cent primary skin grafting was also performed, and in 4 cases skin necrosis necessitated secondary skin grafting.

Seven cases were complicated by hematomas. In 22 cases stiffness after operation was severe enough to warrant the administration of cortisone or of effecting a sympathetic nerve block.

(Number eighty-one in a series on Recent Advances in Medicine and Surgery. Part II will appear in the July 1, 1960, issue of the JOURNAL;*) the reference list for both parts will be printed at the end of Part II.)*

Specialist Condemns Rash of Open Chest Heart Massage

The increasing use of open chest heart massage has been criticized by a New York physician. "The rash of thoracotomies occurring in emergency rooms, medical wards, and even ambulances must be condemned," Vincent J. Collins, M.D., of New York University-Bellevue Medical Center, wrote in the February 6 *Journal of the American Medical Association.*

"... thoughtless thoracotomies are being performed without due consideration of the principles [of cardiac resuscitation and massage] and in the face of inadequate assistance and equipment," he said.

Dr. Collins, a specialist in anesthesiology, stressed that adequate personnel with the proper skill and equipment, including someone with surgical skill and knowledge of the technic of heart massage, must be present.

This extraordinary measure, he said, should not be taken when heart collapse is precipitated by disease. Even in the operating room, where all skills are available and there is usually a preconceived plan of action, the incidence of successful resuscitation is "nil" in cases in which there is pre-existing cardiac disease.

Suggestions that laymen be taught the fundamentals of cardiac resuscitation and massage, he added, ignore the fact that the success of the technic depends upon an understanding of the restoration of the entire oxygen system.

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by JOHN W. PICKREN, M.D. NOVEMBER 22, 1958

Discussed by ROBERT TARAIL, M.D., *and*
EUGENE STUDENSKI, M.D.

Mediastinal Mass—Laboratory Problems and Postoperative Collapse

Case History

A fifty-seven-year old white male entered Roswell Park Memorial Institute complaining of extreme nervousness which had begun three months previously. This nervousness caused such severe tremors of the hands that he was unable to write. Even though he had an excellent appetite, he had lost 6 pounds in weight in a period of one month. In addition to the nervousness, he complained of a sensation of tightness of the chest and noted that he perspired much more than usual.

Physical examination revealed tremors of the hands, lips, and tongue. In the right supraclavicular region a small but definitely palpable lymph node was present. In the suprasternal notch a mass that moved up and down when the patient swallowed was relatively firm. On percussion of the anterior chest wall, dullness was noted. The heart rate was 102 per minute, temperature 98.6 F., blood pressure 180/100, and respirations 20 per minute. The heart was of normal size, and no murmurs or thrills were heard.

Chest roentgenograms showed a huge, well-defined mass located in the superior mediastinum. The trachea was located in the midline. Laminograms revealed an anterior location of the mass as well as an area of calcification in the inferior portion of the lesion. A barium-swallow roentgenogram showed that the esophagus was displaced to the left and posteriorly, but there was no evidence of any intrinsic involvement. Chest roentgenograms also showed pleural thickening and a honeycomb formation of the lung parenchyma of the lower left and right lobes, which suggested bronchiectasis.

Examination of the sputum on five occasions and of bronchial washings on one occasion revealed no tumor cells. An electrocardiogram showed a sinus tachycardia of 112 per minute, a P-R interval of 0.13 seconds, and a QRS interval of 0.09 seconds. Nonspecific S-T and T-wave abnormalities also were present. Blood analyses revealed glucose 126 mg. per 100 ml., nonprotein nitrogen 40 mg. per 100 ml., albumin 4.4 Gm. per 100 ml., and globulin 2.4 Gm. per 100 ml. The hemoglobin content was 16 Gm. per 100 ml., and the white blood cell count was 3,000; it later varied from 6,800 to 4,300. His sedimentation rate was 17 mm. per hour. The urinalysis findings were not remarkable. His basal metabolic rate was plus 83 per cent. There was retention of 10 per cent of a tracer dose of radioactive iodine. No history of previous administration of iodine-containing drugs was obtained. The serum butanol-extractable iodine was 5.3 micrograms per cent.

For a period of eight days the patient was given methimazole (Tapazole) 5 mg. four times daily and a penicillin-streptomycin mixture twice daily. His basal metabolic rate was plus 51 per cent on the third day of therapy and plus 60 per cent on the eighth day. His pulse rate continued to be high, but he felt less nervous subjectively.

An operation was performed. The patient's operative course was without difficulty, but postoperatively he had many problems. On the day of operation he had hypotension that was corrected by the administration of norepinephrine and blood transfusions. However, the hypotension recurred on the subsequent day and was associated with a high and erratic pulse rate. His temperature spiked daily up to 102 F. His respirations were shallow and fast. His cough was weak and ineffective, a situation which resulted in repeated attempts at suctioning of the mucus and pus that collected in the trachea and the bronchi. Roentgenograms revealed densities in the lower portion of the chest suggestive of inflammation. An electrocardiogram showed the same abnormalities as those preoperatively except for the addition of auricular fibrillation and a more pronounced tachycardia.

Antibiotic therapy did not control the elevated temperature. Digitalization failed to control the auricular fibrillation or the tachycardia. The patient's hypotension was corrected only for short intervals. He became apprehensive and anxious. The anxiety increased in spite of phenobarbital administration, and on the fourth postoperative day intravenously administered morphine 23 mg. ($^3/_8$ grain) was necessary for sedation. The morphine administration was continued, methimazole was prescribed again, and iodides were given. On the fifth postoperative day he developed cyanosis of the nail beds and of the face.

Because of the difficulties created by the weak cough and the inability to clear the tracheobronchial tree by suctioning, a tracheotomy was performed. During this operation the patient developed cardiac arrest, and he died in spite of cardiac massage.

Discussion

Robert Tarail, M.D.: This very dramatic case has a lot of significance for the teaching of the clinical management and the therapy of patients with the disorders described in the protocol. To me, the problem is clear cut. I shall make my hypothesis with respect to the basic diagnosis, basic in the sense that it concerns a process that was the initiating factor in this chain of circumstances. Then I shall cover the symptoms, physical findings, laboratory data (including discrepancies among the butanol-extractable iodine, radioactive iodine uptake, and basal metabolic rate), preoperative preparation of the patient, and his postoperative course, and I will decide how all of these fit into my hypothetic diagnosis. Usually, as you know, a seasoned "CPCer" reaches his startling conclusion after all that discussion, but I propose to reverse this more common sequence of events.

My hypothesis, based on the information in the protocol, is that the patient had thyrotoxicosis and an intrathoracic or substernal goiter. How do the symptoms jibe with this hypothesis? Nervousness, tremors, and a good appetite in the face of which there is weight loss are consistent with it. Both tightness of the chest (apparently related to the substernal mass) and excessive perspiration also fit. A symptom unrelated to thyroid disease is the sputum production. The protocol states that there was roentgenographic evidence of bronchiectasis. This disease may cause symptoms of dyspnea, cough, and sputum production.

With respect to the physical findings, the

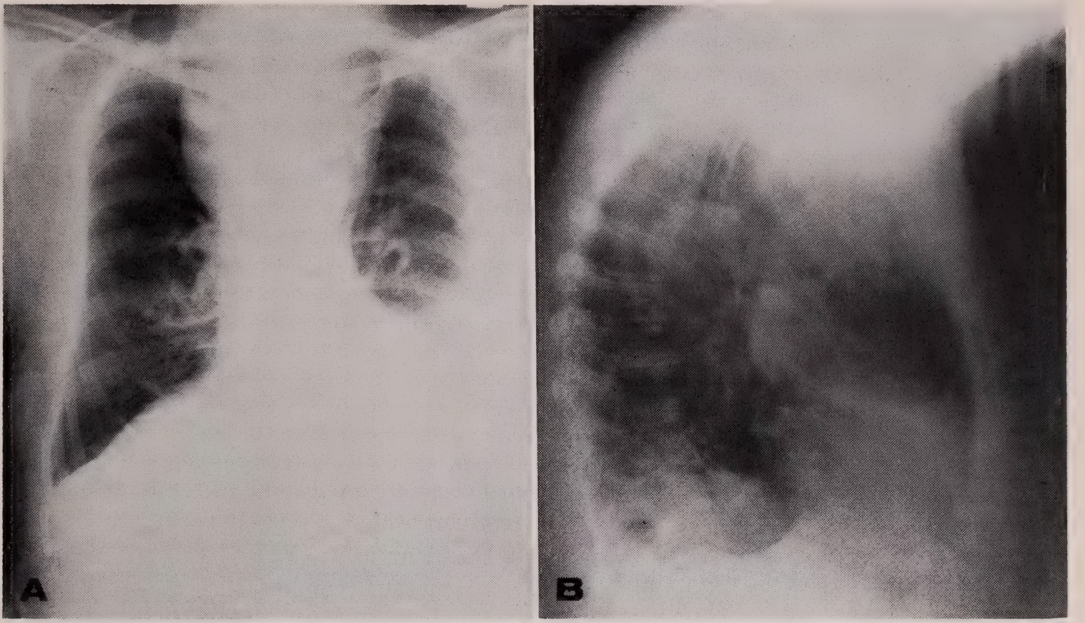

FIG. 1. (*A*) Anterior and (*B*) lateral views of the chest revealing large bilateral anterior mediastinal mass. Note lack of lobulation.

protocol states: "On percussion of the anterior chest wall, dullness was noted." This would be true of any chest wall, for there always is some dullness caused by the heart, mediastinal structures, and sternum. I presume that what is meant is that there was an increase or a widening in mediastinal dullness. Increased dullness in the anterior portion of the chest is not a very helpful finding. A finding apparently inconsistent with my hypothesis is the small but definitely palpable lymph node in the right supraclavicular region. Ordinarily one does not expect lymphadenopathy to occur in patients with hyperthyroidism. However, one textbook actually mentions that lymph node enlargement in such patients is a striking feature of this disorder.[1] My own experience does not correspond so that this lymph node worries me. The remainder of the findings of the physical examination—the tremors, the mass in the substernal notch which goes up and down with swallowing, the dullness perhaps, the definite tachycardia, the cardiac findings, the rate of respiration, and the temperature—are all consistent with the diagnosis of hyperthyroidism. The arterial blood pressure is given as 180/100. The arterial pressure in hyperthyroidism is characterized by an increased pulse pressure. The systolic pressure may be elevated, as it is here. However, more characteristically, the blood pressure would be 180/80 rather than 180/100. But 180/100 does not really militate against the diagnosis of hyperthyroidism, for many patients with classic hyperthyroidism may have an elevation of both the systolic and the diastolic phases. The pulse pressure was increased distinctly. That there is no mention of the patient's eyes suggests that no changes were noted. In general, ocular evidences of hyperthyroidism include exophthalmus, stare, and lid lag. Thus, the physical findings are consistent with hyperthyroidism associated with an intrathoracic goiter. With these symptoms and signs, one already has a very strong case for my hypothesis.

May we see the roentgenograms?

RALPH LILIENFELD, M.D.: The x-ray films of the chest give evidence of a bilateral mediastinal mass which is not lobulated (Fig. 1). This mass extends anteriorly and does not deviate the trachea. The right

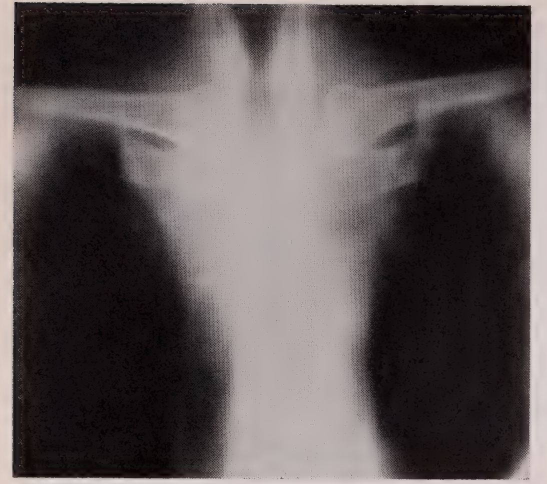

FIG. 2. Laminogram of the mediastinum revealing amorphous calcification at the right inferior pole of the mass.

lung shows normal aeration. The left lung shows some pleural reaction at the base with evidence of bronchiectasis. The heart shadow as well as the thoracic cage are within normal limits. Fluoroscopy of the chest revealed no pulsation of the mediastinal mass, but upward movement of the mass was noted with deglutition. Laminograms of the mediastinum reveal an amorphous type of calcification at the right inferior pole of the mass (Fig. 2). The esophagram reveals slight deviation of the upper portion of the esophagus to the left and posteriorly, indicating that the mass also extends into the middle mediastinum.

From the radiologic point of view, the mass most likely represents a substernal thyroid, partly calcified. In the differential diagnosis a thymoma, teratoma, lymphoma, and aneurysm have to be excluded.

JOHN PICKREN, M.D.: Dr. Lilienfeld, on what basis do you exclude a thymoma in this case?

DR. LILIENFELD: A thymoma usually is situated in the anterior mediastinum. The maximum dimension of a thymoma is characteristically the horizontal one, rather than the vertical one as seen here. Furthermore, this lesion moved with swallowing, while thymomas do not.

DR. PICKREN: On what basis do you exclude enlarged massive lymph nodes in this area?

DR. LILIENFELD: The possibility of a lymphoma was mentioned in the differential diagnosis. The fact that this lesion was not lobulated is a large factor that would exclude enlarged lymph nodes. The large size of this lesion is very unusual for a lymphoma.

DR. PICKREN: Another thing that you mentioned was a teratoma. How do you exclude this lesion?

DR. LILIENFELD: Usually teratomas are situated in the anterior mediastinum and are unilateral rather than bilateral. The lesion not infrequently is calcified, but for confirmation we would like to see teratomatous remnants.

DR. PICKREN: What do you mean by teratomatous remnants?

DR. LILIENFELD: A tooth remnant or fat. The latter may show a radiolucent area within the mass.

DR. PICKREN: Would bronchogenic carcinoma ever give such a picture?

DR. LILIENFELD: Bronchogenic carcinoma rarely is manifested as a bilateral mass, but bronchogenic carcinoma in the posterior aspect of either the right or left upper lung fields can dissect across to the other side of the mediastinum and present as a mediastinal mass.

DR. TARAIL: The apparent presence of bronchiectasis is of some importance in relation to some of the laboratory problems, namely whether or not the patient had taken a cough syrup or some other kind of remedy containing iodine. A substernal thyroid generally is not considered to be a true anomaly in the sense of an anatomic defect related to embryonic development. A thyroid situated at the base of the tongue is considered aberrant thyroid tissue. But a substernal thyroid usually is considered to be an extension of enlarged thyroid tissue from the neck into the mediastinum. Usually a connection between the cervical and the thoracic portion is evident. On occasion this connection apparently can be interrupted, and the mass in the chest then may appear to be quite independent of and unattached to the cervical thyroid.

The laboratory findings are most interesting. No mention is made of the serum cholesterol, thank heaven. This is one of the most tenuous, least reliable methods of assaying thyroid function. It is just about worthless. The fact that the sputum on five occasions showed no tumor cells and that the bronchial washings also showed no tumor cells is interesting. Nothing is said about whether the sputum was purulent or abundant. The tachycardia and the description of nonspecific S-T and T-wave abnormalities of the electrocardiogram are consistent with hyperthyroidism. The blood glucose was 126 mg. per cent Patients with hyperthyroidism generally have glucose intolerance with a diabetic type of curve. This apparently is related to the depletion of liver glycogen caused by an obligatory state of starvation that occurs in patients with active thyroid disease. They may have, as this patient did, a borderline blood sugar level. Both the nonprotein nitrogen of 40 mg. and the hemoglobin of 16 Gm. are at the upper limits of normal. They suggest some mild dehydration. The concentrations of albumin and globulin are within normal limits as are the urinalysis findings. The total white count is given as 3,000 with variations within the normal range. Relative and absolute lymphocytosis often occurs in patients with hyperthyroidism. Monocytosis has been described in this disorder. Actually there is no specific change in the white cell count that is of much diagnostic value in hyperthyroidism. The sedimentation rate of 17 is "all very rosy and glamorous."

Now we come to the "meat" of the situation. I think that the following findings played an important role in determining the course of action of those caring for the patient. A basal metabolic rate of plus 83 per cent is startlingly elevated to the point seen in extreme cases of hyperthyroidism. It is a tremendous elevation. Unfortunately it is given here only as a single measurement before therapy. Multiple measurements are desirable because a single basal metabolic rate determination—whether the result be high, low, or normal—is much less reliable than multiple measurements. This policy also is applicable to the finding that the butanol-extractable iodine of the plasma or serum was normal because of the great technical difficulties in making this measurement accurately. The I^{131} uptake was low. An I^{131} uptake determination, according to Dr. Bender,[2] can be repeated safely and desirably about a week after the first one is done.

The basal metabolic rate was very high. The iodine uptake was low. The butanol-extractable iodine was normal. What can we say about these laboratory results, which at least at first glance may lead to major differences in diagnosis? What are some of the nonhyperthyroid causes of an elevation of the basal metabolic rate. These may be listed in general groups: (1) Often there is a lack of technical precision and accuracy. Basal metabolic rate estimation is subject to one of the common and saddest failings of our day, that is, the tendency of clinicians and hospital laboratory supervisors to believe the results of "objective" tests no matter how poor the technic for conducting these studies may be. Perhaps this is but a continuum from the astute diagnostician of former days, who by percussion could outline confidently a normal heart to the left of center in a patient with dextrocardia. The technical aspects of a satisfactory, precise basal metabolic rate measurement, although well understood, are all too frequently neglected. And even with the best technic, the amount of oxygen consumed (which is what the basal metabolic rate measures) may be shown as spuriously high by virtue of a rare "leak" of oxygen through a patient via a ruptured eardrum. (2) Nervousness may cause an elevation of the basal metabolic rate without the organic cause of the emotional disturbance being identified. A minor example of this is that many patients do not take kindly to nose clips or to the other regalia of a basal metabolic rate measurement. (3) Fever can cause an elevation.

For each degree (Fahrenheit) of elevated temperature the basal metabolic rate is said to rise by 7 to 10 per cent. (4) Epinephrines may effect an increase in the basal metabolic rate. This is an important consideration in this instance in view of the postoperative treatment of our patient with norepinephrine. (5) A pheochromocytoma is a tumor that may cause a tremendous elevation of the basal metabolic rate—of the magnitude described in the protocol—but major evidence of this tumor in our patient is lacking. (6) Cardiac and/or pulmonary insufficiency may yield an increase in the basal metabolic rate, which many observers feel does not rise above about plus 40 per cent on this basis. Presumably, therefore, the pulmonary disease of our patient does not account for his very high basal metabolic rate. (7) Neoplasia, including lymphoma, leukemia, and polycythemia vera, may increase the basal metabolic rate, supposedly because of the rapid metabolism of neoplastic tissue. I contend that the basal metabolic rate of our patient does, in fact, reflect thyrotoxicosis because it fits the clinical story so neatly. Pulmonary disease may have contributed to the elevation, but it was not the crucial factor.

But the butanol-extractable iodine of our patient was reported as 5.3 micrograms per cent, which is within the normal range.[3] How come? The butanol-extractable iodine determination is anything but easy to perform accurately. In fact, our clinical chemistry laboratory recently has been so concerned with this problem that its analyses of serums were compared with those of a laboratory in the forefront of iodine methodology. Unfortunately, major discrepancies in results between the two laboratories were disclosed in the analyses of two of the seven serums compared thus far. Apart from the nettling problems of chemical technic, mercury, either in the laboratory or as a diuretic, and copper have been shown to cause an artifactually low butanol-extractable iodine.[3, 4] Organic iodides, widely used in x-ray studies for observing various cavities and organs, may produce a very high butanol-extractable iodine. Hypoalbuminemia, cirrhosis of the liver, and malnutrition are additional causes of a low butanol-extractable iodine measurement. Actually, if the determination is performed accurately (a big "if," I believe, in most hospital laboratories), it is probably an extremely valuable indicator of thyroid function.

The patient's I^{131} uptake was recorded as 10 per cent, again only a single determination. Dr. Bender[2] tells me that the normal I^{131} uptake in his laboratory is 15 to 50 per cent. We are dealing with a patient who had clinical hyperthyroidism with an evidently diminished uptake of radioactive iodine. Again we are faced with a problem of technic, although a minor one, for patients have been known to get one tenth of the proper dose of radioctive iodine through some slip of the pen. The ingestion of iodine in any form, whether inorganic or organic, will depress the uptake of radioactive iodine. Inorganic iodine occurs in a surprising number of medicinal preparations available to the unsuspecting public. If a man has a cough and goes to the drug store to get some cough medicine, that "remedy" is likely to contain iodine. Or he can even consume iodine from cough drops because many cough drops and troches contain iodine. Some of the "wonderful" tonics, "remedies," and vitamin preparations sold without prescription also contain iodine. If this patient had had a bronchogram for visualization of the bronchiectasis, iodine intake would have occurred. Thus, it is plausible to invoke iodine ingestion in relation to his pulmonary status as an important possible cause of the low I^{131} uptake, even at the risk of appearing to disagree with an apparently contradictory statement in the protocol. Methimazole and propylthiouracil are among the antithyroid drugs which will depress the I^{131} uptake. None of these drugs, presumably, were given to the patient until after the I^{131} was measured. Drugs having converse effects, such as desiccated thyroid, triiodothyronine, and thyroxine, also will diminish the uptake of

I^{131}. Sometimes patients take thyroid secretly in large dosage for some pugnacious reason, perhaps to trip their physicians. Such a patient presents the picture of clinical thyrotoxicosis, but the I^{131} uptake is low, the basal metabolic rate is high, and the concentration of butanol-extractable iodine is high. Finally, it should be mentioned that estrogen and cortisone as well as other steroids may diminish the uptake of radioactive iodine.

Because the clinical picture of our patient fits thyrotoxicosis and a substernal thyroid, I prefer to ignore blithely the results of the butanol-extractable iodine and of the I^{131} uptake determinations. Presumably an attempt was made to treat this patient as though one of his problems was hyperthyroidism. In fact, he was given methimazole, which is an antithyroid agent. Patients with "hot" thyroids are intolerant to stresses such as surgery. In the days before iodine therapy and antithyroid drugs were available, thyroid operations were performed in stages. This was done not because the surgeon did not know how to remove the thyroid technically but because he was afraid of the postoperative consequences in a patient with active thyrotoxicosis.

In my opinion, the preferred preparation for any kind of surgery of a patient with hyperthyroidism is to administer a goitrogen (an antithyroid drug) before surgery, usually for at least three or four weeks. Often a longer period is required. In addition, for ten days to two weeks prior to surgery Lugol's solution 15 drops or so daily is administered to diminish hyperplasia, vascularity, and friability said to be associated with the intake of the antithyroid drug alone. This patient was given methimazole in reasonable doses for only eight days. The basal metabolic rate was plus 51 per cent on the third day of therapy and plus 60 per cent on the eighth day. The pulse rate continued to be high. The patient felt less nervous. The fact that he was less nervous corresponds with the diagnosis of hyperthyroidism, since one of the earliest occurrences (before changes in the basal metabolic rate, the butanol-extractable iodine, and the I^{131} usually are detected) is that the patient feels better and is less nervous after a few days of antithyroid therapy. So I assume that this patient was still hyperthyroid at the time of surgery but that some compelling reason led his physician to feel that an immediate operation was indicated rather than to wait until clinical and laboratory findings showed an euthryoid picture.

The operation presumably was an exploration of the intrathoracic mass. The postoperative course was very interesting, and it fits into the development of so-called thyroid storm or thyroid crisis. What are the usual clinical features of a thyroid storm? In general, it is an aggravation, intensification, and exaggeration of all the manifestations of thyroid intoxication precipitated by a surgical procedure or by a nonsurgical source of stress on patients with uncontrolled hyperthyroidism. It has a course terrifying to both the patient and those caring for him. Such a patient is extremely anxious and uncontrollably restless and therefore needs large doses of narcotics, sedatives, or even anesthetics. He is extremely excited and hot. The body temperature may be very high, but there usually is not much in the way of infection or of other nonthyroid factors to account for the hyperthermia. One expects to see flushing and sweating, and these patients are so restless that the skin of the knees and elbows is red because of friction from increased movements. A final component of the syndrome of thyroid crisis is tachycardia, with or without auricular fibrillation.

Are the findings in our patient consistent with a thyroid storm? I think so. The precipitating factor consists not only of surgery in the presence of probably active hyperthyroidism but also, alas, the use of norepinephrine for hypotension on the day of operation. I do not know why he developed hypotension. Perhaps unreplenished blood loss was a factor, but I do know of the grave danger of giving epinephrine or norepinephrine to a patient with active hyperthyroidism. Such a patient may be profoundly sensitive to the epinephrine group of compounds because these drugs particularly are prone to cause further increases in the basal metabolic rate as well as cardiac arrhythmias. The fulminant course of our patient coupled with agitation and hypermotility requiring much sedation and narcotization fits thyroid storm, as do the tachycardia and the auricular fibrillation. Moreover, the failure of this cardiac disturbance to respond to digitalis is also in keeping with thyroid crisis. The temperature of 102 F. was probably in part a reflection of storm and in part determined by the respiratory infection.

The use of iodide, a goitrogenic drug, and strong sedation suggests that those caring for our patient believed that he had a thyroid storm. In addition to massive doses of iodide, an antithyroid drug, and sedatives, many clinicians administer massive amounts of hydrocortisone. The latter is used because, in animals at least, it appears to suppress certain aspects of thyroid function. The treatment of our patient was unsuccessful. The respiratory and thyroid complications proved to be overwhelming, and the tracheotomy proved to be the coup de grâce.

My diagnoses are hyperthyroidism with a thyroid storm, an intrathoracic (substernal) thyroid, and bronchiectasis with a superimposed postoperative pulmonary infection. I am not happy about that little lymph node which was described under the physical findings. I think that the pathologist may tell us of central necrosis and fatty degeneration of the liver.

Dr. Pickren: Dr. Ozarda, would you like to say anything about the I^{131}?

Ahsen Ozarda, M.D.: The twenty-four-hour I^{131} uptake study has been used widely as an index of thyroid function. However, the optimal time to measure the uptake after the tracer dose is given has not been agreed on. Even under the best conditions the test is not conclusively diagnostic, and its result must be correlated with the clinical findings. The test gives a more accurate result in a toxic diffuse goiter and is not so reliable in a toxic nodular goiter. It is assumed generally that the twenty-four-hour uptake represents the maximum uptake in the majority of cases. There are some instances, however, in which the peak uptake is reached considerably earlier so that the measurement at twenty-four hours is less than the peak uptake (sometimes in the hypothyroid range) and therefore may be misleading (Fig. 3). Eight-, four-, and even two-hour uptakes may be more desirable and would probably eliminate this source of error. An additional forty-eight-hour uptake would be helpful to plot the true uptake curve. In severely hyperthyroid patients the forty-eight-hour uptake is less than the eight-hour measurement; it may be even as low as 50 per cent of the eight-hour value. This decline is more accentuated in the extremely hyperthyroid patient, in whom there is a significant decline in thyroid radioactivity during the second twelve-hour period due to the release of labeled hormone. I would assume that this was the situation in this case. Certainly after listening to Dr. Tarail's description of the patient, it seems highly

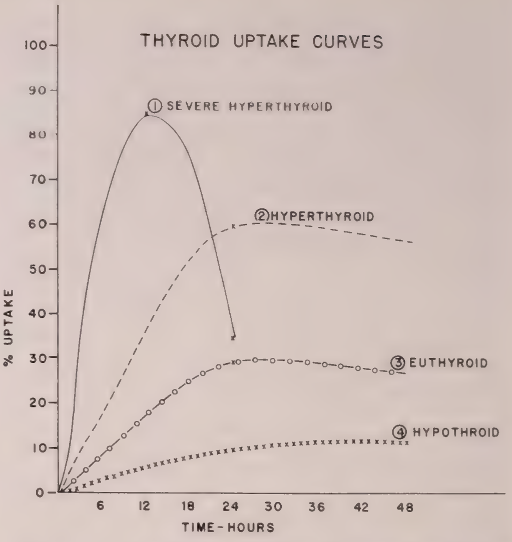

Fig. 3. Graph showing that in patients with severe hyperthyroidism the amount of radioactive iodine in the thyroid may be in the normal or low range twenty-four hours after iodine intake. Studies at eight, four, or two hours after iodine administration may give more accurately the uptake in these individuals.

probable that this patient was extremely hyperthyroid.

It also should be mentioned that any significant deviation in the size of the intrathyroidal iodine pool may affect the degree of uptake. An increase in the size of the pool will decrease the uptake. Furthermore, the uptake will be decreased if the patient has been taking any uptake-suppressing drugs, such as iodine-containing medications, x-ray contrast materials, antithyroid agents, cortisone, para-aminosalicylic acid, or thiocyanate.

In this particular case, in addition to the uptake study a localization study would have been worth while to obtain supplementary information about the size and location of the thyroid gland as well as of its substernal extension.

Diagnoses

Clinical.—*Preoperative: (1) mediastinal tumor of unknown type, (2) bronchiectasis; postoperative: (3) hyperthyroidism with substernal thyroid, (4) thyroid storm, and (5) brohchiectasis.*

Dr. Tarail.—*(1) Hyperthyroidism with substernal thyroid, (2) thyroid storm, and (3) bronchiectasis.*

Anatomic.—*(1) Goiter with minimal evidence of hyperplasia consistent with hyperthyroidism and substernal thyroid, (2) thyroid storm, clinical, (3) bronchiectasis, and (4) chronic lymphadenitis.*

Pathologic Report

Eugene R. Studenski, M.D.: The surgical specimen was a large mass of thyroid tissue weighing 500 Gm. and showing a microscopic pattern of large colloid-filled spaces. In addition, small areas of tightly packed follicles and some vacuolization of the colloid were present. In these tightly packed areas some of the cells were columnar.

The correlation of histologic hyperplasia with clinical hyperthyroidism is not too good. Even before the days of the antithyroid drugs, it was anything but a one-to-one situation. Patients with clinical hyperthyroidism would occasionally have no histologic evidence of hyperactivity; similarly, patients with clinical euthyroidism would sometimes have hyperplastic glands. Since the advent of therapy with antithyroid drugs, with or without iodine, this difficulty has been magnified further because of the anatomic changes resulting from the administration of these drugs. The consumption of an antithyroid drug for several weeks or months causes histologic changes that are similar to those seen in an extremely hyperplastic gland. Lugol's solution, on the other hand, results in involution. When a hyperthyroid patient receives both drugs, the pathologist is extremely hesitant to determine the degree of function by histologic criteria. The antithyroid drug was given to this patient for a very short period. One could expect only minor histologic effects. Nevertheless, hyperplastic changes were present, and although not classic, they are suggestive of clinical hyperthyroidism.

At autopsy the surgical wound was noted. A 2 by 3 cm. segment of residual thyroid tissue was found in the proper region. Extensive bronchiectasis with large amounts of mucous production was associated with atelectasis of the lungs, part of which can be attributed to the opening of the thorax for cardiac massage. There was not a very great amount of recent pulmonary infection or consolidation. The pattern was that of the usual fibrosis and chronic pneumonitis associated with extensive bronchiectasis. The remainder of the examination revealed very little. This is consistent with the diagnosis of thyroid storm. As Dr. Tarail predicted, central necrosis, fatty metamorphosis, and irregular congestion were found in the liver. These have been reported frequently in such cases with thyroid storm. At one time the mechanism of death was explained on the basis of liver failure. Microscopically, also, there was evidence of myocarditis. This, I feel, is something that is independent of the possible inflammatory changes due to cardiac massage, because the chief component of the cellular infiltrate was the myocyte; this cell does not appear very rapidly. Throughout the heart were scattered small areas of myocyte accumulations. The patient did have mild lymphocytic hyperplasia.

In summary, the patient had thyrotoxicosis and thyroid storm. Associated findings were bronchiectasis, liver necrosis, and chronic lymphadenitis.

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Antibiotics and the Internal Ear

While the antibiotic age has helped solve certain otologic problems, it has created others, among which (under some conditions) is the ototoxicity of a small but important group of antibiotic agents: streptomycin, dihydrostreptomycin, neomycin, viomycin, and kanamycin, all of which are among the most effective antituberculous agents. Manifestations of toxicity are both vestibular and auditory. The relative degree of hearing loss and vestibular disturbance may be greater in one and less in another; for example, streptomycin carries with it the greater risk of vestibular disturbance, while in prolonged dihydrostreptomycin therapy there is relatively less risk of vestibular disturbance but greater risk of hearing loss. The other three drugs (viomycin, neomycin, and kanamycin) carry even greater risk of auditory impairment, but the risk of vestibular difficulty is about the same as that for dihydrostreptomycin. The ototoxic properties of these drugs should be born in mind and their use should be approached with care, particularly the newer and less understood agents.—*Transactions: Am. Acad. Ophth. & Otol., March-April, 1959, Joseph E. Hawkins, Jr., Ph.D.*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Postoperative Neomycin Respiratory Depression

CERTAIN antibiotic drugs may complicate anesthesia, and one should be aware of this possibility. A possible effect of such drugs that may cause some concern is the development of respiratory depression, which is due to a paralyzing condition of skeletal muscle. For instance, the following sequence of events occurred in a two-year-old child:[1]

> Ether anesthesia was being administered for ureterointestinal anastomoses. Respirations were adequate, spontaneous, and unassisted. Prior to closure of the peritoneum 1 Gm. of neomycin sulfate in 10 cc. of saline was instilled intraperitoneally. Ether anesthesia then was discontinued. Paradoxically, respirations became increasingly depressed. Twenty minutes after the instillation of neomycin, flaccid paralysis became evident and respirations ceased so that artificial ventilation had to be instituted until muscle tonicity returned.

Similar prolonged and profound respiratory depression following intraperitoneal administration of neomycin sulfate during surgical anesthesia has been reported by others.[2-4] The following case, reported by Jerzy Swierbutowicz, M.D., and Nina Drazniowsky, M.D., is another example of such a complication.

Case Report

A forty-eight-year-old male was admitted to a hospital because of severe abdominal pain with a diagnosis of perforated gastric ulcer. An exploratory laparotomy was proposed. Preoperative laboratory findings were within or close to the normal range. The following blood chemistry values were obtained: fasting blood sugar 135 mg. per 100 ml., hemoglobin 17.5 Gm. per 100 ml., hematocrit 48, sodium 132 mEq. per L., potassium 4.2

Discussed at a conference held at Bellevue Hospital, New York City, February 1, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

mEq. per L., and chlorides 100 mEq. per L. The urine was normal except for a 2 plus content of albumin. The arterial blood pressure was 118 mm. Hg systolic and 70 diastolic. The pulse rate was 108 per minute, and the respiratory rate was 24 per minute. His habits included smoking two packs of cigarets daily and drinking 1 pint of whiskey daily.

For preanesthetic medication the patient was given 100 mg. of Amytal sodium, 75 mg. of Demerol hydrochloride, and 0.5 mg. of scopolamine hydrobromide by intramuscular injection. When he arrived in the operating room forty-five minutes later, he was calm. His arterial blood pressure was 140/90, pulse rate 120 per minute, and respirations 28 per minute. Anesthesia was induced by and maintained with cyclopropane and oxygen in a closed carbon dioxide absorption circle system. Five minutes after the induction of anesthesia the patient's pharynx and larynx were exposed and sprayed with 5 per cent Cyclaine solution. Then a number 40 plastic cuffed endotracheal tube was inserted under direct vision, and anesthesia was maintained by means of this endotracheal airway.

The preoperative diagnosis was confirmed, and the perforation of the gastric ulcer was repaired by plication. The patient's blood pressure was maintained at the preoperative level. The pulse rate diminished slightly to 110 per minute. Respirations were assisted at a rate of 24 per minute. Prior to closure of the peritoneum 500 cc. of 1 per cent neomycin sulfate were placed in the abdominal cavity.

Twenty minutes later the patient's respirations became markedly depressed, as if he were in the deep third plane of ether anesthesia. It was a gasping type of breathing accompanied by complete intercostal paralysis. Although surgery was completed and anesthesia was discontinued, artificial respiration had to be maintained with the endotracheal tube in place. A diagnosis of respiratory depression due to neomycin administration was made, and the patient was transferred in this state to the recovery room.

While artificial respirations were continued there, 1.5 mg. of Tensilon chloride were injected intravenously, but this did not cause any improvement in respiratory activity. Ten minutes later 0.4 mg. of atropine sulfate and 1 mg. of neostigmine methylsulfate (Prostigmin methylsulfate) were injected intravenously. Following this injection respirations improved, and they returned to a normal state in about fifteen minutes. The endotracheal tube then was removed, and there were no further complications.

Comment

This case illustrates clearly that neomycin sulfate administered intraperitoneally may be absorbed into the circulation so rapidly that it results in respiratory depression from paralysis of the skeletal musculature.

Experimental studies utilizing sciatic nerve-gastrocnemius preparations during ether anesthesia have shown that intravenous administration of neomycin sulfate can cause flaccid muscular paralysis which culminates in respiratory depression and ultimately in respiratory arrest.[5] It was demonstrated further that neostigmine methylsulfate could antagonize such a neomycin sulfate-ether block in a manner similar to the antagonistic effect of neostigmine methylsulfate in a neuromuscular block produced by muscle relaxants of the nondepolarizing type. That other antibiotic drugs similarly may produce muscular flaccidity during anesthesia is suggested by reports that streptomycin and dihydrostreptomycin may cause such complications.[6]

The examples cited of drugs altering the course of anesthesia illustrate the importance of being aware of what medication a patient may have been receiving prior to or during surgical anesthesia.

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(*Number eighty-nine in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

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Incidents Reported From Out-of-Town

THE following incidents were reported recently to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Meprobamate	23 years	Female

A request for help in this case was received from a hospital in Yonkers, New York. The patient was brought to the hospital emergency room with a history of having ingested 100 meprobamate tablets (200 mg. each). A gastric lavage was done, and a chalky material was returned.

The patient was apparently a disturbed individual, as can be seen from the following history:

> The patient apparently had had an unhappy youth with hatred for her mother and love for her foster father, and at the age of sixteen she resorted to marriage. This was productive of four children, much misunderstanding, domestic scraps, and an extramarital affair. Recently divorce proceedings were started but were not continued, and the patient was about to resume these proceedings when she learned that her paramour was no longer interested in marriage, at least not at the present time. At 10:00 P.M. on the evening of her admission the patient called her husband and asked him to return home as soon as he was through with work in order to take care of the children since she was not planning to be around.

Following the gastric lavage the patient was admitted to the inpatient service. The examination on admission revealed:

> A well-developed, well-nourished young woman in a semiconscious state, responding to pain, thrashing about, and quieting down on command. Her pulse was 104, blood pressure 80/50, and respirations 24 and shallow. HEAD: *Eyes:* Eyelids are droopy, corneal reflexes are present, pupils react to light, and orbits are fixed. Pupils are round and not dilated. Fundi do not show papilledema. *Ears, Nose, and Throat:* The findings were not remarkable except for slight injection of nasal mucosa. NECK: Supple, trachea in midline, thyroid not palpably enlarged. CHEST: Symmetric. Respirations are shallow. The lungs are clear to percussion and on auscultation. HEART: A

Grade II systolic murmur at the apex and a Grade I systolic murmur at the base. A diastolic murmur was not made out. The first sound seems rather snappy. EXTREMITIES: *Neurologic:* The patient was hyporeflexic. On one occasion I believed a Babinski reflex to be present on the left side.

LABORATORY FINDINGS: *Urine:* Straw-colored and clear. Specific gravity 1.022. Negative for albumin and sugar. *Blood:* Hemoglobin 11 Gm. per 100 ml. (73 per cent). White cell count 10,400, with 1 per cent juvenile forms, 8 per cent stab cells, 64 per cent polymorphonuclears, and 27 per cent lymphocytes.

COURSE: Within a short while the patient's blood pressure dropped to 70 systolic, and she was given metaraminol (Aramine) 5 mg. intramuscularly. Her blood pressure at the time of her transfer to the floor was 132/100, but the metaraminol had to be repeated five times in the following twenty-four hours, when the blood pressure dropped below 80 systolic. She was given a caffein and sodium benzoate combination in the emergency room and later methyl-phenidylacetate hydrochloride (Ritalin hydrochloride) 60 mg. in three divided doses during the first twelve hours following her admission.

The following morning the patient awakened and began inquiring as to her whereabouts. She kept dozing on and off for the rest of that day, and that evening she appeared to be slipping back into the coma. The methyl-phenidylacetate hydrochloride was repeated in 10-mg. doses at eight o'clock and at midnight, and at the same time Benzedrine was given in a 1,000-cc. infusion of 5 per cent glucose for three doses every four hours. By the following morning the patient had improved considerably. She began taking ice chips and sips of water and began conversing with her mother, husband, and the nursing staff. She did complain of some slight nausea and a little vomiting toward that night, which was relieved by 10 mg. of Compazine. The deep-tendon reflexes became active again. Her cardiac status was maintained by injections of quinidine 5 grains every four hours. Since it was feared that the patient might have aspirated some gastric material on admission, she was also placed on penicillin 3 cc. intramuscularly every twelve hours.

On the third hospital day we ordered meprobamate 400 mg. three times daily to prevent any withdrawal convulsions. On this day she was seen by a psychiatrist, who felt that the patient's suicidal act had been impulsive and that a recurrence therefore was unlikely. He also felt that since she had not been taking very large doses of meprobamate prior to her attempt at suicide she probably would not have withdrawal symptoms.

After one week of hospitalization the patient was discharged as physically improved.

The unusually large number of meprobamate tablets ingested is noteworthy.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Imipramine Hydrochloride	28 years	Male

The patient ingested from 50 to 60 25-mg. imipramine hydrochloride tablets with suicidal intent. He was brought to the Kings County Hospital in coma, but after two weeks of observation he apparently recovered with no evident sequelae. The diagnosis on discharge was imipramine hydrochloride intoxication with a schizophrenic reaction.

In spite of the regrettable lack of medical details provided by the hospital, this case is reported because of the excessive dose ingested and the favorable outcome.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Pokeweed (Inkberry)	2 years	Male

Aid was requested in this case by the Chilton Memorial Hospital, Pompton Plains, New Jersey. The patient was suspected of having eaten some pokeweed berries. On his admission to the emergency room the patient's face and hands were noted to be smeared with the juice of the berry. Ipecac was administered to induce vomiting.

Since it was not possible to communicate with the infant, the physician in the emergency room resorted to a very neat piece of medical sleuthing. He tasted the berry himself and found it to be quite unpalatable, bitter, and sour. He then placed a small bit of the berry on the lip of the child, and this promptly caused the child to grimace and spit. It thus was apparent to the physician that the child had not swallowed any of the berry, and this suspicion was confirmed when the vomitus was shown not to contain any berries or purple stains.

The physician is to be congratulated for his ingenuity in this case. However, a word of caution is in order. Children's tastes differ markedly from those of adults. What appears to be extremely unpalatable to an adult may not be distasteful to a child and vice versa. Many reports come to this Center pertaining to the ingestion by children of the most horrible-tasting and malodorous products.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Rubefacient	30 years	Female

This incident was reported from Mount Vernon, New York, following a request for information on the toxicity of the product and the management of the case. This Negro woman had tonsillitis and an upper respiratory infection. She took 3 to 4 teaspoonfuls of a rubefacient (containing menthol, camphor, and thymol) orally at intervals during the early evening and the morning of the following day. Soon after the last dose the patient began to convulse, and she was taken to the hospital emergency room. When observed in the emergency room she was stuporous, and an odor of the rubefacient was noted on her breath. She was admitted to the inpatient service with stupor and convulsions.

On the day of her admission the gastric contents contained the typical odor of the rubefacient. The urine contained many granular casts, 4 plus albumin, and 2 plus acetone. On the following day the urine was entirely normal. The spinal fluid and the electroencephalogram were entirely normal. The patient was treated symptomatically, and after five days she was discharged as symptom-free. The convulsions presumably were due to the camphor, menthol, and thymol contained in the product.

Over-the-counter salves of this nature are not intended for internal use, contrary to much folklore on the subject.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Prednisolone	2 years	Male

The request for assistance in this case was received from Westchester County, New York. The child presumably ingested 44 2-mg. tablets of prednisolone. He had extensive eczema with frequent recurrences, and the medication apparently was prescribed for the condition. The child, in addition to the prescribed dose, helped himself to the remaining contents. Since there were no symptoms or complications, no therapy was instituted. After four days of observation in the hospital he was discharged as well.

Other instances of steroid overdoses reported to this Center likewise have not been accompanied by untoward symptoms or complications of note. This observation, however, is not meant to endorse the neglect of prevention of steroid overdosages.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Golf Ball Center	15 years	Male

This boy punctured the semihard center of a golf ball, and a gelatinous material spurted out and struck him in the eye, causing an immediate burning sensation and marked reddening. Information relating to the ingredients of the material and the indicated mode of therapy was requested from this Center by a Yonkers physician.

The physician was advised of the variable composition of golf ball centers, most of which at the present time, in spite of the popular belief among small boys, are of a nonhazardous nature. There apparently is no standard composition of these centers; they may consist of water, castor oil, syrups, and a variety of other substances. Strongly corrosive materials were not noted in golf ball centers in the survey made by this Center.

The therapy in this case consisted of cool water washes and compresses. The symptoms subsided rapidly without any residual damage to the external eye or vision.

Incidents involving golf ball centers are to be expected because of the exploratory instincts of young boys.

Incident 7

Toxic Agent	*Age*	*Sex*
Insecticide (Chlordane)	3 weeks	Male

The infant was left with a friend, and the mother presumably had given her instructions for feeding him. The formula feeding was contained in an unlabeled half-gallon jug. The friend presumably became intoxicated, and instead of giving the infant the formula feeding, she filled a nursing bottle from the contents of another half-gallon jug which contained an insecticide, a white milky solution resembling milk in consistency and color, and she fed this to the infant. When the mother returned, the child was well. The mother proceeded to heat a nursing bottle and to feed the child. The child began to cough and vomit, and the feeding was discontinued because of the vomiting and the development of convulsions. The mother then noticed the odor of the bottle contents and brought the child to the hospital.

The assistance of the Center was enlisted in tracing the insecticide because the original bottle had been destroyed. The jug containing the insecticide apparently had been prepared by the grandmother, who remembered where she had purchased the insecticide concentrate. The exterminator who sold the product was reached at his home in the evening, and he disclosed the formula of the insecticide, which presumably was a 33 per cent chlordane concentrate.

The symptoms on admission were burning of the mouth and throat, abdominal pain, nausea, vomiting, dyspnea, and convulsions. The child was critically ill for three days and was discharged after five days in the hospital as recovered. The recovery in this case undoubtedly was due to the small amount ingested.

It is of interest that another sibling in this family, a twenty-two-month-old female, is still in the hospital because of a lye ingestion. The lye presumably was given to her by another sibling to play with. The lye was in an unlabeled container in a hallway of the apartment. The patient became lethargic, and blisters were noted on his lips and whitish areas were noted on the buccal mucosa and on the tonsils with profuse bleeding from the gums. Three other siblings are now hospitalized at the Kings County Hospital for tuberculosis. The family will be followed by the visiting public health nurse for any additional health problems.

This incident is one of many involving emulsions which frequently are mistaken for milk. Insecticide concentrates present an unusually severe hazard in the home because of their high proportion of dangerous constituents and the frequent failure of the householder to realize that concentrates must not be used without dilution. Our experience has shown that home-prepared dilutions are seldom labeled and usually are placed in household containers, a situation conducive to mistaken identity and subsequent accidents.

Incident 8

Toxic Agent	*Age*	*Sex*
Castor Bean (Ricin)	27 years	Male

The patient appeared in the emergency room of the Yonkers General Hospital and stated that he had ingested castor-oil beans eight hours prior to admission. He had chewed the beans before swallowing them. He was well until four hours later, when he began to have abdominal cramps and vomited a small amount of food. The vomitus did not contain any blood. The patient claimed to have had some loose stools, and he vomited again two hours later, or six hours after the ingestion.

He decided to report to the emergency room of the hospital. The hospital requested information on the toxicity of the bean and indicated therapy. On his admission the only symptom of note was apprehensiveness. The patient was observed for twenty-four hours in the hospital and then was discharged as improved.

In children, fatalities from the ingestion of one castor-oil bean have been reported. The ricin contained in this bean is one of the most dangerous substances in local gardens.

(Number fifty-five in a series of Briefs on Accidental Chemical Poisonings)

Study of Antibiotic Prophylaxis in Patients with Acute Heart Failure

A double-blind study of 150 randomly selected patients (72 treated, 78 controls) failed to support the suggestion that antibiotics be given routinely to prevent pulmonary infections in patients with congestive heart failure. As a preferred alternative, the authors suggest that special care should be taken to discover pulmonary infection early and then treat it vigorously with appropriate antibiotic agents. A total of 38 patients died, 21 in the antibiotic prophylaxis group and 17 in the placebo group.

Either clinically or at autopsy, 8 of the antibiotic group were found to have had pneumonia as against 6 in the control group. Of this total of 14 known pneumonia cases, 4 recovered on penicillin (3 of these had been on placebo and 1 on antibiotic prophylaxis). Of the 10 who died, 3 had been on the placebo and 7 on the antibiotic. In 6, lung infection was incidental to other causes of death, but in 4 (1 on placebo and 3 on antibiotic) it was a major factor. That radiologic examination remains a relatively accurate method of detection of pneumonia is indicated by the fact that pneumonia was missed by the radiologist only twice in 112 patients. Pneumonia was present in 10 of 28 patients in whom it was suspected from the chest x-ray film. Other clues are purulent sputum, temperature of 101 F. for at least three days, and white cell count over 15,000.

—*New England Journal of Medicine, March 19, 1959, Robert G. Petersdorf, M.D., and Richard K. Merchant, M.D.*

CASE REPORT

High Serum Transaminase Levels in Hemorrhagic Pulmonary Infarct

MILTON PLOTZ, M.D., AND ROCIO P. GALVEZ, M.D., BROOKLYN, NEW YORK

(From the Department of Medicine, Goldwater Memorial Hospital, New York City)

When the symptoms are typical, the diagnosis of acute myocardial infarction is an easy one. However, there are times when the diagnosis is so difficult that every resource of the astute clinician must be used.

A significant advance of the past few years has been the development of a method for measuring the serum level of transaminase and similar enzymes when there is destruction of the heart tissue. This method has proved more reliable than the sedimentation rate which has been so often used in the past. Nevertheless, the transaminase test must be interpreted with caution in the presence of liver disease and certain other conditions. Usually it is of great value in distinguishing between myocardial infarction and pulmonary embolism, a differential diagnosis which is often perplexing. The following case report illustrates the difficulty that may arise even in this situation.

Case Report

A sixty-three-year-old white male was admitted to the Goldwater Memorial Hospital as a transfer patient from the Metropolitan Hospital.

About a year prior to his first hospital admission, about eight months before his death, he started to complain of recurrent precordial pain and paroxysmal dyspnea. There was no known history of hypertension, but the patient was told that he had heart trouble. The patient reported that he had never had rheumatic fever.

His terminal illness started about seven weeks before death, at which time his shortness of breath became more intense and he observed swelling of his ankles. About three weeks later he developed a cough with some blood streaking of the sputum, but there was no fever and no chest pain throughout his final illness. On admission to the Metropolitan Hospital his blood pressure was 102/60. The heart showed regular sinus rhythm with faint heart sounds, and the liver was enlarged. There was no anemia but the white blood count was 13,500 with 91 per cent polymorphonuclear leukocytes. The blood urea nitrogen was 39 mg. per 100 ml., and a fasting blood sugar was 125. There was no evident jaundice. X-ray films of the chest showed an enlarged heart with consolidation in the basal portion of the right lung.

Five days later the patient was transferred to the Goldwater Memorial Hospital still complaining of some shortness of breath in spite of dehydration therapy and digitalization. The heart rate was 84 and the sounds were faint. There was a soft blowing systolic murmur at the aortic area. There was a somewhat harsher systolic murmur at the apex. The blood pressure was 90/60. There was an impairment of resonance with crepitant rales over the right lung base. There was a 3 plus edema of the feet.

X-ray films of the chest showed a generalized enlargement of the heart with a large area of consolidation at the right base. The electrocardiogram showed unequivocal evidence of old myocardial infarction. The white blood count was 25,800; polymorphonuclear leukocytes were 94 per cent. The serum transaminase was 380 Frankel units; thirty-six hours later it was 580 units.

On the eighth hospital day the patient's condition deteriorated suddenly. He became cyanotic, his pulse was imperceptible, and the blood pressure was unobtainable. In spite of an infusion with norepinephrine and other measures, the patient expired about twenty-four hours later. The final clinical diagnoses were coronary heart disease, congestive heart failure, pulmonary infarction, and questionable acute myocardial infarct.

A postmortem examination showed that the heart was enlarged hugely and weighed 800 Gm. There was hypertrophy and dilatation on both sides, most marked in the left ventricle. The aortic valve showed extreme stenosis with calcific nodules on both surfaces of the valve, the larger nodules being seen on the superior surface. There was an old myocardial infarct involving the apex and the anterior surface of the left ventricle. There was no fresh infarction. The anterior descending coronary artery was considerably narrowed by atheroma and it was almost obliterated. There was moderate atheromatosis of the other coronary arteries. There was no disease of the other valves.

The lungs were voluminous and heavy. There was emphysema of all the lobes. In the left lower lobe there was a large wedge-shaped area of firm consistency which was dark red and hemorrhagic. The lesion was roughly 10 by 5 by 4 cm. There were two smaller hemorrhagic lesions in the right lower lobe and in the right upper lobe. The arteries supplying the areas of the lungs which were the site of hemorrhagic necrosis contained thrombi obliterating their lumens. There were mural thrombi in the right auricle. Other findings were passive congestion of the liver, spleen, pancreas, and kidneys.

Comment

This case presents two points of great interest. The first is the disappearance of the characteristic murmur of aortic stenosis when the patient is in heart failure. This is, of course, a well-known phenomenon, representing a trap for even the wariest clinician. The absence of a second heart sound at the aortic area should have alerted us in this case, but in advanced failure this sound may be of very low intensity.

The other point of interest was the extremely high serum transaminase level in the absence of myocardial infarction. This test is useful usually in distinguishing between cardiac infarct and pulmonary embolism, but the serum transaminase level may rise in the presence of large areas of hemorrhage whether this occurs in the lung or elsewhere. It is evident that this must have been the mechanism in this case.

Conclusion

1. The serum transaminase level may be high in the absence of acute myocardial infarction or of liver disease if there is a hemorrhagic pulmonary infarction of sufficient size.
2. The typical physical signs of advanced calcific aortic stenosis may not be present if the heart is in advanced failure.

1120 Church Avenue, Brooklyn 18

Danger of Perforated Appendix in Young Children

The danger of a perforated appendix, a potentially serious complication, is greatest in young children, according to *Patterns of Disease*. "Because appendicitis is infrequent and difficult to diagnose in preschool aged children," the report says, "operation is often delayed and perforation frequently occurs." In one hospital study cited by *Patterns*, two thirds of the children with perforation of the appendix were under six years of age. In the same study, the complication rate for those with perforation was found to be six times greater than for those without.

CHANGING TIMES FOR MEDICINE

AUSTIN SMITH, M.D., *Editor*

Problems of Social Medical Insurance in Austria[*]

KARL FELLINGER, M.D., VIENNA, AUSTRIA

(*From the Second Medical University Clinic*)

Before discussing the problems of the triangle involving patient-socialism-doctor I ask your indulgence for a very short historical survey of the development of the Krankenkassen (health service plan) in Austria, just to show that we have a generation-old experience and that critical as well as beneficial considerations come of a rather long and extensive experience.

The oldest laws about the Krankenkassen are from the year 1837, obliging employers to pay hospital fees for sick workers for a maximum of four weeks. In 1854, the Krankenkassen was established by a special law for coal mining and similar companies. In 1888 the first general social insurance law was issued, stating that every employed workman, apprentice, office employe, and so forth, had to be a member of one of the six Krankenkassen already created. Compulsory services of the Krankenkassen included the payment of medical and hospital fees, medicaments, and allied charges, and also the payment of a certain daily sum during days of illness. Two years later, in 1890, a provision was made to give financial help for young mothers for four weeks after delivery. In the same year a special fund for financial aid for unusual situations was also created.

Thus practically all the essential elements of the modern Krankenkassen were already present at the end of the nineteenth century. Later provisions of this old law create more and more details without adding essential new ideas, except the establishment of insurance for injuries and industrial diseases and an old-age-rent institute. These had existed independently but were affiliated with the Krankenkassen system.

At present the situation in our country is this: Every man or woman who has a job or receives a wage or salary must be a member of the Krankenkassen. The only exempt persons are those who practice professions, such as doctors or lawyers in free practice, farmers, and such independent business people as store owners. All employes are covered, including salaried executives like general managers and presidents of companies. This insurance also covers the spouse of the insured and minor children. Thus about 94 per cent of the Austrian population are, by compulsion, members of the Krankenkassen system.

Some figures illustrate the meaning of this statistic: Vienna has about 1,800,000 inhabitants. Of these, about 1,700,000 are in the official insurance system. Last year the Wiener Gebietskrankenkasse covered 350,000 wage earners, 200,000 office employes, 250,000 old-age or invalid rentholders, 25,000 unemployed persons, 25,000 voluntary members, and 50,000 in various small groups—a total of 900,000. Add to this about 600,000 family members for a grand total of 1,500,000. The balance of 200,000 are covered by the special Krankenkassen for municipal, state, or Federal employes and others. Of a population of 1,800,000, only some 100,000 to 150,000 are not included.

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[*] This address was given before the Eastern Regional Meeting of the Pharmaceutical Manufacturers Association, New York City, Socio-Economic Development Session, December 9, 1959.

This very short and sketchy survey alone shows the eminent social, financial, and, last but not least, political importance of an organization which has become in the course of years truly influential, powerful, and well-organized, and that is a potent factor in relation to the medical profession which is few in numbers, has little financial power, and is usually not very well unified in its organizations.

I should add that the Krankenkassen also have certain privileges given them by law. They are not part of the government although they are under state control. The government controls their financial administration. On the other hand the Krankenkassen have a right to be heard on all discussions of new laws, regulations, and other matters.

Plan of Health Service

Financing.—As an illustration of financial power: the Krankenkassen for Vienna has an annual income from membership fees of about 1,000 million schillings ($40 million), which might not be considered exceptionally high in a country of the dimensions of the United States, but which is enormous in a small country like ours.

Expenses are naturally of about the same sum. On the basis of services rendered by the Krankenkassen to its members, the 1,000 million schillings are spent: (1) doctors' fees, about 200 million (20 per cent); (2) medicaments and nursing supplements, about 160 million (16 per cent); (3) hospital fees, 160 million (16 per cent); (4) dental treatment, 60 million (6 per cent); (5) financial payments to sick persons, 200 million (20 per cent); (6) maternity aid, 40 million (4.6 per cent); and (7) administration, 75 million (7.5 per cent).

Fees to Physicians.—In spite of the comparatively high sum reserved for doctors' fees, the actual payments of doctors is rather poor: By American standards they might be considered as almost ridiculous. The present system provides an over-all payment for 1 patient and for three months of care of about 35 schillings or $1.30. To this are added some special payments, such as for night visits, for Sunday services, mileage fees for out-of-city visits, and fees for certain small surgical services. Altogether the average income of a medical practitioner is about 8,000 schillings gross per month, which means about 5,000 to 6,000 net. The latter is the monthly salary of an office employe of medium rank and of about forty years of age.

Expressed in another way, the medical income has dropped and is of a rather low standard in relation to the high quality average work the practitioner has to do. Naturally you will ask why doctors work under such poor, even humiliating, conditions. The answer is very simple: because they have to.

As shown before, more than 90 per cent of the population are in the Krankenkassen system. The residual of 7 to 8 per cent is too small for the mass of doctors to live on. They comprise mostly the wealthy people, and they prefer to go to specialists and doctors who are better qualified than the average. The present situation is such that a young doctor can hardly exist without being within the Krankenkassen scheme. Therefore he is dependent on it. Here we touch one of the major problems—the problem of a mighty power which interposes itself between the patient and the doctor.

Change in Doctor-Patient Relationship.—Let us consider this for a moment: In free practice the patient seeks out the doctor and expects his skilled help; he is in the position of the sick looking for help. He expects something from a learned man who is in a position to help him in his trouble. This gives the doctor a certain dominant position which is, as we are well aware, an important factor in the patient's treatment in view of the increasingly recognized importance of psychosomatic factors in modern practice.

But now the patient is a member of a powerful organization on which the doctor is highly dependent for his financial existence. (The loss of a Krankenkassen contract can mean professional ruin for the average practitioner.) Therefore the psychologic attitude has changed. Personal confidence, which is connected with a help-asking attitude, has always in the past been the basis of the patient-doctor relationship. The contact between them was immediate, private, and, by the universally observed medical code, secret. And these qualities tended to bring the doctor and the patient closer together.

Now a third person is interpolated—a mighty power—the Krankenkassen. There are a number of influences which limit considerably the closeness of the doctor-patient relationship both formally and psychologically.

Contract.—In the contract the doctor has to sign he gives the Krankenkassen certain formal rights of control, the most important of which are these:

The controlling doctors of the Krankenkassen (no free practice, good salaries) determine the necessity of the service or the number of services. Naturally, there is a right of appeal to an arbitration committee but that takes time and means complications.

The Krankenkassen limits the prescribing of medicaments (pharmaceutical specialties) to a certain list of medicines dispensed free and to a second list which needs the permission of a control physician. Medicines which are neither on list A or list B cannot be prescribed.

The Krankenkassen controls the need for hospitalization.

Changes in Psychologic Attitude.—In my opinion, the important principle demonstrated by these few examples is simply this. The interpolation of the powerful factor Krankenkassen not only disturbs the immediate relationship between doctor and patient, but it also changes in a certain respect the psychologic attitude of the patient to his doctor. The patient no longer has the attitude of one seeking help from a doctor whom he acknowledges as superior in knowledge and craft. Instead he is exacting due services from his employe, if not to say his subordinate. Certainly the strong personality of an experienced older physician will usually find ways to overcome this difficulty. But for the younger doctor, and particularly for the beginner, this shifting of the psychologic viewpoint can be very important, particularly now, when the conception of treating the whole personality of the sick becomes more and more dominant.

A secondary consequence of this psychologic attitude, compounded by the fact that the patient has to pay nothing, is that many patients are now beginning to call the doctors at home for trifling reasons. Naturally, the doctor cannot risk refusing to take even unnecessary calls. Every experienced practitioner will give you hundreds of examples of this kind of thing. The doctor gets overworked and irritable and the patient-doctor relationship gets more and more away from the amicable and confidential state and into an attitude of irritability and even antagonism.

Special Problems.—A further consequence of this changed attitude of the patient to his doctor is the request for unnecessary services. The patient demands certain definite medicaments which he has heard would be particularly useful for his disease. Still more difficult for the doctor, he demands a few days "Krankenstand" (a state of inability to work, with consequent payment of money for these days), certain cures in spas, and so forth. On his side, the doctor is under pressure from the Krankenkassen to keep down expenses as much as possible. Since the doctor is, in a way, dependent on his patients and on the number of patients he has, it is easy to understand how difficult his position sometimes is. A vicious circle develops. The doctor, who needs a great number of patients because of the low individual fees, yields to the wishes of the patient. The patient feels the weak position of his doctor and increases his demands correspondingly. Naturally this is a particular problem with old-age patients, holders of rents, pensioners, and so forth. Since they have time and are often bored, they often see the doctor just to spend their time in the interesting company of a full waiting room. They have many demands. Meanwhile the Krankenkassen urges the doctor to give priority attention to the working population when recommending cures such as are found in watering places. All these conflicts tend to increase the sometimes almost hostile tension between doctor and patient.

The practitioner has sometimes 50, 60, even more patients in his office. It is impossible, naturally, to examine these numbers. So he becomes more and more an administrative distributor. Those patients who seem really sick are referred to specialists who are, often enough, the first to make an adequate physical examination. But the specialist is also in a difficult situation, even though he gets somewhat higher fees, for he depends on the practitioner who refers patients to him. So, in sending the patient back to the practitioner, the specialist must consider his colleague's difficulties. No practitioner will appreciate the recommendation of a series of intravenous injections; that will mean a lot of time and no increase in salary. Just this small example should show you that many considerations, outside the purely medical ones, influence the attitude of the doctor and are often dominant.

These sketchy illustrations should be sufficient to demonstrate the changed situation; that is, the bilateral doctor-patient relationship has changed into a triangular relation: patient-Krankenkassen-doctor. And in this triangle the Krankenkassen is becoming more and more the leading partner. The problems arising out of this development are not just of economic and financial importance for the medical profession. What is more important to the public interest, the system has changed the old relationship of confidence and trusting partnership into an attitude of irritability, often distrust, and even of hostility. And this seems to me the worst aspect of the present situation, because the art of medicine can develop itself to its highest potential only on grounds of confidence and mutual benevolence.

Benefits of System.—One more important remark as I approach the end of this talk. So far I have concentrated on aspects of the patient-doctor relationship which have, in my definite opinion, changed for the worse, and on the increasing development of the Krankenkassen system. There are also some affirmative aspects of the system which must at least be mentioned.

The main point is naturally the absolute—or almost absolute—freedom of the patient from every financial pressure during his disease. Doctor, medicaments, hospital care, and nursing aids put no financial burden on his nervous system.

This has benefited the patient who, naturally, is much more confident and at ease in the case of illness than if every medicine meant a financial problem. But it is also without doubt an important aid to the doctor's duty and work in this sense: When we have a paying patient (one who is not insured) there are two possibilities. He may be a very rich man or a man of moderate means. If he is very rich, naturally, the situation presents no difficulties and everything necessary will be done. If he is a man in good but moderate standing, such as a small shop owner, the problems become difficult and sometimes even serious. It may be necessary, in the course of the disease, to arrange a number of radiologic examinations, laboratory tests, even consultation with specialists. Everything in this list means expenses and sometimes rather high expenses, radiologists particularly are not exactly cheap. A good and real doctor will always consider his patient's interests in every way. If he knows his financial position, he will hesitate to order a new radiologic control, a new consultation with a specialist, and so forth. Things are limited to absolute necessity. This, naturally, is no advantage.

I often say to my young doctors, in discussing these medico-human problems: It is simple to treat a rich man and to treat a poor man. In both cases everything necessary will be done without any considerations outside the purely medical ones. If necessary, you will take x-ray films of the intestines three times, you will test blood proteins many times again and again, and so forth. The problem begins with the man in between, if he is not a member of a Krankenkassen.

Summary

I might conclude this short discussion of a well-known and evidently not simple series of problems by summarizing my remarks; a discussion which, because of the shortage of time, cannot claim to be thorough or even really adequate, but can only try to show up some of the more unofficial problems of the everyday life of the doctor in a Krankenkassen.

The old mutual relation of confidence and immediate contact between patient and doctor is doubtless seriously disturbed under the new systems. The doctor is in danger of becoming more and more an employe not only of the Krankenkassen but also—which is even more difficult—of the patient himself. Accordingly he is in danger of losing his authority and his singular position as a reliable friend and counsel of the sick. But on the other hand, the Krankenkassen system means important and highly estimable relief of the patient, a relief of financial and economic difficulty which otherwise is very often the terrible shadow of disease that causes sorrow, depression, and fear not only to him but also to his family, and this certainly does not help to improve the general healing situation.

Solution of these problems evidently must lie somewhere in the middle: in a system where the patient is freed, by certain arrangements, of the sorrows connected secondarily with the disease which can be relieved by material help; a system which, on the other hand, does not destroy the freedom of the medical profession, its independence, and the immediate character of the doctor-patient relationship. As I have said before, it is only on the basis of the confidence and trust of the patient that the medical profession can reach its greatest fulfillment: where the doctor can become not only an efficient and learned distributor of medicine and other medical treatments, but also a true friend and understanding helper of his patient, who often enough needs this understanding help and sympathetic advice much more than he needs the best prescriptions.

(*Number three of a series on Changing Times for Medicine*)

The only religious way to think of death is as part and parcel of life; to regard it, with the understanding and the emotions, as the inviolable condition of life.—Thomas Mann

SPECIAL ARTICLES

Truth Versus Forand Fiction

LOUIS M. ORR, M.D., ORLANDO, FLORIDA

(*President, American Medical Association*)

At some time in his career almost every man who does a lot of public speaking is accused of plagiarism. Sometimes this complaint is justified, for many speakers do lift freely from other speakers or writers without acknowledging their sources. But just as often the dispute is between two individuals who have had the same idea and express it in similar words. I suppose I have been guilty of both on occasion, but I believe that if someone else has said something well, or expressed a sound idea, why should not others help spread this?

This morning I want to read some words of another doctor—words which summarize his ideas and make his point so effectively that it would be difficult to paraphrase them. The author is Hiram Sizemore, Jr., M.D., of Shepherdstown, West Virginia. This is a letter he wrote to the *Washington Evening Star*, which was published just about a week ago:

> It appears as though the Forand bill or similar legislation will be enacted at this session of Congress. As a general practitioner, I can see where this "free hospital care for the aged" has hidden advantages for all.
>
> It will greatly aid the overworked physician. Most house calls are made on elderly people who are unable to come to the office; however, now we will be relieved of fighting traffic, driving over back roads, and going out into the elements. We can place our patients in a hospital where they can happily enjoy food, lodging, and personal attendants at government expense, while lightening our work load. Of course, we must admit these patients to the hospital whenever they request and must allow them to remain as long as they wish, else some of them might complain to a Congressman. Heaven knows, we physicians have been criticized enough for not being sympathetic to the "problems of the aged" and we, too, like the Congressmen, enjoy being popular. This bill should also benefit us financially as it is easy to see that a person who has free lodging and twenty-four-hour service will have more money left to pay his bills.
>
> These hidden blessings will extend to churches, charitable organizations, and governmental organizations at the state, county, and city levels. They can get out of the responsibility for care and let the munificent Federal government pick up the check. Families can dump their aged into hospitals and spend the extra money on a new TV set. Even retired corporation executives will be eligible for benefits, and thus can save their pensions for new Cadillacs. The cost will be only $8 or $10 billion per year when the program gets into high gear; and as every progressive person knows, "we owe it only to ourselves."
>
> As with every dynamic and bold new venture, there are a few minor problems. With most hospital beds occupied, a few patients with such diseases as severe hemorrhage, crushed thorax, fractured skull, diabetic coma, or meningitis will have to be turned away because no space is available. However, some astute Congressman will be able to make a name for himself by recommending appropriations of $20 billion for new hospital construction.
>
> I cannot understand the opposition to this plan by the reactionary American Medical Association. The proponents of the Forand bill have repeatedly decried the bugaboo of "socialized medicine" and have given repeated assurances that there will be absolutely no governmental interference in the free practice of medicine or in hospital operation. Therefore, hospitals and physicians can charge what the traffic will bear and the government must pay without protest. These honorable proponents surely would not break any promise concerning restrictions.
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> The stubborn A.M.A. seems to have the outmoded idea that the problem of the aged can be solved by low-cost voluntary hospital insurance programs. They believe that a voluntary program can be administered more cheaply and more efficiently without undue strain on already overloaded hospital facilities.

Presented at the House of Delegates, Medical Society of the State of New York, New York City, May 9, 1960.

> The A.M.A. should develop a "social conscience" in the collective sense. Hospitals and physicians have a windfall and don't even have to pay for it. The Forand bill is financed out of the worker's pay check. The A.M.A. should realize that we live in the space age and that thrift and individual enterprise are outmoded concepts.

I would like to continue in this vein of irony, but it might destroy the effect of this wonderful piece of writing. Dr. Sizemore's letter, in my opinion, employs to excellent advantage the rarely usable device of ironic criticism.

Now, however, I would like to become serious. Many of the statements now being made about medical care for the aging are not true—but through constant repetition are being accepted as fact. Perhaps it might not be really nice of me to remind you that this principle was used before in our generation. This tactic is known somewhat crudely as the "big lie" campaign.

There are, however, some facts which are not being told. First, the medical care which the American people, young and old, are receiving today is by far the finest that has ever been available anywhere in the world, and it is improving daily. We have the finest hospitals, the best-trained nurses, the most capable doctors, and the most effective drugs that the world has ever known. And the very great majority are living healthily, happily, and usefully.

These are the facts, They do not mean that we do not have a serious problem, nor that there is not a need to do something about it. But they do mean that there is no reason for raising a spectre of fear among our aging, nor to rush into some premature "cure" which may turn out to be tragically wrong for the aged and all other age groups.

A recent independent survey by the National Opinion Research Center of the University of Chicago disclosed that the very sick among the older population comprises only about 10 per cent of the elderly.

Now let us look at some of the inaccuracies that are being accepted as facts.

For example, it is said that: Two thirds of Americans over sixty-five years of age today have no private health insurance.

The truth is: A recent report issued by the Health Insurance Association of America states that of the 15 million persons sixty-five years of age and older, approximately 49 per cent now have voluntary health insurance. Much of this coverage has been achieved during the past five or six years. This rapid growth in voluntary insurance can be expected to continue so long as our senior citizens are free to choose the sort of health coverage best suited to their individual needs.

It is said that: Less than 10 per cent of all workers who retire can retain coverage in their company's group insurance plan.

The truth is: Sixty per cent of all workers retiring can retain or convert their company group insurance plans, according to a study by Mortimer Spiegelman called "Ensuring Medical Care for the Aged," and published in March, 1960.

It is said that: Medical costs account for a much larger proportion of the family budget of older people than of other persons and that families in old age spend twice as much on medical care as younger families.

The truth is: The fallacy in this statement is that it ignores the normal and natural changes in family budgets resulting from increasing age. Few persons who have reached sixty-five are still buying homes and furniture, raising and educating children, or making other outlays that comprise a substantial part of the budget of younger generations. Obviously the comparison based on the proportion of the family budget is meaningless.

United States census statistics indicate that there is a little difference between the gross medical expenses of persons under sixty-five and those over sixty-five. Data collected in connection with the 1950 census showed the average "out-of-pocket" medical care expenditures per person to be $65 a year for those of all ages, $87 for those from sixty-five through seventy-four years, and $76 for those seventy-five and over.

It is said that: Sixty per cent of all persons over sixty-five have less than $1,000 money income per year.

The truth is: With the normal retirement age established at sixty-five the average income of those who have passed that age is necessarily less than the average of those who are still working.

Left unsaid is that married women who are supported by their husbands are counted as having no income, rather than a proportionate share of their husbands' income. In 1958, according to this definition, 45 million women of all ages had "no income."

Left unsaid in citing of the $1,000 figure is that the OASDI benefits are excluded as money income.

Left unsaid is that the accumulated savings and other assets of those over sixty-five is substantially greater than those of the younger population. Statistics of the Federal Reserve Board show that 20 per cent of those sixty-five and over had liquid assets in 1958 of $5,000 or more, 40 per cent had liquid assets of $2,000 or more, and 74 per cent had some liquid assets. Liquid assets include only bank accounts, savings and loan and credit union shares, postal savings, and savings bonds. Homes and other real estate stocks, and bonds other than savings bonds are not included; and since the indebtedness of the elderly is low and their homes usually mortgage-free, their total financial position is much better than is indicated by money income statistics alone.

It is said that: When an old person goes to the hospital his average stay is twice as long as the average for all patients.

The truth is: Ninety per cent of the people over sixty-five have practically the same average hospital stay as those in the all age category. Nearly 40 per cent of the total hospital days used by this age group are accounted for by the remaining 10 per cent over sixty-five.

It is said that: An old person has two or three times as much chronic illness as a young person.

The truth is: A great number of people of all ages have some form or other of chronic illness, such as defective hearing, hay fever, and poor eyesight. These and many other chronic ailments are in no way disabling to either the young or old.

These and other inaccuracies are being repeated over and over in support of the various legislative proposals that have been presented to Congress. Most of these proposals that have been presented to Congress do not involve doctors directly. However, because we have a personal and sympathetic knowledge of the health needs of the aged we feel it our duty to point out some of the inherent dangers in these plans—dangers not only for the aged but for the entire population.

To pass legislation based on the assumption that we are dealing with identical health problems for all the aging would result in a failure to help those who need medical attention the most and would levy a heavy financial burden on the rest of the people. The premise seems to be under those proposals that at the arbitrary age of sixty-five people automatically become ill, disabled, homeless, and friendless. The truth is a majority of our older people, like a majority of any age, are capable of continuing a productive, happy, healthy life. Catastrophic or terminal illnesses affect but a minority of the aged, and even these cases are best suited for nursing home care. Also the need for serious surgery is far more prevalent before the age of sixty-five than after.

Proposals are based on the premise that the health problems of the aged can be solved simply by including our older people in institutions—away from home, family, and friends. Even if such a program were not so lacking in compassion and understanding, the simple fact remains that much of the nation now suffers from lack of sufficient hospital facilities to care for the critically ill of all ages. Sending millions of elders with minor ailments to hospitals will turn a serious situation into a chaotic one across the nation. Any program calling for prolonged hospital care should go hand in hand with an extensive hospital construction program. Not one of the legislative proposals would provide the capital outlay needed for such a program.

An alternative, of course, is to provide medical care for the minor and chronic ailments of the aged in nursing homes. This plan also is included in proposed legislation. But it, too, lacks proper study and planning. Those who seek election-year makeshift solutions to this pressing national problem would do gross injustice to our elder people. Existing nursing homes would be turned into a turmoil of inefficiencies.

Doctors realize that the legislative proposals which have been made, such as the Forand bill, are based on impulses of good will and good intentions by their sponsors. We recognize, too, that some of our elder citizens are unable to provide for their own medical care, and historically, in such cases, doctors have met their obligations to provide the best possible care regardless of the patient's ability to pay. But we must not forget that the great majority of our aged are in good health and should be allowed to live useful, productive lives. Nor should we saddle the nation with ill-advised and unworkable laws. This is particularly true now that a basis for a sound solution is so immediate.

Two years ago Congress adopted and the President signed a bill introduced by Democratic Congressman John E. Fogarty of Rhode Island which provided that a White House Conference on the Aging be held in January, 1961. The sum of $2 million was appropriated to provide for the extensive studies required in preparation for the conference. In every state in the Union dedicated persons, including doctors and others with knowledge of the problems of the aging, have been intensively engaged in doing the groundwork for the conference. The act requires that a final report, containing a recommended action, must be submitted to the President not later than ninety days following the conclusion of the conference.

In a few short months, then, the best-trained minds in the nation will give to the President and the Congress their recommendations for legislative and administrative action which should be taken to meet the health and other problems of the aging.

We have stated that we recognize the seriousness of these problems. But there is no critical need in 1960 for the kind of legislation that has been proposed. On the contrary. It is imperative that the subject be considered soberly and judiciously and in the light of the findings and recommendations of the conference. Otherwise the entire effort will be threatened by election-year political maneuvering. Americans should not allow their program to be scuttled for any makeshift schemes which might be rammed through Congress in an election-year maneuver for votes.

Vitamin B_{12} And Alcohol

New research on the effect of vitamin B_{12} upon alcohol consumption is reported by the Nutrition Foundation. The conclusions give new evidence on the importance of B_{12} to liver functions.

The investigation was set up in this way: Rats served as subjects for the tests and were, about a month and a half after birth, put on a diet deficient in vitamin B_{12}. After two weeks of that regimen, they were divided into two groups, one to continue on the deficient diet and the other to receive daily injections of B_{12}.

Three weeks of this were followed by a further division of the two groups, one half of each then receiving a daily ration of water spiked with alcohol. At the end of a month, all the rats were killed. The researchers then investigated what the variations in B_{12} and alcohol had wrought.

An immediate observation was that the rats denied B_{12} showed a "complete cessation of growth" dating from the time they had begun to "drink." On the other hand, alcohol had virtually no effect upon the growth of the rats who also received B_{12} injections.

Microscopic sections from the livers of the experimental groups also indicated that alcohol significantly increased the fat infiltration in the livers of the rats deprived of B_{12}. But, the researchers reported, "supplementation of the diet with vitamin B_{12} reversed this condition." A prime conclusion reached by the investigators: B_{12} plays an important role in helping the body synthesize alcohol.—*Nutrition Foundation*

The Humanity of Man: Our Special Challenge

THOMAS A. DOOLEY, M.D., ST. LOUIS, MISSOURI

(*Cofounder, Medical International Cooperation Organization*)

I WOULD like very much to discuss with all of you very briefly a very special challenge that we believe has been flung to doctors—to doctors in the world in our time and in our place in history. Because this generation of physicians, more than any other, must demonstrate the spirit of love for mankind that is strong enough to answer the challenge of hate that is in most of the world today.

I just left an area where the challenge was a palpable, demonstrable thing—a very living thing, and its challenge is yours and mine.

There is a story that Toynbee recently wrote that "our age will be remembered not for its horrifying crimes, nor for its astonishing inventions, but because it is the first age since the dawn of history that dared to be practical, to make the benefits of civilization available to the whole human race." The benefits of our civilization are available to the whole human race. This is the accomplishment of our decade.

I am sure you know the medical statistics as well as I—two thirds of the human race, two thirds of all the men that God has put on this earth, have absolutely no adequate medical care available, and one half of them are born darkly, they live darkly, and they die darkly—without ever seeing a physician. While you and I enjoy our meal here, it is an absolute statistic that tonight over half the people on earth will go to bed just a little hungry.

This is bad enough, but now these people are maturing, and now they are becoming convinced that their plight is not inevitable. I live among that half; I walk with their kings and with their prime ministers; I deliver their children in wretched, smoky huts in their mountains. Among these people there is a strong, palpable surging, a stirring among the intellectual elite, like the students in my village, the young functionaires, the village chieftains—even among the refugees there is a stirring. These people of Asia and of Africa are seeking their place in the growing village, their place in their newly-independent nations, their place in the world. Their place beneath the self-same sky and sun that we have here in Manhattan. These people have bitterness; they have bad memories; they have confusion; and they have much of the rightful resentment of a formerly oppressed people. Sure, they make mistakes—they stir aimlessly many times. But these people, this half of the earth, these people are determined to find their place beneath the world sun. Among them—no, with them—we must work.

Okay—that's admitted. But what of the why, and the who, and the how of working with these people. Why must we work, you and me? Who must work? How must we work? To tell you why we must work I would just reiterate what you already know. But then the ear oftentimes yearns to hear what the heart knows. I believe that there rests upon the individual citizen of our country the responsibility for America. And on America rests the major part of the responsibility of the world for all men. I believe that each citizen of America, each you and me, is America. America isn't a small body of men in Washington. America isn't a small group of men in power—America is you and me—and accordingly what you and I do is always and forever and in every way important to America. And accordingly to the world.

We believe that the highest purpose of man is the liberation of man from the bonds of fear, of human degradation, and of poverty and of misery, and you and I must liberate—we must liberate people from the bonds of pain. There is the whole—you and I—we must do this because we have been given the faint breath of talent as doctors. You and I can fulfill this highest purpose of man, this liberation. We can do it with vigor and vitality and we shall do it. It is you and I in the field of medicine who can best utilize two weapons—the weapon of compassion and the weapon of kindness. These, especially kindness, strengthen themselves because when they are used they call forth an answering kindness. If you use the weapon of hate, you get for a response hate. If you use the weapon of kindness, you get for your response kindness.

Presented at the Annual Dinner of the Medical Society of the State of New York, Hotel Pierre, New York City, May 9, 1960.

It is therefore the furthest reaching and the most effective of all forces; and you and I as doctors in the free world can best utilize this weapon. And we will, because we are deeply involved in the destinies of all men everywhere.

Medicine is unique because it is above the give and take of national rivalries. Medicine is not touched by politics; medicine is not touched by the sharp edges of clashing principles; medicine is not involved in the soft, gummy compromises and compromising that so often must be done.

Let's get practical now—okay? How do we do it? How do we implement this high purpose of all of us which we have? We all know that it is more blessed to give than to receive, and we all know also that it is a damn sight more difficult, but to implement this project, to implement this we in the free world established institutions, and this is what Dr. Peter Comanduras and I did a few years ago. We established a small institution that we called MEDICO. And MEDICO has for its purpose a very simple job, a very simple aim—we want to take care of people who are sick. We want to practice medicine—the simple art of helping people who are sick because they are sick. We want our medicine not to be a tool of foreign policy and not to be a medium of evangelism. Honorable as these two things might be, we want our medicine not to interfere with the nationalism of new nations because, as a Negro doctor in Kenya told me four days ago, "Nationalism is the aspiration of people who want to be themselves. Medicine does not affect this nationalism."

There are many institutions besides MEDICO working in this field. None of these institutions is in competition with each other or repeats any other, contrary to a lot of public opinion. Every institution in the field of medicine in foreign lands has its own sphere of activity. Some are on a larger scale; some are involved in teaching, some in preventive medicine. The institutions like the International Cooperations Administration, the World Health Organization, the HOPE Ship, the Pan American Union, the Columbo Plan—each of these is in its sphere of activity and nobody is in competition with anybody. These organizations, however, are involved basically in the field of prevention and in the field of teaching. MEDICO, in this family of international medicine, is the country doctor.

How do we work in MEDICO? We believe very strongly that there is one unique essence that we possess; we believe that the essential instrument for good in the world is the human spirit. Our x-ray machines and our diagnostic acumen and our hospitals and some of their magnificent air-conditioned splendor are fine indeed. But the essential instrument for good, the basic component for a physician, is the instrument of his human spirit, the instrument of his compassion, the instrument of his love.

Let this human spirit of an American work side by side with this human spirit of an Asian, or of an African. It does no good whatsoever to construct a foundation, or to build a building, or to launch a ship, or to establish a foundation, or to manufacture any kind of program if you do not seek and utilize to its utmost the elements of the human heart and the human spirit.

MEDICO now, after only a little more than two years of existence, has the following programs. We have a Cambodian Hospital, run by Dr. Manny Voulgaropuolos, and we have a new hospital being built in Cambodia in the town of Atana, Sukari. We have a team in Vietnam, a surgical team that worked there and that has now departed. We have a new hospital that is being built by the Vietnamese government and we provide medical services for the largest orphanage in Saigon.

In Laos we have just built a new village hospital in a town called Ban Houei Sai, and, as perhaps you know, Dooley has a small, little hut of a hospital in a town that quivers on the frontier, a town called Moung Sing.

In Malaya we have just signed an accord with the Malayan government to dispatch a team to Kuala Lampur next month. In Kenya, we have a young Kikuku doctor whose name is Dr. Mungai Njoroge who is doing an excellent job, and we have just pledged him a $25,000 new clinic which will go into construction immediately. One of our largest is a medical service program in Haiti, working with Johns Hopkins University and the Henry Ford Hospital. We have teams or support programs in Gabon, in Peru, in Jordan, in Afghanistan, and other projects around the world.

These are not plans and programs in blueprints; these are existing programs. They are there now and a few of these who do not have their staffs will have a staff very soon.

These are simple programs. The global planners are indubitably scoffing at us and I couldn't care less. These programs each have satellite activity around them, the simple village hospital with a half dozen clinics in the mountains around it. But each team is an intimate part of the village life; each team doctor goes to the weddings and goes to the funerals. Each team doctor is a part of that community life. We don't come in, spend a few weeks and then pull out—we are part of that community life. And because this idea has become beloved in Asia, the host governments put up what we need. The host governments pay all indigenous salaries; they build the buildings and give us warehousing and internal transportation and a carte blanche for their medicines.

MEDICO is not a charity organization. The oft-repeated truth that I feel so strongly as all of us in MEDICO do, is that unlimited charity or the unlimited giving away of things can rob a man, and perhaps a nation, of his self-respect.

The drugs that are given us for our projects are donated by the drug companies of America. The surgical supply houses donate all of the surgical supplies and equipment we need. We have plenty of volunteer doctors and nurses. The money is donated to us by people in America, and I might add that my address is Box 2, Times Square Station, New York 17, New York.

All donated money that has been given to us by all of you—every single dollar that is donated sends 100 cents to our overseas projects. The administration of our offices, the payment of our salaries for the people here in New York City—is entirely and totally covered by the royalties of a specific author we won't name.*

Anyway, as long as you keep buying my books, it keeps paying for the overhead, and therefore every donated dollar takes care of my snotty-nosed kids.

A question comes to mind whenever people hear of somebody, of one doctor, or of six, or of now 15 young men and women; doctors and another 30 or 40 young men and women around the world taking care of the sick. The question is always asked of those who go out in the world and leave behind them certain accoutrements of civilization, and that question is "Okay, buddy, what do you get out of it?" Well, ladies and gentlemen, I can speak for all of these young doctors—because I've been in this business of village medicine for six years—and I'll tell you what I get out of it. I get plenty.

All of us have the same quiet, inner joy that you have when you see your patients' eyes light up just a little bit because of you. But take that patient and put him in a hospital, in a high mountain valley, half a world away, where without you he has black magic or sorcery; you heal him and the glow inside of you is a wonderful thing, a thing that is full of wonder. We who are in this field have formed a new purpose and a new order in our lives. And we have a fulfillment of man's appetite, the normal appetite for fruitful activity and a high quality of life.

We have the satisfaction of doing a job that needs doing—not by a government—but needs doing by individuals, by Americans. We have that feeling of accomplishment. We are trying to make the world just a little better, bit by bit, and little by little.

We feel good in our hearts when we know that we are giving meaning to the fundamental yearning of all men in all lands everywhere. And I've seen this yearning in many men, in many lands, many times. And that is a fundamental yearning to be of service to somebody else, to help somebody who "ain't got it so good," in our case by utilizing this wonderful weapon of medicine blended with compassion.

But our deepest reward is knowing that we of MEDICO in some small way are helping to fulfill a dream—a dream that a young German Jewish girl wrote of in the furor of World War II. We feel as though we are somehow or other helping to bring into being the words of the dream of Anne Frank: "People will change and men will become good again. And these pitiless days will come to an end, and the world will know once again, order, rest, and peace."

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* EDITOR'S NOTE: Three books written by Dr. Dooley are: *Deliver Us From Evil*, *The Edge of Tomorrow*, and *The Night They Burned the Mountain.*

We promise according to our hopes, and perform according to our fears.—LA ROCHEFOUCAULD

Basic Requirements for a Scientific Article

WILLIAM HAMMOND, M.D., SCARSDALE, NEW YORK

(*Assistant Editor*, NEW YORK STATE JOURNAL OF MEDICINE)

IN PREPARING a scientific article for submission for publication, there are two fundamental ground rules to be observed:

1. "Keep the READER in mind at all times";
2. Remember Fowler's definition of good writing— that it be simple, direct, brief, vigorous, and lucid.

I. The Thesis

The thesis of the article should either add something new or furnish a fresh approach to that which is known. There should be a clearly defined objective; a point to be made, a condition to be described, an experience to be documented. A single goal is preferable.

Let the subject choose the author rather than the reverse. This presupposes sound knowledge and experience with the subject. Look the field over. At times a second or a third article is useful to confirm another author's findings in an important field. However, repetitious papers are a dead weight.

II. The Title

The title should state with as few words as possible the subject and objective. It should be a fair label for what the author has attempted to say.

For example: "Infectious Mononucleosis—a Study of 500 Cases" is comprehensive and could serve to cover all aspects of the disease. However, if the author desires to emphasize diagnosis the title might better read: "Diagnosis of Infectious Mononucleosis—Experience with 500 Cases."

III. The Form

Remember that the attention span of most readers is quite short; thus paragraphs should be short, complete units. All articles should follow an orderly outline and should include the following:

1. The INTRODUCTION, which states the objective;

2. The BODY, which develops the thesis and covers material, methods, and results. It tells only what the *author* did and what *he* found. The only references here are to technical methods.

3. The COMMENT or DISCUSSION, which develops the author's deductions from the results and brings in references to the work of others. If the findings are contradictory or are inconsistent with the work of others a statement of comparative validity is desirable.

4. The CONCLUSION, which sets forth the author's conclusions and can appear either at the end of (3) COMMENT or DISCUSSION, or, if extensive, in a separate section preceding the SUMMARY.

5. The SUMMARY, a brief review which refines with clarity the basic facts presented in the BODY, COMMENT, and CONCLUSION; it should be based only on material that has been presented in these sections. The SUMMARY is considered by many to be the most important part of the paper. It should be written as if it were to be used as an abstract. In fact, many readers turn to the SUMMARY first to see if the article may be of interest to them.

There is a trend in medical publishing today toward placing this part or a condensation of it at the head of the article.

IV. Types of Articles

Scientific articles fall generally into six types:

1. The clinical report based on observation;
2. Report of experimentation;
3. Review;
4. Description of an instrument or technic;
5. Case report;
6. Monograph.

1. The CLINICAL REPORT OF OBSERVATION is the commonest type of article and using the above outline should be developed as follows:

(*a*) *Introduction.*—Brief history of condition and reason for report, such as opportunity, timeliness, rarity. Statement of author's series of cases.

(*b*) *Body.*—Describes condition under consideration. In the report of cases give only the pertinent facts. Report controls wherever possible; include analysis of results.

(*c*) *Comment or Discussion.*—Summarizes briefly work done in the field by others, comments as to whether author's result corroborates or refutes this.

(*d*) *Conclusion.*—Sets forth author's conclusions, may appear as part of *Comment.*

(*e*) *Summary.*—Extremely concise digest of the foregoing with author's final conclusion from facts presented.

2. The article which REPORTS ON EXPERIMENTATION and especially therapeutic trials requires meticulous attention to detail. Where a drug is under consideration controls are an absolute requirement. One cannot extol a drug without having factual experimental comparison with another drug or absence of drug. The placebo double or triple blind test is the most accurate method in this analysis. Readers will measure results by such indices as shortening the period of morbidity, reduction in case mortality rate, tangible clinical improvement, or shift in laboratory findings toward normal. Readers want also to know about side-effects and toxicity; these must always be mentioned and developed. A willingness to be self-critical of results is an important asset to the writing of this type of article.

3. The REVIEW ARTICLE may be one of two types—the complete review which attempts to cover the whole subject and is practically a monograph, or the review which is a critical assessment and which attempts to make a true evaluation and synthesis of work in a given field. This is a particularly valuable type of review.

The reader of a review article is interested principally in the high lights and particularly the applicability of important recent developments.

4. The DESCRIPTION OF A NEW INSTRUMENT OR TECHNIC should be as good as the descriptions in the Sears-Roebuck catalog. It should be concise and clear and leave the reader with a desire to try it. It should state what the new instrument or technic offers over other methods, such as speed, accuracy, operation by less skilled personnel, or saving in cost. It should be accompanied by a photograph or diagram good enough for reproduction.

5. The CASE REPORT is a very useful means of medical communication; it is something within every reader's ken and will be read where the more profound article may not. Emphasize what you consider to be important—was it the symptoms, the difficulty in diagnosis, the therapy, or the pathologic findings? Write the case report around this for interest, without distorting the facts.

Do not use hospital or personal abbreviations. Dates are helpful, particularly in conjunction with time intervals given in days, weeks, months, years. For example: "On December 16, 1959, six weeks following operation." This is particularly helpful to the reader in referring back to date of operative procedures, date of diagnosis, date of onset of symptoms, or date of admission.

Use metric measurement for the size of lesions; comparison with the size of fruit and nuts is out of favor.

Write the history in narrative form using the patient's expressions wherever possible. Delete everything extraneous. The physical examination, work-up, treatment, and progress reports should follow in logical sequence. Put in the nurse's notes where pertinent. If there are pathologic findings to report quote the pathologist's own terms.

Use only the essential laboratory reports; negative results important in the differential diagnosis may be included.

If the case report points a moral or raises an issue this should be discussed following the case report. All known facts should be brought to bear. Speculation is generally not useful.

In the summary and conclusion the point of the case may be emphasized once more.

6. The MONOGRAPH is a comprehensive review in depth. It requires wide historical background and up-to-the-minute knowledge of developments in the subject.

V. Aids to the Writer and Reader

It is always helpful to break up the monotony of the printed page. This can be done pictorially with tables, graphs, drawings, and illustrations. Supporting data such as statistics and references can be of immense importance to the reader. They can be useful in making your article a building block for extension into the field.

1. ILLUSTRATIONS.—Illustrations should point

up important findings; they should be used sparingly; they should sparkle like jewels. The EEG and EKG should be mounted in accepted sequence. These and also roentgenograms should be submitted either in line drawings or in glossy print photographs and should have sharp contrast, since contrast is diminished in reproduction. In illustrations of before and after treatment the figures should be in equally sharp focus. Let it not be said tricks of photography were used.

2. Tables and Graphs.—Tables and graphs should bring together related facts in logical sequence. Like an appetizer they can be an aid to mental digestion, but if overdone or poorly done they are a deterrent.

Keep them as simple as possible, use them sparingly, space them widely, make them uncluttered and pleasing to the eye. The bar graph stands out well and is perhaps the easiest to follow.

3. Statistics.—Statistical methods of sampling, choosing of controls, and evaluation of results are of high value. The average writer should seek the advice of an expert in this field in the planning stage as well as in the drafting of his paper. Valid conclusions are directly proportional not only to quantity but to quality of sampling as well. Failure to follow accepted statistical technics leads to serious pitfalls for the unwary.

4. References.—References are of two-fold importance—first, meticulously to give credit where credit is due, and, second, to give the reader the opportunity to consult the sources.

The worth of a scientific article is not necessarily directly proportional to the length of the bibliography or reference list. This is background material and the reader should not be swamped with it. Give that which has been important and helpful to you in writing the article. Do not attempt to be absolutely comprehensive except in the case of a monograph, where this is to be expected.

5. Nomenclature of Drugs and Compounds.—There is a final point which has to do with editorial policy in regard to the nomenclature of drugs and compounds.

Registered, trade-marked names of drugs are the legal property of the manufacturer. These names do not enter the public domain until certain lengthy legal requirements are satisfied. The generic or chemical name should be used consistently throughout. The registered name may be mentioned once with a footnote describing the manufacturer's rights to same.

6. Reference Material.—The following may be of help in the preparation of a manuscript:

Bancroft, H: Introduction to Biostatistics, New York, Paul B. Hoeber, 1957.

Burch, G. E.: Of Publishing Scientific Papers, New York, Grune & Stratton, 1954.

Evans, B.: A Dictionary of Contemporary American Usage, New York, Random House, 1957.

Fishbein, M.: Medical Writing, New York, Blakiston Division, McGraw-Hill, 1957.

Fowler, H. W.: A Dictionary of Modern English Usage, London, Oxford Press, 1954.

Hewitt, R. M.: The Physician-Writer's Book, Philadelphia, W. B. Saunders Company, 1957.

Marshall, M. L.: The Physician's Own Library, Springfield, Illinois, Charles C Thomas, 1957.

Strunk, W.: The Elements of Style, New York, Macmillan Company, 1959.

Acknowledgement

Grateful acknowledgement is made to members of the Publication Committee of the Medical Society of the State of New York and of the Associate Editorial Board of the New York State Journal of Medicine who have contributed many helpful criticisms and suggestions which aided in the preparation of this guide.

Just as the sand-dunes, heaped one upon another, hide each the first, so in life the former deeds are quickly hidden by those that follow after.—Marcus Aurelius Antonius

MEDICAL NEWS

Brooklyn Psychiatric Society Elects—The Brooklyn Psychiatric Society elected the following officers for the year 1960–1961 at its recent annual meeting: Abbott A. Lippman, M.D., president; Edward F. Falsey, M.D., vice-president Morton M. Golden, M.D., secretary.

Three New York Physicians Speak in Los Angeles—Three doctors from the New York City area were among the guest speakers who addressed the fifty-sixth annual meeting of the National Tuberculosis Association in Los Angeles on May 15. They were: J. Maxwell Chamberlain, M.D., New York City, whose topic was "Surgery in Lung Cancer—How Much?"; Julius L. Wolf, M.D., New Hyde Park, who participated in a symposium on current co-operative studies in lung cancer chemotherapy; and Paul Klemperer, M.D., New York City, who spoke on "The Concept of Collagen Diseases in Medicine."

Inaugural Meeting of International Society of Tropical Dermatology—The inaugural meeting of the International Society of Tropical Dermatology was held on May 10. The presidential address was delivered by professor Aldo Castellani, Lisbon, Portugal.

Other speakers on the program included the following: Professor Rene Dubos, Rockefeller Institute for Medical Research; Herman E. Hilleboe, M.D., Commissioner of Health, State of New York; Leona Baumgartner, M.D., Commissioner of Health, New York City; Colonel Robert Higdon, MC, U.S.A., consultant in dermatology to the Surgeon General, United States Army, chief, Dermatology Service, Walter Reed General Hospital, Washington, D.C.; and Justin Andrews, M.D., director, National Institute of Allergy and Infectious Diseases. A reception followed the inaugural meeting.

For information concerning the Society contact: Frederick Reiss, M.D., 870 Fifth Avenue, New York 21, New York.

Course in Occupational Health—The New York University Post-Graduate Medical School announces a part-time course, "Occupational Health for Physicians," (482) to be given one-half day each week on Thursday, 1:30 to 4:30 P.M., from September 15, 1960, to May 11, 1961.

The course is sponsored by the Medical Society of the State of New York. Among the topics to be covered are: organization and administration of an industrial medical department; preventive and constructive medicine in industry; occupational diseases; toxicology and industrial hygiene for the physicians, as well as biostatistics and epidemiology.

A full-time program which will be given from September 12 through November 4, 1960 (481), is also available.

For further information write to: Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Drug Withdrawn from Market—Lakeside Laboratories, Inc., has announced that it has temporarily withdrawn from the market its iron-dextran complex which has the trade name, Imferon.

According to Harvey L. Daiell, M.D., executive vice-president of the pharmaceutical firm, Imferon is being recalled at the request of the Food and Drug Administration. "We are taking this action without availing ourselves of the formal hearing which the F.D.A. would accord us because such a hearing might provoke undue public concern," Dr. Daiell said. "By this action we can further a calm, objective, and scientific evaluation of facts. Because we believe Imferon is a safe and an unusually useful drug, we are now in the process of setting up a totally independent and impartial medical committee to screen the available facts and suggest a future course of action."

Notice of the recall has been made to all drug trade outlets and to the medical profession.

Queens Hospital Center Offers Courses—The following courses will be offered in the fall by the Queens Hospital Center, Department of Hospitals, The City of New York: Operative Radium Therapy—to be given on Wednesday mornings from 9:00 A.M. to 12 NOON, October 5 through November 30. The program will include the use of interstitial radiation in the oral cavity; radical insertion of radium in the neck; various applicators in carcinoma of the cervix; the Heyman applicators in carcinoma of the endometrium; radium needles in the parametria; and radon, iridium-thread, and cobalt interstitial therapy.

Special Radiation Procedures in the Treatment of

Cancer—this one-week course in the use of specialized radiation technics in the treatment of malignant disease will begin on Monday, October 17. Clinical, operative, and laboratory sessions will be held and will include: rotational and arc cobalt interstitial therapy with various radioisotopes; recent technics in the field of isotopes; beta-ray applicators; operative radium technics (Heymann, Ernst, Henschke applicators; low-intensity needles; radical neck procedures; parametrial implantations, and so forth); and modern technics in radium mold fabrication.

Radioactive Isotopes for Technicians—a course of eight sessions of four hours each, to be held on Wednesday afternoons September 28 through November 23, from 1:00 to 5:00 P.M. The course will be devoted to laboratory technics in the use of radioactive isotopes. Sessions will be divided equally between lectures and laboratory work. The most commonly used medical application of radioactive isotopes, as well as health and safety measures, will be stressed.

For information concerning tuition and faculty contact: Philip Kahan, M.D., Supervising Medical Superintendent, Queens Hospital Center, 82–68 164th Street, Jamaica 32, New York.

Knickerbocker Hospital Allots Beds to Alcoholics—Knickerbocker Hospital has announced that it will allot a few beds to a "drying out" service for alcoholics. This will be a private service consisting of psychiatric and medical services of five days duration usually. Each prospective patient will be screened by a member of the service. Patients who are able to cooperate and are willing to engage in a follow-up program by their own physicians, by physicians of the alcoholic service, or by a responsible agency, will be given preference for admission.

Initially, patients will be screened through the private office of A. N. Browne-Mayers, M.D., chief of the alcoholic service at the Hospital. The purpose of this screening will be to insure that the Hospital will not admit patients who cannot be maintained properly with the facilities available.

Dr. Browne-Mayers' office is at 55 East 86th Street. Telephone ATwater 9–5757.

New Digest on Law and Medicine—A new monthly publication *Medicolegal Digest*—which will focus on the major common concerns of the professions of medicine and law, was launched in May as a service to physicians.

Among the subjects to be covered by the new digest will be artificial insemination, third party medicine, the doctor as a witness, and medicolegal aspects of space flight. Some articles will be specially written for the digest, others will be abstracted from leading law journals.

Authorities in law, medicine, and hospital administration comprise the editorial board of the new journal. Physicians from the New York area who will serve on the board are: August H. Groeschel, M.D., New York City, associate director for professional services of New York Hospital, and Alexander S. Wiener, M.D., Brooklyn.

Change in Practice of Examination of Civil Airmen—Effective June 15, 1960, the Federal Aviation Agency will requre that student and private pilots be given their medical examinations by designated medical examiners. This rule reinstates a practice which was in effect from 1926 to 1945.

Any physician may be considered eligible for designation as an examiner. Designation as an aviation medical examiner will qualify the designee to examine both class II (commercial) and class III (student and private) airmen, including control tower operators. Instructions concerning the required procedures, standards, and equipment will be supplied to those who apply.

Those physicians who live in localities where flying activities are conducted and who wish to file an application for designation as an examiner should write to: Civil Air Surgeon, Federal Aviation Agency, Washington 25, D.C.

Physician Serves as Consultant in Iceland—The services of a New York physician as a consultant in the development of rehabilitation services is being provided to one of Iceland's largest hospitals. The physician is Bruce Grynbaum, M.D., associate clinical professor, Department of Physical Medicine and Rehabilitation, New York University Medical Center. The hospital expanding its rehabilitation services is the "Landspitalinn."

Dr. Grynbaum's services are being made available through the World Rehabilitation Fund and the International Society for the Welfare of Cripples. His visit to Iceland is part of a long-range program to strengthen rehabilitation services for the physically handicapped in Iceland through establishment of a physical medicine and rehabilitation service at the "Landspitalinn."

The physician who will eventually direct the service, Dr. Haukur Thordarson, is currently undertaking postgraduate training in the Department of Physical Medicine and Rehabilitation, New York University Medical Center under a fellowship from the World Rehabilitation Fund. He will complete his three-year training program and return to Iceland in January, 1962.

Eastern Psychiatric Research Association Meets—The Eastern Psychiatric Research Association held its twenty-fourth scientific meeting on June 2.

Speakers at the meeting were: Jacob H. Friedman, M.D., and Fannie, I. Kapp, M.D., New York City, who spoke on "Refusal of Surgical Therapy as an Immediate Life Saving Procedure," and George H. Sweeney, M.D., Albany, whose topic was "Historical Aspects of Teaching Psychiatry in a General Hospital Psychiatric Ward."

A film entitled "Neurologic Effects of Psychotherapeutic Drugs" was also shown at the meeting.

For information concerning the Association contact: David J. Impastato, M.D., 40 Fifth Avenue, New York City.

Medical Advisory Committee Formed—Announcement has been made of the formation of a medical advisory committee by the Office of Vocational Rehabilitation. Howard A. Rusk, M.D., New York City, director of the Institute of Physical Medicine and Rehabilitation, has been named chairman. Other New York State physicians on the committee are: Herman E. Hilleboe, M.D., Albany, State Commissioner of Health; Edward W. Lowman, M.D., New York City, clinical director of the Institute of Physical Medicine and Rehabilitation; and Theodore Klumpp, M.D., Sands Point, president of Winthrop-Stearns, Inc.

Course in Gastroenterology—The American College of Gastroenterology has announced that its annual course in postgraduate gastroenterology will be given at the Bellevue-Stratford Hotel in Philadelphia, October 27 through 29.

The faculty will be drawn from medical schools in and around Philadelphia. The subject matter to be covered will be essentially the advances in diagnosis and treatment of gastrointestinal diseases and a comprehensive discussion of diseases of the mouth, esophagus, stomach, pancreas, spleen liver and gallbladder, colon and rectum.

For further information and enrolment write to: American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

Monograph Prizes—The American Academy of Arts and Sciences announces that competition for monograph prizes in the humanities, the social sciences, and the physical and biological sciences, is now open.

The final date for receipt of manuscripts by the committee on awards is October 1, 1960. Announcement of the awards will be made in December, 1960. Details concerning the competition may be secured by sending a stamped, self-addressed envelope to the committee on monograph prizes, American Academy of Arts and Sciences, 280 Newton Street, Brookline Station, Boston 46, Massachusetts.

Course in Laryngology and Bronchoesophagology at University of Illinois—The Department of Otolaryngology, University of Illinois College of Medicine, will conduct a postgraduate course in laryngology and bronchoesophagology October 17 through 29, under the direction of Paul H. Holinger, M.D.

Registration will be limited to 15 physicians who will receive instruction by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants should contact: Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

Personalities

Awarded

John F. Rogers, M.D., Poughkeepsie, an achievement awarded by the Poughkeepsie chamber of commerce for "his community service and active participation in the activities of the chamber and professional groups" . . . Milton Rosenbaum, M.D., Bronx, a scroll from the Bronx County Society of Mental Health for "his efforts in behalf of the mental health needs of the people in the Bronx."

Honored

Leona Baumgartner, M.D., New York City Commissioner of Health, with the title "woman of the year" by the Women's Medical Society of New York State on May 8 . . . George T. Pack, M.D., New York City, with an honorary membership in the Surgical Society of Costa Rica.

Retired

Henry Green, M.D., New York City, as assistant medical director of the Transit Authority.

Elected

Gilbert, B. Forbes, M.D., Rochester, as president of the Society for Pediatric Research . . . Henry Clay Frick, 2nd, M.D., New York City, to the board of trustees of the American Museum of Natural History . . . Lois J. Plummer, M.D., Buffalo, as president of the Women's Medical Society of New York State . . . Joseph R. Van Dyne, M.D., Forest Hills, as president of the New York Academy of Gastroenterology.

Appointed

Benjamin Freedman, M.D., Troy, as associate compensation examining physician of the Workmen's Compensation Board . . . Lytt I. Gardner, M.D., Syracuse, to the editorial board of *Medical Tribune* . . . . Hugh Mullan, M.D., New York City, as medical director of the Alcoholism-Vocational Rehabilitation Service of the National Council on Alcoholism.

Speakers

Arthur J. Bendick, M.D., Castle Point, on May 6, before the staff of the Veterans Administration Hospital, Northport, Long Island, on the subject, "Roentgen Problems in Pulmonary Tuberculosis" . . . George C. Escher, M.D., Scarsdale, before the Medical Society of Jefferson County on May 17, on the subject "The Behavior of Carcinoma and Newer Concepts of Treatment" . . . Harold I. Kaplan, M.D., New York City, on April 20, before the staff of the Veterans Administration Hospital, Lyons, on the subject, "Current Trends in Psychosomatic Medicine" . . . John J. Levbarg, M.D., Flushing, on May 18, before the Yonkers Academy of Medicine on the subject "Hypnosis in Medicine" . . . Sidney Malitz, M.D., New York City, before the hospital staff of the Veterans Administration Hospital, Northport, Long Island, on May 5, on the subject, "Drugs and Psychiatry Today" . . . Jacob L. Moreno, M.D., Beacon, on May 20 at a meeting of the Association for the Advancement of Psychotherapy on the topic "Progress in Psychodrama" . . . Howard A. Rusk, M.D., New York City, on May 9 at a luncheon meeting of the Advertising Men's Post No. 209 American Legion and at the May Festival Ball to benefit Just One Break Inc., . . . Melitta Schmideberg, M.D., New York City, on the subject "The Prevention of Delinquency" on May 3 at a joint meeting of the American Jewish Congress West Side Chapter and the Association for Psychiatric Treatment of Offenders.

MEDICAL MEETINGS

Eighth World Congress of the International Society for the Welfare of Cripples

The International Society for the Welfare of Cripples will hold its eighth world congress August 28 through September 2, at the Waldorf-Astoria Hotel, New York City.

The theme of the congress is "Rehabilitation and World Peace." It will be open to persons from all countries who are interested in the field of rehabilitation. It is not necessary for a person to be an official delegate of a government or voluntary agency in order to participate in the congress.

For registration and further information contact: The Eighth World Congress Office, 2023 West Ogden Avenue, Chicago 12, Illinois.

Second International Meeting of Forensic Pathology

The second international meeting of forensic pathology will be held at the Commodore Hotel in New York City, September 18 through 22. The meeting will be sponsored by scientific societies both in this country and abroad which are concerned with forensic pathology and legal medicine.

All inquiries concerning the meeting should be addressed to: Milton Helpern, M.D., 55 East End Avenue, New York 28, New York.

American Medical Writers' Association

The American Medical Writers' Association will hold its seventeenth annual meeting at the Hotel Morrison, Chicago, September 30 and October 1.

A high light of the meeting will be a conference on medical communications moderated by William D. Snively, Jr., M.D., of Evansville, Indiana.

For further details write to: Harold Swanberg, M.D., Secretary, American Medical Writers' Association, W.C.U. Building, Quincy, Illinois.

Asia-Pacific Academy

The first congress of the Asia-Pacific Academy of Ophthalmology will be held in Manila, Philippines, October 9 through 13, under the sponsorship of the Philippine Ophthalmological Society. The main theme of the meeting will be, "Blinding Diseases of the Asia-Pacific Regions."

For registration or further information write to: Dr. Jesus V. Tamesis, Executive Chairman, 42 Quezon Boulevard, Quezon City, Philippines.

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NECROLOGY

Paul W. Adler, M.D., of St. Johnsville, died on April 2 at the age of sixty. Dr. Adler received his medical degree from the University of Vienna in 1925. He was on the staff of Little Falls Hospital. Dr. Adler was a member of the Montgomery County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

J. Lewis Amster, M.D., of the Bronx and Pleasant Valley, died in Mount Eden Hospital on May 4 at the age of eighty-one. Dr. Amster graduated from Cornell University Medical College in 1902 and interned at St. Mark's Hospital. He was an honorary consultant in surgery at Morrisania Hospital and a consultant in surgery at Bronx Hospital, Bronx Eye and Ear Infirmary, Hebrew Home and Hospital for Chronic Sick, and an honorary member of the staff of the Vassar Brothers Hospital in Poughkeepsie. A past president of the Bronx Medical and Surgical Societies, Dr. Amster was a member of the International Anesthesia Research Society, the American Public Health Association, the New York Academy of Medicine, the Bronx Surgical Society, the Bronx County Medical Society, the Medical Society of the State of New York and the American Medical Association.

Arthur Randall Beil, M.D., of Brooklyn, died on May 3 in the Methodist Hospital of Brooklyn at the age of fifty-eight. Dr. Beil graduated in 1929 from Cornell University Medical College and interned at Methodist Hospital. He was director of obstetrics and gynecology at Methodist Hospital and a consultant in obstetrics and gynecology at Lutheran Hospital. Dr. Beil was a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the American College of Surgeons, and a member of the Brooklyn Gynecological Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Bernstein, M.D., of Brooklyn, died on April 11 at the age of fifty-nine. Dr. Bernstein graduated from Long Island College Hospital in 1925.

Myer Sol Bloom, M.D., of Binghamton, died at his home on May 5 at the age of sixty-nine. Dr. Bloom graduated in 1915 from Syracuse University College of Medicine. He was a consulting physician at Our Lady of Lourdes Memorial Hospital and senior attending physician at Binghamton City Hospital. Dr. Bloom was a member of the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold Courtney, M.D., of Syracuse, died on April 13 in University Hospital at the age of fifty-nine. Dr. Courtney graduated in 1925 from Syracuse University College of Medicine and in 1940 from the University of Pennsylvania School of Medicine, and interned at New York Lying-In Hospital. He was an attending in proctology at General Hospital of Syracuse and a consultant in proctology at Onondaga Sanatorium. In 1946 and 1949 he received the Hermance Award for original research and advancement of the proctologic field from the American Proctologic Society and in 1952 he was official speaker at the seventh annual meeting of the Brazilian Proctologic Society. Dr. Courtney was a Diplomate of the American Board of Proctology (Anorectal Surgery), a Fellow of the International College of Surgeons, and a member of the American Proctologic Society, the Syracuse Academy of Medicine, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jules Freund, M.D., of New York City, died on April 22 in a hospital of the National Institutes of Health, Bethesda, Maryland. Dr. Freund received his medical degree from the University of Budapest in 1913. Last year he was a winner of the Albert Lasker Award for achievement in medical research. Since 1957 he had been chief of the laboratory of immunology at the National Institutes of Health. From 1938 to 1945 he was assistant director of the New York City Department of Health and in 1944 he directed the Division of Applied Immunology in New York City on technics of immunization against malaria. Dr. Freund was a member of the American Association of Immunologists, the Society for Experimental Biology and Medicine, and the New York Academy of Medicine.

John V. Hibbard, M.D., of Port Chester, retired, died on May 4 at his home at the age of seventy-six. Dr. Hibbard graduated in 1906 from the University of Buffalo School of Medicine. He was emeritus director of surgery at United Hospital in Port Chester and a consultant in surgery at St. Luke's

Convalescent Hospital, Greenwich, Connecticut. Dr. Hibbard was a founder and a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the American Urological Association, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leon S. Kurek, M.D., of Buffalo, died on September 11, 1959, at the age of seventy-six. Dr. Kurek graduated in 1907 from the University of Buffalo School of Medicine. He was on the staff of the U.S. Veterans Administration Regional Office. Dr. Kurek was a member of the Buffalo Academy of Medicine.

Frederick Thomas Owens, M.D., of Utica, died on April 7 at the age of seventy-seven. Dr. Owens graduated in 1907 from Johns Hopkins University School of Medicine. He was an honorary surgeon at St. Luke's Memorial Hospital Center. Dr. Owens was a member of the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ignatius Louis Stein, M.D., of Flushing, died on April 18 at the age of sixty-seven. Dr. Stein graduated from New York University and Bellevue Hospital Medical College in 1915. Dr. Stein was a Fellow of the American College of Surgeons and a member of the Queensboro Surgical Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Stephen Wahl, M.D., of New York City, died on April 30 in his office at the age of fifty-nine. Dr. Wahl received his medical degree from the University of Leipzig in 1925. He was an associate in orthopedic surgery at the Hospital for Joint Diseases. Dr. Wahl was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the International College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, a past president and member of the American-Hungarian Medical Association, the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jacques Edwin Zipser, M.D., of New York City, died on October 24, 1959, at the age of eighty-six. Dr. Zipser graduated in 1896 from Bellevue Hospital Medical College. He was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

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COURSES FOR GENERAL PRACTITIONERS

Surgical Pathology
Sept. 10 to Dec. 17; Sat., 2 to 4 p.m.

General and special pathology
Sept. 17 to Dec. 24; Sat., 3 to 5 p.m.

Radiology of the chest
Sept. 26 to Oct. 4; Mon. to Fri., 9 to 10:30 a.m.

Normal and pathological physiology
Oct. 5 to Apr. 5; Wed., 2 to 4 p.m.

Differential diagnosis in gastrointestinal radiology
Oct. 11 to Dec. 13; Tue., 5 to 6 p.m.

Clinical Cardiology
Oct. 18 to Dec. 20; Tue., 2 to 4 p.m.

Electrocardiography
Oct. 18 to Oct. 28; 1st week—Tue. to Sat.
2nd week—Mon. to Fri. 9-12 Noon

Chemotherapy of infections and parasitic diseases
Oct. 18 to Nov. 3; Tue. & Thur., 4:30 to 6 p.m.

Differential diagnosis in radiology of the chest
Oct. 24 to Jan. 30; Mon., 4:45 to 6:15 p.m.

Diseases of the liver
Oct. 24 to Oct. 28; Mon. to Fri., 9 to 12: 2-5 p.m.

Cinical Hematology
Nov. 1 to Dec. 20; Tue., 1:30 to 4:30 p.m.

Ophthalmoscopy for general practitioners and pediatricians
Nov. 8 to Dec. 1; Tue. & Thur., 2:30 to 4 p.m.

Office proctology
Nov. 3 to Nov. 4; Thur. & Fri., 10 to 12 and 1 to 4 p.m.

Spatial vectorcardiography and vector interpretation of the electrocardiogram
Nov. 28 to Dec. 2; Mon. to Fri., 9 to 12 and 1 to 3 p.m.

COURSES FOR SPECIALISTS

Rhinoplasty and Otoplasty
July 16 to July 29; Mon. thru Sun., 9 to 6 p.m.

Trans-meatal (Endaural) surgery
Sept. 6 to Sept. 17; 1st week—Tue. thru Fri.
2nd week—Mon. thru Sat. 9 to 6 p.m.

Clinical electroencephalography
Sept. 22 to Jan. 5; Thur., 9 to 12 noon

Clinical use of radioactive isotopes
Sept. 26 to May 29; Mon., 3 to 6 p.m.

Glaucoma
Oct. 4 to Oct. 21; Tue. & Fri., 2:30 to 4 p.m.

COURSES ON WHICH DATES ARE TO BE ARRANGED

Seminar in selected topics in gastrointestinal physiology
Oct 1960 to May 1961; one hour, twice weekly.

Use of radioactive iodine
Sept. through Nov.; repeated Dec. through Feb.
Mon., Tue., Thur., Fri., 1 to 4 p.m.

Radiotherapy (full time)
6-month or 12-month course.

BOOKS RECEIVED

(The following books were received during the month of April, 1960)

Clinical Management of Behavior Disorders in Children. By Harry Bakwin, M.D., and Ruth Morris Bakwin, M.D. Second edition. Quarto of 597 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $15.

Antibiotics Annual 1959–1960. Edited by Felix Marti-Ibañez, M.D. Quarto of 1,034 pages, illustrated. New York, Antibiotica, Inc., 1960. Cloth, $15.

Detoxication Mechanisms. By R. Tecwyn Williams, Ph.D. Second edition. Octavo of 796 pages, illustrated. New York, John Wiley & Sons, Inc., 1959. Cloth, $19.

Intraarterial Infusion of Procaine in Therapeutic Practice. By N. K. Gorbadei. With a supplement, **The Treatment of Patients With Hypertension by Intraarterial Infusion of Procaine Solution.** By I. I. Velikanov. Translated from Russian. Octavo of 135 pages, illustrated. New York, Consultants Bureau, Inc., 1960. Cloth, $7.50.

Basic Facts of Body Water and Ions. By Stewart M. Brooks, M.S. Octavo of 159 pages, illustrated. New York, Springer Publishing Company, Inc., 1960. Paper, $2.75.

Physiology of Prematurity, Transactions of the Fourth Conference, March 25, 26, and 27, 1959. Edited by Jonathan T. Lanman, M.D. Octavo of 187 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1960. Cloth, $4.50.

Anorexia Nervosa. By Eugene L. Bliss, M.D., and C. H. Hardin Branch, M.D. Octavo of 210 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Cloth, $5.50.

Surgery of Repair as Applied to Hand Injuries. By B. K. Rank, M.S., and A. R. Wakefield, M.S. Second edition. Octavo of 284 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1960. Cloth, $9.00.

Clinical Obstetrics and Gynecology, Volume 3, Number 1. Obstetric Emergencies. Edited by Martin L. Stone, M.D. **Pediatric Gynecology.** Edited by John W. Huffman, M.D. Octavo. New York, Paul B. Hoeber, Inc., 1959. Published quarterly (four numbers a year). Cloth, $18 per year.

Henry E. Sigerist on the History of Medicine. Edited by Felix Marti-Ibañez, M.D. Octavo of 313 pages. New York, MD Publications, Inc., 1960. Cloth, $6.75.

Henry W. Sigerist on the Sociology of Medicine. Edited by Milton I. Roemer, M.D. Octavo of 397 pages. New York, MD Publications, 1960. Cloth, $6.75.

Doctor in Bolivia. By H. Eric Mautner, M.D. Octavo of 331 pages. Philadelphia, Chilton Company, 1960. Cloth, $5.95.

Principles of Orthopaedic Surgery. By Paul C. Colonna, M.D. Revised edition. Octavo of 799 pages, illustrated. Boston, Little, Brown & Company, 1960. Cloth, $22.

Communicable and Infectious Diseases. By Franklin H. Top, M.D. Fourth edition. Octavo of 812 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $20.

"H_3" in the Battle Against Old Age. A dramatic new use for novocain? By Henry Marx. Octavo of 207 pages, illustrated. New York, Plenum Press, Inc., 1960. Cloth, $4.95.

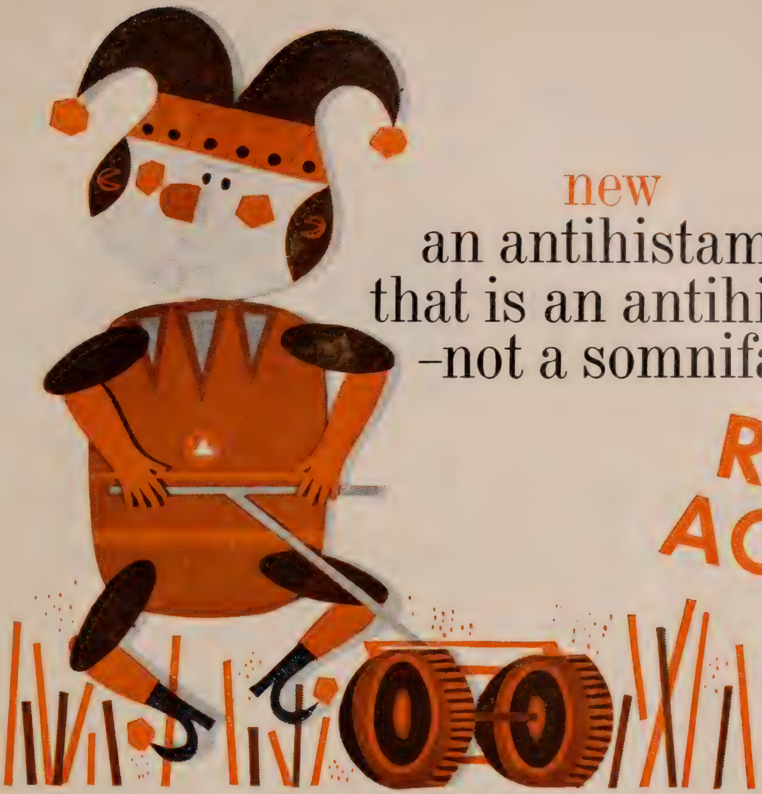
First Aid, Diagnosis and Management. By Warren H. Cole, M.D., and Charles B. Puestow, M.D. Fifth edition. Octavo of 420 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1960. Cloth, $6.25.

Social Science in Nursing. Applications for the Improvement of Patient Care. By Frances Cooke Macgregor, M.A. Octavo of 354 pages. New York, Russell Sage Foundation, 1960. Cloth, $5.00.

Ciba Foundation Colloquia on Ageing. Volume 5. The Lifespan of Animals. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Maeve O'Connor, B.A. With 58 illustrations, and cumulative index to Volumes 1–5. Octavo of 324 pages. Boston, Little, Brown and Company, 1959. Cloth, $9.50.

Ciba Foundation Study Group No. 4. Virus Virulence and Pathogenicity. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. With 13 illustrations. Duodecimo of 114 pages. Boston, Little, Brown

[Continued on page 2010]



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[Continued from page 2008]

and Company, 1960. Cloth, $2.50.

United States Atomic Energy Commission. Radioisotopes in Science and Industry. January 1960. Quarto of 176 pages, illustrated. Paper.

The Central Nervous System and Behavior. Translations from the Russian Medical Literature. Quarto of 1,051 pages, illustrated. U.S. Department of Health, Education, and Welfare, 1959. Paper.

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

State Officers for 1960–1961

THE election of officers of the Woman's Auxiliary to the Medical Society of the State of New York was held at the annual convention May 8 through 11, at the Statler Hilton Hotel in New York City.

The officers elected are: *President,* Mrs. Milton W. Kogan, Oswego; *president-elect,* Mrs. Eugene F. Wolff, Newburgh; *first vice-president,* Mrs. Ezra A. Wolff, Forest Hills; *second vice-president,* Mrs. Herbert J. Ulrich, Buffalo; *recording secretary,* Mrs. Edward Briggs, Wellsville; *corresponding secretary,* Mrs. Jerome H. Flatow, Syracuse; *treasurer,* Mrs. Irwin Alper, Utica; *assistant treasurer,* Mrs. Ralph E. Isabella, Schenectady; *parliamentarian,* Mrs. Arthur L. Bennett, Buffalo.

Directors elected were: Mrs. James L. McCartney, Garden City; Mrs. Joseph H. Kinnaman, Hempstead; Mrs. Maurice G. Sheldon, Olean; Mrs. Frederic W. Holcomb, Kingston; Mrs. Gerald Cooney, Syracuse; and Mrs. Leif G. Jensen, Staten Island. Councillor-at-large is Mrs. Harry F. Pohlmann, Middletown. Councillors and their districts are: District 1, Mrs. John Purpura, Brooklyn; District 2, Mrs. John L. Neubert, Roslyn Heights; District 3, Mrs. William L. Gould, Albany; District 4, Mrs. Louis Tischler, Schenectady; District 5, Mrs. Marvin Brown, Cleveland; District 6, Mrs. Nicholas Klimow, Johnson City; District 7, Mrs. Paul C. Johnson, Penn Yan; District 8, Mrs. Carleton Heist, Westfield; and District 9, Mrs. David Block, Tivoli.

State committee chairmen for the year are: American Medical Education Foundation, Mrs. Harvey Kausel, Slingerlands; archives and historian, Mrs. Michael R. Mazzei, Staten Island; civil defense, Mrs. Joseph G. Vacca, Schenectady; convention, chairman—Mrs. Charles R. Harris, Rochester, and cochairman—Mrs. A. Marc Massaro, Rochester; *Distaff,* Mrs. Herbert J. Ulrich, Buffalo; *Distaff* circulation, Mrs. Royal Howard, Staten Island; fall conference, chairman—Mrs. Paul Lipschutz, Middletown, and cochairman—Mrs. Lorne S. Tieman, Middletown; finance, Mrs. Thomas M. d'Angelo, Flushing; health exposition, Mrs. Thomas d'Angelo, Flushing; legislation, Mrs. Henry Fineberg, Jamaica; mental health, Mrs. E. van Brunt Vurgason, Baldwin; *National Bulletin,* Mrs. George A. Burgin, Little Falls; New York State Fair, chairman, Mrs. W. F. Newcomb, Homer, and cochairman—Mrs. John W. Platt, New Hartford; organization and membership, Mrs. Dominic R. Pitaro, Troy; Physician's Home, Mrs. K. Wood Jarvis, Oswego; poster contest, Mrs. Edward P. Ryan, Glens Falls; press and publicity, Mrs. Frank W. Farrell, Flushing; printing and supplies, Mrs. L. W. Sincerbeaux, Auburn; program, Mrs. Lawrence John Radice, Buffalo; public relations, Mrs. William B. Merrill, Parish; recruitment: health careers, Mrs. James Alexander Moore, Albany; revisions and resolutions, Mrs. Ernest E. Santemma, Hempstead; safety, Mrs. Peter Corsones, Kingston; and voluntary medical care plans, Mrs. Robert Kemp, Gloversville.

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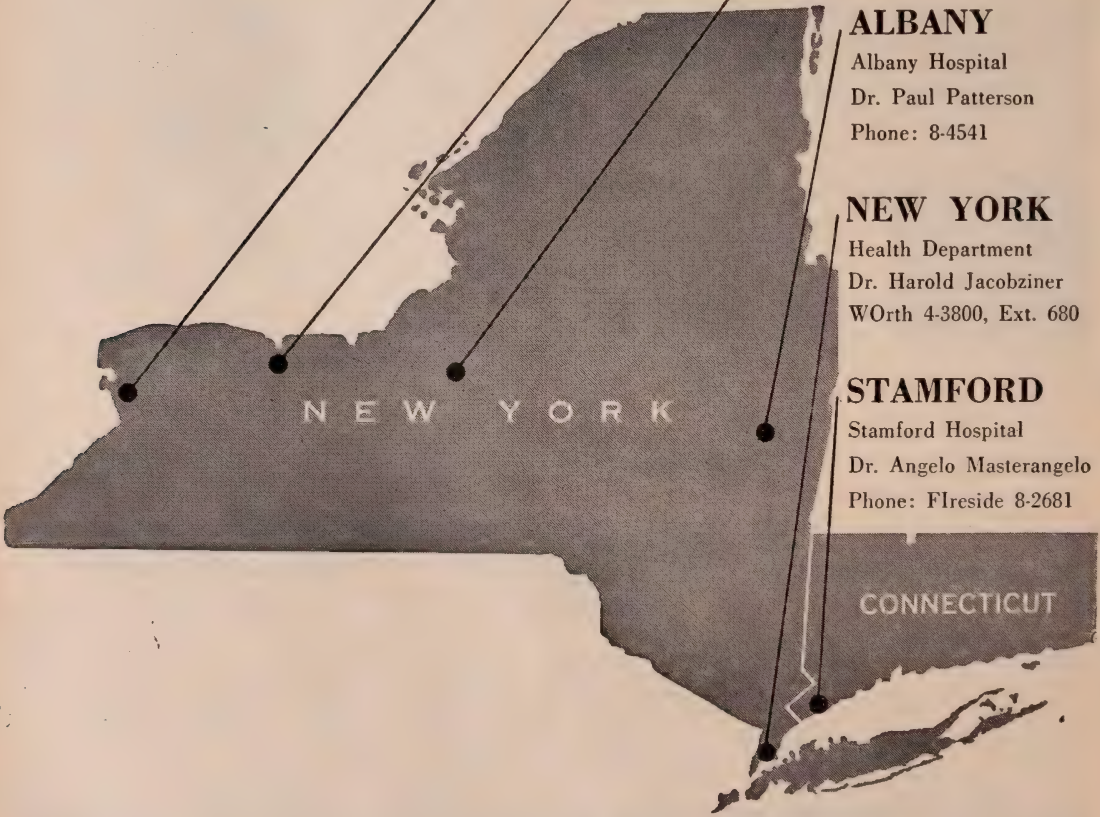

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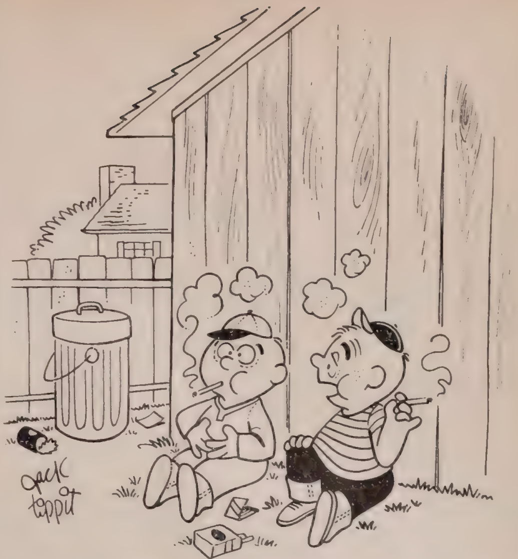

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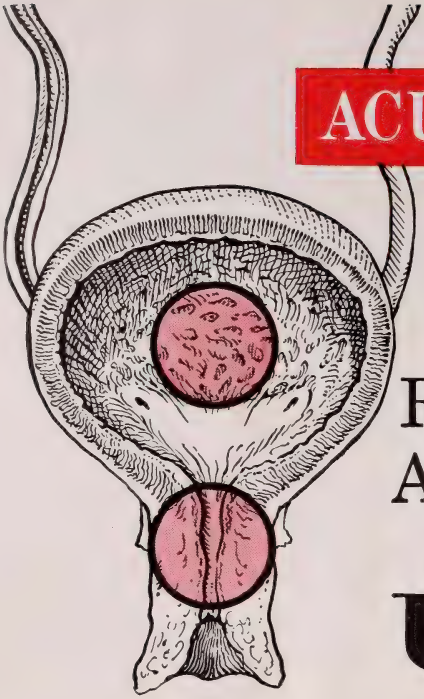

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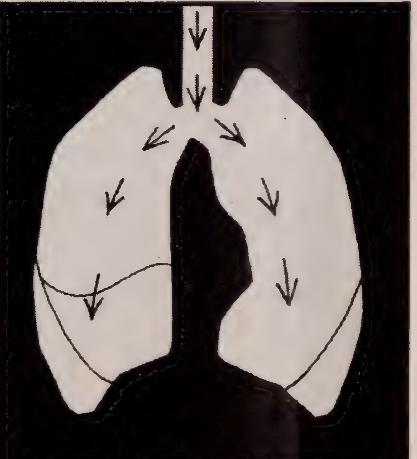

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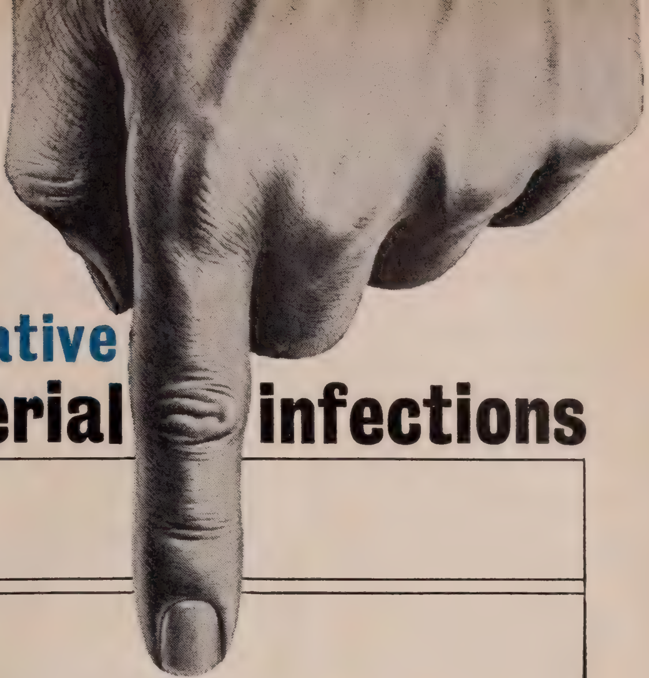

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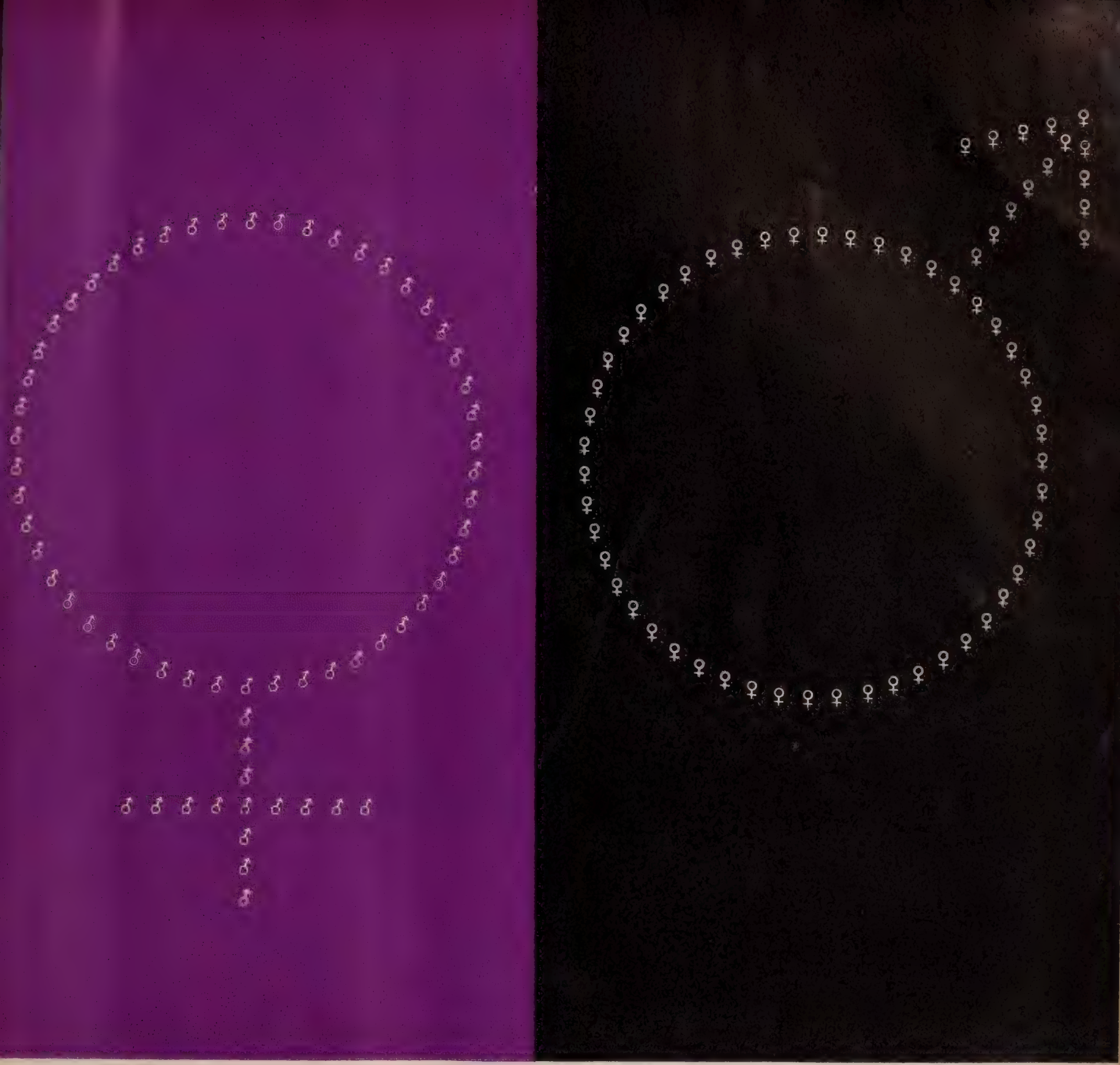

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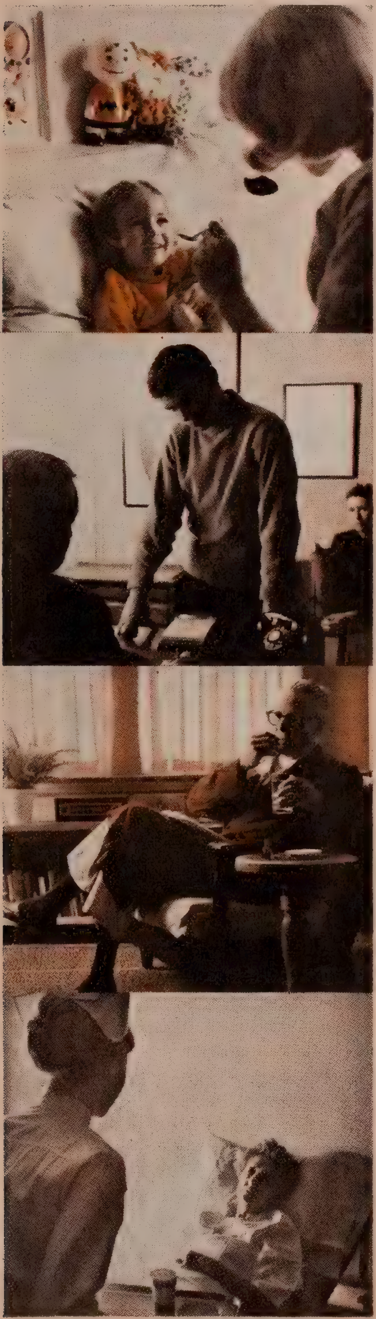

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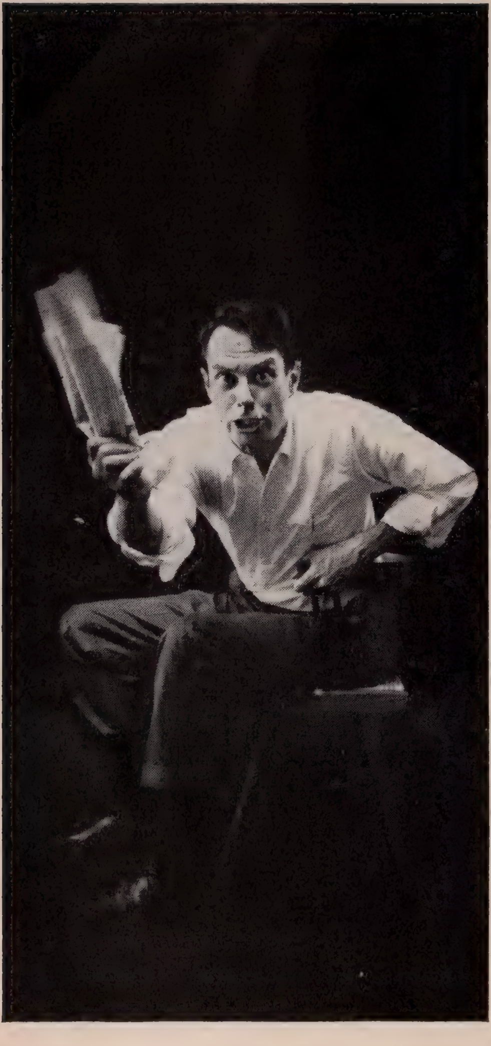

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that is an antihistamine
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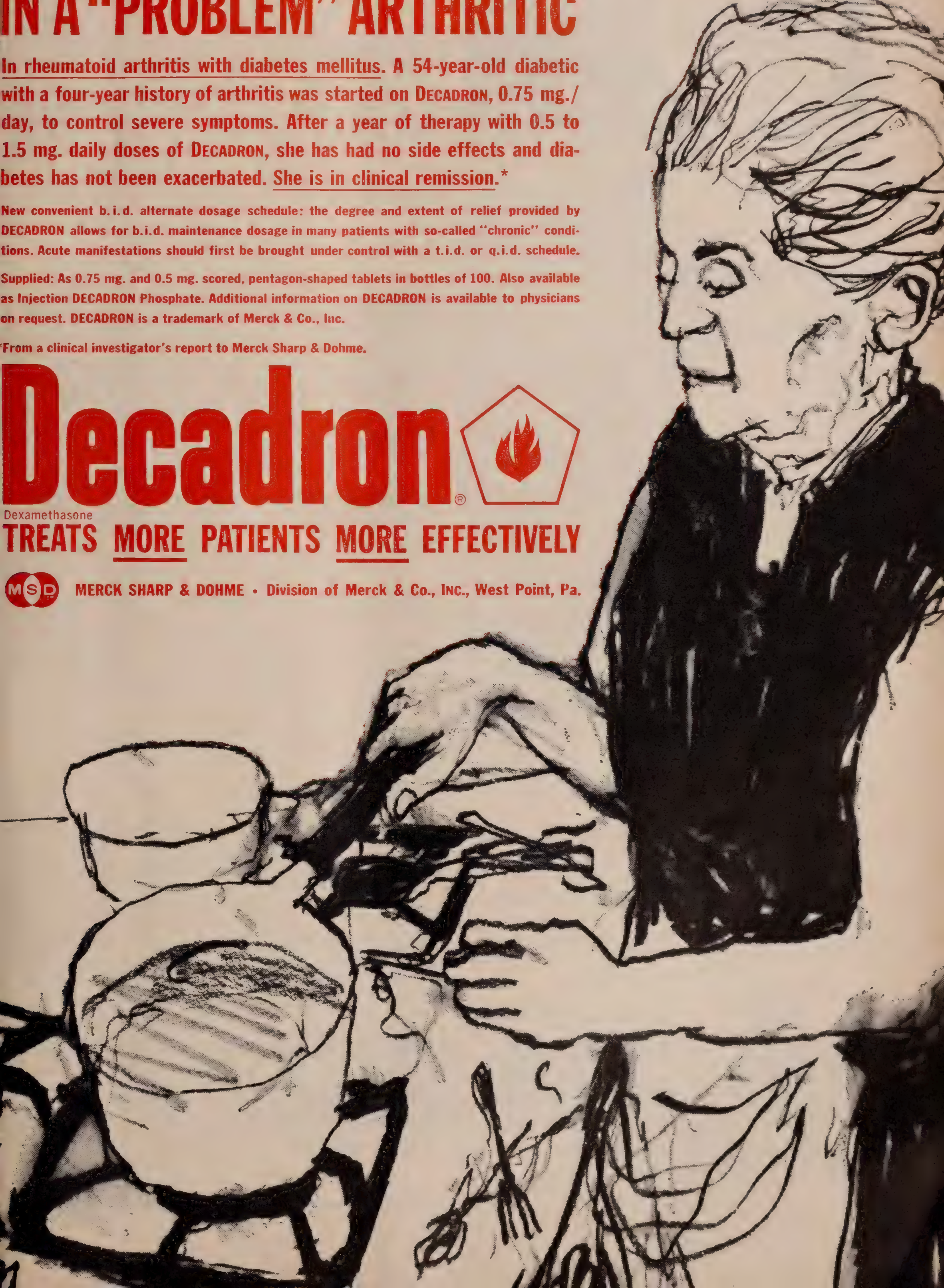

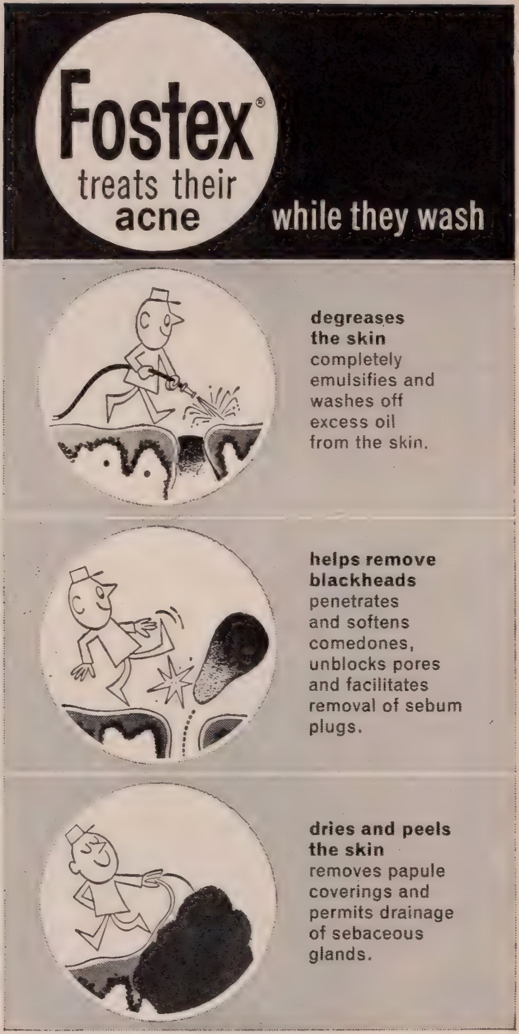

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while they wash

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completely emulsifies and washes off excess oil from the skin.

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Patients like Fostex because it is so easy to use. They simply wash acne skin 2 to 4 times a day with Fostex Cream or Fostex Cake, instead of using soap.

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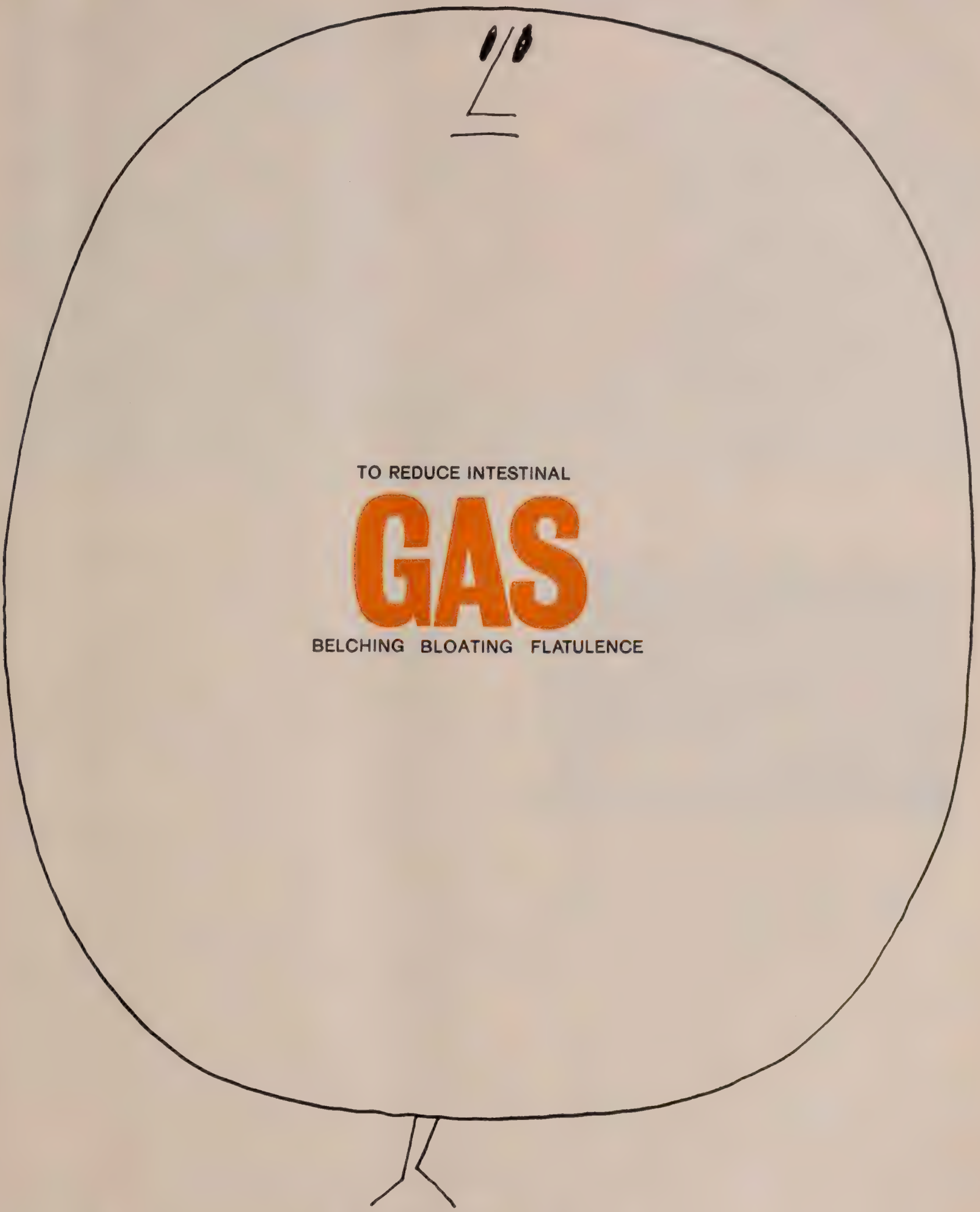
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3

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1. Jones, E. H.: Eye, Ear, Nose & Throat Month. 38:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists 4:2, 1955.

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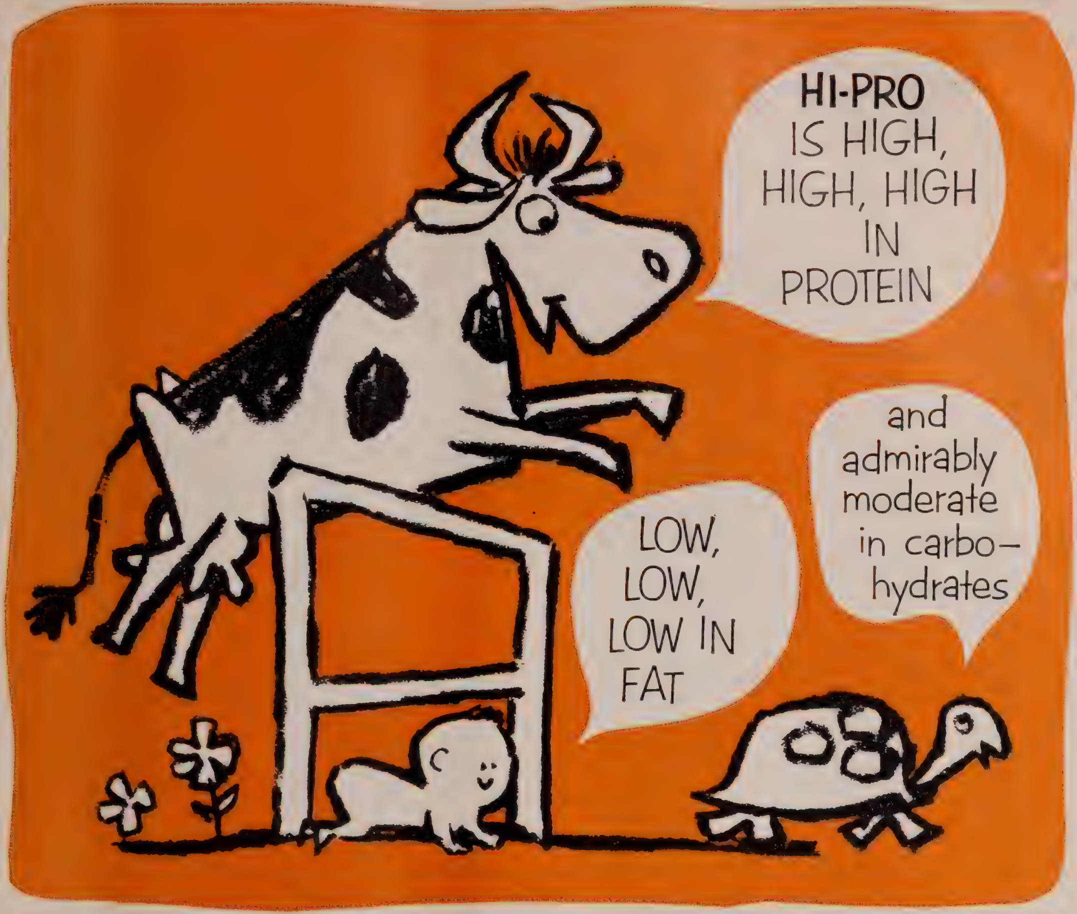
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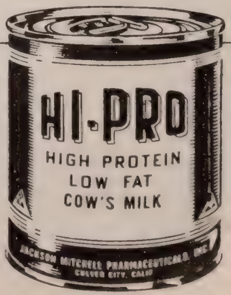
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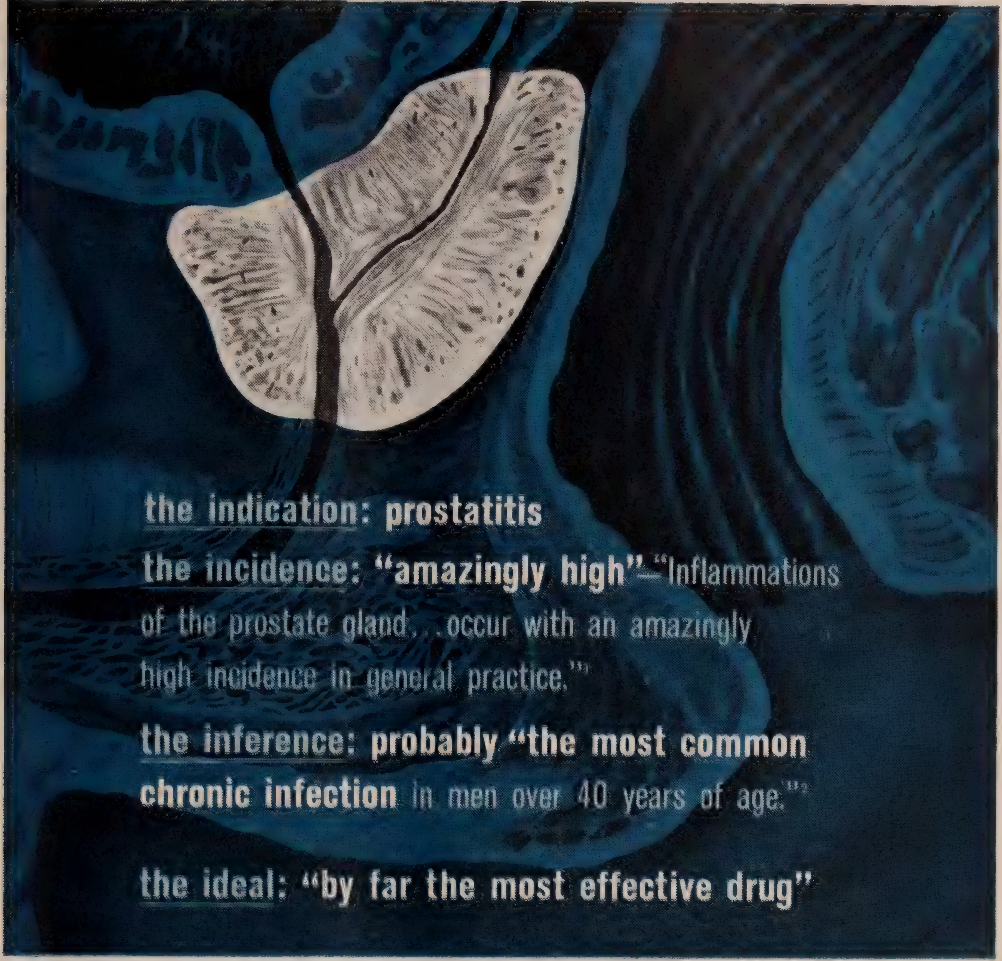
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References: 1. Campbell, M. F.: Principles of Urology, Philadelphia, W. B. Saunders Co., 1957. 2. Farman, F., and McDonald, D. F.: Brit. J. Urol. **31**:176, 1959. 3. Sanjurjo, L. A.: Med. Clin. N. America **43**:1601, 1959.

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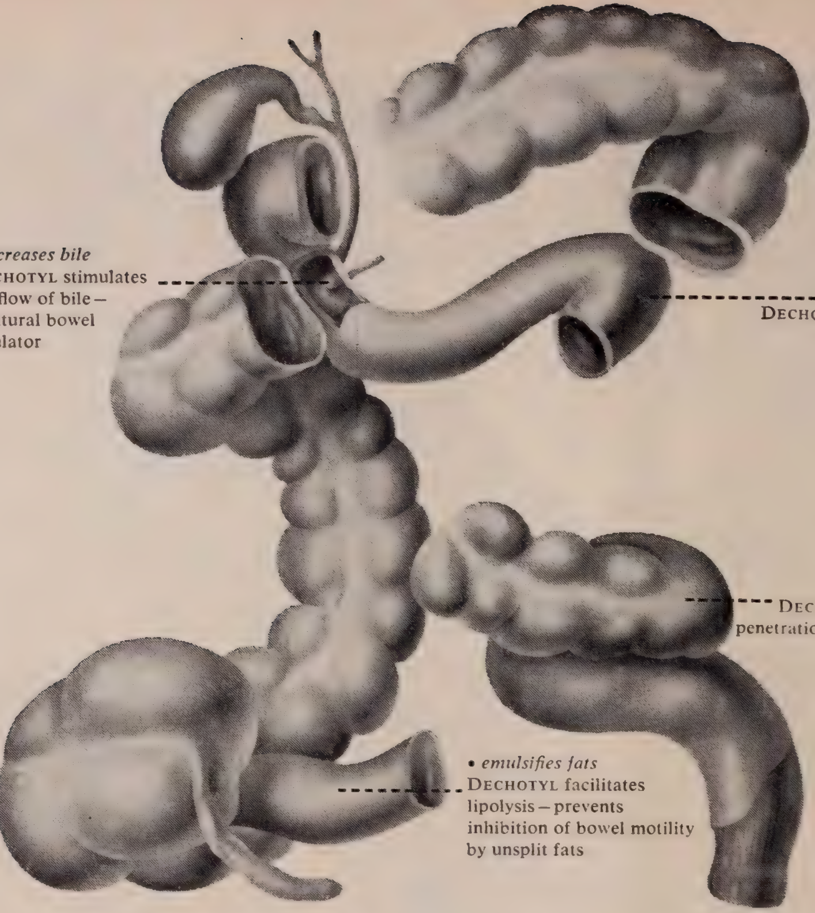

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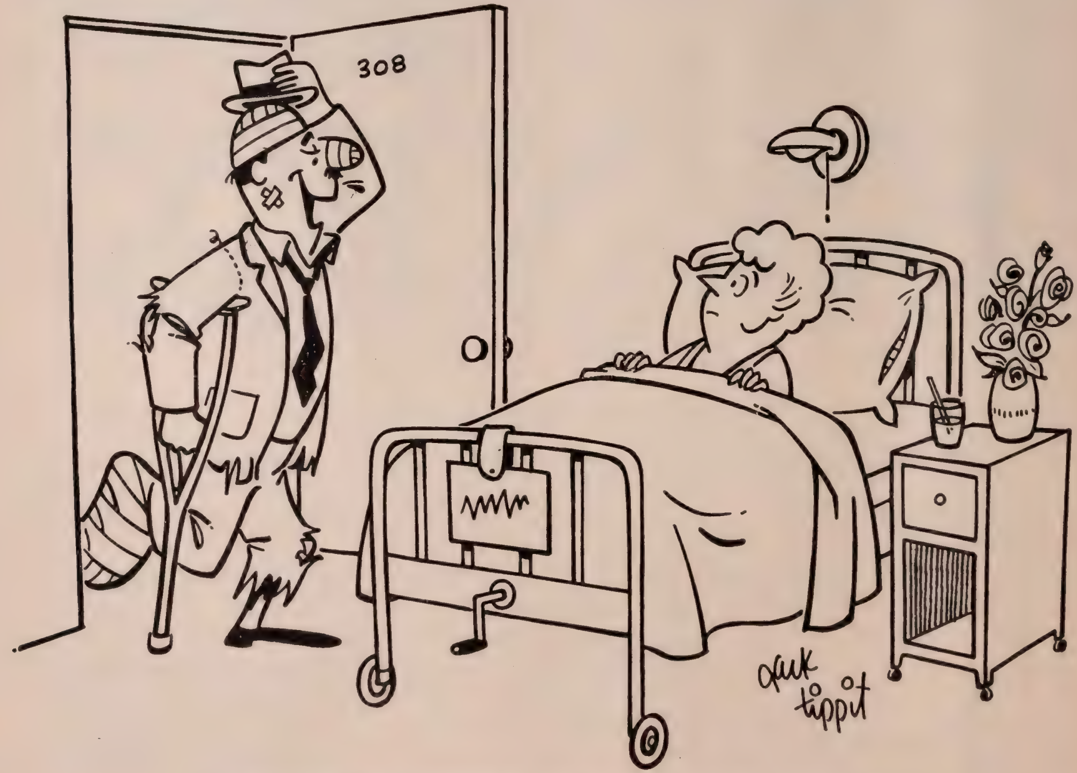

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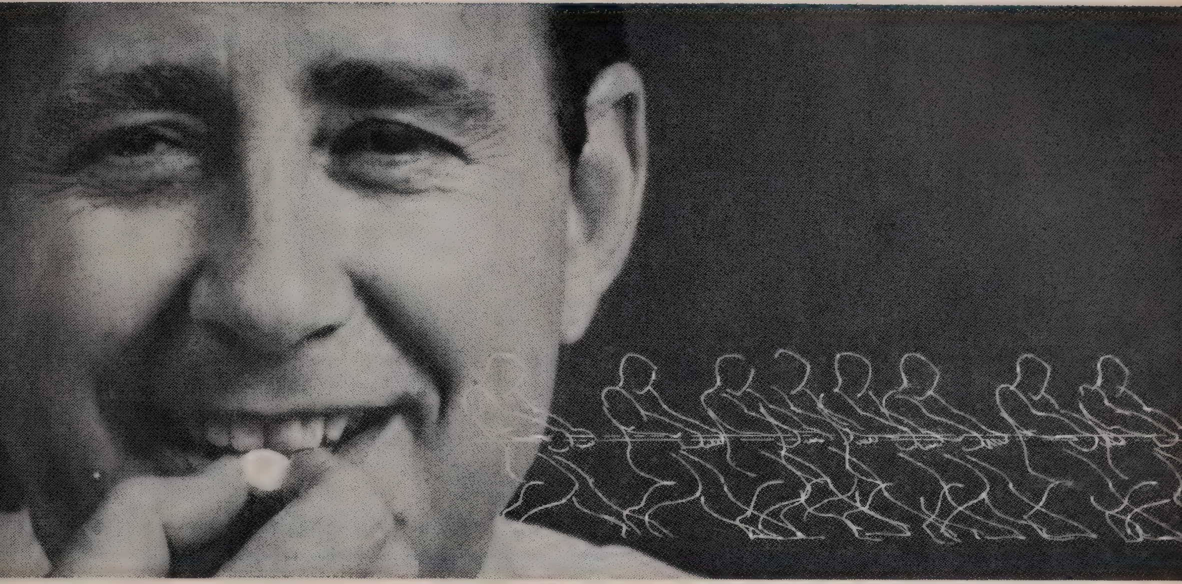

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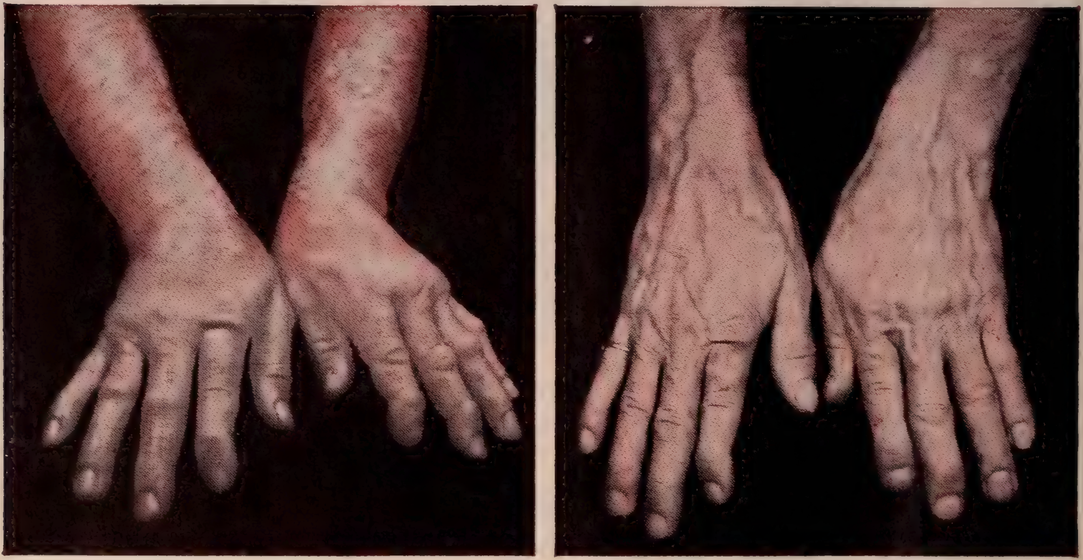

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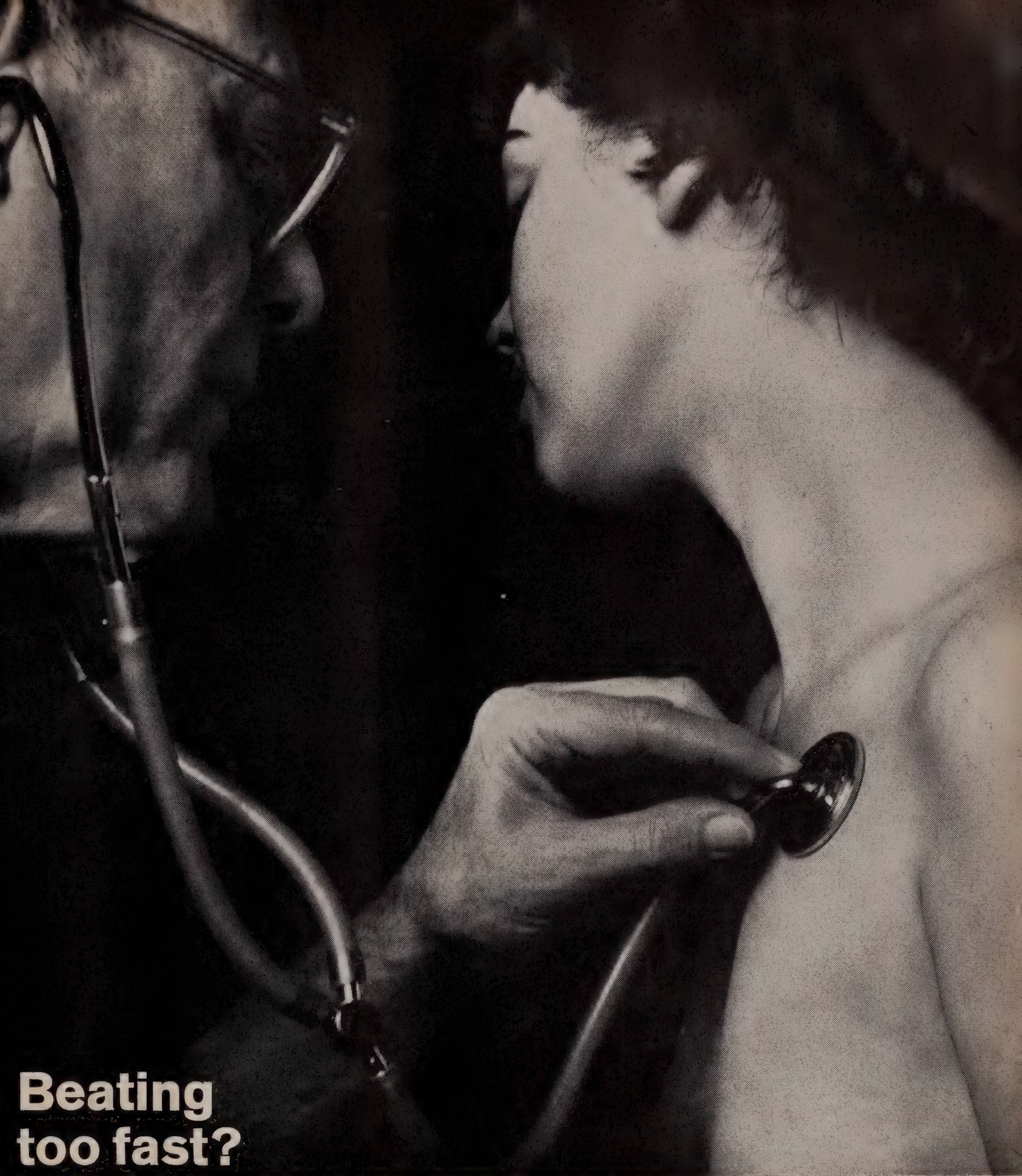

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1. Goddard, E.S.: in *Trifluoperazine, Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959.

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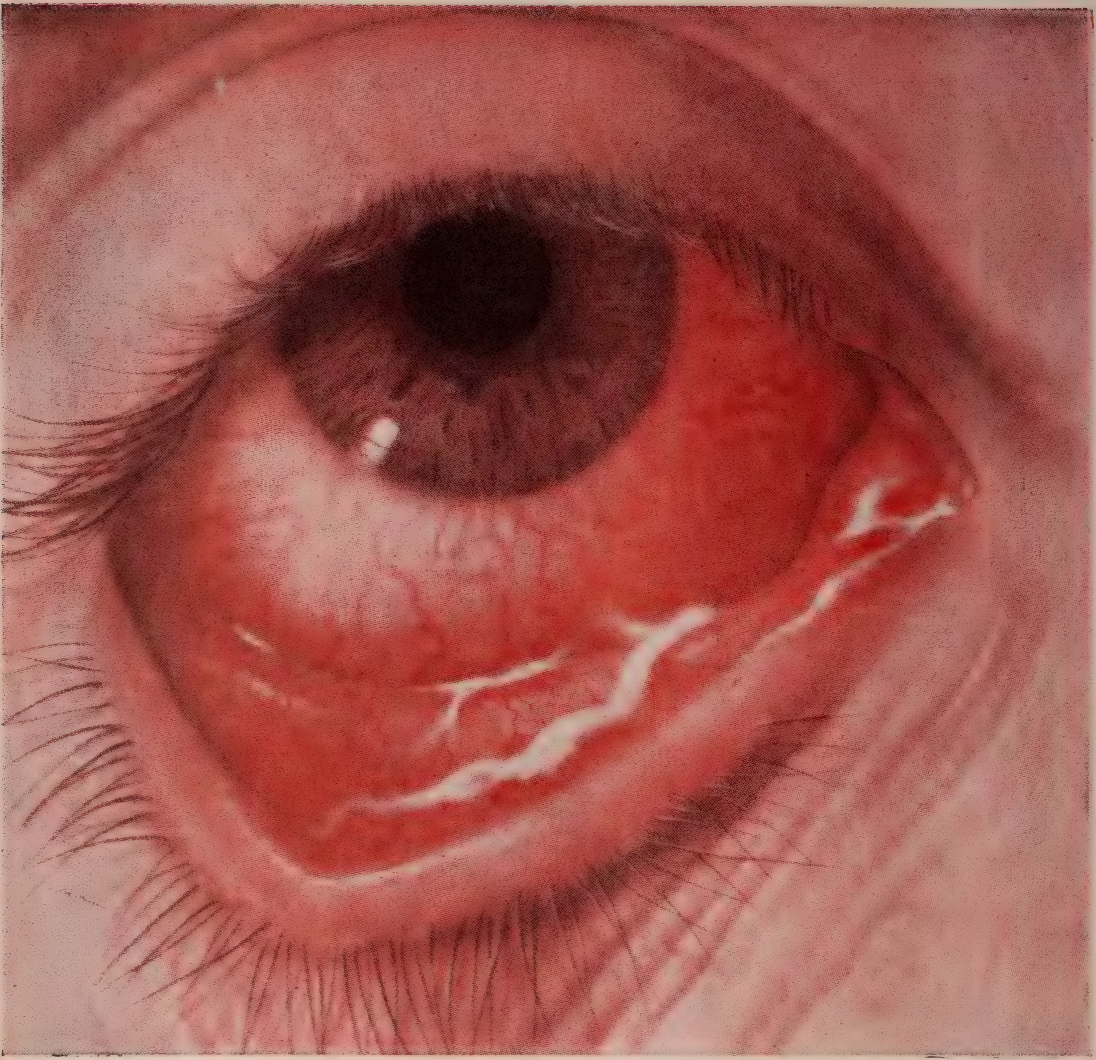

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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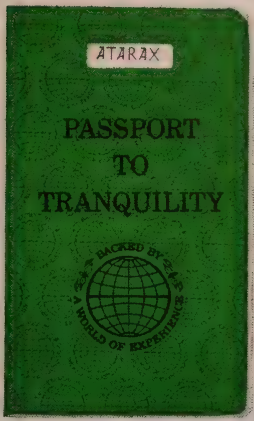

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IN HYPEREMOTIVE ADULTS does not impair mental acuity	"...especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

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A Notable Anniversary

This month marks the twenty-fifth anniversary of a social movement which has been of incomparable importance to medicine, business, and industry—and above all to human understanding and well-being.

The movement, started in 1935 and now known to all as Alcoholics Anonymous, was built out of the depths of despair by two men, one a stockbroker, the other a surgeon. These two men who fought and conquered their own alcoholism through mutual support foresaw that they could best maintain their own sobriety by sharing their experience. It was the old oriental method of "each one teach one," and it has worked so well that now there are over 250,000 members in 80 countries.

The movement does not evangelize and works only with those who voluntarily place their problem in the hands of AA. A wise leadership has avoided fund raising and association with other causes and so has left itself free to concentrate on the all important individual personal situation.

We regret to say that the medical profession up to now has shown little initiative in dealing with alcoholism. Many of our community hospitals refuse to accept the acute alcoholic patient for treatment; even our public hospitals are reluctant to admit them. While government is beginning to realize its responsibility in setting up the psychosocial facilities necessary to deal with alcoholism, the appropriations have been pitifully small and the plans often unrealistic.

By implementing the recommendations of the American Medical Association's Council on Mental Health and those of the Medical Society of the State of New York's Subcommittee on Addiction to Alcohol and Narcotics, physicians can demonstrate their willingness to cooperate in the therapy of alcoholism. AA has pointed the way by removing the social stigma of the condition and by forging a new instrument of social action, one based on the kinship of common suffering.

With becoming modesty, the surviving cofounder has expressed the philosophy of Alcoholics Anonymous in these words: "The AA's are fortunate indeed to have been blessed with the gift of sobriety. But we must always remember that sobriety is not an end in itself. It is only a beginning of a way of life that seems miraculous to us as exalcoholics but which we know is a normal and regular one for the vast majority of men and women.

"It is what we do with our ever-new sobriety today and tomorrow, how effectively we share it with others, how productively we use it in daily living that really counts. If we are to believe those who tell us that in the United States alone there are between four and five million people for whom alcohol is still a problem, as it once was for us, the measure of our responsibility to share our gift comes sharply into focus. It is probable that we will never be able to help solve more than a fraction of the total problem of alcoholism. But perhaps through our own example and experience we can be the catalysts reminding our friends of medicine, psychiatry, public welfare, and the clergy that there is at least one workable approach to the problem—and that others superior to ours may one day appear."

To Alcoholics Anonymous we give our heartfelt congratulations on this twenty-fifth anniversary and sincere best wishes for a long and increasingly useful life. We propose that a third "A" be added to your name—an A for Achievement.

Fundamentals of Modern Allergy

Readers of the JOURNAL will no doubt recall the highly informative series on allergy under the title, "Fundamentals of Modern Allergy," which first appeared in these pages. We, as editors, were particularly proud to present this excellent series to you. Planned as a limited group of articles, because of favorable reception it grew and broadened into a series which appeared for a period of three years in the JOURNAL, and now the series has been re-edited, expanded, and collected into a book under the same title.*

What was particularly interesting about the series was that this was a cooperative venture of the membership of our own New York Allergy Society. It was initiated by one of its officers in an attempt to disseminate information on various aspects of allergy by utilizing the best talent available within the Society. It was felt that allergy, a young and expanding specialty, needed clarification, since in many medical schools, even at this date, there is no formal instruction in this specialty and yet allergic diseases are frequently encountered in practice.

We are happy to have afforded space to this worthwhile project, and now that it has appeared in book form, we salute it and hope that its educational goals will have been achieved. Perhaps this may serve as an example for other of our local societies to emulate. These projects take a great deal of effort and energy and one must be ready to hurdle obstacles and overcome frustrations. But in the long run the final product, as in this case, is worth it.

---

* Prigal, S. J., Ed.: Fundamentals of Modern Allergy, New York, Blakiston Division, McGraw-Hill Book Company, 1960.

Family Physicians for Physicians

It seems to be only a matter of common sense that physicians have their own personal and family doctors. Far too often members of the medical profession take themselves on as patients, forgetful of the old saw concerning an allied profession that "The lawyer who tries his own case has a fool for a client."

The custom is as old as Hippocrates for one physician to treat another without fee. But this practice in modern times may have something to do with a doctor neglecting his own health or even that of his family because he feels a little embarrassed to incur an obligation which he may not have the opportunity to return, as, for instance, in the case of a specialist.

The House of Delegates of the Medical Society of the State of New York meeting this year took cognizance of certain developments in the socioeconomic field of medicine. It adopted the following paragraph of the report of the Reference Committee on Reports of the Commission on Medical Services—B.

"The Council Committee (on Hospital and Professional Relations) urges in its report that each physician have his own personal physician and further encourages the members of the Society to carry Blue Shield and Blue Cross insurance or its equivalent for members and their families to avoid the embarrassment of 'gifts' to colleagues performing services for them. Your Reference Committee heartily endorses this recommendation and suggests that it might be the subject of editorials in the JOURNAL."

In compliance with this suggestion of the Reference Committee the editors of the JOURNAL are pleased to urge all of the membership of the Medical Society of the State of New York to implement as soon as possible this excellent recommendation.

Comment on Battistella v. Society of New York Hospital

In a recent case the Appellate Division of the Supreme Court, First Department, held that the failure to report a lesion on a routine survey x-ray of the chest was not negligence in and of itself. In this case the plaintiff had undergone a physical examination in connection with his application for employment at the defendant hospital. The physical included an x-ray of the chest. The survey type x-ray film ($3^1/_2$ by $4^1/_2$ inches) was read by two radiologists employed by the defendant and reported as negative.

The plaintiff was employed and his work involved the servicing of the hospital's air-conditioning equipment. Some six months later the plaintiff had episodes of coughing up blood. He was x-rayed by a physician at the hospital and the x-ray film ($16^1/_2$ by $13^1/_2$ inches) revealed a lesion.

The same physician then reviewed the survey film taken six months earlier and concluded that the lesion was present on the earlier film but was "missed." A number of other doctors who treated the plaintiff subsequently also indicated in writing that the lesion was "missed" or "not reported" on the survey film. It was the plaintiff's contention that the failure to read properly the original x-ray aggravated his condition and deprived him of medical treatment for six months, resulting ultimately in a year and a half confinement for tuberculosis.

The plaintiff's expert witness testified that there was a lesion on the survey film and that it was a positive film. However, on cross-examination he admitted that among competent and qualified radiologists there could be a margin of error as high as 20 per cent in the reading of small x-ray films as positive or negative. He also admitted that he had the benefit of seeing the lesion on the larger film before he examined the survey film. One of the defendant's experts testified that he had been shown the survey film first and read it as negative but after he saw the larger film, he changed his mind and said that the first film was positive.

The Court finding that there was no evidence of negligence stated in part as follows:

> "Most importantly, while plaintiff's expert testified that the tubercular lesion referring to the small survey photograph was 'there to be seen,' he never testified that in his opinion a qualified radiologist acting competently must have discovered it.
>
> "Of a physician it is required that he exercise reasonable care measured by the skill and knowledge commonly possessed by the members of the medical profession in good standing in the locality where he practices (Pike *v.* Honsinger, 155 N.Y. 201, 209; Prosser, op. cit., pp. 132, 133). The standard allows for errors of judgment reasonably to be expected in context (Pike *v.* Honsinger, supra, at 210; Stone *v.* Goodman, 241 App. Div. 290, 295). Hence, the hospital is not liable merely because its physicians 'missed' the tubercular 'spot' in the survey film. It must also be shown that missing the particular tubercular lesion was a negligent act. On this record and the analysis made of it conclusion that there was negligence may not be drawn."

The Court's decision on the question of negligence appears to be sound. Having decided that there was no negligence, the Court did not have to decide whether or not the hospital owed a duty to the plaintiff to discover and disclose his condition to him. Nevertheless the comments of the Court in this regard are provocative:

> "Concededly, the hospital examines its employes primarily for its own benefit. This is something the person examined knows, and hence, although there may be some reliance, it is in some lesser degree than in the case of a regular patient. Thus, whether, as a result of such examination, there is a duty to discover, as well

as to disclose, any medical condition requiring treatment may be difficult to resolve. A similar question would arise in connection with entrance or other physical examinations given by many nonhospital employers, educational institutions, governmental organizations, and others, where it is primarily the purpose of the examiner that is to be served, rather than that of the person examined. Moreover, even where examinations are conducted in such activities as mass tuberculosis surveys, for the benefit of the person examined, it is doubtful that the same grade of skilled technician would be required as in the case of the private consultation at patient's request."—D.J.F.

Staphylococcal Disease Reportable

Cases of staphylococcal disease and suppurative disease occurring in hospitals in Upstate New York have become reportable July 1, 1960, under a new amendment to the New York Sanitary Code, Herman E. Hilleboe, M.D., State Health Commissioner, said recently.

Joint letters from the Medical Society of the State of New York and the State Health Department have been sent to all physicians informing them of the action of the New York State Public Health Council. The Council makes regulations of the Sanitary Code. These are subject to the approval of the State Health Commissioner. The letter to physicians was signed by Norman S. Moore, M.D., president of the Medical Society of the State of New York, and Dr. Hilleboe.

The purpose of the amendment is to make immediately available to hospitals through prompt reporting the full scientific, epidemiologic, and laboratory facilities of the State Health Department and local health departments in combating staphylococcal disease.

The joint letter explains: "There is strong evidence that most, if not all hospitals, face potential outbreaks of antibiotic-resistant infections. One of the most commonly encountered problems is that due to staphylococcus."

In the letter to physicians, Dr. Hilleboe and Dr. Moore point out that "The evidence is clear that infected persons, either patients or personnel, are the primary sources of infection. The majority of the strains of Staphylococcus aureus isolated from hospitalized patients are resistant to penicillin and increasing numbers are unaffected by the other antibiotics."

The New York State Department of Health has worked closely with the Medical Society of the State of New York, the Hospital Association of New York State, the Greater New York Hospital Association, and the New York State Department of Social Welfare on the problem of staphylococcal infections and suppurative disease in hospitals, and these organizations fully endorse the new requirement of the State Sanitary Code, the letter explains.

We urge prompt and full cooperation of our physician readers with the provisions of the code.

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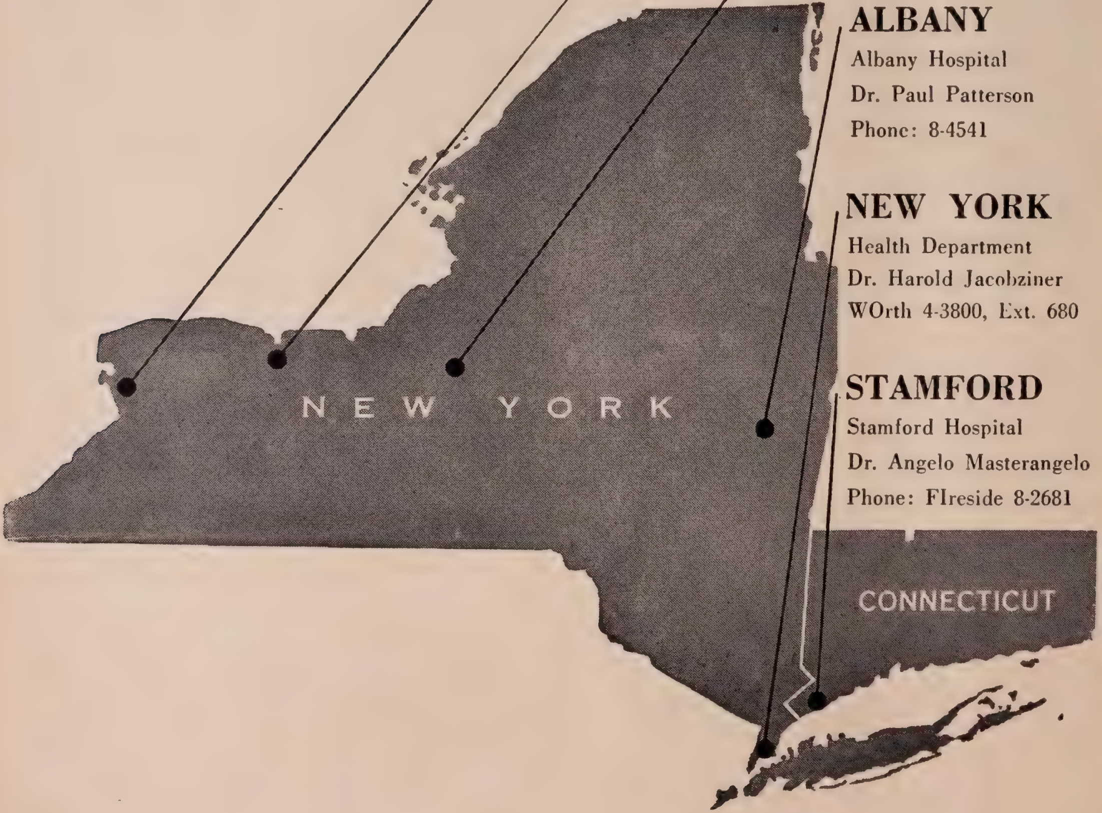

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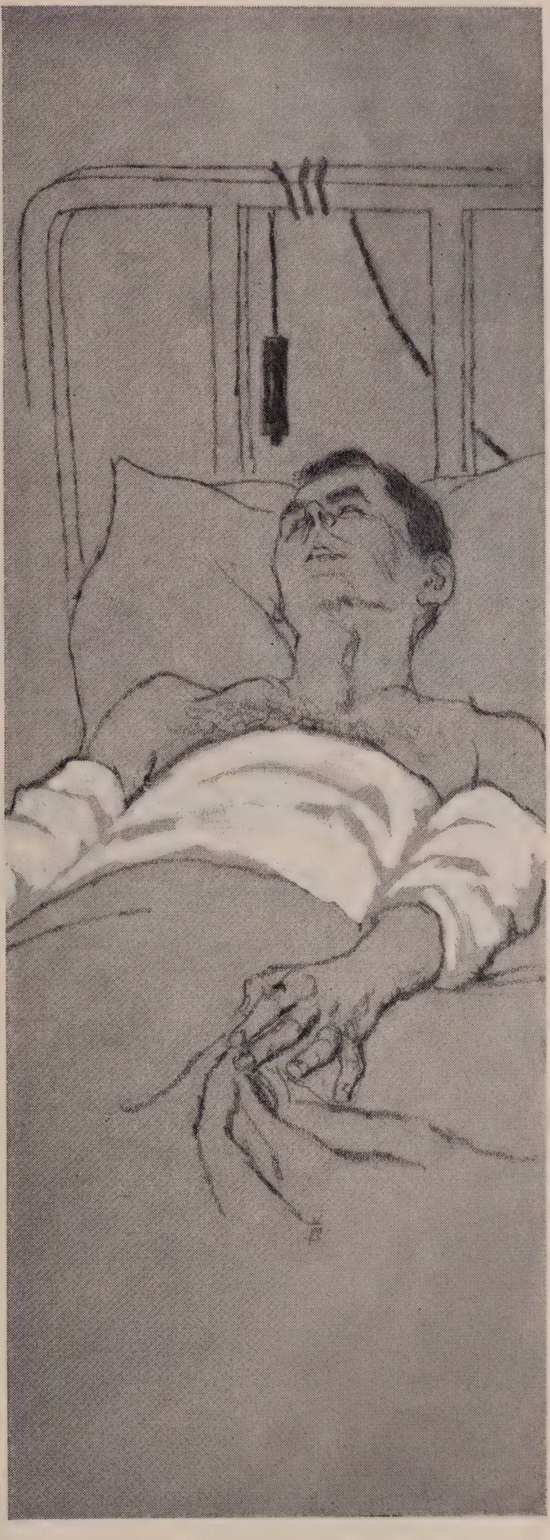

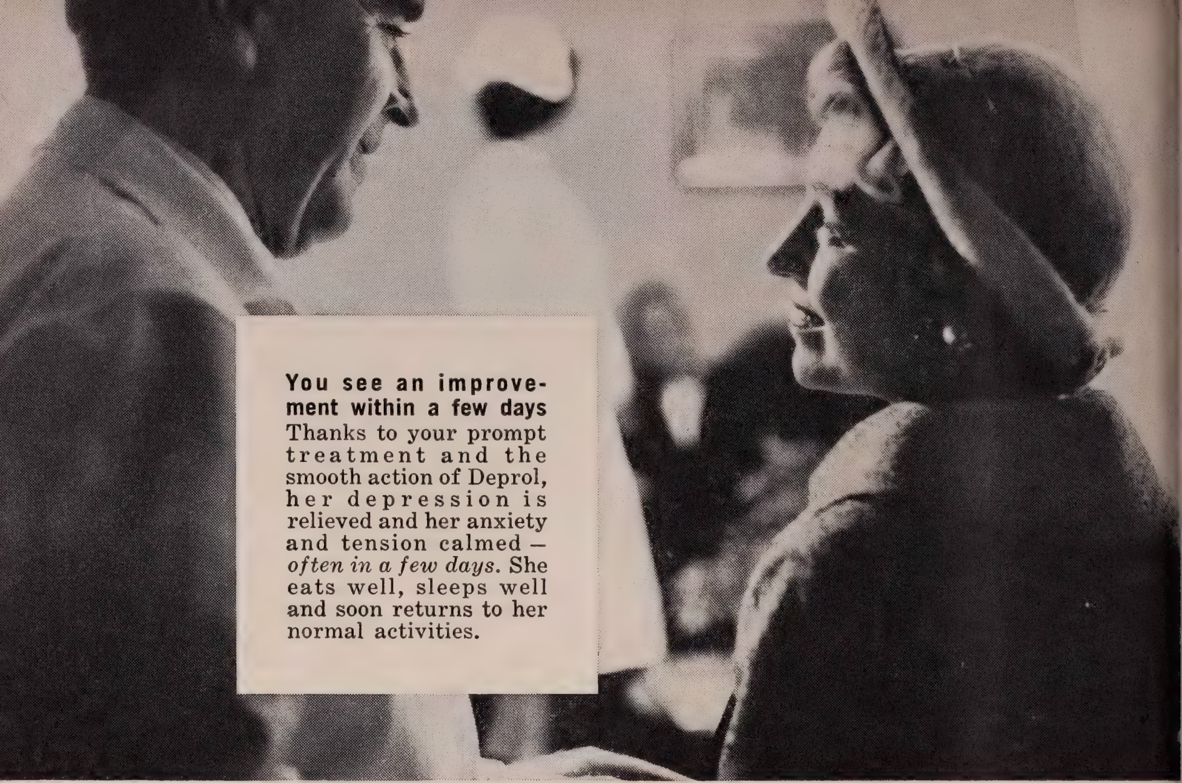

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Panel Discussion

PRESENT CONCEPTS IN INFECTIOUS DISEASE WITH EMPHASIS ON THE ROLE OF ANTIBIOTICS

Moderator

PAUL A. BUNN, M.D., SYRACUSE, *Professor of Medicine, State University of New York Upstate Medical Center*

Panelists

THOMAS M. GOCKE, M.D., ROCHESTER, *Director of Medical Education, St. Mary's Hospital*
PAUL F. WEHRLE, M.D., SYRACUSE, *Associate Professor of Pediatrics and Director of the Virus Laboratory, State University of New York Upstate Medical Center*
DONALD B. LOURIA, M.D., NEW YORK CITY, *Assistant Professor of Medicine, Cornell University Medical College; Director of Infectious Disease Service, Cornell Division, Bellevue Hospital*

Introduction

PAUL A. BUNN, M.D.: In the organization of this panel each member has a different hobby within the general area of infection, and I thought it would be wise for each of us to spend about fifteen minutes talking about our individual hobbies.

Then we have a whole list of questions to ask ourselves; and if those in the audience are not willing to ask us questions, we have enough here to continue the conversation, at least among ourselves, far into the evening.

I think we might begin with Thomas Gocke, M.D. I haven't assigned him a specific title, but knowing his background and knowing his former chiefs, I am sure that he will give us something that is in-

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teresting about bacterial infections and anabacterial treatment in particular.

Antibiotic and Chemotherapeutic Treatment of Bacterial Infections

Thomas M. Gocke, M.D.: Antimicrobial therapy continues to have its primary effectiveness in the treatment of bacterial infections. This does not imply that antibiotics are indicated in the treatment of all fevers, sore throats, diarrheas, or at the suggestion of patients. It does imply that the clinical impression of the existence of a bacterial infection should be confirmed by pretreatment bacteriologic cultures on hospitalized patients and by gram-stain examinations of sputum or urine on patients seen in the doctor's office.

In the past twenty years the use of these antimicrobial agents has actually increased the use and the need for high quality bacteriologic studies. Each community hospital must provide the same fine caliber of analysis in the bacteriology laboratory as has evolved in the other clinical pathology laboratories. Indeed, serious bacterial infections still confront physicians in all fields of medical practice. These infectious disease problems are present in the hospital nursery, on the maternity floor, in the patient convalescing from an operation, and in the chronically ill, frequently readmitted medical case. Although the pathogenic staphylococcus has been a major offender in hospital infections, it has been shown that Escherichia coli, Aerobacter aerogenes, Bacillus proteus, Bacillus pyocyaneus, and enterococci caused more deaths due to bacteremia, pneumonia, meningitis, and empyema in 1957 than they did in 1935.[1]

A brief survey outlining the major values of antibiotics and chemotherapeutic agents in the treatment of bacterial infections, therefore, is indicated.

Sulfonamides. — Sulfadiazine is a time-honored chemotherapeutic agent. Other sulfonamides have not surpassed its antibacterial effectiveness but have been introduced to reduce toxicity and/or to prolong blood levels. Sulfisoxazole has been used in the treatment of urinary tract infections because of its greater solubility in urine.

Sulfamethoxypyridazine has been introduced as an agent that is well absorbed from the gastrointestinal tract, slowly excreted by the kidney, and provides high blood levels. The breakdown products are relatively soluble in the urine and the dose is quite low.

The sulfonamides have been of particular value in the treatment of the following infections: (1) genitourinary infections due to Escherichia coli, (2) meningococcemia and meningococcal meningitis, and (3) Shigella dysentery. In addition, they have been used to prevent group A beta hemolytic streptococcal infections and to inhibit the spread of meningococcal or Shigella infections among contacts of proved cases.

Penicillin.—In the treatment of pneumococcal, group A streptococcal, gonococcal, and syphilitic infections penicillin continues to be the agent of choice. In general, the form of penicillin to be used varies with the severity of the infection being treated. Aqueous crystalline potassium penicillin G given intramuscularly provides high blood level peaks over a relatively short period of time. This preparation is particularly valuable in the treatment of deep-seated infections such as bacterial endocarditis, meningitis, and osteomyelitis caused by penicillin-susceptible organisms. The amount of penicillin that can be given is limited, in a sense, only by the ingenuity of the physician and the tolerance of the patient. Some physicians[2] feel that serious staphylococcal infections caused by penicillin-resistant strains should still be treated with massive doses of this agent, 40 to 80 million units by intravenous injection daily. All agree, however, that other effective antibiotics should also be incorporated into such therapy.

The longer-acting penicillin preparations, procaine penicillin G and benzathine penicillin G, have provided the usual form of penicillin therapy in the types of bacterial and spirochetal infections mentioned previously. The use of oral penicillin has been augmented by the introduction of penicillin V (phenoxymethyl penicillin). Although it provides higher and more prolonged blood levels than oral penicillin G[3] there is no evidence that it provides better results in the treatment of group A streptococcal infections or pneumococcal pneumonias.

Reimann[4] states the incidence of hypersensitivity to penicillin is now 10 per cent. This figure seems unduly high, but it should make one pause before using penicillin. For example, Badger *et al.*[5] have reported a study of yearly disease rates and types in 60 families in Cleveland, Ohio. Seven out of 10 illnesses per year were respiratory and 97.5 per cent of these were nonbacterial infections.

The indications for penicillin as a prophylactic agent have been confined rather sharply to the prevention of streptococcal infections in patients having rheumatic heart disease and as a brief prophylaxis following venereal exposures or in the prevention of ophthalmia neonatorum.

STREPTOMYCIN.—The usefulness and limitations of streptomycin therapy have been known for the past ten years. It is a valuable antibiotic in the treatment of tuberculosis, of gram-negative infections still susceptible to streptomycin, and of enterococcal infections, when combined with penicillin. Dihydrostreptomycin sulfate probably should not be used except in patients who exhibit an allergy to streptomycin. The dihydro form may cause permanent deafness that is not manifest until after therapy is stopped, whereas the vestibular toxicity of streptomycin is reversible when it is recognized early.

Caution is urged in the use of packaged combinations of streptomycin, dihydrostreptomycin, and penicillin. Physicians have prescribed these under proprietary names and have not realized the potential then real danger related to the toxicity of one or both of the streptomycins.

TETRACYCLINES.—The term "broad-spectrum antibiotics" was coined to express the effectiveness of these agents against gram-positive and gram-negative bacteria and in the treatment of the "large virus" infections such as psittacosis and trachoma. In general, this is still true, although 60 to 70 per cent of hospital staphylococci are now resistant to the tetracyclines.

Physicians have been encouraged to believe that the many additives to the tetracyclines, such as citric acid, disodium phosphate, lactose, and glucosamine, have enhanced their therapeutic effectiveness. There is no clinical evidence that this is so and the laboratory data are unconvincing.

CHLORAMPHENICOL.—Although in 1952 the United States Food and Drug Administration warned physicians about the possible hazards of chloramphenicol[6] it is now used widely in the treatment of staphylococcal infections, hemophilus influenza meningitis, and in a variety of urinary tract infections. At one time chloramphenicol was reserved for the treatment of typhoid or typhus fever; now it has even been instituted in the prophylactic therapy of postoperative patients. The latter practice is to be condemned.

The limited use of this antibiotic in the recent past has been fortuitous in two respects: (1) Physicians have learned not to use chloramphenicol in a repetitive fashion for the treatment of minor infections because they fear the development of blood dyscrasias, and (2) bacterial infections that are now resistant to other more widely used antibiotics, such as staphylococcal and proteus infections, can still be treated successfully by this antimicrobial agent. A comment should be added about the treatment of serious staphylococcal infections, such as bacteremia, meningitis, and empyema: Chloramphenicol should not be relied on as the sole antibiotic agent but should be used rather in combination with other effective agents.

ERYTHROMYCIN.—A study of naval personnel[7] revealed that erythromycin is as effective as penicillin in eradicating group A streptococci. This provides physicians with another antibiotic when penicillin is contraindicated, by virtue of possible toxicity, in the treatment of streptococcal pharyngitis, tonsillitis, or scarlet fever.

In the treatment of deep-seated infections due to staphylococci and enterococci, erythromycin is most valuable when combined with another effective antibiotic, such as chloramphenicol or Novobiocin. The reason for using combined therapy is to prevent the development of erythromycin-resistant bacteria. In this respect erythromycin is similar to streptomycin; early and marked resistance can develop during therapy.

These fragmentary comments have not covered all the antibiotics in current use nor have they outlined all the uses of the agents discussed. Dr. Louria will comment later on the antimicrobial therapy of severe staphylococcal infections.

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DR. BUNN: I think it would be sensible to ask each of the other panelists if they would mostly agree or disagree with the things that Dr. Gocke has said. Dr. Wehrle, do you have any suggestions or differences or emphases that you'd like to elucidate on these general statements by Dr. Gocke.

PAUL F. WEHRLE, M.D.: I would like to disagree with one point and to emphasize another, if I may. I am concerned about the potential toxicity of fixed drug combinations because of my dealing with children and young infants. Penicillin-streptomycin combinations are especially dangerous since it is easy to forget that a gram of dihydrostreptomycin sulfate is contained in the mixture. Deafness is particularly handicapping if it appears before speech is established.

The points on which I would like to differ with Dr. Gocke a bit are first his strong feeling that penicillin V is definitely superior as an oral penicillin over G. The V form is more stable and it withstands the digestive process, but if one plans the doses simply to avoid mealtimes it is possible to cut the pencillin bill in half for the treatment of an infection that will respond to oral doses.

I would also argue the point that 10 per cent of persons in this population are sensitive to penicillin. This to me seems an unreal figure although since I deal with children I may not be sufficiently aware of the problems in older patients.

DR. BUNN: Dr. Louria, do you have any comments?

DONALD B. LOURIA, M.D.: Well, minor league ones; actually I should like to start with penicillins V and G. I believe that the studies that came out on penicillin V a couple of years ago pointed out the fact that if both penicillin preparations were taken at the same time on an empty stomach, penicillin V still gives higher levels, dose for dose, although it is actually excreted a little faster. It seems to me that if we are talking about prophylaxis it does not matter which preparation is used. On the other hand if we are talking about serious disease, for example endocarditis, due to a highly penicillin-susceptible microorganism, then penicillin V may indeed be better than penicillin G.

I understand that bacitracin is a good

drug for tough staphylococcal infections in children. Heinz Eichenwald, M.D., at The New York Hospital and several other groups have been using bacitracin as the drug of choice now for hospital staphylococcal infections and they are pleased with it. In the dosage they have used, the pediatric dosage, they have not run into significant renal toxicity and it apparently is much better tolerated in children than it is in adults. Is that right?

Dr. Gocke: This has been our experience also, but we have had fewer cases than Dr. Eichenwald has, however.

Dr. Louria: One final point to amplify your point on dihydrostreptomycin sulfate: Over the past few years several groups have reported a fair number of cases of what appeared to be well-documented deafness occurring after the administration of just a few grams of dihydrostreptomycin sulfate. We now do not use this agent because, especially as you pointed out, the deafness may come on late and be progressive and irreversible. Is it not true that "combiotic" now means dihydrostreptomycin sulfate almost exclusively?

Dr. Bunn: It always has been because of its pharmacologic properties. Neither streptomycin sulfate nor hydrochloride mixes well with penicillin so that any combination preparation, "combiotic" included, has to be with dihydro only. Dr. Gocke, do you want to rebut here? I do not think we're very far apart in any of the disagreements.

Dr. Gocke: Concerning oral penicillin, I would agree that in the treatment of a streptococcal pharyngitis oral penicillin G is adequate therapy. It has been pointed out that the duration of therapy of streptococcal infection is important. The patients should receive oral penicillin for ten days.

Dr. Bunn: In our series 98 per cent recovered satisfactorily. This was reported in 1945 (J.A.M.A. **129:** 320 [Sept. 29] 1945; *ibid.* **144**: 1540 [Dec. 30] 1950).

Dr. Gocke: How large was the dose?

Dr. Bunn: We used 500,000 units two or three times daily, avoiding meals with each dose. More recently we reported that, in our opinion, 400,000 units of penicillin V are equivalent to 500,000 units of penicillin G, a 4 to 5 ratio (J. Lab. & Clin. Med. **48:** 392 [Sept.] 1956). Penicillin G given by mouth is very dependable if you take into account the effect of food on its absorption.

Dr. Gocke: Would you feel it's dependable enough to treat staphylococcal infections with penicillin G orally?

Dr. Bunn: No, I don't think so and in this I agree with Dr. Louria. It's impractical to use that much to achieve a dependable result. With superficial infections such as sore throat or cellulitis in which the intimacy of the organism-drug relationship is easy to achieve, then I think it makes little difference how you give the penicillin, intramuscularly or orally, or with V or G. On the other hand, when there is a deep-seated infection like peritonitis or in the heart valve and it's necessary to get very much higher blood levels to accomplish the same end, it is impractical to use either preparation by mouth, although conceivably it could be done.

I might add that one of these days we will have a new oral penicillin preparation which will exceed in efficacy of absorption both penicillin V and penicillin G. It is synthetic and there will be half a dozen similar products available soon. I think that the arguments about V versus G are rather academic anyway.

Dr. Gocke: Dr. Bunn, could I ask you a question? There was a report* that a penicillanic acid had been developed which could become a precursor to a penicillin that would be effective against gram-negative rods or a penicillin that would be effective against staphylococci. What is this development?

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* Batchelor, F. R., Doyle, F. P., Nayler, J. H. C., and Rolinson, G. N.: Synthesis of penicillin: 6-aminopenicillanic acid in penicillin fermentations, Nature **183:** 257 (Jan. 24) 1959.

Dr. Bunn: Actually these developments are what I was just talking about. As a matter of fact, it's quite exciting. They have a penicillin preparation, not yet available for human consumption, which because of its properties is capable of bypassing penicillinase activity and will be active in the presence of penicillinase. The reason staphylococci, for example, are resistant to penicillin is because of the production of penicillinase, and this new preparation will work in the presence of high concentrations of penicillinase. It's not quite ready for human use yet, but one can look forward with joy to it, I am sure.

The other thing is that some gram-negative organisms are quite susceptible to penicillin if we think in terms of high levels, 12 units or so. In England workers have developed certain of these penicillinanic acid derivatives which are exceedingly active against gram-negative rods. Once again these are not yet ready for human consumption. That probably will take two or three more years.

Now about some of Dr. Gocke's original comments, I would like to make just one statement about kanamycin sulfate and bacitracin. I am somewhat prejudiced I suppose because we have had so much experience with kanamycin sulfate, but in staphylococcal disease of serious proportion we have used kanamycin sulfate with gratifying success. It is exceedingly toxic, to be true. It produces deafness much more quickly and just as permanently as streptomycin will, but it is still a fine agent if one uses it for restricted periods of time. It is our drug of choice to get a serious penicillin-resistant staphylococcal infection over the hump and then we shift back to some safer agents.

I think your experience, Dr. Wehrle, with kanamycin sulfate has been about the same, hasn't it, in pediatrics?

Dr. Wehrle: It has been a perfectly acceptable drug for certain resistant infections.

Dr. Bunn: I think it's safer than bacitracin. There's one other thing about tetracycline that I would like to comment about also. As far as I'm concerned all the preparations that the Pfizer, Lederle, Bristol, Upjohn, and Squibb people have put on the market are essentially the same as far as therapeutic efficacy is concerned. They all cost exactly the same, and no one is good enough to alter the dosage schedule which was described for the first preparation. I really believe that it makes no difference which tetracycline preparation you use.

Dr. Wehrle is next and he will discuss viral infections. Human beings truly harbor an amazing number of viral agents and this new field is both big and exciting.

Viral Infections

Paul F. Wehrle, M.D.: Virus infections probably represent the largest proportion of the day-to-day kinds of acute illnesses that the average physician is called on to treat.

I thought that before launching into these infections directly it might be interesting to go back and see what has happened to virology during the past ten years or so, since this has been a perfectly fascinating period of development of knowledge concerning the diseases of virus origin.

About ten years ago Enders, Weller, and Robbins demonstrated the fact that viruses would multiply in cultures of various mammalian cells. This discovery opened a Pandora's box for the person interested in virus diseases and it not only made possible rather complex work on some of the agents that were already known but also opened new doors which released countless new agents. These poured out at a rate which made it extremely difficult even for people working in the field to keep up. The discoveries were so rapid that, as a matter of fact, some of the viruses were temporarily called "orphan viruses" since they were discovered before the diseases for which they were responsible were discovered. They had no homes to call their own.

The results of this research I think have been particularly striking in respect to

TABLE I.—SOME VIRUSES ASSOCIATED WITH RESPIRATORY DISEASE

Virus	Types or Groups
Influenza	A, A_1, A_2 B C
Parainfluenza	1, 2, 3
Adenoviruses	18
Coxsackie	A (several—herpangina)
ECHO	8, 10, 20
J.H.	1
2060	1
Coe	1

both respiratory infections and the enteroviruses.

Table I shows some of the things that have happened in the respiratory disease field as well as in the enteric field with the application of this particular technic by many investigators. Here we have some of the various viral agents associated with acute respiratory disease.

The influenza viruses are agents that were isolated primarily in chick embryos; the newer technics are not responsible for their identification. However, I think it is interesting to see that within influenza A three separate families of the A type of influenza virus have been recognized, each of which has been associated with disease. Influenza B has been responsible for epidemic forms of influenza. Influenza C is apparently a mild type of infection that, as yet, has not been encountered in epidemic form to my knowledge. It has appeared as a sporadic infection from time to time and has been recovered from asymptomatic persons.

The parainfluenzal group is a new classification of viruses that appear to be related to influenza. These agents have all been isolated by means of tissue culture technic and were completely unknown just a few years ago. The hemagglutination agents were discovered at the National Institutes of Health. The hemagglutination-2 is classified tentatively as parainfluenza number 1, and the hemagglutination-1 is parainfluenza number 3. The parainfluenza number 2, previously termed the croup-associated virus, is another new virus in this group and has been found associated with croup. Hence the name.

The adenoviruses were viruses originally isolated from presumably normal tonsillar tissue at the National Institutes of Health and were originally referred to as APC agents. At essentially the same time another group of investigators at Walter Reed Army Institute of Research found agents that were isolated from respiratory illness. These two groups of viruses have been classified as adenoviruses.

Specific members of the adenovirus group have been found to be important causes of respiratory diseases in certain specific populations such as among army recruits. However in civilian populations they have been found to be associated consistently with something less than 5 per cent of the respiratory illnesses that have been studied.

Consequently, the use of the adenovirus vaccine in civilian populations is probably not a very effective preventive technic in contrast, of course, to the use of influenza vaccine in the face of an impending outbreak in influenza or the use of adenovirus vaccine in an army recruit population.

The Coxsackie viruses originally isolated by Gilbert J. Dalldorf, M.D., and Miss G. M. Sickles in the New York State Health Department laboratory have become known as two large groups of agents. There are now more than 20 members of group A and 5 members of group B. Some of the Coxsackie A viruses have been associated with one particular type of respiratory illness, so-called herpangina. These also produce nonspecific febrile illnesses and are much more prevalent in the late summer in contrast with the other forms of viruses with respiratory symptomatology.

The clinical picture of herpangina is easily recognizable since the typical feature is small vesicles located on the anterior pillars of the tonsils. These are not the agents that produce large ulcers in the mouth. Usually when the patient is seen these tiny vesicles have already ruptured leaving half a dozen small ulcers along the anterior pillars and perhaps also on the soft palate. There was a significant number of persons with this infection in Syracuse during a recent summer and also some in the Cortland area. I would suspect that probably there has been a great deal of it throughout the State recently.

The chimpanzee coryza agent or respiratory syncytial virus is another agent that has been associated with some respiratory illness in human beings. ECHO (enteric cytopathogenic human orphan)-8, ECHO-10, and ECHO-20 viruses also may be associated with some respiratory illness. Further work is needed to determine the final classifications of at least one of these.

The J.H. virus and the 2060 virus are viruses that are similar in many respects. One of these, the J.H., was isolated at Johns Hopkins by Winston Price, M.D. The 2060 was isolated at Great Lakes Naval Training Center by a group of investigators from Tulane University. There is no accurate indication at the present time of the true role of either of these agents in the causation of specific diseases. This is also true of the Coe virus isolated in California. It seems quite likely that these agents may vary in importance in different areas and in different seasons, may assume a considerable role for one season, and perhaps be replaced by one for another season. Perhaps there are many viruses yet to be discovered which may outnumber these in terms of the numbers of respiratory illnesses they cause. The vaccines which are currently available for influenza and adenovirus infections are of limited usefulness in the prevention of the common respiratory illnesses. Influenza vaccine is useful for only specified periods of time when influenza is prevalent, while adenovirus vaccine is best used in such groups as military recruit populations.

The ECHO virus group of enteroviruses is one of the groups that is a direct outgrowth of the development of tissue culture virus technics. Three of these, ECHO-4, ECHO-6, and ECHO-9, have produced epidemic episodes of aseptic meningitis. Both ECHO-6 and ECHO-9 viruses have been responsible for outbreaks of aseptic meningitis in Syracuse. Among the cases associated with ECHO virus that have been studied, muscle weakness has occurred frequently enough so that one should be cautious about muscle evaluation. A graded series of exercises and skillful rehabilitation is desirable for those who are symptomatic and have muscle weakness.

Sporadic episodes of viral meningitis have occurred with ECHO types 2, 3, 5, 7, and 14. A number of these viruses have been associated with diarrhea in infants and in children. It is interesting to see that the diarrheas that have been associated with the ECHO agents have appeared to be milder than bacillary dysentery, salmonella infections, and also the pathogenic types of Escherichia coli. ECHO-9 and ECHO-16 have been associated with an exanthem that has been confused on occasion, at least in our area, with rubella. During our ECHO-9 outbreak last year, we had more cases of rubella reported during the summer than ever before in Syracuse. I think that to confuse the two is very easy inasmuch as the central nervous system symptomatology of the Echo-9 infection may be exceedingly mild, and one is left with a rash that may look like rubella.

Dr. Bunn: Dr. Louria has had some experience with the influenza virus and I would encourage you to read his paper, in three parts, in the January, 1959, issue of the *Journal of Clinical Investigation* (**38**: 199), which I think is probably one of the best reviews of an epidemic of viral disease that we have in our American literature.

I might add just one comment about viral disease. Dr. J. A. Diehl at the University of Minnesota made a careful study on the treatment of respiratory disease in 1938. He made an observation which I think still obtains, that one can reduce the disease pattern, and probably the incidence of any nonbacterial respiratory disease, by

50 per cent with the oral and/or parenteral administration of a placebo. Dr. Gocke, do you have any comments?

Dr. Gocke: I have only a few comments. I would be interested in Dr. Wehrle's opinion about two things. Is primary typical pneumonia a virus infection or a group of viral infections? I would like also to know whether he would use antibiotics in a case of primary atypical pneumonia.

Also there is a fascinating disease that has been described by many, called "epidemic neuromyasthenia." Has there been an etiologic agent isolated in this disease?

Dr. Wehrle: As far as primary atypical pneumonia is concerned, I think the evidence is very good that this consists of several different agents. Certainly one knows that some of the adenoviruses have been associated with episodes of viral pneumonia and, as a matter of fact, one of the original isolates was from a person with primary atypical pneumonia. Strictly speaking adenoviruses have not frequently given rise to cold agglutinins. Yet one sees waves of viral pneumonia in which increases in cold agglutinins do occur but without evidence of adenovirus infection. I think this is a hint that perhaps different things are going through a given community at different times. It might be well to mention the fact that psittacosis virus can also produce a very fine virus pneumonia.

In answer to the second question I personally do not believe that antibiotics are indicated or are desirable in the therapy of the primary viral diseases; however, in the case of a primary atypical pneumonia or in a patient who you feel has a virus pneumonia and who is doing badly, I would certainly see no reason why they should not be used, because I for one am not always smart enough to be sure that there is no bacterial infection in that particular lung.

Epidemic neuromyasthenia is a very curious type of disease, and I am not aware of any successful isolation of a virus or other possible causative agent from patients with this illness.

Dr. Bunn: Dr. Louria, do you have any comments?

Dr. Louria: I have a prejudice about the treatment of primary atypical pneumonia. I think that a secondary bacterial infection in true, cold agglutinin-positive, primary atypical pneumonia is extremely uncommon, and to treat someone because he may get a secondary bacterial infection has no basis in fact. At a clinical level if one is faced with a patient who has no pathogens in the sputum on culture and has a disease that appears to be primary atypical pneumonia, I think there are a couple of points that may help the clinician to decide whether to administer an antimicrobial agent or not. Of course if the patient's infection is increasing, I think there's no choice but to use them.

Most cold agglutinin-positive primary atypical pneumonia is not associated with significant pleurisy. On the other hand in some series of cases with proved psittacosis, pleurisy is a striking manifestation and it may be the predominant complaint of the patient. Consequently, if the patient has pleurisy and if cultures are negative for pathogen, I believe that there is a good chance that the illness would respond well to a broad-spectrum antimicrobial agent.

Similarly, if there is splenomegaly, I think this increases the likelihood of its being psittacosis or some other disease that can be treated with a broad-spectrum drug. Finally, before the cold agglutinin titers are reported, I think it's always worth doing the old test of drawing blood and taking a careful look in the syringe to see that there is no clumping in the syringe. Once in awhile one can pick up cold agglutinins before the laboratory does and this may give you a pretty good idea where you stand diagnostically.

Now the two questions I wanted to ask Dr. Wehrle are first: Somebody gave a talk recently about encephalitis due to an ECHO virus and said that the rash was at times petechial. I wasn't aware that this was true, and I would like to hear your experiences. If it is petechial, this would make the differential diagnosis between it and meningococcal meningitis at times very difficult, especially if you see them early when both may have increases in polymorphonuclear cells and in spinal fluid, and neither may necessarily have a decrease in sugar.

Second: I'm sure we all want to know under what conditions you believe that gamma globulin should be given following exposure to a virus disease.

Dr. Wehrle: In regard to the petechial rash, this has fooled us, too. We had a fair experience with ECHO-9 in our area last year and I think that a couple of the patients we observed with the rash were given sulfonamides simply because we could not be sure that this was not early meningococcal disease. This is not the typical ECHO-9 rash, however. The typical kind is a morbilliform rash and resembles rubella. However, the petechiae in these patients were unmistakable and I think we were justified in using sulfonamides. You have to assume the worst when considering a disease such as meningococcal meningitis, and I don't feel at all bad about having used sulfonamides in these cases where the petechial rash was present.

Dr. Gocke: Were they in the conjunctiva and under the fingernails too?

Dr. Wehrle: No, these were limited to the skin.

Concerning the use of gamma globulin, I would use it for those who are exposed and susceptible to measles in a dose of about 0.02 ml. per pound body weight. Frequently this offers modification of the illness and usually the only disadvantage is that sometimes the incubation period is prolonged. We have seen incubation periods for as long as twenty days in measles following gamma globulin prophylaxis. I personally feel that if the child has no prior history of measles and has had, presumably, a heavy exposure that he should be given a modifying dose regardless of age.

The evidence that gamma globulin modification reduces the incidence of encephalitis in the, roughly, one in a thousand or so persons who may develop the postdisease complication is not so good as one would like. I have seen personally 2 instances of measles encephalitis develop after adequate modification with gamma globulin. However, I think many believe that the incidence of encephalitis is lower among those who have their measles modified by gamma globulin. Furthermore modified measles appears to be followed by a solid long-lasting immunity to measles.

The second such disease in which the data are extremely sound is in the case of infectious hepatitis. A dose of 0.02 ml. per pound body weight given at least one week prior to the onset of clinical symptoms in the recipient gives a dependable modification of the infection. I think the evidence is rather good that this is a modification rather than a complete protection. Therefore, the individual acquires his immunity as effectively as if he had the disease without paying the price for it.

Another instance in which gamma globulin is useful, and I was delighted to see some recent experimental evidence on this point by Dr. Krugman and Dr. Ward, is in the pregnant woman during the first trimester who has no history of German measles and who is exposed to rubella. Krugman and Ward's data indicate quite clearly that there is adequate justification for using this material in a pregnant woman who has been exposed to rubella and who has no history of ever having had it. The dose here is usually considerably larger than is usually given. Most people recommend 20 cc. which, of course, represent a considerable financial outlay. The amount necessary for one injection for a pregnant woman would cost something like $45 and currently very few health departments are supplying globulin for this particular use.

After one leaves these diseases, it is harder to find areas for the effective use of gamma globulin. I am convinced, without any question, that one can prevent paralytic polio with gamma globulin if it is given prior to or soon after exposure. The problem with its use in families is that the dose required is quite large. In addition the behavior of this disease in family groups is such that 90 per cent of the second cases that one expects in families will occur within a week to ten days after the onset of the first case in the family. Therefore, even though one gives gamma globulin on the day the first paralytic case is recognized one is destined to miss a large portion of the persons who will develop paralytic polio in these families. This has, therefore, made it rather difficult to use as a public health preventive medicine tool. The present status, I think, is even more cloudy with the discovery that one can observe circulating antibodies against polio within one week after the administration of one 10 cc. dose of Salk polio vaccine. The use of gamma globulin in agammaglobulinemia and hypogammaglobulinemia is well substantiated, of course.

Dr. Bunn: That's not a preventive; that's treatment.

Dr. Wehrle: Yes, this is therapy rather than prevention. In regard to mumps, hyperimmune gamma globulin* may be useful in preventing mumps orchitis in the adult male who has no history of mumps, who shows negative findings to skin test,† and who has had a close exposure to the disease. I would suggest the skin test since at least one half of adults may be shown to be immune by this technic and hence will not require the expensive preventative. I have followed this course in a fair number of parents who had children with mumps and I have yet to see one who had a good strong skin test develop mumps in spite of no prior known experience with mumps. It will probably happen, but we have yet to see it. False-positive tests do occur with this particular material. I want to stress that regular gamma globulin is probably of no value in mumps: Prophylaxis is indicated.

Dr. Bunn: At this point I'll interrupt and have Dr. Louria talk about certain of the higher microbial forms of pathogens causing human disease and whatever else he would like to talk about.

Fungal Infections

Donald B. Louria, M.D.: I would like to start by expressing my own feelings about the treatment of severe staphylococcal infections. Evidently penicillin is the treatment of choice in penicillin-susceptible staphylococcal infections. The microorganisms that most of us have to deal with in hospitals are insusceptible to penicillin. Many of the staphylococcus infections entering the hospital from the community are also penicillin-resistant. One is then left with the problem of the choice of therapeutic regimens. It seems to me there are four approaches to this.

The first is to treat the condition with large amounts of penicillin. This is not an unreasonable approach for two reasons. One can treat severe staphylococcal infections produced experimentally in mice quite successfully with large amounts of penicillin, the equivalent of at least 20 million units a day in man.[1] Treatment must be started early; if one delays therapy until there is abscess formation, even early abscess formation, no amount of penicillin is effective. This can be explained readily. It has been well documented that microorganisms do not metabolize normally within abscesses, and when bacteria are in this semidormant state penicillin is ineffective. I might say there is no evidence to support the thesis that penicillin fails to get into abscesses, and there are many data to indicate that the antibiotic agent does indeed penetrate into abscess cavities.

Furthermore, if a microorganism is penicillin-resistant in the test tube (that is, resistant to more than one unit), it is likely to be a penicillinase producer. In local

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* Specific hyperimmune mumps convalescent gamma globulin is available from Hyland Laboratories, Los Angeles, or Cutter Laboratories, Berkeley, California.

† Supplied by Eli Lilly and Company, Indianapolis, Indiana.

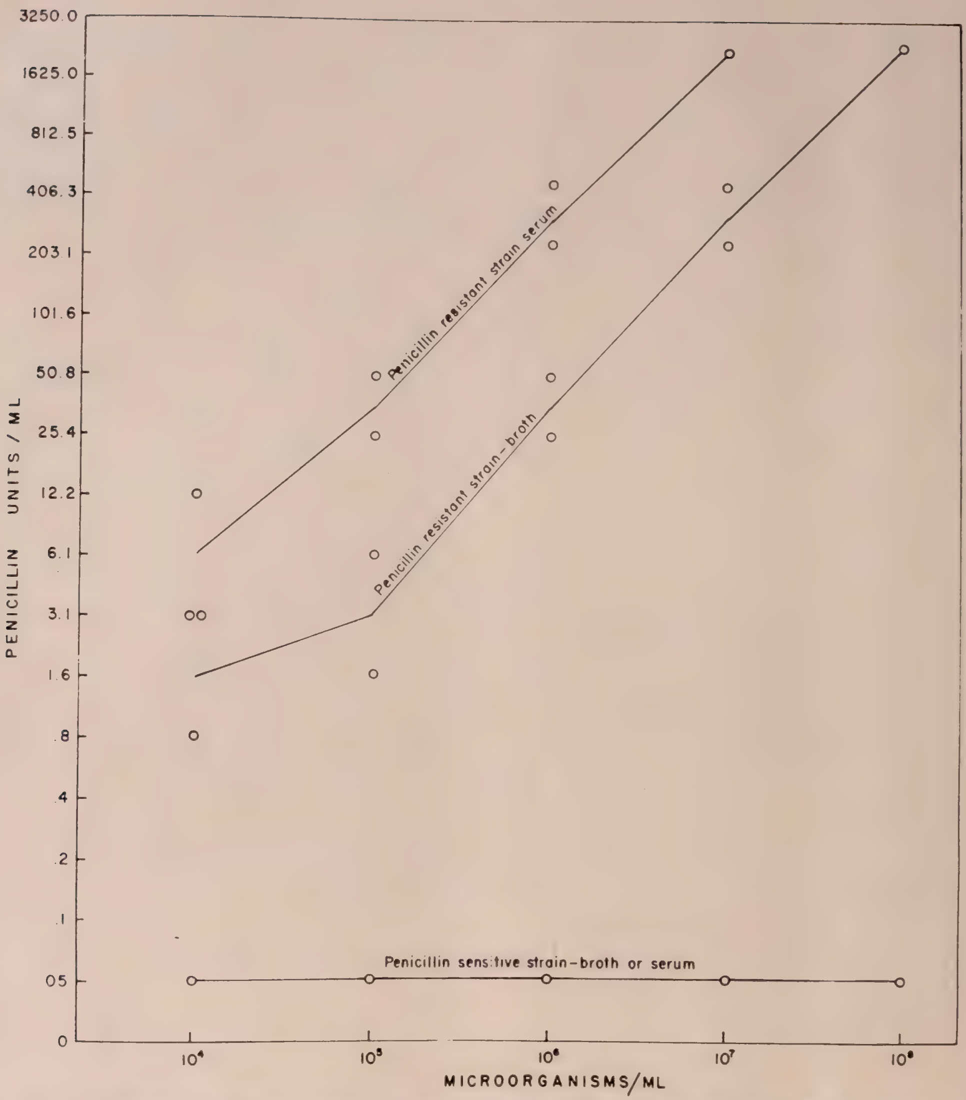

Fig. 1. Sensitivity of staphylococcal strains to penicillin in broth and in 5 per cent serum.

abscesses the number of microorganisms is perhaps 100 million and the amount of penicillinase is enormous. It may be seen in Figure 1 that there is a direct correlation between the amount of penicillin needed for inhibition and the concentration of staphylococci. At abscess titers the amount of penicillin needed for inhibition is probably in the range of 5,000 to 50,000 units; and, of course, that is unobtainable no matter how much is given systemically. It may also be seen in Figure 1 that there is no such direct relationship between inoculum size and penicillin susceptibility with penicillin-sensitive strains which of course do not produce penicillinase. Thus with penicillin-susceptible strains the same amount of penicillin is inhibitory with both small and large inoculums.

When then does it make sense to use penicillin in a penicillin-resistant infection? I think in two instances. First, if there is a well-established local lesion one may assume that this is an abscess and that probably no antimicrobial agent is likely to eradicate it. It might then be reasonable to try and protect the patient from metastatic spread either within the same tissue or to other tissues. I think under those conditions it may be reasonable to treat with massive amounts of pencillin.

Second, I think there is reasonably good evidence that it is still the treatment of choice to give penicillin and streptomycin in staphylococcal endocarditis regardless of the in vitro resistance of the microorganism. The success of Melton and Logue[2] in the treatment of endocarditis due to penicillin-resistant staphylococci with large amounts of penicillin has still not been surpassed by any of the new antimicrobial drugs.

If one decides not to use penicillin, an alternative is to employ one or more of the bacteriostatic agents to which the microorganism is sensitive in vitro. These include chloramphenicol, erythromycin, and novobiocin. I must say that we have been relatively disappointed with those in any combination in staphylococcal bacteremia. They have been beneficial in some cases of severe staphylococcal pneumonia, but in a considerable percentage of cases they fail.

The third choice is to use one of the less used bactericidal agents, neomycin or bacitracin. Although the toxicity of bacitracin has been overemphasized, these drugs are dangerous enough so that we save them for use only if all else fails.

The fourth alternative is to use one of the three new antibiotics: ristocetin, vancomycin, or kanamycin sulfate. My general feeling is that ristocetin is unproved in staphylococcal infection and there are reliable reports now of continued bacteremia during its administration.[3] Furthermore, it has had considerable toxicity, although the company that manufactures it has a new preparation that may be considerably less toxic. The evidence on this is not yet sufficient to make any valid judgment.

I realize that the experience with kanamycin sulfate has been very good. I might tell you a little bit about some of our experiences because ours have not been so favorable. We have failed with kanamycin in several cases of severe staphylococcal disease. In addition, we think we have produced renal failure and death with 8 Gm. of kanamycin. The microscopic slides from this patient's tissue are not yet back so that we cannot be absolutely certain, but the clinical course of this patient suggests strongly that the antibiotic did indeed produce serious nephrotoxicity in this small amount.

We have also observed, following total doses of 16 Gm., severe and irreversible deafness. Now I do not mean to imply that kanamycin is not a good drug; I think it is very good in selected curcumstances. It is good against some of the gram-negative bacteria, and we have had our only successes with pseudomonas bacteremia with kanamycin. I think it should be held in reserve in the treatment of staphylococcal endocarditis because you have to give so much of it that the risk of toxicity is quite great. In other severe staphylococcal diseases treatment can be shorter and consequently the risk of toxicity is less. But it is always significant.

Our own experience, and again this is a personal prejudice because we have worked with this drug a great deal, is that vancomycin is a better drug for resistant staphylococcal infections. We have had 8 patients with severe staphylococcal pneumonia, endocarditis, or bacteremia, most of whom failed on other antimicrobial agents. Our results show recovery in 5 cases, improvement in 1, failure in 1, and probable failure in another. We have had no serious toxicity with vancomycin. Chills, fever, and local phlebitis have occurred but these have not been major problems. There have been reported cases of deafness. These have all occurred at high serum levels in patients with renal failure. We have treated 1 patient with endocarditis who had a blood urea nitrogen of 250 mg. per cent and had some hearing loss prior to therapy. After twenty-one days of vancomycin there was no increase in the hearing loss and no further renal impairment. Indeed, his urea nitrogen improved dramatically. We use vancomycin first in severe penicillin-resistant infections, except in the treatment of staphylococcal endocarditis in which we still start with penicillin and streptomycin. If that does not work, then we go on to vancomycin. I would personally hold kanamycin in reserve.

Dr. Bunn: I think these are very real and very honorable differences of opinion about which is the best drug for a fatal disease. My general philosophy about the toxicity of kanamycin, when one is talking about endocarditis caused by staphylococcus, is that the toxicity doesn't mean much because if you don't use something very effective the patient will die. I'd rather be deaf than dead.

Dr. Louria: It seems to me that one cannot obtain any better results than we have observed with vancomycin. There is no other drug that I know of that will improve 6 of 8 patients with staphylococcal disease of the severity that was present in our patients. We have tested this drug under the most trying circumstances and we have had excellent results, with no severe toxicity. Indeed penicillin does no better in severe penicillin-susceptible infections.

Dr. Bunn: No, there's probably a mortality of about 35 to 40 per cent in these also.

Dr. Louria: Right; by the same token we cannot do any better than Melton and Logue[2] did with massive penicillin in their cases of staphylococcal endocarditis. Unfortunately, their regimen is no longer available to most of us because they used up to 250 million units of penicillin a day. At the time they could get sodium penicillin. Almost all penicillin is now a potassium salt and 250 million units means at least 500 mEq. of potassium. Since most of the patients who are this sick have some renal troubles, we can rarely give over 50 million units because of the danger of hyperkalemia.

I don't think we're in disagreement. I'm all for kanamycin, but I wonder if vancomycin may not be less toxic for this particular situation and, therefore, worth using first.

Dr. Bunn: We have used vancomycin with great success too, as a matter of fact. As I say, I think I'd be inclined to use kanamycin first and vancomycin second, but I doubt that with the information now available either of us can be too dogmatic about which is the better drug. We are comparing our small results with a world of experience prior to the advent of either. We shall have to wait for more long-term evaluations before a conclusion can be drawn.

I agree heartily with you about the use of penicillin in treatment of infections caused by susceptible strains of staphylococci, and I can't disagree in any way about the use of 50 million units or so daily as a trial in the other kind. Unfortunately, I've never seen it succeed using these amounts. Consequently, when we first see a severe penicillin-resistant staphylococcal infection we start right off either with vancomycin or with kanamycin, usually the latter. Often with it we will use huge doses of penicillin also. Perhaps we should get together and arrange to treat a series of patients with both kanamycin and vancomycin together.

Dr. Louria: Now that we've talked about all the useful information, let me talk about some relatively useless things. I thought I'd tell you a little bit about some of the infections which are getting to be progressively more of a problem for us.

Our experience and I think the experience of many people is that now we're seeing many more infections due to higher bacteria than we did in the past. This includes the atypical mycobacteria which can mimic tuberculosis in every way. Some of these are not at all susceptible to antituberculous drugs, but some of them are quite susceptible to the sulfonamides or to some of the broad-spectrum antimicrobial agents. And so it becomes a very practical point to know whether somebody who has what clinically is tuberculosis does indeed have true tuberculous infection or whether he is infected with one of the Nocardias or with one of the atypical acid-fast organisms.

I thought I might cite an example of this type of illness.

Case Report.—A twenty-four-year-old Italian was walking in the park with a friend of his. They began to disagree about Italian politics and the friend stabbed him twice. The man came into the hospital because he had pleurisy on the right side below one of the stab wounds, and while in the hospital he developed pericarditis. Pleural fluid was removed which had about 1,800 leukocytes, half of them polymorphonuclears and half of them lymphocytes, a slightly elevated protein, and no growth of any microorganisms.

He improved on extensive antimicrobial agents which were given on the assumption that he might have a pulmonary infection. It was not known what the nature of his pericarditis was, but it was thought that he might have had a traumatic pericarditis.

This man subsequently came into the hospital three times with pericardial tamponade. On each occasion his life clearly was saved by taking fluid out of his pericardium, which even in the best of hands is not an entirely benign procedure. On the first two occasions, cultures were taken assiduously. His pericardial fluid had about the same cell content as had been found previously in his pleural fluid. All cultures for routine pathogens and for tuberculosis showed negative findings. Two further bacteriologic steps were taken. First his fluid was cultured on all sorts of enriched media. Second, it has been our experience that it is sometimes better to use large amounts of medium and large amounts of fluid if you are dealing with the unusual higher bacteria or with some of the fungi because the concentration of microorganisms may be as low as one per 5 cc. So we took a large amount of pericardial fluid and cultured it on many Sabouraud's flasks containing 20 to 30 cc. of agar. We finally isolated a microorganism that has not previously been reported as a pathogen in man. It is called Waksmania rosea. The name doesn't matter, but it is very closely allied to the atypical mycobacteria and to the Nocardias.

Now, this microorganism (and this man had been on continued antituberculous therapy since his first tamponade) turned out to be susceptible not to the sulfonamides, or to the antituberculous drugs, but was exquisitely sensitive to the tetracyclines and novobiocin. The patient has subsequently made a complete recovery.

I mention this case just to emphasize a problem of increasing severity for us. A bacteriologic diagnosis is frequently difficult to establish in infections caused by these low-grade pathogens. This case demonstrates the importance of an etiologic diagnosis since the use of inappropriate antimicrobial agents in this patient undoubtedly prolonged his illness and increased the opportunity for fatality either from his disease or from diagnostic procedures.

I want to turn briefly to a couple of points about fungous diseases. For every 4 cases of staphylococcal bacteremia we are called to see, we see 1 case of disseminated fungal disease; in our experience, this is almost always disseminated moniliasis. Other people do not have this experience and I feel it may be due to a lack of awareness of the magnitude of the problem.

We have learned to consider certain patients as prime candidates for severe candida infections. First, almost all the patients we see with Monilia fungemia have been receiving extensive antimicrobial therapy. Second, the majority have a severe underlying illness. Third, many have been given adrenal steroid hormones. There is considerable experimental evidence now to show that steroids enhance candidiasis markedly, and further that steroids will augment candida infections to a far greater degree than some other fungous infections. In addition, small number of monilia were inoculated into mice and the animals were given steroids.[4] The infection was markedly exacerbated. Thus steroids will augment moniliasis and will do so experimentally, even when small numbers of fungous cells are used in the inoculum.

Fourth, most of our patients have had indwelling catheters. Cultures from the skin near such catheters have grown monilia and we believe that in several of our patients this is the mode of entry. Fifth, diabetes may possibly predispose to severe moniliasis, although our evidence for this is fragmentary, being limited to a single diabetic patient who entered the hospital with Monilia pyelonephritis and fungemia and who had none of the predisposing factors already listed.

Any patient thus predisposed who develops an unexplained infectious process should be cultured for candida. Such cultures should be made on appropriate solid as well as liquid media. One frequently can make a diagnosis in a matter of twenty-four hours. If only a liquid medium is used, the diagnosis can be delayed and, at times, missed.

CRYPTOCOCCOSIS.—I would like to insert some comments about cryptococcosis. There is no doubt that we are seeing more cryptococcal infection than we used to. I think it's probably because we are saving more people from underlying malignant disease of the reticuloendothelial system. I do not think we are seeing any significant increase in the number of cases of cryptococcosis arising in patients who have no such underlying malignant disease.

There are three points I would like to emphasize:

1. In any patient who has an occipital headache, especially if this patient has an underlying disease of the reticuloendothelial system, I think the burden of proof to say that this is not caused organically is on the physician. Most migraine headaches are frontal in nature; most cryptococcal headaches are occipital. I would say this is true in two thirds of the cases we see.

The worst misdiagnoses we have seen in cryptococcal disease have concerned people who have had no underlying disease to indicate that they might have cryptococcosis. They were diagnosed as having migraine headaches but there was a clear story that the headaches were occipital and only occipital. As far as I am concerned, unless one can be sure these are tension headaches, these people probably deserve lumbar puncture if the headache is severe and persistent.

2. India ink preparations of the spinal fluid are usually negative in the subtle cases. One should not discard the diagnosis of cryptococcosis just because the India ink preparation demonstrates no fungi.

3. I would like to re-emphasize the point I made previously. If one wants to make an etiologic diagnosis of low-grade infections due to higher bacteria or fungi it is best to use large amounts of whatever fluid (blood, and so forth) you're testing and large amounts of medium.

I have been asked to say a few words about the therapy of fungous disease. This is easy. Amphotericin B is the treatment of choice in most disseminated fungous infections. The results in acute disseminated histoplasmosis are frequently dramatic. The treatment of blastomycosis is equally successful. Iodides now have no place in blastomycosis and, as far as I am concerned, neither does stilbamidine. In coccidioidomycosis results are not as good, but still amphotericin B is fairly effective. Eighty per cent of patients with cryptococcosis are said to improve on amphotericin B, though our own improvement rate is nearer 50 per cent.

Our own studies suggest that the antibiotic may be beneficial in disseminated moniliasis. There are no adequate data on the effects of amphotericin B in aspergillosis or mucormycosis.

Mycostatin is not significantly absorbed orally no matter how much you give. It is worthless in systemic mycoses. The parenteral product is no longer available because it was too toxic. It was, however, markedly beneficial in several patients with disseminated mycotic disease.

For the dermatophytes, Griseofulvin is apparently excellent. The reports I have read, the latest of which is by Sternberg and associates,[5] are very enthusiastic. The only superficial infections for which it has been less satisfactory are those affecting the nails which heal quite slowly. Dosage is 1 Gm. a day orally. Thus far it has been relatively nontoxic and in no patient has toxicity been severe enough to warrant discontinuing therapy. It is usually administered for a period of at least one month.

DR. BUNN: Thank you very much.

It is time to stop, even though the four of us, obviously, could talk about prophylaxis, gamma globulin, shock, steroids, and a variety of other things for a long time still. The panel, I am sure, has done a beautiful job and I am very proud of them. I hope maybe some day we can get together again and talk about certain other aspects of infectious disease.

To the panelists, a hearty thank you for a good job. To the audience, we appreciate your patience.

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Is Melanoma Curable?

Of 8 consecutive patients with 9 melanomas (6 malignant and 3 juvenile) occurring over a period of seven years not one has had clinical evidence of recurrence to date. All were treated by wide excision of the primary lesion through the fascia and 3 of these by excision and dissection of the regional lymph nodes in continuity. Seven of these patients are alive and well two to seven and half years after treatment. The patient who died of intercurrent disease thirteen months after treatment did not show any evidence of melanoma at autopsy. These results (and cited results of other investigators) indicate, the author believes, that the prognosis of these highly malignant lesions is not so pessimistic as it is widely believed to be. In her summary, the author notes that the great majority of these "black cancers" are preventable through early treatment of junctional or compound nevi. Once the malignant change has occurred, prompt and effectual treatment is mandatory; delay or inadequate surgery makes death of the patient almost inevitable. Wide and deep surgical extirpation can result in long-term, disease-free survival of the majority of these patients.—*J. A. M. Women's A., June, 1959, Anita V. Figueredo, M.D.*

Recent Advances in the Organic Approach to Psychosis

Biologic Basis of Schizophrenia

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INTEREST in the possible biologic etiology of mental disease has been marked by waves of enthusiastic and intense research alternating with periods of indifference, neglect, and even hostility. Recently we have witnessed an upsurge of activity in this area. Since recent work has not succeeded yet in achieving a clear-cut and confirmable demonstration of the etiology of the major psychoses, it is feared that instead of expansion of this very important and promising area, we may see a leveling off or an actual diminution of the biologic investigation of mental disorders.

The current increase of activity in the investigation of the biologic basis of mental disease has several origins. Most important of these has been the development of the tranquilizing drugs. However, while the tranquilizing drugs have added immeasurably to our therapeutic armamentarium, they do not alter the basic defects in mental disorder—they are not curative. On the other hand, the demonstration that a number of chronic and baffling disorders are caused by specific metabolic faults localized in enzyme systems has been most provocative. For instance, it has been discovered that a mutant gene produces a functionally different enzyme in sickle cell anemia. The abnormal enzyme produces hemoglobin S by substituting a valine amino acid for the usual glutamic acid in two of the four polypeptide chains making up globin in the hemoglobin.[1] Such stirring developments have led Linus Pauling[1] to suggest that 80 per cent of all mental disease may well be molecular disease.

Closer to the psychiatric field has been the finding that an inherited enzymatic defect in the liver of children with phenylketonuria prevents the conversion of phenylalanine to tyrosine and results in an accumulation of phenylalanine in the blood stream.[2] It is this excessive amount of phenylalanine that causes the failure of proper intellectual development in such cases. Even more striking has been the demonstration that when a very young child with this defect was placed on a phenylalanine-deficient diet, mental retardation was prevented.[3] It is noteworthy that in a period of approximately twenty-five years this specific disorder was discovered, the pathogenesis was demonstrated, and a means of prevention was developed. In this instance, in contrast to the major psychoses, a precise and unquestionable metabolic abnormality was demonstrated which served as a point of departure for successful research. Many have worked zealously to demonstrate such specific metabolic abnormalities in the mental disorders. In this survey we shall assess the progress in this area.

Problems of Definition and Diagnosis

Certain difficulties are inherent in such a review. We must define our terms. What do we mean by the term "mental disease?" Current definitions range all the way from

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a psychosis which demands institutionalization to a mental state that results in unemployment or in job dissatisfaction. This range obviously is too broad to be useful in the search for a common etiology. Let us then limit our attention to schizophrenia which has been the focus of recent intensive research characteristic of the pattern of progress in the field of mental disorder as a whole.

Here we immediately have new difficulties of definition. Is schizophrenia a specific disease or a group of diseases?[4] We all know that Bleuler entitled his book *Dementia Praecox, or the Group of Schizophrenias.*[5] If this definition is correct, then there is scarcely any hope that research based on the study of unselected schizophrenic patients can result in the discovery of a common etiologic agent. On the other hand, there are many who hold that schizophrenia is a specific disease with a specific etiology.

Passing from the question of specificity, we find there is much contradiction in the diagnosis of schizophrenia. Agreement between various examiners is quite poor. In the diagnosis of schizophrenia Hoch[6] has reported agreement at best in only 60 per cent of the cases and this figure may be as low as 30 per cent. Studies appear to indicate that the crossing of a state line often may cause a change of diagnosis. Adjacent state hospitals in different jurisdictions but similar populations have reported great differences in the incidence of various diagnoses. In addition, the results of metabolic studies on a patient who has been diagnosed as schizophrenic may be altered greatly by his fluctuating status.[7,8] Can one expect a patient in acute exacerbation to be identical metabolically to a patient in remission? The metabolism of a patient who is acutely excited will be affected by this state whether he is schizophrenic or not. The effects of chronic hospitalization are of great importance also, particularly in regard to diet. Many psychotic patients are on a bizarre diet. The duration of the illness is important. In a state hospital one may see patients whose onsets of illness date from a few months to thirty or forty years ago. There are many difficulties in the very selection of population for study.

In no sense should this survey be considered a complete review of the field. Several excellent reviews have appeared in the last year or two that critically evaluate biologic research in schizophrenia. Among these are the reviews of Kety,[9] Hoagland,[10] Keup,[11] and Benjamin.[12] Books edited by Richter,[13] Rinkel and Denber,[14] and Harlow and Woolsey[15] are also noteworthy. Rather, I shall attempt to review enough material to indicate certain patterns of contemporary research so that we may judge critically the defects and suggest the direction future investigations should take. I shall try to point out what work has been done that is suggestive of a biologic basis of schizophrenia; how much of this work has been confirmed by other workers; and how much has not been confirmed as yet.

Toxic Factor

I shall begin with a survey of research to establish a toxic factor in the body fluids as a cause of schizophrenia. The development of this discussion will be more complete than the survey of other factors but it will be seen that the trend discerned in toxic factors is similar to that of other factors that have been held to be causal for schizophrenia.

The notion that a humoral substance, possibly a protein circulating in the blood stream, is responsible for the production and maintenance of the symptomatology of schizophrenia has an ancient history. This area of research still has a lively following. Workers have attempted to demonstrate the toxic substance in various body fluids by studying their effect on man, animals, plants, and tissue cultures.

The demonstration by Heath and his colleagues [16–18] at Tulane that a substance could be extracted from the serum of schizophrenic patients which would produce psychotic symptoms on injection into human volunteers increased greatly the interest in a circulating toxic substance as a cause of schizophrenia. This group was impressed originally by the contrast in the ability of the serum of schizophrenic patients and of the serum of normal patients to oxidize epinephrine in vitro.[19] This contrast was attributed to both the quantitative and the qualitative differences in schizophrenic serum of the copper-containing enzyme, ceruloplasmin, which is involved in the oxidation of epinephrine and similar compounds.

This of course is similar to the reactions observed by Akerfeldt,[20] who had originally reported a test that is specific for schizophrenia and depends on the oxidation of phenylenediamine by ceruloplasmin. Scarcely had the work been published when it was disproved by a series of papers which indicated that the abnormality was widely prevalent in other disorders and also in pregnancy.[21-23] Further, the investigators established the fact that the defect had been caused in the schizophrenic patients by a deficiency in vitamin C.[24,25]

However, prior to this time and working independently, the Tulane group proceeded to isolate what they felt to be an abnormal form of ceruloplasmin.[16-18] This substance was isolated in a complex extraction procedure and then tested on monkeys in which unusual electroencephalographic and behavior changes were reported. Samples that were found to be active in the monkeys were then injected into prisoner volunteers. The subjects rapidly developed temporary states that were described as resembling clinical forms of schizophrenia. The primary and secondary symptoms of schizophrenia were described in these reports, including autism, disorganization of thinking, catatonic posturing, paranoid ideas, and hallucinations. Schizophrenic symptoms also were displayed following the injection of taraxein into a schizophrenic patient in remission. More recently Heath[18] has described a production of schizophrenic symptoms in nonpsychotic volunteers who received very rapidly 500 cc. of pooled serum obtained from schizophrenic patients.

Two groups have published their experiences in attempting to replicate the Tulane findings. Robins, Smith, and Lowe[26] followed the Heath technic as precisely as possible having received training in the extraction procedure in Heath's laboratory. Of 20 subjects who received either extracts of blood from schizophrenic or normal donors, or normal saline, only 5 showed any behavioral aberrations. The abnormalities occurred as frequently among those who received saline as among those who received taraxein. Similar disappointing experiences were reported by Siegel and his colleagues[27] who entitled their paper appropriately "Taraxein; Fact or Artifact," concluding that taraxein was an artifact. This group questioned five other laboratories all of whom reported negative results.

The complexities of research in this area when one is dealing with actual patients are well illustrated in a report published by a psychoanalyst in New Orleans,[28] one of whose patients was a volunteer in the taraxein experiment. The report is extremely impressive since one can well understand the apprehension of the volunteer, a psychiatric resident, who knew he might be receiving a sample of a potent psychotomimetic substance. He experienced a variety of symptoms which might conceivably have been caused by the ammonium sulfate in the solution. Incongruities between the reports of the subject and the observer also are noteworthy.

Smith[29] also reported an inability to obtain schizophrenic symptomatology in a patient with terminal carcinoma who had received an infusion of serum from a schizophrenic patient. Victor Ginsberg, M.D., and I also repeated this experiment using 500 cc. of lyophilized serum from a schizophrenic patient and injecting it rapidly into a woman with a clear mental status who was suffering from terminal leukemia. As in the experiment reported by Smith, no bizarre symptoms, were manifested. The only complaint was some pain in the area of the infusion when the rate was speeded up by pumping.

In addition to the human work other demonstrations of a possible toxic substance have been made utilizing laboratory animals. Wada[30] has described behavioral and electroencephalographic changes induced in monkeys by an injection of an extract of schizophrenic urine. Particularly impressive was the development of peculiar behavior after the injection of the schizophrenic urine extract into the cisterna magna or lateral ventricle of the monkey.

Gamper, Kral, and Stein[31] injected schizophrenic cerebral spinal fluid into the anterior chambers of the eyes of rabbits. This resulted in the production of an inflammatory exudate. Later Gamper and Kral[32] reported that when cerebral spinal fluid or urine of schizophrenic patients was injected subcutaneously into white mice, there were toxic effects. The latter observations were not confirmed when repeated by Reiter.[33]

The blood serum of schizophrenic patients was tested on the tadpoles of Rana catesbiana by Lazell and Prince.[34] The blood serum of the schizophrenic individuals was found to be toxic for the tadpoles and killed them rapidly as compared with the blood serum of normal individuals. Edisen in 1956,[35] however, failed to demonstrate the toxicity.

The toxicity of blood serum of schizophrenic patients to the larvae of Xenopus laevis was demonstrated by Fischer.[36] Georgi *et al.*[37] criticized this work vigorously.

In an interesting series of experiments, Winter and Flataker [38] were able to demonstrate a toxic effect of blood plasma and extracts of urine from schizophrenic patients on the performance of trained rats. The injection into the rats of 1 cc. of plasma taken from schizophrenic individuals produced a deficiency in performance that was significantly different from that brought about by plasma taken from normal individuals. The syndrome in rats resembled, but was not identical to, that produced by the injection of lysergic acid diethylamide (LSD). However, repetition of this experiment by Ghent and me[39] failed to confirm the result of this experiment. Similarly, Kornetsky[40] and Hoagland[10] obtained negative results.

LeGrand and Annee[41] injected spinal fluid from patients suffering from dementia praecox into white rats. They reported a resulting catatonic stupor. Shapiro[42] conducted similar experiments in an attempt to demonstrate a catatonigenic agent in cerebral spinal fluid obtained from catatonic schizophrenic patients. His experiment did not substantiate the hypothesis that there is a catatonigenic agent in the cerebral spinal fluid of catatonic patients.

Two groups of investigators reported that serum from schizophrenic patients had a phytotoxic effect. Tscherkes and Mangubi[43] observed that the growth index of the roots of Lupinus albus was smaller when grown in a medium containing serum of nonpsychotic individuals. This was confirmed by Macht.[44]

Recently, Fedoroff[45] demonstrated that the blood serum of schizophrenic patients was more toxic to strain L cells and tissue cultures than was the blood serum of healthy individuals. The toxicity disappeared after heating the serum at 56 C. for thirty-five minutes. However, the serum of schizophrenic patients was not toxic to strain Hela cells.

We elected to test the hypothesis by a reverse process. If a protein circulating in the blood is responsible for the production and the maintenance of the symptomatology of schizophrenia, then it would follow that if such a substance is removed from the body, a temporary remission should take place. An experimental approach was suggested by the method of treating erythroblastosis fetalis in the newborn.[46] In this condition a substance normally in the body, bilirubin, is present in the circulating blood stream in excess amounts and can produce irreversible brain damage.[47] By means of exchange transfusions significant amounts of bilirubin can be washed out of the body and the damage that might otherwise take place can be largely avoided.[48] Exchange transfusions have also been used in the treatment of children who have been poisoned by boric acid[49] and other poisonous agents. We felt, therefore, that this method would afford a useful experimental approach to test the toxic factor in schizophrenia.

As it turned out this was not at all a new method. As early as 1667, Denis[50] transfused a thirty-four-year-old man with calves' blood. He reported marked improvement and demonstrated the case before the faculty of a medical school. Several of his contemporaries are also reported to have tried this method.

More recently, in 1938, Reiter[33] performed exchange transfusions in 4 schizophrenic patients. Three of the patients displayed temporary remissions lasting from three to four weeks.

In 1944, Pfeffer and Pescor[51] failed to obtain impressive results when they performed multiple transfusions on 6 schizophrenic patients. However, instead of large exchanges of blood in one procedure such as was reported by Reiter, Pfeffer and Pescor withdrew 500 to 1,000 cc. of blood and injected an equivalent amount daily or every other day over a period of several weeks. Of the 6 cases in the series only 1 case showed any change but the authors did not feel this change could be related to the procedure.

Goldblatt and Krapiwkin[52] administered single transfusions to 12 schizophrenic patients. The blood injected was obtained from normal individuals and from schizophrenic patients in remission. There was improvement in 8 of the 12 patients. Three of these patients were stated to have evidenced complete recovery.

Pascal and Davesne[53] administered whole blood to 6 patients using the intramuscular method. Five of the patients improved; 2 of the 5 were described as recovered.

In 1949 Kielholz[54] reported considerable improvement in 4 cases treated by exchange transfusions. Wortis[55] cites the method of Csiky and his associates whereby acute catatonic schizophrenic patients were treated successfully with repeated blood transfusions.

In our experiments[56,57] exchange transfusions were performed on 6 schizophrenic patients. Five were adult males who had been ill from five to twenty-five years and whose ages ranged from twenty-five to forty-five years. The other patient was a five-and-a-half-year-old autistic child. Fourteen hundred cc. of blood were withdrawn from the child and replaced with blood from normal patients which resulted in an estimated exchange of 55 per cent. In the adults as much as 6,000 cc. of blood were infused bringing about exchanges of from 49 to 63 per cent. While the child displayed questionable temporary improvement following the procedure, no change was observed in the adults. Therefore, the humoral theory was not substantiated insofar as that theory can be tested in this way.

Anatomic Pathology

In the late nineteenth century when the development of pathologic anatomy was very rapid, specific anatomic lesions were described for schizophrenia by such distinguished workers as Alzheimer.[58] However, with the passage of years and the collection of material that was controlled carefully and was not subject to the accusation of postmortem deterioration, the early findings were not confirmed. In this country Dunlap,[59,60] in particular, did much to refute the earlier work. The current consensus certainly would be that a specific pathologic lesion characteristic of schizophrenia has not been demonstrated.[61]

General Metabolism

In the physiologic area, suggestions that there was a decrease in basal metabolism[62] or in cerebral metabolism[63] were not substantiated by other reports.[64,65] There does not appear to be any over-all defect in metabolism in the entire body or in the brain. The possibility of highly localized abnormalities in small cellular aggregates of the brain cannot be excluded as yet.

The physiology of every system has at one time or another been implicated as being abnormal in the schizophrenic patient. By and large, all of these abnormalities have in time either been refuted or proved to be due to deficiencies in diet, inactivity due to chronic hospitalization, or other nonspecific changes. Illustrative of this are studies that have been done on thyroid gland function. Earlier workers demonstrated a low basal metabolic rate and an increased thyroid uptake of radioactive iodine (I^{131}) in schizophrenic patients.[62,66] Recently Kelsey, Gullock, and Kelsey[67] were able to show that the high uptakes observed initially in the psychotic patients were due to a dietary deficiency of iodine which was corrected by the introduction of iodized salt to the diet.

Many studies have been done that seemingly indicate a defect in carbohydrate metabolism in schizophrenic individuals. Later work suggests that abnormal glucose tolerance[68] or impaired metabolism of lactate[69] in a schizophrenic patient may well be due to the incidence of hepatic disease or to nutritional deficiencies.[8] This possibility was re-enforced by the demonstration by Horwitt[8] and his colleagues that such abnormalities could be abolished by a change in the introduction of vitamins of the B group.

In a series of most interesting papers, Funkenstein, Greenblatt, and Solomon[70] were able to show that by studying the reaction of schizophrenic patients and normal individuals to the injection of adrenalin, noradrenalin, and Mecholyl chloride, schizophrenic individuals not only could be distinguished from normal individuals but also could be classified for purposes of treatment and prognosis. Although this research has some confirmation,[71] a number of questions[72] have been raised and there have been reports on inability to replicate the results.[73]

Hoagland, Pincus, and their collaborators[74-76] have stated that there were differences in the rate of excretion of urinary constituents before and after stress or the injection of corticotrophin. Buchbinder and Ferguson[77] have emphasized in their review of this work that there was an appreciable increase in the excretion of inorganic phosphate in the urine following corticotrophin injection in schizophrenic patients while at the same time the urine of normal individuals showed either a decrease or an insignificant change in the excretion of inorganic phosphate. Similar results were reported by Stevenson, Metcalfe, and Hobbs.[78] Hoagland, Rinkel, and Hyde[79] demonstrated further that normal men who had been given LSD-25 showed a pattern in the excretion of inorganic phosphate following the injection of corticotrophin that was similar to that of schizophrenic patients. On the other hand, Bliss and his group[80,81] were not able to confirm all of the findings of the Worcester group. However, one would await with interest further work that is currently being pursued by Hoagland.

Epinephrine and Norepinephrine

In recent years, Osmond, Smythies, and Hoffer[82-84] have stated in a series of papers that a disturbance in the metabolism of epinephrine or norepinephrine is the fundamental defect in schizophrenia. The psycholomimetic effect of oxidation products of epinephrine observed when adrenalin was permitted to deteriorate bolstered this argument. Adrenochrome and adrenolutin were the two compounds mentioned most often as possible culprits. However, Rinkel and Solomon[85] were unable to demonstrate the hallucinogenic properties of adrenochrome. Hoffer[86] reported the presence of adrenochrome in the blood of normal subjects and stated that the administration of LSD caused the adrenochrome to increase significantly. However, the group at the National Institutes of Health working with Szara, Axelrod, and Perlin[87] were unable to detect adrenochrome in the blood of schizophrenic patients or of normal individuals. Holland and his associates[88] were unable to show any difference in the rate of destruction of epinephrine between the schizophrenic patient and the normal patient. Actually, no clear-cut evidence has been found that epinephrine is metabolized through adrenochrome or adrenolutin.[89] The demonstration that the rate of oxidation of epinephrine in vitro is related to the level of ascorbic acid in the plasma used is noteworthy.[25] Thus, it would appear that schizophrenic patients who have a low ascorbic acid level in the blood due to dietary deficiencies will show abnormalities in the rate of epinephrine oxidation which can be corrected by dietary improvement. Although questioned seriously, the possibility that epinephrine is involved in mental disease remains a live topic and much work is still being done in this area of research.[90] Marrazzi[91] has shown that cerebral synaptic transmission was inhibited by epinephrine, norepinephrine, and serotonin. Thus, mental derangement may be a consequence of the disturbance of normal epinephrine or norepinephrine balance at the brain synapses. It should be noted here, as well as in the other areas that will be discussed, that the presentation of this theory precipitated a good deal of research which resulted in discoveries concerning the metabolism of epinephrine both in normal and in diseased states.

Serotonin and LSD

The accidental discovery by Hoffman in 1943 that very minute amounts of lysergic acid diethylamide could produce hallucinations began an era of intense research, the significance of which in mental disease is still uncertain. It is an interesting and often-recounted story.[92] Page, Rapport, and Green[93,94] isolated a substance from the blood serum in their search for a vasoconstrictor substance. They named it serotonin. Subsequently, serotonin was found in the brain by Twarog and Page in 1953[95] and by Amin, Crawford, and Gaddum in 1954.[96]

Shaw and Woolley[97] began a series of experiments in the early 1950's to develop effective hypotensive agents by synthesizing competitive inhibitors of serotonin. They were able to show that ergot alkaloids were natural antagonists of serotonin. However, they found in 1954[98,99] that some of the substances which were competitive to serotonin also produced hallucinations and other severe mental disturbances. Prominent among this family of compounds are LSD, yohimbine, and mescaline. With these substances experimenters have produced and studied "model psychoses."[14] From these observations Woolley and Shaw[98,99] developed a challenging hypothesis. They suggested that since psychotomimetic drugs such as LSD competitively inhibited serotonin in the brain, the resulting deficiency of serotonin could give rise not only to the artificially produced psychoses but also to schizophrenia. In the latter situation the lack of serotonin would not be caused by drugs but by a disturbance of the ordinary synthesis or destruction of this hormone. At the same time Gaddum's group[96] was drawing similar conclusions.

The precise function of serotonin in the central nervous system has never been delineated clearly. Woolley and Shaw[100] did suggest that the rhythmic contractions of the oligodendroglia cells in the brain were essential to stir and facilitate the circulation of the extravascular fluid and thus expedite the passage of oxygen and nourishment to the cells. Any interference with the action of serotonin, such as that caused by an antimetabolite, would result in a slowing of these rhythmic contractions and a consequent interference with the nourishment and the oxygenation of the cells resulting finally in mental aberrations. On the other hand, an excess of serotonin could cause a tetanic contraction and thus reduce circulation.

A boost was given to the serotonin hypothesis by the discovery that reserpine caused a fall in the level of brain serotonin with a consequent excretion of the serotonin breakdown product.[101] Reserpine, LSD, and serotonin all contain an indole nucleus in their chemical structure. This seemed to suggest that an excess of serotonin was the cause of or an accompaniment of mental disorder. There is no ready explanation for the action of serotonin. On the contrary, there are a number of confusing reports. For example, an analogue of LSD, 2-brom-LSD, which exerts considerably greater antiserotonin activity on smooth muscle in vitro and apparently enters the brain readily, is found to produce none of the mental effects of LSD.[102]

Serotonin in the brain can be elevated by two means. The level can be raised by the injection of its precursor, 5-hydroxytryptophan. When administered intravenously to a dog,[103] effects similar to those produced by LSD have been reported, which findings argue against the deficiency hypothesis of serotonin. In this regard we can mention the work of Woolley[104] in which he treated schizophrenic patients with 5-hydroxytryptophan together with a benzyle analogue of serotonin to block the peripheral effects. This therapy was stated to be beneficial in schizophrenia in earlier reports but this was later contradicted. Iproniazid phosphate which inhibits the action of the monoamine-oxidase, the enzyme that breaks down serotonin, also increases the level of brain serotonin. In large dosage iproniazid phosphate can produce a psychosis. On the other hand, it is said to be helpful in smaller dosage in the treatment of depression and other mental states.[105,106]

The serotonin hypothesis does not explain the therapeutic action of chlorpromazine which has no effect on brain serotonin. Recent work, however, suggests that chlorpromazine blocks the action of serotonin and also of noradrenalin.[107]

That there is present in the cerebrospinal fluid of schizophrenic patients a neurohumor with properties identical to serotonin was claimed by Bulle and Konchegal.[108] This was based on the demonstration of reflex changes in a dog following the administration of spinal fluid that were similar to changes observed with serotonin.

We seem to be left with the conclusion that serotonin may well be important in brain functioning and may be involved in mental disease by being present either in excess amounts or in deficient amounts or possibly by being blocked from pursuing its normal action. Varying effect with lower or higher concentration may also be involved. However, the precise relationship of serotonin to schizophrenia is still obscure.

Urinary Excretory Products

Since the known hallucinogens possess an activated aromatic ring it has been reasoned that if there is a naturally occurring hallucinogen in schizophrenia that interferes with the function of serotonin, then one would anticipate a difference between the aromatic excretory pattern in the urine of the schizophrenic patient and that of the normal individual. Young *et al.*,[109] and later Sano,[110] reported an abnormal excretory pattern in the urine of schizophrenic patients. More recently McGeer *et al.*[111–113] have reported a significantly higher concentration of aromatic compounds in the urine of schizophrenic patients. McGeer and his colleagues have shown, by a quantitative rating of the number and intensity of spots on urinary chromatograms, that more activated aromatic compounds were present in the urine of schizophrenic patients than were present in the urine of normal individuals. Others have reported the presence of unidentified indoles[114] and, in one group, the absence of normally occurring indoles.[115] Although most who have worked in this field have been able to demonstrate statistical differences between the urines of normal individuals and that of schizophrenic patients, there have been some studies that failed to show impressive differences.[88] That this is a very hazardous field for the researcher is well recognized since dietary and other factors may well enter in. Mann and Labross[116] are stated to have discovered that in the urine from schizophrenic patients two of four compounds were found to be significantly higher after coffee was ingested.

The report of Zeller *et al.*[117] that schizophrenic patients failed to show an increase in the urinary excretion of 5-hydroxyindoleacetic acid, the end product of serotonin, following the ingestion of large doses of tryptophan was most provocative. This is similar to the report of the effect of tryptophan loading in an autistic child.[118] Banerjee and Agarwal[119] reported opposite results and recently Kopin[120] found no difference between the urine of schizophrenic patients and that of normal individuals.

Genetics

During recent years, the accumulation of evidence, particularly by Kallmann,[121] has lent importance to a genetic factor in schizophrenia. Limitation of space prevents an extensive discussion here but the rapid developments tying in genetic traits with enzyme systems gives promise of establishing mental disease as a "molecular disease."[122]

Comment

An unhealthy discouragement seizes one after a review of this nature. It might be summed up simply by stating that all suggestions that have been made thus far as to a biologic basis for schizophrenia have either been refuted, are still being contested, or have not been confirmed since no one has as yet attempted replication. Many of us are still firmly convinced that the disorders of a preponderance of patients currently diagnosed as schizophrenic have a biologic origin. We fear, however, that a period of disillusionment will set in because of this chronic failure to produce results and that this will lead to another period of extreme neglect of the biologic aspects of mental disease.

Earlier in this review I referred to a number of the hazards and pitfalls that are encountered in research in the behavioral area. I think it should be recognized that this is an extremely difficult field. We are dealing with a concatenation of variables. We are attempting to single out the contribution of a host of factors to a final clinical state: the history of an individual; his family, his economic status, the society and culture in which he lives, his state of nutrition, his level of development, and so on. There has been a lot of work done in this field. One need only look at the reviews already mentioned or at the more than 700 references in the chapter on the physiologic aspects of schizophrenia written by Freeman.[123] A number of distinguished investigators have worked in this field, men who were able to achieve a great deal of success in research in other areas.

Many look with a jaundiced eye on research being conducted today. There are several observations that can be made. Too frequently research is of a "hit-and-run variety." Preliminary results that are provocative or experiments on a limited number of patients unrepresentative of the psychotic population are reported but never expanded or developed further. Another fault appears to be, to borrow a term I noticed in *Printer's Ink*, "serendipsomania." By this I mean the tendency to launch broad, all-inclusive studies that are without specific hypothesis and that cover a multitude of variables with the alleged hope that in the course of the investigation the workers will stumble on an important clue. Such an approach tends to obscure any important clues in a welter of confusing information. This is indeed a problem particularly when dealing with a complex, chronic disorder characterized by exacerbations and remissions, such as are seen among the psychiatric syndromes. If one tries to encompass all the variables the study becomes so complex that it breaks down or yields vague results that defy interpretation. Others respond to this by trying to isolate a very specific area with only a very few variables in rigid control and preferably in vitro in animal experiments. Here one may end up with results that are interesting but wholly irrelevant to the pressing clinical problems. One must try to steer a course between these two extremes.

When one compares advances in schizophrenia with other disease states, let us say for example poliomyelitis, certain differences are readily evident. In the latter we have a disease that is quite clearly defined diagnostically. Second, an etiologic agent was discovered which proved to be the responsible agent according to Koch's postulate. A method for growing the virus was discovered and from this it became apparent that a means of prevention might be developed. This is a relatively simple mechanism in contrast with schizophrenia.

When we think of the gaps in our knowledge in the behavioral sciences, we see that there are many, many years of basic research ahead of us before we can hope to make specific statements concerning the nature of schizophrenia. The accumulation of data concerning the development of the learning process—biologic precursors of behavior, constitutional variations and types of newborn, the relationship of behavior and physiology, the very basic problems of neurophysiology and neurochemistry—all will have to be clarified before real progress can be made.

It is not only a question of doing basic research or encouraging it, but also a question of a certain change of attitude toward such problems. Research should be designed to contribute to basic knowledge. Very often a relatively simple experiment intended to clarify an isolated point is generalized and inflated to be an all-encompassing theory of a very complex state such as schizophrenia. Rather than study the effect of LSD as an interesting experiment on the modification of behavior by slight amounts of a biochemic agent and explore carefully the mechanism of the change, investigators have confused this area of research greatly by precipitously drawing analogies with schizophrenia, then identifying the model psychoses with schizophrenia, and finally, by defending this position violently and vigorously. As Jarvik[124] has pointed out there are certain resemblances between the model psychosis and the functional psychosis, but the state produced by LSD is vastly different from them. However, this tendency to build a gigantic structure on a relatively flimsy base from an isolated experiment is very wasteful of the efforts of talented people. It is titanic work to develop such theories and like the Titans piling Mount Pelion on Ossa the structure can be brought down all too readily, not with the blast of Jove but by a light zephyr only.

While basic research must be carried out in neurophysiology and neurochemistry, it is important that it be not wholly divorced from the patients who are our direct concern. It is noteworthy that many suggestive abnormalities or reaction patterns which have been used as explanations in schizophrenia fail completely when applied directly to the sick patient. Hoagland[10] reported two such interesting studies.

In a collaborative study with the Worcester State Hospital and the Department of Psychiatry and Surgery of the University of Chicago and Billings Hospitals, Hoagland and Huggins[10] studied 8 schizophrenic patients who were subjected to total adrenalectomy and maintained on cortisone or hydrocortisone. Four of the patients had cancer of the prostate or of the breast in addition to their psychosis. This study was undertaken in order to delineate possible abnormal steroid hormone production as a causal factor in schizophrenia. The investigators were unable to relieve the psychosis by this procedure. However, since the removal of the adrenals also removed most of the source of adrenalin itself, these patients presented a unique opportunity to test the theory of Hoffer and Osmond[90] that abnormality in the metabolites of adrenalin is the cause of schizophrenia. With the removal of the source of the abnormal metabolites the psychosis should have disappeared, but it did not.

Another experiment was undertaken in collaboration by Hoagland and Woolley[10] to test the hypothesis that a deficiency of serotonin was responsible for schizophrenia. Patients were injected with the serotonin precursor, 5-hydroxytryptophan, which not only increases the serotonin content of the brain but also elevates intestinal serotonin and results in gastric distress. At the same time, therefore, they injected the patients with a benzyl analogue of serotonin which penetrates the blood brain barrier to a minor extent but acts as an antimetabolite to prevent the effects of intestinal serotonin. In this way it was possible to elevate the brain serotonin without any accompanying intestinal distress. A preliminary report mentioned before had indicated some success. In addition 2 of the patients received iproniazid phosphate which further increased the amount of serotonin in the brain. The results of these experiments finally were reported as entirely negative. Therefore, as far as these experiments went, and there are of course no measurements of actual increase of brain serotonin, there was no detectable effect on behavior.

These experiments indicate that although one may develop many interesting hypotheses and experimental leads, at some point the experiments have to be validated by their application to the sick patients who are the focus of attention and the starting point for all this work.

Conclusion

I have read with apprehension many of the reviews concerning the biologic basis of schizophrenia or of mental disease in general. I find that I am concluding this paper with that same feeling of apprehension. As in the other reviews there appears to be great emphasis on contradiction and the failure to show meaningful results. Some of the causes for this have been indicated. However, it must also be pointed out that great contributions to our knowledge have been engendered by much of the work already mentioned. Because of the interest in the adrenalin theory, for example, much of our newer knowledge of the pathways of adrenalin metabolism and of the metabolism of serotonin have been developed. Out of the wealth of reports there are some interesting leads. Thus much work can be done to delineate variations and uniformities of tryptophan metabolism in schizophrenic patients and to contrast these findings with variations found in other hospitalized patients and in normal individuals. A significant contribution can be made to this field. The functioning of the adrenal cortex in the varieties of stress experienced in emotional and physical states remains to be further clarified. The delineation of the various metabolic pathways in the central nervous system and the interrelationships of serotonin, norepinephrine, epinephrine, reserpine, and chlorpromazine will be of fundamental importance. The recent additions to our knowledge of the role of gamma-aminobutyne acid[91] open new horizons. If the newer data are carefully collected and then utilized for the elaboration of new working hypothesis subject to test, eventual success can be anticipated. Page[125] has expressed this point of view well in his statement that this type of research is tedious and arduous and must therefore "go the long hard way." He also states that "with the recent acceptance of the principles of neurochemistry has come a wave of uncritical enthusiasm which, if allowed to go unhampered, will almost inevitably lead to grave disillusionment. . ." Referring to the value of fundamental study, he points out that "basic research . . . in relation to neurochemistry will ultimately yield rich dividends."

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It was better, he thought, to fail in attempting exquisite things than to succeed in the department of the utterly contemptible.—ARTHUR MACHEN

Use of Triflupromazine Hydrochloride for Control of Emetic Reactions to Nitrogen Mustard Therapy

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NAUSEA and vomiting are common signs of intolerance to therapeutic doses of the cytotoxic nitrogen mustards. Usually occurring one to three hours following the injection of these compounds, emetic reactions may be sufficiently severe to precipitate vascular accidents in debilitated patients with neoplastic disease of the lung, lymphoid or hematopoietic tissue, and a predisposition to hemorrhage. A single treatment may induce vomiting during an initial eight-hour period and nausea that will persist for twenty-four hours or longer. Since almost all patients complain of nausea and approximately 50 per cent experience severe vomiting, antiemetic measures are indicated routinely whenever nitrogen mustards are given so that the benefits of a full and uninterrupted course of therapy can be achieved.

In clinical usage certain of the psychotherapeutic phenothiazine agents have proved to be valuable antiemetics. Chlorpromazine hydrochloride,[1–4] promethazine hydrochloride,[5,6] perphenazine,[7–9] and trifluoromethyl derivatives including triflupromazine hydrochloride[10]* have all been found to arrest nausea and vomiting of various origins effectively in a high percentage of the cases treated. Although chlorpromazine hydrochloride as the pioneer compound in the class is the most familiar and has been administered extensively as an antiemetic, side-effects frequently limit its usefulness. The continuous modification of clinically valuable drugs which characterizes much of the current research effort has led to the substitution of a trifluoromethyl component for the chloride in the phenothiazine nucleus. While the resultant substance, triflupromazine hydrochloride, is otherwise the same in structure as chlorpromazine hydrochloride, comparative appraisal has demonstrated that it is at least five times as potent as an antiemetic agent.[10] This increase in potency is accomplished without detectable evidence of enhanced renal or cardiac toxicity in either laboratory animals or in human patients and without significant signs of liver toxicity with doses of 10 to 30 mg. daily for periods of from seven to twenty-seven days.[10]

Preliminary observations suggested that triflupromazine hydrochloride is particularly suitable for patients with severe nausea and vomiting and for patients in whom emesis failed to respond to other treatment. Experience with triflupromazine hydrochloride during nitrogen mustard therapy, when such effects are largely unavoidable and seriously limit full use of a therapeutic program, appeared to offer a singular measure of the antiemetic influence of the drug.

Materials and Methods

A series of 29 hospitalized patients, forty-two to seventy-seven years of age, 4 with neoplastic disease of lymphoid and hematopoietic tissue and 20 with primary and 5 with metastatic bronchial and lung lesions, were selected for palliative treatment with the nitrogen mustard, mechlorethamine hydrochloride (Mustargen hydrochloride).† At the time therapy was undertaken, the general physical condition of these patients was good in 19 cases, with 5 patients in fair condition,

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* Triflupromazine hydrochloride is supplied as Vesprin by E. R. Squibb & Sons, New York City.

† Manufactured by Merck Sharp & Dohme, Philadelphia.

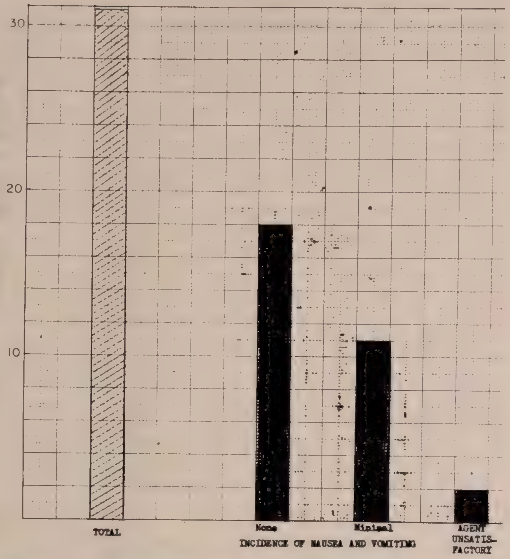

FIG. 1. Antiemetic action of triflupromazine hydrochloride during nitrogen mustard therapy for primary and metastatic carcinoma.

and 5 in a poor state. Eight patients had previously been treated with mechlorethamine hydrochloride and, simultaneously, with chlorpromazine hydrochloride to combat associated nauseant and emetic effects.

A total of 31 treatment courses with mechlorethamine hydrochloride were carried out during this study. Single doses ranging from 4.5 to 9 mg. daily (0.1 mg. per Kg. of body weight) were administered intravenously on four successive days. Prophylactic doses of triflupromazine hydrochloride were prescribed beginning with the first day of nitrogen mustard treatment. Tablets containing 25 mg. were ingested four times daily in most cases; in addition, 7 patients received 10 mg. of triflupromazine hydrochloride intramuscularly, usually one-half hour prior to the injection of mechlorethamine hydrochloride. Two patients in the series were maintained free from emetic reactions with oral doses of 25 mg. three times daily. Triflupromazine hydrochloride was administered for a period of five days or, rarely, for six or seven days. Blood chemistries, routinely performed as a check on the toxic effects of mechlorethamine hydrochloride, were also evaluated as an index to the toxicity of triflupromazine. Both objective and subjective considerations were employed as a basis for appraisal of the effectiveness of medication.

Results

The control of emetic reactions to mechlorethamine hydrochloride achieved with triflupromazine hydrochloride is graphically presented in Figure 1. The addition of the antiemetic agent to the treatment program enabled all but 1 patient to tolerate full four-day courses of therapy with mechlorethamine hydrochloride. Nausea and vomiting were eliminated completely in 18 cases and there were minimal reactions in 11, intolerance never attaining a severity where withdrawal of the nitrogen mustard was required. Table I compares the results in 8 patients who had received nitrogen mustard and chlorpromazine hydrochloride as antiemetic therapy previously. Triflupromazine

TABLE I.—COMPARISON OF THE ANTIEMETIC EFFECTS OF CHLORPROMAZINE HYDROCHLORIDE AND TRIFLUPROMAZINE IN PATIENTS RECEIVING NITROGEN MUSTARD

Patient	Age (Years)	Diagnosis	Incidence of Vomiting* Chlorpromazine Hydrochloride	Triflupromazine Hydrochloride
1	60	Epidermoid carcinoma of the lung	1	0
2	61	Anaplastic carcinoma of the bronchus	1	0
3	65	Epidermoid carcinoma of the lung	1	0
4	59	Adenocarcinoma of the lung	1, 2, 3, 4	1, 2
5	55	Metastatic carcinoma from the breast	1, 2, 3, 4†	1, 2
6	69	Epidermoid cancer of the lung	1, 2, 3, 4†	0
7	64	Adenocarcinoma of the lung	1, 2, 3	1
8	58	Metastatic carcinoma from the breast	1, 2, 3, 4	1

* Figures denote whether vomiting occurred after each dose of 0.1 mg. per Kg. of mechlorethamine hydrochloride.

† Vomiting persisted three days after cessation of therapy.

hydrochloride was poorly tolerated by 1 patient who complained of a feeling of fullness in the head, dizziness, double vision, and marked anxiety. Although the neurologic examination showed negative results, triflupromazine hydrochloride was discontinued and thorazine was substituted with prompt disappearance of the described symptoms. A second patient also complained of a feeling of fullness in the head and anxiety, but experienced no dizziness or double vision; still, medication was continued for two full days because of its ability to suppress emesis and then was withdrawn. When this patient was given another series of injections of mechlorethamine hydrochloride some three months later, triflupromazine hydrochloride was again administered as an antiemetic. On this occasion the drug was well tolerated and successfully reduced nausea and vomiting to a minimum. Emesis experienced by 1 patient with lung carcinoma and in poor physical condition was more effectively controlled by chlorpromazine hydrochloride in a previous regimen than with triflupromazine hydrochloride in the dosage prescribed for this investigation.

Side-effects attributed to triflupromazine hydrochloride included a transient sensation of fullness in the head, anxiety, and nervousness which disappeared when medication was discontinued. No other adverse reactions were observed during this study and all values obtained through routine blood chemistries remained within the limits expected after mechlorethamine hydrochloride therapy. A subjective confirmation of the effectiveness of triflupromazine hydrochloride in controlling the side-effects of mechlorethamine hydrochloride without substituting side-effects of its own was the observation that patients showed a greater willingness to return to their homes following this treatment program than with previous regimens. Our busy hospital staff was impressed by the fact that the use of triflupromazine hydrochloride made possible the administration of mechlorethamine hydrochloride in the morning without patient discomfort rather than as part of the more hectic afternoon and evening schedules. At present this drug is employed routinely side-by-side with nitrogen mustards in all patients with forms of carcinoma that are considered responsive to this form of therapy.

Comment

The ability to control the persistent nausea and vomiting induced by the cytotoxic nitrogen mustards is impressive evidence of the efficacy of an antiemetic agent. Where emesis is associated with certain disease states, the administration of fluids or antibiotics or the unconscious elimination of underlying factors during treatment may in themselves terminate the reaction so that an estimation of drug influence is difficult. Under other circumstances vomiting may be a self-limiting condition and a good response frequently can be obtained with placebos. Therapeutic doses of nitrogen mustards, however, produce an almost universal complaint of nausea, and approximately 50 per cent of any patient group experience severe vomiting. With each injection and with each course of therapy these manifestations of intolerance are activated and not infrequently require cessation of treatment since only this will alleviate the emesis in the absence of more specific measures. Patients selected for nitrogen mustard therapy can provide a valuable experience with antiemetic medication since practical evidence of specific drug action is not difficult to obtain and there is relative freedom from the extraneous influences encountered in emesis of various other origins.

There have been very few effective drugs in the category of antiemetics. Triflupromazine hydrochloride, a trifluoromethyl phenothiazine derivative, appears to be exceptionally active in this area. Added to the treatment program where nitrogen mustards are prescribed, the drug eliminates completely or reduces to a minimum the nausea and vomiting induced by these highly toxic compounds without introducing serious side-effects of its own. A sensation of fullness in the head, anxiety, and nervousness are rare occurrences during the five-day period in which medication is given, and these are transient, vanishing when the drug is withdrawn. On the other hand, the use of triflupromazine hydrochloride enables the successful completion of a full course of therapy with nitrogen mustards in a high percentage of cases with minimal or no discomfort to the patient and in a schedule satisfactory to a heavily burdened hospital staff. The quiescent effect produced by the drug in most instances is a distinct advantage in the patient with neoplastic disease.

Summary

Experience with triflupromazine hydrochloride for control of emetic reactions to nitrogen mustard therapy demonstrated that the compound possesses a high degree of activity as an antiemetic. During 31 courses of therapy with mechlorethamine hydrochloride, triflupromazine hydrochloride in prescribed dosage completely eliminated nausea and vomiting in 18 instances and in 11 reduced such signs of intolerance to a minimum. The drug was withdrawn in 2 cases because of a transient sensation of fullness in the head, anxiety, and nervousness, but 1 of these patients subsequently was given a second course of treatment without any adverse effects. In prescribed dosage, triflupromazine hydrochloride proved inadequate in 1 patient who had previously responded well to chlorpromazine hydrochloride. The potent antiemetic properties of triflupromazine hydrochloride are worthy of trial for control of nausea and vomiting of various origins, particularly whenever such reactions are severe or refractory to other forms of therapy. At present the lack of clearly defined areas of usefulness for antiemetic agents requires an empiric approach to treatment.

Addendum

Since the completion of this study, 3 patients have demonstrated a numbness and tingling of their tongues and lips. This has been described as a sensation of "the tongue being too big for the mouth." Complete neurologic examinations were within normal limits. The patients, on all three occasions, had been receiving 25 mg. of triflupromazine hydrochloride four times daily for forty-eight hours prior to the onset of symptoms, which completely disappeared twenty-four hours after the drug was discontinued. In 2 of the patients, chlorpromazine hydrochloride was substituted and similar symptoms appeared approximately forty-eight hours later and disappeared after the chlorpromazine hydrochloride was discontinued. This may represent a particular individual reaction to the promazine nucleus which is common to both of these drugs.

Glenridge Hospital

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Radioactive Iodine Uptake Studies in Patients with Thyroid Dysfunction[*]

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The twenty-four-hour radioactive iodine (I^{131}) uptake test is now accepted as one of the procedures of choice in the determination of thyroid dysfunction in the human being.[1] The so-called normal range has changed many times. As experience with the test increased, the limits became more definite.

It was decided to determine the correlation between the radioactive iodine uptake and the clinical diagnosis in 207 cases studied at the Long Island College Hospital.

Methods

The authors collected 207 cases in which the clinical diagnosis of hypothyroidism, euthyroid state, and hyperthyroidism was obvious and without question. Two groups of patients were included in the study: (1) hospitalized patients and ambulatory patients from our clinics, and (2) ambulatory patients referred by private physicians.

The admission history, physical examination, and laboratory data were reviewed in the first group directly from the hospital charts. For the second group, questionnaires were mailed to the referring physicians to be filled out by them on the basis of their office records. The questionnaires were prepared to include all of the important signs and symptoms of alteration of thyroid function as well as pertinent laboratory studies (Table I).

TABLE I.—THYROID QUESTIONNAIRE

History

1. Initials:............
Chart Number:.....
2. Age:...............
3. Sex:...............
4. Nervousness:.......
5. Eye symptoms:.....
6. Mass in neck:......
7. Sweating:..........
8. Heat intolerance:...
9. Appetite:..........
10. Weight change:....
11. Hair:............
12. Tremors:.........
13. Palpitation:.......
14. Libido:...........
15. Bowel changes:....
16. Menses:..........
17. Easy fatigability:..
18. Sleeplessness:......
19. Voice changes:.....

Physical Examination

1. Hair:..............
2. Skin:..............
3. Eye signs:..........
4. Tongue tremor:.....
5. Thyroid:...........
6. Bruit:.............
7. Voice:.............
8. Pulse:............
9. Blood pressure:....
10. Hand tremor:.....
11. Warm hands:......
12. Moist hands:......
13. Palpable liver, spleen, or nodes:...

Laboratory Tests

1. Sleeping pulse:......
2. Basal metabolism rate:...............
3. Red blood count:.............
4. White blood count:.............
5. Lymphocytes:.....
6. Cholesterol:.......
7. Protein-bound iodine:...........
8. Tracer radioactive iodine:...........

Treatment, if any:..........................
Surgical report, if any:........................
Pathology report, if any:......................

Our purpose was to exclude all doubtful cases. The total number screened was 600 and represented all those patients on whom a radioactive tracer study was done at our hospital. Of the entire group, there were 20 cases of hypothyroidism, 144 cases of euthyroidism, and 43 cases of hyperthyroidism. Three hundred and ninety-three patients were excluded who had one or more symptoms, signs, or laboratory tests that were equivocal or doubtful; they were not used in this study. To start with the clinically obvious cases, this procedure had to be carried out. Those included in the study were classical myxedematous, euthyroid, and hyperthyroid cases. Starting with this

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premise, we felt that we could then determine how well the radioactive tracer studies correlated with the clinical diagnoses.

Method Used for Obtaining I^{131} Uptakes

The radioactive iodine diagnostic procedure used at the Long Island College Hospital under the auspices of the Radiological Department is as follows.

Each patient is interviewed by a radiologist prior to the study as to his signs and symptoms and possible ingestion of iodine-containing drugs. The list, as compiled by Magalotti, Hummon, and Hierschbiel,[2] is used and is reproduced below.

CHEMICALS AND DRUGS THAT ALTER TWENTY-FOUR-HOUR I^{131} UPTAKE BY THYROID

- Iodine-Containing Compounds
  - These drugs all depress the twenty-four-hour uptake but vary in degree of influence, depending on the type of thyroid. In general, the interference is longer in patients who are euthryoid or who have nodular goiters and shorter in those who have diffuse exophthalmic goiters. The average period of depression is given.
    - General preparations (one to three weeks)
      - Lugol's solution
      - Iodides
      - Antitussives
      - Iodine ointments (topical)
      - Iodine tincture (topical)
      - Iodoform (topical)
      - Iodine suppositories
      - Vitamin preparations (occasional)
      - Entero-Vioform
      - Diodoquin
      - Enterosept
      - Neo-Penil (penicillin)
    - Contrast media
      - Aqueous solutions
        - Diodrast: one to three months
        - Hypaque, Mediopaque, Neo-Iopax, Urokon, Miokon, Thixokon, Renografin: one to two weeks.
        - Dionosil (British): two to four months
      - Oily solutions: up to one year or more
        - Lipiodol, lafay Visciodol, Ethiodol, iodochlorol, Pantopaque
      - Cholecystopaques and cholangiopaques
        - Cholografin: three months
        - Telepaque: two months
        - Priodax: one to three months
      - Uterosalpingopaques
        - Skiodan acacia, Salpix: one month
- Other Chemicals and Drugs
  - These preparations all depress the twenty-four-hour uptake, although to a lesser degree and for a shorter time with hyperthyroidism. The average period of depression is given when known.
    - Antithyroid drugs: two to eight days
      - Thiouracil, propylthiouracil, methylthiouracil, iothiouracil (Itrumil), Muracil, methimazole (Tapazole), mercazole, carbimazole
    - Thyroid medication: one to two weeks
      - Desiccated thyroid, triiodothyronine, thyroxin, thyroglobulin
    - Thiocyanates: one week
    - Perchlorate: one week
    - Nitrate
    - Sulfonamides: one week
    - Orinase
    - Progesterone
    - Adrenocortical steroids: one week or less
      - Cortisone, corticosterone, desoxycorticosterone, prednisone, prednisolone
    - Adrenocoroticotrophic hormone
    - Resorcinol
    - Cobalt: one week or less
    - Para-aminosalicylic acid and isoniazid: one week after prolonged use
    - Butazolidin
    - Amphenone: two to three days
    - Antihistamines: one week or less
    - Phenothiazine
    - Pentothal sodium: one week
- Compounds that Enhance Uptake
  - Thyroid stimulating hormone
  - Estrogens (not persistently)

Fifteen microcuries of I^{131} is then given in capsule form. Twenty-four hours later a scintillator counts four sides (anterior, posterior, and both laterals) for one minute each. The neck is measured, and a standard is counted in a phantom neck of the same size. The background is checked for one minute. The counts for the four sides are added together and averaged. Uptake equals $\frac{\text{corrected average}}{\text{corrected standard}} \times 100.$†

Results

The 20 obviously hypothyroid patients had a radioactive iodine uptake that ranged from 1 to 26 per cent. Most of them, 17 of the 20 (or 85 per cent), were below 15 per cent (Fig. 1A).

One hundred and forty-four patients were definitely euthyroid. Each had a radioactive iodine uptake done because of one or two suspicious symptoms or to evaluate a mass in the thyroid. The radioactive iodine uptakes ranged from 6 to 74 per cent. Most of the cases, 130 of the 144 (or 90 per cent), fell within the 15 to 50 per cent range (Fig. 1B).

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† Isotopes are supplied by Nuclear Advisors, Long Island City, New York.

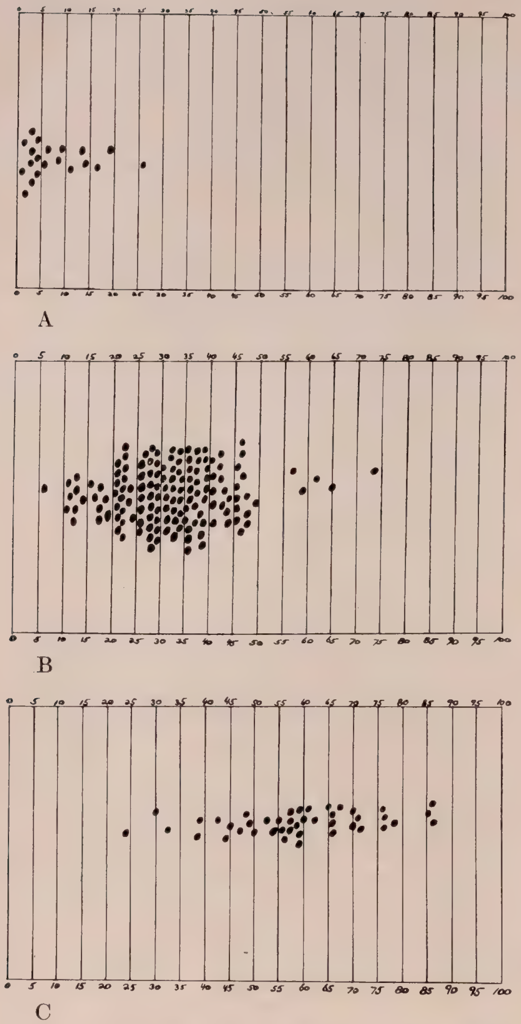

FIG. 1. Per cent of radioactive iodine uptake. (*A*) In clinically hypothyroid patients. (*B*) In clinically euthyroid patients. (*C*) In clinically hyperthyroid patients.

Forty-three hyperthyroid patients had radioactive iodine uptake determinations that ranged from 24 to 87 per cent. The majority, 32 (or 74 per cent), were above 50 (Fig. 1C). This is in close agreement with the findings of other investigators.[2-4]

Comment

It was obvious from the study that the twenty-four-hour radioactive iodine uptake test for thyroid function is a practical but not infallible test for use in a voluntary hospital. It must be emphasized that this test, as is true of most laboratory procedures, is not without overlap and error.

Our hypothyroid range was from 0 to 15 per cent. The euthyroid range was from 15 to 50 per cent. Hyperthyroid patients picked up over 50 per cent in most cases. All three groups had some overlap. The questionable ranges on both sides of the euthyroid group were from 10 to 20 per cent and from 40 to 50 per cent. This was disturbing. Very few physiologic tests have a clearcut, definite end point, but the overlap in our studies makes it necessary for the clinician to be ever alert or he may be misled by the very test he uses to help clarify the diagnosis.

When the pickup falls in either of the questionable ranges, the practitioner must use his clinical judgment. If no additional evidence can be obtained by using the other tests of thyroid function, such as the basal metabolic rate, protein-bound iodine, cholesterol, or thyroid-suppression test, a therapeutic test can be used. If hypothyroidism is suspected, a trial of thyroid extract will help establish the diagnosis. If hyperthyroidism is suspected, treatment with one of the accepted antithyroid drugs will cause amelioration of symptoms within three to six weeks.

Our hypothyroid cases showed that the twenty-four hour radioactive iodine uptake is of value in diagnosing the underactive thyroid state. The clinical diagnosis by the alert physician is still the most accurate way to diagnose thyroid dysfunction. A careful history and a physical examination will make the correct diagnosis in most of the cases. When in doubt, therapy should be guided by the clinical impression and not influenced by equivocal laboratory tests.

The purpose of this paper is not to evaluate the relative merits of the common tests of thyroid function. However, we should like to record our opinion that, if carefully done, the basal metabolic rate, the protein-bound iodine, and the radioactive iodine uptake are of value to the clinician who is in doubt as to the correct diagnosis.[3] Most hospitals have a long list of substances that will disturb the results of these tests. They should be referred to prior to ordering the tests. We suggest that the practitioner be wary of vitamin preparations and cough prescriptions. They often include ammonium chloride which contains traces of iodine and would upset the results of the radioactive iodine and protein-bound iodine tests. The accuracy of all three will depend also on the ability of, and the care exercised by, the department performing them.[4] More reliable results are often sacrificed for the sake of speed, economy, and short cuts.

Conclusions

1. The twenty-four-hour I^{131} uptake test is a simple and practical procedure for the study of thyroid function.

2. We have observed, as have others, considerable overlapping in the I^{131} uptake of hypothyroid and euthyroid patients and of euthyroid and hyperthyroid patients. The following limits of iodine uptake have been assigned on the basis of the data accumulated in this study: hypothyroidism—0 to 15 per cent, normal thyroid function—15 to 50 per cent, hyperthyroidism—over 50 per cent.

3. In evaluating the results of I^{131} uptake determinations, the clinician must keep in mind the fact that such overlapping occurs.

4. On both sides of the euthyroid range are areas that must be considered as nondiagnostic or questionable. This study placed them as being from 10 to 20 per cent on the hypothyroid side and from 40 to 50 per cent on the hyperthyroid side.

5. When the I^{131} test falls within the questionable ranges, the basal metabolic rate, protein-bound iodine, cholesterol level, thyroid suppression test, therapeutic trial, and clinical judgment must be employed to help establish the diagnosis.

Summary

Two hundred and seven cases with known clinical diagnoses were studied. Twenty of the cases were hypothyroid. One hundred and forty-four were obviously euthyroid, and 43 were definitely hyperthyroid.

In the study 85 per cent of the hypothyroids had a radioactive iodine uptake of 15 per cent or lower. Ninety per cent of the euthyroid patients fell within the uptake range of 15 to 50 per cent. Seventy-four per cent of the hyperthyroid patients had a radioactive iodine uptake determination of above 50 per cent.

All three groups demonstrated a definite overlap, and the importance of clinical signs and symptoms in establishing the diagnosis of thyroid dysfunction was emphasized.

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Sitting, Not Stuffing, Makes Overweight Teenager

Researchers at the Harvard School of Public Health find that "sedentary habits" are the key to the plight of the overweight teenager. Lean adolescents, it seems, actually eat more, averaging 4,600 calories a day compared with only 3,400 for the "fatties" in the crowd. The vital difference: the lean youngsters use all of their food energy, while the fat ones, adjusted to their disposition "just to sit," let their calories settle as body fat. Trouble ahead!—*Nutrition Foundation*

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Injuries to and Diseases of the Hand and Their Management

Part II

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Bones and Joints

An aluminum splint combined with a volar cockup plaster cast for the treatment of fractured phalanges and metacarpals has been described.[25] Effective reduction and immobilization, placement of the hand in a manner such that the muscle-tendon systems are at minimal tension, immobilization of the entire hand ray, and compression to avoid edema are required. Regional block anesthesia usually is sufficient. The splint is fixed to the wrist, hand, and forearm by the use of a plaster cast. These structures are held in position by wrapping them with roll gauze. Reduction is maintained by means of strips of tape connecting the digit to the aluminum splint. The method apparently is also useful in markedly comminuted fractures.

In contrast with this method, the use of intramedullary pull-out wire fixation for phalangeal and metacarpal fractures has been advocated.[26] The advantages of this method are: early mobilization of the injured parts, maintenance of function without any loss of position, ease of application of adequate pressure dressings, and adequate stability following extensive trauma. Apparently transarticular placement of the pin has not resulted in joint stiffness.

Carroll[27] has written a thoughtful paper on the levels of amputation in the third finger. He believes that as large a portion as possible of any injured digit should be saved providing that what remains will afford the best painless functioning on healing. He feels that when only the base of the distal phalanx remains it is best to amputate at a level within the distal portion of the middle phalanx. Amputation of the distal phalanx by disarticulation through the distal interphalangeal joint is not advised. It is felt that it is better to fashion the tip of the middle phalanx into a cone by removing the condyles. Any level of amputation down to the base of the middle phalanx is acceptable. In the proximal phalanx amputation through the interphalangeal joint is not advised and a level of less than three quarters of the proximal phalanx is not acceptable. It is Carroll's opinion that if only a short portion of the proximal phalanx is to remain, it is best to remove it along with the entire metacarpal. It is possible to refashion the hand at a later date by shifting the index ray to replace the missing third digit.

Complete dorsal dislocation of the metacarpophalangeal joint of the index finger, although rare, requires open reduction. This may be difficult to accomplish unless the exact anatomy of the deformity is understood. Surgery may reveal that the head of the metacarpal is securely wedged volar to the palmar fascia by the various bands and ligaments constricting the neck of the metacarpal. To reduce the dislocation it is necessary to divide all the constricting bands with care and to preserve the digital nerves, arteries, and flexor tendons.

A case in which there was a somewhat similar problem involving recurrent locking of an index finger in which the sesamoid bone of the index finger was at fault has been described.[28] At surgery roughness of the contiguous surfaces of the metacarpal head and sesamoid bone was so marked that attempted extension put the structures on tension and forced locking of the joint. Excision of the sesamoid bone, smoothing of the palmar surface of the metacarpal head, and reconstitution of the joint capsule gave a good result.

A note on the anatomy of the sesamoid bones is of interest. These bones are found on the palmar surface of the hand and are variable in number. Two at the metacarpophalangeal joint of the thumb, one at the interphalangeal joint of the thumb, and one at the metacarpophalangeal joints of the index and little fingers often are present. The sesamoid bones are intimately related to the volar plates and tendon sheaths, and they may produce symptoms following trauma due to fracture of the bones or to a situation as in the case described.

Nerve Repair

Primary nerve repair in acute injuries still is a somewhat controversial subject. Following acute injury the nerve ends are soft and irregular, and therefore a good end-to-end apposition may be difficult to accomplish. A secondary repair following neuroma formation may be easier to do because of fibrosis of the nerve sheath. Although it is not possible to take a definite stand in this controversy, the reviewer in general favors primary suturing if it is at all possible. In those wounds whose gross contamination or age contraindicate suturing, secondary repair may be advisable.

Successful secondary nerve suturing requires satisfactory mobilization of the proximal and distal stumps and complete resection of the neuroma with accurate end-to-end suture without tension. If there has been little or no loss of nerve substance, this usually is not a major problem.

Seddon[29] has found that factors which influence the recovery of nerve function include: the nature of the wound, the level of the injury, the period of delay before repair, the findings at surgery, and the kind of pre- and postoperative care. Crushing or severe injuries due to high-velocity missiles damage the stump more than a clean cut does. With respect to the level of the injury, it appears that the more proximal the lesion, the poorer the prospect of recovery. Prolonging the period of time prior to repair is harmful because of the possibility of the development of fibrosis in the distal nerve stump and in the surrounding tissues. The period of delay after which useful motor recovery rarely occurs is approximately eighteen months, except after low median nerve suture. The time period after which delay becomes critical for sensory recovery is considerably longer, that is, two to three years. With respect to the length of resection, useful recovery following resection of 13 cm. of the ulnar nerve at the elbow is reported. For other nerves, the lengths range from 8 to 11 cm.

In general, it appears that repair of a divided nerve gives an even chance of useful recovery, that is, return of sufficient function to make the suture worth while.

When apposition of nerve ends is not possible because of loss of substance, it may be necessary to transfer the ulnar nerve anterior to the medial epicondyle or to bring the median nerve anterior to the pronator teres. The radial nerve likewise may be rerouted anterior to the humerus. Should these procedures fail, the surgeon may have to suture the neuroma to a distal nerve with the hand and forearm in flexion. After three or four weeks the arm is extended gradually and the nerve is lengthened. Six to eight weeks later it may be possible to perform a definitive repair.

Other forms of repair include a pedicle graft operation, the use of plasma clots, digital nerve grafts, and cable grafts. Although satisfactory results have been reported in as many as two thirds of nerve grafts, the procedure is not reliable.

Moberg[30] has published the findings of a very thorough study of sensory function in the hand. He has correlated the results of a test utilizing ninhydrin, which stains amino acids and the lower peptides excreted in sweat, in which the patient picks up small objects on which he leaves his fingerprints. He also studied the iodine-starch method, which has the advantage that the print can be seen immediately, that is, without having to be developed first. An advantage of the ninhydrin method is that the print can be fixed and preserved. It is Moberg's belief that tactile gnosis varies directly with pseudomotor function in the hand and that the tests are very useful in assaying the level and the rate of the return of functional sensibility.

Larsen and Posch[31] have reviewed their experience in the treatment of nerve injuries in 325 cases involving the upper extremity. They favor immediate, or primary, repair whenever possible; however, in cases of contaminated, crushed, or torn wounds or when adequate operating facilities are not available, they prefer secondary repair. They have found that sensory return after nerve repair is uniformly good. The best results were in the return of motor function following radial nerve suture, being satisfactory in one half to two thirds of the cases of median nerve suture at the wrist. Motor return following ulnar nerve lacerations was poor. The authors have utilized tendon transfer operations where necessary to restore function to a permanently paralyzed portion of the extremity.

Carpal Tunnel Syndrome

A detailed report on 22 patients with evidence of median nerve compression at the wrist has been published.[32] The disease was bilateral in 12 patients and unilateral in 10. It occurred almost three times as frequently in women. Half the patients were between thirty and fifty years of age. Numbness and paresthesias in the digital distribution of the median nerve were present in all but 1 patient. Significant night pain was present in 31 of the 34 hands. Thenar atrophy was found in 12 of the 28 hands in which the condition of the thenar musculature was noted. The test for Tinel's sign gave a positive result in 13 of 20 hands. Anesthesia was demonstrable in only 19 of the 34 hands. There was a history of increased use of the hand prior to the onset of symptoms in 14 patients.

Operative treatment consisted of exposing the carpal ligament through a curving incision extending longitudinally over the wrist and dividing the ligament to expose the median nerve. In 9 patients pseudoneuromas were found in an enlargement of the nerve proximal to the edge of the transverse carpal ligament.

In an attempt to clarify the etiology of this disease, pressure readings in the carpal tunnel were recorded in 6 abnormal wrists at surgery and in 6 normal hands studied at autopsy. A Foley catheter connected to a distensible bag filled with mercury was introduced into the proximal half of the carpal tunnel. Readings were taken with the wrist in neutral position, acutely flexed, and acutely extended. The findings suggest that an increase in pressure is produced in the proximal portion of the tunnel by flexion and extension of the wrist while in the distal portion of the canal only extension raises the pressure. The authors feel that wrist flexion is more significant than extension in the production of symptoms. They believe that flexion of the fingers with the wrist flexed squeezes the median nerve between the taut flexor tendons and the unyielding anterior wall of the carpal canal.

Another report on this syndrome[33] stresses nonsurgical treatment for patients in whom the onset of symptoms occurred after acute trauma. Treatment includes splinting of the wrist, anti-inflammatory medication, conventional physiotherapy, and x-ray therapy. Indications for surgery include: thenar muscle atrophy, increasingly uncomfortable hyperthesias in median distribution, appreciable sensory loss, and the return of symptoms following their relief after rest. The authors believe that the simple transverse incision through the distal fold of the wrist provides satisfactory exposure and that it is unnecessary to use a hemostatic cuff or Esmarch bandage. The transverse incision is used because of the danger of the formation of keloids or uncomfortable scars from a vertical incision. Most hand surgeons prefer the hemostatic cuff and the more generous exposure afforded by a gently curved vertical incision.

Splinting

It is useful to consider hand splints in two large categories.[34] The first type provides support and immobilization; the second type is designed to increase the range of motion. Indications for the use of supportive and immobilization splints include the following goals: putting injured or infected tissues at rest in a position of function, restoring normal position after fractures or soft tissue injury, relaxing muscles deprived of their normal antagonists by injury, and preventing tension on suture lines following repair of tendons and nerves.

The simple aluminum splint is perhaps the most useful of all the immobilization splints. It is inexpensive, light in weight, malleable, and strong, and it is sterilized readily and prepared easily with ordinary padding and roller gauze. This type of splint is used frequently following the repair of divided tendons and nerves in the fingers, palm, or wrist, and it usually is used in conjunction with a bulky pressure dressing designed to exert moderate and even pressure over all surfaces. Immobilization splints also minimize postoperative pain following the repair of divided soft tissues.

The Mason-Allen Universal splint is made of aluminum with a cup-shaped end designed to permit immobilization of the hand in a position of function. It is very useful in severe hand injuries, which may include fractures, divided tendons and nerves, and avulsions of the skin. Severely burned hands may be dressed and immobilized on this splint, for it affords a means of obtaining moderate compression and allows the digits to rest in a natural, curved position with the thumb in moderate abduction and opposition. Should injured soft tissues contract and cause stiffening, the digits will be in the best position to afford maximum function with whatever degree of motion is regained.

The simple ulnar splint is named because of its value following division of the ulnar nerve. It is fashioned from aluminum and is so positioned that it prevents hyperextension of the proximal phalanges of the fourth and fifth fingers. The splint does not actually immobilize the hand, but its preventing of hyperextension of the proximal phalanges makes it possible for the patient actively to extend the middle and distal phalanges.

The wrist cockup splint is used following radial nerve injury to prevent overstretching of the denervated extensor muscles. It usually is sufficient to support the wrist and palm in hyperextension inasmuch as the fingers can be moved actively by the interossei and lumbrical muscles innervated by the ulnar and median nerves. It is necessary to support the thumb because of the loss of the extensors and long abductor of the thumb.

Finger splints often are very useful following soft tissue or bony trauma. Avulsion of a common extensor tendon at its insertion in the distal phalanx (mallet finger) often may be treated successfully by splinting the finger in hyperextension at the distal interphalangeal joint with the proximal joint in flexion. A plain aluminum splint may be padded with felt for the finger tip and bent to the proper shape.

The basic ulnar and cockup splints fitted with outriggers may be valuable for increasing the range of motion in hands following surgery and injury. Outrigger bars may be riveted to the basic splints in such a manner that rubber bands attached to finger cuffs will provide elastic traction. The tension thus provided may be used to preserve normal motion and to restore motion to stiffened digits.

The opponens and thumb abduction splints are useful for increasing the range of motion of the thumb. The opponens splint consists of a spring steel attachment riveted to an aluminum frame, and it exerts gentle pressure to the proximal thumb phalanx in an ulnar and rotatory direction. A simple wrist cuff and elastic traction also are helpful in promoting abduction and opposition of the thumb.

Hands subjected to severe injury, such as crushing by heavy rollers, extensive burns, or simultaneous division of the median and ulnar nerves, may become very immobile and thus present a difficult problem in the attempt to increase their range of motion. An ordinary leather glove fitted with straps and buckles helps to improve flexion.

The knuckle bender is a padded aluminum splint designed to increase flexion at the metacarpophalangeal joints. Rubber bands attached to wire projections assist the patient in stretching contracted joint capsules and extensor tendons. The prime flexors of the metacarpophalangeal joint, the interossei, and the lumbrical muscles then begin to assume a more normal function.

Injury of the central extensor tendon near the proximal interphalangeal joint may allow the lateral bands to prolapse and cause the buttonhole deformity. If this deformity is at all pronounced, corrective splinting should be instituted prior to surgery. The safety pin splint, which is padded at each end and has a canvas strap placed centrally, is very useful in overcoming the flexion deformity. Another useful device is the garter splint, which encircles an injured finger and its normal neighbor. Flexion and extension of the normal digit increases the range of motion of the stiffened finger.

Anesthesia

Surgical procedures on the hand which are of such magnitude as to require more than one hour of operating time usually are best done under a general anesthetic. This affords complete muscle relaxation, and the hemostatic cuff may be used without discomfort to the patient. Procedures which require one hour or less often can be done under nerve block anesthesia. The patient will tolerate the blood pressure cuff quite well for periods of up to one hour providing he has received adequate premedication.

Recently an excellent description of the technic of regional nerve block at the wrist was published.[35] In this method a 2 per cent solution of lidocaine hydrochloride (Xylocaine hydrochloride) and a 1:200,000 concentration of epinephrine are used. Small quantities of the solution are deposited with a 25-gauge needle. The author summarizes the requirements of regional block anesthesia as follows: (1) complete anesthesia, (2) painless injection, (3) a bacteriologically safe site for injection, (4) the use of minimal amounts of the solution to avoid compression of vascular and lymphatic tissue, and (5) the avoidance of injecting into nerves. When only one digit is involved, the digital nerves in the palm and beneath the dorsal skin may be anesthetized. Successful utilization of this technic requires precise knowledge of the anatomy of the structures at the wrist and meticulous execution of technic.

The same author[36] also has described a procedure for regional nerve block in surgery of the hand and forearm. The 2 per cent solution of lidocaine hydrochloride is injected into the upper portion of the arm just distal to the distal edge of the tendon of the pectoralis major. By injection into this site it is possible to anesthetize all of the major nerves. To render the hemostatic cuff completely painless it is necessary to add a subcutaneous ring block which anesthetizes the superficial sensory nerves and the intercostobrachial and perforating branch of the superficial circumflex axillary nerve. The author of the report advises the use of approximately 16 ml. of the solution for the major block and 8 to 10 ml. for the subcutaneous ring block. This type of anesthetic is considered adequate for procedures lasting for up to four or five hours.

Reconstructive Surgery

Several procedures to reconstruct a thumb or other digits which may be congenitally absent or amputated following trauma have been devised.

Thumb reconstruction probably is not indicated unless the loss is proximal to the middle of the proximal phalanx. Reconstruction in these cases may include deepening the cleft between the thumb and hand, lengthening the thumb by the application of tubular skin and bone grafts, pollicization of the index or other fingers, or pollicization of a toe. If the thumb is absent at the carpometacarpal joint, it must be realized that a reconstructed thumb will have little or no movement and will serve merely as a stump for opposition. Multiple procedures usually are required and involve construction of a tube pedicle flap on the abdomen. Following transfer of this tube to the thumb, a bone graft will be required.

There is some difference of opinion as to the degree of sensory innervation in such reconstructed digits. In some cases it appears that sensory nerves grow into the reconstructed thumb and give fairly good sensation. However, some workers feel that such a pedicle is devoid of practically all sensation. Pollicization of an index finger[37] entails a shift of soft tissues including the neurovascular bundle and an osteotomy through the proximal portion of the metacarpal with fixation to whatever available bone is present in the thumb.

A recent report on the reconstruction of a digit following the loss of all fingers with preservation of the thumb[38] indicates that rehabilitation of a patient was accomplished during a twelve-month period and required only two surgical procedures. The patient appeared to have benefited from the addition of the reconstructed digit for the purpose of assisting the thumb.

Excision of the greater multangular bone together with portions of the base of either the first or second metacarpals may be of value in improving motion in the thumb which has been limited by degenerative arthritis, trauma, or severe contracture as a result of direct injury or injury to adjacent tissues. This arthroplasty is reported to increase the range of motion at the base of the thumb and to improve opposition.[39]

Severely damaged hands with the loss of metacarpals may be reconstructed. The staging of such procedures includes pedicle skin, bone, and tendon grafting. The lost metacarpals may be replaced by single blocks of iliac bone tailored to fit the sides of the existing defect in the bony framework of the hand. It may be possible to replace the loss of three adjacent metacarpals or all four metacarpals by large single iliac grafts which are technically easier to apply and more stable than multiple individual grafts.

In general, reconstructive procedures of this type require many operations but may afford a very satisfactory return of function to patients with severely injured hands.

Rheumatoid Arthritis

The most common deformities found in a group of 305 patients treated by Laine, Sairanen, and Vainio[40] in Finland include fusiform swelling of the fingers, ulnar deviation at the metacarpophalangeal joints, buttonhole deformities of the thumb and other fingers, the so-called swan-neck deformity, and tendon nodules.

Ulnar deviation of the fingers may be treated by anchoring the extensor apparatus to the radial side of the metacarpophalangeal joint. In severe cases it may be necessary to resect the metacarpal heads followed by proper repositioning of the extensor apparatus.

The mechanism of buttonhole deformity of the fingers appears to be similar to that of the traumatic condition in that inflammation of the proximal interphalangeal joint results in rupture of the central slip. As a result, the lateral bands subluxate, thus causing flexion of the proximal interphalangeal joint and hyperextension of the distal phalanx. It would appear that repair of this deformity may be undertaken following subsidence of the inflammation in a manner similar to that used in the traumatic buttonhole deformity.

Buttonhole deformity also occurs in the thumb and appears to be related to damage of the metacarpophalangeal joint secondary to inflammation followed by ulnar displacement of the extensor pollicis longus. As a result, the patient cannot extend the proximal phalanx. However, the distal phalanx may be pulled into a compensatory position of hyperextension. The workers in Finland[40] found that it was often necessary to stabilize and lengthen a short and highly mobile thumb with a bone graft.

The swan-neck deformity—hyperextension of the proximal interphalangeal joint and flexion of the metacarpophalangeal and distal phalangeal joints—is so named because of the appearance of the involved finger. The pathogenesis appears to be due to a volar displacement of the proximal phalanx. The interossei and lumbrical tendons are held in their original places by the transverse metacarpal ligaments. As a result, their pull is directed more dorsally than anteriorly, and they cause hyperextension of the inflamed proximal interphalangeal joint. The flexor digitorium profundus then pulls the distal joint automatically into flexion. Deformities due to tightening of the lumbrical and interosseus muscles and tendons (intrinsic plus deformity) following rheumatoid arthritis may be treated as outlined previously.

Tendon nodules can grow to a considerable size and during the early stages may produce snapping fingers. Further growth may result in flexion contractures of the fingers or in an inability to clench the first. Early removal is advised.

Metastatic Tumors

Twenty-three cases of metastatic malignancies in the hand have been reported.[41] Bronchogenic carcinoma is the most frequent primary lesion, and often the metastatic lesion calls attention to the primary lung lesion. The metastatic site may be inflamed, painful, and swollen. In many cases a false diagnosis of a felon or another inflammatory condition is made, which emphasizes the necessity for a histologic examination should there be any doubt of the nature of the lesion. Tubercular dactylitis may be confused with a metastatic lesion. This type of tuberculosis, however, is more common in children, may cross the joint space, may cause sequestra, and usually is relatively painless.

Enchondroma is a benign bone lesion commonly encountered in the hand. It is characterized on an x-ray film by an area of decreased density in the diaphysis, and it appears as a rounded cystlike lesion. Epidermoid cysts are not uncommon. They are characterized by a smooth, well-demarcated outline, usually in the terminal phalanges. Other lesions which may be encountered are osteoid osteomas, which are characterized clinically by pain and slow but progressive swelling of the involved bone. The roentgenograms are usually diagnostic because of sclerosis of the involved bone. Giant-cell tumors of the hand are slow-growing lesions which may attain considerable size before giving rise to symptoms. Roentgenograms may reveal a round or oval area of decreased density with a thin cortex containing numerous fine trabeculations. Other lesions which may be encountered include simple bone cysts and primary osteogenic sarcoma. The latter condition is characterized by pain, swelling, and rapid progression. As a rule x-ray films reveal osteolitic and osteoblastic lesions which may be diagnostic.

Sarcoidosis

Sarcoidosis of the fingers[42] may begin with a burning pain lasting for four or five days followed by swelling. The nail, if affected, may become wider than normal, brittle, and striated. The affected skin may be reddish blue, shiny, and smooth, and the tips of the fingers may be bulbous. Movement of the fingers often is unaffected, and there is no peripheral nerve involvement or evidence of deficient circulation.

Radiographic examination shows a coarse expansion of the trabecular structure of the affected phalanges. There may be almost complete disappearance of the phalanges in the tips of severely involved fingers. The diagnosis is established mainly from skin biopsy and from the x-ray examination. Patients may benefit from vitamin D_2 (calciferol). There is evidence that cortisone and ACTH may have valuable suppressive action in this disease.

Experimental Work

Recent experimental work on the healing of tendons and tendon grafts has re-emphasized the importance of the blood supply in the healing process.[43,44] It appears that blood vessels entering long tendons from their muscular origin and periosteal insertion are able to nourish only the proximal and distal thirds of the tendon. Circulation to the central portion of long tendons is accomplished by intermediate vessels which enter through the paratenon or a volar mesentery. In free grafts this portion of the circulation is restored through postoperative adhesions. It appears that permanent disruption of the central vessels or mechanical prevention of postoperative adhesions around free grafts by plastic or other covering materials results in cellular death and eventual disintegration of collagen bundles.

To preserve these important blood vessels restoration of a normal flexor tendon sheath and specialized blood supply by use of a composite tissue homograft of the entire flexor mechanism (with the tendon and tendon sheath intact) has been attempted.[45] Composite tissue heterografts of the flexor mechanism of human cadavers persist following transplantation beneath the abdominal wall of animals. These composite grafts can be transplanted successfully to human beings and may restore flexion to a severely damaged digit. It appears also that these composite tendon homografts are not affected by storage at 37 F. for periods of up to forty days before transplantation.

Other experimental work is in progress with respect to the role of paratenon in the healing of free tendon grafts. Paratenon is the thin, filmy connective tissue surrounding tendons in locations where they do not pass through a definite tendon sheath. It is conceivable that instead of promoting healing with free gliding, paratenon may add to the postoperative adhesions and prevent successful gliding of tendon grafts.

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Prejudice is a vagrant opinion without visible means of support.—AMBROSE BIERCE

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and* WILLIAM B. OBER, M.D.

NOVEMBER 25, 1959

Discussed by ABRAHAM SUNSHINE, M.D.

Intra-Abdominal Catastrophe in a Young Man with Long-Standing Heart Disease

Case History

FURMAN M. JONES, JR., M.D.: A forty-one-year-old Dominican male was admitted to Knickerbocker Hospital on October 6, 1959, because of abdominal pain, diarrhea, and exertional dyspnea of approximately four days duration. The abdominal pain was located principally in the left upper quadrant and umbilical area, occasionally radiating to the back. The pain was sharp and continuous. It was not modified by respiration, position, or the intake of food. The diarrhea had begun at about the time of the onset of pain, and it was characterized as two or three loose, watery stools a day. The stools contained mucus but no blood. There had been no nausea or vomiting associated with the diarrhea. On the day preceding admission he became short of breath, both on exertion and at rest. He admitted to occasional chills and sweating but denied cough or chest pain. There had been no symptoms referable to the urinary tract.

At the age of twenty the patient had been told that he had "heart trouble" and that he had a murmur. He denied the occurrence of any illness resembling rheumatic fever, migratory polyarthritis, or chorea. He had been told that he did not have high blood pressure. He had had the usual childhood diseases, but he had not had scarlet fever. He denied exposure to or treatment of lues. Periodically since the age of twenty he had had intermittent episodes of dyspnea on exertion. During his third decade he had received treatment for his "heart trouble," but the nature of the treatment was not disclosed. Three years before admission he was started on digitalis and was maintained on this medication. Periodic injections of diuretics were also given because of mild to moderate fluid retention. At the time of admission he was not working. There was no history of exposure to industrial toxins. There was no history of alcoholic intake.

On his admission his temperature was 103 F., pulse 160 and irregular, respirations 50, and blood pressure 200/100. He appeared to be a normally developed, well-nourished adult male, acutely ill, somewhat pale, and giving evidence of respiratory distress. He was sweating profusely and complained of abdominal pain and shortness of breath. The eyegrounds were normal with no arteriolar changes, exudates, or hemorrhages. The neck veins were distended and the hepatojugular reflux was positive.

Respirations were rapid and irregular. Both lung fields were slightly dull posteriorly, and there were moist rales up to the midlung fields bilaterally. The heart was enlarged to the right and left, the left border being percussed to the anterior axillary line in the sixth intercostal space. A harsh, rough, high-pitched systolic murmur was heard over the entire precordium and was loudest at the apex. No diastolic murmurs were heard. The pulmonic second sound was equal to the aortic second sound.

The abdomen was soft, slightly distended, and diffusely tender. There was definite rebound tenderness in both lower quadrants and tenderness to deep palpation in the epigastrium and left upper quadrant. Visible peristalsis was not detected. The bowel sounds were hypoactive but were heard and were normal in pitch. The liver and spleen were not palpable, nor was any abnormal mass felt. A rectal examination gave negative findings. There was no peripheral edema, and the peripheral pulses were equal and of normal strength. A neurologic examination gave negative results.

The urine was alkaline and had a specific gravity of 1.026. It contained no sugar, albumin, or acetone, and there was only an occasional white blood cell in the sediment. The red cell count was 4.17 million, hemoglobin 15.5 Gm. per 100 ml., white cell count 39,000 with 94 per cent polymorphonuclear leukocytes and 6 per cent lymphocytes, platelet count 216,000, and sedimentation rate 13 mm. per hour. The fasting blood sugar was 107 mg. per 100 ml., nonprotein nitrogen 84 mg. per 100 ml., calcium 8.4 mg. per 100 ml., serum amylase 424 units, and serum transaminase 580 units. The serum sodium was 140 mEq. per L., potassium 4.8 mEq. per L., chlorides 103 mEq. per L., and carbon dioxide 17.5 millimols per L. A culture of the urine yielded coagulase-negative hemolytic Staphylococcus aureus, and four blood cultures failed to yield organisms.

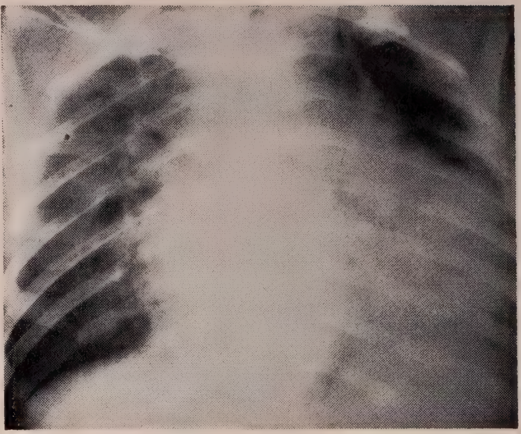

FIG. 1. Portable chest film showing generalized cardiac enlargement. The poorly demarcated rounded area in the midchest area suggests pronounced dilatation of the left auricle.

An electrocardiogram showed auricular fibrillation with a ventricular response of 150 per minute. There was a bilateral bundle branch block with a QRS complex of 0.14 second. RS-T depression was present in leads I, aVl, and V_1 and V_2. Biphasic T waves were present in V_3 through V_6.

A chest film taken with the patient in the recumbent position showed generalized cardiac enlargement. A rounded density superimposed on the right lateral aspect of the cardiac shadow was interpreted as an enlarged left auricle (Fig. 1). No abnormality was seen in the lung fields. A flat film of the abdomen revealed a small amount of gas in the small intestine but no unequivocal evidence of ileus.

On admission, because of the pulmonary edema, the patient was treated with oxygen, meperidine hydrochloride (Demerol hydrochloride), the sodium salt of meralluride with theophylline (Mercuhydrin), and lanatoside C (Cedilanid). At the time it was believed that the patient was hypokalemic; therefore he also was given potassium chloride. The lungs cleared in a few hours and the blood pressure fell to normal levels, but the tachycadia persisted and he continued to complain of abdominal pain. A gastric tube was passed, and 900 cc. of guaiac-negative, brownish fluid was aspirated. The fluid did not have a foul or fecal odor. Continuous suction was maintained, and further therapy with fluids intravenously, probantheline bromide (Pro-Banthine), atropine, and additional meperidine hydrochloride did not relieve his symptoms.

Because of the fever and the leukocytosis, penicillin and tetracycline (Achromycin) were administered. The white cell count then ranged from 24,000 to 39,000. The serum amylase determination was repeated and was found to be 356 units. The abdomen remained soft and slightly distended with both generalized tenderness and rebound tenderness in both lower quadrants. Peristalsis remained normal to slightly hypoactive, and the patient passed some loosely formed stools.

On the third hospital day he became hypotensive, and in spite of vigorous treatment he expired in shock.

Discussion

Abraham Sunshine, M.D.: The patient, a forty-one-year-old male with known heart disease, was admitted because of an acute abdominal catastrophe. I will first discuss the protocol in terms of the patient's heart disease. We are told that the patient had a heart murmur since the age of twenty and that he was symptomatic at that time. He gave no history of rheumatic fever or rheumatic heart disease. The absence of a history of acute rheumatic fever occurs in a significant number of patients who have rheumatic heart disease. The manifestations of rheumatic fever in these patients may be mild and therefore may be passed off as insignificant. Years later, cardiac lesions are detected. We are told further that during the patient's third decade he had received treatment for heart disease, the nature of which treatment was not known. Three years prior to admission he developed congestive heart failure which necessitated treatment with diuretics and digitalis.

The significant physical findings on admission pertaining to the cardiovascular system were an acutely but not chronically ill male with a blood pressure of 200/100 and an irregular pulse at a rate of 160. He was in respiratory distress. Although the patient was hypertensive, the eyegrounds were entirely normal. The neck veins were distended. Both lung fields were slightly dull posteriorly, and there were moist rales up to the midlung fields bilaterally. The hepatojugular reflux was positive. The heart was enlarged to both the right and to the left, the left border being in the anterior axillary line in the sixth intercostal space. A harsh, high-pitched, rough systolic murmur was heard over the entire precordium and was loudest at the apex. The type of murmur is not described, but its characteristics would be very important in the determination of its origin. Was this the diamond-shaped injection-type murmur, or was it the decrescendo, high-pitched murmur heard in regurgitation? The second pulmonic sound was not reduplicated.

The electrocardiogram reveals bilateral bundle branch block with RS-T segment changes secondary to the block. The chest x-ray film reveals an enlarged heart and a double density compatible with an enlarged left auricle. The elevated blood pressure on admission probably reflected the acute abdominal catastrophe. I do not think that the patient had hypertensive disease of long standing. There was no retinopathy. The kidneys concentrated the urine efficiently.

The most likely cause of this patient's heart disease is rheumatic heart disease with mitral insufficiency. Although a diastolic murmur was not heard, the occurrence of pure mitral insufficiency is rare and I think that there probably was associated mitral stenosis. There is evidence of both left ventricular and left auricular enlargement. There is nothing to suggest aortic valve involvement, although occasionally the murmur of aortic stenosis can be transmitted and heard best at the apex.

What other etiology can we consider with reference to the cardiovascular system? Congenital heart disease, such as an interatrial septal defect, has to be mentioned. However, the location of the murmur, the absence of a reduplicated second sound at the pulmonic area, and the bilateral bundle branch block do not support this diagnosis. The chest x-ray picture of course is not at all compatible with this condition, since in this condition one would expect to see an enlarged outflow tract and no evidence of left ventricular hypertrophy. An interventricular septal defect also does not fit this clinical picture. We would expect a patient having a heart of this size due to an interventricular septal defect to be chronically ill and with a history of repeated pulmonic infection. Here, also, there would be an increase in the pulmonary outflow tract. A bicuspid aortic valve either resulting from a congenital anomaly or of the acquired type should be mentioned. Again, one would not expect an enlarged left auricle, and so this diagnosis does not merit serious consideration. Therefore, I believe that the patient had rheumatic heart disease with mitral insufficiency and probably mitral stenosis.

What are the complications that one can expect with rheumatic heart disease? Three possibilities should be mentioned: (1) a systemic embolus, (2) a pulmonary embolus from the right side of the heart, and (3) bacterial endocarditis. Let us review the abdominal findings for the features relating to these possibilities as well as to other causes.

The patient gave a four-day history of abdominal pain, diarrhea, and exertional dyspnea. The pain was located principally in the left upper quadrant and umbilical area with radiation to the back. It was sharp and continuous and was not modified by respiration, position, or the intake of food. Pain of this nature in this area can arise from a variety of sources. Splenic infarcts can produce pain in the left upper quadrant, and the spleen may go on to rupture. Pain from this source usually is intensified by respiration, and there are associated findings in the chest as well as a palpable mass when rupture occurs. The source of this pain can well be from the pancreas, and we will discuss this possibility subsequently in greater detail. Referred pain in pneumonia or in pulmonary infarction can also present this way, but usually it is accentuated by respiration. A perforated ulcer should be mentioned. However, it would be aggravated by the intake of food and probably would reveal free air.

A dissecting aneurysm can begin in this manner, but the pain usually radiates in the course of the dissection. A renal infarct also should be considered, but usually this would give rise to flank pain. Regional enteritis may present with diarrhea, but the history of our patient is not suggestive of it. Intestinal obstruction is another possibility, but one would expect nausea and vomiting as an early manifestation. Mesenteric occlusion, which can certainly start in this manner, must be considered as a possiblity. However, the persistence of peristalsis with bowel movement and the absence of nausea, vomiting, and distention, I believe, rule out this diagnosis. An embolus to the celiac axis could produce mesenteric thrombosis with ischemia of the pancreas.

Let us review the physical findings on admission as they pertain to the abdominal process. The patient was acutely ill and toxic. The abdomen was soft, slightly distended, and diffusely tender. There was definite rebound tenderness in both lower quadrants and tenderness to deep palpation in the epigastrium. Peristalsis was hypoactive. No organs or masses were palpable. Rectal examination gave a negative result. This picture is compatible with pancreatic involvement. The tender abdomen without board-like rigidity again gives support to the diagnosis of mesenteric occlusion.

The laboratory data have some interesting features. The specific gravity of the urine was 1.026. The nonprotein nitrogen was elevated, but the microscopic examination of the urine did not yield abnormal findings. The evidence of good renal tubular function and an elevated nonprotein nitrogen indicates that there was no underlying renal disease and that the azotemia was a result of prerenal factors. There was marked leukocytosis with a normal sedimentation rate. The latter may have been a result of the overt congestive heart failure. The fasting blood sugar was normal, and the serum calcium was low. One explanation for this would be the formation of calcium soaps because of the lack of pancreatic enzymes to digest fats. The serum amylase level was high, revealing some destruction of pancreatic tissue. This process is further confirmed by the increased transaminase with a normal bilirubin, which rules against an obstructive phenomenon to account for these findings.[1] The bacteriologic studies furnish no assistance. The flat film shows a small amount of gas without any evidence of ileus.

The patient's course in the hospital was a downhill one. His congestive heart failure responded to digitalis, diuretics, sedation, and oxygen, but the tachycardia remained. The abdominal pain persisted. The abdomen was soft and tender with rebound in the lower quadrant. Peristalsis was present, and the patient had a bowel movement. The stomach yielded 900 cc. of blood-free, nonfecal fluid. A second determination showed that the transaminase remained elevated. On the third hospital day the patient became hypotensive, and he expired in shock in spite of vigorous treatment.

Could the patient have had pancreatitis? The pain described in the protocol certainly is compatible with this diagnosis. The pain in this disease can be quite varied and may appear in the epigastrium, the right upper quadrant presenting as acute cholecystitis, or in the suprapubic region. The incidence of hypertension was found to be 10 per cent in a review of 307 such cases.[2] Diarrhea also is seen in 20 per cent of patients with pancreatitis. I believe that the diarrhea in this patient represented a general inflammatory process and was nonspecific. The laboratory data of elevated amylase and transaminase levels are compatible with pancreatitis.

If this patient did have pancreatitis, what would we consider as the etiology? He was not an alcoholic. He had no previous history of biliary tract disease, which may be a predisposing factor, nor was there a familial history of biliary tract disease. Rarely does hyperlipemia lead to pancreatitis. There was nothing revealed on physical examination, such as xanthomas and arcus senilis, nor on laboratory examination to suggest this. Familial pancreatitis recently has received attention.[3] It usually occurs in young women with a strong family history. Our patient's age, sex, and absence of familial history all are against this as a cause. Could this have been an acute exacerbation of chronic pancreatitis? There is nothing to suggest previous episodes; therefore I believe that this too cannot be given serious attention. Occasionally pancreatitis is brought on by overindulgence, but again this does not apply. Finally, hyperparathyroidism has been associated with pancreatitis, but there is nothing to suggest this combination in our patient.

Other causes of pancreatitis can be grouped under the classification of vascular lesions. Infarction of the pancreas is a rare but a definite cause of pancreatitis. Recently some 90 cases were reviewed by Frater *et al.*[4] The usual background is malignant hypertension. However, it also has been associated with myocardial infarction as a result of obliterative atherosclerosis. In some cases emboli can cause a massive infarction or multiple small infarctions of the pancreas. The usual pancreatic vascular lesions associated with valvular diseases of the heart generally are microscopic lesions. Bacterial endocarditis also has been reported as a cause of pancreatic infarction, the sequence being septic embolization and the formation of a mycotic aneurysm. Other vascular occlusive lesions in the pancreas develop after intra-abdominal operations. In our particular patient we have to consider two factors, embolic disease or bacterial endocarditis, either of which may lead to pancreatic infarction. Since emboli resulting from valvular heart disease are a rare cause of infarction of the pancreas, I believe that bacterial endocarditis is more of a possibility.

In conclusion, I believe that the patient had rheumatic heart disease with mitral insufficiency and probably mitral stenosis. I believe that the acute abdominal catastrophe was a result of pancreatic infarction caused by septic emboli, resulting from acute bacterial endocarditis involving the mitral valve.

Milton Wigod, M.D.: I find it difficult to reconcile the absence of anemia with bacterial endocarditis of any duration. To me, the soft abdomen, severe abdominal pain, and diarrhea are not inconsistent with mesenteric thrombosis.

Michael S. Bruno, M.D.: The absence of nausea and vomiting are rare in acute pancreatitis, but I suppose that segmental infarction of the organ need not of necessity be accompanied by those symptoms.

Perry Berg, M.D.: Not infrequently the analysis of fluid obtained by peritoneal puncture may help to distinguish between acute pancreatitis and mesenteric thrombosis.

Dr. Jones: How do you explain the normal sedimentation rate if this patient had an endocarditis?

Dr. Bruno: Is there any reason why the emboli in this patient must be interpreted as septic emboli? Could not ordinary embolic thrombi explain the findings as well?

Dr. Sunshine: In reply to Dr. Jones's question, I would attempt to explain away the normal sedimentation rate as an elevated sedimentation rate canceled out by the concomitant presence of congestive heart failure. In reply to Dr. Bruno's question, bland thrombi from valvular heart disease are a very rare cause of pancreatic infarction.[4] Therefore, to support my diagnosis of pancreatic infarction, which is rare enough in and of itself, I would like to go out on a limb still further and hypothesize its development as secondary to an infrequent pathogenesis. Bacterial endocarditis is a more frequent background for embolization to the pancreas with consequent acute infarction.

Diagnoses

Clinical.—*(1) Rheumatic heart disease with subacute bacterial endocarditis, and (2) pancreatic necrosis secondary to embolization from above.*

Dr. Sunshine.—*(1) Rheumatic heart disease with mitral insufficiency and stenosis; (2) acute bacterial endocarditis, mitral valve; and (3) infarction of pancreas by septic embolus.*

Anatomic.—*(1) Idiopathic cardiac hypertrophy with dilatation of mitral valve ring; (2) dilatation and mural thrombosis, left auricular appendage, with embolization to left descending coronary artery and superior mesenteric artery; (3) myocardial infarction, posterior, healing and recent; (4) infarction of jejunum with focal perforation and local peritonitis; (5) chronic passive congestion of lungs with interstitial fibrosis; (6) acute and chronic passive congestion of liver with central necrosis; and (7) altered coagulation mechanism, manifested by fresh hemorrhage into healing myocardial infarction and venous thrombi in pancreas and kidneys.*

Pathologic Report

William B. Ober, M.D.: At autopsy the heart was considerably hypertrophied and all four chambers were dilated, especially the left auricle. The heart weighed 780 Gm., and the left ventricle was 20 mm. thick. There were no congenital de-

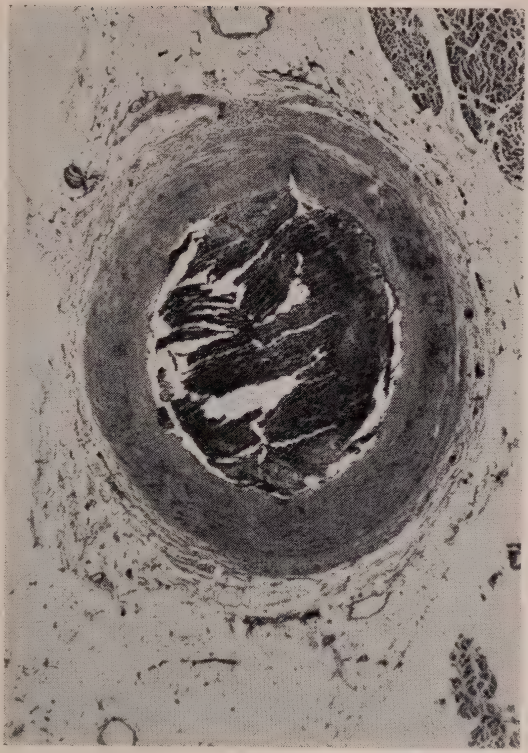

FIG. 2. Section of left descending coronary artery showing occlusion by embolic thrombus. There is no arteriosclerosis, and the thrombus shows no sign of organization at its periphery.

fects or anomalies, and there were no valvular lesions other than dilatation of the mitral valve ring to a circumference of 15 cm. The left auricular appendage contained mural thrombi intimately adherent to the trabeculae and varying somewhat in age. The coronary artery tree showed a trivial degree of atheromatous change, insufficient to account for the presence of a recent thrombus occluding the left descending branch 7 cm. from the ostium (Fig. 2). This thrombus is interpreted as an embolus from the mural thrombi in the left auricle. Distal to the occlusion in the anterolateral portion of the left ventricle wall was a 2- to 3-cm. zone of infarction. The ventricular endocardial surfaces were free of thrombi or areas of thickening. The aorta showed a few soft atheromatous plaques but no sclerosis.

The lungs had a combined weight of 1,220 Gm. and showed a severe degree of chronic passive congestion consistent with the history of progressively less tractable congestive heart failure. A degree of acute passive congestion was superimposed. The liver was of normal weight and showed the characteristic "nutmeg" pattern of chronic passive congestion with more recent acute congestion and central necrosis. The parenchyma of the pancreas was normal, and there was no pancreatitis. Small fibrin thrombi were found in several minor pancreatic veins. The kidneys weighed 240 Gm. each and were free from nephrosclerosis or scarring of even the most trivial degree. A small thrombus was found in a minor renal vein.

The distal two thirds of the jejunum and the ileum down to within 20 cm. of the ileocecal valve were dark purplish, infarcted, and perforated at two points along the antimesenteric border of the ileum. An embolic thrombus was found in the superior mesenteric artery 4 to 5 cm. from its origin occluding the lumen but lying distal to the first major ramus, that is, the pancreaticoduodenal artery. There was early fibrinous peritonitis, maximal at the areas of perforation of the ileum.

In the absence of hypertension, valvular disease, arteriosclerosis, a congenital defect, lues, fibroelastosis, or collagen disease, we can only parade our ignorance by labeling this a case of idiopathic cardiac hypertrophy. We can assign no presently known reason for this patient's heart disease of two decades duration, nor do we know why the heart increased progressively in size until it failed. Such cases are uncommon but are not rare. It remains a diagnosis of exclusion. In a high percentage of such cases which are reported there is a patchy fibroelastosis of the ventricular myocardium and a superimposed mural thrombosis. These features were absent in this patient, and the auricular thrombi appeared to be secondary to his fibrillation.

The myocardial infarction is interpreted as secondary to occlusion of a major coro-

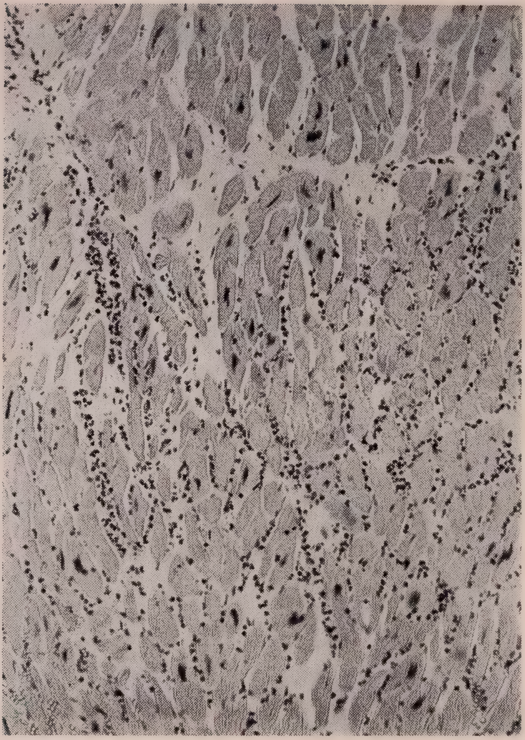

Fig. 3. Section of posterior wall of left ventricle showing recent myocardial infarction. The fibers are necrotic, and there is infiltration by polymorphonuclear leukocytes.

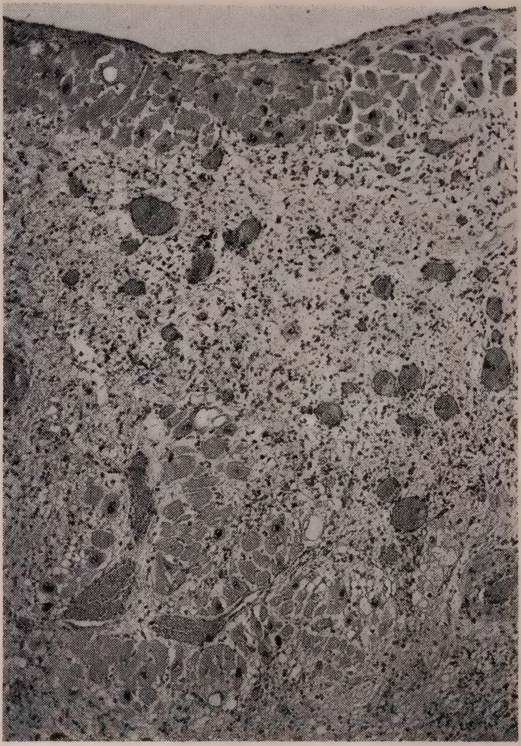

Fig. 4. Section of posterior wall of left ventricle 1 to 2 cm. below section in Figure 3 showing healing myocardial infarction. Most of the necrotic fibers have been cleared, but a few remaining fibers are present. Granulation tissue with sparse lymphocytic infiltration and dilated endothelial-lined channels occupy the space left vacant by the cleared muscle fibers. The subendocardial layer is spared.

nary artery by an embolic thrombus from the left auricle, a distinctly uncommon phenomenon. Microscopic examination of the infarcted area showed two distinct stages of the process in the same location. There was a zone of very recent infarction, no more than three days old, characterized by smudgy necrosis of myocardial fibers with pyknotic nuclei and a fairly intense infiltration of polymorphonuclear leukocytes (Fig. 3). Adjacent to this was a zone of older infarction, about four to five weeks old, with healing and actual fibrosis (Fig. 4). In this zone of older infarction there were several bundles of necrotic muscle fibers which had not yet been cleared by phagocytosis; these patches are clearly distinguishable from the freshly infarcted fibers. The presence of an older area of infarction need not imply a previous occlusion. Infarction without occlusion can occur with only slight narrowing, especially in hypertrophied hearts, if, for any reason, oxygen demand exceeds supply. The presence of two separable infarcts in the same location merely indicates that, like lightning, a myocardial infarct may strike twice in the same place.

The infarcted small bowel showed essentially anemic infarction of the mucosa and submucosa (Fig. 5). The muscularis was largely spared, and the coagulation necrosis was only focally transmural. In spite of the occlusive nature of the embolic thrombus in the superior mesenteric artery, there was some degree of leukocytic infiltration in the infarcted bowel, implying some degree of blood supply.

One of the obscure features of this case is

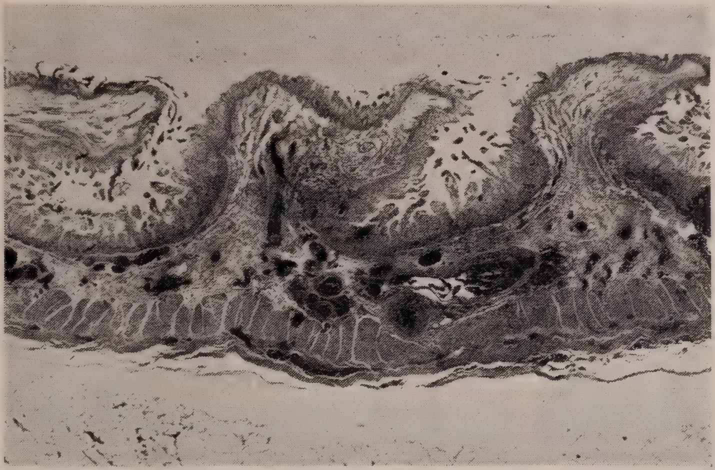

FIG. 5. Section of jejunum showing anemic infarction of mucosa and submucosa. There is intense vascular congestion in the submucosa sufficient to account for the gross appearance of purplish discoloration. The muscularis is spared.

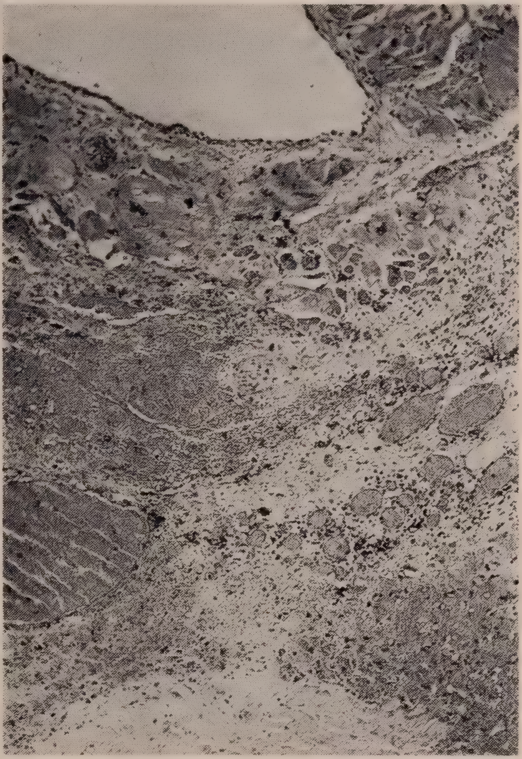

FIG. 6. Section of posterior wall of left ventricle showing healing myocardial infarction, as in Figure 4. There is fresh hemorrhage from the thin-walled vessels, a terminal event.

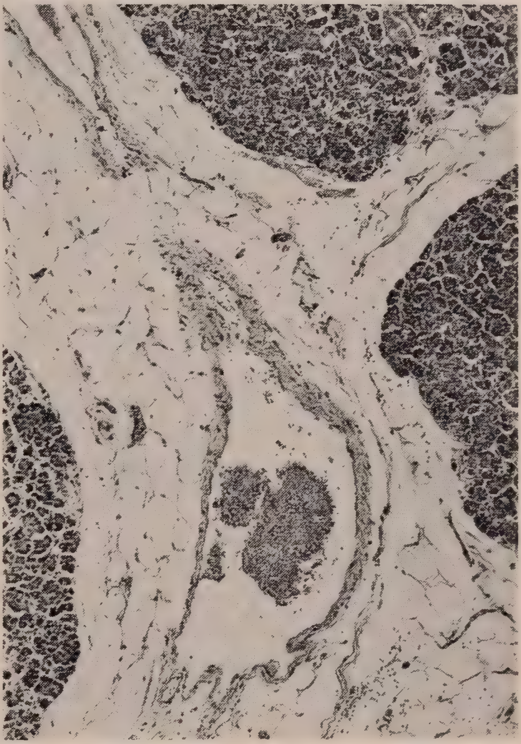

FIG. 7. Interlobular vein in pancreas contains small, nonoccluding antemortem thrombus. There was no infarction, necrosis, or inflammation of pancreas.

the presence of a disorder of the coagulation mechanism. This was not clinically apparent and no hematologic studies were done, so the nature of the defect cannot be further defined. However, there was fresh hemorrhage into the area of healing myocardial infarction (Fig. 6), presumably from the capillaries in the granulation tissue, and there were occasional small thrombi in the veins of the pancreas and kidneys

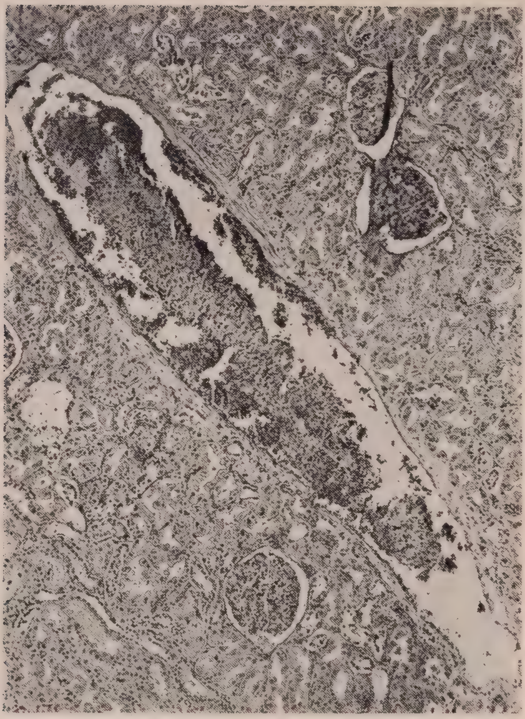

FIG. 8. Interlobar vein in kidney contains sizable antemortem thrombus. There was no intrinsic lesion of kidney.

(Figs. 7 and 8), neither of these organs being involved by the peripheral embolization. It is tempting to think that when a bowel undergoes infarction it may liberate both thromboplastic substances and fibrinolysins into the circulation. The morphologic evidence for the disorder in the coagulation mechanism was sufficiently fresh to be consistent with its having occurred after the bowel was infarcted. One is tempted to draw an analogy between this set of observations and those seen in certain vascular accidents associated with pregnancy in which there may be massive hemorrhage in certain organs and extensive intravascular thrombosis in others. This serves to remind us that hemorrhage and thrombosis are merely opposite sides of the same coin, for example the common association of hemorrhagic manifestations and thrombotic phenomena in polycythemia vera.

There are two misleading clues in the clinical history. Precisely how this patient was able to have reasonably normal bowel sounds and actual bowel movements when most of his small bowel was infarcted is not clear. I suppose that the peristaltic sounds can be ascribed to the relatively good preservation of the muscularis of the infarcted bowel and that the stools represent the passage of material already in the colon at the time the circulation of the ileum became compromised. The other misleading observation is the elevated serum amylase. I will leave that to Dr. Bruno to discuss.

DR. BRUNO: I had the privilege of seeing this patient during his terminal illness. On rounds we had long discussions regarding the evolution of the abdominal findings and their correlation with the rest of the clinical picture. In my experience it is not uncommon to find that nonformed, occasionally bloody stools will be passed for several days after the catastrophe of small bowel infarction. Eventually, of course, when the lower intestinal contents are evacuated, this will stop. To me the most unusual aspect of the abdominal findings was the persistence of bowel sounds after the infarction. I agree with Dr. Ober that this can be attributed to the relatively complete preservation of the muscularis.

With regard to the elevated serum amylase, there are a number of nonpancreatic conditions which may give rise to significant elevation of the blood level of this enzyme. We know, for instance, that the administration of morphine or related compounds may produce a rise in serum amylase, increasing pancreatic ductal pressure because of a direct effect on the duodenal musculature and the sphincter of Oddi.[5] For some time it has also been known that the level of the serum amylase may rise as a result of decreased renal excretion, although the exact mechanism of renal clearance of the enzyme is not clearly understood. Indeed, the ratio of serum amylase to urinary diastase (amylase) has been proposed as a measure of renal function. In a recent study of 6 cases of acute renal failure[6] the serum amylase was revealed to be significantly elevated in each patient but there was no linear relationship between this value and the blood urea nitrogen level. Moreover, when hemodialysis was used successfully, the elevated level of the serum amylase was not significantly reduced.

From a practical viewpoint, the important limitations in the use of the serum amylase level as a diagnostic tool are more likely related to the number of nonpancreatic intra-abdominal conditions which will result in its elevation. Free perforation of the gastrointestinal tract may be associated with a high serum amylase level resulting from the absorption of the enzyme from the peritoneal cavity.[7] Even higher serum amylase levels can be seen in the presence of intestinal obstruction, particularly when the condition is associated with infarction of the small intestine.[8] It is postulated that under conditions of obstruction and infarction the amylase of the intestinal contents is absorbed either by the capillaries or the lymphatics of the damaged bowel or from the peritoneum after seeping through the intestinal wall. In experiments with animals it has been found that intestinal obstruction alone is not associated with increased amylase levels but that the combination of obstruction and infarction usually is.[9]

The patient under discussion had intestinal obstruction, intestinal infarction, and finally multiple perforations of the jejunum with peritoneal soiling. This undoubtedly afforded a wide surface for absorption of the enzyme from the intestinal contents, and I would attribute the laboratory findings to this cause.

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Women Still in Minority in Medicine

Women more and more may be entering the man's world but they are still much in the professional minority when it comes to medicine. The medical student population is currently approximately 30,000 with women comprising only 5.6 per cent of the total enrollment. However, at four schools the figure is 10 per cent or more: Howard, Boston University, New York University, and Western Reserve. One school, Woman's Medical College of Pennsylvania, limits enrollment to women, while two schools, Dartmouth and Jefferson, admit only men.—*Patterns of Disease, Parke, Davis & Company*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Postoperative Hemorrhage Complicated by Cardiac Insufficiency

Effective treatment of postoperative hemorrhage may be difficult to execute when the situation is complicated by congestive cardiac failure. This problem was encountered in the following case, and the report relates the difficulties involved.

*Case Report**

A sixty-two-year-old male manifested bleeding from a femoropopliteal bypass graft which had been implanted six weeks previously. It was proposed to remove the graft to allow for measures to control the bleeding.

The patient had diabetes which was in good control. He had been admitted to a hospital because of pain in both feet. While in the hospital he developed dry gangrene of both large toes. He was given dibenzyline therapy without success. An aortogram was performed, and it showed a block of the common femoral artery. Amputation of the right hallux was accomplished, and this was not followed by wound healing. A femoropopliteal bypass graft procedure then was performed.

Six weeks later the patient complained of pain over the graft site. His hemoglobin at this time was 12 Gm. per 100 ml. of blood, and his hematocrit was 41. One day later his hemoglobin content diminished to 6.5 Gm. per 100 ml., and his hematocrit fell to 21. His prothrombin time was fifty-six seconds. Vitamin K was administered intravenously, and this was followed by the administration of 1 L. of whole blood. A small rise of the hemoglobin to 8.5 Gm. per 100 ml. resulted. Another pint of blood was administered intravenously, after which procedure the patient manifested some respiratory wheezing. At this time the patient's peripheral venous pressure was found to be 110 mm. of saline, which is considered a normal pressure.

Discussed at a conference held at Bellevue Hospital, New York City, February 1, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

* Presented by Rudolph Fabrizio, M.D.

Since it was believed that the patient's respiratory wheezing was due to a possible allergy reaction from the blood transfusions, 50 mg. of diphenhydramine hydrochloride (Benadryl hydrochloride) were injected intramuscularly, and a suppository composed of 500 mg. of aminophylline was inserted rectally. This combined therapy did not alleviate the respiratory bronchial wheezing. To combat the apparent bleeding an additional 1,000 cc. of blood were administered (making a total of 2,500 cc. of blood transfused), and it was decided to remove the femoropopliteal graft and to institute measures for the control of the bleeding. The patient's arterial blood pressure at this time was 110 mm. Hg systolic and 90 diastolic, pulse rate 132 per minute, and respiratory rate 34 per minute. Because of the existing tachycardia it was deemed advisable not to administer any belladonna derivatives as preoperative medication.

The patient arrived in the operating room markedly dyspneic and with capelike cyanosis. Immediately he was placed on the operating table, and oxygen was administered to him by face mask with some improvement in his condition resulting. At this time an electrocardiogram showed a sinus tachycardia at a rate of 132 per minute. Anesthesia was induced with cyclopropane and oxygen. An endotracheal tube was introduced quickly during direct laryngoscopic vision. Tracheal suction did not seem to alleviate the bronchial wheezing. To rule out cardiac asthma the patient was examined by a medical consultant, who advised against the use of digitalis.

Isoproterenol hydrochloride (Isuprel hydrochloride) 1 mg. was injected intravenously without any improvement resulting. When the bleeding at the operative site was followed by an almost complete loss of arterial blood pressure, blood again was administered intravenously. The pulmonary wheezing persisted, and the patient's arterial blood pressure remained at only 86/60. At the termination of the operative procedure rales were present in both lung fields, and it then was realized that the patient had pulmonary edema. Ouabain $^1/_2$ mg. was injected intravenously, and this was followed in fifteen minutes by a rise in the arterial blood pressure to 160/90. The patient began to react on the endotracheal tube, which then was removed. It was decided to transport the patient to the recovery room for further therapy.

As he was turned in bed it was noticed that he suddenly stopped breathing. On auscultation over the precordial area no heart sounds could be detected. Immediately the patient was reintubated, and artificial respiration was instituted while the chest was opened along the fifth left intercostal space. The heart was in standstill. Manual cardiac contractions were begun quickly. After two minutes spontaneous cardiac contractions returned, the electrocardiogram showed a regular sinus rhythm, and the arterial blood pressure returned to 160/90.

In an effort to diminish the pulmonary edema about 500 cc. of blood were allowed to escape from the thoracotomy wound before it was closed. A pulmonary-assisting respirator was connected to the patient, and he was given oxygen and ethyl alcohol by means of nebulization. The pulmonary edema disappeared, and the patient recovered with a return of his mental faculties.

Improvement continued for several days, and then deterioration returned with the right leg becoming septic. It was decided to amputate the right leg under refrigeration anesthesia. As the patient was about to be transported to the operating room he suddenly became cyanotic and unconscious. His pulse was felt to be weak and rapid. A blood pressure reading was not obtainable. An endotracheal tube was inserted, and oxygen was administered by controlled respiration with some improvement resulting. Amputation was accomplished quickly, but the patient's condition did not improve. Attempts to raise his arterial blood pressure were of no avail. Cardiac arrest occurred again. Immediate thoracotomy and manual cardiac contractions again restored spontaneous cardiac contractions with a regular sinus rhythm.

He was returned to the recovery room, where he was placed under hypothermia. Soon afterwards, however, he died. Autopsy showed that he had intrinsic myocardial disease with congestive heart failure, lower right lobe pneumonia, and a large thrombus in the right ventricle which possibly acted as a ball valve mechanism.

Comment

In spite of apparent significant blood loss from the site of a recent femoropopliteal bypass graft, administration of blood to correct this bleeding resulted in cardiac overloading and pulmonary edema. The possibility of such a complication should be borne in mind whenever a blood transfusion needs to be administered to a patient with myocardial disease.

One factor which confused the issue in this case was the finding of a normal peripheral venous pressure (110 mm. saline) when respiratory difficulty characterized by pulmonary wheezing occurred during administration of the third pint of blood. Usually there is a significant rise in the peripheral venous pressure when cardiac insufficiency develops. However, this is true when right-sided heart failure occurs alone or in combination with left-sided heart failure. Development of left-sided heart failure alone would result in pulmonary vascular engorgement without any rise in the peripheral venous pressure. This is a rare condition, but it may have been present in this case.

Actually, hemorrhagic shock is accompanied by a marked diminution in peripheral venous pressure so that a normal peripheral venous pressure under such conditions should make one suspicious of increased pulmonary vascular pressure and engorgement. Although the pulmonary wheezing might have been due to an allergy reaction to the blood transfusions, it might have been better not to have been so sure of this and to have digitalized the patient at that time.

Certainly this should have been done when intravenous administration of isoproterenol hydrochloride failed to improve what was thought to be a bronchial-constricting reaction due to the blood transfusions.

The first cardiac arrest, which occurred when the patient was turned on his side, may be attributed to a lack of circulatory compensatory adjustment due to pulmonary edema and cardiac insufficiency. The second cardiac arrest was probably due to the various drugs used in attempting to correct extreme arterial hypotension in a patient moribund from septic toxicity and circulatory failure.

(Number ninety in a series of Clinical Anesthesia Conferences)

Enlarged Arteries Found in Lungs of Heavy Smokers

Significant variations in the diameter of arteries of the lungs of heavy smokers as compared with those of nonsmokers have been found in a study of chest x-rays.

Dr. Josue Pagan-Carlo, Department of Radiology, Touro Infirmary, New Orleans, reported the findings in the December 19 issue of the *Journal of the American Medical Association.*

The arterial shadows on routine chest x-rays of 694 smokers and nonsmokers were measured by calipers in the study. In the area of the right descending pulmonary artery the study revealed that average measurements of the arteries of heavy smokers were significantly higher than for nonsmokers.

A heavy smoker was defined as one who smokes more than 30 cigarets a day. The expansion of the pulmonary artery in heavy smokers may result from constriction of the smaller branches of the artery brought on by the chronic effect of nicotine.

"No one knows all the possible reflexes initiated in the lungs as a result of the effects of the irritating inhalants in the tobacco smoke," Dr. Pagan-Carlo said. He pointed out that "no significant difference was demonstrable in the vascular markings of light and moderate smokers, as compared to nonsmokers."

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S. *Technical Director, Poison Control Center*

Suicidal Attempts and Poisonings Involving Infants

The following incidents recently were reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Mercury	17 years	Male

A seventeen-year-old boy from Passaic, New Jersey, swallowed about 3 fluid ounces of mercury in a suicidal attempt. Two hours following the ingestion he was brought to a hospital emergency room by the City's Police Department.

On his admission the physical examination revealed no abnormal findings. A flat plate of the abdomen was taken, and it disclosed that a large amount of the ingested mercury had passed already through the stomach and into the duodenum. There was extreme sagging of several jejunal loops. The patient was given castor oil, was observed for several hours, and then was sent home as symptom-free.

The cases involving mercury ingestion reported to this Center usually are due to the small amount of mercury in a thermometer. In none of these cases have there been significant consequences. Physicians still fail to recognize the difference between ionic mercury, such as bichloride of mercury, and liquid mercury. The ingestion of ionic mercury should cause major concern. BAL (dimercaptopropanol) is a specific antidote for all such cases. The potential hazards from mercury vapor are much greater than those from the more or less inert liquid mercury. The organic mercurial disinfectants in the dilutions usually used also have not proved to be a poisoning problem in the cases reported to the Center. On the other hand, some of the organic mercurials used as fungicides and weed killers are hazardous. Mercury oxide ointment, ammoniated mercury, and calomel likewise have not posed any problems because of their insolubility and the minor amounts ingested. However, their use, particularly for a long duration of time, has been incriminated in many cases of acrodynia reported in the literature.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Phenylethylhydrazine	20 months	Male

This incident was reported by a physician from West Virginia. It involved his twenty-month-old male infant. While the parents were away from home, the youngster climbed onto a stool and obtained a vial of phenylethylhydrazine tablets from the kitchen table and put a number of them into his mouth. The vial of tablets had been put on the kitchen table on the previous day for the physician's mother-in-law, for whom the medication was prescribed. During this time the housekeeper was talking on the telephone in the kitchen. She witnessed the episode, stopped her telephone conversation, removed the pills with her fingers from the child's mouth, and wiped his mouth with a washcloth, after which she felt secure that she had obtained the entire contents. It was found, however, that she had retrieved 4 tablets from his mouth and 4 from the floor, leaving 10 tablets unaccounted for.

The child did not appear to be abnormal, and he took his usual afternoon nap. The parents were entirely unaware of the incident until four and a half hours following the ingestion. Five and a half hours following the ingestion the infant was awakened. He appeared well and ate his supper as usual. At about 7:00 P.M., or nine hours following the ingestion, he suddenly became very drowsy and fell asleep while he was being bathed. Four hours later, or thirteen hours following the ingestion, the child's unusual drowsiness caused serious concern. A further investigation was made, which supported the suspicion that the 10 unaccounted for tablets actually had been ingested. The child could not be awakened either by shaking him or talking to him, but his pulse, respiration, and color remained normal. He was taken to a hospital, where an exchange transfusion was considered.

The findings on admission were stupor, irritability, staggering, and a 1 plus albumin and occasional casts in the urine. There was a slight elevation of temperature, which was treated with a cool sponge bath. The child was taken home the following afternoon and was permitted to be up and around, but he staggered like a drunkard, being led around by his brothers and sister and having alternating periods of activity and drowsiness. He had a loss of appetite for several days, refusing practically all food except for orange pop. After seven days following the ingestion the patient appeared to be entirely recovered.

Information provided by the manufacturer to the Center indicates that following an overdosage of this drug there may be a short period of drowsiness, tremors, and convulsions, and marked hyperthermia—as high as 108 to 110 F.—may occur. The consequences of overdosages of this product should be considered as arising from midbrain involvement. The use of sympathomatic amines is contraindicated, and the phenothiazine sedatives are preferred as anticonvulsants to the amobarbital ones. It was stated that the ingestion of up to 30 tablets of phenylethylhydrazine has resulted in side-reactions. The prognosis for the ingestion of between 30 and 50 of these tablets is "touch and go"; for above 50, fatalities may be expected.

The Advisory Committee to the Poison Control Center has been effective in getting drug manufacturers to include with increasing frequency the effects of overdosage as a subject in their professional literature. However, we believe that the data which drug companies possess on the incidence of such fatalities should be made available in the professional literature, to serve as a guide to the medical profession for the counteracting of the effects of overdosage. Most of the fatalities involving these products are not reported in the literature, and the accident files of the drug companies are practically the only available sources of this valuable information. The present reluctance of drug companies voluntarily to make such information available in their literature is understandable from the business point of view, but this attitude is highly regrettable from the viewpoint of therapy. The practicing physician is too apt to get a false sense of security when he reads, "No significant reports of toxicity to the liver, kidneys, or blood."

Incident 3

Toxic Agent	*Age*	*Sex*
Promazine Hydrochloride	33 years	Female

A thirty-three-year-old woman ingested fifty 25-mg. tablets of promazine hydrochloride in a suicidal attempt. Forty-five minutes later she was taken to a hospital emergency room, where her stomach was lavaged with saline. Afterward she was admitted to the inpatient service for observation.

The only symptom on admission was tachycardia with a pulse rate of 100. The laboratory findings were noncontributory except for the gastric contents, which included a reddish material. At no time did the patient show evidence of hypotension, nor was there any change in her level of consciousness. Since she was symptomless, no medications were administered. After observation for a day she was transferred to the psychiatric service for further observation and care.

Incident 4

Toxic Agent	*Age*	*Sex*
Promazine Hydrochloride	34 years	Female

This case was reported by a New Jersey hospital. A thirty-four-year-old female ingested forty 50-mg. promazine hydrochloride tablets in a suicidal attempt. The symptoms on her admission to the hospital were constricted pupils and stupor with coma and convulsions. Four hours following the ingestion her stomach was lavaged with tap water. Vomiting was induced, and barbiturates were given for the convulsions. No abnormal findings were noted on her discharge the following day.

Incident 5

Toxic Agent	*Age*	*Sex*
Promazine Hydrochloride and Secobarbital	50 years	Female

A fifty-year-old female was admitted in a comatose state to a hospital two hours after the ingestion of fifty 50-mg. promazine hydrochloride tablets and fifteen secobarbital tablets (a total of $1^1/_2$ Gm.) in a suicidal attempt. She had made several attempts at suicide previously and had been treated for manic depressive psychosis by means of insulin shock.

On admission the patient was in deep coma, areflexic, and in shock. Immediately her stomach was lavaged in the emergency room, and she then was treated with nikethamide (Coramine) and infusions of levarterenol bitartrate (Levophed). She improved after twenty-four hours of hospitalization. The physician in attendance advised transfer to a psychiatric hospital, but the patient's husband refused to give his permission and signed the patient out against the physician's advice.

The marked difference in severity in this case from the 2 preceding ones is assumed to be due to the synergistic action of the combination of the two drugs. This action has therapeutic implications.

Incident 6

Toxic Agent	*Age*	*Sex*
Glutethimide	53 years	Male

A fifty-three-year-old male ingested from 12 to 20 glutethimide tablets in a suicidal attempt. He was taken to a hospital emergency room, where his stomach was lavaged three hours following the ingestion. The only symptom on his arrival was stupor. The patient refused to be admitted to the hospital, and he signed a release form.

He became worse and was taken to another hospital, where the following symptoms were noted on admission: dyspnea, stupor, cyanosis, and coma. Although he was in coma, his condition appeared to be good during the first twenty-four hours; the reflexes were present and he responded to painful stimuli. Then suddenly he went into shock, developed rapid and deep respirations, became cyanotic, and showed evidence of pneumonic consolidation of the whole left lung and right apex.

The shock was combated early with levarterenol bitartrate (Levophed). Bemegride 100 mg. intravenously also was administered, with an increase in reflexes and opening of the eyes ensuing irregularly. The patient was given a bronchoscopic examination, but no plugs were found. With intensive antibiotic therapy and the maintenance of his blood pressure level with levarterenol bitartrate, he awoke after thirty-six to forty-eight hours. The pneumonia cleared in two weeks. He now is under psychiatric care.

There still are conflicting reports of results with the use of bemegride. Not only is its effectiveness questioned, but, according to Milton Helpern, M.D., Chief Medical Examiner of New York City, its use complicates chemical determinations in both fatal and nonfatal sedative poisonings.

Incident 7

Toxic Agent	*Age*	*Sex*
Aspirin	7 weeks	Male

This seven-week-old male child is a resident of New Jersey. He was given 300 mg. of aspirin every three hours for three days for therapeutic reasons. The total amount ingested was over 2,400 mg. After this amount was taken the infant became tachypnetic and hypernetic, and he was taken to a hospital in New York City.

The pertinent findings on his admission were hyperpnea and tachypnea. He was treated with electrolyte solutions, presumably of bicarbonate and molar lactate. He was discharged as symptom-free five days after admission.

The report giving the clinical data in this case unfortunately is lacking in detail. The daily dosage of aspirin and the total amount ingested was excessive for a child of his age.

Incident 8

Toxic Agent	*Age*	*Sex*
J-O Paste	1 year	Male

This one-year-old male infant obtained the phosphorous pesticide from the kitchen floor and ingested about 1 teaspoonful of the paste. He was taken to the emergency room of a nearby hospital, where he was treated with a raw egg followed by a gastric lavage about twenty minutes after the ingestion. He also was given syrup of ipecac. The gastric contents and the vomitus which was voided after the administration of the ipecac had a garlic-like odor. Although the child was symptom-free, he was admitted to the hospital for observation, where he remained for one day. Every attempt by the public health nurse to contact the family has proved futile thus far.

Ingestions of J-O paste by very young infants are being reported to this Center with great frequency, with varying degrees of severity of the effects indicated. Parents should be cautioned by physicians and pharmacists on the need for greater care in the storing and handling of pesticides. Although these preparations usually have adequate warnings and precautionary measures indicated on their labels, personal warnings still are urgently needed. There still is no antidote for phosphorous poisoning, therefore prevention is the best treatment. Although ordinarily a twenty-four-hour period of observation is recommended in instances of chemical poisonings, it is an insufficient period of time in cases of phosphorous poisoning since delayed reactions are not uncommon several days after the ingestion.

Phosphorus is the most striking example of the attractiveness of foul-smelling substances to children as well as to rodents.

(*Number fifty-six in a series of Briefs on Accidental Poisonings*)

Aneurysms of the Abdominal Aorta and Its Branches

The authors studied the necropsy records of 68 untreated patients with a total of 96 abdominal aneurysms in the hope that their findings might serve as a basis of comparison, especially of survival time, with patients subjected to grafting procedures. Although the writers estimated that 48 per cent might have been saved from vascular rupture by a grafting operation, they point out that the question whether ultimate survival might have been longer remains to be resolved by experience with large groups of patients in whom such procedures have been performed. Of the group studied, the survival time was found to be comparable with findings of other investigators. Of the total, 30 per cent of the patients were dead within one month of symptoms; 74 per cent were dead in six months, 80 per cent were dead in less than one year. The survival rate of this group was much lower than it was in a group in which aneurysms were incidentally noted on diagnosis. Nine out of 14 patients with luetic abdominal aneurysms (64 per cent) had another aortic aneurysm. Almost half of the patients with abdominal aneurysms died of a vascular rupture. Of the aneurysms 7 cm. wide or over, 72 per cent were ruptured, while less than 18 per cent under 7 cm. were ruptured. Hypertension was evident in 47 per cent of the patients with arteriosclerotic aneurysms, and 35 per cent showed definite evidence of previous myocardial infarction.—*Marvin L. Gliedman, M.D., William B. Ayers, M.D., and Betty L. Vestal, B.A., Annals of Surgery, August, 1957*

CHANGING TIMES FOR MEDICINE

AUSTIN SMITH, M.D., *Editor*

Intervention of Government in Patient-Doctor Relationships

*Swedish Experiences**

WALO VON GREYERZ, M.D., STOCKHOLM, SWEDEN

(*From the Office of Civil Defense*)

AN INTELLIGENT appreciation of the prevailing problems in the field of health and medical care in Sweden necessitates, as a matter of course, a retrospect glance at the past and present structure of our organization for health and medical care.

Background

OPEN CARE.—Let us begin with open care, which in Sweden is the term used for all medical care rendered to patients who are not hospitalized, regardless of whether they receive this care from a private practitioner or at an outpatient clinic. As far back as two hundred years ago an institution was inaugurated which still exists and still plays an important and perhaps unique role. Throughout Sweden were appointed state and municipal health officers with the double function of caring both for the health of the population and for the sick. The sparse population made this necessary. At present 13 per cent of the Swedish doctors belong to this venerable, two-centuries-old category. Their duties cover general preventive medicine, such as pre- and postnatal care; vaccinations; tuberculosis prevention; inspection of school children; control of such general facilities as water, sewage, and waste disposal; and milk and food distribution, just to name a few. Along with these their salaried duties also include sick care free of cost for all people in their district without means. Outside this group they practice on a fixed fee-for-service basis. They number about 10 per 100,000 inhabitants as compared with the whole country's total of 71 doctors per 100,000 inhabitants.

Besides these doctors in the service, open care is provided by practitioners and within hospital reception facilities. Private practitioners comprise about 21 per cent of all doctors in our country, corresponding to a ratio of 16 private practitioners per 100,000 inhabitants. They are distributed unevenly throughout the country, being concentrated mostly in the urban areas. They operate on a free fee-for-service basis. Of practicing doctors 40 per cent are general practitioners, the proportion between specialists and general practitioners varying, as is to be expected, with the size of the town. In small communities about four fifths of the physicians are general practitioners, in large cities one fifth.

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* This address was given before the Eastern Regional Meeting of the Pharmaceutical Manufacturers Association, New York City, Socio-Economic Development Session, December 9, 1959

Hospital reception facilities for open care are organized in several ways, mostly as outpatient departments and private consultations with senior hospital staff physicians. Most of this care is on a fixed fee-for-service or standard-charge basis. Service is rendered by both senior and junior staff physicians. Private practitioners outside hospitals have access only to their technical facilities such as x-ray or laboratory for referring patients.

Of interest is the fact that 40 per cent of all medical activity is in open care. A statistical analysis five years ago shows that the number of consultations in open care was 190 per 100 inhabitants during one year. Seventy of these consultations concerned private practitioners. This means that 40 per cent of all open medical care is in the hands of the free medical sector, a fact that must be held in mind when we subsequently pass over to a critical perusal of the present and future trends in medical politics.

A special feature in Sweden is an arrangement that provides sick care, free of cost for the patient, to all state or municipal employes, and also to personnel in certain larger industries. The patients are assigned to certain private practicing physicians who give their services mainly on a free fee-for-service basis. Doctor's fees are paid by the employer.

Hospital Care.—Hospital care is rendered nearly exclusively in general hospitals, either administered by the state, mainly teaching hospitals; by regional authorities; or, in the six largest cities, by municipal authorities. Only a very few private hospitals exist. Patients are referred to a hospital within their own region of taxation. Only the teaching hospitals cater to the sick from the whole country. Care at a hospital is free for all people without means. Others pay a nominal fee covering about one tenth of the actual cost to the community, and in most cases even this nominal fee is paid by our compulsory sick insurance, to which I will return later. Many hospitals have a small number of private or semiprivate beds at a cost to the patient about five to ten times that of the general wards. Even here the community subsidizes sick care by paying the balance up to the real cost per bed, which now amounts to $10 to $15 a day. Doctors are remunerated by monthly salary, in many cases augmented by practice in the outpatient department. It must be realized that medical practice in Sweden makes a sharp distinction between doctors outside of and those belonging to a hospital. Practitioners working on their own must, when the situation of the patient so requires, refer him to a hospital, where he will be taken care of by other colleagues. When discharged from the hospital patients can be referred back to their doctors or treated subsequently at the outpatient department as the occasion demands. This system implies that a private practitioner in referred cases finds his responsibility cut off during the most acute, and perhaps most interesting, stage of the patient's illness and that he must adjust himself to a discontinued care covering only pre- and post-hospital treatments. We find this segregation of field work from hospitals both unnatural and ill-advised.

Sick Insurance Scheme.—And now a few words about our sick insurance scheme. Apart from private individual insurance against illness there has existed for half a century a general insurance scheme on a voluntary basis, built on insurance principles even if the state contributed. This was popular in urban areas and among those in the middle-income bracket. It provided for benefits in illness, reimbursement of doctors' fees to a certain extent, and total reimbursement of hospital fees. Apart from this general scheme there was a compulsory insurance for wage earners, paid by taxes, covering professional accidents or illnesses. In 1954 our government enacted a new law which makes insurance against sickness or accidents compulsory and covers the whole population. The premiums are baked into the state taxes. During his illness the insured receives a certain proportion of his income according to a rather complicated scale. His hospital fee is also taken care of if he is treated in a general ward. Open medical care is reimbursed in such a way that the patient receives three fourths of a nominal fee. The nominal fee is defined for different services rendered and is a matter solely between the insurance authority and the patient. The doctor, when not tied to a tariff, is free to set his own fee. The patient pays the doctor the whole sum, receives a specified receipt, goes to the insurance office, and receives his due reimbursement. Preventive medicine or other medical measures concerning health protection are not as yet covered in this scheme. All medicines above a cost of 3 crowns are subsidized to 50 per cent, certain vital lifetime drugs to 100 per cent. As yet there has been no tendency to issue a list of drugs entitling one to subvention. Any such attempt would be opposed violently by the profession.

After this short review of the outlines of our organization I will now proceed to the main object of my study. The time at my disposal necessitates a condensation of the subject and also stresses the impossibility of making it in any way comprehensive. Allow me to give it the form of kaleidoscopic marginal notes.

SOCIAL CHANGE.—To begin with I would like to point out that the political climate in Sweden has undergone a change during the last half century, a social evolution that rightly should be named a revolution. During the second decade of this century and under the influence of repercussions of World War I our country went through the throes of forming the new social order. As is historically natural for a country with a long-established and continuous development of its own, this process was carried through without undue or irreparable upheavals and resulted twenty-seven years ago in a social-democratic government standing on a parliamentary majority platform. And this government still presides, albeit with a rather precarious margin during the last few years. Theoretically Marxistic but in practice seemingly moderate, the government, during its many years of power, has put through social reforms so far-reaching that one can state with impunity that the wrongs that originally nourished the party's reformatory zeal now have been rectified. Self-conscious class distinction is, or should be, disappearing. The standard of living is very high and quite uniform. Political interest is concentrated mainly on differences of opinion in the economic and social fields. Defense policy and foreign affairs leave us lukewarm. Social policies absorb 35 per cent of the national budget. The total cost for health and medical care is twice the sum of defense costs.

In the field that interests us today, health and medical care, we can follow the impact of political guidance of our country's development in the last half century.

Effects of Government Regulation on Health and Medical Care

The present standard of medical care that the majority of our people now enjoy is partly a result of the purposeful pursuit of the present government's doctrines. This implies that government has had both the desire and the obligation to support the sociomedical needs of the people, inspired by the International Labor Organization recommendations in Philadelphia. The program in the medical field has been and still is so far-reaching that private capital would be incapable of attaining the same goals. The dynamics of democratic politics must necessarily imply that promises in the sociomedical field automatically imbue their future implementation with a quality of compulsion. The result can be disappointing. The tragedy lies in the fact that government and the profession have the same goal, the rendering of the best medical service possible, but our opinions of the means diverge.

In older times there existed a feudalistic trend in medical affairs. Doctors had and were given authority. Nowadays we see the opposite tendency. Political compulsion demands that politically reliable individuals stand at the controls so as not to endanger the politically desired results. Medical competence is brushed more and more aside. We now see how political power dominates in all stages. Royal committees, regional and local boards, and hospital boards are often furnished with only an uninfluential minority of medical experts.

POLITICAL INDIFFERENCE OF MEDICAL PROFESSION.—One of the reasons for this state of affairs is the political indifference of the medical profession in Sweden. Few doctors are actively engaged in political activity and still fewer confess openly their allegiance to the government party. Those who do so are quite naturally engaged in positions where they can implement their double function of expert and politician.

Taking at random one item, let us see what has happened in sick insurance. It was a political necessity to make the new insurance scheme compulsory. A voluntary scheme was politically unfeasible as long as there was risk that the sector of the people that most needed it would or could not cooperate. The scheme was put across without due consideration of the views of the medical profession. A bureaucratic monstrosity was the result. The extra paperwork now involved has been estimated to take about one tenth of the doctor's time, meaning that during the time we formerly helped 10 patients we now help 9. The forms for receipt are unnecessarily complicated and must be filled out minutely. Services rendered must be enumerated by a special code. Inadvertencies in the filling out result in subsequent correspondence with the insurance authorities. The patients queueing up to receive their benefits can be subjected to interrogation in public and the physician can be asked to give detailed information on his treatment. The companies have controlling doctors with the special function of acting as a liaison between insurance authority and physician. But the authoritative attitude of the insurance officials puts both the patient and the doctor on the defensive. Compulsory insurance acts as a wedge in the relationship of confidence between patient and doctor. Instead of relying on his doctor as a friend interested solely in his well-being, the patient must now look at him as a necessarily intermediate agency between himself and the insurance company, whose activities must be directed toward a maximum of economic benefit. And the doctor now finds that every case implies that he function both as the patient's confident and as a watchdog of officialdom. He is no longer only the patient's doctor but is also in part a civil servant.

DOUBLE ROLE OF PHYSICIAN.—Of course this is in itself nothing new; the same double function has persisted a long time in relation to many other functions where doctors' certificates constitute a necessary prerequisite. What is new here is that this double role of the physician is now evident every time he and a patient meet.

Both this sick insurance and other forms of medicosocial benefits have other consequences. Patients are now getting so used to all these forms and to inquisitive correspondence that they are losing their natural feeling of their own rights. Above all they lose their right to personal integrity. One of the cornerstones of our profession is the patient's confidence in our professional secrecy. The larger the medicosocial structure becomes the more necessary it is for the authorities to command the right to inspection. And now we are coming to the heart of the problem, the point where doctor and government must diverge. By rule of law we Swedish doctors may not divulge unnecessarily anything that has passed between the patient and ourselves. The government gives the word "unnecessarily" a narrower interpretation than the doctor does. A conflict of conscience results. Blind to the consequences of development or to avoid discomfort the doctor can be led to comply with the will of government rather than with the unspoken wish of the patient. Medical information is thus disseminated to wider and wider groups. As time goes by the result may be that the old confidence in the doctor is replaced by a conviction that he is an instrument for the spreading of information. I feel that this is the most dangerous trend in modern sociomedical development. Thus this trend works surreptitiously, unostentatiously undermining principles of supreme importance.

It is axiomatic that the more the doctor becomes a civil servant the greater must be his allegiance to the government. It follows that the wider we can keep free our sector of medicine the larger will be the patient's right to personal integrity.

The danger is that the government often makes progress by plucking one leaf of the artichoke at a time. We cannot see the disadvantages until so much of the vegetable is taken that the result is irreparable.

Discrimination Among Medical Fields.—A special danger lies in discrimination against any section of the profession. In our country we are happy to have four medical universities with such standards of education that we can say that no essential difference exists among them. A doctor in Sweden with a license to practice is in equal standing with his colleagues irrespective of which school he is a graduate. Notwithstanding this excellent foundation, common to all of us, we find discrimination in many fields. Most ostentatious is the relationship between the official health officer and the private practitioner. In diverse official regulations it is stipulated that only a certain category of doctor may issue an official certificate. A private practitioner who has tended a patient for his whole life is in certain cases not entitled to issue a certificate for the same patient's cremation, for instance! Sick insurance does not cover the costs of transportation of patients to a specialist if the specialist is not appointed to a general hospital. A private practitioner may not send a patient to a hospital outside his region, but a staff physician in a local hospital may do so. Vaccination against smallpox is compulsory; exemption is allowed only on a certificate from a health officer. A Royal Decree stipulates that doctors catering to the employes of the state or a community must be chosen first from among official health officers. These instances are just a gleaning among the underbrush of bureaucratic formalities that put medical care at a disadvantage and at the same time discriminate against certain categories of the profession.

We find discrimination in other fields. A private practitioner has of course much larger consultation costs than his colleague in a hospital. His fee accordingly must be higher. But the sick insurance reimburses according to a fictitious nominal fee. The practitioner often feels it is in the interest of his patient to reduce his fee to coincide with the nominal, a decision the hospital doctor with his lower fee does not have to make.

Discrimination against the private practitioner has many branches of damaging influence. Only the health officer may serve in certain semiofficial capacities: as school doctor, railway company doctor, in preventive medical centers, on night duty at police stations, or at alcoholic polyclinics. Along with his salary he is subsidized by the government with fringe benefits, sick pay, pension, and low rent, and he is obliged to follow a low and fixed fee-for-service. In smaller communities it is therefore quite natural that a private practitioner works at a disadvantage. He may not augment his income by taking over his colleague's semiofficial activities. As we said before his fee is held artificially near the nominal insurance scale. He must nevertheless press his income from practice higher than his official colleague to meet the extra costs of rent, sick insurance, and retirement.

He must also be prepared to answer his patients' questions on why he is not entrusted with certain medical duties. How have these strange anomalies come to pass? Probably through the fact that a health officer is obliged to pass certain postgraduate training at hospitals before assignment, and competition earlier was so keen that this training gave him a high and all-round standing. The general practitioner was not always so well trained. He had too much to do in urban areas, and sparsely populated areas gave little room for private practice alongside a health officer. Great difficulties prevailed also for housing, and conditions were on the whole favorable for an expansion of official activity. Nowadays the conditions have changed. Competition for official assignments is not so keen and general practitioners are now taking many years of postgraduate training as a matter of course. Our medical association is just working on the question of prerequisities for certification of general practitioners. With this in mind it would seem realistic to give the general practitioner the same professional standing and the same professional rights as his official colleague.

FACILITIES FOR MEDICAL CARE.—Let us now take another angle. The high cost of medical care, accelerating alarmingly, once compelled the government to concentrate its efforts on hospital care. This was also politically expedient. The high standard of Swedish hospitals gave rise to a confidence in technical facilities that dwarfed the less scintillating environments in open care. The total reimbursement of costs in hospitals gave patients reason to seek such attention rather than the more expensive open care. When other than pure medical considerations determine the flow of patients the results must become unsatisfactory. The demands on hospital care rose to such heights that they could not be met and at the same time the daily costs per bed rose prohibitively.

To meet this demand and to give the people less expensive care the government has been forced to turn and has set up a series of different kinds of outpatient departments, either in connection with hospitals, which is the rule, or separate from them. The outpatient departments account for 30 per cent of the total number of consultations in open medical care. Although their facilities are often excellent and the actual medical work there is of good caliber, experience has not been favorable. The great number of patients to be treated in a short time gives rise to a type of activity that excludes personal contact. Patients complain of waiting long hours, of disrupted diagnostic procedures, of lack of privacy, and above all of the difficulty of getting assurance of continuous treatment by the same doctor and a good heart-to-heart talk with him. They feel like numbered objects put into a complicated machine, where a doctor, any doctor, is one of the cogs among all the technical niceties and laboratory procedures. Without risk of contradiction one can state that this form of subventioned care therefore does not meet reasonable demands; it is not really comprehensive.

IMPORTANCE OF PERSONAL CONTACT.—In a so-called well-developed country such as Sweden, medical care must embrace social, economic, and personal aspects. One or all of these have a tendency to be overlooked as soon as the medical apparatus grows to such an extent that the main object of its activity, the patient, loses his identity and becomes a mass particle in an organizational process whose demigod is efficiency. Here again we touch on a mainspring in our deliberations, the supreme importance of continuous personal contact between patient and doctor.

We can now discern a trend to re-establish the old institution of the family doctor, to raise his social standing, and to give him such support that both the profession and the government can realize that he is the hub of the medical care system.

During the last years a continuous discussion has been carried on concerning the number of doctors needed to meet all the demands that medical and social development can raise in the future. Large deficits exist in certain fields, such as mental care, chronic care, and rehabilitation. Unfortunately this question has to some extent been tainted by politics. The results of different investigations stand at variance. The government is pushing through an energetic program to augment considerably the number of doctors in the coming decades by the enlargement of training facilities, shortening of training curricula for medical students, and even through the import of doctors from other countries. The medical association is more restrictive and wishes to put more emphasis in the future on an intelligent reorganization of existing facilities, a better congruence in the establishment of technical and personal outfits, an adequate distribution of patients to relevant forms of care, and a greater emphasis on open care in the free sector. They also aim at attaining such reforms in sick insurance and other economic factors of relevancy as may give the individual patient a larger feeling of responsibility.

Scientific and technical progress, a rising demand for medical care, partly as a result of a very high standard of living, and the general impetus of sociomedical development will certainly strain to the utmost our possiblities of meeting the requirements in the future. Without doubt the relative as well as the absolute number of doctors must be increased. The difficulty lies in envisaging where in this gigantic process the danger lurks that vital needs of human contacts between patient and doctor can be overlooked. The number of doctors is actually less essential than their quality, as long as they have access to an adequate number of qualified auxiliaries. Their moral and professional stamina is paramount. If in the future our country should be led to such a development that the present deficit in the number of doctors should be changed into an excess, dire dangers would arise. The high professional standard that admittedly exists at present is also nurtured by competitive necessity. Good social and economic standing gives the doctor peace to direct his energy toward his patients and his work without undue influence. Even the slightest risk of a proletariat among doctors can prove to be dangerous. Those individuals in the profession who lack moral courage to stand up against a descending professional standing will very likely be tempted to indulge in overdiagnosis, overtreatment, loose morals in certification, and eventually a submission to political considerations.

Short Work Week.—I turn now to another imminent danger. A leading theme in the political field has been the introduction of a successively shortened working week. This has been put through in the labor union sector of hospital personnel. Now also the nurses have brusquely had their working hours regulated. Doctors have taken it as a matter of course that their specific kind of responsibility excludes both the need and the feasibility of a fixation of their working time. But government finds it difficult to negotiate with a party who can refer to working conditions that cannot be evaluated in money. With fixed working hours following fixed income, fixed income means civil service, and civil service leads to lack of professional freedom.

Here I must return to the main theme of this paper, the necessity of retaining the largest possible sector of medical care free from administrative and political intrusion. We often meet the insinuation that our preoccupation with professional freedom and professional secrecy is dictated by egotistic and monetary motives. Apart from the obnoxiousness of this accusation as an insult to a profession not lacking in social conscience, it overlooks the fundamental fact that for the majority of the doctors of our country the fate of the patient dominates personal greed. Are they in good faith who would imply that doctors working twelve hours a day, giving up sleeping hours, driving in all kinds of weather, and giving consolation along with treatment, are driven to such unusual behavior by simple sordidness? Granted that such selfish individuals exist, they constitute nevertheless such a minority that the motives of the majority should be respected. In a world imbibed with materialistic ideology it is of course difficult to make lay administrators understand the value to the community of such motives. Has political power and ideologic blindness made it impossible for responsible authorities to realize that the present stubborn rigidity of thought in the field of working hours can have consequences as dangerous as they are absurd? A doctor who looks at his watch at five o'clock, who weighs his patient's need at that time of the day against the allurement of his due overtime pay, who sends his patients away if they come outside official working hours: Will the patient still look up to his doctor as his friend primarily at his service when the doctor considers himself the servant of the state?

Comment

One of the main features of the present policy is a widening of the sector of physicians with fixed fees-for-service or salaried remuneration. A new hospital law decrees that senior staff physicians are not allowed free or fixed fees for service given in private wards in general hospitals. Open medical care in outpatient departments has been organized without medical opinion and with fixed fees. Government offers these hospital physicians compensation with a higher salary and a better pension. Slowly but surely the number of doctors drawn partially or wholly into the civil service sector is growing. They are beginning to demand social security for themselves to such an extent that they run the risk of losing their freedom. Are they to blame in a world of dire uncertainties?

If we were to peruse the long list of activities in the Swedish Medical Association during the last decades and at the same time follow the steady flow of governmental proposals, schemes, decrees, and laws conditioning medical services in our country, I am afraid I would have to beg you to listen to me for the rest of the day. The items would hardly throw more light on the subject than has already been offered, as many of our problems are so intricately interwoven into the specific structure of our Swedish community that they necessitate an intimate knowledge of local conditions. I will therefore abstain from this.

In conclusion I should like to stress the fact that, although my address has been pitched in a rather critical tone, it would be a mistake to think that Swedish doctors are unhappy in their work. With all its defects our country still offers its doctors rich opportunities to help the suffering and thereby to feel satisfied as human beings. But it will take great vigilance and foresight on the part of those responsible for the policy of our medical association and a closing of our ranks to find ways and means to disperse the mists of political envelopment. Our goal must be to guard and promote the existence of a medical profession which has professional freedom and the right to mold the relationship between the patient and his own doctor in a way which age-old experience has proved is the only one leading toward the attainment of complete mental, physical, and social well-being.

(*Number four of a series on Changing Times for Medicine*)

How glorious it is—and also how painful—to be an exception.—ALFRED DE MUSSET

CASE REPORT

Spontaneous Pneumothorax Preceded by Upper Respiratory Infection of Virus Symptomatology

ANTHONY G. GRISTINA, M.D.,* BRONX, NEW YORK, WILLIAM FRANKLIN, M.D., AND PETER H. CAHN, M.D.

(*From the 4084th United States Air Force Hospital Dispensary, Sondrestrom, Greenland*)

HERETOFORE virus upper respiratory disease has not been incriminated as a cause or predisposing factor in the etiology of spontaneous pneumothorax. It is not the purpose of this paper to review the literature on spontaneous pneumothorax, but rather to present 3 cases showing this interesting meretritious relationship which occurred in a small, semi-isolated population group within a short period of time.

For over one hundred years spontaneous pneumothorax has been described as a structural failure of the alveolus which has been compromised by disease such as tuberculosis, pneumonia, pulmonary infarct, or by congenital emphysematous bleb formation. More recently and especially within the last decade, coincident with the discovery and use of chemotherapeutic and antibiotic agents for the treatment of upper respiratory disease, the condition has been noted in individuals whose immediate and past history has been essentially unremarkable.[1-4]

This is a study of spontaneous pneumothorax occurring within one month at a small isolated air base in 3 individuals who, approximately two weeks prior to collapse, had prolonged upper respiratory disease with symptoms indicative of virus infection.

Case Reports

CASE 1.—A twenty-two-year-old white male was admitted to the hospital dispensary on April 19, 1958, twelve hours after awakening with a sharp excruciating pain in the left chest. The patient experienced severe dyspnea. A dry cough was present, but there was no hemoptysis. Three weeks prior to admission the patient had been seen and had been treated symptomatically for an upper respiratory infection characterized by conjunctivitis, coryza, pharyngitis, and myalgia. Symptoms persisted for one week. The patient was not on flying status and had not been exposed to atmospheric pressure differentials.

Physical examination revealed a thin young white male with marked respiratory embarrassment. His blood pressure was 110/70, pulse 100, respiration 30, and temperature 98 F. Examination of the left hemithorax revealed diminished respiratory excursions, decreased breath sounds and tactile fremitus, and hyperresonance throughout.

X-ray films revealed a 90 per cent collapse of the left lung. The white cell count was 14,500 with 78 per cent neutrophils, 20 per cent lymphocytes, and 2 eosinophils. Sedimentation rate was 13 mm. per hour and hemoglobin was 13 Gm. Urine analysis showed normal results and the serologic test for syphilis indicated negative findings. Staphylococcus albus was cultured from the throat. First and second strength tuberculin tests were negative.

The patient was placed on bed rest and given tetracycline (Achromycin) prophylactically. Forty-eight hours later, when re-expansion failed to occur, a thoracentesis was performed in the second intercostal space in the midclavicular line and 650 cc. of air were withdrawn. The patient recovered without advent and was discharged for duty on May 12, 1958. Follow-up x-ray films showed complete re-expansion of the left lung without evidence of adhesions or emphysematous blebs.

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* Presently resident in orthopedic surgery, Hospital for Special Surgery, New York City.

CASE 2.—A twenty-year-old white male was admitted to the hospital dispensary on April 24, 1958, complaining of pain in the left chest and shortness of breath beginning eight hours prior to admission. He was not engaged in physical exertion at the time of the symptom onset. Three weeks prior to admission the patient had had symptoms of virus upper respiratory infection including cough, coryza, headache, and myalgia. His symptoms persisted for one week during which time he was seen on sick call and treated symptomatically. The patient was not on flying status and again had not been exposed to atmospheric pressure differentials.

Physical examination revealed a thin white male in moderate respiratory distress. His blood pressure was 120/80, pulse 82, respiration 22, and temperature 98.6 F. There was hyperresonance with decreased breath sounds and tactile fremitus on the left. Chest x-ray films revealed a 30 per cent collapse of the left lung.

The white cell count was 18,800 with 67 neutrophils, 27 lymphocytes, 1 monocyte, and 2 eosinophils. The hemoglobin was 14 Gm. The urine analysis showed normal results and the serologic test for syphilis also gave negative findings. Staphylococcus albus was grown from the throat culture. First and second strength tuberculin tests showed negative results.

The patient was placed on tetracycline prophylactically. His hospital course was uneventful, and he was discharged for duty on May 12, 1958. Follow-up x-ray films indicated complete re-expansion without adhesions or emphysematous blebs.

CASE 3.—An eighteen-year-old white male was admitted to the dispensary on May 19, 1958, one-half hour after noting severe pain in the left chest which became worse with respiration. He was not engaged in strenuous physical activity at the inception of symptoms. In September, 1957, the patient had suffered a spontaneous pneumothorax of the left lung. At that time he was hospitalized for three weeks and responded well to conservative management. During the two weeks prior to the second admission, the patient had cough, coryza, conjunctivitis, headache, and pharyngitis but had felt well the two days prior to admission. The patient was not on flying status and had not been exposed to atmospheric pressure differentials.

Physical examination revealed an undernourished young white male in moderate respiratory distress. His blood pressure was 110/60, pulse 110, respiration 24, and temperature 99.4 F. Hyperresonance and diminished tactile fremitus were noted in the left chest. X-ray films revealed a 20 per cent pneumothorax of the left lung.

The white blood count was 9,200 with 60 neutrophils and 40 lymphocytes. The hemoglobin was 14 Gm. and the sedimentation rate was 3 mm. per hour. Urine analysis indicated results within normal limits. A throat culture was not taken. First and second strength tuberculin tests showed negative findings. The patient was treated conservatively with bed rest and prophylactically with tetracycline. He recovered and was discharged on May 29, 1959. Follow-up x-ray films revealed complete re-expansion without emphysematous blebs.

Comment

The air base on which these cases occurred is isolated on the west coast of Greenland. Each of the persons involved in the study had been residing on the base for at least several months prior to the pneumothorax. The personnel on this base are subject to endemic waves of virus upper respiratory infection at irregular intervals. Since there is no local population, the infecting agents are undoubtedly carried and transmitted by transient individuals arriving by air transport.

The base population at the time of the study was approximately 1,000 men, the greater preponderance of whom were in their second and third decades. There had been no cases of spontaneous pneumothorax at this dispensary within the previous two years.

Nose and throat washings and blood specimens were taken from each of the 3 patients during his hospital stay in an effort to establish and identify the presence of a particular virus at the time of pneumothorax. Unfortunately, because of the distances involved, the specimens were not suitable for examination when they arrived at the laboratory in the United States. Throat cultures in the first 2 cases showed the presence of normal flora.

One month prior to the occurrence of these cases, an increase in the number of upper respiratory infections was noted among the base personnel. The symptom complex was similar to that which was described previously. The upper respiratory infections occurring two weeks prior to admission in each case were believed to be virus in nature because of the symptom complex described and the presence of normal respiratory flora in 2 of the cases.

Several observations may be made: (1) This was an abnormally high incidence of spontaneous pneumothorax in a small population group for a one-month time period[3-5]; (2) all 3 cases were preceded by a persistent upper respiratory infection of virus-type symptomatology two to three weeks prior to collapse but were apparently well at the time of collapse; (3) 1 of the cases had a previous pneumothorax on the same side, but none of the cases demonstrated by x-ray studies show evidence of emphysematous blebs or other respiratory disease; (4) all 3 cases occurred in a young and narrow age range in a population group that may be acquiring exposure to particular virus types for the first time and thus may have little or no immunity; and (5) none of these men had been exposed to atmospheric pressure differentials and were not undergoing respiratory exertion at the time of pneumothorax.

Conclusion

The abnormally high incidence of spontaneous pneumothorax occurring in a one-month time period in a small isolated population group suggests a particular or common external etiologic agent rather than a congenital defect. The presence in each case of the antecedent virus infection would seem to be more than accidental and may be the causative factor.

Therefore, an interesting relationship between upper respiratory infections of virus symptomatology and pneumothorax has been demonstrated. Whether or not the association is etiologic in an otherwise normal lung, contributory in a morphologically or physiologically compromised and thus predisposed organ, or whether the association is more than coincidental is entirely speculative in a study of this size.

This series remains an interesting occurrence and a speculation which should be correlated and proved by future observation and study.

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Effects of Phenylbutazone and ACTH on Gastrointestinal Mucosa

In a study of experimental animals the authors explored the possibility—suggested by clinical experience—that the incidence of gastrointestinal complications may be increased from the use of ACTH-cortisone and phenylbutazone together or in a series. Guinea pigs were given these drugs in combination and in sequence for varying periods. None of the control animals developed gastrointestinal lesions, but ulcers occurred in almost half of the test animals. Phenylbutazone alone seemed to be the most toxic agent, followed closely by its combined use with ACTH. The authors conclude that in general it is better to avoid this combination unless results cannot be produced any other way, or to reduce the dose of each agent to the level least likely to be toxic. If combined use seems necessary, every precaution must be taken to protect the gastric mucuosa.

—*American Journal of the Medical Sciences, January, 1959, Joseph T. Freeman, M.D., M. A. Giess, M.D., Roberta Hafkesbring, Ph.D., and Eleanor K. Caldwell*

MEDICAL NEWS

Physician to Study in Denmark—Lester C. Mark, M.D., New York City, has been awarded a Fulbright grant for Advanced Research and a John Simon Guggenheim Memorial Fellowship for eight months starting July 1. Dr. Mark will utilize his awards by taking a sabbatical leave from his position as associate professor of anesthesiology at Columbia to study in Denmark.

He will collaborate with Drs. Carl Clemmesen, Per Lous, and Willy Dam, directors of the Departments of Psychiatry, Clinical Biochemistry and Physiology, and Anesthesiology, respectively, at the Bispebjerg Hospital, in studies of the effects of barbiturate poisoning on acid-base balance and kidney function.

Dr. Mark will remain in Denmark until February, 1961.

Muscular Dystrophy Fund Changes Name—The National Foundation for Muscular Dystrophy has announced that it now will be known as the National Foundation for Neuromuscular Diseases Inc. The change was made to make the organization's name more descriptive of its broadened purpose.

New York State Chapter of American College of Chest Physicians Elects—The following officers were elected at the recent annual meeting of the New York State Chapter of the American College of Chest Physicians: Willard R. Davies, M.D., Rockville Centre, president; Alfred Dooneief, M.D., Mount Kisco, first vice-president; Hyman Alexander, M.D., New York City, second vice-president; and Harry Golembe, M.D., Liberty, secretary-treasurer.

Woman Reporter Wins Empire State Medical Reporting Award—Miss Cathy Covert, science writer for the *Syracuse Herald-Journal* and the *Syracuse Herald-American*, has been named the winner of the first Empire State Award for Excellence in Medical Reporting. Miss Covert received the $500 award for a series of articles probing the reasons for an increase in the infant death rate in the State and the nation and also for her articles concerning a study linking radioactive rock with the birth of malformed infants.

The annual award is sponsored by the Medical Society of the State of New York and Annual Health Conference, Inc., on behalf of the New York State Health Department. The purpose of the award is to encourage the development of sound medical reporting in New York State and to recognize the contributions to public knowledge and understanding of health and medicine that are made by reporters and newspapers.

Footprinting Newborn Mandatory—The New York State Public Health Council has passed a regulation making footprinting of newborn infants mandatory. The new regulation to the State Sanitary Code will be effective July 1, according to Herman E. Hilleboe, M.D., State Health Commissioner.

More than half of the hospitals in Upstate New York are presently footprinting newborn infants. In the past, however, footprinting has been of little value because the footprints have not been taken properly. For this reason institutes have been set up by the State Health Department Regional Health Directors in cooperation with regional hospital councils to provide instruction for hospital staff members concerned with the technics of taking footprints properly.

Patients Sought for Clinical Study of Hand-Schüller-Christian Disease—The cooperation of physicians is requested in a study of eosinophilic xanthomatous granulomatosis, and most specifically Hand-Schüller-Christian disease, being conducted by the Radiation Branch of the National Cancer Institute in the Clinical Center of the National Institutes of Health, Bethesda, Maryland. This study has as its primary purpose a search for therapeutic methods which may favorably affect the course of the disease.

The study has three major components: a histopathologic evaluation of the course of the disease process during and following an appropriate therapeutic period; comparative studies devoted to the effect of prolonged and short-term therapy on the course of the underlying granulomatous process will be undertaken; and, finally, an attempt to evaluate some parameters in lipid and calcium metabolism during therapy.

Patients appropriate for this study are those with a histopathologic diagnosis consistent with some phase of eosinophilic xanthomatous granulomatosis who have active disease. It is preferable that such patients not be seriously ill as this precludes long-term studies of effects. In order to minimize the effects of prior treatment, those patients who have not received antifolic-acid, radiation, or steroid therapy for at least one month prior to their evaluation are considered most appropriate for the program but previously treated patients will also be considered for admission. Accepted patients will be studied for various periods of time and may be followed subsequently by either the referring physician or physicians at the Clinical Center. An individual program will be instituted for each patient and will include appropriate supportive and symptomatic care as well as the experimental therapy.

Physicians interested in referring such patients should write or telephone to: Charles G. Zubrod, M.D., Clinical Director, or J. Robert Andrews, M.D., Chief, Radiation Branch, National Cancer Institute, Bethesda 14, Maryland, Telephone OLiver 6-4000 (ext. 4346, Dr. Zubrod: ext. 3351, Dr. Andrews).

Wesson Fund for Medical Research and Education—Applications for financial grants from the Wesson Fund for Medical Research and Education are now being accepted. Requests will be accepted from nonprofit research centers at universities, hospitals, and laboratories, as well as from individuals whose primary work is in nutritional research. Applications will be screened by a medical advisory board.

Applicants should address their requests to: Wesson Fund, 1 East 45th Street, New York 17, New York.

Albany Medical College Honors Alumni—Albany Medical College recently honored its alumni who have reached their fiftieth year of service in the medical profession. The alumni, members of the medical college's class of 1910, who received special citations at the annual dinner meeting of the alumni association were as follows:

Albany: William D. Allen, M.D., Philip C. Hacker, M.D., and John F. Southwell, M.D.; *Bloomington:* Leander G. Rymph, M.D.; *Herkimer:* Howard C. Murray, M.D.; *Johnstown:* Frank G. Calder, M.D.; *Pottersville:* George Bibby, M.D.; *Springfield Center:* John J. McShane, M.D.; *Syracuse:* Wardner D. Ayer, M.D.; and *Troy:* Eugene F. Connally, M.D.

Program for Reporting Adverse Reactions to Drugs—A program for the reporting of unusual or adverse reactions to drugs has been announced by the Food and Drug Administration. It will be conducted initially with a limited number of hospitals selected to represent a cross section of medical specialties. Where necessary, contracts may be negotiated with the hospitals (or individual physicians designated by them) providing for reimbursement.

As the program develops additional hospitals will be included with the aim of establishing nationwide reporting. The project is an outgrowth of a voluntary pilot study carried out during the past four years in cooperation with the American Association of Medical Record Librarians, the American Society of Hospital Pharmacists, the American Medical Association, and the American Hospital Association.

The program is designed to develop information promptly on the untoward effects of drugs, especially the newer drugs. The information will be utilized by the Food and Drug Administration in the resolution of medical and administrative problems under the Federal Food, Drug, and Cosmetic Act.

American Board of Obstetrics and Gynecology—The American Board of Obstetrics and Gynecology has announced that applications for certification in the Board, new and reopened, part I and requests for re-examination in part II are now being accepted. Deadline for receipt of applications is August 1, 1960.

The following change in requirements for certification was recently made by the members of the Board. "A resolution was passed at the recent annual meeting of this Board which eliminates the submission of case reports as part of the part I examination. It is required, however, that each candidate eligible to take the part II examination bring to the place of examination a duplicate list of hospital admissions as submitted with his or her application.

This change in requirements is not retroactive and therefore applies to candidates making application for the 1961 examinations."

It has also been resolved by members of the Board that applications for appraisal of incomplete training will no longer be accepted for review by the Residency Review Committee.

American College of Physicians Offers Postgraduate Courses—The American College of Physicians has announced that registration is now open for its fall and winter postgraduate courses. For registration forms and further information write to: Edward C. Rosenow, Jr., M.D., Executive Director, American College of Physicians, 4200 Pine Street, Philadelphia 4, Pennsylvania.

Personalities

Retired

George H. Ramsey, M.D., Rochester, on June 30, as professor of radiology and chairman of the Department at the University of Rochester School of Medicine after thirty years of service.

Installed

Bernard J. Pisani, M.D., New York City, as president of the Medical Society of the County of New York, on May 24.

Honored

Foster Murray, M.D., Brooklyn, and George G. Ornstein, M.D., New York City, with life membership on the Board of Directors of the New York Tuberculosis and Health Association.

Awarded

Thomas M. d'Angelo, M.D., Flushing, the New York University Alumni Meritorious Service Medallion . . . Sidney Kahn, M.D., New York City, the first Walter J. Farr Memorial Scroll . . . Morton L. Levin, M.D., Buffalo, the Hermann M. Biggs Memorial Award of the New York State Public Health Association.

Appointed

John E. Conboy, M.D., Bronx, reappointed to a nine-year term on the Board of Higher Education of the City of New York . . . James F. Coyle, M.D., Huntington, as associate medical director of the America Fore Loyalty Group . . . Halsted R. Holman, M.D., New York City, as professor and head of the Department of Medicine at Stanford University School of Medicine . . . Saul Krugman, M.D., New York City, as professor and chairman of the Department of Pediatrics at New York University Medical Center . . . William P. Shepard, M.D., New York City, to a special committee appointed by the Rockefeller Foundation to study the facts on voluntary health and welfare agencies . . . John C. Sherman, M.D., Schenectady, as the director of medical education at St. Clare's Hospital, Schenectady . . . Harry M. Zimmerman, M.D., to the national scientific advisory board of the Eleanor Roosevelt Institute for Cancer Research.

Elected

Oscar Auerbach, M.D., Staten Island, to the Board of Directors of the New York Tuberculosis and Health Association . . . Simon A. Beisler, M.D., New York City, as president-elect of the American Urological Association . . . Katharine D. Brownell, M.D., New York City, as secretary of the Citizens' Committee for Children of New York . . . Edward E. Fischel, M.D., Bronx, to the Board of Directors of the New York Tuberculosis and Health Association . . . Louis M. Hellman, M.D., Brooklyn, as president of the Society for Gynecologic Investigation . . . John E. Hesling, M.D., Albany, as president of the American Urological Association . . . Granville W. Larimore, M.D., Albany, Deputy State Commissioner of Health, to the executive committee of the Empire State Health Council . . . Jerome M. Schneck, M.D., New York City, to the Faculty of the History of Medicine of the Society of Apothecaries of London . . . Carlton E. Wertz, M.D., Buffalo, to the executive committee of the Empire State Health Council.

Speakers

Leona Baumgartner, M.D., New York City Commissioner of Health, at the twentieth anniversary convention of Licensed Practical Nurses of New York, on May 23 . . . Henry H. Beinfield, M.D., Brooklyn, on October 8, at the sixth annual program of the American Rhinologic Society, Chicago, on the topic "Surgical Correction of Choanal Atresia in Infancy and in Later Life" . . . Joseph H. Isenstead, M.D., Canajoharie, on the topic "The Systemic Importance of Relative Liver Dysfunction to the Development and Specific Treatment of Vascular and Blood Diseases" before the section on gastroenterology at the thirty-fifth annual congress of the Pan American Medical Association, Mexico City, on May 7 . . . Aaron Karush, M.D., New York City, before the staff of the Veterans Administration Hospital, Northport, Long Island, on the subject "Psychotherapeutic Methods" . . . Joseph A. Kinnaman, M.D., Garden City, Nassau County Health Commissioner, before the annual meeting of the Nassau County Board of Health, May 31 . . . Howard A. Rusk, M.D., New York City, at the commencement exercises of Finch College, June 8.

Men are never so likely to settle a question rightly as when they discuss it freely.—Lord Macaulay

NECROLOGY

Donald Smythe Childs, M.D., of Syracuse, died on April 27 at the age of seventy-two. Dr. Childs graduated in 1909 from Syracuse University College of Medicine. He was senior attending in radiology at St. Joseph's Hospital, a consultant in radiology at Syracuse Psychiatric Hospital, a senior consultant in radiology at Syracuse University Hospital (Hospital of the Good Shepherd), and an attending in radiology at St. Mary's Hospital. Dr. Childs was a Diplomate of the American Board of Radiology (Roentgenology), a Fellow of the American College of Radiology, and a member of the Radiological Society of North America, Inc., the Syracuse Academy of Medicine, the American Roentgen Ray Society, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans Andrew Christensen, M.D., of Brooklyn, died on January 25 at the age of seventy-three. Dr. Christensen graduated in 1912 from Long Island College Hospital Medical School. He was an attending in otolaryngology at Samaritan Hospital of Brooklyn and a consultant in otolaryngology at Kings County and St. Peter's Hospitals. Dr. Christensen was a Fellow of the American College of Surgeons.

Robert Anderson Cooke, M.D., of New York City, died on May 7 at Roosevelt Hospital at the age of seventy-nine. Dr. Cooke graduated in 1904 from Columbia University College of Physicians and Surgeons and interned at Presbyterian Hospital. He was a consulting physician at Riverview Hospital (Red Bank, New Jersey), a consulting physician in allergy at Vassar Brothers (Poughkeepsie) and Roosevelt Hospitals, and director of the Institute of Allergy at Roosevelt Hospital. In 1918 he opened an asthma and hay fever clinic at the New York Hospital which was later attached to Roosevelt and renamed the Institute of Allergy in 1950. For twenty years, until 1940, he taught applied immunology and clinical medicine at Cornell University Medical College. In 1923 Dr. Cooke founded the Society for the Study of Asthma and Allied Conditions (now the American Academy of Allergy) and in 1938 he established the Association of Allergy Clinics of Greater New York. Dr. Cooke was a Diplomate of the American Board of Internal Medicine, a Member of the American College of Pathologists, a Fellow of the American Academy of Allergy, and a member of the Association of American Physicians, the American Clinical and Climatological Association, the American Society for Clinical Investigation, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David Louis Engelsher, M.D., of the Bronx, died at his home on May 10 at the age of sixty-two. Dr. Engelsher graduated in 1919 from New York University and Bellevue Hospital Medical College and interned at Morrisania Hospital. He was a consulting physician in allergy at Fordham Hospital, attending physician in allergy at Morrisania Hospital, director of allergy at Bronx Eye and Ear Infirmary, and chief of allergy at Morrisania Hospital Outpatient Department. Dr. Engelsher played a role in the foundation of a pioneer allergy clinic at Bellevue Hospital where he served as an instructor in the subject. Dr. Engelsher was a Fellow of the American College of Allergists and a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Mills Glenn, M.D., of Fonda, died on January 9 at the age of eighty-six. Dr. Glenn graduated in 1911 from Albany Medical College.

John Samuel Oliver Herrlin, Jr., M.D., of Astoria and New York City, died on May 1 at the age of sixty-two. Dr. Herrlin graduated in 1923 from New York Homeopathic Medical College and Flower Hospital. He was an attending in surgery at Flower and Fifth Avenue Hospitals, Metropolitan Hospital, and Bird S. Coler Memorial Hospital and Home, staff pediatrician at Booth Memorial Hospital, and a consultant in surgery at Southampton Hospital Association. A professor of clinical surgery at New York Medical College, Dr. Herrlin was a consultant to the Consolidated Edison Company as well as president of the combined medical boards of Metropolitan Hospital and Bird S. Coler Memorial Hospital and Home. Dr. Herrlin was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Queensboro Surgical Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Debora Clute Hornby, M.D., of Schenectady, died on January 18 at the age of ninety-two. Dr. Hornby graduated in 1890 from the Woman's Medical College of the New York Infirmary for Women and Children.

Harry Jacobs, M.D., of Brooklyn, died on February 9 at the age of sixty-one. Dr. Jacobs graduated in 1921 from Long Island College Hospital Medical School. He was an honorary member of the staff at Prospect Heights Hospital. Dr. Jacobs was a member of the Industrial Medical Association, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Julie Mathilde Latte, M.D., of New York City, died on January 19 at the age of sixty-four. Dr. Latte received her medical degree from the University of Munich in 1923. She was an associate in ophthalmology at New York Polyclinic Hospital Outpatient Department. Dr. Latte was a member of the New York County Medical Society and the Medical Society of the State of New York.

Johnston MacLeod, M.D., of Flushing, died on May 23 at his home at the age of ninety-one. Dr. MacLeod graduated in 1891 from Bellevue Hospital Medical College. He was a consulting physician at Flushing Hospital and Dispensary where he had served as a former medical director as well as headed the school of nursing. He was a major in the Army Medical Corps for two years overseas in World War I. Dr. MacLeod was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander Mansky, M.D., of New York City, died on May 1. Dr. Mansky graduated in 1907 from Long Island College Hospital Medical School.

Morris Samuel Marks, M.D., of New York City, died on April 14 at the age of fifty. Dr. Marks graduated from the Medical Faculty of the University of Glasgow, Scotland, in 1936 and interned at Flower and Fifth Avenue Hospitals.

Howard Harris Mason, M.D., of New York City, retired, died on May 8 at his home at the age of eighty-one. Dr. Mason graduated in 1904 from Columbia University College of Physicians and Surgeons and interned at Presbyterian and Babies Hospitals. He was a consultant in pediatrics at Presbyterian and Greenwich (Connecticut) Hospitals. A former professor of pediatrics at Babies Hospital, he was chairman of the medical committee and vice-president of the board of directors of Keene Valley (New York) Hospital. Dr. Mason was a Licentiate of the American Board of Pediatrics and a member of the American Pediatric Society, the Medical Society of the State of New York, and the American Medical Association.

Dudley Joy Morton, M.D., of New York City, died at Roosevelt Hospital on May 22 at the age of seventy-six. Dr. Morton graduated in 1907 from Hahnemann Medical College of Philadelphia. In 1924 he joined the Department of Surgery at Yale Medical School and in 1928 was appointed associate professor of anatomy at Columbia University College of Physicians and Surgeons, resigning this post in 1944. Dr. Morton was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Adolph Mulstein, M.D., of the Bronx, died on January 12 at the age of eighty-two. Dr. Mulstein graduated in 1911 from the University of Maryland School of Medicine and College of Physicians and Surgeons.

John Judge Powers, M.D., of Albany, died on April 17 at his home at the age of fifty-one. Dr. Powers graduated in 1935 from Albany Medical College. He was Albany County Health Commissioner and a consultant in public health at Albany, St. Peter's, and A. N. Brady Hospitals. Dr. Powers was a Diplomate of the American Board of Preventive Medicine (Public Health), a Fellow of the American College of Preventive Medicine, and a member of the American Public Health Association, the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Porter Rhudy, M.D., of Penn Yan, died on March 17 at the age of sixty-one. Dr. Rhudy graduated in 1924 from the Indiana University School of Medicine. He was an attending in surgery at Soldiers and Sailors Memorial Hospital. Dr. Rhudy was a member of the Yates County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lipa Szumer, M.D., of the Bronx, died on November 19, 1959, at the age of seventy-two. Dr. Szumer received a medical degree from the University of Vienna in 1915. Dr. Szumer was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Prize Winners—Eight seniors shared nine prizes which were awarded at the 130th commencement exercises on May 31. The winners were: Marvin G. Godner, Forest Hills, who won the Association of the Alumni Medal for outstanding qualities which give promise of his becoming an ideal alumnus and one of two Daggett Prizes for exemplary deportment. The second Daggett Prize went to Francis Caprio, Chatham, New Jersey. John M. Sherwin, Scarscale, won the S. Oakley Vander Poel Prize, given annually to the student passing the best bedside examination in general medicine. The John Milton Bigelow Prize, for the best examination in diseases of the nose and throat, was presented to Robert G. Bump, Delmar. Arthur E. Smith, Albany, received the R. J. Wharton Prize which is presented for the greatest proficiency in pediatrics.

Three Lamb Foundation Prizes, awarded to the students whose kindly understanding most nearly approaches the ideal in doctor-patient relationship, were received by James I. Thompson, New York City; Richard P. Propp, Albany; and Laszlo Makk, also of Albany.

New York Medical College

Commencement—Degrees were conferred on 112 members of the graduating class at the commencement exercises held on June 7. Senator Jacob K. Javits was the speaker. Among the honorary degrees awarded was a Doctor of Science to Stephen P. Jewett, M.D., chairman, Department of Psychiatry.

State University of New York Downstate Medical Center

Special Lectures—Maurice Seevers, M.D., chairman, Department of Pharmacology at the University of Michigan Medical School, delivered the third Centennial Lecture on May 2. He spoke on "Narcotics and Addiction." The twelfth annual Alpha Omega Alpha Lecture was delivered on May 6, by Hans Selye, M.D., professor and director, Institute of Experimental Medicine and Surgery, Montreal, Canada. Dr. Selye spoke on "Stress and Cardiac Infarcts." The second annual Sigma Xi Lecture was delivered on May 23, by Dr. Barbara W. Low, professor of biochemistry, Columbia University's College of Physicians and Surgeons. Dr. Low's address was: "Some Considerations of Structure and Function in Proteins." A special lecture was delivered on June 1 by Dr. Peter Bischoff, Chief of Urology, St. Elizabeth's Hospital, Hamburg, Germany, who spoke on "Surgical Repair of Hydronephrosis and Megaloureter."

Faculty Changes—John B. Wild, M.D., chief, Medical Service of the 130th Station Hospital, has been appointed associate professor of medicine. A British citizen, Dr. Wild received his medical education at the University of London and came to the United States in 1953 as third-year resident in medicine at the State University of Iowa Hospitals, where he became assistant professor of medicine in 1955. In 1957 he entered military service as commanding officer of the 57th Field Hospital. Harvey Gollance, M.D., medical superintendent, Kings County Hospital, has been appointed lecturer in medical administration. A graduate of New York Medical College, Dr. Gollance took his internship at Morrisania City Hospital. He became deputy medical superintendent at Kings County Hospital in 1941 and supervising medical superintendent in 1957. The Kings County Hospital Center is the major clinical teaching affiliate for the Downstate College of Medicine.

Faculty promotions—For the 1960–61 academic year: To full professor: Stanley M. Aronson, M.D., associate professor of pathology; Irving F. Enquist, M.D., associate professor of surgery; Lawrence Frank, M.D., associate professor of dermatology, who will head the division of dermatology; and Brian F. Hoffman, M.D., associate professor of physiology. To associate professorships: Robert L. Bell, M.D., and Albert W. Cook, M.D., assistant professors of neurosurgery; Benjamin Kissin, M.D., assistant professor of medicine; Leroy S. Lavine, M.D., assistant professor or orthopedic surgery; Dr. Robert S. Speirs, assistant professor of anatomy; and Edward F. Vastola, M.D., assistant professor of neurology. To assistant professor: Charles C. Fries, M.D., instructor in surgery; Erwin Lear, M.D., instructor in anesthesiology; Lewis E. Lipkin, M.D., instructor in pathology; Reginald K. Waterhouse, M.D., instructor in urology; Ayse M. Yuceoglu, M.D., instructor in pediatrics; and Dr. Arthur M. Zimmerman, instructor in pharmacology.

Alumni Day—Participants in the scientific session on "The Physiologic Relationship of the Heart and Lungs in Health and Disease" were: Harold A. Lyons, M.D., class of 1940, professor of medicine—moderator: Gordon R. Hennigar, M.D., professor of pathology—"Pathologic Vascular Changes"; Harry Z. Mellins, M.D., class of 1944, professor and chairman of radiology—"Radiologic Appearances"; George Emmanuel, M.D., instructor in medicine—"The Relationship of the Physiologic Abnormalities"; William Dock, M.D., professor of medicine—"The Clinical Aspects of the Problem."

Honors Day—The Medical Center's annual Honors Day symposium was held on May 16. The Honors Day Award for the best student research project went to Paul Kolker, of Massapequa Park, Long Island. Mr. Kolker's paper, judged by the faculty to be the most noteworthy, was entitled "The Formation of Ascites—An Experimental Study in the Rat." Other seniors who presented research papers during the program were: Martin R. Feller, Brooklyn—"Temperature Measurements in the Rabbit Eye"; Daniel J. Ferrigno, Jr., Brooklyn—"A Method for the Complete Homogenization of Skin"; Richard A. Gams, Bronx—"The Influence of Ovarian Hormones on the Distribution of Blood and Electrolytes in Uterine Smooth Muscle Tissue"; David P. Gerstman, Buffalo—"A Statistical Evaluation of Pregnancy in the Unwed Primagravida"; and Leonard Kleinman, Bronx—"Mechanism of Relaxing Effect of Epinephrine and Isoproternol on Smooth Muscle." Funds for the research projects were awarded under the College's student fellowship program, which is supported by the United States Public Health Service, the National Science Foundation, the College's Parents and Alumni Associations, and various private foundations and companies.

The Mitchell General Excellence Prize for the member of the graduating class "best qualified in all departments of medicine" went to Stephen R. Shapiro, Brooklyn. Mr. Kolker received the Linder Surgical Prize for the "greatest promise and accomplishment in surgical investigation"; and Albert N. Martins, the Bronx, received the Ford Anatomy Prize for "superior ability in advanced anatomical studies and research."

The Honors Day address, which followed the presentation of student research papers, was delivered by Robert Fisher Oxnam, president of Pratt Institute.

Commencement—One hundred and thirty-four medical students received the M.D. degree and three graduate students received the Ph.D. degree at the annual Commencement exercises on June 14.

Willard C. Rappleye, M.D., president of the Josiah Macy, Jr. Foundation and former dean of the College of Physicians and Surgeons, delivered the commencement address, entitled "The Challenges Ahead." Howard W. Potter, M.D., professor Emeritus, psychiatry, administered the Hippocratic Oath and David I. Abramson, M.D., head of the Department of Physical Medicine and Rehabilitation at the University of Chicago College of Medicine, was awarded the Alumni Medallion for Distinguished Service to American Medicine for his work in cardiovascular and peripheral vascular disease. The degrees were conferred by President Robert A. Moore of the Downstate Medical Center and the diplomas awarded by Dr. John H. Slocum, Vice-President for Administration of the State University of New York.

State University of New York Upstate Medical Center

Prizes—The Honors Thesis Award winners are: Ronald A. Naumann, Baldwinsville, who received the first award as well as a prize from the Faculty-Student Association of the College; first honorable mention went to Ralph Richert, Bronx, as well as the Onondaga Medical Service Representatives Association prize; honorable mention also went to Alan G. Green, Utica, and Samuel Thier, Brooklyn. The Honors Thesis Awards are based upon voluntary, independent research work conducted by the medical students sometime during their four years and are written up in a scientific paper form and submitted for judging in the senior year and are marked according to originality and excellence of presentation. Winners of the awards are recommended by the faculty committee for additional honors at commencement time.

Alpha Omega Alpha—Third year medical students who were recently initiated into Alpha Omega Alpha, a national honorary society, were: Morton E. Alpert, New York City; Vincent I. Maddi, Binghampton; Howard R. Nankin, Nanuet; and Irwin D. Schlesinger, Brooklyn.

University of Rochester School of Medicine and Dentistry

Appointed—Louis H. Hempelmann, Jr., M.D., professor of experimental radiology, has been appointed chairman, Department of Radiology, effective July 1. Dr. Hempelmann succeeds George H. Ramsey, M.D., who has been chairman of the Department since 1948 and who retired on June 30.

MONTH IN WASHINGTON

Politics now overshadows all other factors in the issue of health care for the aged. It appears certain to be a major issue in this year's campaigning for the White House and Congress, regardless of what Congress does in the field before adjourning this summer.

Both the Democrats and the Republicans are supporting costly, sweeping plans which differ on the basic approach. The major Democratic plans call for use of the Social Security System. The Republican proposals would have the Federal government and the states put up hundreds of millions of dollars to help the aged buy health insurance on a voluntary basis.

The medical profession and allied groups oppose these political solutions because, among many other important reasons, they actually would not meet the problems of many aged who need help in financing the cost of illness.

Meanwhile, a key Democrat, Rep. Burr Harrison of Virginia, warned Congress against acting on such legislation in this year of a national election. He predicted that if any such legislation should be approved this year it "would be certain to be a monstrosity."

Noting that various solutions had been proposed, Harrison said: "The only features which these proposals have in common are that they are all tremendously expensive; they all propose revolutionary change; and they are all complicated, uncertainly-based and little-understood by the prospective beneficiaries."

Harrison, who is a member of the House Ways and Means Committee which handles such legislation, urged that Congress defer action until next year. He recommended that, in the meantime, the Ways and Means Committee "conduct an exhaustive study of the various proposals."

In early May, the Eisenhower Administration unveiled a Federal-state, $1.2 billion-a-year plan to help the aged with limited incomes buy broad medical and hospital insurance coverage. Under the plan, an aged person, if able financially, would bear part of the cost of both the insurance and of the medical care and hospitalization.

Arthur S. Flemming, Secretary of Health, Education, and Welfare, and Vice-President Richard M. Nixon stressed that participation by the aged in the Administration program would be on a voluntary basis.

The Administration's plan ran immediately into widespread opposition. Louis M. Orr, M.D., Orlando, Florida, President of the American Medical Association, said it was based "on the false premise that almost all persons over sixty-five need health care and cannot afford it."

"This is not a fact," Dr. Orr said. "The truth is that a majority of our older people are capable of continuing a happy, healthy, and, in many cases, productive life. Of the more than 15 million persons in the nation over sixty-five years of age, only 15 per cent are on old age assistance."

Dr. Orr said neither the Administration's proposal nor the Forand-type Social Security approach is tailored to meet the problems of the undetermined number of older persons who, "although able to finance other costs, find it difficult to withstand the additional burden of the cost of illness."

Dr. Orr advocated the A.M.A.'s positive eight-point program for the health care of the aged as a "sensible, economical" plan that would preserve freedom as well as promote security. If both these objectives are to be realized, Dr. Orr said, health care programs for the aged "must necessarily be limited to support for the needy aged and leave to voluntary, competitive private enterprise, those activities needed to improve the health care of the rest."

In brief, the A.M.A. program comprises: (1) improved preventative medical care for the aged; (2) a state-administered program of Federal grants-in-aid to states for liberalization of existing old age assistance programs so that the near-needy could be given health care without having to meet the present rigid requirements for indigency; (3) better nursing home facilities for the long-term care of aged persons, especially those over age seventy-five; (4) rapid development of health insurance and prepayment policies to provide long-term nursing home care; (5) expansion of home nursing care services; (6) elimination of compulsory retirement and a basic change in the attitude that a person who reaches sixty-five has suddenly become nonproductive and senescent; (7) health education to instill a "will to live" in older persons and to make them aware of the need for continuing healthful nutrition; and (8) anti-inflationary curbs to maintain the purchasing power of fixed pension and annuity benefits.

A Republican lawmaker, Sen. Barry Goldwater of Arizona, denounced the Administration's plan as "socialized medicine" and a "dime store new deal." The outspoken conservative predicted its ultimate cost would be "staggering." He said the Admin-

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

istration could have done better by proposing "full deductions for taxes for any amount spent for medical care of anyone" and for full costs of health plans by either an individual or corporation.

In endorsing the Administration's plan, Vice-President Nixon charged the Forand-type proposals backed widely by Democrats would "open the door for socialized medicine." He said: "The Forand bill and similar plans would set up a great state program which inevitably would head in the direction of herding the ill and elderly into institutions whether they desired this or not. Such a state program would threaten the high standards of American medicine."

Sen. Pat McNamara (D., Mich.), Chairman of the Senate Subcommittee on Problems of the Aged, headed a group of 16 Senate Democrats who sponsored legislation that would provide hospitalization and medical care for virtually all the nation's older persons.

The cosponsors included three avowed candidates for the Democratic nomination for president, Sens. Hubert H. Humphrey (Minn.), John F. Kennedy (Mass.), and Stuart Symington (Mo.).

Cost of the McNamara legislation was estimated at $1,578,000,000 a year. This would be financed by a $^1/_4$ per cent increase in the Social Security tax and $370 million from general tax money.

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

The Distaff—a Magazine for Auxiliary Members

THE *Distaff* which is sent to an Auxilary member when she pays her membership dues, is the official magazine of the Women's Auxiliary to the Medical Society of the State of New York.

The 20-page publication is an attractive magazine printed on a good grade paper with an appropriate cover. It is an outstanding magazine and compares most favorably with any other Auxiliary publication in the country. In it are articles by State officers and chairmen of the Auxiliary, advice and suggestions from the State Medical Society, problems affecting the medical profession such as pending or imminent legislation, questions of public health, prepaid health plans, problems of the aging, medical education, health careers, and many other subjects of interest to physicians' families which are freely discussed and should be read by Auxiliary members for them to be well informed.

Readers are invited to contribute news for publication and suggestions which will improve the magazine. The "President's Message" is a feature of every issue and is a concise, thought-inspiring column directed to every member in the State.

An interesting feature is the picture page. High lights of events taking place throughout the State are conveyed in the *Distaff* to other counties and often act as sources of inspiration to other groups. The "County Activities Around the State" is a section which has proved of great value to the 47 counties which comprise the State Auxiliary. Reading these brief reports stimulates interest in the various health problems, and often the constituent auxiliaries receive invaluable suggestions from its contents.

The "Guys and Dolls" column announces births in physicians' families and the "In Memoriam" section informs readers of the deaths of members. Added to these features are many extracurricular activities of the doctors' wives, frequently with a picture illustrating the articles. Articles in the *Distaff* have been credited with spurring members on to greater achievements as well as encouraging the leaders to undertake new ventures in their Auxiliary work.

The *Distaff* is in truth the cord which binds the 47 county auxiliaries together. Written by Auxiliary members for Auxiliary members and financed by the Auxiliary treasury, it is an invaluable aid in coordinating the work of our splendid organization. It is well worth reading and is indeed a significant factor in unifying the work of the "distaff" side of the medical team.

MRS. HERBERT J. ULRICH, *Editor*
Distaff

33 Parkside Avenue
Buffalo 14, New York

BOOKS REVIEWED

Planning Homes for the Aged. Edited by Geneva Mathiasen and Edward H. Noakes. Quarto of 119 pages, illustrated. New York, F. W. Dodge Corporation, 1959. Cloth, $12.75.

The evolving technology of geriatrics is greatly in need of reference material on the physical planning for group care of the sort assembled in this publication. Developed around a series of premiated drawings submitted in a competition in 1956 under the joint sponsorship of the National Committee on the Aging, and the magazines *Architectural Record* and *The Modern Hospital*, this book is much more than simply a presentation of drawings. In fact the most serious criticism which can be made is the poor quality of the plates. Many of the drawings are greatly reduced in size and the paper therefore should have been selected to give them the sharpest definition possible. This was not done and the result detracts from one of the book's potentially useful features, at least for the architect approaching a new field of practice.

But the 11 chapters cover as many aspects of the problem, each written by a qualified expert, and they are of themselves extremely useful for the lay members of boards and administrators about to embark on housing for the aged as they are for architects who may be responsible for the technical planning. They include articles on the social and mental factors in planning homes for the aged, on group services, the residence unit (which differs from other types), construction materials, and many others. The bibliography in an appendix is also valuable in a field where precedent and resultant experience is relatively limited. It might be noted that the two articles from the *Architectural Record*, of September, 1954, (p. 185 ff.) and May, 1956, (p. 195 ff.) which appear in the bibliography contain many plans of homes for the aged. In addition, but not included in the bibliography, are various other articles in the *Architectural Record* (e.g. March, 1958, pp. 216–222; October, 1958, pp. 179–186) and the *Architectural Forum* (e.g. August, 1958, pp. 86–91). Those seriously interested in the architectural thinking which has been done in this field might be helped to refer to those articles.—R. B. O'Connor

Ideals in Medicine. A Christian Approach to Medical Practice. Edited by Vincent Edmunds, M.D., and C. Gordon Scorer, M.D. Duodecimo of 192 pages. Chicago, The Christian Medical Society, 1958. Cloth, $3.00.

This little volume ably fulfills its mission "to present the distinctively Christian ideals as they may be employed in the service of Medicine." The British editors and 11 other contributors have presented this essentially Protestant viewpoint as a guide principally for younger novitiates in the ever more complex and perplexing practice of medicine. The scope is broad, with all important areas considered. The emphasis is appropriately on principles and perspectives rather than inflexible rules and ready, rigid resolutions of all problems. The physician's personal attitudes, standards, and conflicts, together with his relations to patients and colleagues, are discussed in sufficient detail to guide the practitioner to decisions and behavior most consonant with Christian teaching.

The subject matter is amplified by two appendices: Clinical Investigations (A memorandum of the Medical Research Council) and The Code of Medical Ethics of the World Medical Association. An excellent, classified bibliography is provided as is a more than satisfactory index. A particularly pertinent quotation from the chapter on "Ultimate Loyalties" has universal implications and underscores the timeliness of this and similar contributions to the philosophy and principles of professional practice:

> A third change which has come over society, and has inevitably left its mark on the medical profession, is the widespread drift away from common honesty and sense of duty. We are in an age of social revolution. Every class is striving either to better itself or else to retain the privileges it has and which it believes it is in danger of losing. There is an almost universal tendency to demand payment for every service rendered, and the professional classes, hard hit by the rising cost of living and the high level of taxation, are in no mood to be pioneers in altruism.—Robert W. Hillman

Practitioners' Conferences Held at The New York Hospital-Cornell Medical Center. Volume 7. Edited by William J. Grace, M.D. Octavo of 275 pages. New York, Appleton-Century-Crofts, Inc., 1959. Cloth, $6.75.

This is the seventh in a series of edited transcripts of clinical conferences held at a leading university hospital. The contents include: Surgery for Mitral Stenosis, Management of Multiple Sclerosis, of

Leukemia, of Early and Late Syphilis, of Acne, of Herniated Discs, Diseases of the Adrenal Cortex, of Rheumatoid Arthritis, of Carcinoma of the Breast, of Meningitis, of Acute Hepatitis, and of Hepatic Coma. Each subject is defined and delineated by a panel of authorities in the field and who demonstrate cases and explore the subject thoroughly by discussion and occasional controversy. As usual, each topic is replete with its own bibliography and the subject index includes all the prior six volumes as well as its own.

With this issue, a well-known clinician, William J. Grace, M.D., assumes the mantle of editorship relinquished by Claude E. Forkner, M.D. Readers of previous volumes will detect the absence of Dr. Forkner's subtle direction, and his ruthless deletion or irrelevant material; missing, too, are his succinct summarizations which epitomized the presentation and discussion of each topic.—MILTON B. SPIEGEL

A Synopsis of Anaesthesia. By J. Alfred Lee, D. A. Fourth edition. Duodecimo of 616 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1959. Cloth, $6.50.

Four editions within twelve years attest to the popularity of the text and to the progress of the specialty of anesthesiology. The newest edition contains more than twice as many pages as earlier editions. Whole chapters have been rewritten and many new ones added. It is a treasure chest of information on every aspect of anesthesiology from the minutiae of anatomy and physiology to hypothermia and open-heart surgery. The subject matter is presented in topical outline form, ideal for review in preparation for examinations. Many of the mistakes of former editions have been deleted. The use of English terms in pharmacology and illustrations of English anesthetic machines detract from its value to American students. It is well indexed and references cover both the American and English literature. This book can be highly recommended for residents preparing for Board and College examinations.—SAMUEL BERKOWITZ

Headache. Diagnosis and Treatment. Edited by Arnold P. Friedman, M.D., and H. Houston Merritt, M.D. Octavo of 401 pages, illustrated. Philadelphia, F. A. Davis Co., 1959. Cloth, $8.00.

The dust jacket calls it "A masterly work by 12 eminent clinicians who cover each special phase of headache." It is that and more.

This book is concerned with headache and all the unpleasant sensations occurring in the head, face, and neck. Each section takes up an anatomic, symptomatic, physiologic, clinical, psychosomatic, or biochemical aspect. This consequently leads to

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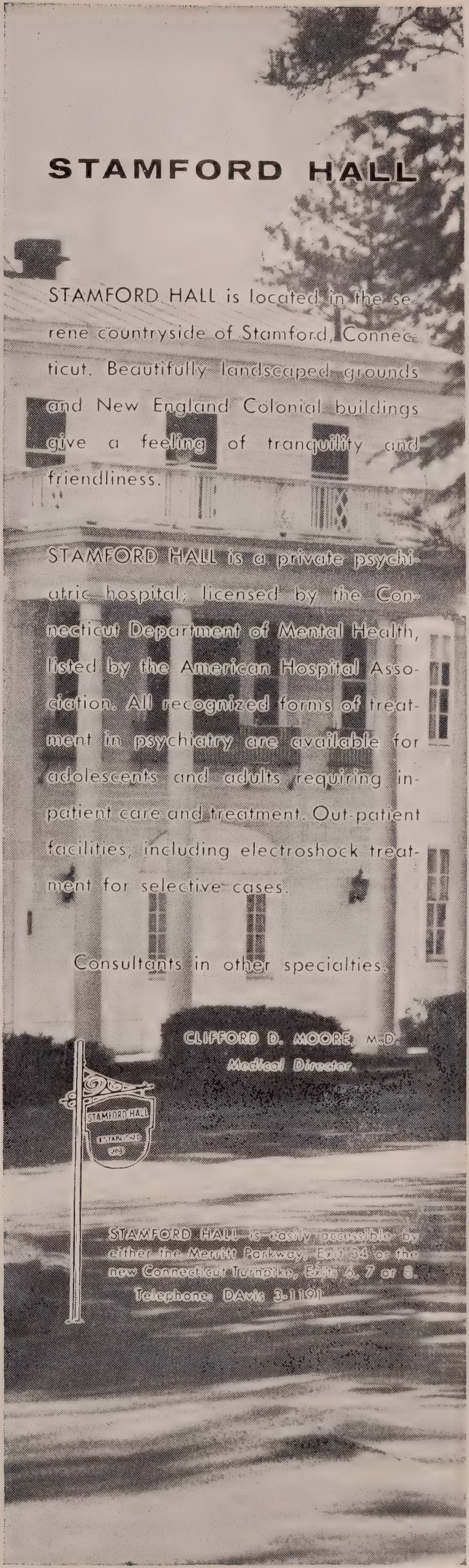

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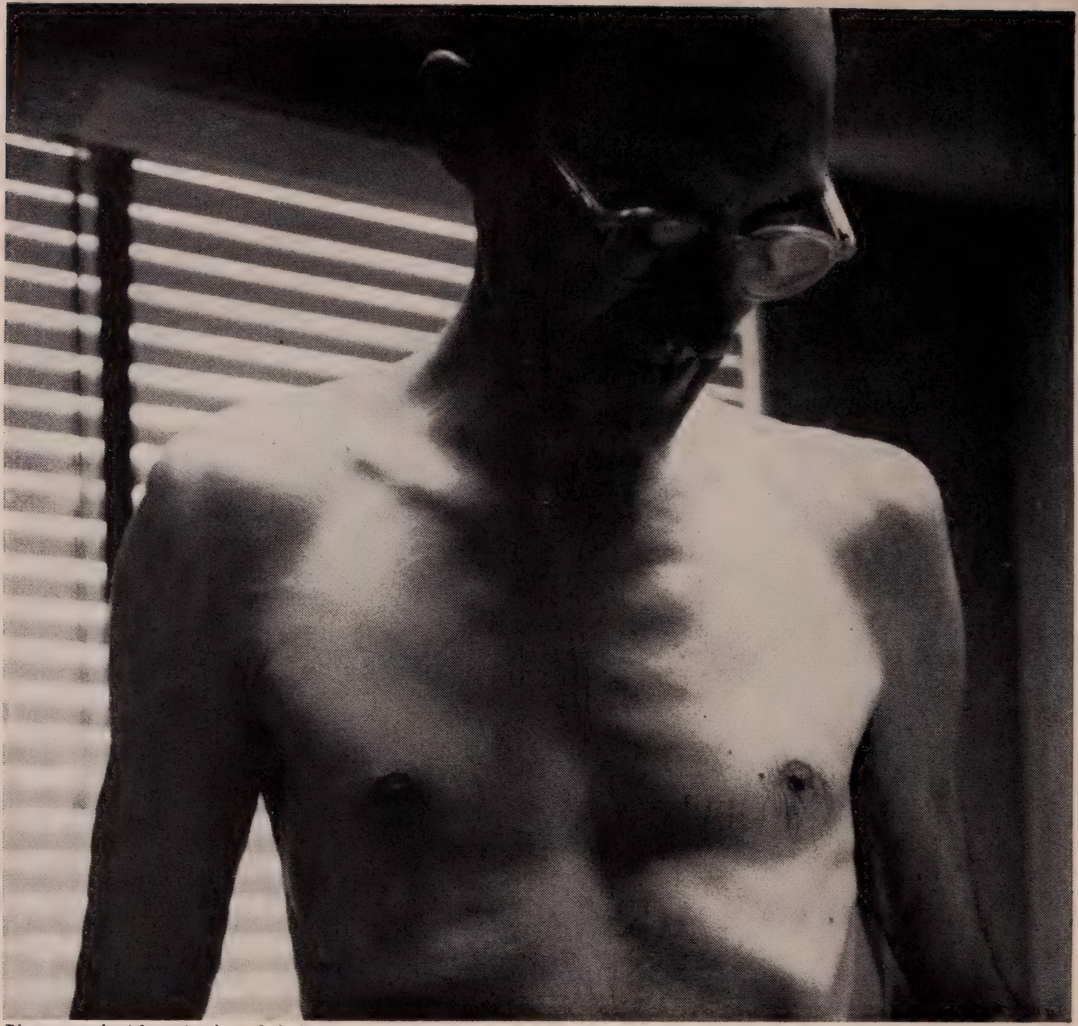

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How new Dianabol rebuilt muscle tissue in this underweight, debilitated patient

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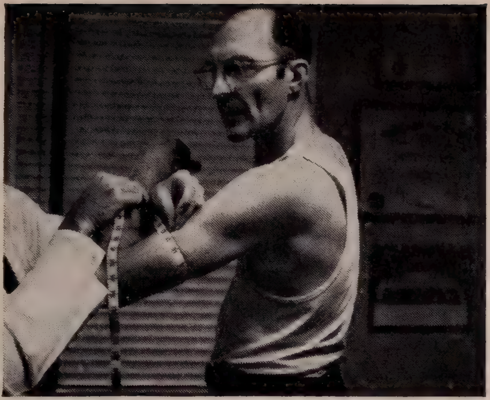

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[Continued from page 2171]

some repetition.

The sections on facial pain are a good survey. Facial pain has never been carefully or systemically evaluated psychiatrically although it is the common experience among neurologists and psychiatrists that facial pain is frequently associated with "functional" and "organic" psychiatric syndromes.

As a comprehensive survey of what is known about unpleasant sensations localized to the region between (and including) the vertex of the skull and the root of the neck, this book is highly recommended.—Edward L. Pinney, Jr.

Textbook of Surgery. Third edition. Edited by H. Fred Mosley, M.D. Octavo of 1,336 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $17.

The third edition of this monumental work is a thorough coverage of all aspects of surgery with a worth-while film reference at the end of each chapter.

The surgical bacteriology and chemotherapy is discussed with emphasis on the host parasite relationship. To cause infection, it is essential for any pathogenic organism to gain access to the body tissues and to be able to multiply there to a sufficient degree.

The defense mechanism consists of the following: Self sterilizing ability of healthy skin; lysoenzyme a bacterial enzyme occurring in nasal secretions and tears plus antibodies in the mucosal secretions; the acid pH and type of epithelium of the vagina which prevents the implantation of the coliform organism and may restrict the localization of gonococci; phagocytosis: The body is highly successful with nonpathogenic organism and extrinsic matter. It is less successful with pathogenic bacteria. Their pathogenicity is attributed to the ability to resist phagocytosis. The first clinical manifestation of the interaction between host and parasite is local inflammation. The polymorphonuclear cells first appear and later the mononuclear macrophages make their appearance. If this mechanism is not effective in destroying the majority of organisms, an invasion of the lymph channels and blood vessels take place and a generalized infection will follow. Antibodies render the bacteria more susceptible to phagocytosis or can agglutinate or lyse microbes.

The antibodies are connected with the serum globulin. They are often called natural or nonspecific antibodies because they are present in the serum of those who are not known to have experienced previous infection with a given organism.

The specific or immune antibodies are connected with the serum globulins and are formed in answer to

[Continued on page 2174]

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a specific stimulus with the object of removing and neutralizing the bacterial or toxic substances or both. Antibodies are effective only against bacteria outside of tissue cells and cannot affect microbes inside the host cells.

Complement and properdin system—They are components of the serum and play a role in the defensive mechanism. Their exact interrelation values and functions are not entirely clear.

This third edition is very timely in the wake of our high hospital infections and should focus our thoughts on the injudicious use of antibiotics. This highly important textbook is recommended to a*ll* surgeons.—John J. Lille

Schizophrenia. An Integrated Approach. Edited by Alfred Auerback, M.D. Octavo of 224 pages, illustrated. New York, The Ronald Press Company, 1959. Cloth, $5.50.

The book consists of a group of papers and discussions of papers by the participants in a symposium on schizophrenia at the Hawaiian Divisional Meeting of the American Psychiatric Association in May, 1958. The participants are leading psychiatrists, anthropologists, ethnologists, and sociologists.

The papers are mainly nonpsychoanalytic in the sense of not being particularly concerned with psychodynamics. Clinical experimental papers are presented. Descriptive papers are used as a basis for discussion.

The current status of research in physiologic and related fields aimed at an understanding of the schizophrenias are reviewed and appraised. There is a good paper on the use of drugs. A report on treating families and their schizophrenic member as a group stimulates hypotheses as to the function of the family unit. Other papers take up individual treatment of schizophrenics.

This book is recommended for psychiatrists as a representative survey of current thinking about schizophrenia.—Edward L. Pinney, Jr.

The Modern Family Health Guide. Edited by Morris Fishbein, M.D. Octavo of 1,001 pages. Garden City, Doubleday & Company, Inc., 1959. Cloth, $7.50.

Within the covers of a single volume, Morris Fishbein, M.D., erstwhile editor of the *J.A.M.A.*, has compiled a concise and comprehensive compendium covering the entire theory and practice of medicine with a philosophic discussion of its background and functions. In addition there is included an encyclopedic dictionary of medical terms. It is replete with statistics, diets, health guides, and first-aid instruction. Pharmacotherapeutics is couched in broad, generalized terms. Compared to the equivocal, often ambiguous medical articles which appear in our daily newspapers and the lay magazines, this material is more accurate and informative. Although it is intended to be a supplement for the practicing physician, it will be utilized to supplant him.

The editor characterizes it as "a little of the right kind of knowledge," but, like all "little knowledge," it can be a dangerous thing. The practicing physician had best study it well since patients who possess it may quiz him on its contents as a test of competence. This iatrogenic pestilence from the pen of Dr. Pepys is not among its contents.—Milton B. Spiegel

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Hearing Impairments

About 5,800,00 in the United States have some degree of hearing loss, including nearly 110,000 who are totally deaf, it is reported by statisticians of the Metropolitan Life Insurance Company on the basis of current National Health Survey findings.

Forty out of every 1,000 males have impaired hearing; a rate one third higher than that for females. The higher rate among males is attributed to their more frequent involvement in accidents and their greater exposure to prolonged intense noise in industry.

The relative frequency of hearing impairments rises rapidly with advance in age. From 8 per 1,000 persons under twenty-five, the rate rises to nearly 130 per 1,000 at ages sixty-five to seventy-four, and to about twice that figure at ages seventy-five and over.

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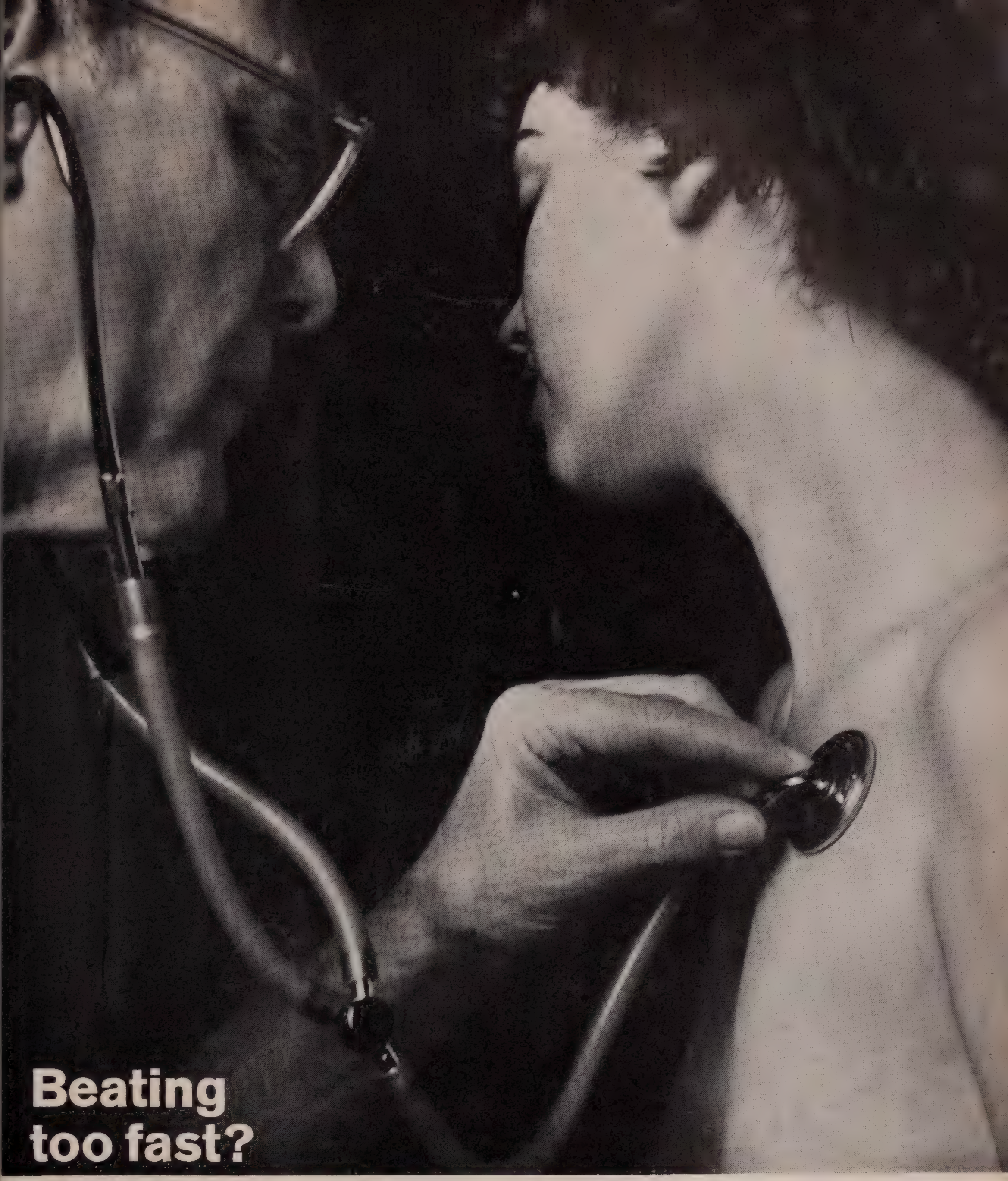

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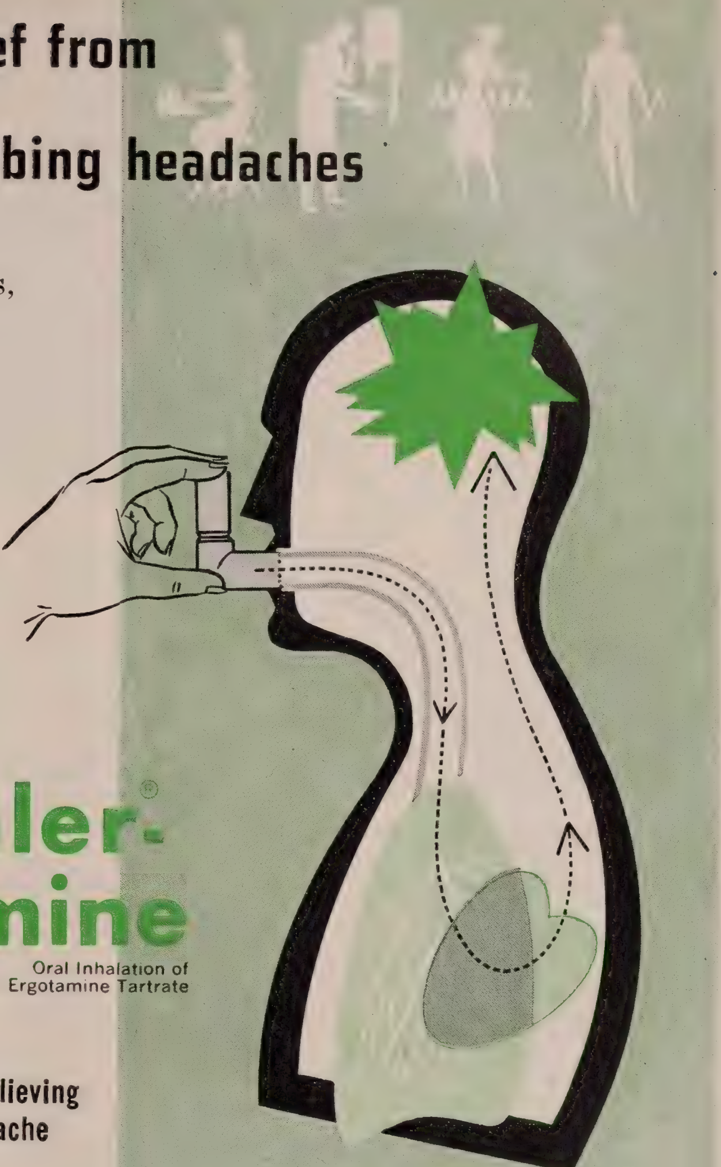
and occipital
neuralgia



Medihaler®-Ergotamine

Oral Inhalation of
Micronized Ergotamine Tartrate

Fastest overall method for relieving recurrent throbbing headache

Approximates speed and predictability of relief following ergotamine injection.

Eliminates delay in treatment...Medihaler travels *with* the patient...ready and in use in 5 seconds!

"In a series of over 300 episodes of vascular headache in 41 patients 'Medihaler'-Ergotamine was effective in about 70%."

Graham, J.R., Faulkner Hospital,
Jamaica Plains, Boston:
Personal Communication.

Dosage: A single inhalation at onset of headache. Additional inhalations should be spaced not less than 5 minutes apart. Not more than 6 inhalations in any 24-hour period.

In 2.5 cc. stainless steel vial (50 doses) with plastic oral adapter. Each depression of metering valve delivers 0.36 mg. ergotamine tartrate self-propelled from the oral adapter.

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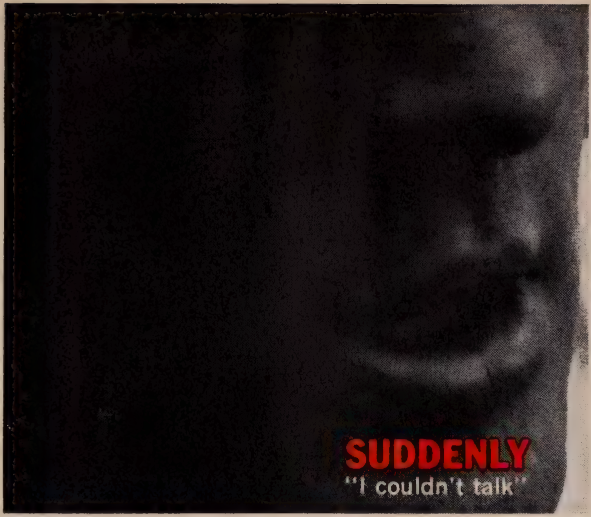
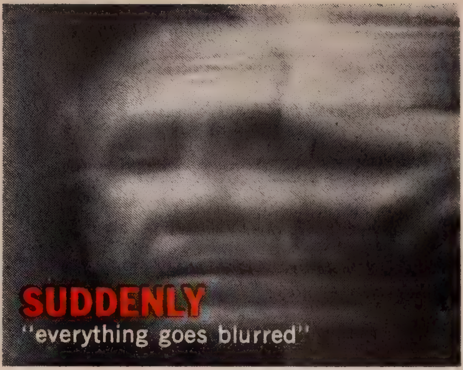
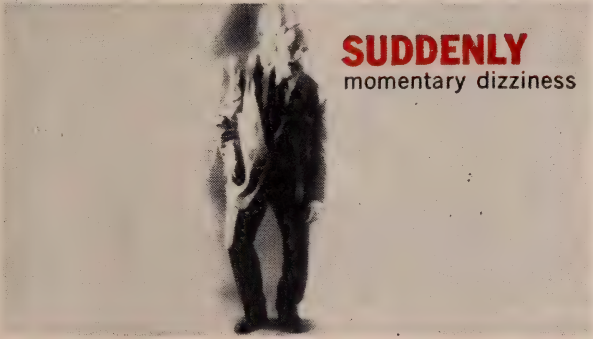


SUDDENLY
"I couldn't talk"



SUDDENLY
"everything goes blurred"



SUDDENLY
momentary dizziness

SUDDENLY
she finds herself
dropping things

Look out for the "little strokes"

resulting from abnormal capillary fragility. Sudden dizzy spells, blurred vision, bizarre feelings of pain, transitory weakness of arm or leg—all are typical symptoms.[1] It has been suggested that many of these incidents (frequent in the middle years as well as in the elderly[2]) might be due to minor cerebral hemorrhages.

"Little strokes"—avoidable? Many cerebral accidents may be avoided if adequate amounts of hesperidin and ascorbic acid are provided.[3] Hesper-C, a combination of hesperidin complex and ascorbic acid, promotes capillary resistance and repair; helps reduce the damage from abnormal capillary fragility.[4]

THE CAPILLARY-PROTECTIVE FACTORS
HESPERIDIN COMPLEX PLUS ASCORBIC ACID

Hesper-C®

a vital measure of protection against the "little strokes"

References: 1. Alvarez, W. C.: The New Physician 6:42, 1957. 2. Little Strokes, Hope through Research, Publication 689, United States Department of Health, National Institute of Neurological Diseases and Blindness, 1959. 3. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953. 4. Martin, G. J. (Ed.): Hesperidin and Ascorbic Acid, New York, S. Karger, 1955.

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“R Day”—*when pain is relieved*—can come early for patients with inflammatory (non-traumatic) neuritis if treatment with Protamide is started promptly after onset.

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60% required only 1 or 2 daily injections for complete relief

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Thus. the neuritis patient’s first visit—especially an early one—affords the opportunity to speed his personal “R Day.”

Protamide is available at pharmacies and supply houses in boxes of ten 1.3 cc. ampuls. Intramuscularly only, one ampul daily.

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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

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a rapid way to clear the airway

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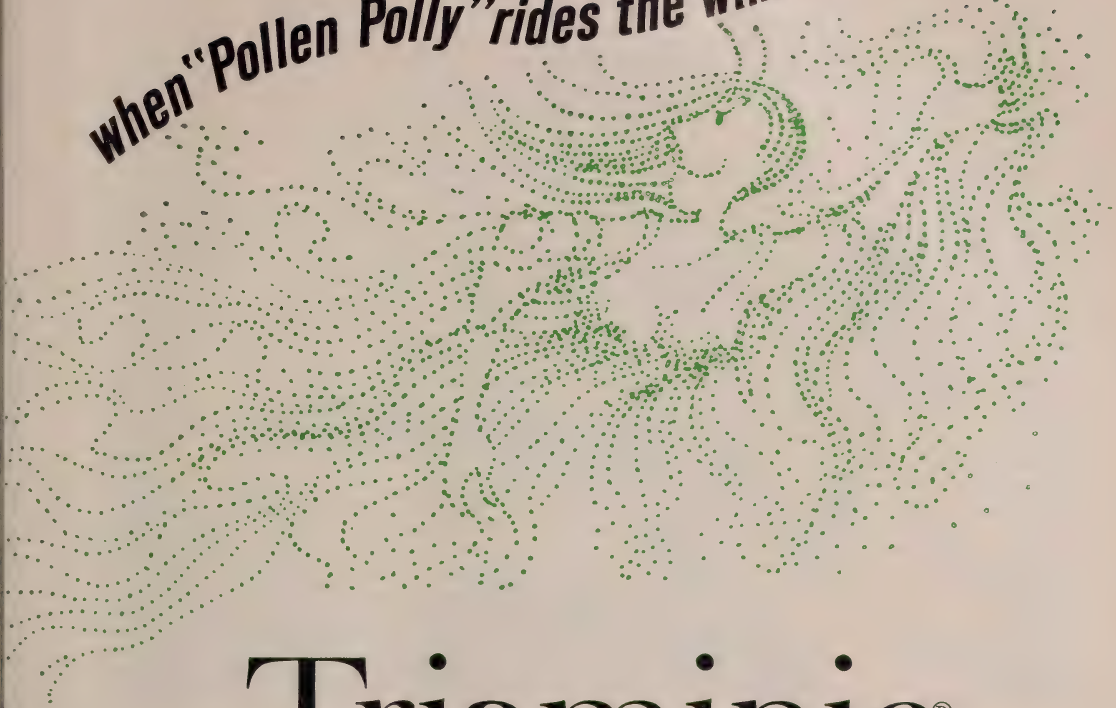

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...relief from pollen allergies

more complete than antihistamines alone...more thorough than nose drops or sprays

The miseries of respiratory allergy can be relieved so effectively with Triaminic.[1-5] Triaminic contains two antihistamines plus the decongestant, phenlypropanolamine, to help shrink the engorged capillaries, reduce congestion and bring relief from rhinorrhea and sinusitis.[1] Oral administration distributes medication to *all* respiratory membranes without risk of "nose drop addiction" or rebound congestion.[2, 3]

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Phenylpropanolamine HCl	50 mg.
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TRIAMINIC JUVELETS® ½ the formulation of the Triaminic Tablet with timed-release action.

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References: 1. Fabricant, N. D.: E. E. N. T. Monthly **37**:460 (July) 1958. 2. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4. Fuchs, M.; Bodi, T.; Mallen, S. R.; Hernando, L., and Moyer, J. H.; Antibiotic Med. & Clin. Ther. **7**:37 (Jan.) 1960. 5. Halpern, S. R., and Rabinowitz, H.: Ann. Allergy **18**:36 (Jan.) 1960.

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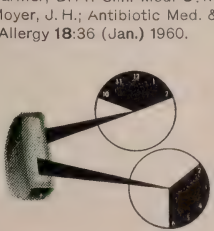

first—the outer layer dissolves
within minutes to produce
3 to 4 hours of relief

then—the core disintegrates
to give 3 to 4 **more**
hours of relief

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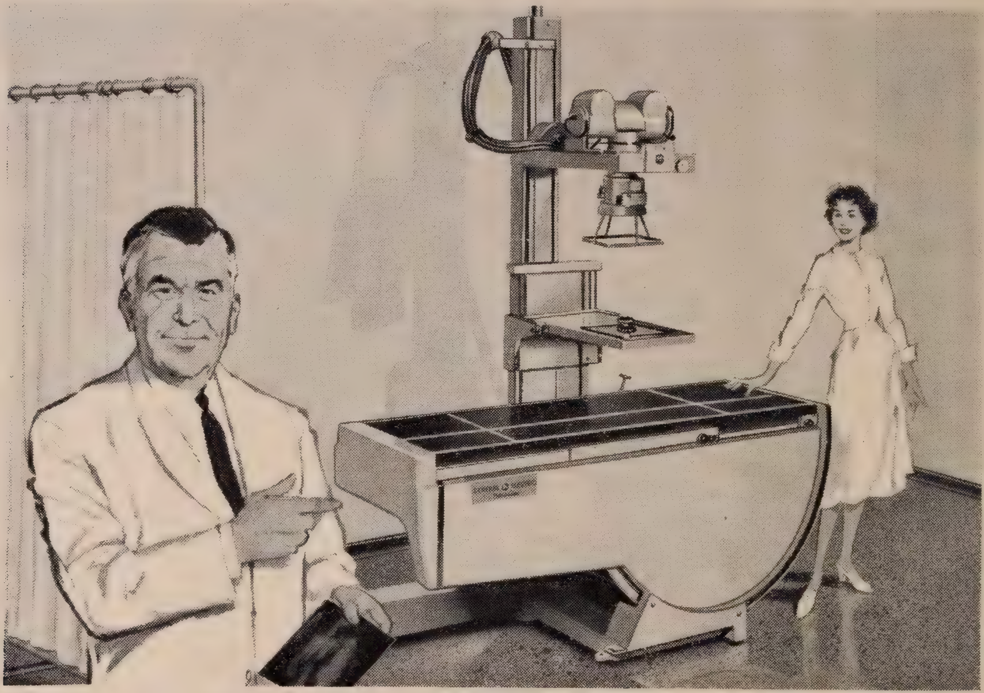

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FOR THERAPY
OF OVERWEIGHT PATIENTS

- d-amphetamine depresses appetite and elevates mood
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relieves pain, spasm; improves function increases tolerance to exercise

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

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an antihistamine
that is an antihistamine
–not a somnifacient

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drowsiness *(other side effects)* rare, relief prompt, toxicity low

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when allergies occur

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(Clemizole HCl)

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Bronkotabs is more effective because it is more comprehensive in treatment. First, Bronkotabs dilates bronchioles, combats local edema and provides mild sedation.

In addition, Bronkotabs decongests, using a most effective expectorant (glyceryl guaiacolate)[2] to liquefy and help expel the thick, tenacious mucus which is the cause of much of the respiratory distress in chronic asthma.[3] Since asthma is a chronic allergic disease of the bronchial tree,[3] Bronkotabs also supplies a highly efficient antihistamine (thenyldiamine) for prophylactic maintenance.[4] Marked and consistent relief of symptoms with minimum side effects can be expected with a dose of one tablet every three or four hours, not to exceed five times daily.

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References: 1. Spielman, A. D.: In press. 2. Schwartz, E., et al.: Am. Pract. & Digest Treat. 7:585, 1956. 3. Ogden, H. D., and Fuchs, M.: J. Louisiana M. Soc. 111:175, 1959. 4. Drill, W. A.: Pharmacology in Medicine, New York, McGraw-Hill Co., 1954, p. 41.

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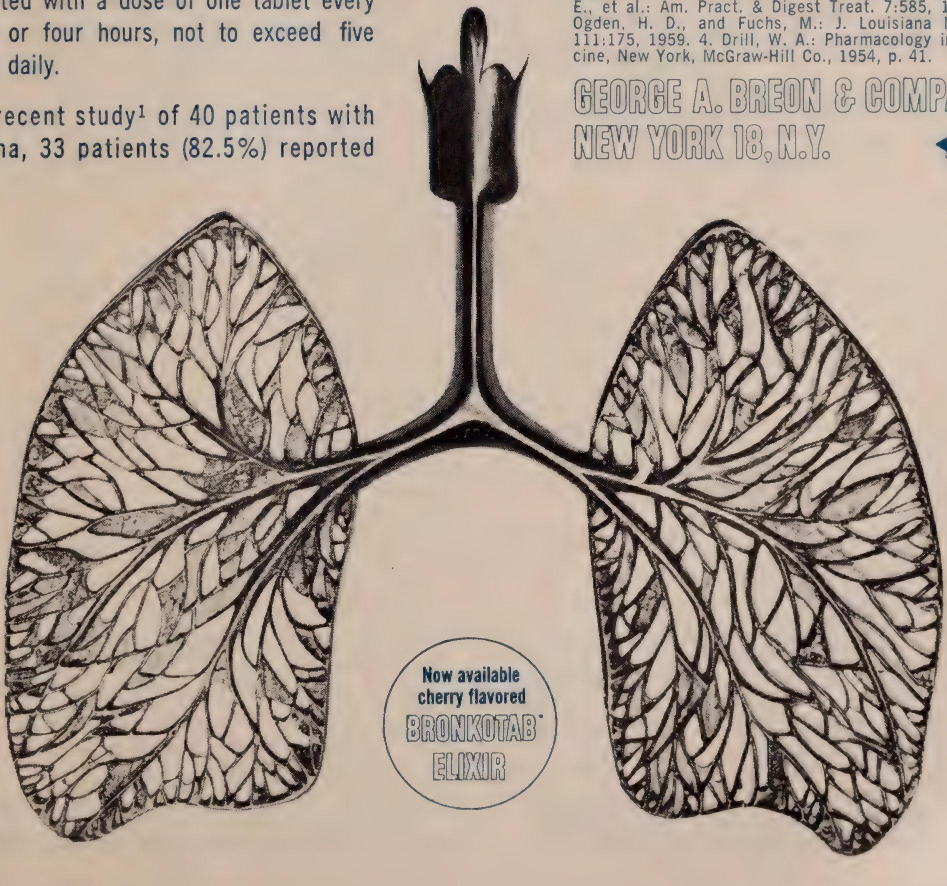

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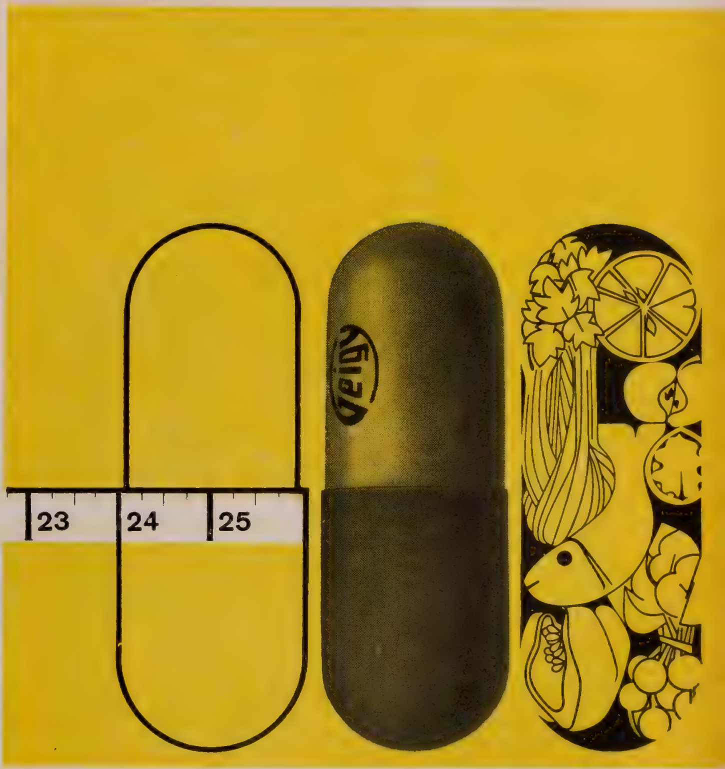

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References: 1. Angelucci, H. M.: Am. J. Obst. & Gynec. **50**:336, 1945. 2. Hensel, H. A.: Postgrad. Med. **8**:293, 1950. 3. Cortese, J. T.: Clin. Med. **2**:45, 1955. 4. Dill, L. V., and Martin, S. S.: M. Ann. District of Columbia **17**:389, 1948. 5. Horoschak, A., and Horoschak, S.: J. M. Soc. New Jersey **43**:92, 1946.

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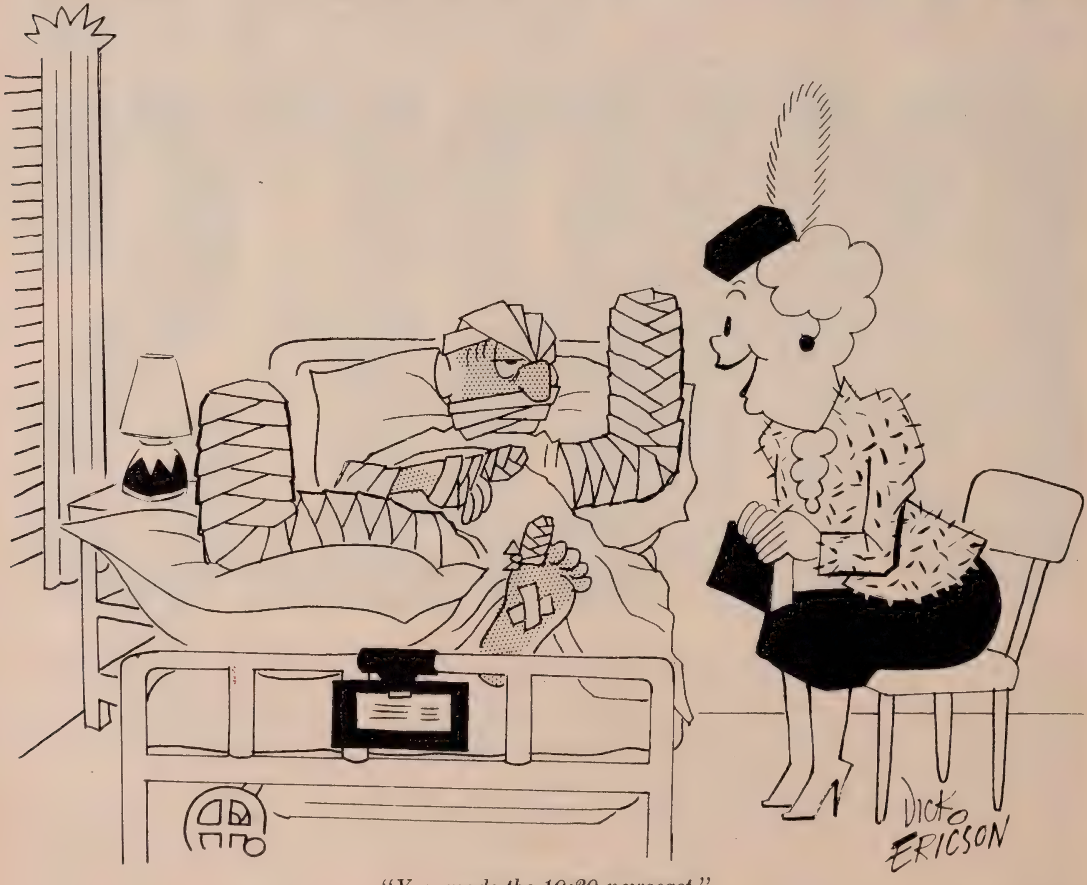

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Literature supplying details of dosage and administration available on request.

Bibliography: (1) Scott, J. S., & Kellaway, P.: *M. Clin. North America* 42:415 (March) 1958. (2) Ganoug, L. D., in Green, J. R., & Steelman, H. F.: Epileptic Seizures, Baltimore, Williams & Wilkins Company, 1956, pp. 98-102. (3) Bray, P. F.: *Pediatrics* 23:151, 1959. 26460

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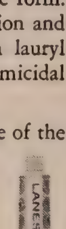

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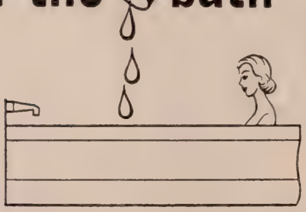

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[1] Spoor, H. J.: N. Y. State J. Med., Oct. 15, 1958

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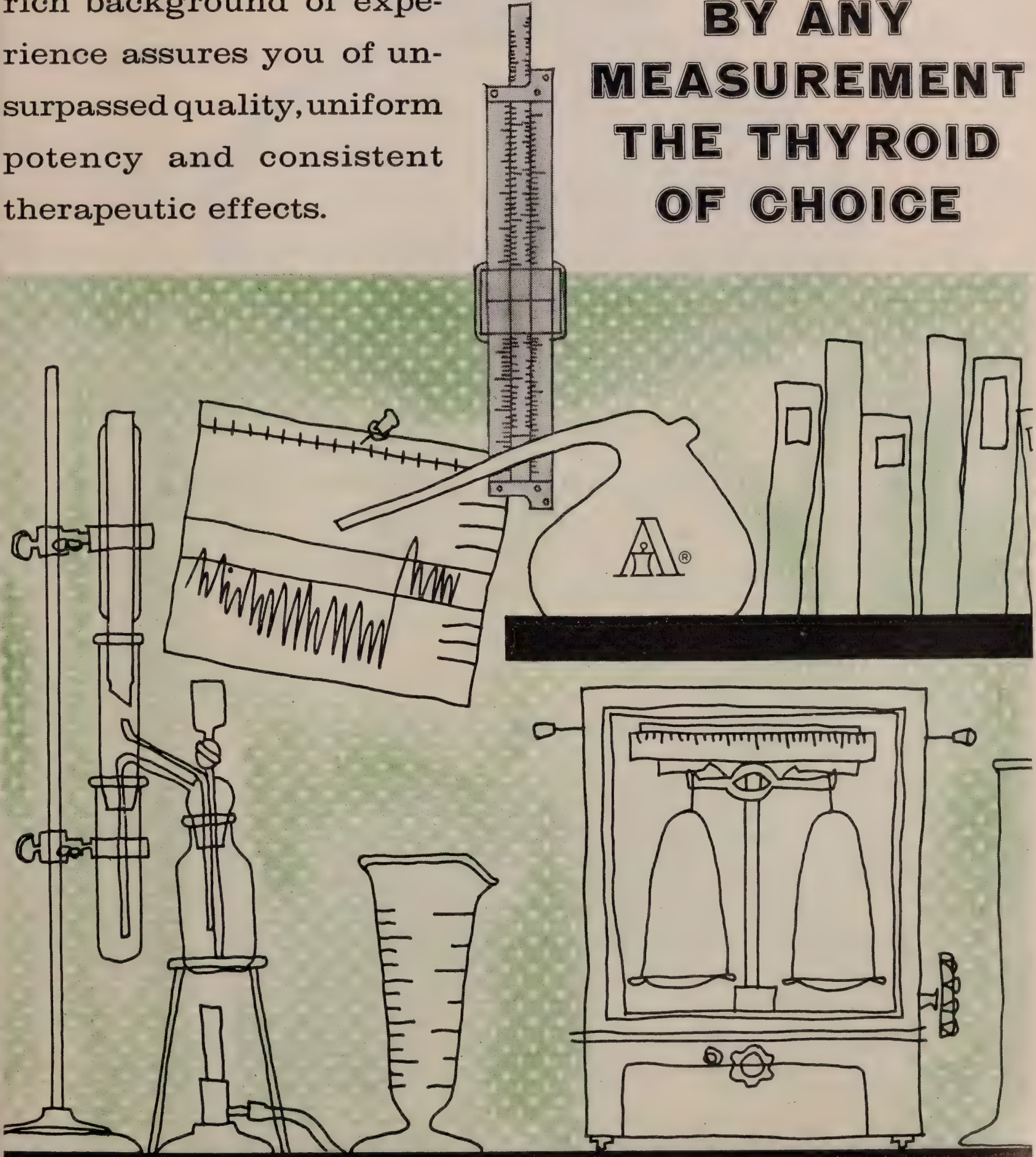

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GENERAL INFORMATION

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EDITORIALS

Maternal Mortality Case Reports

There seems to have been a decreased interest in maternal mortality committees in recent years, due in all likelihood to the marked reduction in the percentage of maternal deaths since the first maternal mortality committees were organized in New York City and Philadelphia.

Many local committees apparently feel that mortality figures are so low that an "irreducible minimum" has been reached, and therefore their work is no longer necessary. The problem of neonatal mortality has rightfully taken up a good deal of interest, but this should not replace the constant vigilance which is necessary in order to continue to safeguard the life of the parturient.

With changing attitudes in the practice of obstetrics we must be constantly on the alert for causes of maternal deaths different from the ones we have commonly come to expect. Medical and surgical complications of pregnancy are becoming more prominent as causes of deaths, while conditions wholly peculiar to pregnancy no longer have their former statistical weight.

In an effort to restimulate interest in, and the work of, county medical society maternal mortality committees, the JOURNAL in this issue, on page 2311, is instituting a new section on "Maternal Welfare in New York State" under the auspices of the Subcommittee on Maternal and Child Welfare of the Committee on Public Health and Education, Medical Society of the State of New York. The chairman is Edward C. Hughes, Syracuse. The subcommittee has been compiling statistics on the causes of maternal deaths throughout New York State and is expected to publish much interesting and valuable information throughout the year. Physicians will be interested to learn the most frequent causes of current maternal deaths in this State, the subcommittee is requesting the cooperation of all hospitals in the State.

Published in this issue are several case reports from a recent meeting of the Maternal Welfare Committee of the Medical Society of the County of Queens. Other county society maternal welfare committees are invited to submit case reports.

—G.J.L.

Is the Practice of Medicine Trade or Commerce?

The Supreme Court of the United States on November 9, 1959, refused to consider an appeal in the case of *Elizabeth Hospital v. Richardson*, 269 F. 2d 167, and by doing this, in effect, left standing the decision of the lower Federal courts which held that neither the rendition of hospital services nor the practice of medicine constitutes "trade or commerce" within the meaning of the Sherman Antitrust Act. Therefore an Arkansas-licensed physician had no treble-damage action under the Sherman Act based on his claim that his exclusion from membership in an Arkansas county medical society interfered with referral of out-of-state patients to his Delaware-incorporated Arkansas hospital.

The Elizabeth Hospital, Inc., was a Delaware corporation authorized to do business in Arkansas, where it maintains and operates a hospital at Prairie Grove, Washington County. The plaintiff hospital corporation was equally owned by four persons, including a physician, one Frank Riggall, M.D. The individual defendants were all physicians and surgeons and members of the Washington County Medical Society, which was also a named defendant, as was the American Medical Association.

The plaintiff sought to recover treble damages totaling $300,000 for alleged violation of the Sherman Antitrust Act and to obtain an injunction requiring the county medical society, an unincorporated organization, and the A.M.A. to admit Dr. Frank Riggall to membership therein. The plaintiff also alleged violation of the constitution, statutes, and common law of Arkansas.

In brief, the plaintiff's complaint was that it was authorized to and did engage in the operation and maintenance of a hospital of which Dr. Frank Riggall was chief of staff; that it purchased medical equipment and supplies, etc., for its use in operating its hospital from outside of the State of Arkansas. It alleged a conspiracy on the part of the defendants which interfered with the referral of patients from outside the State of Arkansas. The conspiracy was based on the refusal of the Washington County Medical Society to admit Dr. Frank Riggall to membership therein, resulting in denial to him of membership in the Arkansas Medical Society and the American Medical Association.

Dr. Riggall, as an individual, had been unsuccessful in an earlier action brought against the Washington County Medical Society on essentially the same grounds. He had charged that in denying him and certain members of his hospital staff membership in the county medical society there had been a conspiracy or combination in violation of the Sherman Antitrust Act as well as a conspiracy under the law of Arkansas to injure or damage him in the practice of medicine. Dr. Riggall's application for membership in the society was rejected by the membership by a secret vote of 34 to 2. The bylaws of the society provide that the society shall be the judge of the qualifications of its members. They also provide that the members shall vote on all applications and that the elections shall be by secret ballot and that three fourths of the votes of the membership present and voting shall be necessary to elect.

The court in the first action by Dr. Riggall had ruled that under neither the common nor the statutory law of Arkansas was there a proper ground for the lawsuit. It ruled that he was not being driven from competition and that no monopoly was shown. It pointed out that the action of the medical society and its individual members, whatever their motive may have been, was not action to attain an unlawful purpose or to use unlawful means in attaining a lawful purpose, absent some specific statutory requirement that all persons be admitted to membership. The court in the action by the hospital ruled that the same reasoning applied and held that no cause of action was spelled out under the law of Arkansas.

The court then went on to deal with the complaint that the Sherman Antitrust Act had been violated by a conspiracy "in restraint of trade or commerce among the several states . . .." The Court rejected this contention saying in part:

> "We think that the plaintiff's operation of a hospital, to include rendition of hospital services to some persons who came from outside the state, is no more engaging in interstate commerce than was Dr. Riggall in rendering medical services to persons who likewise came from other states. The fact that some of plaintiff's patients might travel in interstate commerce does not alter the local character of plaintiff's hospital. If the converse were true, every country store that obtains its goods from or serves customers residing outside the state would be selling in interstate commerce. Uniformly the courts had held to the contrary. . . .
> Interference with intrastate activity cannot constitute a violation of the Sherman Act unless its effect on interstate commerce is both substantial and direct."

It then went on to quote from its opinion in the earlier action brought by Dr. Riggall in support of its decision to dismiss the hospital's action:

> "The mere fact that the plaintiff at his location in Arkansas may be treating patients from other states who must travel interstate does not result in practicing his profession in interstate commerce, as the transportation of such patients is incidental. The practice of his profession as disclosed by the allegations of complaint is neither trade nor commerce within Section 1 of the Sherman Antitrust Act, nor are there any allegations in the complaint indicating that the actions of the defendants . . . resulted in a monopoly within the provisions of Section 2 of the Act. Plaintiff has not been prevented from practicing his profession, but in the final analysis his complaint is that he could practice it more profitably but for the acts of the defendants."

—J.R.B.

Interesting Psychiatric Program

The JOURNAL is pleased to present in this issue and the next five significant papers in the field of psychiatry derived from the program of the second New York State Divisional Meeting of the American Psychiatric Association.

A large portion of the meeting was devoted to community aspects of psychiatry. Our readers who scan these papers on pages 2236 to 2248 of this issue will get from them, we hope, the image of the psychiatrist not as an isolated ivory tower practitioner, but as a physician with a feeling for and a lively interest in the medical and social community.

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1. Andrews, M. C.; Andrews, W. C., and Strauss, A. F.: Effects of Progestin-Induced Pseudopregnancy on Endometriosis: Clinical and Microscopic Studies, Am. J. Obst. & Gynec. 78:776 (Oct.) 1959.
2. Kistner, R. W.: Endometriosis and Infertility, Clin. Obst. & Gynec. 2:877 (Sept.) 1959.

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SCIENTIFIC ARTICLES

Analysis of Electrocardiographic Patterns in Hypothyroid Heart Disease

ALBERT H. DOUGLAS, M.D., F.A.C.P., JAMAICA, NEW YORK, AND PAUL SAMUEL,* M.D.,
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(From the Department of Medicine, Queens Hospital Center, Jamaica)

It is the purpose of this paper to analyze a relatively large series of electrocardiograms taken from patients with hypothyroid heart disease who were studied before and after specific therapy with thyroid extract. This study was initiated because of the ever-increasing importance of coronary artery disease and the fact that hypothyroid heart disease, a condition that can be cured if recognized early enough, may produce electrocardiograms that are easily mistaken for those of myocardial ischemia, particularly in the presence of hypercholesterolemia. When hypothyroid heart disease is complicated by arteriosclerosis or when atypical angina pectoris is present, the differential diagnosis becomes even more important because of the potential harm which may follow the improper use of therapeutic agents to increase metabolism.

The present study is based on the analysis of the electrocardiograms of 92 patients with hypothyroid heart disease. Fifty-three of these were assembled from the literature and 39 from the files of the Queens Hospital Center and of the authors, reviewed over a twenty-year period. Rigid criteria were used in the selection of cases and only those were chosen in which the clinical diagnosis of hypothyroidism was confirmed by the basal metabolic rate, the blood protein-bound iodine and cholesterol levels or the radioactive iodine uptake, and the clinical and electrocardiographic response to therapy with thyroid extract.

Material

Assembled from the Literature.—In reviewing the papers on the subject under investigation, only those electrocardiograms which were reproduced in the texts were studied. Tracings with poor reproduction were eliminated because of possible error in interpretation. The composition of this material is shown in Table I.

Cases Added by the Authors.—The electrocardiograms of 39 new cases of hypothyroid heart disease have been added to those listed previously. A careful review of the records of the Queens Hospital Center from January, 1938, to December, 1958, yielded 25 cases that satisfied the criteria for selection which have been defined. One of us followed an additional 14 cases chosen from records that cover a period of twenty-eight years.

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* At present Research Fellow of the American Heart Association, New York University–Bellevue Medical Center.

TABLE I.—COMPOSITION OF MATERIAL ASSEMBLED FROM LITERATURE DEALING WITH ELECTROCARDIOGRAMS OF PATIENTS WITH HYPOTHYROID HEART DISEASE

Author	Number of Cases
Standard and precordial leads, before and after treatment	
Katz[1]	1
Rossi and Romero[2]	1
Schlesinger and Landtman[3]	1
Lipman[4]	1
Schantz and Dubbs[5]	1
Barker[6]	1
Tourniaire, Blum, and Tartulier[7]	3
Gonzalez de Cossio[8]	2
Urschel and Gates[9]	1
Standard and precordial leads, before treatment only	
Piaggio Blanco *et al.*[10]	2
Standard leads, before and after treatment (39 cases)	
Sprague and White[11]	1
Thacher and White[12]	1
Luten[13]	1
Davis[14]	1
Tung[15]	3
Hallock[16]	2
Walker[17]	1
Ohler and Abramson[18]	3
Gant[19]	1
Stewart, Dietrick, and Crane[20]	1
Levine[21]	1
McGavack, Lange, and Schwimmer[22]	1
Mussio-Fournier, Cervino, and Brazzano[23]	1
Graybiel and White[24]	3
Aarseth[25]	1
Lawrie[26]	1
Schoene and Pollock[27]	1
Kern *et al.*[28]	2
Schlesinger and Landtman[3]	4
Ljung[29]	4
Holmdahl and Welin[30]	3
Ellis *et al.*[31]	1
Urschel and Gates[9]	1

The electrocardiograms of the 39 cases included the following.

Leads	Number of Cases
Standard and precordial leads, before and after treatment	15
Standard and precordial leads, before treatment only	12
Standard leads only, before and after treatment	3
Standard leads, before treatment only	9

The total material in this study included the electrocardiograms of 92 patients in the standard leads and 41 patients in the precordial leads before treatment. After treatment tracings of these patients were available in 69 cases in the standard leads and in 27 cases in the precordial leads.

Seventy of the 92 patients were females and 20 were males; in 2 cases the sex was not indicated. In 6 instances congenital hypothyroidism was present with an age range of from five months to ten years. In 86 instances the hypothyroidism was found in adults, some in post-thyroidectomy. In this group the average age was 52.5 years (from twenty-one to seventy-two). The basal metabolic rate was available before treatment in 79 cases. The average was minus 28 per cent. The average basal metabolic rate after treatment was plus 2 per cent.

Patients in whom another organic disease complicated the picture were eliminated from the study with the exception of hypertensive and arteriosclerotic heart disease without myocardial infarction. Including 10 patients with hypertension (160/98 to 206/140), the average blood pressure was 135/85 before treatment and 150/92 after treatment. The total serum cholesterol was available in 23 instances before treatment. The average was 326 mg. per cent (170 to 615 mg. per cent). After treatment the average value on 17 determinations was 208 mg. per cent (134 to 350 mg. per cent).

The diagnosis established, dosage of thyroid extract was administered of from 0.25 grains to 7.5 grains daily, usually in increasing doses. The time interval between pretreatment and post-treatment electrocardiograms averaged three and a half months, with a range of from eight days to nine years. Four patients were in congestive heart failure before treatment was started, and they were subsequently controlled by medication. In 4 cases anginal pain was noted before treatment.

In 10 cases the precordial leads were recorded in CF derivations, in 31 cases V leads were recorded. In this study all have been grouped and designated as V leads.

Results

The data of the tracings from the literature and those added by the authors have been analyzed together. Electrocardiograms taken after clinical and laboratory evidence indicated that the hypothyroid state had been corrected by specific therapy were compared statistically with pretreatment tracings of the same patients. The data included in the calculation of the average voltage of a deflection were limited to those with readings available before and after treatment. The degree of statistical significance was chosen at the 5 per cent level in this study.

HEART RATE.—Heart rate values were available in 44 cases before treatment. The average rate was 68 beats per minute or from 42 to 90 beats. After adequate treatment the average heart rate rose to 100 beats per minute or from 65 to 120 beats.

THE P WAVE.—The mean axis of the P wave in the frontal plane was determined in 76 tracings before treatment was started. The average value was plus 51 degrees. After treatment this axis was plus 54 degrees as determined in 66 tracings, showing that hypothyroidism did not modify the direction of the progression of excitation in the atrium.

Table II shows the average voltages of the P wave. The average size of P was higher after treatment in every lead. The increase was statistically significant in the limb leads, with the exception of aVl. In the precordial leads the increase was not significant in this material except for lead V_4. The voltage was increased by 0.038 millivolt in lead I, 0.057 millivolt in lead II, and 0.046 millivolt in lead III. The difference in aVr was minus 0.035 millivolt, in aVf it was 0.055 millivolt, and in V_4 0.036 millivolt.

Table III includes an analysis of the P wave before and after treatment. In the standard leads before treatment 82 per cent of the total number of P waves was positive and the remainder were flat, diphasic, or negative. After treatment 93 per cent of the total became positive. In the precordial leads, before treatment, 49 per cent of the P deflections were positive, while after treatment this figure rose to 74 per cent.

THE P-R INTERVAL.—The P-R interval was determined in the records of 82 hypothyroid patients. Its average duration was 0.19 second (0.10 to 0.52 second). After treatment, as determined in 61 tracings, this value was 0.17 second (0.09 to 0.34 second). This difference was not considered significant because of the post-therapeutic increase in the cardiac rate. In 72 instances the P-R interval was within normal limits (under 0.22 second). In 10 cases (12 per cent) it was greater than normal. In the latter group, after treatment, the interval became normal in 2 cases, was shorter but not within normal limits in 3 cases, remained unchanged in 4 cases, and became longer than the pretreatment interval in 1 case.

Atrial fibrillation was present in 3 cases.[17] In the first case this condition was of thirteen years duration. It was not influenced by thyroid medication. In the case of the second patient, who was hypertensive, the fibrillation was unaltered by treatment. In the third case the fibrillation was converted to a regular sinus rhythm after thyroid therapy. In 1 case complete A-V block was abolished after adequate medication.[5]

THE QRS COMPLEX.—The mean axis of QRS in the frontal plane, as determined in 86 tracings, was plus 35 degrees (plus 110 to minus 40 degrees) before treatment. After control of the hypothyroidism the axis became plus 29 degrees, plus 80 to minus 30 degrees, as determined in 69 tracings, showing that the electrical axis of the heart was not substantially modified by hypothyroidism.

The average duration of the QRS complex was 0.083 second, as determined in the tracings of 91 hypothyroid patients. After treatment the average was 0.080 second, as determined in 68 tracings. Prior to treatment, prolongation of the QRS complex was found in 11 cases. After treatment

TABLE II.—Average Voltage in Milli-

	P wave						R wave					
	Before Treatment		After Treatment				Before Treatment		After Treatment			
Lead	Average	Standard Deviation	Average	Standard Deviation	Number of Tracings	Statistical Significance	Average	Standard Deviation	Average	Standard Deviation	Number of Tracings	Statistical Significance
I	0.070	0.055	0.108	0.062	66	$p<0.001$	0.513	0.301	0.806	0.441	69	$p<0.001$
II	0.103	0.073	0.160	0.089	64	$p<0.001$	0.525	0.292	0.742	0.354	69	$p<0.05$
III	0.049	0.074	0.167	0.120	65	$p<0.001$	0.248	0.826	0.300	0.376	69	$p>0.2$
aVr	−0.060	0.040	−0.095	0.035	11	$p<0.05$	0.067	0.074	0.080	0.249	15	$p>0.5$
aVl	0.028	0.053	0.053	0.057	13	$p>0.1$	0.360	0.384	0.557	0.584	15	$p>0.2$
aVf	0.049	0.040	0.104	0.054	13	$p<0.01$	0.200	0.259	0.175	0.216	12	$p>0.5$
V_1	0.013	0.049	0.018	0.082	22	$p>0.5$	0.032	0.034	0.043	0.098	22	$p>0.5$
V_2	0.025	0.058	0.047	0.045	17	$p>0.1$	0.174	0.278	0.232	0.578	19	$p>0.5$
V_3	0.017	0.031	0.039	0.044	14	$p>0.1$	0.377	0.442	0.550	0.351	13	$p>0.5$
V_4	0.027	0.042	0.063	0.038	18	$p<0.025$	0.654	0.507	0.973	0.678	24	$p>0.1$
V_5	0.041	0.036	0.056	0.035	17	$p>0.2$	0.750	0.497	0.893	0.646	23	$p>0.5$
V_6	0.037	0.039	0.044	0.028	9	$p>0.5$	0.357	0.242	0.529	0.416	7	$p>0.4$

5 of the 11 were reduced to normal duration, in 2 cases the duration was decreased but not to normal values, and in 3 cases it remained unchanged. In 1 case no readings were available after treatment.

In the standard leads before treatment 35 of 92 tracings (38 per cent) showed low voltage (no more than 0.5 millivolt in any of the standard leads). After treatment 9 of 69 cases (13 per cent) showed low voltage. In the precordial leads, before treatment, 12 cases of 41 (30 per cent) showed low voltage (the sum of RS was not higher than 0.9 millivolt in V_2 and 0.7 millivolt in V_6). With correction of the hypothyroidism this number decreased to 4 patients out of 27 (15 per cent).

The average sizes of the R wave are given in Table II. Although the average voltage of R increased in every lead after control of hypothyroidism, the difference was found significant only in leads I and II of the material studied. When the magnitudes of the R and S waves were added and the averages were compared (Table II), the increase after treatment was significant in the three standard leads and in V_3 and V_4. The voltage of R increased by 0.293 millivolt in lead I and 0.217 millivolt in lead II. The average of the RS complex was higher by 0.297 millivolt in lead I, 0.225 millivolt in lead II, and 0.175 millivolt in lead III after treatment. In the precordial leads the difference of the RS was 0.277 millivolt in V_3 and 0.302 millivolt in V_4. An analysis of the variations of the RS complex is presented in Table IV.

The zone of transition was determined in the tracings of 39 hypothyroid patients and in 27 instances in the post-treatment records. Before treatment in the precordial leads the zone of transition was at V_4 or V_5 in 33 per cent of the cases; the remainder were between V_2 and V_4. After treatment the transition zone was on the left side in only 19 per cent of the tracings while 81 per cent were between V_2 and V_4.

The intrinsicoid deflection time was determined in 35 cases before treatment. In the right-sided precordial leads it was longer than 0.03 second in 4 cases (12 per cent). After treatment 2 of the 4 cases became normal; the readings in the remaining 2 records were not available. On the left side of the precordium the intrinsicoid deflection time before treatment was longer than 0.05 second in 2 cases (6 per cent). After disappearance of the signs of hypothyroidism it became normal in 1 case while the other remained unchanged.

The Corrected Q-T Interval.—The corrected Q-T interval was determined according to Bazett's formula[32] $[(\text{Q-T})/\sqrt{\text{R-R}}]$. Its average was 0.42 second (0.33 to 0.60

VOLTS BEFORE AND AFTER TREATMENT

RS wave						T wave					
Before Treatment		After Treatment				Before Treatment		After Treatment			
Average	Standard Deviation	Average	Standard Significance	Number of Tracings	Statistical Significance	Average	Standard Deviation	Average	Standard Deviation	Number of Tracings	Statistical Significance
0.561	0.288	0.813	0.445	69	$p<0.001$	0	0.130	0.201	0.155	68	$p<0.001$
0.550	0.284	0.775	0.335	69	$p<0.05$	0.020	0.136	0.224	0.133	69	$p<0.001$
0.417	0.294	0.592	0.387	69	$p<0.005$	0.008	0.120	0.052	0.133	69	$p<0.05$
0.510	0.265	0.771	0.559	15	$p>0.1$	0	0.087	−0.103	0.195	15	$p>0.05$
0.400	0.462	0.597	0.556	15	$p>0.2$	−0.010	0.074	0.033	0.127	15	$p>0.2$
0.321	0.228	0.404	0.336	12	$p>0.4$	0.005	0.083	0.046	0.087	12	$p>0.5$
0.670	0.332	0.775	0.475	22	$p>0.5$	−0.039	0.212	0.040	0.240	22	$p>0.2$
1.087	0.739	1.182	0.529	19	$p>0.5$	−0.006	0.138	0.161	0.283	18	$p<0.05$
0.723	0.381	1.000	0.374	13	$p<0.025$	0	0.096	0.208	0.117	13	$p<0.001$
0.908	0.430	1.210	0.684	24	$p<0.05$	−0.032	0.186	0.145	0.218	25	$p<0.05$
0.733	0.490	0.952	0.597	23	$p>0.1$	0.003	0.119	0.109	0.225	24	$p>0.05$
0.371	0.245	0.543	0.454	7	$p>0.4$	0.008	0.068	0.100	0.097	9	$p>0.4$

second) in 70 tracings before treatment. After treatment the average was 0.44 second (0.36 to 0.61 second) as determined in 52 tracings.

In 32 of 70 records of hypothyroid patients (46 per cent) the corrected Q-T interval was longer than normal (0.42 second). After treatment this value was found to be abnormally long in 27 of 52 tracings (52 per cent). Thus the duration of electrical systole was increased in about half of the cases and the occurrence of this abnormality was not diminished by adequate treatment. Therefore, it was not the result of hypothyroidism by itself, or, if it was a consequence of hypothyroidism, it was irreversible by treatment within the time period covered by this study.

THE S-T SEGMENT.—Only in congenital hypothyroidism was the change of the S-T segment characteristic in this material.[3] The electrocardiograms of all 6 cretin children presented displacement of the S-T segment, showing an elevation in 5 and a depression in 1. This abnormality disappeared after treatment.

In acquired hypothyroidism the S-T segment was abnormal in 14 of 86 cases (11 per cent), with elevation in 6 and depression in 8 cases. After treatment this abnormality occurred in 10 instances out of 77 (13 per cent), with elevation in 7 and depression in 3 cases. As for the Q-T interval, these data indicate either an etiologic factor other than hypothyroidism or irreversible pathologic conditions in the cases unaltered by therapy.

THE T WAVE.—The axis of the T wave in the frontal plane was determined in 63 cases before and 67 cases after treatment. In 29 cases this axis was perpendicular to the frontal plane before treatment. The mean axis before treatment was plus 73 degrees. Fifty-six per cent of the 63 cases were between 0 and plus 90 degrees and 44 per cent were in the second, third, or fourth quadrant. After control of the symptoms of hypothyroidism, the mean axis was plus 45 degrees, with 93 per cent of the total between 0 and plus 90 degrees; 7 per cent were distributed in the second and fourth quadrants. Thus hypothyroid heart disease modified the mean axis of the T wave significantly and this abnormality was reversed by adequate treatment.

The average voltages of the T wave are included in Table II. The average size of the T was increased after treatment in every lead. Among the limb leads the difference was found to be statistically significant in the three standard leads. The increase was 0.20 millivolt in lead I, 0.091 millivolt in lead II, and 0.125 millivolt in lead III.

In the precordial leads before treatment, the average voltage of T was negative or

TABLE III.—THE P WAVE BEFORE AND AFTER THYROID THERAPY

	Before Treatment									After Treatment								
	Positive		Flat		Diphasic		Negative			Positive		Flat		Diphasic		Negative		
Lead	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Total	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Total
I	76	86	11	12	1	2	...	...	88	64	96	3	4	...	...	...	...	67
II	83	94	5	6	...	...	...	...	88	67	100	...	...	...	...	...	...	67
III	57	65	28	32	...	...	3	3	88	55	82	9	13	1	2	2	3	67
aVr	...	...	4	24	1	6	12	70	17	...	...	1	9	...	...	10	91	11
aVl	7	39	9	50	...	...	2	21	18	9	64	1	7	1	7	3	22	14
aVf	14	78	4	22	...	...	...	...	18	12	86	2	14	...	...	...	...	14
V_1	12	35	9	26	6	18	7	21	34	13	59	3	14	...	...	6	27	22
V_2	12	44	14	52	...	...	1	4	27	13	62	7	23	...	...	1	5	21
V_3	9	47	10	53	...	...	...	...	19	12	71	4	23	...	...	1	6	17
V_4	17	46	19	51	1	3	...	...	37	20	80	4	16	...	...	1	4	25
V_5	22	61	13	36	...	...	1	3	36	20	83	3	13	...	...	1	4	24
V_6	8	61	5	39	...	...	...	...	13	10	91	1	9	...	...	...	...	11

TABLE IV.—CHANGES IN THE SUM OF R AND S WAVES AFTER THYROID THERAPY

	Increased		Unchanged		Decreased		
Lead	Number	Per Cent	Number	Per Cent	Number	Per Cent	Total
I	52	75	6	9	11	16	69
II	51	74	7	10	11	16	69
III	46	67	15	22	8	11	69
aVr	10	67	3	20	2	13	15
aVl	11	74	2	13	2	13	15
aVf	4	33	3	25	5	42	12
V_1	12	54	5	23	5	23	22
V_2	11	58	...	...	8	42	19
V_3	10	77	...	...	3	23	13
V_4	19	79	1	4	4	17	24
V_5	14	61	2	9	7	30	23
V_6	4	57	1	14	2	29	7

flat in the right-sided leads (V_1, V_2, V_3, and V_4). After treatment this abnormality was no longer present. The increase of the average size of T was statistically significant in V_2 (0.289 millivolt), V_3 (0.117 millivolt), and in V_4 (0.251 millivolt). Table V includes an analysis for the T wave before and after treatment. Thus in the majority of the cases hypothyroid heart disease tended to lower or invert the T wave in the right-sided precordial leads, while in the left-sided leads no significant changes occurred.

THE U WAVE.—A U wave was present in the tracings of 24 hypothyroid patients out of 92 cases (26 per cent). In most of the cases the U wave was visible in leads II, V_4, and V_5. U waves were observed after treatment in 12 tracings out of 69 (17 per cent).

Comment

Since Zondek's original report in 1918,[33] there has been considerable interest in the electrocardiographic changes associated with hypothyroid heart disease. However, many of the studies antedate the use of the precordial leads and the relatively recent reports have been limited to isolated cases or to series too small for accurate statistical analysis.

In the present study the electrocardiograms of 92 patients with well-documented hypothyroidism have been analyzed. Prior to treatment with thyroid extract all of the

TABLE V.—THE T WAVE BEFORE AND AFTER THYROID THERAPY

	Before Treatment									After Treatment								
	Positive		Flat		Diphasic		Negative			Positive		Flat		Diphasic		Negative		
Lead	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Total	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Total
I	35	38	21	23	12	13	24	26	92	64	93	...	...	2	3	3	4	69
II	51	56	14	15	8	9	18	20	91	62	90	3	4	2	3	2	3	69
III	35	38	27	29	8	8	23	25	92	36	52	10	15	9	13	14	20	69
aVr	9	31	7	24	3	10	10	35	29	2	13	...	...	1	6	13	81	16
aVl	8	28	7	24	2	7	12	41	29	9	56	2	13	...	...	5	31	16
aVf	8	44	8	44	...	...	2	12	18	7	50	5	36	...	...	2	14	14
V_1	10	29	2	6	3	9	19	56	34	13	59	...	...	2	9	7	32	22
V_2	9	31	2	7	4	14	14	48	29	17	77	1	5	1	5	3	13	22
V_3	9	47	3	16	1	5	6	32	19	15	94	...	...	...	...	1	6	16
V_4	14	36	2	5	6	15	17	44	39	21	78	...	...	3	11	3	11	27
V_5	20	53	5	13	6	16	7	18	38	17	68	1	4	3	12	4	16	25
V_6	5	38	4	31	3	23	1	8	13	7	64	2	18	1	9	1	9	11

tracings showed significant deviations from normal when compared with the normal values established by Kossmann and Johnston.[34] The administration of thyroid extract was followed by a partial or complete disappearance of the electrical abnormalities, suggesting that they were the result of hypothyroidism. Our series, therefore, is believed to represent an accurate sample of the disease studied.

Although a change in the direction of normal occurred in each instance when comparison between pretreatment and posttreatment records was possible, in many cases abnormalities persisted in the electrocardiograms taken after adequate therapy. This is best explained as the result of complicating coronary artery sclerosis. Furthermore, arteriosclerotic heart disease frequently produces electrocardiographic changes similar to those of hypothyroid heart disease.[11] In order to recognize the changes produced by hypothyroidism alone when associated disease exists, it is necessary to distinguish between electrocardiographic abnormalities which are corrected by specific therapy and those which are not.

The data presented in this study corroborate the findings of other authors who have reported that suppression of thyroid function produces a significant reduction in the voltage of QRS[28] and inversion of the T waves.[9] However, previous investigators have not attempted a detailed analysis of the T-wave changes. Our findings indicate that such analysis is important. T-wave inversion in the right-sided precordial leads has been shown to be more frequently reversed by specific therapy than is T-wave inversion in leads V_5 and V_6. It is probable that the pathology which is responsible for these differences is primary hypothyroidism in the first instance and secondary coronary artery sclerosis in the second. It is of interest in this respect to note that T-wave inversion was found in the right-sided chest positions even when hypertension was present in 10 of the cases.

The evidence presented suggests that a

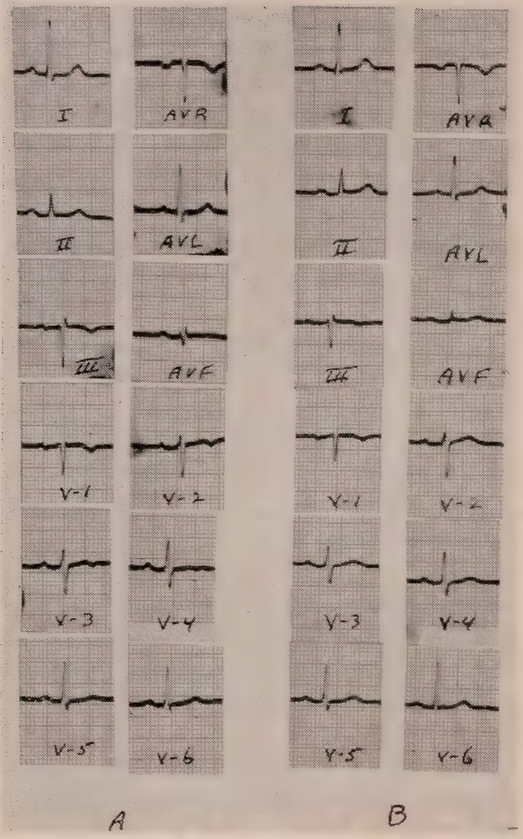

FIG. 1. (*A*) Before therapy, protein-bound iodine was 3.2 micrograms per cent serum and cholesterol was 349 mg. per cent; (*B*) after three months of thyroid extract, 1/8 grains once a day, protein-bound iodine was 5.5 micrograms per cent serum and cholesterol was 291 mg. per cent.

detailed analysis of the T-wave changes in hypothyroid heart disease gives valuable clues to the diagnosis, prognosis, and proper treatment of this disease. When T-wave inversion is limited to leads V_1 to V_4, a diagnosis of hypothyroid heart disease uncomplicated by coronary artery sclerosis is more likely than when T-wave inversion appears in leads V_5 and V_6. In the latter instance thyroid extract should be administered more cautiously.

Figure 1 illustrates the T-wave changes in the chest leads before and after specific therapy with thyroid extract.

Summary

The electrocardiograms of 92 patients with hypothyroid heart disease have been analyzed. In 69 cases tracings were available after the patients had been treated with thyroid extract and after clinical and laboratory signs of the disease had disappeared. The pretreatment and post-treatment records were compared, and the following is a summary of the pertinent results and conclusions.

1. The average rate of the heart was 68 beats per minute prior to treatment and 100 beats per minute after treatment.

2. The axis of the P wave in the frontal plane was not modified by hypothyroid heart disease. The average voltage of the P wave was higher after treatment in every lead; however, the increase in voltage was statistically significant only in leads I, II, III, aVr, aVf, and V_4.

3. The P-R interval was not modified by hypothyroid heart disease.

4. The axis of the QRS complex in the frontal plane was not influenced substantially by the disease. The average duration of QRS was 0.083 second before and 0.080 second after treatment. Before treatment the voltage was low in 38 per cent of the records in the standard leads and in 30 per cent of the precordial leads. After treatment low voltage was present in 13 per cent of the standard and in 15 per cent of the precordial leads. Although the average voltage of the R wave increased in every lead after control of the hypothyroidism, the difference was significant in leads I and II only. The sum of the R and S waves was significantly increased in leads I, II, III, V_3, and V_4. The zone of transition was seen more frequently on the left side (between V_4 and V_5) before treatment than after control of the disease.

5. The corrected Q-T interval was not influenced by hypothyroid heart disease.

6. The S-T segment remained unchanged in acquired hypothyroid heart disease.

7. The most important changes involved the T wave. In 44 per cent of the cases the frontal axis of the T wave was not situated in the first quadrant. This change was reversible by specific therapy. In the limb

leads the increase in voltage of T was significant in leads I, II, and III. In the right-sided precordial leads (V_1 to V_4) T was inverted, flat, or diphasic in the majority of cases before treatment. After treatment there was significant change toward normal in these positions and the average T became upright in leads V_1 to V_4. This is in contrast with the T-wave pattern in leads V_5 and V_6. In the left-sided precordial positions the average T was positive before treatment and there were no significant changes after treatment.

8. When T-wave inversion appears in leads V_1 to V_4 the possibility of hypothyroid heart disease should be considered. This pattern is more likely to be reversed by the administration of thyroid extract than the pattern of T-wave inversion in leads I, aVl, V_5, and V_6. Because of its relative irreversibility, the latter pattern suggests complicating coronary artery disease when it is found in patients with hypothyroidism, and thyroid extract should be used more cautiously in this group.

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MODERN MANAGEMENT OF THE MENTALLY ILL*

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Modern Treatment of the "Insane"

An Historical View of Nonrestraint

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It is possible to view the development of modern psychiatry within the context of the history of ideas generally. "New" or contemporary ideas evolve from the thoughts of earlier times. Our understanding of the present always improves in the perspective of the past. Just as the scholastics of the Middle Ages were astonished, in their recovery of classical knowledge, to find ideas long attributed to Christian orthodoxy clearly stated by pagan philosophers, so also, discovery of the origins of psychiatric ideas often throws new light on our current interests. Contemporary human relationship concepts, that is, transference, have evolved out of the context of older, less definitive concepts such as rapport, which in this case can be traced back to Mesmer who conceived rapport to be the passage of magnetic fluid from one person to another, thereby exerting a curative effect. Catharsis, a concept employed early in relation to psychoanalytic psychotherapy,[1] is, in the form of music catharsis, as old as Homeric Greece. Moreover, ideas are always part of what might be called the "fabric of ideas," or the ideology of their time—although Mesmer's magical ideas might appear to be regressive in late eighteenth century France and more appropriate to medieval times. Supernaturalism, however, as a system of thought, is always with us in varying degrees in different times and cultures. And history repeats itself or, to borrow Muller's metaphor,[2] weaves a pattern on a loom.

It is the purpose of this review to outline briefly, and therefore rather cursorily, the development of the related ideas of nonrestraint and the "open" hospital and their application in the so-called moral treatment of the nineteenth century and in the therapeutic milieu today.† From the standpoint of historiography this is no small task and the subject is approached humbly. The problem of historical bias and selectivity of facts cannot be minimized.

Intellectual History

Humanistic ideology, to which nonrestraint and the open hospital are related, belongs clearly to the Renaissance and the

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† Marc H. Hollender, M.D., and William P. Hotchkiss, Ph.D., have contributed a number of ideas to the development of this theme.

Enlightenment—the period of the emancipation of man and a sharpening focus on individual liberty and human dignity. To the "insane" in our society this meant removal from the old categories of witch, or saint, or criminal, and new placement in the category of patient, although still "lunatick." Corresponding to this revision in status, attitudes toward the mentally ill which had been strictly judgmental began to change to increasing acceptance. Mental patients at last became fit subjects for scientific scrutiny and understanding. The camisole, the locked door, and other forms of restraint began to lose their social relevance to a changing scene in which mental institutions were evolving from prisons to hospitals and their staffs from custodians to doctors. But social change never proceeds without friction. On the one hand there was increasing concern for human rights and, on the other, a need to preserve the status quo, that is, to suppress deviance by removing and isolating from society its irrational or alienated members. This paradoxic attitude toward deviant people—recognizing their rights and endeavoring to understand them but, at the same time, locking them up and putting them as far away as possible—is unresolved today.

The title of this paper, "Modern Treatment of the Insane," is borrowed for historical contrast from a letter written by Robert Gardiner Hill and published in the *Lancet*, September 21, 1850.[3] When Hill went to Lincoln Asylum in 1829 the quarter boot and other types of fetters were still in use. Mechanical restraint was the universal practice. But in nine years at Lincoln, Hill was able to reduce the restraint hours from 20,423 per year to zero, for a period of sixteen months. "This was (he wrote) . . . the first frank statement . . . laid before the British Public."[4]

A hundred years have passed since Hill and one hundred fifty since Pinel. William Tuke, John Conolly, and Thomas Kirkbride, to name a few, have long since come and gone, but the restraint issue is still very much alive in psychiatric hospitals. Changes related to the social and to the scientific scene have occurred. In regard to the former, there have been an increasing tolerance and a beginning understanding of the so-called mentally ill; in regard to the latter, perhaps the most important recent developments affecting the restraint issue are renewed interest in the therapeutic community[5] and the advent of the tranquilizing drugs. Indeed, in 1960, the idea of nonrestraint, its application in the open hospital, and corollary implications for the changing status and role of so-called mental patients in our society, are attracting as much attention in psychiatric journals, books, and the press, both here and abroad, as they did in the middle of the nineteenth century. At that time, mental patients had been studied systematically and psychiatry had been a legitimate career for physicians for only fifty years.

The Struggle Over Restraint[4]

It might be said that treatment of the insane reflects, in its own area, the larger struggle for freedom, which, rising and waning throughout the history of Western man, has surged forward particularly during the past two hundred years.

It was Philippe Pinel who, in striking the chains from his patients at the Bicêtre in the Revolutionary year of 1793, also gave to psychiatry the "air and liberty" he craved for his patients. Sigerist[6] has pointed out: "In general medicine, the use of hospital patients for research and instruction can be traced back to the sixteenth century. . . As long as mental patients were confined to asylums that hardly differed from jails, as long as they were chained like animals, were not examined, and were scarcely treated, clinical investigation in the field of mental disease was impossible or at best, limited to the observation of a few nonhospitalized patients. The dramatic liberation of the inmates of the Bicêtre by Pinel in 1793 was, therefore, infinitely more than a humanitarian gesture. It was the beginning of a movement that made the patients of mental hospitals available for psychiatric research and subsequently for the training of psychiatrists." After two milennia, then, at the beginning of the nineteenth century mental patients could once more be looked on with Hippocratic realism. Moreover, they could now be viewed as sick people accessible for study as is any other (medical) patient. Pinel's action succeeded in opening the door at least from the outside in—if not always from the inside out—and his attitude found a counterpart in William Tuke in England who was no revolutionist but a successful merchant who persuaded the Society of Friends to build the York Retreat.

Pinel's action succeeded symbolically more than it did actually. In England, although Hill, at Lincoln, strove for nonrestraint from 1829, and the more articulate Conolly[7] at Hanwell from 1839, according to Bromberg:[8] "As late as 1885, Hack Tuke observed. . . among British superintendents the teachings of Hill and Conolly were held rather as 'pious opinion' than invariable rule." In Germany, Griesinger advocated nonrestraint and worked toward organization and improvement of the lot of the insane. But, like his colleagues, he was hampered by Germany's political segregation and the prevailing trend toward romantic philosophy. America might have been expected to depart from the European pattern with a fresh start. But we must recall that American history is, for the most part, only a chapter in the larger and longer narrative of modern Europe. Populated by European emigrés and emerging from a revolution led by intellectuals influenced by the social philosophy of Rousseau, America continued to be closely related ideologically to Europe. As we shall see, particularly in regard to developments in psychiatry, ideas and men have continued to commute back and forth across the Atlantic. If anything, the attitude toward and the management of mental patients in America bore the pattern of European thinking; but the pattern was less colorful, less striking than that woven by Pinel,* Hill, and Conolly.

Americans, including Benjamin Rush, the father of American psychiatry, John S. Butler, Isaac Ray, and, indeed, all thirteen members of the founding group of the Association of Medical Superintendents of American Institutions for the Insane (1844), were notable for humane administration, probably surpassing Europe, but a conservative and cautious attitude toward nonrestraint. At the initial meeting of this group, which was to become the American Psychiatric Association, a resolution was passed upholding the use of restraint. Three decades later at the meeting in 1874, although restraint had decreased the issue was far from settled. In America, probably only Miss Dorothea Dix, a retired New England schoolteacher who strove for a quarter of a century on behalf of improved conditions for the mentally ill on two continents, matched in devotion and daring the Europeans, Pinel, Hill, and Conolly.

Traditions, once set, resist alteration with inertial force. More than a hundred years later, in the summer of 1957, a group of six New York State hospital directors were appointed by Paul Hoch, M.D. to spend almost a month abroad studying patterns of open hospital management which, historically speaking, are re-emerging rather than emerging in more favorable social circumstances in England. Historic precedents for exchange visits between countries on questions of mental health are not difficult to find. And it is significant that Americans, still wary of the open door, chose to visit England. The York Retreat, Sigerist notes, ". . . was visited every year by scores of physicians from continental Europe and America and exerted by the mere force of its example, a far-reaching influence that was particularly felt in America."[6] Charles Dickens visited America on a lecture tour in 1842, recording his observations in his

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* Benjamin Franklin tried to persuade Philippe Pinel to come to America without success. It is interesting to speculate on the possible effect on American psychiatric history had Franklin succeeded.

American Notes.[9] Dickens visited two city institutions, one in Boston and one in New York, being ". . .much pleased by the first and much distressed by the second." J. Henry Tuke, a member of the philanthropic family associated with the York Retreat for five generations, visited this continent in 1845 and "was troubled by much that he saw." He described the Lunatic Asylum in Toronto as one of the most painful and distressing places he had ever visited. "Originally intended for a prison, it was dark, and the faces of the seventy patients showed misery, starvation, and suffering. The doctor in charge pursued a system of constant cuppings, bleeding, blistering, and purging the patients, giving them the smallest quantity and poorest quality of food; no meat was allowed."[9] Bucknill,* a well-known English psychiatrist, published his *Notes on Asylums for the Insane in America* in 1876 in which he referred to the "most unfortunate and unhappy resistance of the superintendents to the abolition of mechanical restraint as their 'great stumbling block.'" Nevertheless, Bucknill considered the Pennsylvania Hospital, where Kirkbride espoused restraint in theory but nonrestraint in practice, to be as good as the best English hospitals. Daniel Hack Tuke† last of his illustrious family at the York Retreat and first to be a physician, visited 40 American hospitals and recorded his impressions in *The Insane in the United States and Canada* published in 1885. Tuke reported the number of patients in asylums in 1880 to be 40,992 of whom 2,242 (5.4 per cent) were in restraint. The types of apparatus were camisole, 887; muffs, 526; strapped to bench, 439; handcuffs, 147; ball and chain, 21; cribbed, 111; type not stated, 111. At the other pole was Bloomingdale where in ten months only 2 men had been restrained and in two years no women at all. In general, moral treatment with its corollaries, nonrestraint and benign management, tended to fare better in the private hospitals of the period.[9] These restraint devices, as well as seclusion rooms which augmented the patient's isolation, were well known but, interestingly enough, the employment of seclusion as a form of restraint did not attract wide discussion. It might be interesting to speculate on the reasons for this. Seclusion rooms were only another form of restraint and, as we know from recent sensory deprivation studies, were probably the most malignant of all. It is the degree of restriction on motility which provides the logical clue: Because the patient was able to move about with limited freedom within the seclusion room without being strapped, jacketed, or cuffed, this form of restraint, by its ambiguity, escaped the scrutiny accorded the restraint issue generally in nineteenth century European and American literature.

The history of nonrestraint took a different course in England from that in America. Zilboorg,[10] in a summarizing sentence, notes the history of medical psychology in America during the nineteenth century to be "The history of. . .the American Psychiatric Association, and the life of Dorothea Dix." If English psychiatry in the nineteenth century were to be similarly summarized the uncompromising note in favor of nonrestraint sounded by Hill and Conolly and practiced successfully in a number of hospitals following Lincoln and Hanwell would be included. Early enthusiasm, however, led to disillusion. Persisting differences in point of view on the part of hospital superintendents did not support the innovation. Moreover, the fabric of ideas, or climate of opinion generally, was unfavorable. In the following section, we shall try to show how the changing social scene, in which we may include, technologically, the tranquilizing drugs, has been an important factor, perhaps the most important factor, in the re-emergence of the open hospital in Britain and its recent appearance in America.

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* Bucknill, J. C.: Notes on Asylums for the Insane in America, London, Churchill, 1876.

† Tuke, D. H.: The Insane in the United States and Canada, London, Lewis, 1885.

Social Changes Affecting Nonrestraint

Since Pinel, attitudes toward the so-called mentally ill have been changing slowly in the direction of tolerance, first on the part of medical men and second on the part of people generally. But new ideas (tolerance and nonrestraint appeared to be new ideas in nineteenth century Europe) are often greeted with unwarranted optimism and enthusiasm. So it was that, after Pinel and Tuke, later reinforced by the nonrestraint practice of Hill and Conolly, a "Cult of Curability"[11] arose in psychiatric and medical circles. The acceptance of mental patients as sick people and their release from chains into a benign, hospital environment (moral treatment) raised the hope that mental patients, formerly regarded as hopeless, could now marvelously be cured.

Mental hospitals—which had been jails, then asylums, and, following Pinel, hospitals with physician-superintendents—began to publish statistics which inflated the generally hopeful enthusiasm. But, as time passes and the "cures" were scrutinized more critically, favorable statistics lost support and the "Cult of Curability" became an illusion.

The nineteenth century, in our day only yesterday afternoon, set the background from which modern psychiatry has emerged. It was a great and moving century which has been called justly the beginning of the scientific age, a century rich in intellectual development: artistic, philosophic, political, and technologic. Trends, germinating in the Greco-Roman world, had been revived and developed in the European Renaissance and the Enlightenment. Pinel, Tuke, and Rush reacted to the growing humanitarian trend of the eighteenth and nineteenth centuries, an outgrowth of Renaissance humanism.* The ideologic energies of the Reformation, the demise of feudalism, the rise of mercantilism, increasing urbanization, the emerging middle class, individualistic social philosophy, progress in the objective sciences after Galileo and Newton, the French Revolution, and the American Bill of Rights—all symbolized forces which combined to support man's growing self assertion.

The nineteenth century humane physicians and psychiatrists, responding to the intellectual ferment of their time, endeavored to convert ideas into action by extending individual rights, citizenship as it were, to that oppressed, isolated, and ignored class of people who, as behavioral deviants, had been deprived of their social franchise. Darwinism, also, exerted its effect on social and philanthropic thinkers who became much concerned with the effects of environment. It was logical that developments in the forensic aspects of psychiatry would parallel hospital reform and the development of moral treatment. Psychiatrists like Isaac Ray in America, Prichard in England, Bernheim in France, and others, strove for humanization of legal attitudes toward the so-called insane. As we have noted, these initial efforts were only a beginning.

Work begun a century ago is no less lively and challenging today.

Although it was not yet possible to replace the security of lock and key with the security of mutual understanding, early efforts pointed toward this eventuality. The definition of mental patients as sick people, albeit in a medical and not yet a psychologic sense, and endeavors to understand them rather than condemn them opened the way to other important nineteenth century trends: taxonomy or disease-naming (Pinel-Kraepelin) which was on a continuum with the eighteenth century trend toward classification in the other sciences; the study of organic psychoses by Esquirol and Krafft-Ebing; and hospital building which, probably affected by nineteenth century industrialism and other factors,* tended toward ever bigger, more spacious, hospitals—a tendency which only recently and concurrently with renewed interest in the open hospital has begun to reverse itself toward breaking up the mental hospital into smaller wards or smaller hospitals.

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* Indeed, humanism, too, can be traced further back to Greece. Protagoras, for example, enunciated the philosophic idea: "Man is the measure of all things," thereby stressing the importance of the individual.

In this regard it should be emphasized that architecture, particularly in regard to size, has been directly related to the issues of nonrestraint and moral treatment. During the last quarter of the nineteenth and the first quarter of the twentieth century, Kirkbride's admonition that no hospital should be so large that the superintendent could not know every patient individually—his maximum population was 250—was progressively disregarded as hospitals became larger and larger,[13] thereby necessitating the introduction of more and more control and effectively reversing the nineteenth century trend toward decreasing restraint. The larger a hospital becomes, the more communication (that is, knowing the patients and knowing what is going on) is impaired, and the more cautious and apprehensive becomes the attitude of administrative personnel who feel the insecurity of the unknown rather than the relative security of shared communication. Bigness tends to increase the anxiety of staff members who must assume legal responsibility for the behavior of patients committed to their care, and the result is tighter control. Recent restatement and re-emphasis of the principles of moral treatment, now called therapeutic milieu or the open hospital, call attention to the contradiction between hospital design and treatment program. We must take a new look, today, at the relationship of architecture, including location (isolated or integrated) and size, to the ideas (custodial care or dignity and freedom) of the people who inhabit it.

The advances in neurology made by Charcot; the study of the so-called neuroses by Charcot, Breuer, and Freud; the emergence of psychotherapy through the work of Mesmer, Charcot, Liébeault, Bernheim, and Freud; and the beginning of a movement away from an exclusively medical model of mental disease toward psychologic concepts[14] brought the nineteenth century to a close with the assurance of increased hospitality toward mental patients in the twentieth. The stage was set for Clifford Beers and the mental hygiene movement outside the hospital; for progressive changes inside the hospital which have included the training of psychiatric nurses (begun at the McLean Hospital in 1882) as well as of psychiatric aides; and the development of an integrated, coordinated, teamwork approach in the services of psychiatrist, psychologist, nurse, social worker, and occupational therapist. The psychiatric hospital is not only "breaking up" today but the walls are breaking down. Psychiatry, via mental health education, outpatient clinics, and home care, is moving out of the traditional fortress of the mental hospital into the community.

The tranquilizing drugs, recently arrived on the scene, may be viewed as providing a chemical form of restraint that is less constricting than mechanical forms and permits a different type of interaction. Or, in another frame of reference, they may be regarded as catalysts, on a personal or person-to-person level, of changes operating on the wider social scene. That is, to convert humanitarian, equalitarian ideals into action it may first be necessary to reduce the mutual fear felt between patients in psychiatric hospitals, their guardian personnel, and the surrounding community, a fear which has become traditional and which has been institutionalized in various forms of restrictive "management." Indeed, discussions of nonrestraint dating far back into the nineteenth century reveal that opposition to nonrestraint often has come not from the superintendents but from the attendants themselves. Significantly, a revival of interest in the open hospital has followed rather than preceded the advent of the tranquilizers which have been used widely in psychiatric hospitals since 1954. It appears that one function of these drugs has been to reduce mutual fear and anxiety in the hospital social system. Korsakov's dictum, "The less restraint for the patient, the more restraint for the physician,"[15]* is now easier to invoke. And things which become easier, safer, and more economical to do usually get done. The reduction of anxiety brings people together, facilitating communication of needs and evoking ways and means that patients may get "the thousand attentions" to which Conolly alluded a hundred years ago. A recent study in nonrestraint[16] quotes Conolly's observation: "Restraint and neglect are synonymous. They are a substitute for the thousand attentions needed by a disturbed patient." And, as Robert Hunt noted after his recent inspection of British hospitals: "The open door has considerable therapeutic value per se, but it is to a large extent a symbol of other values. The open door cannot stand alone, but must be backed up by an active treatment program by a psychiatrically oriented staff. It is also greatly facilitated by a good community program which provides continuity of care for the patient in and out of hospital, and early initiation of treatment in the community.[17]

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* The principle of state support for public mental hospitals which has prevailed in America since 1825 "...seemed logical in view of the prevailing government responsibility for poor relief, since a custodial asylum was likely to care largely for the poor." "Insane asylums" evolved from the "almshouse tradition."[12]

Summary

The recent renewal of interest in nonrestraint, or freedom for patients in psychiatric hospitals, has called attention to the need for a review, briefly presented here, of the historical development of this idea and the course which its application has taken in nineteenth and twentieth century mental hospital situations. It should be remembered that the issue has usually been posed in this form: open door or locked ward and restraint or nonrestraint. It has been an "either-or" proposition. This is like saying that all obstetric patients should be given rooming-in or the nursery. Rather, it would seem that each would have its values and limitations. The outcome, however, would depend on the mother's needs and her feeling, making the issue an "and-also" rather than an "either-or" proposition.[18] There are those who point out that if the insane are treated like children they will behave like them. Yet, the provision of control has a benign aspect in the case of the seriously beset patient whose reintegration may require, at first, more control than freedom. Although we may regard the open door and nonrestraint as ideal for most patients, we must beware of a missionary zeal to universalize. We must keep our focus on the individual needs of the individual patient by striving for freedom without forcing in on those who will be harmed by it.

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* Korsakov, who introduced the system of nonrestraint in Russia in 1881, ". . .tried and succeeded to implant the understanding that 'non-restraint' was not a mechanical removal of the physical restraint, but a method of treatment involving 'more attention to patient's needs, more affection and devotion to the patient.' "[15]

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Social Needs Arising in a New Era of Psychiatry

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THE past few decades have witnessed a number of new approaches to the treatment of the mentally ill and have furthered our understanding of the variety of factors involved. As a result, there has been a great increase in discharges from mental hospitals, and this increase will, no doubt, continue and may possibly be accelerated because of further advances in treatment methods and because of a new atmosphere of therapeutic optimism or, as Zilboorg* stated, the "rediscovery of the patient," resulting in greater respect for the patient as an individual, a person.

Some of the vast numbers of patients returned to the community have been hospitalized for up to ten years and more. The world of which they were once a part has moved along without them, leaving them defenseless against overwhelming social and economic obstacles. In many cases their place in the family group has been lost and they are met with indifference or open hostility in the subsequent realignment. Suspicion, distrust, and isolation not infrequently close in on them.

This wall of prejudice confronting them plus the lack of understanding on the part of families, neighbors, friends, and employers often appear to threaten the freedom newly gained by these individuals.

Research Unit

In an attempt to shed light on some of the existing problems, the New York State Department of Mental Hygiene organized a Research Unit at the Manhattan Aftercare Clinic. Patients were referred to the Clinic from mental hospitals in the New York metropolitan area. They were not selected but were admitted at random as they were released. In the past four years, the Research Unit has studied, observed, and treated about 500 patients in its rather limited facilities.

From the beginning efforts have been made to determine whether or not the improvement achieved in response to hospital treatment was lasting or whether relapses were brought about by unfavorable social situations. All patients were seen on a regular basis, once a week for the first three months. They were checked to see whether or not their mental state remained improved, drug therapy was regulated where needed, and the possibility of side-effects from continued drug administration was explored.

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* Fromm-Reichman, F., and Moreno, J. L., Eds.: Progress in Psychotherapy, New York City, Grune & Stratton, Inc., 1956, vol. 1, p. 6.

At the initial visit, which was made on the day immediately following release from the hospital, a comprehensive analysis was made of the socioeconomic situation of each patient as well as of his mental condition. If drug therapy was needed, drugs were issued in sufficient amounts to last until the next weekly visit. Any problem requiring assistance that might otherwise lead to undue stress was discussed thoroughly, and assistance was given whenever possible.

Among the problems most frequently encountered were employment, vocational guidance, housing, and last, but by no means least, the whole array of family relationships.

Since patients were under close observation for several years at the previously mentioned Research Unit, it became apparent that they needed reassurance to gain confidence in aftercare clinics as places where they might find help not only for social problems, but also for mental and personality problems. On leaving the hospital, patients are eager to avoid contact with social workers and with psychiatrists who, they feel, are individuals bent on checking up on them for symptoms that might warrant their return. It is imperative that such attitudes be remedied and that the climate of the Clinic be one in which patients are put at ease and learn that they can discuss the recurrence of psychotic symptoms without fear that this will lead to rehospitalization. They must be reassured that it is the objective of the Clinic to bring these symptoms under control through ambulatory treatment, now facilitated by the use of tranquilizing drugs. Existing social problems can be attacked only in an atmosphere of mutual confidence, after the rejective attitudes of both staff and patients have been eliminated.

Special Problems

Patients who are in the greatest need of supportive therapy are those who are rejected by their families. For example, many families were found to be either ambivalent in their attitude or openly hostile toward these patients. Some families were just waiting to use the slightest misstep as an excuse for returning the patient to the hospital. Some patients were made to live under the constant threat of rehospitalization as a punitive measure, being told over and over again, ". . . you do this—or else."

It appeared, in general, that adjustment in a conjugal environment was by far easier and better than it was when a patient had to be reaccepted into the family setting consisting of patients and other siblings. Frequently patients found that neighbors and friends shunned them and, on occasion, displayed outright cruelty, as, for instance, one former patient related that her young children were told, "Your mother was in a nuthouse. She does not belong here. I will call the police and have her returned where she belongs."

From what has been learned in following these patients who are trying to adjust again to life in the community, it appears that we have to prepare far better plans for patients returning home from the hospital than we have done so far. We have also to bear in mind that institutionalization does affect an individual's habits, and that these habits and modes of life at times are difficult to tolerate in the home environment. Frequently it will be important to discuss existing problems with all members of the family as well as with the patient, and to attempt to assist them in straightening out existing difficulties.

Families frequently seem to wonder why patients who have been returned home cannot start working immediately. Although they are willing to admit that after any physical illness an individual requires some time for recuperation and readjustment, they are unwilling to allow the same latitude after prolonged hospitalization for reasons of mental illness. Others, again, are overprotective, interfering with the patient's attempts to do things on his own: to work, to start any kind of social life, and frequently afraid of what neighbors might think or say.

In the unfolding of a special study* of the social factors involved in the general rehabilitation of mental patients, it became apparent that a greater number of individuals, about 35 per cent, were able to find gainful employment on their own initiative than had been anticipated. These findings are particularly interesting since many of the patients in this group were hospitalized from over two to thirteen years. While presently a number of patients are unemployed, only about 10 per cent are considered not employable at all. About 10 per cent need some form of vocational rehabilitation, either to learn new skills, to brush up on old skills, or to develop work tolerance.

While several of the men and women returned to their former jobs, others found employment through contacting private or public employment agencies, through contacts of one or another member of the family, or through the daily newspapers. While the employers of those patients who returned to their former jobs knew about their employes' illnesses, most of the other patients withheld this information after having experienced on two to three occasions that they were not hired after they had told the truth when applying for a job. When asked about recent employment thereafter, these patients stated that they had been physically ill for some time or gave some other personal reason for their recent period of unemployment.

In the group of 500 patients now under observation for the fifth year, a considerable number of men and women gainfully employed required maintenance pharmacotherapy. In none of the cases did this interfere with their work capacity or work performance, nor was there any accident proneness observed. But it was noticed that when these patients were exposed to too much pressure on the job, symptoms were quickly reactivated; they disappeared as soon as the pressure lessened.

Several patients were able to learn new skills and to go through some type of formal education as, for instance, working toward a high school diploma or continuing their college educations. Pharmacotherapy did not interfere with these undertakings.

In the course of the years it became apparent that certain existing needs would have to be considered to assist individuals better in their attempts toward successful community adjustment and to reduce further the rate of rehospitalization.

One of the most urgent needs seems to be better preparation of patients and their families for reunion. The possible necessity of continuation of pharmacotherapy on a temporary or maybe an infinite basis should be explained carefully. The role of the aftercare clinic in supervising such pharmacotherapy and in assisting in any problem arising should be pointed out, and where such clinics are not available other existing agencies should be made known, or the parties should be advised to enlist assistance from the family physician.

Among the factors requiring further attention appears to be the matter of public assistance. The need for proper clothing comes up frequently, and where the economic status is low, patients are faced with the difficulty of procuring proper clothes and, as one woman stated, "I have been in the hospital for many years. I have not only grown out of my clothes, but they are outmoded and I am ashamed to be seen in such dresses and, therefore, cannot go out to look for work or to meet people."

Certain rulings prevalent in various agencies will need to be reconsidered, for instance, the fact that money for a winter coat is being allowed, while no funds can be allotted for buying warm underwear, which some people who live in low-cost housing units with insufficient heat provided need urgently.

Some attitudes of those agencies dealing with the assignment of housing facilities to former mental patients are in great need of revision.

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Need for Volunteers

The task before us is tremendous and cannot be accomplished by psychiatrists, social workers, or public health nurses alone. Never before, and in hardly any other area, is the assistance of volunteers so badly needed as here. The work of volunteer groups actually should start inside the hospital on the very first day of the patient's admission, when he finds himself bewildered and lost, frequently not understanding why he was hospitalized, to what end, and for how long he will have to stay. The volunteer talking to the patient, possibly over a cup of coffee in the community store, could relieve the patient from at least part of his anxiety. The volunteer could easily become the link between the community and the hospital during the period of an individual's hospital residence. But far more than this is needed once the patient prepares for leaving the hospital and returning to the community.

There is above all the question of where the expatient is going to live. When they are finally released from the hospital many younger individuals in their late teens or early twenties, and occasionally older people, find themselves either without families or friends with whom they can live, or they are completely rejected by their families which, on occasion, is even worse than having no home. These people need, at least for a period of transition, some sort of foster home or, if they live alone in furnished residences, some foster family that could adopt them like relatives and show an interest in their welfare and prevent them from being all alone.

In cases where there is no need for a foster home as such, there is the need for some interested group to take care of these persons on such occasions as holiday times. It happens frequently that former patients state they had to spend Christmas, Thanksgiving, and other holidays all by themselves because they had no place to go to.

Mothers returning home after a residence in a mental hospital are facing the problem either of not being able to care for their children and themselves or of the hospital not permitting them to take over the care of their children right away if there is no supervision provided. Frequently this was found to be a great hardship, and in the few cases where it was possible to secure the services of a homemaker who would give a helping hand to the mother in taking care of children and at the same time provide some supervision for the patient, both mother and children benefited a great deal.

In this group belongs also the need for civic or social group membership to provide these patients with the opportunity to form new interpersonal relationships. The few existing expatient clubs frequently are rejected by patients because "they remind me too much of the hospital." Church groups to which these individuals should be referred could provide some assistance here.

In addition to this, volunteers could make available transportation services where needed. A patient has to get to the Aftercare Clinic, to a day hospital, to a dentist, and so forth, and needs not only some means of transportation but also an escort whom the family cannot provide for some reason; in those cases where there is no family, the volunteer could serve as such an escort and possibly provide transportation.

In taking some of these needs into consideration we will be better able to achieve the goal we are striving for: full and lasting social, economic, and vocational community reintegration of our mental patients.

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Discussion

Marvin K. Opler, M.D., *Buffalo, New York.*—Dr. Kris has told us, in warm and humane terms, some things I believe we know from other sources. We are simply not handling mental illness or mental health rehabilitation as well as we know how. Many patients lack the most elementary support of families and community agencies. In addition, an aftercare clinic needs the further cooperation of welfare agencies, employers, and voluntary community aides.

We in social psychiatry are not content to say merely, "We told you so," although I think our researches have for some time pointed in these same directions. The task of social psychiatry is to understand social and cultural backgrounds of mental illnesses well enough to provide new technics and methods of prevention, treatment, and rehabilitation. If I may take the discussant's privilege of reorganizing the materials in this light, I can comment on what I think the implications are.

Aftercare clinics, rather than full-fledged community clinics, home treatment centers, and preventive psychiatry, are one indication that we are not yet wholly in a "new era" of psychiatry, although we are wrestling with certain results of improvements in care and treatment. Because of chemotherapeutic controls, there are now more ambulatory psychotic patients and persons with severe psychoneuroses outside institutional confines. The open door mental hospital experiments, begun in England and continued in America with the aid of tranquilizers and antidepressants, tend all too easily to become a "revolving door" with discharge rates and readmission rates both higher and suspiciously resembling each other. As Dr. Kris notes in passing, the day hospital and the night hospital may be added to this picture.

What is reported specifically for the Research Unit of the Manhattan Aftercare Clinic, the 500 patients who received some support in a four-year period, is impossible to evaluate without a control group comparison of matched cases who received no such supportive therapy. However, we know from the rise in the general readmission rates throughout the country that the behavioral science and psychiatric professions must get down to some realistic thinking and study as to how to bring first-rate psychiatric treatment to patients in their own communities. This is what Dr. A. Querido developed in Amsterdam and christened "home treatment." As a consultant for the only large-scale experiment of this type in the United States, T. T. Friedman, M.D.'s, psychiatric home treatment service in Boston, I can say that there is nothing inappropriate about such a plan in this country. More recently, the Albert Einstein psychiatric outpatient services have developed a more limited emergency service, limited because of the very few home visits allowed, but otherwise somewhat reminiscent of Dr. Friedman's ongoing experiment. The Manhattan aftercare program differs, of course, in that it catches the patient after hospitalization, at the exit of the hospital as it were, rather than at the entrance. But in our study of the Midtown community of Manhattan with the late T. A. C. Rennie, M.D., we found a surprising number of psychotic patients, schizophrenic patients included, in their homes; they had never been hospitalized, but some were as sick as any I have seen inside a hospital.[a,b]

I am adding these points about the new patient in the community clinic or in a home treatment service and the nonpatient in the community to Dr. Kris's discussion of the aftercare clinic to point up the enormity of the total problem. It would seem to me that social psychiatry must include more generous efforts in the direction of preventive psychiatry, and that community clinics are required more broadly than in the category of posthospital treatment. The inpatient, the expatient, and, hopefully, the nonpatient appear to me to have difficult problems which fortunately are amenable to outpatient or ambulatory treatment. I am hardly saying that we have outgrown the hospital. But everyone knows that maintenance pharmacotherapy, the open door or, as I have called it, the revolving door, and milieu therapy inside the hospitals have been attended by a necessary shift to a larger proportion of ambulatory ill. The Midtown study finds that those patients in such social categories as lower class and those of the rapidly acculturating ethnic or cultural groups are the groups most in need of treatment but with the greatest unmet therapy needs. As concerns psychoses, the New Haven study of Hollingshead, Redlich, and Myers finds exactly the same thing.[c] In view of these findings for New York City and for New Haven, it seems clear that community social psychiatry will be necessary and will probably be the next important development in what Dr. Kris calls the new era of psychiatry.

Let us consider some additional elements of the new era. Recently Borgatta, a sociologist with the Russell Sage Foundation, published an evaluation of the Altro sheltered workshop.[d] Or rather, I should say, he struggled with the problem of evaluation of this program, for there were no matched samples one finds in workshops and those in other programs, or without workshops, for comparison. The results seem to go like this: The workshop appears to be a good idea, but we have no way really of knowing this. Where we can tentatively measure results the results themselves appear to be less dramatic than expected. Of course, in this program, or in the Aftercare Clinic, the best comparison might obtain only if we compared our patients with those who do not receive such benefits. Malignant mental illnesses (and certainly the hospitalized disorders generally fall into this category) do not stand still. Unless checked they get worse. It may well be that the aftercare program, in dealing with persons who we learn were in hospitals anywhere from two to thirteen years, mitigates the readmission rate. It is encouraging to learn that about 35 per cent found gainful employment and that 10 per cent with some form of vocational rehabilitation may be added. That many are maintained by pharmacotherapy is not surprising. Still I would wonder whether a double-blind study might not disclose that placebos and doctor-patient contacts are equally effective.

I have added these problems of evaluation (for Altro or the Aftercare Clinic) not because I am dubious about the work being done, but to underline the point that not only do we have difficulties in evaluating such programs, but also that in general psychiatric program innovations in this country do not aim at prevention. In Buffalo we have analogs of the aftercare program in that our outpatient department or alcoholism clinics regularly operate with "graduates" from inpatient services. The same problems obtain with families, agencies, and shortages of community aides. But, in addition, one could say that such programs with expatients are not truly preventive programs. They could be said to operate on the usual premises of American psychiatry as applied to lower classes and to ethnic groups. On the basis of our New York Midtown study or the New Haven study, these efforts in the lower classes and ethnic groups, while commendable in themselves, can be all called "too little and too late."

Obviously, the aftercare clinic and the outpatient clinic generally must sooner or later be part of the community clinic, in which aftercare is just one phase. Both types of clinic require not only psychiatrists, but also experts in social and cultural backgrounds. Mental illness is a part of neglect, and only community understanding and effort which are based on social as well as on psychiatric knowledge will help in the prevention, care, and rehabilitation of psychiatric disorders.

Dr. Kris.—Dr. Opler has stressed the need for preventive psychiatry rather than an attempt at doing "too little too late." However, we have to remember that the problems facing us are tremendous and we have to start by tackling at least one phase of the total problem. The work here described presents such an attempt, that is, starting at the point of release from hospitals, then trying to prevent renewed hospitalization, and assisting these patients over a number of years to make a better community adjustment.

The role of ethnocultural factors has been taken into careful consideration throughout the entire study, and plans are presently under way for the evaluation and integration of the accumulated data.

Dr. Opler has also wondered whether or not a double-blind study might possibly disclose that placebos plus doctor-patient contacts are as effective as pharmacotherapy. Such a study recently undertaken by Gross* in Maryland disclosed the role of pharmacotherapy in maintaining symptom-free those patients who are returned to the community. Those on placebos, it was found, relapsed into overt psychosis.

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[a] Opler, M. K.: Epidemiological studies of mental illness, in: Symposium on Preventive and Social Psychiatry, Washington, D.C., Government Printing Office, 1958, p. 111.

[b] *Idem:* Culture and Mental Health, New York, Macmillan Company, 1959, p. 425.

[c] Hollingshead, A. B., and Redlich, F. C.: Social Class and Mental Illness, New York, John Wiley and Sons, 1958, p. 442.

[d] Meyer, H. J., and Borgotta, E. F.: An Experiment in Mental Patient Rehabilitation, New York, Russell Sage Foundation, 1959, p. 114.

* Personal communication.

When neither their property nor their honor is touched, the majority of men live content.—MACHIAVELLI

Management of Patients with Schizophrenic Reactions

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During the past one hundred and ten years increasing interest and research have been devoted to the problem of the mental illness currently referred to as schizophrenia. In 1850 the Belgian psychiatrist, Morel, coined the term dementia praecox to describe a certain number of the reactions beginning in early youth and ending in deterioration.[1] Unfortunately he interpreted this disorganization of personality as an arrest in development to be included with mental deficiency . . . due to heredity.[2] In 1906 Adolf Meyer began to develop the thesis that dementia praecox is not a disease entity but rather a type of reaction developing in certain personalities as a result of progressive difficulty in adaptation and that the accumulation of faulty habits of reaction led to a "habit deterioration."[3] In 1911 Eugen Bleuler introduced the term schizophrenia[3] and in the past twenty-five years this term has been considered applicable "not to a disease entity but to heterogeneous types of behavior tending to allied and serious disorganizations of the personality" involving disturbed patterns of thought, feeling, and activity.

Bleuler's formulations helped greatly in the early analysis of the disorder since they postulated three basic disorders having to do with "disturbances of association of ideas. . . disturbances in affectivity. . . and disturbances in relationship with the external world." In addition, he distinguished two groups of symptoms which he termed "primary" and "secondary." The former referred to the disturbances of association and of emotion and the latter included the symptoms of acute psychosis such as hallucinations, delusions, catatonic states, and others.

Bleuler believed that this condition was basically organic in nature owing to toxic or structural changes with psychogenic factors determining or shaping the clinical picture which then varied in different individuals or, from time to time, in the same individual.[4] Meyer's earlier concepts were more dynamic since he saw the disorder as being the product of a progressive maladaptation in life experience.

Lewis,[5] in reporting on diagnostic research at the New York Psychiatric Institute, outlined the criteria for early differential diagnosis of psychoneurosis and schizophrenia and concluded from that material that "(schizophrenia) represents a different pattern from the neurosis from the very beginning, and that it begins either in the original constitutional organization, or at least very early in the life of the individual."

Where there is a notable degree of obvious, diffuse, and persistent anxiety present, together with other symptoms of neurotic reaction in addition to the primary symptoms already identified, the condition sometimes is referred to as "pseudoneurotic schizophrenia."[6]

The schizophrenic process is recognized also in children and in adolescents and here again there are various theories as to the source or sources of the disturbance. Bender[7] for example considers that schizophrenia results from "a developmental lag of the

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biological processes from which subsequent behavior evolves by maturation at an embryological level, leading to anxiety and secondarily to neurotic defense mechanisms." Certain acting-out patterns of behavior in adolescents who are suffering primarily with schizophrenia are designated as "pseudo-psychopathic schizophrenia."[8]

Under the influence of psychoanalytic study of the personality and its functions these symptoms have been considered as ". . . various forms of poor ego functioning, that is to say, the patient tends to lose his appreciation or awareness of the limits of reality so that he expresses his thoughts in terms of primitive or symbolic terms often unintelligible to the observer.[9] He tends also to become dissociated in his thinking with possible withdrawal or poor control of his drives with regression to infantile types of behavior or irrational aggressiveness." These "characteristics of severe ego disturbance are identical with the formal signs and symptoms of schizophrenia as described by Kraepelin and Bleuler."[9] To understand these psychodynamics of personality development as sources of schizophrenia "increasing stress is now being placed on the influences of early interpersonal relationships within the family that either fail to meet the child's emotional needs or are emotionally traumatizing to him."[10]

Often one sees a reaction of avoidance of close relationships based on deep-seated fears of losing such support and frequently, as Fromm-Reichmann[11,12] has pointed out, schizophrenic patients who are withdrawn are regarded by others as being hostile. Thus observers react in a similar manner and thereby fail to understand the illness and are incapable of helping in its alleviation.

Since schizophrenic patients cannot be relied on to distinguish correctly between thought and reality, it has been emphasized that "with the psychotic, one must be careful not to raise unconscious instinctual and infantile material into the consciousness . . . (since) . . . in psychosis, he has to deal with too much unconscious material already brought to consciousness. Thus the therapeutic aim here is not the release of repression but re-repression."[13] The gradual establishment of a relationship with a patient will later enable the therapist to guide him in an understanding and a resynthesis of those parts of his personality which have been in conflict while ". . . those parts of the ego which still function with adequate distinction of thoughts and reality must be employed as allies."[13]

Causes of Schizophrenia

In recent years more attention again has been given to investigations of possible genetic factors,[14] endocrine metabolism,[15] and to physiochemical changes that might give rise to the schizophrenic reaction or that might result from it. It is not known yet, however, which comes first, psychologic disturbances which can be identified by physiochemical means or physiologic changes which result in disturbances of psychologic function. The evidence to date seems more confirmatory of the former and in recent years multidisciplinary research has been utilized as reported at the Second International Congress of Psychiatry in 1957 which was devoted entirely to the subject of schizophrenia[16] and in which contributions by American investigators were of prominent significance.[17] In the meantime, about 25 per cent of the admissions to our mental hospitals are patients suffering from schizophrenia, and they amount to about one half of the patients in residence in these hospitals.[1] In an over-all estimate there are probably about 16 persons in every 1,000 births who suffer from this illness.[18]

From what has been said it can be seen readily that there are various degrees and types of schizophrenic reaction and many schizophrenic patients who are not being treated in hospitals are referred to as "ambulatory." Treatment for this group of patients is provided in office practice or in clinics, and in many instances hospital care may not be needed. In others outpatient care before or after hospitalization may enable a patient to maintain a place for himself in the community.

In outpatient treatment a careful diagnostic study should be done first including a comprehensive history and physical evaluation together with psychologic or other special tests that may be indicated. An important dynamic part of such a study must be the manner in which the initial examining interviews are conducted in order to establish a working relationship with the patient while at the same time an accurate appraisal of his immediate needs is being made. These needs may include adequate protection against possible suicidal or aggressive tendencies. The beginning use of psychotherapy for the patient also includes preparing workable estimates of what the patient means by his verbalizations and his observable behavior. Learning the patient's language and establishing a sense of communication with the patient which he can accept as such with a minimum of anxiety are early measures of the patient's capacity for response to therapeutic efforts.

Research at the New York Hospital–Westchester Division[19] and at other centers[20] also has been directed toward influencing the attitudes of parents or the other family members whose emotional relationships with the patient have been significant. Psychiatric social service is utilized in the form of casework therapy as part of the treatment plan which is in this sense "family centered."

Case Reports

Case 1.—A sixteen-year-old boy, who was transferred to the outpatient department of the New York Hospital–Westchester Division from another treating agency because of increasingly intense delusions of persecution, was at first almost inaccessible owing to his marked withdrawal and suspiciousness. This was in part owing to his inability to accept the prospect of a change in the therapist, since it had become so difficult for him to form useful interpersonal relationships. When his attachment to his previous therapist was reviewed in positive terms from the standpoint of the patient's values concerning this relationship, he was able to accept the new treatment situation and to participate in it. Reestablishment of communication with this patient had to be accomplished during the first part of each weekly interview over a period of many weeks until he could begin to "carry over" his improving appreciation of reality factors from visit to visit. At the same time, intensive social casework with his parents contributed to his progress in treatment.

Continuing treatment is based also on psychotherapeutic methods designed to help the patient develop more adequate integration of his personality, but most authors agree "on the need for alleviating immediate anxiety, the need for active participation, active support and increase of self-esteem and avoidance of direct interpretations at least in the first phase, with increasing application in latter parts of the treatment."[21]

Slow progress over prolonged periods is the rule and the dependency on the patient-physician relationship is apt to be indefinite, extending long after improvement or apparent recovery by means of follow-up visits, correspondence, or phone contacts.

The careful use of certain tranquilizers and other medications is found to be a valuable adjunctive treatment measure. Also, currently the general consensus[22] is that, appropriately used, certain of these drugs have ". . . unquestioned effect in the behavioral status of the patients if not in the fundamental psychotic structure," and that future prospects are encouraging for "some substance which may profoundly affect the fundamental factors in schizophrenia or in combination with psychotherapy may facilitate a greater degree of recovery than has been heretofore possible."[23]

At times group therapy can be useful and there is a need for further development of "work therapy" and rehabilitation programs for patients under outpatient care so that they can readapt themselves gradually in a sheltered environment where the degree and type of stress to which they are exposed can be controlled to some extent.[24]

Case 2.—A twenty-five-year-old single man who had completed two years of college work was referred by his minister because of emotional instability and inability to hold a position. Previous treatment effort had been discontinued owing to poor rapport and he did not complete his application until six months after the initial referral. In a telephone conversation he sounded hesitant and vague in describing his problem, referring to it finally as "difficulty in associating with people." In the intake interview he described fatigability, dissociation tendencies, peculiar somatic sensations, a marked sense of aloneness during childhood, phantasy preoccupation, and bizarre patterns of emotional reactions. He said, "Rationally I can do things but emotionally I'm not there. . .somewhere I stopped growing." In treatment interviews he showed an unexpected capacity to respond to careful investigations of his experiences, ideas, and feelings. Fears, anxieties relative to his masculinity and sexual status, and projective trends were uncovered gradually while at the same time it was necessary to guide him in his control of impulses as well as in his appreciation of reality and of judgment factors. At the end of six months he was able to be transferred to a new therapist, an indication of real therapeutic progress, and he then continued to make further gains including a new training experience by means of this new relationship. Social casework contact with the patient's brother also was an important aspect of the treatment plan.

Accurate or meaningful statistics reflecting the results of outpatient treatment for schizophrenic patients are not reported frequently. In the outpatient department of the New York Hospital–Westchester Division during the past three years, 32 patients with schizophrenia have been seen of whom 12 were considered to be suitable for outpatient treatment. Of these 12 all have improved or have been maintained at a functioning level.

The factors which precipitate hospitalization of schizophrenic patients vary greatly. Generally, it comes about as a result of disturbances in thinking, feeling, and acting to such a marked degree that the patient himself or those around him recognize that he is no longer able to carry on with life in an efficient and productive manner. Such behavior may have been going on for varying periods of time. The astuteness of the general physician in noting a loss of interest and a gradual withdrawal or anxiety, bodily concern, and self-absorption not typically neurotic may lead to psychiatric consultation and early hospitalization for the schizophrenic disorder.

In other instances depression and a suicidal attempt may be the presenting symptoms. Impulsive, bizarre behavior in a patient, directed by delusions and hallucinations, necessitates immediate hospitalization not only for the protection of the community, but also for the purpose of preventing the patient from further acts which would only compound his problem once he returned to realistic thinking and could see the consequences of his behavior.

Treatment of the Schizophrenic Patient

At the time of admission to the hospital the majority of patients are fairly well controlled and sufficiently in contact to make the decision to enter the hospital. It is apparent immediately to the admitting physician that the schizophrenic patient is fearful, suspicious, isolated, and exceedingly sensitive. Warmth and understanding of the patient at this beginning period of hospitalization frequently make the early adjustment run more smoothly. Occasionally, because of the patient's disorganized state and with hostility as a predominant symptom, the patient will not accept hospitalization and certification becomes necessary.

After the patient is admitted to the hospital, it is important initially to spend considerable time with the relatives of the patient in an effort to allay their anxieties and guilt. If this is not accomplished fairly quickly, at least to a degree, it is difficult to obtain information which is so necessary for the early formulation of the patient's problems. Frequently the relatives are made more comfortable by being offered an opportunity to ask questions. The admitting physician gives them an explanation and information as well as assurance that they will continue to receive guidance over the weeks and months ahead. A preliminary case history is then taken emphasizing development, personality, family constellation, life situation, development and characteristics of symptoms, and previous treatments. The day after admission this material is made available to members of the therapeutic team. This includes the patient's personal physician and representatives of the departments of nursing, physical education, occupational therapy and hydrotherapy, as well as the departments of psychology, social service, music, and library, if such therapies are pertinent to this early stage in the management of the patient.

The schizophrenic patient's behavior can be understood only in the light of his previous experiences. Frequently these patients have been compromised by heredity, constitution, and environment. Usually there is an early history of severe emotional deprivation which seems to have limited their capacities for close emotional relationships with others. Their withdrawn individualistic and independent attitudes have kept them from healthy and warm relationships and identifications. One of the prime goals in treatment in the hospital is to give them an opportunity for such relationships.

Immediately on admission to the hospital the patient is met with attitudes of tolerance and understanding by all who come in contact with him. Every effort is made to understand his needs. He is offered protection, comfort, and encouragement. During the first few days in the hospital little, if any, pressure is placed on the patient and he is encouraged to make his own adjustment. During this period the patient is observed to determine his capacity for participation in group activities. Efficient participation cannot be expected early in treatment; however, he is encouraged to participate to the limit of his capacity. During this time the necessary psychiatric, psychologic, and physical examinations are completed. Also the personal physician of the patient spends time in obtaining a detailed life history from relatives and other important people in the patient's life.

The goal of management of the patient during the acute phase of his illness is toward eliminating the overt symptomatology of his illness and thereby gaining his participation in the therapeutic programs of the hospital and through the relationship that he develops with his personal physician to begin the work of psychotherapy. This may take anywhere from a few weeks to many months and depends on the severity of the acute symptoms and the involvement of the individual in the schizophrenic process.

During the acute phase the patient's opportunity for recovery must be protected. This includes protection of the patient from suicide and escape. The environment is arranged so that all means of self-injury are minimized. The suicidal patient can be observed constantly until this drive has subsided. An elopement tendency is managed by a closely supervised environment and diversions. A few patients refuse to eat or drink and require tube-feeding. The reasons for such measures are explained to the patient in a firm but kind manner.

Other therapeutic measures are directed toward ameliorating the disorder and its effects by releasing the abilities the patient has for successful contact with his environment. Once this is accomplished, the acute phase of treatment is completed. Success is dependent on many types of effort and varies greatly from patient to patient.

Isolation and seclusion for periods of time offer a patient opportunity to be free of stimuli which otherwise he might misinterpret and react to impulsively. The hostile, aggressive, overtalkative, and excited patient might receive benefit from an hour or so in a prolonged bath. This offers protection to himself and others, and at the same time it allows for relief of bottled-up tensions. Frequently, during the acute phases of the illness, this may be the only opportunity that the physician has to be near the patient during disturbed periods when much valuable information can be obtained, as well as to demonstrate to the patient that an effort is being made to understand him. Hydrotherapy and massage may be indicated for the undisturbed patient who has a high level of tension and anxiety. In the withdrawn and apathetic patient this form of therapy offers a stimulating effect. The sedative effect of prolonged baths and cold wet packs aids him in sleep. If the patient is sufficiently in contact, he may spend a period of the day in recreational activity or occupational therapy.

If these measures prove inadequate to reduce the intensity of the symptoms, there are other more definitive therapies which are helpful. Electroshock therapy, over a period of several weeks, can have a remarkable effect on the impulse-driven, delusional, and hallucinating patient. With freedom from these symptoms, the patient's sleep, appetite, and physical condition improve. Energy that was dissipated in symptoms is now available for the group and program activity. The tranquilizing drugs such as chlorpromazine hydrochloride, promazine hydrochloride, prochlorperazine, and trifluoperazine hydrochloride are useful with the additional advantage that the patient's sensorium is not disturbed if it is used for a prolonged period of time. In the withdrawn, apathetic, and anorexic patient a daily injection of insulin in small doses is beneficial. The appetite improves and the patient gains weight and generally appears more vital than before the institution of this therapy. The acute phase of treatment comes to an end when the patient has been comfortable for several weeks and has been able to join a semiconvalescent group and to participate in a full program of hospital activities. At this point, although he is making progress, he continues to exhibit unhealthy areas in his personality structure. With the resources that he has within him, through the relationship that he has with his personal physician, and in the therapeutic atmosphere of a hospital milieu, the patient begins the process of re-education directed toward more healthy ways of thinking, feeling, and acting.

As the acute symptoms subside and the patient is beginning to find a place in the group life of the hospital, removal from the stresses of life has bolstered his already existing but weakening patterns of adaptation. Attention to any physical problem has improved his physical status. The active interest of a warm, patient physician who seeks to understand and not to judge has helped the patient regain his self-respect and confidence. Under the physician's careful guidance the patient has tried himself out at the test of a program of activities kept within his capacities and interests so that self-esteem which comes only from accomplishment is enhanced. A carefully planned program of socialization has drawn him back gradually to participation with others, breaking through the loneliness and feelings of isolation which are common to psychiatric disorders. With tact and great care the physician has nurtured a personal relationship with his patient, respecting his individuality and integrity although not necessarily either condoning or accepting behavior which is unproductive or unhealthy.

In most instances even in this group of schizophrenic patients who have the reputation for being distant, reserved, withdrawn, and exceedingly sensitive, it is possible for the psychiatrist to achieve a working personal relationship. This working relationship is a kind of atmosphere of mutual trust and respect and is the background on which is built the reorganization of the personality structure toward health which is the goal of treatment in convalescence.

With modern treatment, not only do the majority of schizophrenic patients return to their former level of adjustment to life, but also one third of them achieve an adjustment in work, family, and social life which indicates a more mature level of personality adjustment than was present before the illness.

Somewhere within himself a mentally ill patient knows that he is ill, has lost his way on the road of life, and needs and wants treatment. The schizophrenic patient is sensitive, easily hurt, and has little capacity to endure and prevail over the ordinary pains of life. This sensitivity is often intensified by repeated painful experiences in personal relationships in early life. Later close and meaningful contacts with others are avoided and he protects himself behind a mask of reserve, indifference, coldness, suspicions, and hostile defensiveness. It is as though the patient has learned to believe that to love is to get hurt. Such feelings are commonly expressed as the following quotations: "Experiencing emotions puts you in the power of others"; "If I love you, you can hurt me"; "Emotions are to be avoided."

As the patient begins to recognize his attachment to and dependence on the physician, painful memories and behavior patterns connected with past experiences are often reactivated and sudden and inappropriate expressions of anger and aggressiveness may result.

We are all familiar with the fact that the past tends to color the present. In schizophrenia the past may not only color the present, but also it may, and frequently does, blot out the present. This is what we mean when we talk of transference: when patterns of feeling and behavior, which are connected with past experience, determine inappropriate actions in the present in an entirely new and different setting.

In the convalescent period of treatment which we shall discuss now, such transference reactions continue.

CASE 3.—A male patient, in the acute phase of his illness, directed much anger and provocative behavior against another fellow patient who was aggressive and overtalkative, accusing this patient of being the source of critical and belittling auditory hallucinations. During his convalescence he responded to an outgoing "life of the party" man by saying, "He's a loud mouth and never lets me get a word in edgewise and is too sick to be on this hall." In both instances the patient was reacting in an excessive manner. During the more acute phase of his illness, his delusional talk was listened to with respect and interest in an attempt to cultivate a rapport with him. He was advised to avoid contact with the other patient by keeping occupied in other parts of the hall. The physician did express his interest in why the patient sought out this second patient's company so avidly. Later in the convalescent phase, when he was again excessively emotional in his judgment about another patient, the physician expressed surprise that the other patient disturbed him so much and also made the comment that possibly his own responses were overly determined by some experience in the past with individuals who reminded him of this fellow patient. At this point the patient had sufficient self-confidence and trust in his physician's respect for him to stand the threat of this implied criticism of his behavior. He was able to enter into a review of past family relationships and came to recognize that his attempts to emulate his more successful brother had met with frustration and failure with much suppressed jealousy and anger toward this brother. He was then able to examine his own makeup, interests, and talents. His effort for accomplishment became directed along the lines of his own assets. He finally gave up his plans to be a bond salesman and found a position in the field of art where his talents lay.

Comment

Patients need help in managing these transference feelings and the guilt and anxiety connected with them. The psychiatrist can give guidance and support and often must accept being a kind of sounding board against which the patient expresses his hostile and aggressive feelings. The psychiatrist at such times is required to have a calm self-possession which comes from an understanding of the real source of the patient's reactions. With this understanding the physician then can help the patient direct his feelings into productive goals which are more to his ultimate advantage.

Program activities for men such as the

punching bag and hitting games such as bowling, tennis, and golf provide socially acceptable outlets. For women knitting, clay work, and metal work can play a similar role. In convalescence patients can use such outlets by purposeful choice.

Prolonged and close contacts with staff members provide healthy examples of mature adults responding objectively to the various stresses of everyday life. This is a strong although subtle therapeutic influence in patients who have sometimes lacked good models for healthy identification in their earlier lives. Patients often comment favorably on this aspect of their hospital experience.

There are many opportunities for self-expression in the daily life in the hospital with its program of varied activities. Such a program helps a person to learn about himself through his own experiences. Opportunities for practicing and improving social technics and skills are brought forth in the daily life with others in the hospital program including dances, card parties, concerts, and informal discussion groups.

In this process of education and re-education the time comes for the patient to practice these newly found skills in his life outside the hospital. In the concluding weeks of treatment the patient visits away from the hospital for increasing periods with relatives and friends and gradually is introduced to the pace of everyday life outside the hospital. On the convalescent hall the patient usually starts commuting to his job in life, at first returning to the hospital at night, but gradually spending increasing periods at home. By this time relatives, friends, and even employers of the patient have had the opportunity to discuss with the physician, the social worker, or both the facts concerning the patient's illness—what can be expected of the patient as well as their own apprehensions and misconceptions.

Conclusion

It is obvious that a modern psychiatric hospital is as complex in many respects as our modern society. It functions as a home and a school as well as a hospital in the more usual sense. In fact, it is an arranged and supervised pattern of what our culture is. Its problems are often those of parents, teachers, and vocational advisers. As a parent, the psychiatrist strives to care for and guide his patient. As a school, the hospital attempts to educate him toward newer and better technics in the art of living. Its vocational advisers assist the patient in accepting his place in accordance with his personality assets and motivations.

In treatment we try to find out why the patient acts as he does and attempt to remedy the causes of pathologic patterns of feeling, thinking, and acting while sustaining his individual sense of self-respect and integrity.

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Unlock Atomic Makeup of a Protein

Science has taken another important, though beginning, step in unlocking the secrets of protein, "the molecular manager of human biology." The achievement, establishing the exact chemical makeup of ribonuclease, was announced recently by a team of Rockefeller Institute scientists. At work for six years, the team identified and "placed" the 1,876 atoms, including carbon, hydrogen, oxygen, nitrogen, and sulphur, which make up the protein's 124 "subunits."

Now able to correlate chemical composition with the protein's known function, the researchers believe the discovery will advance knowledge of protein's role in human health and nutrition. The success of the Rockefeller group marks the fourth protein to be completely analyzed by science. Insulin, ACTH, and ocytocin had been "worked out" previously. More than a million important proteins have not yet yielded to scientific investigation.

Where Do the Most Drug Addicts Live?

More drug addicts live in New York than in any other state in the United States. Of the four states in which most of the nation's addicts are concentrated, New York is first with 45 per cent of the total number of active addicts, Illinois second with 14 per cent, California third with 13 per cent, and Michigan fourth with 5 per cent.

Addicts live mainly in big cities and are found largely in the poorest areas of such cities, characterized by lowest income, poorest housing, unstable family structures, and highest delinquency rates.—*Patterns of Disease, Parke, Davis & Company*

proceedings

NEW YORK ALLERGY SOCIETY

MURRAY DWORETZKY, M.D., AND SHEPPARD SIEGAL, M.D., *Editors*

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SCIENTIFIC SESSION

AARON D. SPIELMAN, M.D., *President, Chairman*

Certain Immunologic, Clinical, and Hypersensitivity Manifestations of Agammaglobulinemia

PAUL A. M. GROSS, M.D., *Research Fellow, Department of Pediatrics, Harvard Medical School, and Research Associate, Department of Medicine, Children's Medical Center, Boston, Massachusetts*

AARON D. SPIELMAN, M.D.: Our guest speaker, Paul A. M. Gross, M.D., has taken for his topic this evening a subject of tremendous interest to the allergist. Dr. Gross has worked with Charles A. Janeway, M.D., and David Gitlin, M.D., in the Research Laboratory of the Harvard Medical School in the field of immunology.* A number of papers published in recent years by Dr. Gross with Dr. Janeway and Dr. Gitlin have attracted a great deal of interest. It is with great pleasure that I introduce Dr. Gross.

PAUL A. M. GROSS, M.D.: There are four cardinal features to the syndrome of agammaglobulinemia. The first is recurrent bacterial infection. The second is the virtual absence of gamma globulin, not only in the blood stream, but also in the interstitial fluids. The body pool of gamma globulin is divided between the intravascular and the extravascular compartments. Forty-five per cent of the total is intravascular and 55 per cent is extravascular in location. These two compartmental pools are in dynamic equilibrium with each other. Constant diffusion from the intravascular to the extravascular space is balanced by the lymphatic return of an equal amount of gamma globulin from the extravascular to the intravascular compartment. The diminution or absence of gamma globulin in the plasma can be demonstrated easily by quantitative immunochemical measurement. The absence of gamma globulin from the tissues can be demonstrated by conjugating a fluorescent dye, such as fluorescein isocyanate, to an antibody prepared against human gamma globulin and spreading this fluorescent antibody on tissue sections obtained by biopsy or at autopsy from an agammaglobulinemic patient. After washing away the excess conjugated antibody, examination with an ultraviolet microscope reveals fluorescence wherever the antibody has become attached to the gamma globulin antigen. In tissue from agammaglobulinemic patients there is very little fluorescence visible, in contrast to normal tissue.

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The third cardinal feature of the agammaglobulinemic syndrome is the absence of plasma cells. Normally there are up to 2 per cent plasma cells in the bone marrow, while absent or virtually absent counts are found in agammaglobulinemia. Even more striking is the absence of plasma cells from areas in which they are usually found in large numbers because of an intense chronic inflammatory reaction, such as the appendix and ileum, and from the bronchiectatic lesions which frequently complicate the respiratory infections in agammaglobulinemia.

The fourth cardinal feature is the inability to produce circulating antibodies even after intense stimulation by bacterial, viral, rickettsial, or mismatched red cell antigens.

The name agammaglobulinemia is really a poor one. In the first place, it is a jawbreaker. It takes patients weeks before they can pronounce it correctly and weeks more before they can spell it. Also, and more important, it's a poor name because it is not gamma globulin per se which provides resistance to infections, but antibodies, and there may be a significant difference. For example, a patient with multiple myeloma may have a great quantity of electrophoretically detectable gamma globulin and yet be unable to produce antibodies against bacterial antigens, with the result that like the patient with agammaglobulinemia he falls prey to recurrent bacterial infections. Finally, agammaglobulinemia is a poor name because only rarely are these patients found to have complete absence of gamma globulin when tested by immunologic technics. In congenital agammaglobulinemia there usually is a serum concentration of 10 to 50 mg. per cent. In adult or acquired agammaglobulinemia the levels are usually a little higher, between 25 and 100 mg. per cent. A more accurately descriptive name might be the antibody deficiency syndrome, but it appears that the colorful name agammaglobulinemia has the authority of time and precedence and will probably remain with us.

Measurement

How are the gamma globulins measured? The common way of measuring gamma globulin is by paper electrophoresis. This is an adequate method if the gamma globulin level is normal or elevated, but it is inaccurate with levels below 100 mg. per cent, since this is too little protein for quantitative staining with the commonly used protein dyes such as bromphenol blue and amidoblack. Therefore, in these instances more sensitive technics must be used. Immunochemical methods, such as those devised by Jacques Oudin and David Gitlin, are more accurate at low concentrations.

Oudin's method is to impregnate a 2 per cent solution of agar with horse antiserum prepared against human gamma globulin. The impregnated antibody is placed in a capillary tube which is sealed at the bottom. Serum containing the antigens to be tested for is overlaid on the agar, the tube is sealed on top with clay, and it is maintained upright for twenty-four hours. As the antigen, which in this case is gamma globulin, diffuses down into the agar, there is a narrow zone called the equivalence zone where the proper combining ratio of antigen to antibody is present. In this zone a precipitate forms which is visible as a thin white line. This line is very discrete because the antigen-antibody complex is soluble in the zones of antigen and of antibody excesses. The distance from the interface of serum and agar to the precipitate is proportional to the concentration of antigen. With low concentrations of gamma globulin the line will be close to the interface; with higher concentrations it will be found further down in the impregnated agar. If one prepares a series of known concentrations of gamma globulin and measures the distance of precipitate formation from the interface for each concentration after a given time, any unknown serum concentration can then be estimated from this standard curve.

Gitlin also has used a more sensitive quantitative immunologic technic. Serum gamma globulin is diluted to a range of 0.05 to 0.5 mg. per ml. and precipitated with rabbit antiserum prepared against normal human gamma globulin. The precipitates are washed and dissolved in acetic acid, and the concentration of protein is measured by the light scattering and absorption of the dissolved precipitates in a spectrophotometer. Unknown serum gamma globulin concentrations can then be estimated from a standard curve prepared with known concentrations of gamma globulin and the same antiserum.

Identification

How are the gamma globulins named and defined? The name gamma globulin was originally an electrophoretic definition. It referred to that group of protein molecules which at pH 8.6 moved most slowly toward the anode after electrophoresis. The principle of electrophoresis is that at a sufficiently alkaline pH all the serum proteins will be negatively charged because of a relative excess of COO − (carboxyl) groups over positively charged NH_4 + (amino) groups. Under the influence of an electric current, the proteins migrate as anions. Albumin has the largest net negative charge and migrates most rapidly toward the anode. It is followed by the $alpha_1$, $alpha_2$, beta, and, last, the gamma globulins.

When Tiselius, who perfected the technic of free electrophoresis in the 1930's, sought to find the electrophoretic mobility of antibodies, he noted that they were associated with the gamma globulin fraction. For many years afterward the name gamma globulin became identified with antibodies. This identification was further solidified during World War II with the discovery of chemical means of large-scale isolation of the gamma globulin fraction from human plasma. The resulting fraction was found to contain most of the plasma antibodies and was made available for the prevention and treatment of many infectious diseases.

The exact definition of gamma globulin became more complex in the early 1950's when Dr. Pierre Grabar of the Pasteur Institute introduced his technic of immunoelectrophoresis. After separating the serum proteins by the electrophoresis of serum in agar, he cut a trench parallel to the axis of migration in which he placed horse antiserum which had been prepared against human gamma globulin. Just as in the Oudin tube, antigen and antibody diffuse toward each other. Where they meet in a zone of equivalence, a precipitate forms and is seen as a thin white arc. Surprisingly, the arc of precipitate formed not only against the gamma globulin electrophoretic fraction, but also continued as a single line opposite the gamma-beta interzone and the beta and the $alpha_2$ globulins. Grabar's interpretation of this phenomenon was that in each of these other electrophoretic fractions outside the gamma range there are proteins which are immunologically similar, if not identical, to the gamma globulins. Immunologists subsequently have extended the electrophoretic definition of the gamma globulins to include these immunologic relatives. It is important to note that in agammaglobulinemia there is not only an absence of the electrophoretic gamma globulins, but of these immunologically related proteins as well.

The explanation of this phenomenon has not yet been elucidated. It is possible that some electrophoretic gamma globulins may combine with proteins of a greater electrophoretic mobility and move with greater velocity toward the anode. Such protein-protein interaction has been noted for mixtures of albumin and gamma globulin, which may migrate as molecular complexes of intermediate mobility. However, it seems more likely that these relatives are truly antibodies, very similar to gamma globulin but having a larger number of negative charges, therefore migrating with greater velocity as anions.

In support of this hypothesis is the discovery that not all antibodies are in the electrophoretic gamma globulin fraction. For example, insulin skin-sensitizing antibodies migrate as beta$_1$ globulins, the complete (saline) agglutinins against the Rh factor migrate both as beta$_1$ and as alpha$_2$ globulins, and the incomplete (blocking) antibodies migrate with three electrophoretic globulin fractions (as alpha$_2$, beta$_1$, and beta$_2$ globulins). Thus, not all antibodies migrate with the gamma globulins.

Let us return for a moment to the plasma protein deficiencies in agammaglobulinemia. The absence of the electrophoretic gamma globulins and their immunologic relatives in the beta and alpha$_2$ globulin regions has been described. There are also two other important proteins missing, both of which migrate in the interspace between the gamma globulins and the beta$_1$ globulins. This zone, which does not stain for proteins after the electrophoresis of normal serum on paper, nevertheless contains at least three immunologically distinct proteins, each of which may have an antibody function. These proteins have been variously named beta$_2$ or slow-moving beta globulins, and gamma$_1$ or fast-moving gamma globulins to distinguish them from the bulk of slow-moving gamma$_2$ globulins. We shall call them beta$_2$ globulins.

Gitlin developed a clever way to show all the missing serum proteins in agammaglobulinemia. He prepared horse antiserum against the 16 or 18 antigenic proteins found in normal human serum. Then he absorbed out of this antiserum all the antibodies against the proteins in agammaglobulinemic serum. This left in the horse antiserum only those antibodies against the serum proteins which the agammaglobulinemic patient lacks. Immunoelectrophoresis was performed in agar with normal human serum and developed with this absorbed antiserum. Three antigen-antibody precipitates formed, corresponding to the three missing proteins in agammaglobulinemic serum. One was the spectrum of immunologic gamma globulins extending from the electrophoretic gamma$_2$ to the alpha$_2$ globulin locus. The other two have since been named the beta$_2$-A and beta$_2$-M proteins by European investigators.

The beta$_2$-A globulins, like the normal gamma globulins, have molecular weights of about 160,000. However, they are immunologically and chemically distinct, having a much higher content of carbohydrate. In fact, they are glycoproteins. The beta$_2$-M globulins are macroglobulins, having molecular weights between 900,000 and 1 million. At least five different antibodies have been found to be associated with the beta$_2$ macroglobulins. They are the anti-A and anti-B isohemagglutinins, the Rh incomplete blocking antibody, the Wassermann antibody, the rheumatoid factor (which may or may not be an antibody), and the cold hemagglutinins. It is interesting to note that the absence of the isohemagglutinins in a patient with the clinical picture of agammaglobulinemia whose blood type is A, B, or O, is a useful screening test for the antibody deficiency state. A normal titer of isohemagglutinins is 1:16 or higher. The congenital agammaglobulinemic often has a total lack of isohemagglutinins. The patient with acquired agammaglobulinemia often has them in a low titer of 1:2 or 1:4, if they are not totally absent.

Even more intriguing than the absence of these beta$_2$ proteins in agammaglobulinemia has been the discovery of a clinical syndrome that is characterized by recurrent bacterial infections and failure to form antibodies after antigenic stimulation, yet with normal amounts of gamma globulin in the plasma. The sole abnormality is the absence of the two beta$_2$ globulins, A and M. So far two children and two adults have been found with this clinical and immunologic picture.

This finding has reawakened interest elucidating the exact role of the gamma globulins in resistance to infection.

Clinical Classification

A clinical classification of the antibody deficiency syndrome is presented as follows:

- I. Transient hypogammaglobulinemia of infancy
- II. Childhood (congenital) agammaglobulinemia
  - A. Idiopathic
  - B. Secondary (such as possibly pneumocystis carinae)
- III. Adult (acquired) agammaglobulinemia
  - A. Idiopathic
  - B. Secondary
    - 1. Multiple myeloma
    - 2. Macroglobulinemia
    - 3. Leukemia
    - 4. Malignant lymphoma
    - 5. Amyloidosis
- IV. Isolated absence of the beta$_2$-A and beta$_2$-M globulins
- V. Hypoalbuminemia and hypogammaglobulinemia
  - A. Protein malnutrition
  - B. Malabsorption syndrome, such as sprue
  - C. External loss of plasma proteins
    - 1. Hemorrhage
    - 2. Proteinuria
    - 3. Weeping lesions (burns, eczema, pemphigus)
  - D. Hypercatabolic syndromes
    - 1. Nephrotic syndrome
    - 2. ? Idiopathic hypercatabolic hypoproteinemia
- VI. Hypergammaglobulinemia and antibody deficiency
  - A. ? Janeway's children
  - B. Multiple myeloma
  - C. Macroglobulinemia
- VII. Experimentally induced antibody deficiency
  - A. Vitamin deficiency (pyridoxine, folic acid)
  - B. Injury to mesenchymal tissues
    - 1. X-radiation
    - 2. Corticosteroids
    - 3. Nitrogen mustard

The transient agammaglobulinemia of infancy results from a delayed onset of antibody formation during the first few months of life. The fetus is unable to synthesize gamma globulin and has approximately a normal level at birth thanks to transplacental donation from his mother. The normal infant begins to synthesize gamma globulin during his first or second month, but only in the third month does synthesis begin to exceed catabolism. In some infants, for reasons still unknown, gamma globulin synthesis does not begin for six or eight months. As serum gamma globulin levels in such infants fall below concentrations of about 150 mg. per cent, recurrent infections may occur. After antibody synthesis finally begins, it presumably continues in a normal fashion.

From a purist's point of view, congenital agammaglobulinemia is not an entirely accurate name for this syndrome, since it is not definitely known whether or not these children are born with the inability to produce antibodies. In fact, 1 case of the so-called congenital type had a gamma globulin level of 500 mg. per cent at nine months of age and no gamma globulin at two years. Apparently he had had the power to synthesize gamma globulin at the earlier age and then had lost it.

Most of the congenital cases are found in males, presumably due to the inheritance of a sex-linked recessive trait; but a large screening program in England has uncovered some females with agammaglobulinemia. Most cases of the congenital type have an onset at between the ages of nine months and two years.

The acquired form of agammaglobulinemia usually begins in adult life, but it may begin in adolescence or even in later childhood. The disorder is assumed to be acquired, but the possibility of an inherited defect expressing itself later in life, as occurs in diabetes mellitus, has not been excluded. Most cases occur without any underlying disease process, but some are secondary to other diseases, especially those affecting the mesenchymal tissues.

When hyperglobulinemia occurs with agammaglobulinemia, one wonders about the possible diversion of amino acids from the synthesis of normal gamma globulins and antibody to the synthesis of the abnormal proteins. Such a mechanism may be present in patients with multiple myeloma or macroglobulinemia, and in children such as those described by Janeway who have recurrent infections, hepatosplenomegaly, plasmacytosis, and hyperglobulinemia.* However, it is not yet certain that this latter group has an antibody deficiency state.

The major clinical features of agammaglobulinemia are listed as follows:

- I. Character of clinical infection in agammaglobulinemia
  - A. Bacterial
    - 1. The common invaders: pneumococcus, beta hemolytic streptococcus, Staphylococcus aureus, meningococcus, and Hemophilus influenzae
    - 2. Tuberculosis uncommon
  - B. Viral infections usually well handled
    - 1. Recurrences of rubeola, rubella, mumps, and herpes zoster
    - 2. Exceptionally, a malignant course in
      - (*a*) Infectious hepatitis and serum hepatitis
      - (*b*) Progressive vaccinia
  - C. Fungal infections
    - 1. Moniliasis
    - 2. Histoplasmosis
    - 3. Disseminated cryptococcosis
- II. Disorders of the mesenchymal tissue in agammaglobulinemia
  - A. Reticuloendothelial system
    - 1. Splenomegaly: 50 per cent adult cases
    - 2. Hypersplenism: 25 per cent adult cases
      - (*a*) Reticulum cell hyperplasia
      - (*b*) Depletion of lymphoid elements
    - 3. Lymphadenopathy and hepatomegaly: 25 per cent adult cases
  - B. Connective tissue ("collagen") diseases
    - 1. Rheumatoid arthritis
    - 2. Scleroderma
    - 3. Dermatomyositis
    - 4. General vasculitis

The clinical hallmark of the antibody deficiency syndrome is recurrent bacterial infections. All 21 cases of congenital agammaglobulinemia seen at Children's Hospital and all but one of the 42 cases of acquired agammaglobulinemia reported in the literature have experienced repeated bacterial infections. Although the infections are usually caused by the common bacterial invaders, occasionally unusual patterns of infection may provide diagnostic clues. A second attack by a type-specific pneumococcal organism within one to six months following an infection that has been treated adequately with antibiotics may be a clue to a deficiency in antibody production. Beyond six months, however, such type-specific antibodies are frequently absent. Two attacks of Hemophilus influenzae infection in a child, or even a single attack in an adult, should raise one's suspicion, since almost all individuals past the age of eight years have acquired antibodies to this organism.

Of all the organ systems commonly invaded by bacterial pathogens, those most frequently involved are the upper and lower respiratory tracts, the skin, and the meninges. Bronchiectasis was a complication in 21 per cent of acquired cases.

Tuberculosis occurs infrequently and responds well to therapy in agammaglobulinemia. Gram-negative bacillary and viral infections are also well handled by these patients. Since properdin is important in the defense mechanism against these two broad groups of organisms, properdin levels were measured in some of the children with congenital agammaglobulinemia at Children's Hospital and were found to be normal. Herpes zoster was unusually common in the acquired cases but may have been related to the high incidence of underlying reticulum cell and lymphomatous disease. Second attacks of certain viral infections have been noted, and occasionally a fulminating course resulting in death has been observed with the viruses causing infectious hepatitis and serum hepatitis. The vaccinia virus also may spread rapidly throughout the body resulting in progressive vaccinia, and not even specific hyperimmune gamma globulin was able to prevent death in the reported cases of progressive vaccinia. However, this is not a common complication of vaccination. All 21 children with agammaglobulinemia at Children's Hospital have been vaccinated without serious sequelae.

Among the fungal infections, moniliasis is the most frequent. Since many of these patients receive antibiotic prophylaxis during much of their lifetime, it is not clear whether the moniliasis results from an enhanced susceptibility due to antibody deficiency or is a complication of the deranged balance in their native flora due to the therapy. Another patient with acquired agammaglobulinemia died of disseminated cryptococcosis, but he also had an underlying leukemia, a disease in which a high incidence of fungal disease is recognized.

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* Janeway, C. A., Craig, J., Davidson, M., Downey, W., Gitlin, D., and Sullivan, J. C.: Hypergammaglobulinemia associated with severe recurrent and chronic nonspecific infection, A.M.A. Am. J. Dis. Child. **88**: 388 (Sept.) 1954.

Agammaglobulinemia may stem from, or result in, diverse manifestations of a disordered mesenchymal system. In acquired cases splenomegaly is the most common finding on physical examination, having been noted in over 50 per cent of 42 cases. In several cases it preceded the onset of clinical infection; in others, it followed. Hypersplenism occurred in one-half the cases of splenomegaly. The hypersplenic state is taken in its broadest sense to mean splenomegaly either with neutropenia (and a failure to show a leukocytic response to a pyogenic bacterial infection), hemolytic anemia, or thrombocytopenia, alone or in any combination. Hepatomegaly and generalized lymphadenopathy were present in 25 per cent of the adult cases, always in association with splenomegaly. Thymomas have been noted in 4 cases. When biopsy of the spleen or lymph nodes was performed, the most frequent pathologic diagnosis was idiopathic reticulum cell hyperplasia with depletion of the lymphoid elements. Hyperplasia was often associated with infection but sometimes preceded any known infectious process.

The connective tissue diseases, also representing disorders of the mesenchymal system and perhaps a hypersensitivity phenomenon, occur with unusual frequency in agammaglobulinemia. Rheumatoid arthritis, dermatomyositis, scleroderma, and a generalized vasculitis have been observed. A rheumatoid-like arthritis occurred in one third of the congenital cases at Children's Hospital.

Next to the manifestations of infection, diarrhea was the most common symptom, and next to splenomegaly, steatorrhea was the most common sign in acquired agammaglobulinemia, having occurred in 20 per cent of patients. In some cases it antedated the onset of infections; in others it followed them. In several cases there was a remission after treatment with gamma globulin.

Hypersensitivity in Agammaglobulinemia

There are three types of serum (circulating) antibodies, and at least one cellular antibody type which mediate hypersensitivity reactions. Of the serum antibodies one is the precipitating antibody often associated with the immediate anaphylactic type of reaction. Another is the "blocking" antibody, which combines with its antigen in a nonprecipitating manner and blocks the union of the antigen with the precipitating and, in some cases, skin-sensitizing antibody. The third antibody, reagin, responsible for such atopic allergic manifestations as hay fever, asthma, and urticaria, can be demonstrated by its nonprecipitating, skin-sensitizing property in the classic Prausnitz-Küstner test in which serum injected intradermally into normal skin will cause an immediate flare and wheal after its antigen is also injected into the same site. In contrast to the preceding antibodies which can be transferred passively by means of serum and result in immediate reactions, the cellular antibody type can be transferred only by leukocytes and results in such delayed hypersensitivity reactions as are found in tuberculin and fungal skin tests and in poison ivy dermatitis.

Just as agammaglobulinemic patients seldom exhibit a complete lack of gamma globulin, it is unusual to find a complete lack of hypersensitivity responsiveness to spontaneous or induced stimulation. Serum sickness with precipitins against horse antiserum developed in the serum of a young man with electrophoretic agammaglobulinemia. Positive skin tests against several of the common allergens have occasionally been noted both in the congenital and in the acquired types of agammaglobulinemia. Hay fever, asthma, aspirin hypersensitivity, and penicillin rashes have also been reported. The delayed type of reaction to poison ivy and adhesive tape and to tuberculin, histoplasmin, and streptococcal antigens have been described. Id reactions to monilia infections have been observed in two cases of congenital agammaglobulinemia.

The induction of the delayed type of skin sensitivity has been tried successfully with several antigenic substances both in the congenital and in the acquired types. BCG vaccine induced a positive tuberculin skin test finding in 4 congenital agammaglobulinemic persons, although it failed to do so in 2 others. The production of delayed-type antibodies by 1 of these patients was substantiated by the transfer of his leukocytes to a normal tuberculin-negative recipient with the subsequent conversion of the recipient to a tuberculin-positive state. Conversely, leukocytes from normal donors previously sensitized to tuberculin and streptococcal products induced the delayed type of hypersensitivity in patients with either congenital or acquired agammaglobulinemia. Moreover, the recipient agammaglobulinemic patients were able to sustain this hypersensitivity, as demonstrated by positive skin test findings, for as long as one and a half years, which is far longer than the life of the leukocytes.

Similar successful delayed-type antibody responses to the vesicant, 2, 4-dinitrofluorobenzene and to streptokinase-streptodornase have been produced in congenital agammaglobulinemia. A delayed type of sensitivity was induced by vaccinia virus antigens in congenital agammaglobulinemia.

Organ transplants from normal donors to agammaglobulinemic recipients have demonstrated variable antibody-producing capacities. Skin transplants are sloughed in about two to five weeks by recipients with a normal immunologic response. In a patient with acquired agammaglobulinemia, the skin transplants survived from eleven to sixteen weeks. In 2 congenital agammaglobulinemic patients they survived two years and showed on signs of sloughing at the last report. Since skin transplants are believed to be rejected by delayed-type cellular antibodies, and since such an antibody response can be induced in agammaglobulinemia by other antigens, it is puzzling that the transplants should have survived so long in these 2 patients. It may be that serum antibodies mediate the skin transplantation rejection response.

Lymph node transplants from normal donors to congenital and adult agammaglobulinemic patients did not result in a permanent functional "take." In some cases the nodes responded to antigenic stimuli with low titers of antibody, but these minimal responses vanished within a few months after transplantation.

The Mechanism of Agammaglobulinemia

Agammaglobulinemia results from a decreased synthesis of gamma globulin owing to the absence of plasma cells and perhaps, in some instances, of lymphocytes. Present theories of antibody formation favor at least two, perhaps three or more, cellular stages. In the first stage the antigen is picked up by lymphocytes which then either modify the antigen or prepare a template for antibody formation. The modified antigen or template is passed on, in a manner as yet unknown, to undifferentiated mesenchymal cells, which then differentiate into plasma cells and produce antibodies. The lymphocyte stage is an early one lasting from six to twenty-four hours after antigenic stimulation, and it may be inhibited by x-irradiation and cortisone. The plasma cell stage of antibody formation, beginning from twenty-four to forty-eight hours after antigenic stimulation, is not inhibited by these agents. Other workers have also implicated the eosinophil in an early stage of antibody formation.

The light that the agammaglobulinemic syndromes have shed on hypersensitivity mechanisms is overshadowed by the incompleteness of the antibody deficiency in most of these patients. Many if not all agammaglobulinemic patients are able to produce at least cellular antibodies which mediate the delayed-type hypersensitivity reactions and occasionally the serum (circulating) antibodies as well. Since hypersensitivity reactions may require only minute amounts of antibody, allergic manifestations have been observed even in individuals who have a severe immunologic handicap as judged by their antibody response to bacterial antigens.

Agammaglobulinemia has provided the immunologist and the allergist with an opportunity to glance at some of nature's secrets, but nature has so far allowed us only a worm's eye view.

Facts on Addiction to Barbiturates

Addiction to barbiturates is more damaging to a person than addiction to heroin and other opiates, according to *Patterns of Disease*, a Parke, Davis & Company publication for the medical profession.

The barbiturate addict is more disabled than the opiate addict in terms of thinking, judgment, reaction time, and general intellectual functioning. Moreover, barbiturate withdrawal unless properly managed, may result in death.

How many barbiturates addicts are there in the United States? The number is not known, since these drugs do not come under the control of the Federal Bureau of Narcotics. But the annual consumption of barbiturates in this country is an estimated 300 tons.

And more people die from taking barbiturates, either accidentally or intentionally, than any other poison.

Women Have More Operations Than Men

Women tend to have more operations than men, according to *Patterns of Disease*, a Parke, Davis and Company publication for the medical profession. Some 46 operations per 1,000 women are recorded annually in short term hospitals, exclusive of deliveries. The rate of men's operations is 38 per 1,000. By far the commonest type of operation is the tonsillectomy and/or adenoidectomy, of which 16 for every 1,000 persons were performed in 1957–1958. Next are appendectomies, with 6 operations for every 1,000 persons performed during the same period.

STAFF CONFERENCE

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Conducted by R. H. LYONS, M.D.   JANUARY 15, 1959

Meningitis and Escherichia Coli

Two cases of meningitis are presented to illustrate interesting and current concepts of treatment. The first case highlights the problem of shock and its therapy with steroids and the second focuses attention on Escherichia coli as causing a metastatic meningitis.

Case Histories

CASE 1.—FRED LOBOVSKY, M.D.: This is the second hospital admission of a sixty-three-year-old white widow, a patient of William Schiess, M.D.; her chief complaint was chest and back pain with fever.

Present Illness.—This patient had always been in good health. Two days prior to admission she noted the onset of a febrile illness with chills and headache. On the day before admission she noted generalized weakness and chest and back pain. On the morning of admission she was found by a tenant in a stuporous state and unable to speak. She was referred promptly for hospital admission. There is no clear history of contact with a sick person.

Physical Examination.—Her blood pressure was 80/60, pulse 110, respirations 28 per minute, and temperature 105.4 F. The patient was an obese white female who was morbidly ill, stuporous, and disoriented. Purpuric skin lesions in various stages of development were seen distributed diffusely, including the soles of the feet. The skin was wet and flushed. There were conjunctival petechiae but none on the palate. Her neck was not rigid. The heart was not enlarged; there were distant clear tones but no murmurs, rub, or gallop. The lungs were clear. The remainder of the examination showed essentially negative findings with no abnormal neurologic signs.

Laboratory Data.—On admission the hematocrit was 41, hemoglobin 12.5, white blood count 13,800, with 70 per cent polymorphonuclears and a marked shift to the left with 20 per cent young forms. On the next day the white blood count was 54,000, with 75 per cent polymorphonuclears, including 12 per cent stab forms and 2 per cent metamyelocytes. The urine showed 3 plus albumin, a moderate number of bacteria, a 10 to 20 white blood count, and moderate numbers of coarsely granular casts. A repeat test of the urine a few days later revealed a slight trace of albumin, but otherwise showed negative findings. The initial blood sugar was 115 mg. per cent, and the nonprotein nitrogen was 50 mg. per cent (normal 25 to 35). Later nonprotein nitrogen concentrations fell to normal. An initial spinal fluid showed

3,400 white blood cells with 94 per cent polymorphonuclears and 6 per cent lymphocytes, chlorides were 115 mEq. per L., and protein was 85 mg. per cent (normal 20 to 40 mg. per cent). Throat and spinal fluid smear and cultures showed negative findings. No organisms were seen on a smear of aspirate of petechiae. A culture of the blood revealed Neisseria meningitidis. Chest x-ray films showed normal findings.

Hospital Course.—After the appropriate sputum, blood, and spinal fluid cultures were obtained, the patient was given saline, penicillin, vasopressors, hydrocortisone, and 2.5 Gm. of sulfadiazine by intravenous injection. Subsequently 5 Gm. of sulfisoxazole (Gantrisin) were given daily and aqueous penicillin was continued with 1 million units given by intramuscular injection every two hours. On this regimen her temperature fell to 101 F. within four hours, her blood pressure became normotensive, and by the next hospital morning she was clear mentally. She maintained adequate urinary output. Penicillin was stopped after forty-eight hours. For the next few days she complained of headache, weakness, and nausea with some emesis. On the fifth hospital day she became afebrile and remained so except for occasional elevations to 100 F. By the end of the first week her purpura had disappeared and vasopressors were gradually reduced, then stopped. A tapering off of cortisone was started by the eighth hospital day, and by the fourteenth day it was discontinued successfully. Sulfisoxazole 1 Gm. orally every four hours, omitting the nighttime dose, was discontinued by the sixteenth day. Except for mild peripheral edema and a small pressor slough treated conservatively, the patient's course was one of progressive improvement. She was ambulatory by the thirteenth hospital day and was discharged on the twenty-second day.

Richard Lyons, M.D.: Did you see organisms in the spinal fluid?

Dr. Lobovsky: No organisms were seen.

Dr. Lyons: At the time of admission you recognized that she might have meningitis, but you didn't know exactly the cause, except for the appearance of the petechiae. Even the first spinal fluid examination was not helpful.

Dr. Lobovsky: That is correct. An extensive search for organisms was made on smear of the spinal fluid both by Richard B. Jamieson, M.D., and by Dr. Bunn and no organism could be seen.

Dr. Lyons: What is a pressor slough?

Dr. Lobovsky: Because of her low blood pressure she was given norepinephrine through a catheter in her left leg. Apparently some leaked out of the vein and she developed a bullous lesion which had serum in it. This sloughed.

William Schiess, M.D.: It should be pointed out that the lumbar puncture on this woman was not done until about four hours after treatment was started. This may have influenced the negative findings in the first spinal fluid.

Case 2.—Ronald A. Miller, M.D.: This is the first admission to this hospital of a sixty-eight-year-old white male referred from another hospital with persistent febrile episodes and abnormal cerebrospinal fluid.

Present Illness.—On August 21, the patient was admitted to another hospital with right hemiplegia, aphasia, and incontinence of urine and feces. This had been preceded by four days of right arm weakness and paresthesia of the right arm and leg. The hospital course was characterized by daily fever, spiking to 105 F., rarely below 100 F. He was placed on catheter drainage after the sixth hospital day; this has been continued to the present time. The course included intermittent pyuria with cultures of urine that showed positive findings for E. coli and Aerobacter aerogenes. He was treated with penicillin, chloramphenicol, streptomycin, and sulfisoxazole without any profound effect. He was discharged to a

TABLE I.—CONTENTS OF SPINAL FLUID

Date	Sugar (Mg. Per Cent)	Protein (Mg. Per Cent)	Blood Count		Culture
			White (Cm.)	Red (Cm.)	
Aug. 21	130	19	0	0	Negative
Oct. 24	50	331	30	43	E. coli
Oct. 31	00	604	729	9	. . .
Nov. 5	. . .	560	107	16	E. coli negative
Nov. 11	. . .	610	2	300	E. coli negative
Nov. 17	. . .	404	94	15	. . .
Normal ranges	50 to 80	20 to 40	0 to 5	0	

chronic disease hospital on October 2. His course there continued as before with no clinical improvement and with continued temperature elevation. Because of a proptosis of the eyes a diagnosis of hyperthyroidism was entertained and he was treated with propylthiouracil for a short time. The protein-bound iodine concentration was found to be 5.8 micrograms per ml. (normal), and the drug was stopped. A spinal tap was done on October 24, and he was referred to the neurologic service of this hospital.

Examination.—The patient's blood pressure was 140/60, respirations 24, temperature 103 F., and pulse 110. His general appearance was that of an obese white male who was acutely ill. There were no significant abnormalities in the chest, lungs, abdomen, or extremities. The heart was slightly enlarged. A neurologic examination revealed a bilateral positive Babinski's sign with right-sided flaccid paralysis and left-sided spasticity and without movement.

Laboratory Data (combined hospitals).—The hematocrit was 34 to 36, hemaglobin 10 Gm., white blood count 10,000 to 20,000 cells, with a shift to the left generally observed. The urine showed 2 plus albumin. There were usually innumerable white blood cells on smear. The skull x-ray film findings were normal. An electroencephalogram revealed a mild right frontotemporal trend, and, later, nonfocal signs were also interpreted. These were both taken after the last hospital admission. An angiogram (bilateral) taken on October 30, 1958, revealed an internal carotid artery occlusion at its origin.

For the spinal fluid contents see Table I. All pressures were within normal range, as were chlorides. There was a persistent xanthochromia. There was no evidence to suggest a tumor or abscess.

Hospital Course.—A diagnosis of E. coli meningitis was made and he was started on penicillin, 24 million units daily, chloramphenicol 1 Gm. three times daily, and kanamycin sulfate 1 Gm. twice daily. He continued to have focal leftsided seizures for two weeks. These were finally controlled with Dilantin sodium given by intramuscular injection. There was slow clinical improvement with a fall of temperature to between 101 and 102 F. within five days. The course more recently has been of continued improvement and all antibiotic medications are now being reduced gradually.

KENNETH GOLDEN, M.D.: Of interest, I think, is the fact that twice organisms which were reported as sensitive to streptomycin and moderately sensitive to chloramphenicol were recovered from the patient's urine by disk method. He had been treated liberally with these drugs but had failed to clear his infection completely, and indeed in retrospect it must have spread during treatment with these agents. Apparently during the first hospital stay the infection with fever persisted so long and the pyuria occurred so often that eventually the patient was discharged in the belief that perhaps the fever was on another basis, such as a hypothalamic lesion or, later, hyperthyroidism. At any rate, the same antibiotics have been used for the past three weeks, and he has gotten better because the dosage of each was increased significantly. He continued to have pus in his spinal fluid for twenty days, however.

Dr. Lyons: Does he still have proptosis? Did it develop under medical observation or was it there when he was first seen?

Arthur Dube, M.D.: When this man was admitted to the second hospital he was afebrile and he had definite proptosis, very fine hair, and a pulse rate of 110. The diagnosis of thyrotoxicosis was considered. When we received information about his protein-bound iodine level and when he became febrile, we discontinued that therapy, since the diagnosis no longer seemed tenable. The proptosis, at least from my observation, did not change particularly during the time that he was receiving thiouracil. He continues to have it now and there is no explanation for it.

Dr. Lyons: What were the indications for admission to the neurologic service?

Dr. Dube: He came to us with the history of stroke and intermittent episodes of fever which were thought to be due to the catheter drainage. During our observations he had not only intermittent fever, which was not well correlated with urinary tract findings, but also he had intermittent episodes of mental confusion and disorientation. In my own mind I was not certain that this latter was really on the basis of infection and I re-evaluated him neurologically. This revealed nothing more than hemiplegia. On October 24 he had another lumbar puncture. The protein, which initially had been 19 mg., was now 331 mg. per cent. He also had 30 white blood cells per milliliter. I did not culture the fluid for I was not even considering the possibility of meningitis or brain abscess. I should have.

Dr. Lyons: This is an unusual kind of chronic meningitis occurring in a patient who apparently had some form of cerebrovascular accident and we have more pathologic conditions on this patient than we can certainly explain altogether. Do the x-ray films help us, Dr. Head?

Joseph A. Head, M.D.: I am not sure that the angiograms are going to enlighten us very much concerning the etiology of his infection, but they do show a problem in angiography which is becoming perhaps more readily recognized recently than it has been in the past. We should correct one slight error in the protocol: It is the left artery which has been occluded and not the right.

There is a very marked narrowing of the right carotid artery which is consistent with arteriosclerosis. He has, however, an occlusion of the left carotid in the area of the so-called "carotid siphon" where it comes up around the sella turcica. In this patient the vessel narrows markedly there.

I think that by reason of considerably increased study of the nature of the vessels themselves we have begun to appreciate the fact that not infrequently there are occlusions of these major vascular channels, which perhaps contributes something to our understanding of disease in this group of people.

Dr. Lyons: I would say that the only things in common in these 2 patients are their ages and the fact that each has a form of meningitis. One certainly had the classic meningococci variety, presenting with meningococcemia, while the other had a chronic meningitis with cultural evidence of colon bacillus in the spinal fluid. I have asked Theodore Kelly, M.D., if he would review the basic concepts of shock with meningococcemia and meningitis and the literature concerning colon bacillus meningitis.

Review

Theodore Kelly, M.D.: Concerning the complications of meningococcal meningitis, I would like to speak specifically about the Waterhouse-Friderichsen syndrome, since it is the most devastating complication of meningococcal meningitis. It seems best to define Waterhouse-Friderichsen syndrome as the combination of shock, meningococcemia, and adrenal insufficiency.[1,2] The term adrenal insufficiency is used rather than adrenal hemorrhage because if the original papers of Waterhouse and Friederichsen are consulted, it is evident that fatal shock occurred in a large variety of septicemic conditions and often without associated adrenal hemorrhage. In 1944 Rich,[3] at Hopkins, in studies of a large series of cases, suggested that adrenal cortical damage might be related to the circulatory collapse seen in patients with severe infectious diseases. He demonstrated lipid depletion and a histologic pattern of the gland which he refers to as "tubular degeneration in the adrenal cortex" in these patients. In addition, with similar observations in patients who died from surgical and traumatic shock, he was able to show that these adrenal lesions were not the result of circulatory collapse. Further he noted that massive adrenal hemorrhage with shock occurred more often in children with meningococcal meningitis than in adults. Most adults who died during the course of fulminating meningococcemia with shock failed to show adrenal hemorrhage. He also noted that tubular degeneration of the cortex was present in patients who had severe infections but in whom shock was absent. Kinsman *et al.*[4] autopsied 5 patients who died with Waterhouse-Friderichsen syndrome and in 3 of their patients there was massive adrenal hemorrhage. In the other 2 cases there was a zonal degeneration and conspicuous congestion in the inner aspect of the adrenal cortex but no hemorrhage. He was more impressed by the widespread tissue damage in all parts of the body and believed that if any physiologic disturbance resulted from the adrenal lesions it was only a part of the picture in the resulting catastrophe. Hall and Gold[5] autopsied 14 patients who died during shock from meningococcemia and in only 1 patient was there hemorrhage and necrosis in the adrenal gland. Ebert *et al.*,[6] using large doses of cortisone, were unable to protect dogs against the hypotensive effect of intravenously infected meningococcus toxin, and they believed that shock in this condition, that is meningococcemia, was a result of an increase in blood volume in the peripheral vessels. In 1944, Thorn[7] demonstrated that, just as the insulin requirements are increased in diabetic patients with infections, so also the hormonal replacements needed to be increased in patients with Addison's disease who had infection. I think much confusion will be avoided if the term Waterhouse-Friederichsen syndrome is discarded and is spoken of instead as the concept or the syndrome of bacteremic shock. It might be assumed that ACTH and the adrenal steroids have been investigated thoroughly in the prophylaxis and treatment of peripheral circulatory collapse in meningococcemia and meningitis since shock in this infection implies the existence of adrenal insufficiency or acute adrenal failure, but the documented information is not definitive. From what has been said it seems likely, or at least there is suggestive evidence, that adrenal insufficiency in severe infections is associated with anatomic changes in the adrenal gland and there is some indirect clinical evidence that there are inadequate levels of adrenal hormone in patients with severe infectious disease and that these inadequate levels contribute to the severity of the illness. Although it has been shown that patients who are severely ill may have what is considered to be normal levels of circulating hydrocortisone, it is not known whether or not these normal levels are sufficient under cases of stress, such as these severe infections, nor is it known whether patients who are severely ill with extensive infections will utilize administered hydrocortisone more rapidly or at a slower rate than healthy persons. Not enough anabolic and catabolic studies on adrenal hormones have been done on patients or animals who are severely ill to allow definitive conclusions to be drawn. Melby and Spink[8] have shown that patients may have normal levels or increased concentrations of compound F during severe infections and with or without attending shock. In addition, as far as compound F is concerned they have shown that the adrenal glands of these patients respond to stimulation with exogenous ACTH as rapidly as do the glands of normal controls. Of particular importance is that fact that the plasma half-life of administered hydrocortisone is considerably less in patients who recover from meningococcemia and shock than in those who eventually succumb. Until there is conclusive evidence in the management of bacteremic shock Spink[9] would treat these patients with a pressor substance, antibacterial therapy, and adrenal hormones.

A review of the literature allows only a brief discussion on colon bacillus meningitis. The few isolated case records have been summarized and reviewed in several reports, mainly by Randall,[10] Lepper *et al.*,[11] Keefer and Hewitt,[12] Rammelkamp *et al.*,[13] and others.[14,15] E. coli is present universally in the intestinal trace of man and animals and since it is a predominant organism in the colon it is referred to commonly as the colon bacillus. It is a gram-negative rod, usually motile, nonspore forming, and it is grown readily on ordinary media. The vast majority of cases of coliform or colon bacillus meningitis have been in infants, and the condition accounts for about one-half per cent of all neonatal deaths. The exact portal of entry for this organism is unknown but the umbilical stump, dermal sinuses, and meningoceles have been implicated. In acute cases reported in adults, the enteric organism seems to gain access to the lymphatics and blood streams more readily in instances of abdominal surgery, in perforation of a hollow viscus, in renal disease, particularly the pyelonephritis of diabetics, in the presence of renal calculi, in patients with gastrointestinal carcinoma, and in liver and biliary tract disease. For example, 1 or 2 patients were apparently infected during the course of intrathecal administration of streptomycin in the treatment of tuberculous meningitis.

Older clinicians have suggested that a lumbar puncture during bacteremia may result in or institute meningitis, but there is no proof that this is true. It seems likely that E. coli meningitis is generally a metastatic complication of bacteremia. Until the advent of sulfonamide therapy, the disease was almost uniformly fatal. Despite the use of a wide spectrum of antibiotics, in combination and by various modes of administration, the mortality rate is approximately 80 per cent today. It is interesting to note that French authors have recently been using intrathecal administration of adapted bacteriophage in the treatment of this disease.

In conclusion, E. coli is an uncommon cause of purulent meningitis, particularly in adults. It is a disease whose pathogenesis is extremely obscure, and it is frequently a fatal disease. The optimum therapeutic regimen is as yet unknown.

Discussion

DR. LYONS: Dr. Kelly has raised a perennial point that we argue about every year concerning the role of shock in infection. Is this due to adrenal exhaustion? Is this due to fever? Dr. Bunn, would you comment about the colon bacillus as well?

PAUL BUNN, M.D.: It would be most convenient to have some kind of a test or to be endowed with special clinical acumen which would permit the clinician to know exactly when to administer steroids to patients with bad infections. There just isn't any easy answer to the problem. In this instance, however, I think the administration of cortisone was proper for the very obvious reason that the clinical picture suggested that the patient indeed had adrenal insufficiency, whether or not it was from hemorrhage into the gland or from damage to the gland or from exhaustion because of the continued severe infection. There can be little doubt that its sensible administration will salvage a life on many occasions, such as this. The mortality rates for patients with shock and meningococcemia in the past has been in excess of 50 per cent. With artificial steroid supplementation I think that we probably reduce the mortality appreciably. I might add that one of the best studies of the adrenal gland in patients with meningococcal disease was published by Ferguson and Chapman[16] of our own school following the last epidemic of meningococcal infections in the middle forties in Syracuse.

It is different with other infections, however, where there is no real indication or real incidence of adrenal hemorrhage. As Dr. Kelly has so well emphasized, not all patients with so-called Waterhouse-Friederichsen syndrome have adrenal hemorrhage, but a significant percentage do. Having no test to determine which patient with meningococcal disease will develop adrenal insufficiency, it seems to me that adrenal steroids are indicated for every patient when shock comes about.

A review of information in the published literature about the use of steroids in other kinds of infectious shock is not so revealing and I think it would be silly to argue the pros and the cons. In Syracuse, when the individual is seriously infected, usually with positive blood culture, and when shock is imminent or present, it has been our basic custom in the past two years to administer full substituted doses of hydrocortisone parenterally, in doses of 300 mg. a day. We then attempt to withdraw it as rapidly as the patient's course will permit. Whether or not we have accomplished anything with this treatment remains to be evaluated at a later time. It must be emphasized that we hesitate to use adrenal steroids unless the organism causing the infection is controlled in a major way by some kind of antibacterial drug, alone or in combination. When such control is lacking, we are much more reluctant to administer cortisone.

When the patient was first seen Dr. Schiess asked two pertinent questions: (1) Is there any other infectious agent capable of causing purpuric lesions with meningitis such as ECHO (enteric cytopathogenic human orphan) virus, and (2) was penicillin indicated from the first? ECHO-type virus is indeed capable of producing a serious variety of meningitis and on occasion this is associated with petechiae. But ECHO's do not produce both shock and purpura, which this patient had. It must be an extraordinarily rare event to see anything but a meningococcus do this. On the other hand, the clinical combination of shock, purpura, and meningitis happens frequently in meningococcal disease.

Dr. Schiess was most wise during the first few hours of this patient's disease, at a time when he did not know exactly that meningococcus was the cause, to take the precaution of giving her adequate amounts of penicillin. This agent is adequate treatment for such other causes of meningitis as the pneumococcus. When the diagnosis was secured, the penicillin was stopped and sulfonamide was continued. I would like also to emphasize that even in the presence of meningococcal disease with bacteremia and purpura, this patient had no stiff neck. This probably was the result of shock and her neck muscles would not become rigid even though the central nervous system was involved.

DR. LYONS: As a clinician I always think of meningitis as being associated with a stiff neck, but I would say that almost 50 per cent of the patients that I have had the opportunity of seeing, mostly because their conditions were quite complicated, did not have stiff necks. They were too sick to have stiff necks.

DR. BUNN: Attention to the epidemiology of the meningeal infection in this woman, who was previously very healthy and had led an exemplary life, might be worth while. Later on a culture of her nose and throat to rule out the presence of a meningococcal carrier state would be advised. Of incidental interest is that there were three other cases of meningococcal meningitis in the local hospital from which this woman came, and at the same time.

I have very little to add to what Dr. Kelly said about E. coli meningitis. One speculation deserves comment: Perhaps a patient who has had recent brain damage and is susceptible to an infection in that damaged area will have the type of infecting organism that is altered by prior antibiotic treatment. I am not certain that this individual had antibiotic agents throughout his other hospital experiences, but he did have a number of drugs in the week prior to his admission to Memorial Hospital. Although he was eligible to get meningitis, perhaps the antibiotic agents played some role in what organism eventually caused his infection. Obviously, as Dr. Kelly pointed out, E. coli are common parasites in our body economy and only once in awhile do they become pathogenic and cause serious disease. This patient was an exception, unfortunately.

I would disagree with Dr. Kelly on one minor point. Actually, we have reasonably good chemotherapeutic programs, although I must agree they are not well published. No one collects a large enough series of E. coli meningitis to describe a precise therapeutic regimen. The organism, however, although resistant in major part to streptomycin and penicillin, does respond to a great number of the newer antibacterial agents including kanamycin sulfate. It is interesting that this patient had received kanamycin sulfate but it failed to prevent central nervous system infection, presumably because the dose he was getting for the treatment of his urinary tract infection was too small. As it turned out in the laboratory, the E. coli organism causing his disease was exquisitely susceptible to kanamycin sulfate, and this drug, in proper dosage, apparently helped control his infection. This merely brings out the distribution problems with this drug. As is true with most other drugs, there is a real blood-brain barrier to the transport of kanamycin sulfate to the central nervous system. Any disk method of measuring organism sensitivity to a drug cannot be interpreted literally in the case of meningitis; dosage must be increased to get adequate concentrations in the central nervous system. When this was appreciated in this patient, better control of the central nervous system infection was evident. Early doses of drugs probably kept the infection in the meninges from becoming fulminant, and they may, indeed, have made an acute infection chronic, but cure could never have been achieved without the large doses which were finally given.

Dr. Lyons: Would you care to comment, Dr. Bunn, about the possible role of lumbar puncture in the presence of colon bacillus bacteremia as a cause?

Dr. Bunn: I think Dr. Kelly manipulated that possibility very well. I suppose the fear first arose concerning tuberculous meningitis, but I really have no comment to add. I presume it could happen but probably doesn't.

Dr. Lyons: Do you think it is an old wives' tale or is it real?

Dr. Bunn: If it should ever happen, it would be a freak. Thus it is an old wives' tale.

Dr. Lyons: Can we kill off the meningococcal carrier state with this massive treatment?

Dr. Bunn: I wish that were possible. It's certainly possible to get rid of an immediate carrier state which will persist for many weeks after an acute infection, but I know of no real long-term study that has determined that freedom from carrying meningococcus is a permanent affair months after the drug is stopped. The carrier state is a very confused topic of conversation. If after several months the patient was found to harbor meningococci in her upper respiratory tree, I would be inclined to consider the need for permanent prophylaxis with the use of a sulfonamide.

Dr. Grossman: Several years ago I believe Dr. Bunn mentioned that meningococcal and pneumococcal meningitis could be treated with penicillin alone if large enough doses were given, such as about 12 million units daily. Do you still feel this is adequate therapy, especially in the presence of shock?

DR. BUNN: I think so. However, it is a commonly accepted procedure to treat this disease with a sulfonamide; with it the mortality rates have been improved tremendously. It is a very cheap treatment and the incidence of drug toxicity is low. The number of cases that have been treated with penicillin alone are still very small because the older method has proved so effective. I am sure that penicillin and sulfonamide are both first-rate drugs in the event of meningococcal infections, but the latter is simpler and there is no real need to do away with what is an accepted and good therapeutic program. For a number of reasons we treated some 5 cases of meningococcal infections solely with penicillin. They have all done well. But it is difficult to administer 10 to 12 million units of penicillin every day by some parenteral route; comparatively, oral sulfonamide is so simple.

DR. LYONS: Dr. Lloyd, would you care to comment on the role of the adrenals in this kind of infection?

CHARLES W. LLOYD, M.D.: Each year I think we actually know less about this because of a multiplicity of factors. In the situation in which the adrenal is destroyed by apoplexy, a decreased secretion rate is the primary factor. The difficulty in proving which patient had this and which one did not, of course, can be done only at autopsy. Dr. Kelly reviewed beautifully, I think, the current status. However, a few unpublished facts might be worth mentioning. In many of these situations there is probably a functional relative adrenal insufficiency, despite relatively good circulating levels of hormone. The gland is doing a good job or at least it would be an adequate job under less stressful conditions, but the hormone is not doing what it should do. Now maybe this is simply because the tissue demand is astronomic. I am sure this is partially true. There are experimental data which demonstrate that the requirement for the material can be altered tremendously by the situation. For example, in the classic experiments of Dwight Engel in which he pancreatectomized rats, when ACTH was given their diabetes got worse. When he gave them a stressing material such as formalin, actually the glycosuria got better. They were firing off great quantities of ACTH and their own adrenals were working, but for some reason the hormone was going somewhere else than to the place it should and it made the diabetes worse. In a situation such as we have with this patient it may very well be that the hormone is not getting to the place it belongs in the right way even though the patient probably has an adequate circulating level. There are many data which suggest that we are not measuring the effective hormone when we measure the free plasma 17-hydroxycorticoids, that actually what we should be doing is to measure some other form. I think the evidence is probably pretty strong that the hormone that we administer to these patients is not in the form that does the job. It has to go through some process in the body before it becomes effective. The data with the corticosteroids are not very plentiful but there are good data for estrogens. For example, estrogen has to be combined with protein before it becomes active. It is possible that infected patients may not be handling the material in a way that makes it effective.

We are not going to help Dr. Bunn in deciding which patients to treat with cortisone and which ones not to, but it might be that if we could get information on which ones have high and which ones have low levels it would help us to understand the process.

DR. LYONS: This fall, more than at any other time on the Medical Service, we have had a series of patients who have been difficult to wean from pressor substances. I don't quite know why. Perhaps we are giving more pressor material than we have ever given before; perhaps we are upsetting a whole series of vascular readjustment reflexes by the use of Levophed or Aramine bitartrate, in the sense that they produce a peripheral vasoconstriction which might lead in turn to a central response against peripheral vasoconstriction by vasodilation. Then when the peripheral action of the drug on the arterioles is stopped, the vasodilation effect is present and the blood pressure drops rather suddenly. In 2 patients, for example, we attempted to block this pressor effect by the use of atropine and in both instances the patients seemed to be weaned off the drug more readily than they were before. I think one has to be a little careful about accepting the hypothesis but it seemed to be a working philosophy that was of some help. Obviously there are good animal data that will support this hypothesis that as you elevate the blood pressure by peripheral means you also produce a vasodilation response centrally which can be blocked in a number of ways, most importantly in the animal by cutting the vagus. In the human being this did work with atropine.

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Short Hospital Stays for Mothers Contribute to Breast-Feeding Decline

A key factor in the continuing decline of the number of new mothers that breast feed their infants is the short time available after birth in the relative peace and calm of the hospital. So states Dr. H. F. Meyer. He notes that most American mothers and infants are now discharged from the hospital in five days or less.

While breast-feeding is advocated by doctors for both nutritional and psychologic reasons, bottle-feeding is now the rule for 79 per cent of all newborn children in the northeastern states.—*Nutrition Foundation*

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Efficacy and Pharmacology of Anorexigenic Agents

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THE judicious use of certain sympathomimetic amines may be helpful as an adjunct in a therapeutic program of weight reduction. In the past several years certain fundamental contributions by neurophysiologists and pharmacologists have established the framework for the understanding of the neural mechanisms involved in food intake regulation. With this framework the use of sympathomimetic amines as anorexiants has progressed from empiric prescription to a rational therapeutic program based on the probable mechanisms of action of these agents.

In the light of past contributions this review analyzes: (1) currently held theories of food intake regulation, with particular reference to the regulatory mechanisms of the central nervous system; (2) the mechanism of action of anorexigenic agents with reference to food intake regulation; (3) the structure-activity relationships of the sympathomimetic amines, and (4) the efficacy of the available preparations, with a criticism of the published material on this subject included.

Central Nervous System Regulation of Food Intake

The neural regulation of hunger, appetite, and satiety is intimately concerned with brain stem, hypothalamus, and cortex organization. In recent reviews Brobeck[1,2] has emphasized the importance of the basic reflex patterns involving the integrated motor activity of the trigeminal, facial, glossopharyngeal, vagal, and hypoglossal nerves as well as the sensory components of these and other nerves. The early experiments of Miller and Sherrington[3] and Bazett and Penfield[4] showed that simple feeding responses are possible after the removal of much of the mesencephalon and the more rostral portions of the brain. The results of these experiments suggested that a certain degree of satiety can occur even at the reflex level.

The function of the hypothalamus is assumed to be a quantitative one, possibly adjusting energy intake to energy expenditure. The work of Hetherington and Ranson[5] first proved that striking obesity follows bilateral injury to the ventromedial nuclei, which lie in the walls of the third ventricle. Anand and Brobeck[6] extended those experimental data which showed a general basic pattern of hypothalamic control and regulation of homeostatic mechanisms. Employing rats and cats these investigators demonstrated that discrete bilateral lesions of the ventromedial nuclei, placed with the Horsley-Clarke stereotaxic instrument, induce an increase in food intake, or hyperphagia, leading to obesity. However, if the bilateral lesions are confined to the extreme lateral part of the lateral hypothalamus, a complete cessation of eating results. From their observations it appeared to these authors that the more medial hypothalamic structures, where lesions cause hyperphagia, exert their influence on food intake through a "feeding center" by means of inhibitory fibers running laterally into that center. This concept is in accord with their observation that the degree of hyperphagia and the rapidity with which obesity develops depend on the size of the lesions in the more medial region, that is, on the number of inhibitory fibers damaged.

The hypothalamus seems to have the function of facilitating activity in other parts of the nervous system. Magoun[7, 8] has shown that the hypothalamus is the rostral part of a neural complex known as the bulbar facilitatory mechanism. Stimulation of this mechanism tends to enhance the effects obtained by simultaneous stimulation of other parts of the nervous system. In the hypothalamus the facilitatory mechanism described by Magoun lies in the lateral regions occupied by the feeding center, which may belong to the facilitatory mechanism. Strominger and Brobeck[9] have concluded that the neural basis of feeding is a pattern of reflexes initiated by stimuli reaching the central nervous system from the sense organs of vision, olfaction, hearing, or touch. The centers of the lateral hypothalamus may be regarded as facilitatory mechanisms acting on these feeding reflexes. In the absence of the medially located neurons, exemplified by hypothalamic and aurothioglucose obesity, the reflexes continue in a facilitated state for a longer period of time than they should, and overeating naturally results from the failure of inhibition.

Various theories have been set forth regarding the factors which activate feeding reflexes. In general, it may be stated that deficits of the body's stores of calorically significant nutrients activate feeding reflexes, which are facilitated by areas in the lateral hypothalamus and inhibited by the ventromedial hypothalamus. The amino acid concentration, the amount of depot fat, and the levels of blood glucose have been suggested as playing central roles in the governing of long- and short-term control of food intake, but to date none of these factors has been firmly established to the exclusion of other multiple factors.[10]

Mechanism of Action of Anorexigenic Agents

Since the chance discovery in the late 1930's of the anorectic properties of amphetamines during the use of these compounds in the treatment of narcolepsy and other conditions, the mechanism of action of these agents has remained controversial.[11–13] Harris and his coworkers[14] summarized the possible mechanisms of such drugs in facilitating the loss of weight as follows: (1) They increase the expenditure of energy by (*a*) increasing the basal metabolism, as does dinitrophenol, or (*b*) increasing muscular activity by causing restlessness; (2) they tend to induce negative water balance by (*a*) promoting diuresis or (*b*) reducing the intake of water; (3) they cause incomplete digestion or absorption of food by (*a*) decreasing motility or (*b*) decreasing secretion; and (4) they reduce the ingestion of food by (*a*) decreasing the tone and motility of the empty or fasting stomach or (*b*) decreasing the desire or appetite for food.

A series of well-designed experiments by these authors[14] demonstrated the probable central locus of action of the amphetamines, showing that the major effect of the drug in the facilitation of weight loss is its appetite-suppressant property. Their experiments demonstrated that the weight loss ascribed to amphetamine therapy is due to diminished food intake. While placebo capsules had no effect on the average rate of weight loss, the amphetamines definitely decreased the intake of food and increased the rate of weight loss in human beings. Extending their work to dogs the same authors demonstrated that the anorectic effect of amphetamine is not interfered with following denervation of the stomach and the upper part of the small intestine. This observation suggested that the peripheral gastrointestinal sensory aspects of hunger (hunger pains or contractions) are relatively unimportant in the control of dietary intake. Soon after these experiments, Sangster, Grossman, and Ivy[15] confirmed the findings by demonstrating that small doses of dextro-amphetamine produce anorexia without affecting gastric contractions. In animals with vagotomized pouches of the entire stomach d-amphetamine produced no effect on the gastric contractions, but characteristic depression of food intake was observed. This information, coupled with the fact that amphetamine failed to produce anorexia in a small number of patients with prefrontal lobotomies, led Harris *et al.*[14] to believe the locus of action of these agents to be in the central nervous system.

Following the previous demonstration of a satiety center (ventromedial nuclei) and a feeding center (lateral nuclei) in the hypothalamus, Anand and Dua[16] showed that direct stimulation of the satiety center results in diminished food intake while direct stimulation of the feeding center results in hyperphagia. Recently Brobeck and coworkers[17] reported increased electrical activity in the medial portion of the hypothalamus but not in adjacent regions following the parenteral administration of amphetamine derivatives in anesthetized cats. These authors speculated that amphetamine excites the medial portion of the hypothalamus, which contains the inhibitory part of the feeding center.

The assumption that the amphetamines act by stimulating the ventromedial nuclei, thus inhibiting food intake, appears to be at variance with the findings in the work of Marrazzi and Hart,[18] who have shown that the amphetamines and agents of similar structure inhibit synaptic transmission in the midbrain. In their early experiments Marrazzi and Hart used autonomic ganglia as their test system. Each ganglion contains only one group of synapses, and the incoming and outgoing nerve fibers are easily accessible to stimulating and recording electrodes. The ganglion is cut from a nerve but is still attached to its blood supply via the ganglion branch from the abdominal aorta. The fibers in this ganglion are stimulated by a mild electric shock from the stimulating electrode. Those fibers that run uninterrupted through the ganglion conduct the resulting impulse to the recording electrodes at a somewhat faster rate. Through the fibers that synapse at the ganglion the impulse is relayed at a slower rate and may be modified by drugs introduced into the ganglion. Similar experiments were later performed on the intact brains of experimental animals. The stimulating electrode excited a point in one hemisphere of the brain, the stimulus then being transmitted through nerve fibers to the complementary point in the other hemisphere. Again, modification at the synapse may be produced by the injection of drugs. With systems such as the foregoing it was demonstrated that epinephrine and a number of chemical relatives including amphetamine inhibit the transmission of impulses across the synapse while acetylcholine increases trans-synaptic transmission.

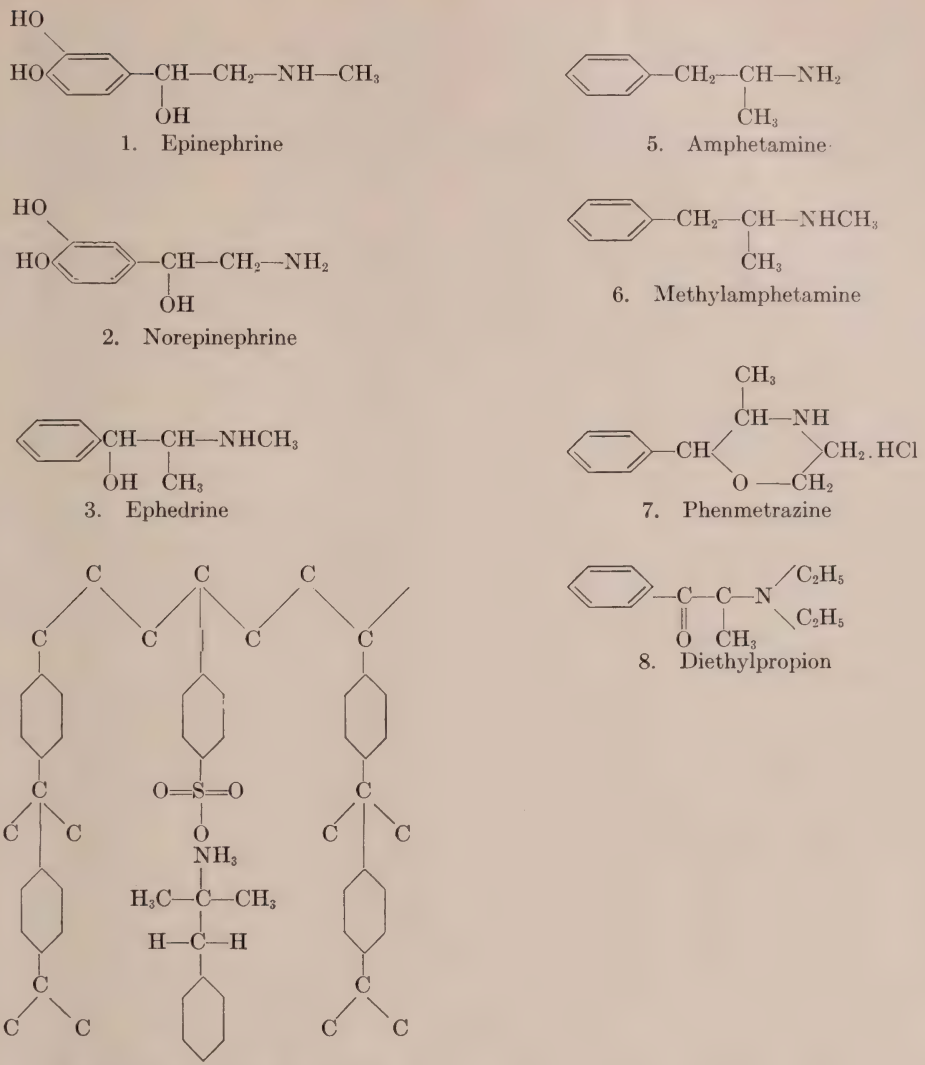
More recent evidence presented by Stowe and Miller[19] and Tepperman[20] suggests the probable locus of action of the amphetamines to be at the lateral nuclei, or feeding center. Following the induction of hypothalamic hyperphagia in rats by destroying the ventromedial nuclei, Stowe and Miller demonstrated anorexia after the oral or subcutaneous administration of amphetamine. Thus, amphetamine produces an anorectic effect in the absence of the satiety center, implying a suppressant effect of the agent on the feeding center. Tepperman showed that aurothioglucose obese mice who have destruction of their ventromedial nuclei become anorectic after the administration of d-amphetamine.

Structure-Activity Relationships

Recent knowledge on the structure-activity relationships of anorectic agents is discussed in detail by Alles[21] and Goodman and Gilman.[22] In 1910 Barger and Dale[23] published an account of an impressive study of the relationship between the chemical structure and the physiologic action of sympathomimetic amines. They established that the production of an action that simulates stimulation of the peripheral nervous system is not peculiar to epinephrine but is possessed by a large series of amines, most notably by some of the simple derivatives of phenylethylamine. The results in these investigations, however, apply only to the actions of the peripheral nervous system, and this review, in view of the fact that the probable locus of action of anorexigenic agents is in the central nervous system, is concerned primarily with the central actions of these agents.

Laboratory measurements of the central nervous system activity of these agents have involved quantitative studies of the motor activities of mice and rats, the effects of these agents on respiration, and their efficacy as antidotes in narcosis from chloral or from the barbiturates.[21,24] Clinical studies by Williams *et al.*[25] provide some insight into the relationship of structure to anorectic activity, but few other studies which correlate structure-activity relationships to anorectic potency are available. Presenting selected general features of structure-activity relationships will serve to introduce the drugs which are stated to be appetite depressants. These specified relationships of structure to activity are admittedly generalizations. When substitutions are made in an effort to alter functional activity, much depends on the other substituents in the compound to be tested.

Almost all of the appetite depressants are sympathomimetic drugs which are either isomers, congeners, or relatives of the best-studied of the anorexiants, amphetamine. Figure 1 presents formulas of this and other anorexigenic agents. If one starts with the "parent" compound, the unsubstituted phenylethylamine, a correlation of substituents added to the phenyl ring and ethylamine moiety may be examined. Phenylethylamine in comparison with amphetamine was studied by Alles.[21] The former compound has an evanescent pressor effect, produces transient increased central nervous system activity, and is destroyed rapidly by amine oxidase. Substitution on the phenyl ring generally reduces central nervous system activity, increases sympathomimetic potency, and decreases the duration of the action of the compound. The substitution of hydroxyl groups in the aromatic nucleus, particularly in the meta and para positions, markedly enhances sympathomimetic activity, for example, as occurs with epinephrine and norepinephrine. Maximal sympathomimetic potency is obtained when two carbons are interposed between the benzene ring and the amine group. The addition of a hydroxyl group on the beta carbon generally results in increased cardiac activity, increased hyperglycemia, and diminished central activity. For example, the addition of a beta-hydroxyl group to amphetamine to form phenylpropanolamine results in diminished central nervous system activity by the latter compound. A comparison of the structures of ephedrine and methylamphetamine reveals that the addition of a beta-hydroxyl substituent on the former drug results in increased pressor and decreased central nervous system activity.



1. Epinephrine

2. Norepinephrine

3. Ephedrine

4. 2-Phenyl-tert-butylamine resinate

5. Amphetamine

6. Methylamphetamine

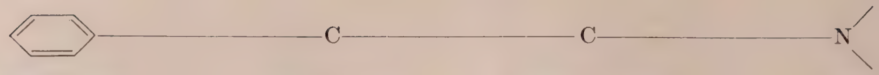
7. Phenmetrazine

8. Diethylpropion

FIG. 1. Chemical formulas of anorexigenic agents. Formulas 4 through 8 represent agents in current use.

Alpha-carbon substitution generally results in decreased pressor and increased central nervous system activity. Amphetamine, methylamphetamine, phenmetrazine, and diethylpropion all contain an alpha-methyl substituent. In addition to the functional changes which have been mentioned, the addition of an alpha-methyl group strengthens the carbon-to-nitrogen bond, thereby increasing the resistance to amine-oxidase activity.

These compounds, then, have a mild but long-lasting pressor effect and prolonged (four to six hours) central nervous system stimulatory activity. The effects of amino group substitution are variable, depending on the other substituents in the molecule and, more important, depending on the effect of the size and the number of alkyl groups on the nitrogen. N-methylation causes the inhibitory and glycogenolytic properties of the compound to be increased in addition to increasing central nervous system stimulation. An increase in the size of the alkyl chain results in decreased adrenergic excitatory effects and increased vasodilator,



AROMATIC RING	BETA CARBON	ALPHA CARBON	AMINE
Phenyl substitution (varies according to number and position of substitution):	Beta-carbon substitution (addition of beta-hydroxyl group):	Alpha-carbon substitution (addition of alpha-methyl group):	Amine group substitution ((*a*) N-methylation and (*b*) increase in length of alkyl substitution):
1. Reduces central nervous system activity. 2. Increases sympathetic potency. 3. Decreases duration of action.	1. Increases cardiac activity. 2. Increases hyperglycemia. 3. Decreases central nervous system activity.	1. Decreases pressor activity. 2. Increases central nervous system activity. 3. Increases resistance to amine oxidase activity.	1(*a*). Increases inhibitory and glycogenolytic action. 2(*a*). Increases central nervous system activity. 1(*b*). Increases vasodilator, bronchodilator, and cardiac effect. 2(*b*) Increases central nervous system activity.

FIG. 2. General summary of the structure-activity relationships of sympathomimetic amines.

bronchodilator, cardiac, and central excitatory effects. Such substitutions occur in the compounds, phenmetrazine and diethylpropion. Among the alpha-substituted compounds, the pressor potency of dextro forms (d-amphetamine and d-methamphetamine) in man is somewhat greater than the levo forms. Central nervous system excitatory actions are complex, the dextro forms of aromatic compounds generally, but not invariably, being more potent. Levo forms tend to have longer durations of action. Levo forms resulting from beta-methyl or beta-hydroxyl substitution are more effective pressor agents. A general summary of these structure-activity relationships is given in Figure 2.

The precise mechanism of action of the anorexigenic and the central nervous system stimulating effects of sympathomimetic agents is unknown. Although these compounds may interfere with trans-synaptic transmission or affect the reticular activating system, it has been suggested that the action of psychotropic agents is involved intimately with the structure of neuronal membranes and the relationship of the membranes to the physical properties of molecules to which they are exposed.[26] At present there are insufficient data to support the concept that central nervous system stimulation and anorexigenic potency can be divorced without altering the appetite-suppressant qualities of the drug. With few exceptions, the more potent a phenylethylamine derivative is with regard to central nervous system stimulating properties, the greater is its anorexigenic effect.

There is no correlation between the peripheral or central activities of amphetamine and its congeners and the monoamine oxidase system.[21] Biel and his coworkers,[27] describing the structure and activity relationships of monoamine oxidase inhibitors, suggested that the replacement of an amino group by a hydrazine moiety yields central nervous system stimulants with a dual action: (1) direct amphetamine-like central nervous system stimulation and (2) monoamine oxidase inhibition, which prevents metabolic destruction of endogenous central excitatory amines.

Anorexigenic Agents in Current Use

It must be appreciated that a precise analysis of the efficacy of anorexigenic agents in man is difficult. Variation in dose, central nervous system response, age, sex, physiopathologic states, neurotic overlay, and other factors from group to group defy stringent analysis. The exact anorectic effect may remain occult when one compares patients on restricted with those on unrestricted diets. Also, depending on the investigator, the sample of population employed differs, for example, the use of private practice or clinic patients. In addition, variable methods in the collection of data and haphazard patient follow-ups becloud the picture. Despite these difficulties, certain information has been gleaned from the existing literature which provides a basis for the use of these compounds.

AMPHETAMINES.—Amphetamine agents include d-amphetamine, racemic amphetamine, and methylamphetamine. The amphetamines continue to be the standard by which other anorexigenic agents are measured. The specific antiappetite effect of these compounds has been mentioned in the section dealing with their mechanism of action. A second factor contributing to the anorexigenic efficacy of these agents is central nervous system stimulation. Although the central nervous system stimulatory effects of the amphetamines afford certain undesirable side-effects, to be discussed, some investigators feel that this action effects a reduction of physical lethargy and alleviates the depression which often accompanies dieting, thus affording greater ease in adhering to strict low-calorie diets.

In addition to the animal experiments already mentioned, abundant clinical data have verified the anorexigenic effects of the amphetamines on human beings.[25,28–39] Adlersberg and Mayer[39] demonstrated the efficacy of these agents as adjuncts in a specific weight-reducing program. However, they state that optimal results were obtained during the first two months of therapy, after which time the rate of weight loss declined significantly. Tolerance to the amphetamines with respect to reduction in appetite may develop in some patients even after a few weeks of administration.[25] If the drug is discontinued for a short while, its antiappetite effect returns on readministration.

The comparative merits of the various amphetamines are difficult to appraise. From perusal of published reports,[28] it appears that d-amphetamine has achieved greater clinical acceptance than the racemic compound or methylamphetamine. In an effort to prevent or diminish tolerance some investigators prefer to rotate these compounds during prolonged treatment.

As sympathomimetic agents the amphetamines act at postganglionic adrenergic neuroeffector sites and produce increased sympathetic tone. The peripheral effects of these agents are relatively mild, being approximately a one-hundredth that of epinephrine. The over-all effect of these drugs is to produce mild vasoconstriction, a slight increase in heart rate, bronchiolar relaxation, and slight smooth muscle relaxation in the gastrointestinal, biliary, and urinary tracts. Of greater significance are the pronounced central nervous system effects produced by these drugs. Increased auditory and visual acuity, wakefulness, alertness, and attentiveness have been noted. Pharmacologically these drugs are considered analeptic agents. In addition to their effects on the central and autonomic nervous systems, these drugs have a direct effect on skeletal muscle. It has been demonstrated that in frogs painted with 1 per cent amphetamine there is an increase in the tone and contractility of the gastrocnemius muscles with a greater degree of relaxation between contractions. The drugs also slow the onset of the type of fatigue which yields characteristic curves. These agents have little or no effect on the hemogram, blood sugar, or urine. The basal metabolic rate is minimally affected, rarely deviating more than plus 10 per cent.

Although there is a relative lack of toxicity resulting from recommended doses, central nervous system stimulation commonly is present. General irritability, increased nervous tension, palpitations, headaches, insomnia, and constipation may necessitate a reduction in dosage. Dry mouth and halitosis may occur. Large doses may produce marked restlessness, pupillary dilatation, an increased pulse rate, increased blood pressure, nausea, and shallow breathing. Doses in the toxic range reportedly produce confusion, delirium, anxiety, and hallucinations in addition to headache, arrhythmias, and angina. If recommended doses are adhered to, there usually is no contraindication to the use of amphetamines in mild to moderately hypertensive patients. In long-term studies of obese hypertensive patients in whom these drugs have been used, a number of investigators have noted either a fall in blood pressure or no effect on the pressure during weight reduction. Habituation to amphetamines has been reported, but there are few documented reports of actual addiction to the drugs. Frank psychotic episodes have ensued in previously unstable individuals following the use of excessive doses of methylamphetamine, according to Japanese observers.[28] In this country Heath noted similar findings in students with underlying schizoid traits who ingested excessive doses of d-amphetamine.[40]

In general, it is best to start with the smallest dose of amphetamine which will produce an anorectic effect, spacing the doses throughout the day. For example, 2.5 mg. of d-amphetamine thirty to forty-five minutes before meals will produce moderate anorexia in many individuals. As tolerance is acquired the dose may be raised to 5 mg. three times daily. If tolerance again develops, another amphetamine or one of the recently introduced agents, discussed subsequently, may be employed. The original drug may be reintroduced at a later date since the tolerance is not long lasting. If the patient complains of insomnia, the evening dose may be combined with a barbiturate or an agent with lesser central nervous system stimulation may be employed. In general, a lesser degree of control is afforded by timed, disintegrating capsules. Absorption is necessarily erratic, depending on the state of the gastrointestinal tract, the type of food ingested, and so on.

Levo-Amphetamine Alginate.—As mentioned previously, the presence of an asymmetric carbon atom in beta phenylisopropylamine allows for the existence of three forms of beta phenylisopropylamine, namely dextro, levo, and dextrolevo. Amphetamine refers to the racemic compound. The dextrorotatory form is almost twice as potent as the other forms in stimulating the central nervous system. Levo-amphetamine alginate, however, has been stated to be an effective nonstimulating agent. Current pharmacologic evidence in essence coincides with the view that this drug does not stimulate the central nervous system; however, the potency of its anorexigenic effect remains to be evaluated. When tested by Williams *et al.*[25] l-amphetamine proved to be much less effective than d-amphetamine, although central nervous system side-effects were insignificant. In a comparison study evaluating Catron and other psychochemicals, Pomeranze[41] estimated the appetite-suppressant qualities of both d-amphetamine (at 5 mg. daily) and l-amphetamine (at 10 mg. daily) to be approximately equivalent, as were the sympathomimetic effects of the two agents. With respect to mood elevation and increased activity, l-amphetamine was found to be about half as active as the dextro compound. It should be noted that no numeric details of these experiments were offered. The material contained in the reports and exhibits of Gadek and his coworkers[42] is insufficient to support the contention that l-amphetamine alginate has potent appetite-depressant properties. These reports include the results of studies on monkeys, dogs, and rats. No information regarding the number of animals employed, food intake, or the duration of the experiments was noted in the experiments on monkeys. From the presentation it appears that the duration of the experiments was twenty-four hours, an inadequate period for the evaluation of anorexia. Experiments on dogs were conducted over a three-day period at dose levels of 5 mg. per Kg. in a comparison study with d-amphetamine and phenylpropanolamine. Although it is stated that l-amphetamine alginate clearly demonstrated its superiority, no data are given.

In a study of 80 patients treated with a "properly maintained diet" plus l-amphetamine[42] the average weight loss was found to be 2 pounds per week. The duration of the therapy ranged from one to thirty-eight weeks, but no mention is made of the number of patients in each time interval. Twenty-five per cent of these patients had a weight loss of between 0.1 and 1 pound per week, with no further breakdown given. No controls were used in this experiment, but in the conclusion of the report it is stated that preliminary double-blind studies indicate the new agent to be very efficacious.

Although l-amphetamine alginate may prove to be an effective, nonstimulating anorexiant, further animal and clinical evaluation is needed to confirm its efficacy.

PHENYLPROPANOLAMINE.—Phenylpropanolamine is a sympathomimetic amine structurally similar to amphetamine with the addition of a beta-hydroxyl group, which theoretically should diminish central nervous system stimulation. For some time this compound has been considered an effective reducing agent, its acceptance being reflected in a statement about its anorexigenic properties in *New and Nonofficial Drugs.* A recent double-blind study comparing d-amphetamine and phenylpropanolamine demonstrated the lack of significant anorexigenic properties of phenylpropanolamine.[43]

Until further studies with phenylpropanolamine are reported, no definite statement can be made regarding the anorectic potency of this compound.

PHENMETRAZINE.—Phenmetrazine, an oxazine derivative with sympathomimetic properties, was introduced clinically in Germany in 1954.[44] Clinical studies both in this country[45–53] and abroad[54] have confirmed its anorexigenic potency. Published reports indicate that it compares favorably in this respect with d-amphetamine.[45,53] As with d-amphetamine, nervousness, insomnia, euphoria, irritability, and dryness of the mouth may occur on phenmetrazine therapy. Dosages of from 75 to 100 mg. daily result in a tendency to increased central nervous system stimulation.[47] Several reports in the British literature[55, 56] have emphasized the euphoria, insomnia, and nervousness associated with the drug. When phenmetrazine was employed in doses of 25 to 50 mg. on 10 normal volunteers, anorexia, relative insomnia, perspiration, and restlessness were noted.[56]

Further clinical trials on a long-term basis would be desirable for complete evaluation of this agent. At the present time this agent appears to be effective enough to be employed in a rotating schedule with d-amphetamine, as mentioned previously.

DIETHYLPROPION.—Published reports regarding diethylpropion, a recently introduced agent, are essentially limited to the published presentations of the Michigan Academy of General Practice Symposium, Detroit, March, 1959. Structurally this compound is a close relative of phenmetrazine. Limited animal studies by Brunchow[57] and Martin[58] suggest an anorexigenic effect of this agent, but two-month studies on animals do not offer sufficiently detailed information for adequate evaluation of such a drug.

Clinical evaluation of diethylpropion by Spielman[59] involved a group of 70 unselected patients on a low-calorie diet. The age range of thirteen to sixty-four years was noted, but no specific breakdown into age groups was given, a factor of some importance since the aged are notoriously more difficult to reduce. The duration of therapy was stated to be from three to forty weeks. Thirty patients remained on therapy for from eight to forty weeks, but no mention is made as to when or why the remaining 40 patients discontinued therapy. Although approximately 88 per cent of the patients were stated to have had a satisfactory response to therapy, no breakdown was offered as to the duration of therapy in each case.

Side-effects were stated to be minimal, consisting essentially of headache, thirst, and wakefulness, with no notation on the relationship of the duration of therapy and the occurrence of side-effects.

A three-month clinical study by Huels[60] from Germany involved the study of 10 patients on a suggested 1,000-calorie diet and 25 mg. of diethylpropion three times daily.

These patients had a mean weight loss of approximately 2.1 pounds per month, with about half of these patients losing considerably less than 2 pounds per month.

Clinical evaluation of this agent under properly controlled conditions is required before its anorexigenic potency is established.

2-PHENYL-TERT-BUTYLAMINE RESINATE.—2-phenyl-tert-butylamine is a structurally symmetric amine exhibiting some of the pharmacologic properties of the sympathomimetic agents yet differing somewhat from other appetite depressants. Laboratory data suggest that the active drug may be released at a fairly predictable rate, achieving an effective pharmacologic level in about an hour and lasting for from eight to nine hours.

The published reports by Freed and Hays[61] and Cass[62] suggest that the agent may have significant anorexigenic potency. Employing a multiple dosage level technic, Freed and Hays were able to demonstrate a weight loss of 0.25 of a pound per day in 178 patients. These investigators felt that 2-phenyl-tert-butylamine gave a better response than sustained release forms of d-amphetamine, with a relative lack of nervousness and of overstimulation. The major side-reactions of the former drug were insomnia and occasional nausea. The investigations of Cass[62] confirmed the earlier work of Freed and Hays in addition to suggesting that the drug has a slower onset of tolerance.

Although additional clinical data and long-term studies are necessary for the complete evaluation of this drug, the present information suggests that the agent can be useful in a rotating schedule with d-amphetamine, phenmetrazine, and possibly some of the other agents reviewed.

Summary

The neural regulation of hunger, appetite, and satiety involves brain stem, hypothalamus, and cortex interactions. The function of the hypothalamus is assumed to be a quantitative one, adjusting energy intake to energy expenditure. Deficits of the body's stores of calorically significant nutrients activate feeding reflexes, a process which is facilitated by areas in the lateral hypothalamus and inhibited by the ventromedial hypothalamus. The amino acid concentration, the amount of depot fat, and the levels of blood glucose have been suggested as factors which play central roles in governing long- and short-term control of food intake, but to date none of these factors has been firmly established to the exclusion of other multiple factors.

Recent evidence suggests the site of action of anorexigenic agents to be at the feeding center. These agents may act by suppressing the activity of the lateral hypothalamus.

A review of structure-activity relationships of sympathomimetic amines with particular reference to central nervous system activity is presented. Clinical and laboratory data suggest that the central nervous system stimulating properties and the anorexigenic potency of appetite depressants are grossly parallel. There is no correlation between the peripheral or central activities of amphetamine and its congeners and the effects of these drugs on the monoamine oxidase system.

The anorexigenic agents in current use are discussed.

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(*Number eighty-two in a series of Recent Advances in Medicine and Surgery*)

Medical Society of the State of New York

ANNUAL CONVENTIONS

1961	May 8 to 12	Rochester
1962	May 14 to 18	New York City
1963	May 13 to 17	New York City

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by EUGENE R. STUDENSKI, M.D. JUNE 13, 1959

Discussed by JAMES HOLLAND, M.D.

Hodgkin's Disease Associated with Malabsorption Syndrome

Case History

The patient was a forty-nine-year-old white female who at the age of thirty-nine developed pain in the left shoulder followed by the appearance of lymph node enlargement of the axillary and left supraclavicular regions. Six months after the onset of these symptoms a biopsy of a lymph node was reported as revealing Hodgkin's disease. She was treated with x-ray therapy. These enlarged nodes disappeared and never reappeared.

One year later she developed pain in the left hip and left leg. A mass was felt in the left lower quadrant, and x-ray therapy was administered. Edema of the leg was noted thereafter, and masses in the left lower quadrant were palpated on several occasions. Episodes of redness of the left leg and complaints of itching were present on several occasions.

Six years after the onset of symptoms pain appeared in the neck region. The patient was noted to have fever and weakness and was given a course of triethylene melamine. One year later it was noted that the pain recurred and that there was collapse of the sixth and seventh dorsal vertebrae. A course of nitrogen mustard was prescribed, but the back and leg pains persisted. Eight years after the onset of her disease the patient complained of chronic diarrhea for the first time. The next year a diagnosis of sprue syndrome was made. Ten years after the onset of symptoms, three months before exitus, and after a protracted course of chronic diarrhea, 4 plus proteinuria was first noted.

The patient's last (thirteenth) hospital admission was brought about because of exacerbations of diarrhea with the appearance of vomiting followed by dehydration and a 15-pound weight loss over a period of two weeks. She had a systolic blood pressure ranging from 85 to 65 and a diastolic pressure ranging from 60 to 30. The only positive findings on physical examination were signs of loss of weight, oral moniliasis, and two small nodules in the chest wall. The urine showed 4 plus proteinuria. Her blood urea nitrogen was 32 mg. per 100 ml. She was given parenteral fluids with vitamins, sedatives, and chlorpromazine.

On the seventh hospital day oral ulceration was noted in areas where white patches had been present on admission. The patient was given nystatin mouth washes.

On the eighth hospital day redness of the entire skin was noted, and a blood culture contained hemolytic streptococci. After penicillin was administered, the next few blood cultures were sterile. The skin lesion, however, progressed to an exfoliative dermatitis. Later blood cultures grew out Pseudomonas aeruginosa and monilia. Oral cultures showed staphylococci. Urine cultures showed Pseudomonas aeruginosa. At this time a positive agglutination for salmonella was reported. The blood urea nitrogen rose to 95 mg. per 100 ml. The 4 plus proteinuria remained, and a few red cells appeared in the urine. The patient expired on the fifteenth hospital day. Her temperature throughout this last admission ranged from 93 to 95 F.

The initial hemoglobin level ten years before exitus was 12 Gm. per 100 ml. with a gradual lowering to a final level of approximately 8 Gm. per 100 ml. in spite of therapy with numerous drugs. The white blood cell count and the differential were never remarkably abnormal. Two samples of bone marrow taken in the last year of life showed no unusual features. Tuberculin tests with purified protein derivative, first and second strengths, gave negative results. Total serum protein determinations were usually 4 to 5 Gm. per 100 ml.; the albumin to globulin ratio was approximately 1:1. The calcium content was normal except for a drop to 8 mg. per 100 ml. four months before exitus and another drop to the same level preterminally. The patient's prothrombin time was normal except for a preterminal determination of twenty seconds with a control of fifteen seconds.

Urinalysis findings were not remarkable until three months before exitus. Prior to the terminal episode urine cultures showed occasional Pseudomonas aeruginosa, and on one occasion four months before exitus hemolytic streptococci were found. Prior to the terminal episode blood cultures were sterile, except on one occasion four months before exitus when hemolytic streptococci were found. Stool cultures revealed no pathogens. Microscopic examination of a stool revealed much fat on staining with Sudan IV. In the stool 21.5 per cent of an oral dose of 70.85 microcuries of I^{131}-tagged protein and 9.8 per cent of an oral dose of 46.6 microcuries of I^{131}-labeled oleic acid were excreted. Under the conditions of this test in this hospital, the upper limit of the normal is 5 per cent excretion.

Roentgenographic findings were essentially noncontributory except for evidence of collapse of the sixth and seventh dorsal vertebrae followed by the appearance of involvement of the first and second lumbar vertebrae. Upper gastrointestinal and colonic examinations were reported as giving essentially normal findings. A deficiency pattern was seen in the small bowel films. Bilateral apical calcifications were noted, and during the last year there were evidences of a pleural reaction on the right side.

Discussion

James Holland, M.D.: Six months after the appearance of cervical and supraclavicular adenopathy a diagnosis of Hodgkin's disease was made by biopsy in a woman who was thirty-nine years of age. Roentgen-ray therapy was effective, and no further evidence of disease appeared in those areas. A year after the initial radiation treatment pain developed in her left hip and left leg associated with a mass in the left lower quadrant which was irradiated. The mass decreased in size.

Episodes of redness of the left leg and complaints of itching seem to signify lymphangitis and are suggestive of lymphatic obstruction and lymphedema. The pattern like erysipelas raises the possibility of streptococcal infections. The left lower quadrant mass was present constantly for the next four and a half years before lymphadenopathy reappeared. A mass remaining constant and without growth over a period of four and a half years constitutes some sort of disease control. This might have been the result of fibrosis following radiation. Remission for four and a half years in Hodgkin's disease, although certainly not unknown, is uncommon. Coley is well known for the introduction into tumor therapy of the broth of a streptococcal culture collected from an individual with erysipelas. The remission in the patient under discussion possibly represents the influence of bacterial infection.

It is noted that she had fever; this is characteristic of Hodgkin's disease. Pain in the neck region appeared, and a long remission was induced with triethylene melamine, an orally active mustard compound. She was asymptomatic until pathologic fracture of the dorsal vertebrae occurred, probably due to osteolysis from Hodgkin's disease. Nitrogen mustard was administered. For the succeeding twelve months pains were still present, possibly a result of the structural abnormalities following the collapse of the sixth and seventh dorsal vertebrae.

Some eight years following the onset of her disease the patient complained of chronic diarrhea, and she developed new findings consistent with the malabsorption syndrome: a total protein of 4 to 5 Gm. per 100 ml., of which the albumin concentration was approximately 2 Gm. per 100 ml., mild hypocalcemia, iodinated fatty acid absorption studies which showed failure to absorb radioiodine, and Sudan IV-positive material in the stool.

Stool cultures on two occasions were considered noncontributory. A test result for salmonella agglutination was positive. I do not believe she had salmonellosis. This diagnosis requires evidence of a rise in titer, which is not reported. The agglutination demonstrates, however, that the patient could have produced antibodies against some bacterial organisms. Yet, in her last year of life she was susceptible to infection by a large number of organisms. She had recurrent urinary tract infection. Urine cultures prior to three months before exitus showed occasional Pseudomonas aeruginosa. Prior blood cultures were sterile, except on one occasion four months before the patient's demise when she had hemolytic streptococci. This was succeeded by a positive urine culture for hemolytic streptococci, and then in the period leading to her exitus she was noted to have a monilial infection in the mouth. On her last admission redness of the entire skin was noted, and blood cultures again contained hemolytic streptococci. A disease consistent with exfoliative dermatitis ensued, with fever, heavy proteinuria, some hematuria, and death.

One can accept adenopathy, the biopsy report of Hodgkin's disease, osteolysis with pathologic fracture, and the response of the disease to mustard therapy as reasonable evidence for Hodgkin's disease. A major deviation from the usual course, however, is the appearance of diarrhea. Two pathogenic mechanisms are possible: (1) retroperitoneal Hodgkin's disease with infiltration of mesenteric lymph nodes leading to the syndrome of secondary sprue and (2) Hodgkin's disease with secondary amyloidosis of the intestine resulting in malabsorption. Since the patient survived for a period of two years following the development of this complication and because of the proteinuria, I believe that secondary amyloidosis is more likely than extensive mesenteric lymph node replacement.

The preterminal development of susceptibility to an extraordinarily large number of infections suggests that she might have developed acquired hypogammaglobulinemia, a syndrome in which there is a deficiency or absence of plasma cells and of the production of gamma globulin. Although hypogammaglobulinemia occurs, patients with chronic lymphocytic leukemia, lymphosarcoma, and Hodgkin's disease more often have lowered "resistance" to infection by normal bacterial flora without being able to demonstrate lowered concentrations of gamma globulin. The fact that she developed a positive agglutination for salmonella indicates that she did not have a complete failure of synthesis of antibodies.

Secondary amyloidosis is a peculiar disorder involving protein synthesis in which precipitation of a glycoprotein occurs in the tissues, particularly those beneath the endothelium of blood vessels and along reticulum fibers. Amyloid is a protein richer in nitrogen than is normal liver protein. It has a high concentration of glucosamines and galactosamines. It migrates electrophoretically in the alpha 2 and alpha 1 region in some specimens which have been made soluble after acid treatment and in the beta region in other studies.

Individuals with certain chronic diseases, such as tuberculosis, and secondarily infected burns or wounds, who have been subjected to continuing antigenic stimulation, are those in whom we ordinarily see secondary amyloid disease. Horses used in the production of tetanus antiserum and repeatedly immunized with tetanus organisms and toxin develop amyloid disease as an end stage of antibody production. It can occur in patients with cancer. It seems possible that either a virus hypothetically involved in certain cancers or the tissue constituents of a tumor might induce amyloidosis. One may consider secondary amyloidosis as a disordered response to an antigen. I do not know of any instances of hypogammaglobulinemia in which amyloid disease has also been present.

There is one factor that I have not mentioned which should be discussed, the appearance of bilateral apical calcifications. Since I do not associate calcification with uncomplicated Hodgkin's disease or with amyloid disease, I now would like to see the roentgenograms of the bones and chest, and with their aid I hope to decide whether tuberculosis or histoplasmosis are considerations which should enter the problem.

Franz Lessman, M.D.: At the time of the patient's first admission the chest film was not remarkable except for some minimal fibrocalcific changes in both apices due to old tuberculosis. There were no changes in these findings for six years, after which time a slight effusion in the lower left pleural cavity was found to be present. During the last months of the patient's illness this effusion increased considerably but responded well to treatment. The last chest film, taken shortly before her death, showed elevation of both diaphragms with a partly encapsulated effusion in the lower left pleural cavity. The heart shadow was partly overlapped by the pleural effusion and could not be defined exactly. The elevation of the diaphragms could be explained by the presence of an enlarged liver and spleen.

Several roentgenographic studies of the genitourinary tract were carried out. The first one, done three years before death, revealed adequate renal excretion bilaterally. The right kidney was displaced downward. At this time the lumbar spine and pelvic bones were within normal limits. An examination by retrograde pyelography one year before death again revealed downward displacement of the right kidney. A myelogram showed a complete block at the level of the fourth dorsal vertebra. A skeletal survey revealed destructive lesions of the seventh cervical and the third and fourth dorsal vertebrae. A radiolucent process at the lower border of the second lumbar vertebra was visualized. An intravenous pyelogram taken shortly before death did not show any further changes. However, the lumbar spine now showed a definite osteolytic defect at the second lumbar vertebra.

An examination of the upper gastrointestinal tract four years before death revealed a small diverticulum in the second portion of the duodenum. The small bowel and the colon at that time were within normal limits. In the small bowel study one year prior to death there was evidence of functional disturbance with a delayed transit time, a thickened mucosa, and a wormlike and somewhat lifeless appearance of the distal portion, a picture which is compatible with the so-called deficiency pattern. The last small bowel study, done shortly before death, revealed the same pattern.

In summary, the finding of osteolytic lesions of the spine and enlargement of the liver and spleen is consistent with Hodgkin's disease. The deficiency pattern of the small bowel can be observed under several pathologic circumstances, such as sprue and subnormal function of organs such as the liver and pancreas. Since Dr. Holland mentioned secondary amyloidosis in his differential diagnosis, I want to mention the occasional occurrence of a similar small bowel pattern in the presence of amyloid disease. This pattern, however, is not pathognomonic of amyloidosis.

DR. HOLLAND: To commit myself to a description of the pathologic changes, I would say that this patient had disseminated Hodgkin's disease. I think that the calcifications in the pulmonary apices were old tuberculous lesions essentially unrelated to her course. I think that she had destruction of bone due to Hodgkin's disease and not due to osteomalacia secondary to a spruelike syndrome, and that she had secondary amyloidosis rather than Hodgkin's disease of her intestine. I think that amyloidosis involved the small gut, possibly the liver, and probably the kidney. I doubt that she had acute nephritis. I think that she may have had pyelonephritis at some time in the past with distortion of the renal pelvis on the right side. I think that the exfoliative dermatitis, which may have been present at death, was due to a streptococcal infection and not to drug administration. She was well managed during her lifetime, and to have survived these many problems certainly is a credit to her physicians.

The degree of hypotension (65/30) in the terminal illness is very pathologic. Addison's disease secondary to amyloidosis of the adrenal gland is such a rare event that I would rather consider an advanced state of cachexia, as seen in this patient, to be the cause of the low blood pressure. I cannot say more than that I think that individuals who have an advanced state of premortem change may show this phenomenon. I do not think that it represents adrenal deficiency, and I do not think that it represents central nervous system disease.

WILLIAM REGELSON, M.D.: Should granulomas other than Hodgkin's disease be considered as well?

DR. HOLLAND: I surely would consider others, and have, but I do not want to go into the long differential diagnosis of the granulomatous lesions. To my mind, the appearance of adenopathy, osteolysis, what I assume to be amyloid disease, and responsiveness to alkylating agents and radiation is very substantial evidence for Hodgkin's disease, confirming the biopsy diagnosis.

DR. REGELSON: One might suggest that this woman had extensive Hodgkin's lesions along the retroperitoneal area. The situation was worsened perhaps by radiation, and the extension caused direct involvement of the kidney or the renal vein and possibly also the small gut. This process could cause a fall in blood pressure, the loss of effectiveness of the thermoregulatory system, and the entire picture that was presented so that it is not necessary to postulate amyloid.

DR. HOLLAND: I do not like it. I think that renal insufficiency based on direct infiltration of the kidneys is a distinct rarity in Hodgkin's disease. Renal vein thrombosis is a possibility which perhaps should have been mentioned as a cause of the acute renal insufficiency with the nephrotic syndrome. But I do not think that renal vein occlusion due to pressure by Hodgkin's disease is a common phenomenon.

DR. REGELSON: Would you say that amyloid is as uncommon a phenomenon as renal vein thrombosis in Hodgkin's disease?

JOSEPH SOKAL, M.D.: John Pickren, M.D., and I made a casual search for nephrotic syndromes due to renal vein compression in Hodgkin's disease and found no cases. In an equally casual search for amyloidosis in Hodgkin's disease I found 25 cases. Also, retroperitoneal involvement, in my experience, is associated with hypertension rather than with hypotension.

DR. HOLLAND: I should mention that it is not inconceivable that this woman may have received corticosteroids for her sprue syndrome or for her general debility, and this treatment can sometimes lead to very pronounced hypothermia. Is it possible that the exfoliation was a penicillin reaction?

Robert Tarail, M.D.: The exfoliation preceded the penicillin administration but it did not precede analgesic or barbiturate therapy.

Diagnoses

Clinical.—(*1*) *Hodgkin's disease with* (*?*) *central nervous system involvement and* (*2*) *malabsorption syndrome due to* (*?*) *amyloidosis.*

Dr. Holland.—(*1*) *Hodgkin's disease with vertebral collapse;* (*2*) *amyloidosis of small intestine, liver, and kidneys, and* (*3*) *multiple terminal infection.*

Anatomic.—(*1*) *Hodgkin's disease;* (*2*) (*?*) *histoplasmosis with vertebral destruction and psoas abscess;* (*3*) *amyloidosis of small intestine, liver, kidneys, and spleen with malabsorption syndrome;* (*4*) *cryptococcosis, disseminated; and* (*5*) *subacute bacterial endocarditis, terminal.*

Pathologic Report

Eugene R. Studenski, M.D.: This case also is complicated from the morphologic viewpoint. I shall start with the most recent pathologic process and work backward. The lymph nodes were characterized by the appearance of large clear spaces around a few residual cells. The clear spaces were filled with budding yeasts characteristic of Cryptococcus neoformans. Most of the lymph nodes found at autopsy showed this pattern, as did the spleen and bronchus.

The next most terminal event was subacute endocarditis of the mitral valve from which Streptococcus viridens was isolated. Focal embolic glomerulonephritis was present as a corollary to this process. The next preceding process was amyloidosis which involved the spleen, liver, adrenal gland, kidney, and intestine. The intestine showed characteristic changes. The stroma of the villi was entirely replaced by hyalinuniform amyloid (Fig. 1). The overlying epithelium showed proliferative changes. In addition, there was atrophy and loss of glandular structure. This certainly is one of the very rare, quite distinctive patterns associated with the malabsorption syndrome.

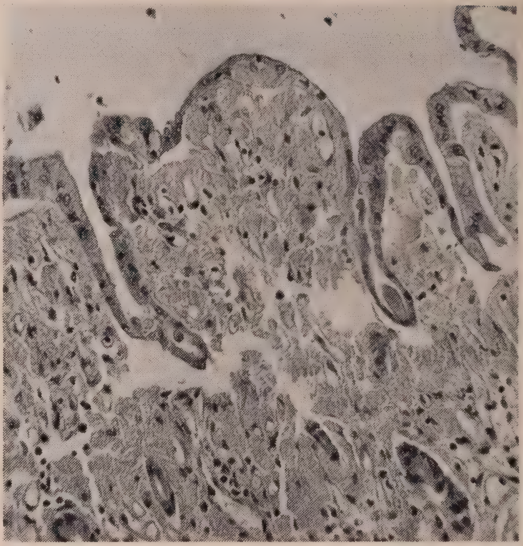

Fig. 1. Microscopic view of villi of small intestine revealing amyloidosis.

Another antecedent process was seen in the spine, where complete collapse and destruction of several lumbar vertebrae formed a mass communicating with an abscess cavity in the left lower quadrant and the pelvis. Around this region intense inflammation and involvement of nerves account for the pain and edema. This necrosis is quite distinct from the pattern of cryptococcal involvement. In the bone marrow there were scattered islands of pyknosis and coagulation necrosis associated with fibrosis and new bone formation. The wall of the abscess cavity contained giant cells with areas of caseation. Surprisingly we found Bauer-positive granules, largely intercellular, both in the necrotic zones and in the wall of the abscess cavity. The exact nature of these granules is in question. In some areas they were morphologically consistent with Histoplasma capsulatum. In other areas they were much too small and their pattern was not distinct enough for precise identification. I have to admit that we do not know exactly what they are. The age of the collapse is certainly quite consistent with the evidence on the radiographs. I might say that the date of the appearance of pulmonary calcification is approximately six or seven years before exitus and about three or four years before the appearance of collapse and would be consistent with something like disseminated histoplasmosis. Finally, a lesion that has every characteristic of Hodgkin's disease was found in the adrenal gland with only one other focus in a small axillary lymph node. I feel that this is a case of Hodgkin's disease.

This patient developed a sepsis with some organism, possibly histoplasma, and the lumbar vertebra collapse and a psoas abscess were involved. However, the most common bone lesion of Hodgkin's disease is in the vertebrae and may be followed by massive collapse. The appearance of amyloidosis with Hodgkin's disease without known secondary infection frequently is reported, and in this patient small intestinal involvement caused a malabsorption syndrome. She developed terminal sepsis. Since a positive Widal test result, which, by the way, is partially explained by the isolation of an atypical coli bacillus with an incomplete salmonella antigen, was reported shortly before death, the patient's susceptibility to infection is totally unexplainable in terms of destruction of lymph nodes, agammaglobulinemia, and inability to produce antibody. One can speculate that the terminal infections are related to Hodgkin's disease or amyloidosis in some unknown manner.

Dr. Sokal: What did the brain show?

Dr. Studenski: Nothing significant.

Dr. Holland: Cryptococcosis complicating Hodgkin's disease accounts for 15 or 20 per cent of all patients who have cryptococcosis. However, histoplasmosis complicating Hodgkin's disease is not an association that is recognized as being unusually common.

Rabies in New York State

The number of cases of animal rabies in New York State continued to rise during the first three months of the year. As of March 31, 97 rabid animals were reported, compared to 26 for the same period in 1959.

The disease has been most prevalent in the following counties: Allegany, 22; Steuben, 21; Erie, 15; Ontario, 12; and Cattaraugus, 9.

During 1959, 475 laboratory-confirmed cases of rabies in animals were reported, compared to 261 in 1958. In recent years the reported incidence of rabies has been cyclic in nature with peaks of decreasing magnitude occurring every three or four years, starting with the peak incidence of 1,155 cases reported in 1946.

Cases reported during the first three months of the year include: foxes, 62; cows, 13; cats, 10; dogs, 4; skunks, 4; raccoons, 2; and horses and goats, 1 each.

CLINICAL ANESTHESIA CONFERENCE

*A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia*

***Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists***

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GEORGE RUBENSTEIN, M.D.

Respiratory Depression Due to Postoperative Narcotic Overdosage

A GENERAL awareness in the medical profession has developed concerning the necessity for assessing the proper dosage of narcotics to be administered to a particular patient according to the patient's age, sthenicity, and degree of pain. When a narcotic is required in the immediate postoperative period, these important factors must be supplemented by considering the amount of anesthetics and the type of anesthesia administered as well as the amount and period of time of preoperative narcotic administration. When some of these supplementary factors are not considered, untoward reactions may occur following what would seem to be a safe narcotic dosage. Such effects were observed in the following 2 cases.

Case Reports

CASE 1.—A sixty-year-old woman was to undergo a subtotal gastrectomy for a gastric ulcer. She weighed 137 pounds and was 65 inches tall. Her arterial blood pressure was 150 mm. Hg systolic and 88 diastolic. Her heart rate was 74 per minute. The hemoglobin content of her blood was 11.8 Gm. per 100 ml., and the hematocrit was 36.

There were supplementary diagnoses of senile psychosis, generalized arteriosclerosis, partial deafness, and apprehension. In addition, there was dental malocclusion consisting of obliquely angulated maxillary dentition in a prognathic manner, with the occlusive surfaces of the mandibular dentition coming into apposition with the bases of the maxillary dentition. The maxillary teeth were loose in the anterior portions of their sockets.

For prenanesthetic medication the patient was given 0.4 mg. of atropine sulfate intramuscularly, and she came to the operating room in a calm

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Discussed at a conference held at Bellevue Hospital, New York City, March 7, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

state. Anesthesia was induced with intravenously administered thiopental sodium and was maintained with cyclopropane and diethyl ether. Endotracheal intubation was accomplished with no untoward events. The operative and anesthetic procedures were without complications. The patient was brought to the recovery room, where she was extubated uneventfully.

One hour later she reacted fully, and she was returned to her room. Then she complained of pain, and the resident physician ordered 100 mg. of meperidine hydrochloride (Demerol hydrochloride), which was administered intramuscularly. Forty-five minutes later the patient was noted to be semistuporous with almost complete respiratory obstruction. A plastic oropharyngeal airway was inserted with some force. Following this it was noted that a lateral incisor tooth was missing from the maxillary dentition. The attempt to relieve the respiratory obstruction was effective, and the patient's color and response to stimuli improved immediately. Since there appeared to be no pharmacophysiologic depression, no further measures other than very close observation were instituted. The patient became fully reactive and responsive three hours later.

Diagnostic measures were instituted to locate the missing tooth. A roentgenologic survey revealed the missing tooth to be in the remaining portion of the stomach, and its course throughout the gastrointestinal tract to its physiologic elimination was followed.

Case 2.—A fifty-two-year-old woman was admitted to a hospital for open correction of bunions on both of her great toes. Her physical condition was good. She weighed 120 pounds and was 62 inches tall. Her arterial blood pressure, blood chemistry values, and urinalysis findings all were normal.

For preanesthetic medication she was given 75 mg. of meperidine hydrochloride and 0.3 mg. of scopolamine hydrobromide by intramuscular injection at 7:15 A.M. When she arrived in the operating room forty minutes later, she appeared to be calm and comfortable and her vital signs were normal. Anesthesia was accomplished by the intravenous administration drip of thiopental sodium in a 0.2 per cent concentration and by the administration of cyclopropane and oxygen in a closed to-and-fro carbon dioxide absorption system. Surgery and anesthesia were completed uneventfully at 10:10 A.M. The patient was brought to the recovery room in good condition. Her respirations, pulse rate, and arterial blood pressure remained normal during the sixty-five minutes of her stay in the recovery room. She regained consciousness quickly without any nausea or emesis. During this period she offered no complaints, and she received no medication other than 500 cc. of 5 per cent dextrose in water administered intravenously. At 11:15 A.M. she was returned to her room with an order of 1 mg. of oxymorphone (Numorphan) to be administered intramuscularly in the event of pain. She was beginning to feel some pain by this time, so the narcotic medication was administered.

Eight minutes later the patient was noted to have respiratory depression with loss of consciousness. Her respiratory rate diminished to 5 per minute and she became cyanotic although her pulse rate remained at 84 per minute and her arterial blood pressure was 118/72. An oropharyngeal airway was inserted, and oxygen was administered by face mask. This alleviated the cyanosis, but the respiratory rate remained at 5 per minute. Levallorphan tartrate (Lorfan) 1 mg. was injected intravenously, and this resulted in a good response within five minutes. The respiratory rate increased to 16 per minute, and the patient became alert and responsive. Six hours later, when she complained of pain again, oxymorphone was readministered in the same amount as previously. It eased her pain within ten minutes without any respiratory depression, and her convalescence thereafter remained uncomplicated.

Comment

These 2 case reports are presented to indicate the dangers inherent in the immediate postoperative administration of narcotics, particularly after prior administration of general anesthesia. In both instances the amounts of the narcotic ordered and administered were not excessive according to recommended dosage. However, it must be borne in mind that in patients who already have received sedatives, analgesics, and anesthetic agents the amount of a narcotic required to relieve the beginning stages of pain is usually one half or one third of the usual dose. For this reason many recovery rooms have a standard rule that the first postoperative narcotic dose be either one half or one third of that which is to be administered on the following days. When, as in these 2 cases, no narcotic is required or administered during the patient's stay in the recovery room, specific orders should be given to the medical and nursing personnel caring for the patient to diminish the first postoperative narcotic dose accordingly.

(Number ninety-one of a series on Clinical Anesthesia Conferences)

Industrial Waste Disease Strikes Japanese City

The sometimes high price of industrialism has been paid again—this time in the Japanese city of Minamata, Japan. Industrial wastes from a nearby factory are held to have infected an important staple of the city's food supply—the fish in the bay. The resulting scourge destroyed its human victims' nervous systems, eventually causing death. To contain the mysterious killer, which does no damage to the fish the Japanese Government has been forced to ban all local fishing. But efforts are under way by industry to control the waste material.—*Nutrition Reviews*

Scurvy Still a Problem

While overeating and the health risks inherent in obesity are the most severe nutritional problems confronting the United States, old-fashioned scurvy remains a scourge in some parts of the world. Historically one of the most dreaded specific forms of malnutrition, the disease is caused solely by a lack of vitamin C in the diet. Recent reports of an outbreak of the condition in the far northern reaches of Canada have been cited by *Nutrition Reviews.* Although vitamin C is plentifully available in the U.S. in the form of fresh vegetables and fruit, the nutrient has been deficient in many Indian and Eskimo diets. As a result, arctic infants had a hard time with scurvy throughout the mid-1950's.

The problem is now being checked by adding vitamin C to the canned milk distributed in the affected areas.

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

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Intravenous Fat Administration

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APPROXIMATELY three years have passed since an improved fat emulsion* was given a thorough clinical evaluation and the results published.[1] The development of this improved formula marked a significant advance in the long search for safe and stable artificially-prepared emulsions.

The interest in intravenous fat emulsions rests on numerous well-established and important facts in parenteral nutrition: (1) It is impossible to attain an adequate caloric intake using only isotonic 5 per cent glucose solutions since 1 L. supplies only 200 calories. The use of 15 per cent glucose requires 3 L. of solution to provide 1,800 calories assuming there have been no urinary losses. Where cardiovascular-renal diseases exist such large volumes are often contraindicated. (2) The use of hypertonic solutions is attended by an increased incidence of phlebitis and sclerosis of the veins. The use of concentrations above 10 per cent requires catheters threaded into larger veins and slow administration is necessary to avoid or minimize urinary spillage. (3) Obvious advantages derive from the facts that: (*a*) 9 calories are derived from 1 Gm. of fat in contrast with 4 calories from 1 Gm. of carbohydrate, (*b*) intravenous fat is not excreted in urine or feces, and (*c*) oil-in-water emulsions exert very little osmotic effect and are not irritating to venous endothelium even in relatively high concentration. Although alcohol contributes 7 calories per gram when completely oxidized, the amounts of this substance that can be given routinely are limited rather sharply. (4) Any amino acids that are given will be catabolized in varying degrees for energy purposes and not for protein synthesis unless a significant proportion of the patient's caloric needs are met by other nutrients. While there is a great difference of opinion as to whether or not nitrogen equilibrium and significant protein synthesis can be attained in the immediate postoperative or post-traumatic period with a good caloric and nitrogen intake, there appears to be evidence that a significant sparing of nitrogen will occur with a high caloric intake when protein or amino acids are supplied.[2-4] These levels can be much more readily attained on an intravenous basis by the supplementary use of fat emulsions.[2,5]

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* Lipomul I.V. (Series 11, 612 formula) manufactured by the Upjohn Company, Kalamazoo, Michigan.

The ready availability of the calories supplied by intravenous fat has been demonstrated in a variety of ways including the use of isotope-labeled fat, growth experiments, and metabolic studies. Fat so administered appears to be equivalent to isocaloric amounts of intravenous glucose or oral fat and carbohydrate.[5,6]

Composition

The composition of the improved fat emulsion per 100 ml. is as follows:[7] Cottonseed oil 15 Gm. (135 calories); phosphatides (purified soya lecithin) 1.2 Gm. (9 calories); Pluronic F68 (a synthetic nonionic polyoxyethylene oxypropylene polymer) 0.3 Gm.; dextrose (for isotonicity) 4 Gm. (16 calories); and water in sufficient quantity. A bottle of 500 ml. supplies 800 calories. The white opaque emulsion has over 90 per cent of the fat in particles which are submicroscopic and not over 0.02 per cent of the visible particles are larger than 1.5 microns. It is reportedly stable for at least one year in the refrigerator; the emulsion breaks down in the presence of electrolytes or if frozen.

The significant advance of the new formula over its predecessor resides in a purification of soya phosphatide, a change which has greatly reduced the incidence of serious immediate reactions.[8]

Reactions and Side-Effects

The reactions and side-effects may be classified as "immediate" and the "fat overloading syndrome."

IMMEDIATE REACTIONS.—The immediate reactions are:

1. "Colloid" Type.—The colloid type reactions are characterized by symptoms of warmth of the face and neck, apprehension, constriction in the chest, dyspnea, and severe chest or back pain; cyanosis may also occur. These reactions occur early in the infusion and may develop after the administration of less than 1 ml. Fortunately, they are of short duration (two to ten minutes), nonlethal, rare (0.1 per cent or less), and in most instances the infusion may be resumed with recurrence after cessation of symptoms.

2. Febrile Reaction.—The febrile reaction is the most common reaction noted. Mueller[8] has reported that 17 per cent of infusions were associated with a rise of temperature above 100.6 F. orally or 101.6 F. rectally. Preston and Henegar[9] noted that in 18.6 per cent of infusions there was a rise of 1.1 F. or more and in 2.8 per cent an increase of 3.1 F. or more. Fever in association with a chilly sensation or chills occurs much less frequently (4.9 per cent).[10] The temperature usually tends to rise several hours or more after the infusion is begun. It reaches a peak at from five to six hours and is usually back to normal within eight to ten hours. The rate of administration does not appear to affect materially the incidence of reactions; Forbes, Allen, and Gray[10,11] could not find any significant differences when 600 ml. volumes were infused in one and three-quarters, three and a half, or seven hours.

The etiology of the fever is not established. The usual type of pyrogen reaction does not appear to be involved with the improved formula; antihistamines are not preventive; pH, carbonyl and peroxide content, and particle size do not correlate with febrile reactions in rabbits. It has been suggested (but not proved) by some that the fever is a physiologic response to rapid fat oxidation. Mueller[8] noted a highly significant correlation between the febrile response and the rapidity of clearing of lipid from the blood. With few exceptions patients whose sera were lipemic after eight hours did not develop significant fever. However, "fast clearance" and fever are not perfectly correlated. Lipoprotein lipase apparently accounts for only a very small proportion of the fat cleared.[12] The major portion of the infused fat apparently leaves the blood stream as chylomicrons and follows the same pathway in metabolism as does ingested fat. Only minor rises occur in blood ketones following a 600 ml. infusion.[13]

3. Miscellaneous Reactions.—Miscellaneous reactions include nausea, vomiting, a sensation of abdominal fullness, rash, and headache. Fluctuations in blood pressure and pulse also have been noted to occur in a small percentage of patients.[1,8–10]

The immediate reactions rarely are severe enough to prevent cessation of the infusion. For example, only 3 out of 644 infusions had to be discontinued (in each instance because of chill) by Preston *et al.*[14] Mueller[8] reported only 3 of 362 infusions that could not be completed.

Extravasation of the fat emulsion results in a very low incidence of local reaction about the infiltrated vein.[15]

"FAT OVERLOADING" SYNDROME.—The "fat overloading" syndrome consists of a group of symptoms and signs which have been noted to develop in a proportion of patients (estimated by the manufacturer at approximately 15 per cent) given 500 ml. or more of the fat emulsion daily for fourteen or more days. The complete syndrome is usually heralded by one or more symptoms of increasing lethargy, progressive anemia, abdominal pain, headache, nausea, and vomiting. Fever may be intense and the patient may appear seriously ill and demonstrate many of the following signs and laboratory findings: hepatomegaly (with or without splenomegaly), epistaxis, hematemesis, melena, thrombocytopenia, increased red cell fragility, obvious coagulation defects (including prolonged clotting and bleeding times and abnormal prothrombin time), jaundice, and elevations in bromsulphalein retention.

The syndrome may develop rapidly and increase temporarily in severity after termination of daily infusion. The severity and extent with which symptoms and signs appear vary with the individual. Detailed case histories have been reported by Levenson, Upjohn, and Sheehy[16] (on 2 healthy volunteers), and by Watkin,[17] and Mueller.[13] Watkin[17] has suggested that the syndrome develops because of fat overloading and the excess fat is taken up by the reticulo-endothelial system. In this connection, it has been demonstrated with dogs which received multiple infusions of large amounts of fat emulsion, that as the number of infusions increased, the ability to clear the serum of fat became progressively more impaired.[18] The clinical similarity between the human syndrome and that which is seen in idiopathic hyperlipemia has been noted.

Dramatic and progressive improvement followed the administration of hydrocortisone intravenously in 2 of the cases cited.[13,17] Others reverted to normal usually within two to four weeks after cessation of the intravenous fat. No deaths have been reported.

The etiologies of the anemia and blood coagulation defects are still unclear. The anemia is often hypochromic or hypochromic microcytic in type,[17,19] with decreased serum iron,[19] and a reticulocytosis in most[13,16,17] but not all[19] cases. Hemolysis may occur in some patients.[4,16] It is agreed that single or short-term infusions of the fat emulsion do not cause hemolysis. However, multiple infusions may cause hemolysis by virtue of a lipemia which has been postulated to cause a rise in free fatty acids to levels which exceed the binding capacity of serum albumin so that the fatty acids attach themselves to and cause lysis of the formed elements.[20] In contrast to the hypocoagulability which is found during the acute febrile stage of the syndrome, a transient hypercoagulable state occurs in association with the hyperlipemia which accompanies each individual infusion.[13,15]

Liver Function Tests

Significant but reversible increases in bromsulphalein retention have been noted after multiple infusions in some patients without liver disease. Thus, Glas and Birkelo[21] noted significant rises in bromsulphalein from normal retention in 2 of 10 patients after the administration of 4 and 6 bottles respectively of the new fat emulsion without apparent alterations in other liver function tests. Preston *et al.*[14] noted that bromsulphalein retention, cephalin flocculation, and thymol turbidity test results showed increases in the majority of their patients after approximately two weeks of infusions but tended to return to preinfusion status after the emulsions were discontinued. The most striking changes were in the bromsulphalein retention. The changes occurred regardless of whether or not the preinfusion levels were normal or elevated (the majority of the subjects had carcinoma of some level of the gastrointestinal tract). Similar changes have been noted by others.[17,22,23] It is of interest that the changes in various liver function tests in cirrhotic individuals do not appear to differ significantly from those already mentioned.[24]

Electrolytes

No significant long-term trends have been noted in any serum electrolytes. However, when serial studies[25] were made at frequent intervals before, during, and after fat infusion in 11 fairly healthy and 24 chronically ill patients, almost all exhibited a decrease in serum potassium levels, averaging about 9 per cent; many but not all subjects have a lowering of carbon dioxide-combining power averaging 7 per cent; pH and sodium and chlorine concentrations were affected to only slight degrees. Within four hours after the ending of the infusion, correction of the carbon dioxide and serum potassium was complete or in process. The serum potassium change was not accompanied by urinary changes and therefore may be related to transport into cells in association with glucose and perhaps fat metabolism.

Histologic Changes

Liver biopsy and postmortem examinations following fat emulsion infusions reveal the appearance of a brown nonlipoid staining pigment in the Kupffer cells and parenchymal cells about the portal vein and in the spleen.[7,21,24,26] The exact nature of this pigment is not presently known but it appears reversible. Liver biopsy specimens by various investigators have not demonstrated any consistent or predictable increase in fat deposition following multiple infusions, even with the development of the fat overloading syndrome.[13,17,22,24,26] Microscopic study before and after repeated infusions has not revealed any change in the degree of liver damage in alcoholic patients with cirrhosis.[24]

Indications for Use

Intravenous fat emulsion is useful as a caloric supplement in patients who are undernourished, unable to ingest adequate food by mouth, and likely to be dependent on intravenous feeding for some time. These include malnourished patients being prepared for surgery, postoperative patients whose gastrointestinal tracts are not functioning normally within a few days postoperatively and whose debilitated state requires vigorous caloric and other supplementation, patients with extensive burns unable to obtain adequate oral nutrition, those with gastrointestinal disease with resultant severe nutritional depletion, and also certain patients with acute or chronic renal failure in whom maximum nitrogen sparing is indicated.

Dosage

The relatively low incidence of immediate reactions makes the presently available emulsion a safe one in limited doses. Because of the danger of the development of the fat overloading syndrome precautions must be taken when multiple consecutive daily infusions are indicated. These include examination of the serum for the presence of lipemia prior to each infusion after the first week, baseline hematologic determinations (including hematocrit, platelet count, clotting and bleeding times, and prothrombin time) and certain liver function tests, especially bromsulphalein retention. Hematocrit determinations should be performed every two or three days. If more than 10 units are given, hematologic and liver function tests should be repeated on alternate days, and if abnormalities develop the infusions should be stopped until the values return to normal ranges. The persistence of lipemia is an adequate reason for delaying the infusion until clearing occurs.

While patients vary greatly in their apparent tolerance to multiple doses, a limit of fourteen 500 ml. units (at the rate of one or two units per day) in any one series is presently recommended. One unit in conjunction with supplementary intravenous glucose and amino acids or oral feedings should be utilized where possible. Insufficient evidence is available on the number of units that can be given safely on a schedule of alternating instead of daily infusions. Presumably the tolerance for fat would be increased by such a schedule. Similarly, more information is needed on the limits of repeat courses of infusions. The existence of the overloading syndrome with its limitation of free use of prolonged consecutive daily infusions is an unfortunate and serious limitation to the usefulness of present fat emulsions in situations where they are most needed. Whether this syndrome can be eliminated by further improvements in the emulsion or modifications in the dosage schedule remains to be seen.

Administration

Close supervision of the patient during the first fifteen to thirty minutes of each infusion is indicated. The manufacturer recommends the following maximum rates of infusions: For adults—first five minutes, 10 drops per minute; next twenty-five minutes, 40 drops per minute with 100 drops per minute thereafter; for infants—5 to 10 drops per minute for the first five minutes followed by a rate of 0.5 to 1 drop per pound of body weight per minute.

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BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Aspirin and Mercury Intoxication and Lye Poisonings

The following incidents recently were reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Aspirin	$4^1/_2$ months	Male

A four-and-a-half-month-old infant was admitted to Bellevue Hospital with the chief complaint of respiratory distress. The history obtained from his parents disclosed that the child was well until one week prior to admission, when he developed fever, a productive cough with white mucous expectoration, a nasal discharge, and a draining ear. At that time he was taken to a hospital outpatient department, where an injection of penicillin was given as well as a medication to be taken orally, 1 teaspoonful every four hours. The parents were told to return with him in about a week.

Following this therapy the patient's symptoms subsided in three days. He was well until two days prior to admission, when he developed diarrhea with six yellow watery stools two days prior to admission and three stools which were more formed one day prior to admission. He was eating well until fifteen hours before admission, at which time he started vomiting his milk as well as solids and refused feedings. Nine hours before his admission his temperature rose again, and his mother noticed that he was coughing and that he had difficulty in breathing. The baby was taken again to the hospital outpatient department, and Terfonyl $^1/_2$ teaspoonful every four hours was prescribed. His mother was told to bring him back the next morning, December 24, but since the respiratory distress worsened, she brought the child to the pediatric dressing office of Bellevue Hospital on December 24 at 3:00 A.M.

He was admitted promptly to the pediatric ward. The history of his illness was given by his parents. They stated that the child had received a total of 2 baby aspirins in the two previous days. The review of systems, past history, and family history yielded essentially negative data. The patient had been born in Puerto Rico after an uncomplicated full-term pregnancy and with a normal spontaneous delivery. He had had a normal growth and development with no previous medical, surgical, or communicable diseases. The only immunization which had been received was 1 dose of polio vaccine. The entire family (2 adults and 3 other siblings) was absolutely healthy at the time of this child's illness.

On admission to Bellevue Hospital the infant was in acute respiratory distress. He was breathing 60 times a minute with flaring alae nasi and intercostal and subcostal retractions. His temperature was 101 F., and his heart rate was 200. The positive findings included a dull but not injected right eardrum and a left eardrum which could not be visualized, mucous discharge from the nose, and internal strabismus but with equal pupils which reacted normally to light. The neck was supple, and the chest, except for the respiratory retractions, was clear to percussion with good aeration bilaterally. The breath sounds were thought to be increased bilaterally with prolonged expiration, but no rales or wheezes were heard. Heart auscultation gave normal findings except for the marked tachycardia. The abdomen was soft with the liver edge felt 3 fingerbreadths below the right costal margin; the spleen was not felt. The remainder of the physical examination, including the neurologic examination, gave findings which were within normal limits.

The laboratory examination revealed a hemoglobin of 8 Gm. per 100 ml. and a hematocrit of 32. The white cell count was 11,000, with 60 per cent polymorphonuclears, 36 per cent lymphocytes, 2 per cent monocytes, and 2 per cent eosinophils. The blood contained sodium 145 mg., potassium 5.2 mg., chlorides 119 mg., and sugar 110 mg. (all per 100 ml.) and carbon dioxide 9.9 mEq. per L. The urine was acid with a 1 plus albumin and a 2 plus acetone. The spinal fluid was clear with 4 monocytes per cu. ml., protein 55 Gm. per 100 ml., and sugar 25 mg. per 100 ml.; no organisms were found on smear or culture.

The electrocardiogram showed a rate of 170 beats per minute, a P-R interval of 0.12 second, and a QRS complex of 0.04 second; the tracing was within normal limits for the age of the patient. Two sets of x-ray films were obtained, one at noon and the other in the evening. The child was placed in a croupette with humidity and oxygen, and he was given procaine penicillin 600,000 units and Achromycin 40 mg. every six hours. In the afternoon the regimen was changed to 300 mg. of chloramphenicol (Chloromycetin) intramuscularly and 600,000 units of aqueous penicillin every six hours.

His temperature dropped to normal a few hours after his admission, and his pulse was 150 beats per minute with 36 respirations per minute at 2:00 P.M. However, in the next few hours his respiratory distress increased, with a rate of 44 to 54 respirations per minute, and his pulse rate rose again, to 170 to 190 per minute. The child was given intravenously 120 cc. of a 2:1 solution of 5 per cent dextrose with normal saline. The second carbon dioxide determination, done at about 7:00 P.M., was 7.2 mg. per 100 ml. A urine sample again was shown to be acid and positive for acetone and had a 1 plus albumin and no sugar. Both samples tested with a ferric chloride solution gave a purple color immediately as well as after the addition of acid and after boiling. A sample of blood for a salicylate determination was then obtained, approximately two hours before death, and it revealed a level of 58 mg. per 100 ml. At 9:00 P.M., after a period of marked tachycardia and gasping for breath, the child died. Artificial respiration and intracardiac adrenalin were administered unsuccessfully.

A home visit was made by a public health nurse to obtain some additional information relating to the mode of occurrence and to advise the family on how to avoid such accidental occurrences. The mother related that on the morning prior to taking the child to the first hospital the child had had an earache, and she had given him some baby aspirin, 1 every four hours for one day. Since the baby continued to cry, the mother thought that he had another earache (he previously had been treated for an earache), and therefore she continued giving him baby aspirin, 1 tablet every three hours for another day. The child vomited and had diarrhea while on the aspirin medication. When he was examined at the first hospital, he was given a "yellow liquid" medicine. Neither the medication nor container could be retrieved. A return appointment for the following week was made. Since the child did not improve, he was taken to Bellevue Hospital, where he died within eighteen hours following admission. The mother revised her story relating to the aspirin administration several times. It is quite possible that she had administered aspirin of adult size and perhaps at more frequent intervals and for a longer period of time than that to which she admits.

Needless deaths from aspirin overdosage still occur. Physicians have an obligation when prescribing aspirin to instruct parents orally and in writing as to dosage, time interval, and duration of administration. Families should also be advised about the need for safe storage and handling of this potentially hazardous product.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Lye	$1^1/_2$ years	Female

This incident was reported from Mount Sinai Hospital, New York City, by Donald Gribetz, M.D. While the patient was playing unsupervised in the yard, someone dropped a can of lye from a window. The child obtained it and swallowed an unknown amount of the lye. She vomited several times soon thereafter and was taken to a hospital emergency room, where her stomach was lavaged with saline forty-five minutes following the ingestion. The lavage was performed because the nature of the intoxication was unknown at that time. The mother claimed that the child had swallowed "potassium." However, it later was found that the product was lye.

The examination on the first hospital admission showed that the baby had definite burns on the mouth and lips and a very necrotic soft palate. It is possible that this condition was aggravated by the inducing of emesis and the gastric lavage in the emergency room prior to the determination of the injurious agent. At that time the barium swallow roentgenographic examination of the esophagus gave normal findings. The child was treated with fluids intravenously, procaine penicillin 600,000 units daily intramuscularly, chloramphenicol 500 mg. intramuscularly twice daily, and steroids. The steroid administration began with hydrocortisone 100 mg. intramuscularly daily for the first two days and then methylprednisolone (Medrol) 10 mg. intramuscularly three times daily. After much debate it was decided not to resort to esophagoscopy initially or to institute bougienage. The decision to omit these two procedures was reinforced by the fact that from the fifth day the child tolerated oral feedings well.

When this incident first was reported to the Center, it was stated that the baby was still in the hospital, where she was being treated with steroids and dilatation on a trial basis. The steroids were continued for two weeks, after which time considerable improvement was noted. The treatment was reported as successful due to the steroid therapy alone, a situation similar to that in a series of cases reported in the *Journal of Pediatrics* in 1956.[1] The barium swallow examination was repeated one week later. Although the child was swallowing without difficulty, a partial constriction of the lower portion of the esophagus was noted. Bougienage therefore was started and was continued three times weekly in the outpatient department. On the basis of these findings Dr. Gribetz concluded that the therapy with steroids alone, originally presumed to be successful, was only partially successful.

Dr. Gribetz therefore recommends that patients with lye poisonings be treated not solely with steroids but also with bougienage.

The public health nurse who visited the home obtained information relating to the family history. The family, consisting of 2 adults and 4 siblings, lives in a one-room apartment. The father is a factory worker of a low educational and socioeconomic level. The patient was adjudged to be of average intelligence, and she compared favorably in growth and development with other children of the same age. At present the father is unemployed and is receiving some assistance from the Department of Welfare. The family was very cooperative, imparted information freely, and was grateful for the advice given by the public health nurse with regard to the prevention of accidents.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Lye (Drano)	3 years	Female

This incident also was reported from Mount Sinai Hospital, New York City, by Donald Gribetz, M.D. The child's godmother had just used Drano to clean the kitchen sink and had placed the can on a low table. The patient, unnoticed by the godmother, obtained the can and swallowed an unknown amount of its contents. The child immediately cried out and complained of burning in her mouth and throat.

The report states that the patient was admitted to the hospital on December 16, 1959, two hours after swallowing the Drano. Vomiting had been induced at home. Physical examination on admission to the emergency room revealed a red and swollen lower lip, a reddened buccal mucosa, a swollen posterior pharynx, and an uvula and tonsillar pillars which were edematous.

The child was treated with fluids intravenously, 600,000 units of procaine penicillin daily, 400 mg. of chloramphenicol intramuscularly twice daily, and steroids. Steroid administration was begun with 20 mg. of methylprednisolone twice daily, and after forty-eight hours the dose was reduced to 30 mg. per day. Four days following her admission an esophagram revealed no pathologic condition. Nevertheless, bougienage was started on that day. Steroid therapy was discontinued on January 4, 1960. After her discharge, bougienage was continued in the outpatient department.

The child was under the care of the godmother for about a month prior to the accident. The public health nurse relates that although the godmother appeared to be attached to the child, she was totally unaware of the child's needs and of the elementary precautionary measures needed to avert accidental occurrences to children. She was grateful for the help she received from the nurse and promised to make the environment safer.

In spite of the absence of a pathologic condition on the barium esophagram, this patient was treated with steroids and bougienage. This was done because of the experience obtained in the first case. The results in this case with combined therapy were adjudged to be excellent.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Ammoniated Mercury Ointment	2 years	Female

This case was reported from The New York Hospital. The patient apparently was in good health until the end of August, when she developed impetigo on her forehead, face, and vulva. The condition cleared by the end of September. At the beginning of October the child developed a whitish discharge over the entire scalp. She was given a prescription and was treated for five days with Selsun, sulfur, and a 10 per cent mercurial salve applied twice a day to her scalp. The total amount of mercurial salve used was about $3^1/_2$ ounces. From the middle of September through October the child had a respiratory infection. About October 12 a boil the size of a dime was noted on her back. She was treated with Epsom salt and 1 injection of penicillin.

About the middle of October she became very irritable and ceased to play and run well. She became constipated. There was no vomiting. About the first week in November she was noted to be weak and unsteady in sitting up, and she refused to walk. At that time fine tremors developed in her hands. At no time did she have any difficulty in talking. A reddish, discrete pinpoint rash was noted around her chest and abdomen.

The child was referred to a pediatrician, who believed that she had the Guillain-Barré syndrome and referred her to a local hospital. Prior to admission she began walking with a wide gait. At the local hospital the child was irritable, pale, and with poor muscle tone. She sat only with difficulty. Physical findings showed diminished deep tendon reflexes. A lumbar puncture showed clear fluid, 31 cells (all red blood cells), protein 81 Gm. per 100 ml., and sugar 79 mg. per 100 ml. The original blood cultures grew Staphylococcus aureus. Two subsequent cultures were negative. She was treated with penicillin and streptomycin.

On the third hospital day she developed a morbilliform, scaly rash on both palms and soles. A urine mercurial test was done, the result of which was positive. However, the control also was slightly positive so that the diagnosis was questionable. The child was treated with BAL, 3 mg. per Kg. every four hours for forty-eight hours and then every twelve hours for twelve days. Her condition was unchanged clinically, and she was discharged on December 11, 1959. When she arrived home, she was unable to walk and appeared very weak but less irritable. Her speech improved to the extent that she began to speak in sentences.

She was referred to The New York Hospital one month following her discharge from the source hospital. The physical examination at The New York Hospital revealed a large, well-nourished, white female two years of age who was unable to support herself and was very flaccid in bed. A small, flat, discrete morbilliform rash was noted on both soles and palms. Her skin was icteric; petechiae and cyanosis were also noted. The pharynx was moderately injected. The right kidney was easily palpable and appeared large. No hernias or abdominal masses were felt. The vulva was erythematous. The patient appeared irritable and slightly lethargic.

The deep tendon reflexes were absent; motor responses were bilaterally weak and flaccid. The superficial abdominal reflexes persisted only on the right side. The patient reacted to pinprick more pronouncedly on the upper extremities than on the lower extremities. On reaching, a tremor of both hands was noted. The patient was able to hold objects well and to reach directly for objects. She sat very poorly with support. There were no plantar or Hoffman reflexes.

The laboratory findings were as follows: The urine had a pH of 7.5 and 4 to 5 white blood cells; otherwise it was normal. The blood had a hemoglobin of 12.1 Gm. per 100 ml. and a white cell count of 10,500 with a normal differential. There was no basophilic stippling in the red blood cells. The blood urea nitrogen was 18 mg., sugar 86 mg., chlorides 113 mg., sodium 142 mg., and potassium 4.6 mg. (all per 100 ml.) and carbon dioxide 22 mEq. per L. The total protein of the blood was 7 Gm. per 100 ml. with an albumin-globulin ratio of 4.8 to 2.2. The initial pressure on lumbar puncture was 100 mm. Hg. The spinal fluid was crystal clear with no organisms or cells and was negative on culture. It had a sugar of 65 mg. per 100 ml. and a protein of 75 Gm. per 100 ml. A throat culture grew hemolytic Staphylococcus aureus, beta-hemolytic streptococci, and many alpha streptococci.

X-ray examination revealed the chest to be normal. The long bones were normal intrinsically. However, subcutaneous and intramuscular flaps were markedly increased with noticeable loss in muscle mass. The teeth appeared to be normal.

The electrocardiogram showed a normal tracing with incomplete right bundle branch block.

Since there was a problem in making a definite diagnosis, the case was presented to Samuel Z. Levine, M.D., Director and Head of the Department of Pediatrics, who felt that the child showed the typical picture of acrodynia. Inasmuch as she was gradually improving on no medication, further diagnostic tests were considered unwarranted at the time. Because of the patient's general improvement, and particularly since she was able to sit up owing to improvement in muscle tone, further treatment with BAL was deemed unwise. However, because of the beta-hemolytic streptococcus infection in her throat, the child was treated with an antibiotic for ten days.

She was discharged on a high-vitamin, high-protein diet. Physiotherapy was also advised. She had received these physiotherapy treatments for ten days while she was in the hospital, and the parents were instructed in the administration of this treatment following her discharge.

Although association between mercury and acrodynia has been established since 1948, there still are some observers who believe that conclusive scientific proof for its causal relationship has not yet been given. In the February, 1960, issue of *Pediatrics* there is a report on the use of edathamil calcium disodium in acrodynia.[2] The study indicates that edathamil calcium disodium had no significant effect on the progress of the disease nor did it help significantly in the elimination of mercury from the body. The authors suggest that a more promising field for study perhaps would be the sympatholytic and ganglion-blocking drugs, since it is possible that acrodynia may be an autonomic disorder.

The source hospital explained that the reason it had not reported this case to the Center is that it had not been accustomed to consider sensitivity to metals as poisonings. However, drug reactions and side-reactions are truly poisonings. "Side-reaction" is merely a convenient euphemism for "poisoning," and the physician should always report to the Center not only "poisonings" but side-reactions and overdosages. Only by means of accumulating new knowledge and data relating to side-reactions, toxicity of products, and iatrogenic accidents will it be possible to determine whether a drug, particularly a new drug, is actually safe for general use. As stated in a recent article published in *The Journal of the American Medical Association*, "Only by means of such studies will it be possible to determine whether a drug is safe for a specific use. The physician can aid greatly in the acquisition of such knowledge by prompt reporting of such incidents to the poison control center."[3]

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(*Number fifty-seven in a series of Briefs on Accidental Chemical Poisonings*)

Power, like a desolating pestilence, pollutes whate'er it touches.—SHELLEY

MATERNAL WELFARE IN NEW YORK STATE

EDWARD C. HUGHES, M.D., SYRACUSE, *Editor*

Chairman, Subcommittee on Maternal and Child Welfare
Committee on Public Health and Education
Medical Society of the State of New York

*Illnesses Accidental to Pregnancy as Causes of Maternal Deaths**

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(*From the Maternal Welfare Committee, Medical Society of the County of Queens*)

The following 4 cases were presented by the residents from the institutions in which the deaths occurred, and each case was discussed in turn by a member of the attending staff of the same institution. All personal data are purposely excluded from the case presentations.

The main purpose of the presentation of each case is to analyze and classify the death and to derive education therefrom so that the medical profession at large can benefit from these data. Since 3 of the cases deal with medical problems, an internist, Joseph Resigno, M.D., was invited to the meeting to act as consultant.

Case Reports

Case 1.—A thirty-eight-year-old Negro woman, para 2, gravida 3, was admitted on May 20, 1959, with the chief complaint of a painful lump in the right breast which she had noticed two to three months prior to admission. There was an associated bloody discharge from the right nipple. The patient had two living children delivered by cesarean section. At the time of admission she was approximately four months pregnant.

A general examination revealed a systolic murmur in the pulmonic area and no evidence of cardiac enlargement. The lungs were clear. The uterus was palpable 1 finger below the umbilicus. The right breast was larger than the left and a mass was palpated in the upper outer quadrant. This mass was hard, slightly mobile, tender, and measured $1^1/_2$ by $^3/_4$ by $^3/_4$ inches. A bloody discharge was expressed from the right nipple. Nontender and mobile nodes measuring 1 by $^1/_2$ inches were palpable in the right axilla.

On May 20, 1959, the breast mass was excised. The pathologic report revealed an infiltrating adenocarcinoma with scirrhous features. Adjacent breast tissue showed early pregnancy changes and a miniature fibroadenoma. On May 28, 1959, a radical mastectomy was performed. The supraclavicular lymph nodes were almost completely infiltrated by sheets of large epithelial tumor cells. Fifteen axillary nodes showed tumor infiltration. The pre- and postoperative laboratory findings were not remarkable except for secondary anemia which was corrected with whole blood. The alkaline phosphatase was 4. Chest x-ray films showed negative results.

After due consultations with the radiation, obstetric, gynecologic, and surgical departments, the grave prognosis of the problem was realized and the patient was allowed to continue without any further treatment until September 29, 1959. On this admission the patient gave a history of upper abdominal pain of one week's duration radiating to the right costovertebral region. The pain was increased by deep breathing. The chest was dull to percussion at both bases. The uterine fundus was 6 cm. below the xiphoid and the fetal heart was 130 and regular in the right lower quadrant. The impression was pleural effusion and possible rib metastasis.

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* Presented at the meeting of the Committee on Maternal Welfare of the Queens County Medical Society, January 28, 1960.

From this date on the patient's condition became gradually worse and a low flap cesarean section was performed on October 1, 1959, as soon as her medical condition permitted. A bilateral oophorectomy was performed at this time. The patient was subsequently discharged to the tumor clinic. Her condition worsened gradually and she died on November 12, 1959. No autopsy was obtained.

Prenatal and postpartum visits should always include a thorough breast examination. Early diagnosis and treatment is the only hope for possible cure of carcinoma of the breast during pregnancy. In this case, if the mass had been discovered at an earlier date and appropriate surgical and radiologic treatment instituted, the patient's life might have been saved, but the fact that pregnancy had progressed to four months and the lesion had metastasized left little hope for cure.

Case 2.—This was the first admission to this hospital of a twenty-nine-year-old white female, para 1, gravida 1, with the chief complaint of persistent headache and visual disturbances of two weeks duration.

Previous obstetric history states that on May 11, 1959, she was admitted to the hospital in active labor and had a normal spontaneous delivery of a 6-pound, 11-ounce living infant. The only recorded prenatal or postnatal blood pressure on April 27, 1959, was 110/76. There was no proteinuria at this time. She was discharged on May 19, 1959. No reason was given for her length of time in the hospital.

Prior to admission to this hospital on October 29, 1959, she had two convulsive episodes in the previous two weeks. An ophthalmologist had made a diagnosis of severe optic neuritis. The day before admission her blood pressure was 220/100. The chest x-ray film showed an enlarged heart. There was a 3 plus proteinuria. She was given Serpasil, dosage not specified. About midnight of the same day she had two convulsions lasting thirty to sixty seconds and became stuporous. An examination revealed a stuporous woman with a blood pressure of 280/170.

The tentative diagnosis was pheochromocytoma, acute glomerular nephritis, and brain tumor. The spinal tap was negative. The neurologic consultant stated that a convulsive seizure was described. On examination she had an upward conjugate deviation of the eyes to the right, followed by twitching of the face. This was followed by shaking of the right upper extremity, then the lower extremity, and finally the whole body for a duration of thirty seconds. The diagnosis was frontal lobe tumor.

A tracheotomy was performed at 3:30 P.M. on October 29, 1959. At 9:00 P.M. she was put in a respirator. The blood pressures, taken every fifteen minutes, ranged from 106 to 160 systolic accompanied by an unobtainable diastolic pressure. She expired shortly thereafter.

The laboratory reports stated that the blood urea nitrogen was 24, the hematocrit 47, and the stool examination showed negative findings for occult blood.

The pathologist's report of the autopsy findings were as follows: (1) pyelonephritis, (2) bronchopneumonia, and (3) viral encephalitis. The cause of death was bronchopneumonia. The microscopic examination revealed malignant nephrosclerosis and probable uremia in spite of a blood urea nitrogen of 24.

This case presented a multiplicity of diagnoses and even with a postmortem examination exact causative factors are undetermined.

Case 3.—A twenty-nine-year old female patient was admitted to the hospital on June 27, 1959. The patient had been married for six years, had four living children, and at the time of admission was approximately five months pregnant.

In March, 1959, the patient had an episode of infectious mononucleosis characterized by fever, generalized adenopathy, and an extremely high heterophilic titer, 1:7,260. Treated with steroid therapy for less than one week, she made a complete clinical recovery, but the titers fell gradually, the last one, in May, being 1:800. Otherwise there was no additional antecedent history.

Her present illness began on June 22, 1959, with muscle and joint pains, weakness, and chilly sensations, but no fever. These complaints persisted until the evening of June 26, 1959, when she developed a high temperature. On admission the next day her temperature was 106 F., blood pressure 96/50, and pulse 124. The patient was acutely ill but not toxic and, except for a liver 2 fingers below the costal margin and a spleen 1 finger below, the remainder of the physical examination showed negative results. The admission laboratory data revealed a leukopenia, 4,000 white blood count, 62 per cent polymorphonuclear leukocytes, hematocrit 37, hemoglobin 12.8 Gm., urine 1,004, 1 plus albumin, occasional red blood cells, and a few white blood cells. The serum transaminase was normal, the Widal test showed negative results, the chest plate disclosed negative findings, and the spinal tap on the second day of admission indicated completely negative results.

On the second hospital day surgical consultation confirmed some tenderness in the right lower quadrant, but no surgical intervention was indicated. The patient was catheterized to obtain a sterile specimen and after this procedure developed a complete renal shutdown for thirty-six hours with a blood urea nitrogen rise to 75. Additional laboratory data revealed a heterophil of 1:56 (forty-eight hours), normal blood sugar, total proteins, but the albumin-globulin ratio reversed (3.2:4). There was a mild elevation of bilirubin noted, both direct and indirect; serum calcium and additional liver function tests gave entirely normal indications. Repeated blood and urine cultures showed negative results.

On the third day of admission the patient had a moderately severe hematemesis and a drop of hematocrit to 26. She was transfused and seen by the hematologist who felt that she had no primary hemorrhagic disease or blood dyscrasia but rather a severe systemic infection. At this point her urine output improved dramatically and remained excellent until eighteen hours before death. However, she developed a severe reduction in the white blood count and platelets. The white blood count fell to as low as 450 per cu. mm. and the platelets to as low as 51,000. Her condition became progressively worse and gastrointestinal bleeding in the form of melena appeared, pyrexia persisted, and petechial eruptions appeared. She developed an oliguria and rising blood urea nitrogen eighteen hours before expiration together with showers of petechiae and progressive gastrointestinal bleeding. Despite continuous intravenous administration of antibiotics and the institution of steroid therapy in massive doses during the last four days together with repeated transfusions of fresh whole blood, the patient showed no response, had a spontaneous miscarriage twelve hours before death, and developed a mild icterus. The spleen became progressively larger, the abdomen progressively more distended, and the patient expired.

The autopsy findings were: acute hepatitis; subacute glomerulonephritis with toxic parenchymal degeneration of kidney tubules; congestion, hemorrhage, and infarction of the spleen; acute gastric dilatation with focal congestion and hemorrhage; aplasia of bone marrow; pericardial petechiae; jaundice and petechiae of skin; and ascites.

The rapid course of this patient's condition made diagnosis practically impossible, and in the final analysis the whole case is still mystifying.

CASE 4.—This patient was a twenty-four-year-old white housewife who already had had one child born at term after an uneventful pregnancy. Her current pregnancy was also uneventful, and she was delivered of a normal baby at term on October 17, 1959, in another hospital. During her labor she received 100 mg. of meperidine hydrochloride and 0.4 mg. of scopolamine hydrobromide as sedation and cyclopropane general anesthesia during delivery.

Her immediate postpartum course was characterized by the fact that she remained in a confused state for a period which was "much longer than average." She was sent home in an apparently good condition on the fifth day postpartum. Two days later, seven days postpartum, while resting the patient suddenly awoke complaining of a strong headache followed shortly afterward by nausea and vomiting Four Anacin tablets failed to give relief. An hour and thirty minutes after the onset of the headache she was examined by her family physician who found no neurologic symptoms except for the headache. He gave her 100 mg. of meperidine hydrochloride intramuscularly which gave some relief. Three hours later she went into coma and was hospitalized.

On admission she was still in coma and responded to painful stimuli only with a slight grimace. Her pulse rate was 80 per minute, and blood pressure 128/80. The pupils reacted equally to light but were dilated at times and constricted at times; the fundi appeared normal; and the eyes were slightly divergent. The reflexes were hyperactive, and the lower extremities were rigid in extension with the feet in plantar flexion. On stimulation the upper extremities were extended with inversion of the hands. The urinary findings showed negative results. A spinal tap yielded grossly bloody fluid under 322 mm. of water pressure. The diagnosis on admission was subarachnoid hemorrhage. The diagnosis given by the consulting neurologist was subarachnoid hemorrhage secondary to ruptured aneurysm of the anterior communicating artery.

The day after admission the patient had several grand mal seizures and her temperature spiked to 105.6 F. She was treated with oxygen tent; urea plus invert sugar solution, and intravenous fluids; sodium luminal; Dilantin sodium; sodium amytal (with each seizure); alcohol spongings; tap water enemas, and other means to lower her temperature. A tracheotomy was performed that evening to obtain a clear airway.

The patient remained alive but was in coma for the next two days; her condition worsened gradually until she expired ninety-four hours after admission. Permission for an autopsy was not granted.

The internist who cared for this patient states that at no time did she have any warning symptoms. A diagnosis beforehand was impossible. The onset of coma and rapid progress until death left the patient with little or no hope for survival.

Summary

These cases illustrate some current causes for maternal deaths. A careful medical evaluation of the obstetric patient along with adequate medical consultation will aid greatly in the early diagnosis and treatment of these cases with possible prevention of death.

Cholesterol Danger Discounted

Two southern physicians discount the level of cholesterol (a fatty substance) in the blood as a cause of heart and arterial diseases. In a study of 1,400 white and Negro children in Georgia, they found that cholesterol levels in the two groups were equal, even though the diets of the two races often vary markedly. Even so, fat deposits in the arteries of the Negro children were four times greater than in the whites. The final paradox: the Negroes seemed less prone to heart and arterial diseases. The doctors conclude that diet is not the only factor and that the public "should not go overboard" in switching to the exclusive consumption of low-cholesterol foods.—*Nutrition Foundation*

LETTERS TO THE EDITOR

Letters to Editor Encouraged

To the Editor:

One of the primitive urges of man is to publish what's on his mind. As soon as a child is old enough to hold a pencil, a crayon, a piece of chalk, or a pen knife, he begins to scrawl his thoughts on walls, barn doors, sidewalks, tree trunks, billboards, and desks. Sometimes the script is legible and the text informative and significant, such as "John loves Mary." But the publication always fulfills at least one purpose—satisfaction of this primeval desire to communicate publicly.

The physician retains this urge. Notice how he collars his professional brethren to recount his recent diagnostic triumphs, therapeutic victories, and surgical exploits, or to give vent to his latest opinions. He longs to put them into print and sometimes he does, as evidenced by the voluminous clinical literature that floods medical libraries. But usually his observations and ideas do not reach the printer because they are not sufficiently documented, refined, and original, or the prospect of arranging illustrations, polishing prose, and submitting a neat manuscript to an inquisitional board of editors is too much to bear. So most physicians are doomed to pass their careers without re-experiencing their childhood joy of publication.

In our mother country, those revered journals, *Lancet* and the *British Medical Journal*, have solved this problem. For many years they have featured sections devoted to "Letters to the Editors," wherein one finds expressed the observations, the ideas, the opinions, the passions, and the hopes of British physicians. Adjacent to a brief preliminary report of an ingenious laboratory study one may read the lament of an impoverished house officer or a violent opinion regarding some current social phenomenon. Arguments concerning therapeutic methods and political problems rage back and forth as they can only in a society well imbued with democracy.

In these columns week after week, the brilliant panorama of clinical medicine with its fascinating ramifications into science and society is portrayed marvelously. Often important concepts are expressed: controversies that need to be aired, points that must be made, and new advances that should be brought quickly to the attention of physicians. And always the humblest practitioner has an opportunity to publish his thoughts just as the most erudite professor.

I would like to propose that the NEW YORK STATE JOURNAL OF MEDICINE establish a "Letters to the Editor" section similar to those of *Lancet* and the *British Medical Journal.* Any and all letters from physicians, short of the scurrilous, should be printed and promptly so. Controversy should be encouraged and not avoided, and the use of nom de plumes allowed. Manuscripts with insufficient substance for publication as articles could be condensed to letter form by authors rather than rejected, and the submission of interesting observations, ideas, or opinions encouraged by the editor.

I believe such a section might serve as an open forum for New York physicians, relieve the JOURNAL of some of the articles that need not be published as such, increase readership interest, and perhaps most important, give every physician the opportunity to see his words and his name on that loveliest of all tableaux—the printed page.

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Are Artificial Airways Dangerous?

To the Editor:

On February 1 1960, on pages 388 to 390 in your JOURNAL,* two capable anesthesiologists reported on the dangers of artificial airways for rescue work. Even in the best eye there is a blind spot. Documentation by the scientific method seems to have disappeared in this type of article. Surely this must be a blind spot that should be corrected immediately before irreparable damage is done.

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* Collins, V. J., and Saland, G.: Dangers of artificial airways for rescue work, NEW YORK STATE J. MED. **60:** 388 (Feb. 1), 1960.

Each year in the United States 6,500 people drown and many thousands are lost in asphyxial deaths from choking, in breathing noxious gases, and in hypoxic atmospheres. During 1959 Cleveland fire and police personnel were called to more than 300 victims of asphyxia. They arrived from five to fifty minutes before the physician arrived or before the victim could be transported to the hospital or to the morgue.

For years we in the Department of Anesthesiology at Western Reserve University through the educational divisions of the Fire and Police Departments have taught policemen and firemen the principles of resuscitation, which now include the S-shaped airway. These same methods are taught to our nurses, interns, and residents in our hospitals in Cleveland.

Our medical mission team which served Asia and Africa through medical missions and national hospitals secured and delivered one thousand of these lifesaving instruments. Many lives have been saved as a result of their use, without a single report of the "accidents" loosely described in this paper. The Maryknoll Sisters Hospital in Pusan, Korea, through Sister Doctor Mary Lois has documented the saving of 18 children through this device. Mr. George Pitkin, a medical photographer, and a practical nurse in Dr. Albert Schweitzer's Lambarene Hospital, saved the life of an apneic African child with this instrument. A Japanese missionary doctor in the Baptist Hospital in Kyoto, after hearing one lecture that included brief instruction in the use of this device, used it successfully in saving a senior doctor colleague in another hospital who had choked into a state of cyanosis and apnea in an acute asthmatic attack. A third-month anesthesia resident in the University Hospitals of Cleveland set the stage for the reversal of a cardiac standstill through such mouth-to-mouth ventilation and cardiac massage, resulting in the baby's going home with his parents.

It is quite proper for cautious physicians who challenge medical advances to present case reports of complications and death that carefully document data. It is improper, and evidence of a scientific blind spot, when they make such statements as that lifesaving devices have "been presented prematurely to the public"; "Reports have been collected showing that this device has been instrumental in a number of accidents when used by laymen"; and "For a number of reasons . . . it is believed that this airway or any device inserted into the oral cavity by a layman should be condemned."

The most frequent cause of airway obstruction and asphyxial death is the human tongue obstructing the patient's airway. The human tongue and the specialist's pen must not without documentation through objective research condemn a method that has saved life as frequently and with as great a potential for other good results as the S-shaped airway. Where are the controls that have been salvaged under comparable conditions by laymen using other methods, in this report?

It is regrettable that such reports as these and those learned men who write them have influenced the Fire Department of the City of New York and the New York Society of Anesthesiologists to close the door on one of the few improved methods of lifesaving to be evaluated in this century.

American laymen properly trained, firemen and policemen, Red Cross personnel, and Boy Scouts and others, in my experience, can be trained in thirty minutes, with a good diagrammatic anatomic moulage of the oropharynx or a good teaching moving picture, to use effectively the S-shaped airway. They can also be taught to withhold its use from the victim who has his reflexes.

It is my recommendation that the authors of this report rewrite it in the traditional manner they have so effectively taught in the past, and obliterate the blind spot.

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Reply by Authors

Dear Dr. Hingson:

Your letter and enclosure to the editor have been received. This is indeed a most interesting and I am sure a well-motivated difference of opinion. Your letter electrifies us quite sharply.

At the outset, I wish you to understand that Dr. Saland and I are strong exponents of the technic of mouth-to-mouth breathing. In fact, in this area we are crusading for its wider use. I believe, therefore, it is necessary that we properly focus our attention on the true area of disagreement. This area of disagreement is *whether or not* there is a need for artificial devices, whether there is need for an artificial device to be part of the mouth-to-mouth technic as applied by laymen.

If you reread our report in the New York State Journal of Medicine, you will note that we believe the pharyngeal airway and the S-shaped airways are medical tools. Do you not agree that the airway was invented by a physician and first used by Hewitt? Subsequently it was developed and improvements made by many anesthesiologists. I am sure that you in your long period of teaching have realized that the knowledge and judgment relating to the use of this simple device in the operating room as well as the skill needed is not acquired overnight. Since you have not fully appreciated some of our points I would like to make further comments.

1. There is ample evidence that the tongue as an obstruction can be managed very successfully at least 95 per cent of the time by proper positioning of the head. Elam *et al.* have discussed this at some length in a recent article in the *Journal of the American Medical Association.**

2. In the last year and one half, the rescue squads and the firemen of the Fire Department of the City of New York have been using the mouth-to-mouth technic without an artificial airway. The application of the technic has been successful in some 31 miscellaneous cases. These have been collected by the medical service of the Fire Department. I am sure that you have done yeoman service with the Fire and Police Departments of Cleveland, and I am sure that these men have had a number of opportunities to use methods of artificial respiration, but I think you will admit that the Fire and Police Departments of the City of New York in a single month can obtain quite a varied and extensive experience.

3. I would next like to point out that throughout the country many rescue groups have had pharyngeal airways of the Lumbard type available with the different types of commercial resuscitators for many years. A casual survey points out the interesting fact that most of the ambulance drivers and others have not seen fit to use these airways even though instruction has been given on many occasions. In other words, the idea to use a pharyngeal airway is far from new. As stated by Chief Klotzback of the Police Department of the City of New York, and also by Jim Ferguson, Coordinator of Safety for the City of New York, these airways have not been used for good reason. At the very beginning they were found to pose a hazard and indeed involved a number of legal actions.

4. If you will look at our article again, you will note that we took a number of medical men and found that even after adequate instruction and demonstration they still lacked sufficient skill to insert an airway effectively *within thirty seconds.* In addition, if there was a period of time elapsing between explanation, demonstration, and imitation and a subsequent period of application, that the skill was greatly lost.

5. Last, I have been consulted and have reviewed three cases which in the opinion of the doctors and myself represented dangerous complications occuring consequent to the use of the pharyngeal airway. In two instances vomiting occurred and in the other instance the tongue was actually blocking the pharnx when an S-shaped airway had been improperly placed.

In conclusion, I think that there is a "blind spot" which fails to recognize the need to apply a measure of common sense. I am convinced firmly that many of us from our ivory towers see the ideals but are not pragmatic or empiric enough to recognize when a method or idea is practical or workable. To think that a skill, to be sure a very simple one, can be easily mastered by laymen and then the skill retained for long periods borders on the ridiculous. The chance to apply this skill in asphyxial resuscitation is presented approximately twelve thousand times a year distributed over the entire United States. Hence, any single person can at best have a most limited experience or practice. Until someone can demonstrate that out in the field the occasional and casual rescuer can be a safe rescuer when he employs a medical device such as the pharyngeal airway, we must oppose its widespread use.

I am especially opposed to the selling of this device over the counters of every drugstore and now some of the chain stores with merely a set of instructions, and I am firmly convinced that any right-thinking anesthesiologist will not consider that this particular skill can be approached casually, can be used by everyone, or can be prostituted in a wave of enthusiasm. I think if this particular feature is highlighted the advance made in having the mouth-to-mouth technic accepted will be jeopardized. I would in no way make these statements unless I felt and knew that there was a safe and effective alternative. To reiterate, this exists in terms of Elam's method of head positioning.

Also, I must comment on the fact that most of your teaching regarding resuscitation has involved doctors or people in the nursing profession. We can quote just as many examples of people saving lives at home. Furthermore, your students in Cleveland are not a representative group of the population. We need to have housewives, Boy Scouts, school children, the average nonprofessional layman able to do a proper rescue procedure. I believe you should take a group of aides, orderlies, and secretaries and determine how quickly they acquire the needed skills.

Last, I can only restate my position that the use of an artificial airway by nonprofessional people must be condemned. So far as the use of professional workers is concerned, it is also a highly questionable technic. At no time in these remarks have I indicated that mouth-to-mouth or rescue breathing technic is not desired. We are convinced that it is the best technic, that it is here to stay provided some of our colleagues are not carried away by the desire to make the average man the equivalent of a doctor. I only hope that you, as you stated in your opening letter, take these remarks to be nonpersonal, and I think that the burden of proof must really rest on those who are advocating the use of an airway to demonstrate fairly that the situation without the airway is either ineffective or dangerous, and on this score I challenge you for proof.

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* Elam, J. O., *et al.*: Head-tilt method of oral resuscitation, J.A.M.A. **172**: 812 (Feb. 20) 1960.

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Bibliography Available on Relationship of Oxygen Therapy to Retrolental Fibroplasia

To the Editor:

The National Society for the Prevention of Blindness is receiving a number of inquiries regarding the relationship between oxygen therapy for premature infants and retrolental fibroplasia. Specifically, it is asked when the knowledge, that uncontrolled use of oxygen in the treatment of premature infants might result in retrolental fibroplasia, became generally available to the profession and hospitals.

Those who fail to follow recommendations established by competent authority for prescribing oxygen for premature infants subject their patients to the risk of blindness.

The entire medical profession and all hospital administrators have a duty to institute and persistently follow procedures in the administration of oxygen to premature infants that will prevent retrolental fibroplasia.

Available is an annotated bibliography on the relationship of oxygen therapy to retrolental fibroplasia. These references are set out in chronologic order to show when it was that knowledge of the cause and prevention of retrolental fibroplasia became available to the medical profession.

Your cooperation in forcefully bringing this subject to the attention of your readers will be deeply appreciated by the National Society for the Prevention of Blindness and its Committee on Retrolental Fibroplasia (V. Everett Kinsey, Ph.D., Detroit, Michigan, chairman; Arnall Patz, M.D., Baltimore, Maryland, and Algernon B. Reese, M.D., and Jonathan T. Lanman, M.D., New York City). Many others who have either a professional or personal interest in the universal use of such important sight-saving information will be equally appreciative.

Thank you for your assistance.

John W. Ferree, M.D.
Executive Director
National Society for the Prevention of Blindness
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New York 19, New York

Seeing Is Perceiving

United States research on solar exploration has shed new light on just how important sight is to the sense of taste. Trying to anticipate conditions which may confront U.S. astronauts, nutrition scientists at the Air Force Aero Medical Laboratory put a number of human "guinea pigs" in a completely darkened room and fed them. Absolutely stripped of their sense of sight, the subjects could not detect any difference in the taste of white and whole wheat bread, to distinguish between different kinds of canned fruit, and found all of meat tasted about the same.—*Nutrition Reviews*

NECROLOGY

George S. Apelian, M.D., of Brooklyn, died on May 3 at the age of sixty-two. Dr. Apelian received his medical degree from the University of Beirut in 1923. He was an assistant in dermatology at Kings County Hospital Center and Methodist Hospital of Brooklyn and an attending in dermatology at the Methodist Hospital of Brooklyn Outpatient Department. Dr. Apelian was a member of the Kings County Medical Society and the Medical Society of the State of New York.

Moses Barinbaum, M.D., of New York City, died in the Lenox Hill Hospital on May 25 at the age of seventy-four. Dr. Barinbaum received his medical degree from the University of Koenigsberg in 1911. He was a member of the New York Psychoanalytic Society, the New York County Medical Society, and the Medical Society of the State of New York.

Edith Michael Buyer, M.D., of Suffern, died on June 5 in the Ramapo Manor Nursing Home at the age of sixty-six. Dr. Buyer graduated in 1918 from Johns Hopkins University School of Medicine. She had been a psychiatrist and medical supervisor for the Board of Education in New Rochelle since 1927 and had also been on the staffs of the New Rochelle Hospital and the Vanderbilt Clinic of the Columbia-Presbyterian Medical Center. From 1930 to 1934 she held a special appointment as an assistant in psychiatry at Columbia University, and she had also done volunteer work at the Children's Village at Dobbs Ferry. During World War II, Dr. Buyer was a medical officer at the Waves Training School in the Bronx, and after being released from active duty continued to participate in the Naval Reserve program as medical officer of a men's unit. Before her appointment to the New Rochelle post, she had worked for the children's bureau of the United States Department of Labor and as a supervisor of children's hygiene centers for the New York State Department of Health. Dr. Buyer was an adjunct in pediatric psychiatry at the New Rochelle Hospital and the New Rochelle Hospital Outpatient Department. She was a Member of the American Psychiatric Association, and belonged also to the American School Health Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Michael Callahan, M.D., of Rochester, died on May 22 at his home at the age of sixty-seven. Dr. Callahan graduated in 1921 from the University of Buffalo School of Medicine. He was a senior attending physician in general practice at St. Mary's Hospital. Dr. Callahan was a member of the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Festus M. Chaffee, M.D., of Middlesex, died on May 8 in Soldiers and Sailors Memorial Hospital, Penn Yan, at the age of eighty-one. Dr. Chaffee graduated from Syracuse University College of Medicine in 1902. He was a Yates County coroner for over fifty years and was an honorary physician at Soldiers and Sailors Memorial Hospital, Penn Yan. Dr. Chaffee was a member of the Rochester Academy of Medicine, the Yates County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Ivey Delph, M.D., of New York City, died on May 29 in Sydenham Hospital at the age of sixty-five. Dr. Delph graduated in 1922 from Howard University College of Medicine and interned at Freedmen's Hospital, Washington, D.C. He was a member of the Manhattan Central Medical Society, the New York County Medical Society, and the Medical Society of the State of New York.

Percy Fridenberg, M.D., formerly of New York City, retired, died in Nyack on June 2 at the age of ninety-two. Dr. Fridenberg received his medical degree from the University of Strassburg in 1891 and interned at Mount Sinai Hospital. He had been a consultant in ophthalmologic surgery at Lebanon Hospital and the Hospital for Joint Diseases. Dr. Fridenberg was a Diplomate of the American Board of Ophthalmology, a Fellow of the American College of Surgeons, and a member of the American Ophthalmological Society, the New York Ophthalmology Society, and the New York Society for Clinical Ophthalmology.

N. Joseph Garabedian, M.D., of Staten Island, died on June 7 in St. Vincent's Hospital, New Brighton, at the age of forty-one. Dr. Garabedian graduated in 1943 from Georgetown University School of Medicine. From 1948 to 1950 he was on the teaching staffs of the Brooklyn Cancer Institute, Kings County Hospital, and the Long Island

College Hospital. Dr. Garabedian was a Diplomate of the American Board of Obstetrics and Gynecology and a member of the Brooklyn Gynecological Society, the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herbert Hartman Glosser, M.D., of Wellsville, retired, died on March 11 while traveling in Honolulu, Hawaii, at the age of eighty-four. Dr. Glosser graduated in 1899 from the University of Pennsylvania School of Medicine. He was a consultant in ophthalmology at Edward J. Meyer Memorial Hospital. Dr. Glosser was a Diplomate of the American Board of Ophthalmology and a member of the American Academy of Ophthalmology and Otolaryngology.

Carl Victor Granger, Sr., M.D., of Huntington Station, died on May 12 at his home at the age of fifty-eight. Dr. Granger graduated in 1927 from New York University and Bellevue Hospital Medical College. He was an associate in general practice at Huntington Hospital and a surgeon for the Huntington police. Dr. Granger was a member of the Suffolk County Medical Society and the Medical Society of the State of New York.

Morris Greenberg, M.D., of New York City, died in New York Hospital on May 25 at the age of sixty-nine. Dr. Greenberg graduated in 1917 from Columbia University College of Physicians and Surgeons and interned at Bellevue Hospital. He was a consultant in pediatrics at Knickerbocker and Grand Central Hospitals and director of the Bureau of Preventable Diseases of the New York City Department of Health. Dr. Greenberg was a Licentiate of the American Board of Pediatrics, a Diplomate of the American Board of Preventive Medicine, Inc. (Public Health), and a member of the American Public Health Association, the American Academy of Pediatrics, the New York Pediatric Society of which he was also a former president, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Abraham Roscoe Harber, M.D., of the Bronx, died on May 23 at the age of sixty-five. Dr. Harber graduated in 1920 from Cornell University Medical College and interned at Lebanon Hospital.

Hugh George Henry, Sr., M.D., of Germantown, died on April 24 at the age of sixty-five. Dr. Henry graduated in 1929 from McGill University Faculty of Medicine. He was an associate attending physician at Columbia Memorial Hospital. Dr. Henry was a member of the American Academy of General Practice, the Columbia County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sion Woodson Holley, M.D., of Farmingdale, died on May 13 at the age of fifty-four. Dr. Holley graduated in 1935 from the School of Medicine of the University of Chicago and interned at the Henry Ford Hospital. He was an attending physician at Nassau County Tuberculosis Hospital. Dr. Holley was an Associate Fellow of the American College of Allergists and a member of the Nassau County Medical Society and the Medical Society of the State of New York.

Louis Henry Levy, M.D., of New York City, retired, died on May 26 in Mount Sinai Hospital at the age of seventy-seven. Dr. Levy graduated in 1911 from Yale University School of Medicine and interned at Mount Sinai Hospital.

John Miller MacMillan, M.D., of Rochester, died on April 14 at his home at the age of fifty-six. Dr. MacMillan graduated in 1931 from the Faculty of Medicine of the University of Toronto. He was a consulting physician in chest diseases at Rochester General and Rochester State Hospitals and Monroe County Infirmary and an assistant in radiology and an assistant attending physician at Strong Memorial Hospital. From 1950 to 1958 he was director of Iola Sanatorium. Dr. Miller was an Associate of the American College of Chest Physicians and a member of the American Trudeau Society, the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, and the Medical Society of the State of New York.

Alan John Maged, M.D., Suffern, died on June 1 at his home at the age of fifty-nine. Dr. Maged graduated in 1928 from the University of Maryland School of Medicine and College of Physicians and Surgeons. He was an attending in pediatrics at Good Samaritan Hospital and senior clinical assistant in children's allergies at Mount Sinai Hospital. A former president of the Rockland County Medical Society, he was physician for the Ramapo Central School District and consulting pediatrician for the State Rehabilitation Hospital in West Haverstraw and the Happy Valley School in Pomona. Dr. Maged was a member of the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Vincenzo Pascale, M.D., retired, of New York City, died on June 1 in Lawrence Hospital, Bronxville, at the age of seventy-three. Dr. Pascale graduated in 1910 from Columbia University College of Physicians and Surgeons. For forty years he was associated with the Social Hygiene Division of the Bureau of Preventable Diseases of the New York City Health Department. Dr. Pascale was a member of the Association of Military Surgeons of the United States, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Isador Ira Pollock, M.D., of the Bronx, died on May 10 at the age of fifty-nine. Dr. Pollack graduated in 1929 from Jefferson Medical College of Philadelphia. He was a senior attending physician in general practice at Bronx Hospital. Dr. Pollock was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Grant Reed, M.D., of Binghamton, died on May 6 at his home at the age of forty-nine. Dr. Reed graduated in 1932 from Syracuse University College of Medicine. He was an attending in surgery at Our Lady of Lourdes Memorial and the Charles S. Wilson Memorial Hospitals. Dr. Reed was a Fellow of the American College of Surgeons and a member of the Binghamton Academy of Medicine, the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William St. Lawrence, M.D., of Southampton, died on June 4 in Southampton Hospital at the age of seventy-two. Dr. St. Lawrence graduated in 1910 from Cornell University Medical College and interned at St. Luke's Hospital. He was a consultant in pediatrics at New York Eye and Ear Infirmary, Central Suffolk Hospital Association (Riverhead), and Southampton and Stamford (Connecticut) Hospitals. In 1914 he founded a clinic for the study of heart disease in children at St. Luke's Hospital (New York City) and was its chief from 1914 until 1929. From 1911 to 1915 he was assistant pathologist and bacteriologist at New York Hospital, an associate in diseases of children at the Columbia University College of Physicians and Surgeons from 1920 to 1929, and pediatrician at Sloan Hospital for Women from 1920 to 1926. Dr. St. Lawrence was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the New York Academy of Medicine, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Albert Joseph Shappell, M.D., of Yonkers, died on May 11 at the age of sixty. Dr. Shappell graduated in 1934 from New York University and Bellevue Hospital Medical College. He was a member of the American Academy of General Practice, the Yonkers Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Daniel F. Shields, M.D., of the Bronx, died on April 28 at the age of eighty-three. Dr. Shields graduated in 1905 from St. Louis University Medical Department. He had been an attending in eye, nose, and throat at the Bronx Eye and Ear Infirmary and retired in 1955. Dr. Shields was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Moses Ashby Stivers, M.D., of Middletown, died on June 3 at the Elizabeth A. Horton Memorial Hospital at the age of eighty-seven. Dr. Stivers graduated in 1894 from Columbia University College of Physicians and Surgeons and interned at New York Hospital. He retired in 1952 and became an honorary surgeon at the Elizabeth A. Horton Memorial Hospital. Dr. Stivers was a Fellow of the American College of Surgeons and a member of the Orange County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raphael G. Stoliarsky, M.D., retired, of New York City, died on May 29 in Grand Central Hospital at the age of sixty-six. Dr. Stoliarsky received his medical degree from the University of Warsaw in 1920. He was a member and former president of the Russian Medical Society and a member of the American Geriatrics Society, the New York County Medical Society, and the Medical Society of the State of New York.

David Warshaw, M.D., of New York City and Jamaica, died in Methodist Hospital, Houston, Texas, on May 26 at the age of sixty-five. Dr. Warshaw graduated in 1921 from Cornell University Medical College and interned at the Hospital for Special Surgery, Memorial Hospital, and Mount Sinai Hospital. He was a consultant in surgery at Hillside Hospital and executive director of Doctors Hospital of Queens. Dr. Warshaw was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter W. Wayne, M.D., of Long Island City, died on May 21 at the age of fifty-three. Dr. Wayne received his medical degree from the University of Warsaw in 1934. He was an assistant attending physician at Elmhurst General Hospital (now City Hospital at Elmhurst). Dr. Wayne was a member of the Queens County Medical Society and the Medical Society of the State of New York.

MEDICAL MEETINGS

Third International Congress of Physical Medicine

The third international congress of physical medicine will be held in Washington, D.C., August 21 through 26. Electrodiagnosis of pain in the lower back will be discussed at two of the sessions of the congress.

Biological Photographic Association

The thirtieth annual meeting of the Biological Photographic Association will be held in Salt Lake City, Utah, August 23 through 26, at the Hotel Utah Motor Lodge. For further information contact: Mr. Carroll H. Weiss, Director of Communications, 160 Riverside Drive, New York 24, New York.

Eighth World Congress of the International Society for the Welfare of Cripples

The International Society for the Welfare of Cripples will hold its eighth world congress August 28 through September 2, at the Waldorf-Astoria Hotel, New York City.

An important segment of the Congress will be a day-long scientific session on the subject, "The Patient with Cerebral Palsy: A Critical Evaluation of the Problem of Total Care." For more information concerning this portion of the program contact: Brewster S. Miller, M.D., Medical Director, United Cerebral Palsy Association, Inc., 321 West 44th Street, New York 36, New York. Telephone JUdson 6–3411.

Fourth National Cancer Conference

The fourth national cancer conference will be held at the University of Minnesota, Minneapolis, September 13 through 15. The theme of the conference is "Changing Concepts Concerning Cancer." It is sponsored jointly by the American Cancer Society and the National Cancer Institute of the Public Health Service, Department of Health, Education, and Welfare.

The following New York physicians will participate in the conference: *Albany:* Herman E. Hilleboe, M.D.; *Brooklyn:* John G. Masterson, M.D.; *Buffalo*: John B. Graham, M.D., and George E. Moore, M.D.; *New York City:* Herbert Brendler, M.D., Alexander Brunschwig, M.D., Helen Curth, M.D., Dean Davies, M.D., Emerson Day, M.D., Edgar Frazell, M.D., Alfred Gellhorn, M.D., E. Cuyler Hammond, Sc.D., Gordon McNeer, M.D., Walter L. Mersheimer, M.D., James J. Nickson, M.D., George T. Pack, M.D., Jerome Urban, M.D., and Willet Whitmore, Jr., M.D.; *Rochester:* Donald McDonald, M.D.

For further information write to: National Cancer Conference Coordinator, American Cancer Society, 521 West 57th Street, New York 19, New York.

Association of Medical Illustrators

Celebration of the fifteenth anniversary of the Association of Medical Illustrators will be held in Chicago, October 3 through 5, at the LaSalle Hotel. Among the speakers will be Frank Netter, M.D., East Norwich, nationally known medical illustrator.

Association for the Advancement of Psychotherapy

The Association for the Advancement of Psychotherapy has announced that the first Emil A. Gutheil, M.D., Memorial Conference will be held on Sunday, October 30, at the Barbizon Plaza Hotel, 106 Central Park South, New York City.

The morning program will deal with "Current Concepts in the Management of Anxiety." The speakers will be Gustav Bychowski, M.D., and Lewis R. Wolberg, M.D., New York City, and Lauretta Bender, M.D., Queens Village.

In the afternoon the Emil A. Gutheil, M.D., Medal for Outstanding Contributions to Psychiatry will be awarded to Nolan D. C. Lewis, M.D., Bronx, emeritus professor of psychiatry, Columbia University, who will deliver the memorial lecture. The topic of Dr. Lewis' talk will be "The Future of Psychotherapy."

For further information contact: Stanley Lesse, M.D., Secretary-Treasurer, The Association for the Advancement of Psychotherapy, Inc., 15 West 81st Street, New York 24, New York.

1961 Eastern States Health Education Conference

The New York Academy of Medicine has announced that it has set Thursday and Friday, April 27 and 28, 1961, as the dates for the 1961 Eastern States Health Education Conference. The conference will be held at the New York Academy of Medicine, 2 East 103rd Street, New York City.

MEDICAL NEWS

Mount Vernon Medical Society Elects Officers—At its five hundred and third meeting recently the Mount Vernon Medical Society elected the following officers: Francis X. Marrone, M.D., president; Mario V. Bisordi, M.D., vice-president; George A. Sirignano, M.D., secretary; and Milton Budnick, M.D., treasurer.

Postgraduate Courses to be Held in Rochester—The following postgraduate courses are planned for Rochester in the coming months:

"Minor Surgery and Orthopedics"—Rochester General Hospital (one full day), October 6; "Advances in Pediatrics"—University of Rochester Medical Center (three full days), October 12 through 14; "A Program of Guest Speakers" (presented by Lederle Laboratories)—Manger Hotel (one full day), October 26; "Recent Advances in Urology"—University of Rochester Medical Center (two full days), November 3 and 4; "Recent Advances in the Diagnosis and Treatment of Endocrine and Metabolic Disorders"—University of Rochester Medical Center (three full days), November 17 through 19; "Gastroenterology"—Rochester General Hospital (two full days), December 1 and 8; "Electrocardiology"—Rochester General Hospital (one and a half to two hours on eight days), January 5, 12, 19, and 26 and February 2, 9, 16, and 23, 1961. "Recent Advances in Medicine"—Rochester General Hospital (one full day), March 30, 1961; and "Obstetrics and Gynecology"—University of Rochester Medical Center (three days) June 22 through 24, 1961.

Officers Elected by New York Society of Clinical Hypnosis—The Metropolitan New York Society of Clinical Hypnosis elected the following officers for 1960–1962: Leo Wollman, M.D., Brooklyn, president; Dominick Oddo, M.D., Flushing, vice-president; Victor Lait, M.D., Flushing, secretary; Eleanor Hamilton, Ph.D., New York City, treasurer; and John Caracappa, M.D., Elmont, program chairman.

Correlated Clinical Science Course at New York Academy of Medicine—A thirty-five-session-course will be presented by the Committee on Medical Education of The New York Academy of Medicine to provide a basic review of the several human organ systems with particular emphasis on their physiology, pharmacology, and biochemistry as related to clinical disease.

Although the course is primarily designed for recent graduates at the intern and resident levels, it is open also to all interested physicians.

For further information write to: Aims C. McGuinness, M.D., Executive Secretary, Committee on Medical Education, The New York Academy of Medicine, 2 East 103rd Street, New York 29, New York.

Pediatric Section Elects Officers—The Pediatric Section of the Medical Society of the County of Kings and Academy of Medicine of Brooklyn has elected the following officers for the year 1960–1961: Saul Starr, M.D., president; Ben M. Zweifler, M.D., vice-president; Ernest T. Heffer, M.D., secretary; and Hyman Lieberman, M.D., treasurer.

Physicians Certified by American Board of Obstetrics and Gynecology—The American Board of Obstetrics and Gynecology has announced the certification of the following physicians in the specialty of obstetrics and gynecology: *Albany:* Levon Bedrosian, M.D.; *Brooklyn:* Rudolph J. Bauersachs, M.D., Alex Friedman, M.D., David Leisten, M.D., Samuel Z. Schader, M.D., and Sidney H. Silverman, M.D.; *Buffalo:* Joseph J. Ricotta, M.D.; *Cedarhurst:* Norman G. Konicoff, M.D.; *Freeport:* James M. Glynn, M.D., and William G. McGuinness, M.D.; *Flushing:* B. Frank Labriola, M.D.; *Forest Hills:* Gerald S. Stober, M.D.; *Glen Cove:* William D. McLarn, M.D.; *Hamburg:* Henry L. Pech, Jr., M.D.; *Huntington Station:* Warren A. Linhart, M.D.; *Jamaica:* Lewis Shenker, M.D.; *Massapequa:* Edward J. Rayner, M.D.; *Middletown:* Leonard S. Weiss, M.D.; *Monsey:* Lester Lando, M.D.; *New City:* Robert A. Sher, M.D.; *New Rochelle:* Raymond P. Nolan, M.D.; *New York City:* Stanley J. Birnbaum, M.D., William D. Brandon, M.D., Elmer W. Davis, Jr., M.D., Emanuel A. Friedman, M.D., Solomon Kaplan, M.D., David Klebanow, M.D., James M. Lauderdale, M.D., Bernard N. Nathanson, M.D., and Seymour Schlussel, M.D.; *Niagara Falls:* Edward C. Weppner, M.D.; *Port Chester:* Richard E. Counselman, M.D.; *Poughkeepsie:* Irving H. Dreishpoon, M.D., Jerome Kaufman, M.D.; *Rochester:* Richard E. Fullerton, M.D.; *Syosset:* Kenneth J. Kerwin, M.D., and

John H. Ray, III, M.D.; *Syracuse:* Mario J. Prioletti, M.D.; *Watertown:* Martin V. Berrigan, M.D.; and *Woodhaven:* Edward J. Doherty, M.D.

Course on Cerebral Palsy—The International Society for Welfare of Cripples and United Cerebral Palsy, Inc., will sponsor an international postgraduate cerebral palsy course September 6 through 23, from 9:00 A.M. to 5:00 P.M., at the Institute for the Crippled and Disabled, and metropolitan New York medical schools and clinics.

For further information write to: Dr. Isabel P. Robinault, Institute for the Crippled and Disabled, 400 First Avenue, New York 10, New York.

Eastern Psychiatric Research Association Elects Officers—The following officers were elected at the June meeting of the Eastern Psychiatric Research Association: Charles Buckman, M.D., Kings Park, president; William Malamud, M.D., Boston, Massachusetts, president-elect; Emerick Friedman, M.D., Albany, first vice-president; William Furst, M.D., East Orange, New Jersey, second vice-president; David J. Impastato, M.D., New York City, secretary-treasurer; Albert Browne-Mayers, M.D., New York City, assistant secretary-treasurer; and councilors: William B. Terhune, M.D., New York City; Wilfred Dorfman, M.D., Brooklyn; and Robert E. Arnot, M.D., Boston, Massachusetts.

Course in Laboratory Methods in the Diagnosis of Tuberculosis—In cooperation with the Division of Special Health Services, Public Health Service, the Microbiology Laboratories of the Communicable Disease Center, Atlanta, Georgia, will offer a course in laboratory methods in the diagnosis of tuberculosis on the following dates: October 31 through November 11, 1960; and January 30 through February 10, 1961.

The course is open to all grades of employed laboratory personnel who are approved by their state health officers. Practical laboratory training in all phases of tuberculosis bacteriology, including preparation of culture media, microscopy, cultural procedures, diagnostic use of animals, cytochemical technics, and testing of drug sensitivity will be included. Demonstration and training in technics for the isolation and identification of atypical acid-fast bacilli will also be presented.

Laboratory directors and senior laboratory staff members may make application for this course also.

No tuition or laboratory fees will be charged. Application forms may be obtained from the Laboratory Branch, Communicable Disease Center, Public Health Service, Atlanta, Georgia.

Course on Fractures and Other Trauma to be Held in Philadelphia—The Philadelphia Regional Committee of Trauma of The American College of Surgeons will hold a course in fractures and other trauma March 2 through 4, 1961. The course will be conducted by Sir Reginald Watson-Jones, London, England. Also participating will be John Royal Moore, M.D., Philadelphia, and Preston Wade, M.D., New York City.

For further information contact: Lewis Manges, M.D., 2001 Delancey Place, Philadelphia 3, Pennsylvania.

Personalities

Speakers

Herman E. Hilleboe, M.D., New York State Commissioner of Health, on June 9, before the International Conference on Live Polio Vaccines. . . . John Ingrassia, M.D., Richmond Hill, on the subject "Intestinal Obstruction in the First Year of Life" on June 20, before the staff of the Forest Hills General Hospital.

Appointed

Russell C. Barone, M.D., Rochester, as police physician of the Rochester Police Department . . . Robert N. Lindsay, M.D., Old Forge, as Masonic State senior grand deacon . . . Leo D. Moss, M.D., Olean, as director of the Cattaraugus County Health Department laboratories . . . Anthony J. Saeli, M.D., Rochester, as a coroner's physician for Monroe County . . . George M. Warner, M.D., White Plains, as director of the Bureau of Chronic Disease and Geriatrics of the New York State Department of Health . . . Frederic L. Vosburgh, M.D., Lynbrook, as commissioner of Health for the City of Mount Vernon.

Awarded

Joseph W. Belser, M.D., East Greenbush, the Greenbush Junior Chamber of Commerce Distinguished Service award . . . Bernard Feldstein, M.D., St. Johnsville, a Veterans of Foreign Wars Community Service Award . . . Isidore Snapper, M.D., Brooklyn, an honorary degree from Long Island University . . . Edward G. Whipple, M.D., Rochester, the 1960 Albert David Kaiser Medal by the Rochester Academy of Medicine . . . Raymond Wytrwal, M.D., St. Johnsville, a Veterans of Foreign Wars Community Service Award.

Elected

Edgar H. Bates, M.D., New York City, as president of the New York University School of Medicine Alumni Association . . . Charles M. Brane, M.D., Yonkers, as a vice-president of United Medical Service, Inc. . . . Thomas Hale, Jr., M.D., Albany, as a trustee of the National Savings Bank of Albany . . . Seymour Lionel Halpern, M.D., New York City, as president of the Food and Nutrition Council of Greater New York.

BOOKS RECEIVED

(The following books were received during the month of May, 1960)

Medical, Surgical, and Gynecological Complications of Pregnancy. By the Staff of the Mount Sinai Hospital, New York City. Edited by Alan F. Guttmacher, M.D., and Joseph J. Rovinsky, M.D. Quarto of 619 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1960. Cloth, $16.50.

New Hope For Your Hair. By Irwin I. Lubowe, M.D. Octavo of 253 pages, illustrated. New York, E.P. Dutton & Co., Inc., 1960. Cloth, $3.95.

Women and Fatigue. By Dr. Marion Hilliard. Octavo of 175 pages. Garden City, N. Y., Doubleday & Company, Inc., 1960. Cloth, $2.95.

Basic Theory of Psychoanalysis. By Robert Waelder, Ph.D. Octavo of 273 pages. New York, International Universities Press, Inc., 1960. Cloth, $5.00.

A Primer of Electrocardiography. By George E. Burch, M.D., and Travis Winsor, M.D. 4th ed. Octavo of 293 pages, illustrated. Philadelphia, Lea & Febiger, 1960. Cloth, $5.00.

The Concise Encyclopedia of Modern Surgery. By James Hale Rutledge, M.D. Quarto of 308 pages, illustrated. Philadelphia, Chilton Company, 1960. Cloth, $8.00.

The Ego in Love and Sexuality. By Edrita Fried, Ph.D. Octavo of 296 pages. New York, Grune & Stratton, 1960. Cloth, $5.50.

Psychoanalysis and Moral Values. By Heinz Hartmann, M.D. Duodecimo of 121 pages. New York, International Universities Press, Inc., 1960. Cloth, $3.00. (The Freud Anniversary Lecture Series.)

Fundamentals of Clinical Hematology. By Byrd S. Leavell, M.D., and Oscar A. Thorup, Jr., M.D. Quarto of 503 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $10.

Edema, Mechanisms and Management. Edited by John H. Moyer, M.D., and Morton Fuchs, M.D. Octavo of 833 pages, illustrated. Philadelphia, W.B. Saunders Company, 1960. Cloth, $15.

Annual Review of Medicine. Volume XI. Edited by David A. Rytand and William P. Creger. Octavo of 453 pages, illustrated. Palo Alto, Calif., Annual Reviews, Inc., 1960. Cloth, $7.00.

The Thyroid-Vitamin Approach to Cholesterol Atheromatosis and Chronic Disease: A Ten-Year Study. By Murray Israel, M.D. New York, The George Press, Inc., 1960. Paper.

Advances in Pediatrics. Volume XI. Edited by S. Z. Levine, M.D. Octavo of 285 pages, illustrated. Chicago, Year Book Publishers, Inc., 1960. Cloth, $9.00.

Science and Psychoanalysis. Volume III. Psychoanalysis and Human Values. Edited by Jules H. Masserman, M.D. Octavo of 377 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $11.

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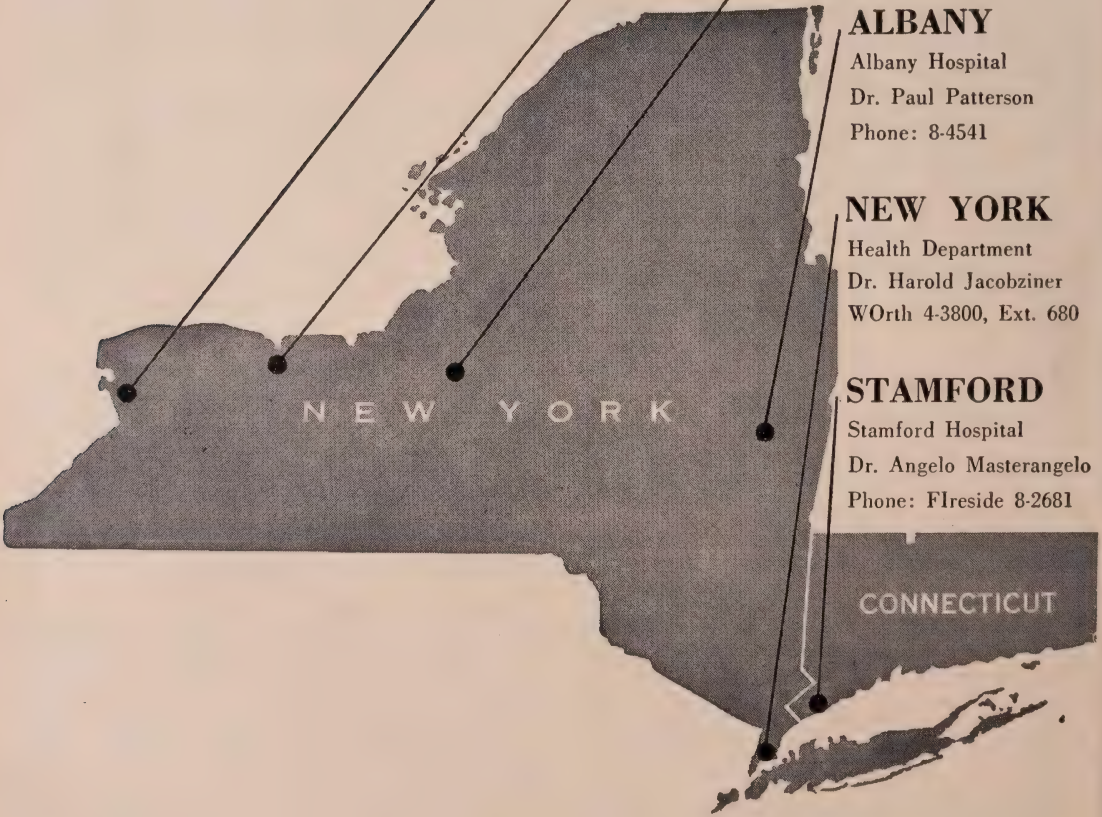

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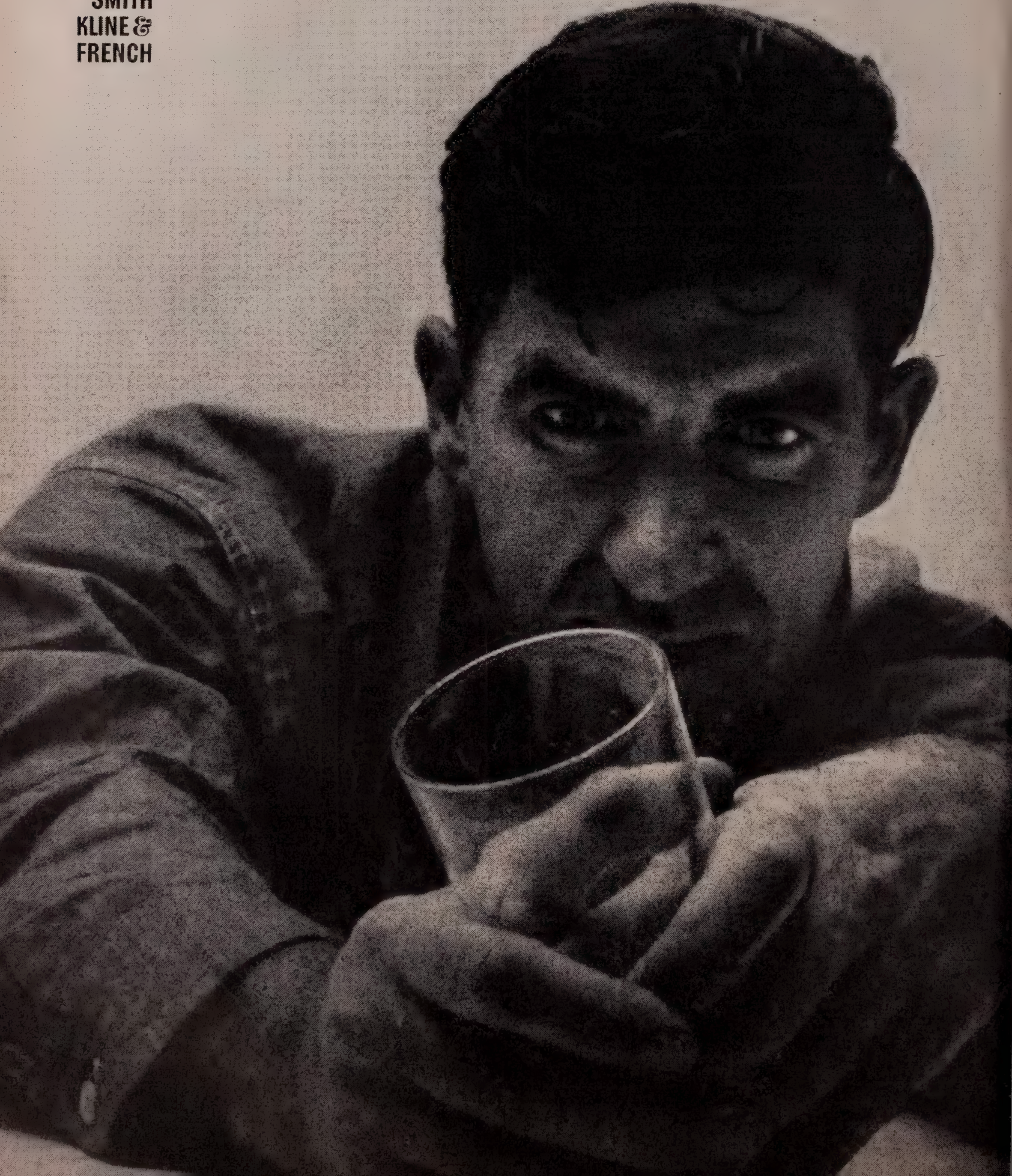

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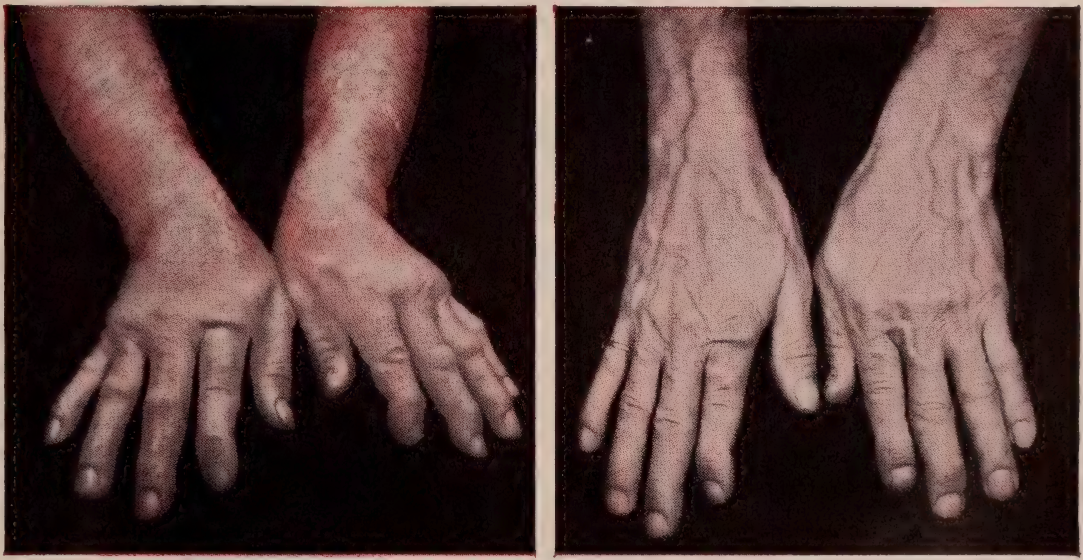

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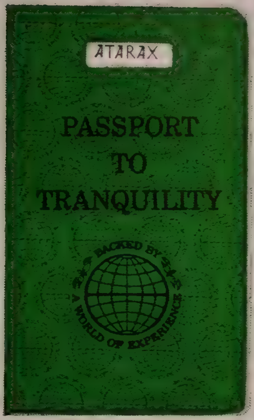

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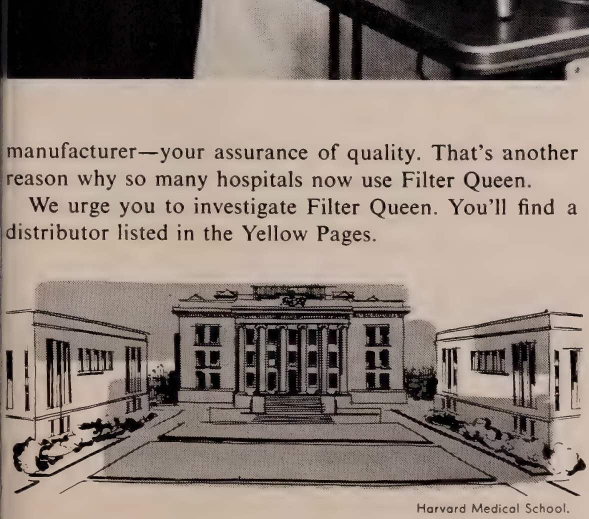

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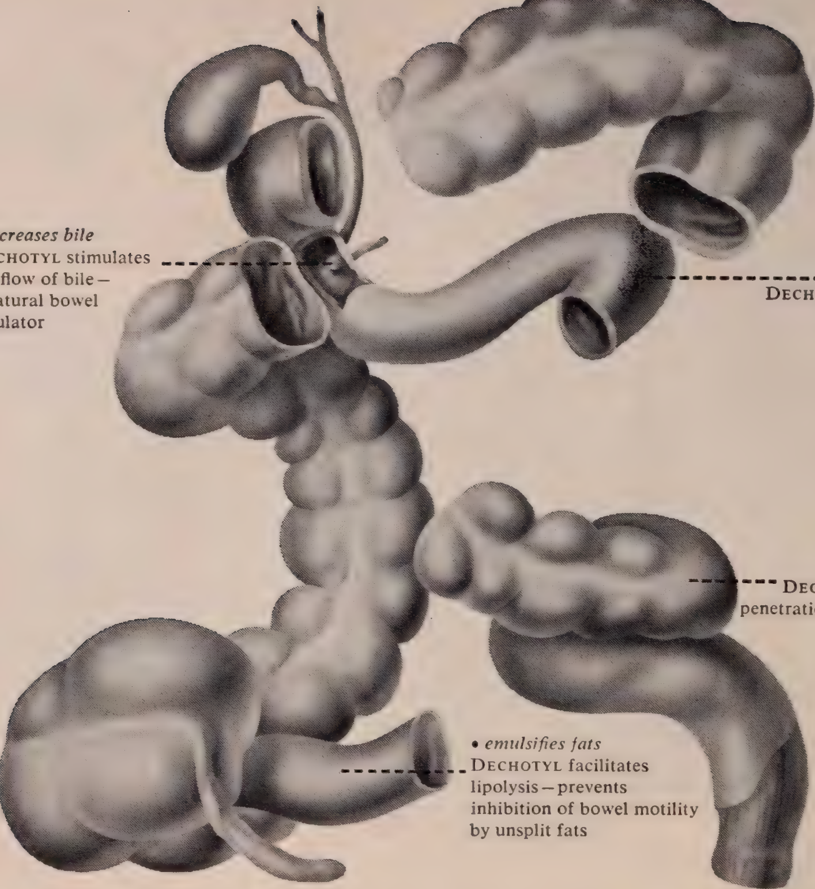

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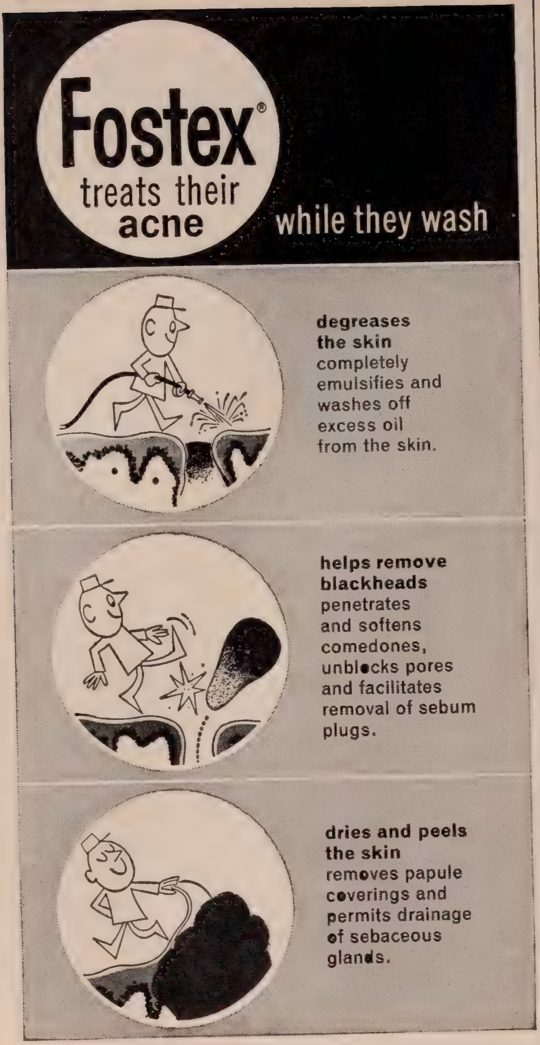

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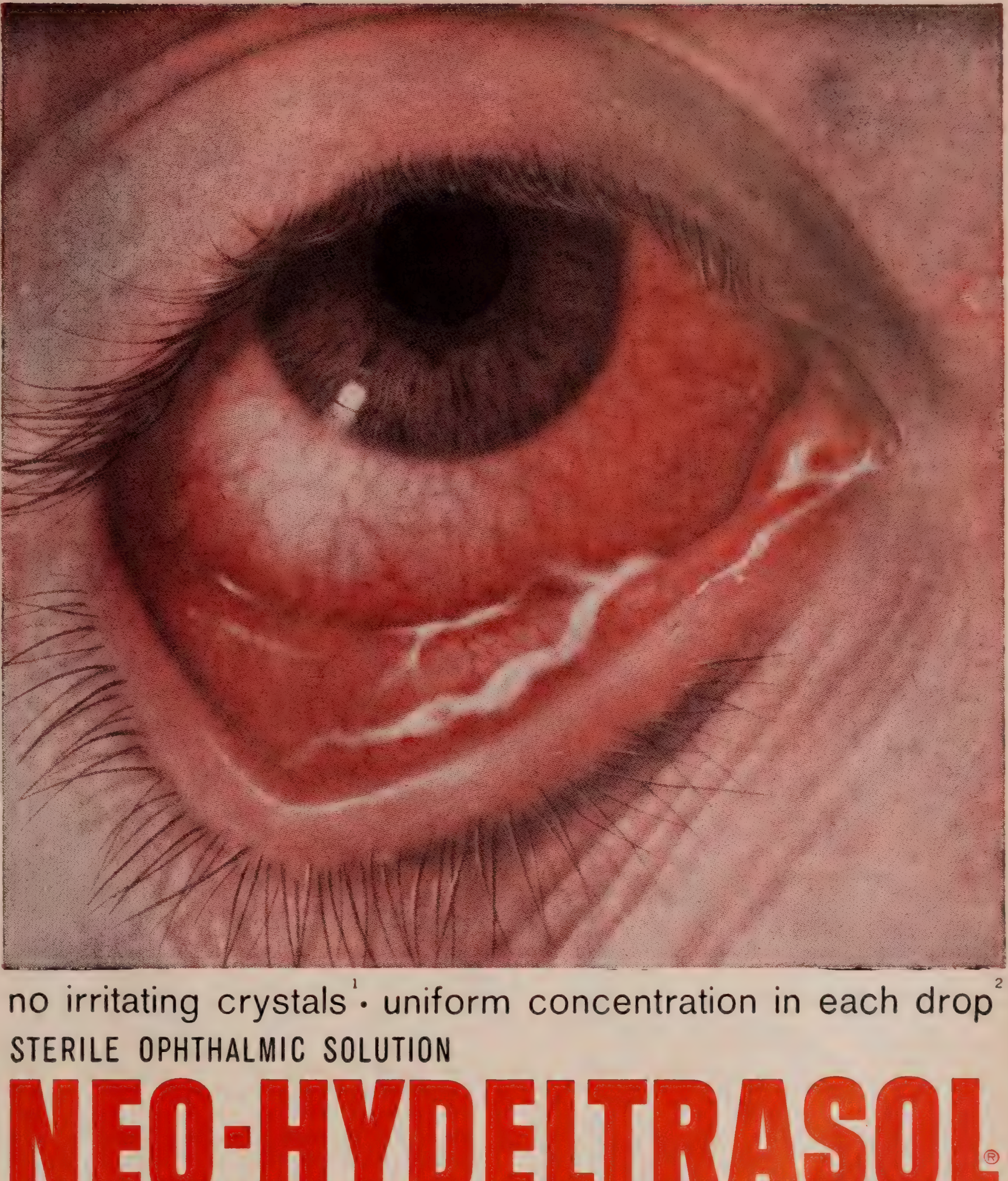

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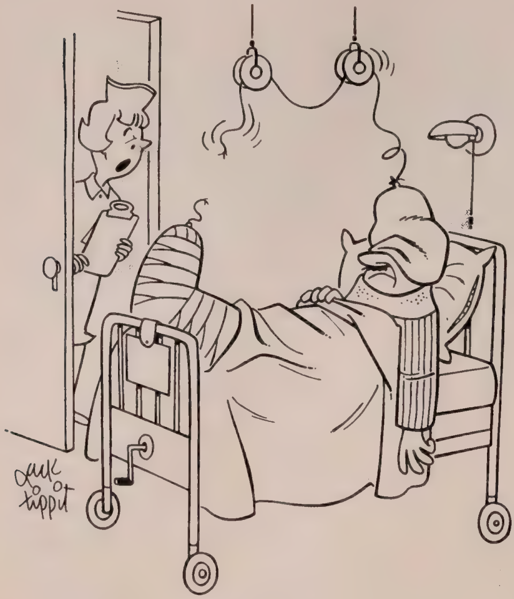

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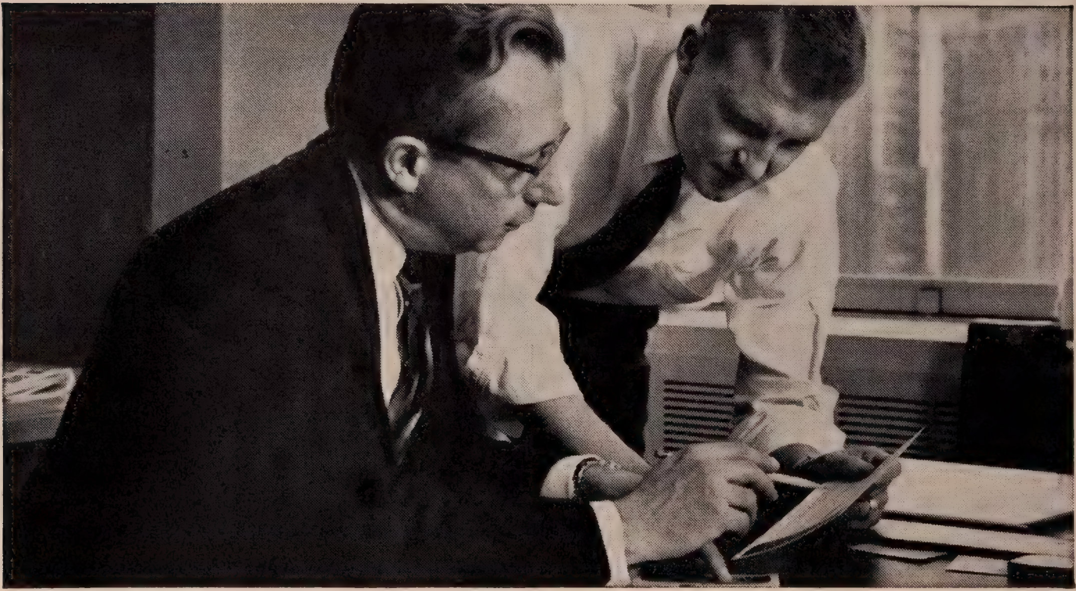

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1. Jones, E. H.: Eye, Ear, Nose & Throat Month. *38*:460, 1959. 2. Lockwood, J. H.: Bull. A. Mil. Dermatologists *4*:2, 1956.

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CIBA
SUMMIT, N. J.

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955. /2830MB

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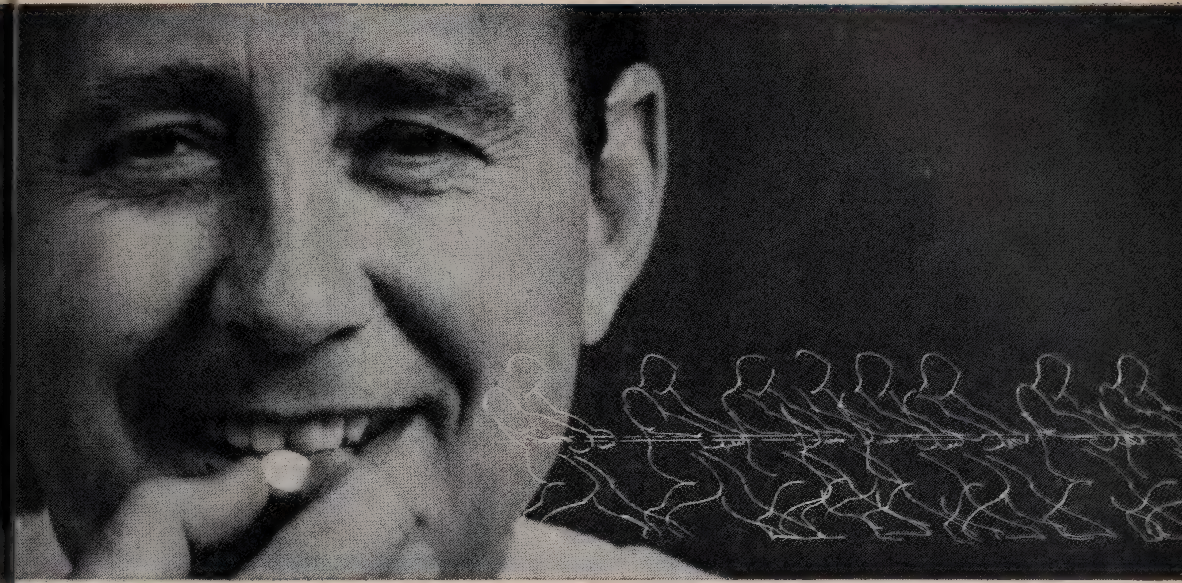

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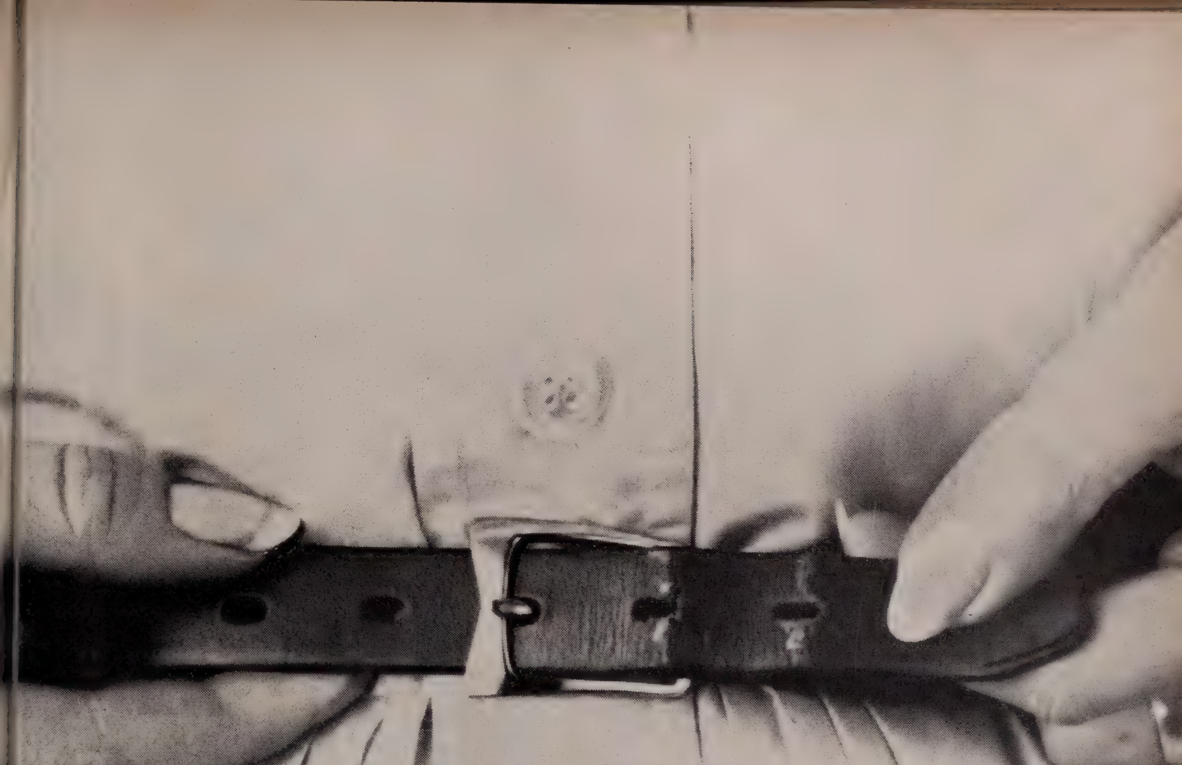

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References: 1. Angelucci, H. M.: Am. J. Obst. & Gynec. 50:336, 1945. 2. Hensel, H. A.: Postgrad. Med. 8:293, 1950. 3. Cortese, J. T.: Clin. Med. 2:45, 1955. 4. Dill, L. V., and Martin, S. S.: M. Ann. District of Columbia 17:389, 1948. 5. Horoschak, A., and Horoschak, S.: J. M. Soc. New Jersey 43:92, 1946.

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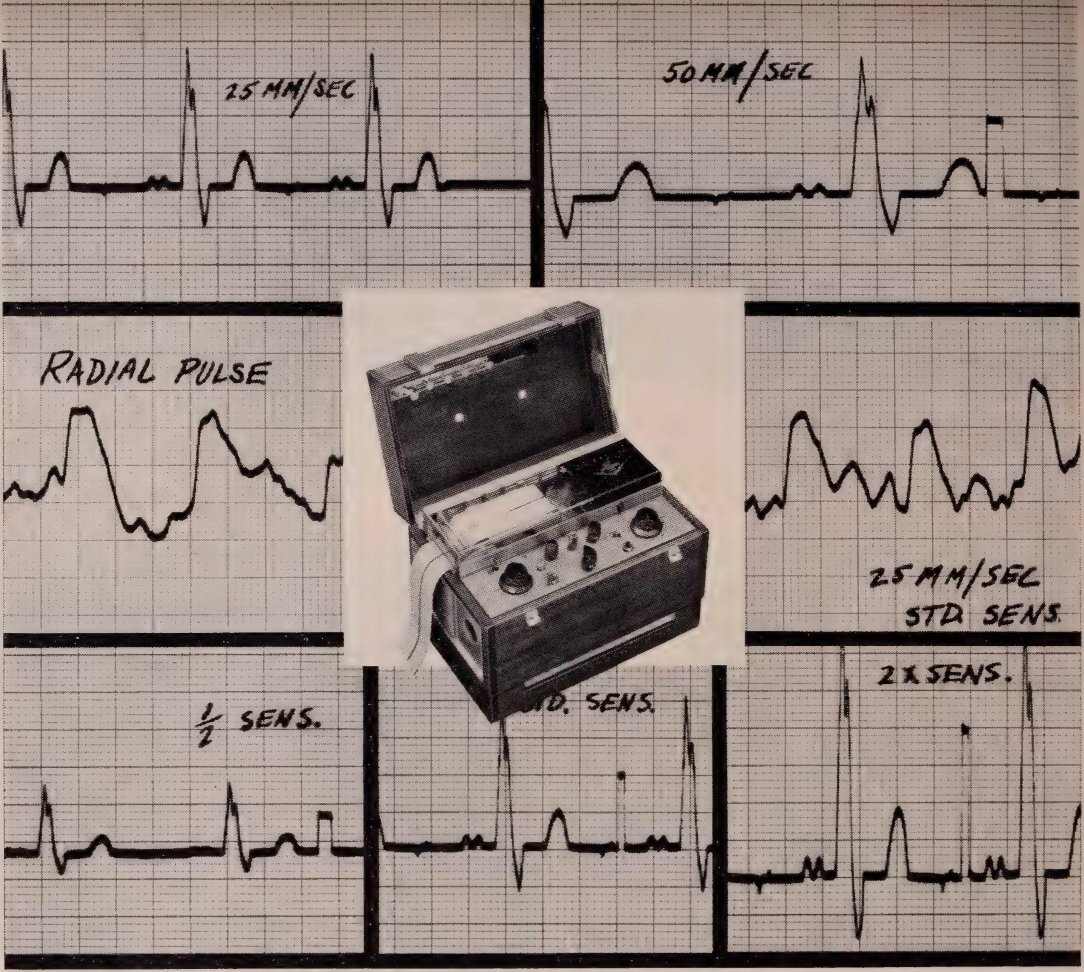

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*From a clinical investigator's report to Merck Sharp & Dohme.

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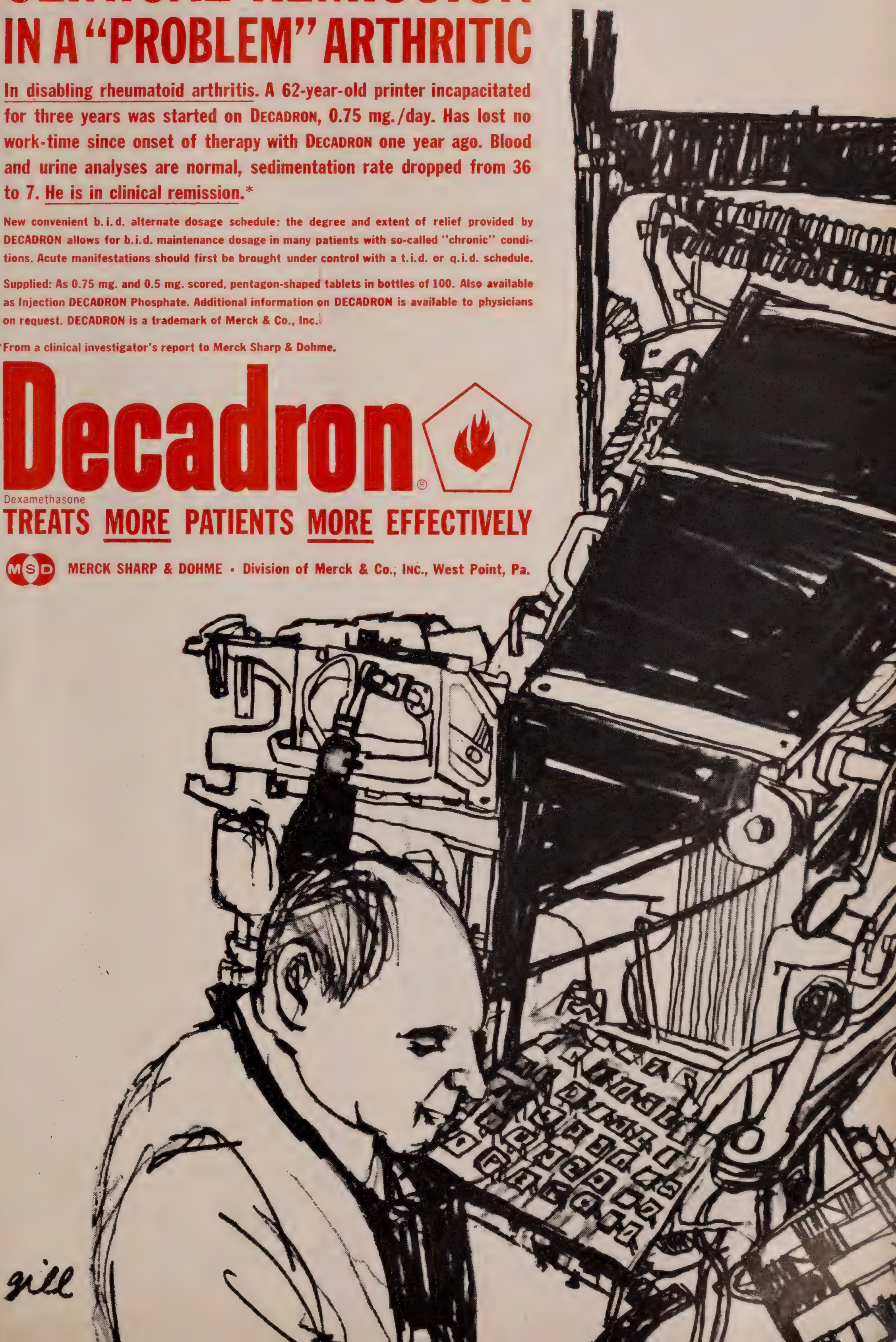

important new therapy in Peptic Ulcer

cessation of all symptoms and complete healing in 70 out of 78 cases as reported in Postgraduate Medicine (Oct.) 1959

"... chymotrypsin offers a new approach to the treatment of peptic ulcer."

In 54 cases, most of them hospitalized, in which chymotrypsin (Chymar) was used in conjunction with other agents "All of the symptoms disappeared and *complete healing of* the ulcer occurred in 49 (90.7 per cent) of the 54 cases . . ." Average time for cessation of symptoms . . . 6 days; for complete healing . . . 36 days; average follow-up period . . . 12 months. *In 24 cases* in which Chymar was used alone, "Cessation of all symptoms and *complete healing occurred in 21* (*87.5 per cent*) of the 24 cases . . ." Average time for cessation of symptoms . . . 5.8 days; for complete healing . . . 24 days; average follow-up period . . . 25.5 months.

Conclusions: "Because of the excellent results obtained in 78 cases of peptic ulcer . . . I strongly recommend its use as a most valuable adjunct in the treatment of this disease."*

*Mozan, A. A.: Postgraduate Med. 26:542, 1959

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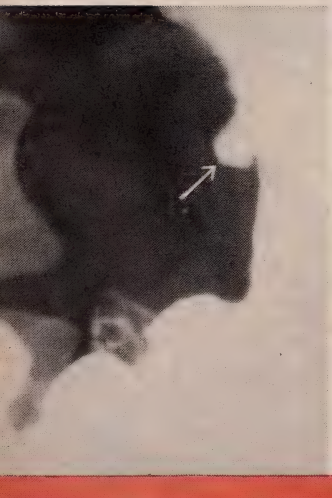
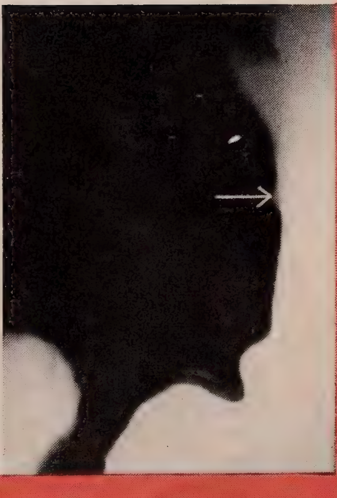


Pretreatment roentgenogram made on January 26, 1957 shows a large niche on the upper third of the lesser curvature.



Roentgenogram made on February 23, 1957 shows only a slight indentation on the lesser curvature.

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Coolidge, C. W.; Glisson, C. S., and Smith, A. S.:
J.M.A. Georgia **48**:167, 1959.

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2. SUPPOSITORIES for continued home use —1st week one suppository in the morning and one on retiring. After 1st week, one suppository at night may suffice.

Continue use of suppositories during menses. Treatment should be continued throughout a complete menstrual cycle and for several days thereafter. MICOFUR 0.375% and FUROXONE 0.25% in a water-miscible base.

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*Knudsen, E. T., and Rolinson, G. N.: Lancet *2*:1105 (Dec.19) 1959.

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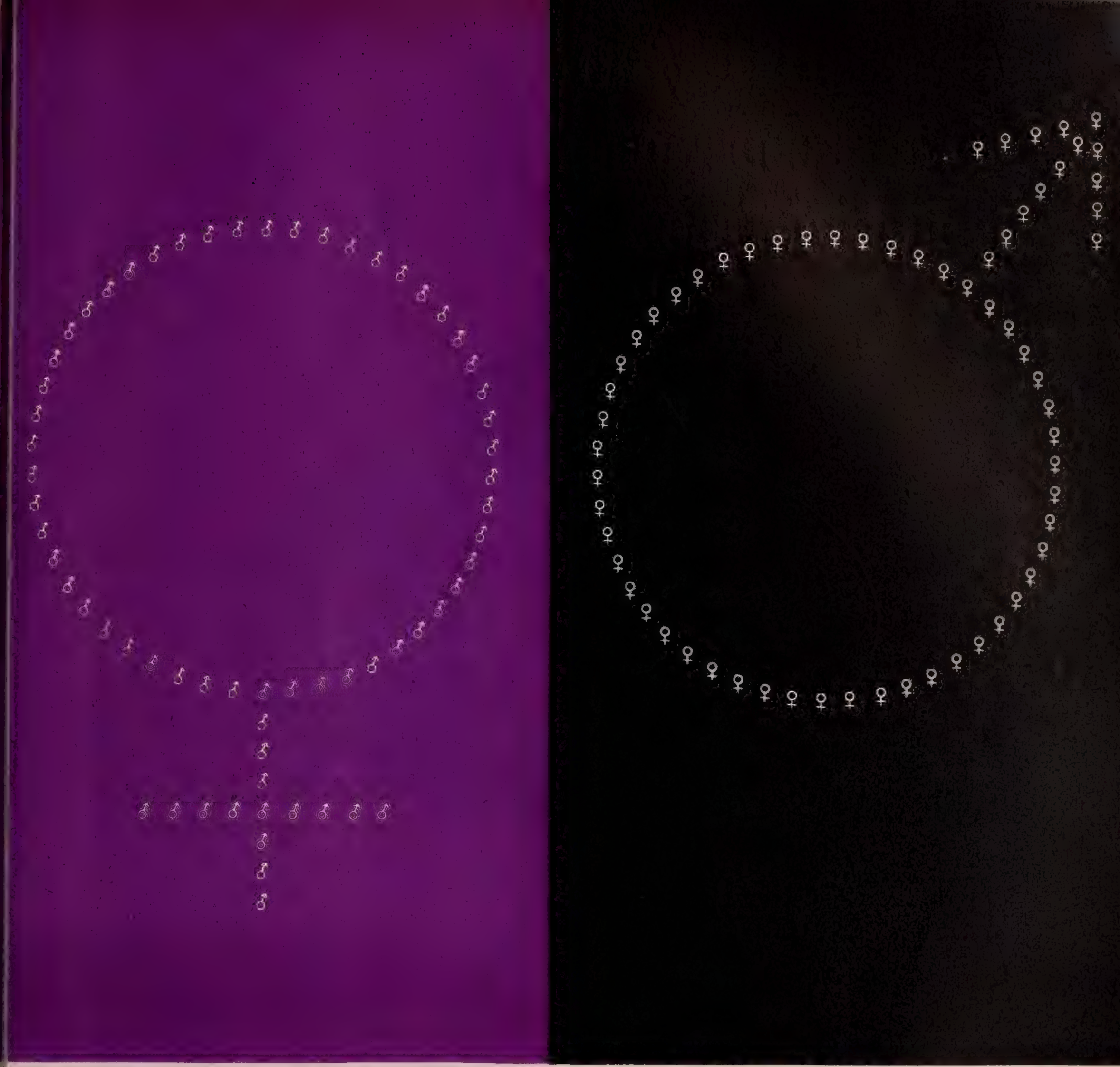

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*Marmell, M., and Prigot, A.: Tetracycline phosphate complex in the treatment of acute gonococcal urethritis in men. Antibiotic Med. & Clin. Ther. **6:**108 (Feb.) 1959.

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EDITORIALS

New Series on Civil Defense

In this issue, the JOURNAL presents the first of a series of articles on civil defense, prepared by the secretary of the Medical Education for National Defense (MEND) Committee of Albany Medical College.

These articles are designed to summarize the present state of our knowledge concerning the instruments of mass destruction now in existence, and the ways of reducing their toll. The emphasis will not be on medical procedures, but on the basic facts about these weapons. Later we hope to have an equally comprehensive series on the strictly medical aspects of the problem.

Preparations to reduce the extent of a disaster do not imply expectation that the disaster is inevitable. Indeed, the preparation often reduces the likelihood of any disaster occurring at all. The extent to which protective measures will save lives in a thermonuclear war cannot be predicted with any certainty. However, there appears to be little doubt but that a very large number of lives can be saved, certainly many millions. It may be that, as some pessimists state, the number of lives saved will be fewer than those lost, despite our best efforts. Even if this were true, it should not deter our efforts to save as many as possible. There are many diseases with a high mortality rate. Nevertheless, physicians always try to save as many as possible.

One of our major responsibilities as citizens is to do whatever we can to prevent a thermonuclear war. One of our major responsibilities as physicians is to reduce as much as possible the number of deaths if such a war should occur. There is no conflict between the two. Further, there is a universal assumption that after an attack physicians will do everything possible to save the lives of the victims. This series of articles shows clearly that preventive measures will save many more lives than the most efficient postattack medical care. Indeed, the effectiveness of preventive measures here is not of the order of the proverbial 9 to 1, but is probably in the range of 1,000 to 1. Surely that is reason enough for physicians to be actively concerned with the problem.

The Medical Society of the State of New York has a Committee on Civil Defense and Catastrophe which has been active in working out the role of physicians in civil defense. Unfortunately, some civil defense officials at the local level have been apparently less than cooperative.*

Clearly, something must be done to improve our civil defense efforts, and certainly physicians, by virtue of their scientific training, their dedication to the saving of lives, and their position of leadership in the community are uniquely suited to this task. Accordingly, the JOURNAL and the State Society Committee on Civil Defense and Catastrophe have decided to present this series of articles, as well as others on the same subject.

It is gratifying to observe the growing interest of the medical colleges in civil defense, as exemplified by the MEND program. It may be noted that the nationwide MEND program began with an experimental program at one of our New York State schools (Cornell) and has now been extended to 60 of the nation's 86 medical colleges. The coordination of the MEND program of the medical colleges with the civil defense program of the Medical Society of the State of New York is most welcome, since both are thereby strengthened.

The interest in and contributions to civil defense which can be expected from the medical profession are exemplified in part by these articles which reflect the developing MEND program at Albany Medical College.

---

* Burkhardt, E. A.: Disaster medicine: the local problem, NEW YORK STATE J. MED. 59:4023 (Nov. 1) 1959.

COPE's Unfounded Charges

Recently the political education arm COPE of the AFL-CIO, in an attempt to win support for some kind of Forand-type legislation in the current session in Congress, launched an attack on the American Medical Association of which assault the best that can be said is that it appears to be scurrilous, in bad taste, and largely untruthful.

In reply, Louis M. Orr, M.D., in his President's Page in the *Journal of the American Medical Association** said that "a list of sweeping charges has been circulated with the intention of showing that the A.M.A. historically has opposed beneficial health measures. The memorandum suggests that A.M.A. disapproval of Forand-type legislation is ridiculous and without merit."

Dr. Orr then said further that, "The memo begins by contending that 'a generation ago, the A.M.A. opposed the requirement that all cases of tuberculosis be reported to a public authority—the foundation for tuberculosis control methods.' This accusation is completely unfounded. The A.M.A. actually has advocated the reporting of all cases of tuberculosis to a public authority since 1899 and as recently as 1944.

"COPE then charges that the A.M.A. was against smallpox vaccination, immunization against diphtheria, venereal disease clinics, tuberculosis and cancer clinics, blood banks, Medicare, and various other items. It alleges that the A.M.A. has opposed, and fought, them all. The facts are these:

"The A.M.A. has campaigned for compulsory smallpox vaccination since 1863.

"The A.M.A. has cooperated with public health agencies for the prevention of contagious diseases for more than 80 years. It has never attacked provisions for immunization against diphtheria by public health agencies.

"Official A.M.A. actions on venereal diseases can be traced back to 1874, and it is categorically untrue that the Association was against the creation of public venereal disease clinics.

"The charge that the A.M.A. opposed the creation of free diagnostic centers for tuberculosis and cancer also is utterly without foundation. Our cooperation in these matters is a recorded fact.

"The allegation that the A.M.A. fought the Red Cross plan to set up a nationwide reserve of civilian blood banks is a gross distortion of the truth. While we may have differed on method, we supported the objectives—immediately and completely. Furthermore, I add this personal note: Nine years prior to the Red Cross efforts my wife and I made possible the establishment of the fourth blood bank in America and the first in Florida.

"COPE implies that the A.M.A. opposed government medical care to dependents of men in the armed forces. The facts are that the A.M.A. did not oppose Medicare. In fact, the House of Delegates when expounding its policy on Medicare specifically stated 'the policy advocated should not in any way be construed as one of opposition by the A.M.A. to dependent medical care . . . the position recommended refers only to the manner it should be provided, for it is determined by Congress to be a proper emolument of military service.'

"Contrary to COPE, the A.M.A. is busy every day of the year in hundreds of projects for the public and for medical science. It continuously emphasizes and promotes all positive programs in behalf of the American public. . ."

We reproduce at length Dr. Orr's rebuttal since we believe that many of our members may have overlooked the charges and may not have read Dr. Orr's factual reply. It is highly important that all physicians should possess this factual information.

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* J.A.M.A. 172: 1395 (Mar. 26) 1960.

This is an election year, and it may be anticipated that as it draws to a close, numerous instances will be encountered of attacks on physicians and their national, state, and county organizations both by individuals, politicians, and numerous groups who have something to promote and find the doctors a convenient "whipping boy."

It seems curious, to say the least, that so few people recognize the fact that what progress has been made in medicine and the public health has been accomplished by doctors who since time immemorial have been trying to put themselves out of business, albeit unsuccessfully.

We believe that such unfounded charges as those made by COPE will in the end defeat their purposes—even in a political year.

Editorial Comment

Medical Education Challenged. This challenge arises from many new and rapidly growing scientific, social, and economic forces. The Report of the President,[1] Josiah Macy, Jr. Foundation has this to say in part:

> The American people are convinced that adequate health services are essential in our society and are determined that "medical security" in some form shall be made available to the entire population. They are beginning to make constructive use of their wealth through voluntary as well as governmental channels to attain the fullest possible measure of benefits. These beginnings, although still far from meeting the current needs, are illustrated by the large Federal appropriations through the National Institutes of Health, the National Science Foundation, the Hill-Burton program, and the annual voluntary contributions of over two billion dollars for health and welfare causes. The public is turning to the educational institutions and health professions to propose and guide such programs.
>
> Valuable as they are, the sudden large increase in funds for investigation from a variety of sources outside the medical schools has led to a partial separation of the control, direction, and utilization of research personnel from the educational institutions. One result of such outside financial support, usually temporary, is to create a group of workers with little or no responsibility for teaching or other academic services. It is apparent that a large number of such personnel should be supported on a permanent basis to insure their continued productivity, future livelihoods, and university careers. Such support would avert the danger of shifting the center of gravity in many medical schools away from their primary objectives.
>
> This situation is now receiving attention. Quotations from two current reports may be cited: "An increase in the capacity of research and education and research functions more effectively would be in the national interest. To this end, Federal funds for research should be provided under conditions which give the institutions a substantial degree of freedom in deciding how to use the funds"; and "In large part, the support of research exclusively through the project system has deprived educational institutions of a large measure of autonomy and freedom in determining the character and direction of their research activities. Furthermore, exclusive reliance on the project system does not make it possible for educational institutions to assume a position of responsibility in carrying out their role in the conduct of medical and health-related research supported through Federal funds."

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[1] March 14, 1960.

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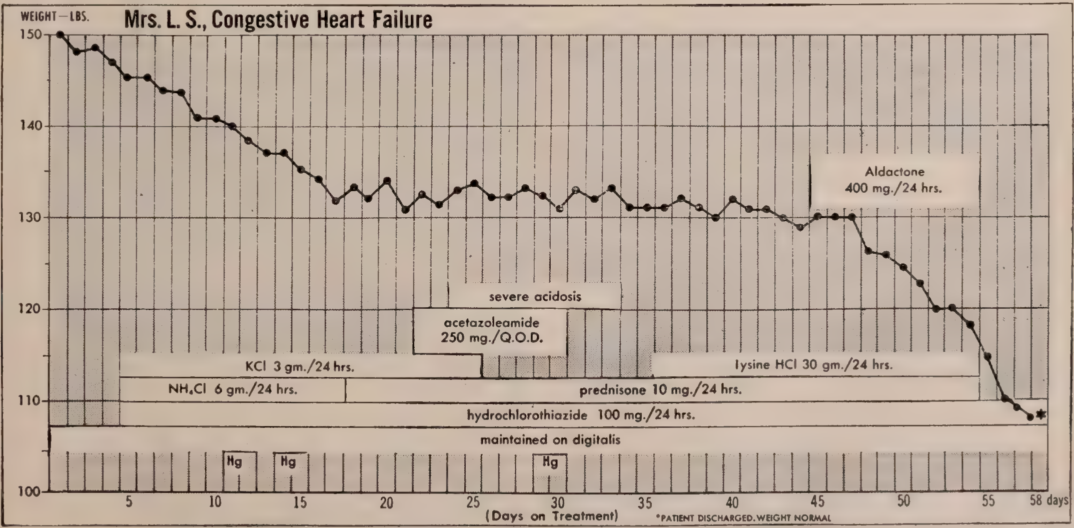

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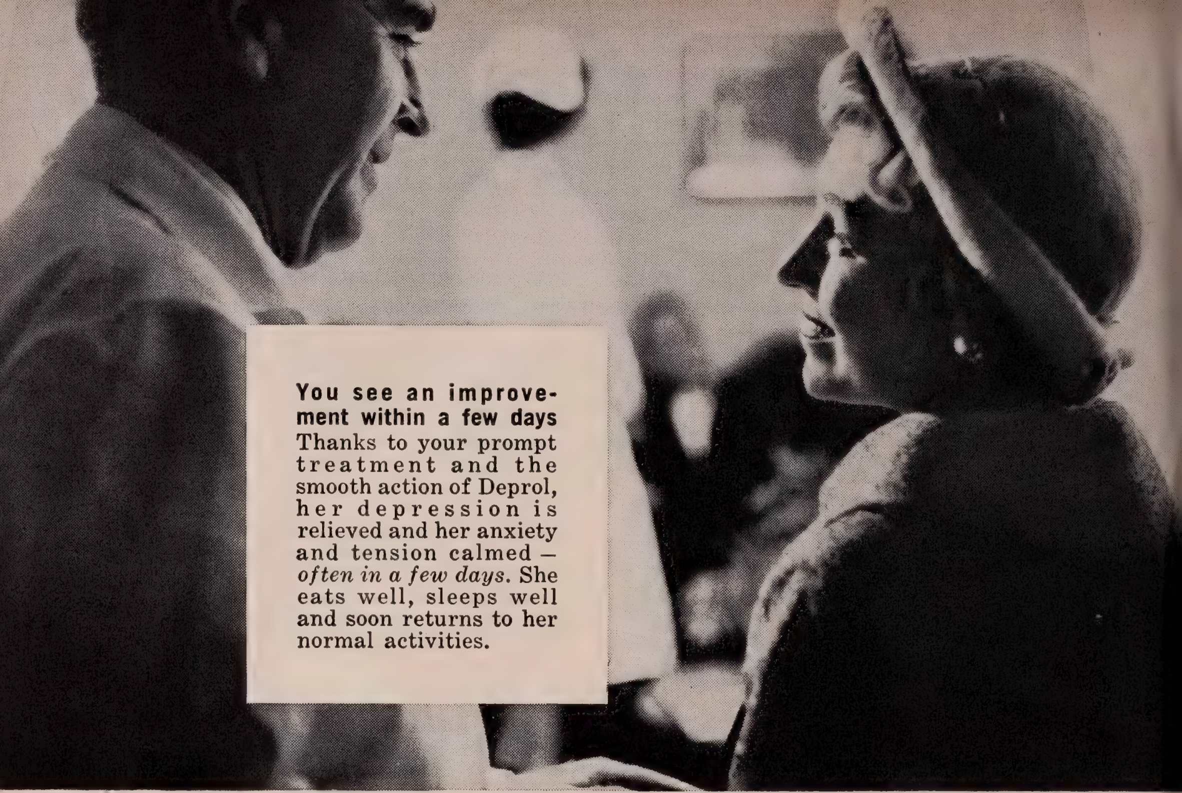

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SCIENTIFIC ARTICLES

Diagnosis and Treatment of the Hyperactive Child

STELLA CHESS, M.D., NEW YORK CITY

(From the Department of Psychiatry, New York Medical College, Flower and Fifth Avenue Hospitals, and the Mental Hygiene-Child Guidance Clinic, Metropolitan Hospital)

HYPERACTIVITY is one of the most common manifestations of disturbed child behavior. It appears frequently as a presenting problem in child guidance clinics, clinics for retarded children, residential child care institutions, and in private practice. Even when it is not mentioned initially by the individuals offering complaints about the child, hypermotility often is numbered among the prominent issues which bring a youngster to a psychiatrist for diagnosis and treatment.

Hyperactivity can be defined as follows: The hyperactive child is one who carries out activities at a higher rate of speed than the average child, or who is constantly in motion, or both. The estimate of such increased motility should not rest primarily on the subjective reports of the parents or of other individuals involved with the child, such as teachers. Before such a diagnosis is made objective behavioral data must be obtained from these sources and supplemented by the clinician's own observations, by psychologic tests, and by reports from other physicians.

This presentation is based on a detailed study of 82 children who were diagnosed as hyperactive out of a total of 881 children seen in a consultative private practice. These data are supplemented by impressions gained from an additional population three times as large as that of the private practice study seen over an eighteen-year-period in several child guidance clinics, a clinic for mentally retarded children, and several residential child care institutions.

Even though the series of cases analyzed is not a small one, it cannot be considered as presenting an accurate picture of the over-all incidence of hyperactivity or of its various subgroups. The factors which cause the child to be brought in for evaluation may vary from one socioeconomic group to another and also may involve variations in cultural concepts of normal activity.

There was a preponderance of boys in the group—85 per cent—although the percentage of boys in the over-all consultative practice of 881 was only 59 per cent.

Diagnostic Categories

The cases were diagnosed in the following categories: (1) physiologic hyperactivity; (2) organic brain damage; (3) mental retardation without obvious brain injury; (4) reactive and neurotic behavior disorder; and (5) childhood schizophrenia.

PHYSIOLOGIC HYPERACTIVITY. — The physiologically-hyperactive group comprises the children whose hyperkinetic functioning is not integrally associated with any other pathology. However, in many of the children, secondary disturbances with psychodynamic significance develop out of the problems of living created by the primary hyperactivity. Criteria for this group

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Presented at the Annual Meeting of the American Psychiatric Association, Philadelphia, Pennsylvania, April 30, 1959.

are hyperactivity from birth or early infancy, and the absence of any significant evidence of brain damage on history or on examination.

Of the 82 cases reviewed, 36 (42 per cent) fell within this physiologic group; 29 were boys and 7 were girls. Seventeen (47 per cent) presented significant secondary behavioral reactions to the hyperactivity. These children were seen at a younger average age than the children in the other diagnostic categories, 36 (59 per cent) being six years of age or younger at the time of the referral. Undoubtedly this is because parents, teachers, and others in the child's environment tend to accept and adapt to his increased motility as he grows older unless secondary behavioral disturbances also develop. These children were the subjects of a wide range of complaints which reflected the many variations in specific behavior produced by hyperactivity. The behavior presented initially by the parents might appear to be destructive, bizarre, lacking in judgment, or very impulsive.

A number of professional workers in psychiatry and psychology have brought their own children to the office because of a fearful suspicion that this was childhood schizophrenia. For example, one five-year-old boy's behavior was described as typical when he messed up a room with finger paints, spread shoe polish in another room, dropped his shoes out of a window, and took his two-year-old sister for a long walk, crossing a dangerous and forbidden thoroughfare in the process, all in the same morning. Work-up showed no evidence of serious pathology, and this behavior was evaluated as being due to hyperactivity and short attention span. The benign prognosis was confirmed by follow-up.

Complaints from teachers were frequent. At the nursery school level these included the knocking over of other children, the destruction of equipment, the exuberant throwing of objects such as blocks, and resistance to naps. At the grammar-school level, secondary symptoms related to restrictions to movement were common. These included simple reactions such as teasing and restlessness as well as more elaborate reactions such as hostility to the teacher, negativism, and various symptoms of school phobia. Educational deficits sometimes developed, although this was true of a smaller proportion in the other diagnostic categories. The very intelligent children tended to do poorly in day-by-day classwork, but a standardized achievement test frequently proved them to have mastered the work up to or beyond the grade level. Where secondary reactive disturbances developed, learning difficulties and scholastic retardation were consistently found.

Organic Brain Damage.—The criteria for inclusion in the organic-brain-damage category are: hyperactivity from birth or from the time of the known or suspected brain insult, signs and symptoms of brain damage, and lack of motivational basis for hyperactivity at the time of its onset.

Fourteen (16 per cent) of the 82 cases—12 boys and 2 girls—were diagnosed as brain damaged. More than 80 per cent were brought for consultation after the age of six. All of these children showed educational deficits. Many of them had, in addition to hyperactivity and short attention span, perceptual difficulties and perseverative tendencies which interfered greatly with their ability to profit from the teaching procedures geared to the average child. Phobic reactions to school, while present, were surprisingly infrequent. Where facial stigmata were present, as was sometimes the case in this group, the children had an additional special problem of being rejected as playmates by other children because of their physical appearance. Even without this special problem most of the youngsters in this group experienced great difficulty in forming relationships with other children. They teased, were often impulsively aggressive, or took themselves into dangerous situations with frantic dashes for safety when they panicked. Development of negativism or symptoms of secondary gain, such as demands for excessive personal servicing or exploitation of sympathy, were characteristic. Sleep disturbances were prominent.

MENTAL RETARDATION WITHOUT EVIDENT BRAIN DAMAGE.—The criteria for inclusion in the mental-retardation-without-evident-brain-damage group are the presence of both hyperactivity and mental retardation and insufficient evidence to make a diagnosis of brain injury.

There were 3 cases, all boys, a number too small to warrant generalization. In these 3 cases, as well as in many cases seen in clinic work, the parents tried to explain the child's difficulties as being due primarily to the hyperkinesis, and thus avoid the stigma of retardation. In some cases, on the other hand, the hyperactivity increased the problems of management of these retarded children enormously as contrasted with the retarded children with quiet activity patterns.

REACTIVE AND NEUROTIC BEHAVIOR DISORDERS.—The reactive-and-neurotic-behavior-disorder group comprised youngsters whose hyperactivity was one of a constellation of behavioral symptoms which expressed defensive reactions to environmental stress or neurotic patterns. The criteria for this group are: no evidence of hyperactivity at birth or in early infancy, no evidence of brain damage, and evidence that the hyperactivity represents a pattern of behavior developed by the child in an attempt to cope with an environmental stress and/or neurotic conflicts within himself.

Eighteen (22 per cent), of which 14 were boys and 4 girls, fell within this group. Eighty per cent were brought for evaluation after the age of six. Aside from the particular symptom of hyperactivity, the other symptoms and disturbances in behavior ran the same gamut as those of any other group of children with reactive and neurotic disorders. In some cases the hyperactivity was so frenetic that it overshadowed other symptoms. Even in these cases, however, the motivational character of the hyperactivity could be clearly delineated.

CHILDHOOD SCHIZOPHRENIA.—The criteria for childhood schizophrenia are total behavior warranting a diagnosis of schizophrenia, and hyperactivity appearing as a clear manifestation of the psychosis.

In many of these cases, hyperactivity was one of the types of disturbed motility which was noted in early infancy; in others, the symptoms appeared only after the onset of walking.

Twelve (15 per cent), all of whom were boys, were in the schizophrenic group. In general, the hypermotility in this psychotic group was of relatively minor importance in the over-all serious psychopathology and played only an additive role in the schizophrenic child's difficulties. In some cases, the increased motility was the final behavioral characteristic which made the child unmanageable in the school, recreational, or home situation.

Associated Symptomatology

Associated symptoms differed to some extent in the different age groups, both in kind and in number in all of the diagnostic categories under consideration. In addition to the hyperkinesis, prominent complaints in the two- to five-year-old group in their order of frequency were: (1) sleep problems; (2) nonconformity to limits or prohibitions; (3) unprovoked or unwarranted hitting or fighting; and (4) impulsive acts.

Associated symptoms for the six- to twelve-year-old group, in their order of frequency were: (1) short attention span; (2) nonconformity to limits or prohibitions; (3) disturbances in play with other children; and (4) disruptive school behavior.

The adolescent group had added difficulties of: (1) poor school achievement; (2) nonconformity to limits or prohibitions; (3) short attention span; and (4) impulsive social behavior.

I have had the opportunity of following intimately 2 cases of children with persistent physiologic hyperactivity, starting at the age of three and extending into adolescence. At each age level their behavior was impulsive and hyperkinetic but was expressed differently in each period to correspond with their over-all level of maturation and functioning.

Treatment

Treatment of the hyperactive child utilizes the skills and methods generally used in the treatment of childhood behavioral disorders: guidance of parents, direct psychotherapy, medication, and auxiliary technics such as remedial reading and tutoring. The treatment approach in the individual case depends primarily on the diagnosis but may be influenced also by special circumstances or symptoms.

In the physiologically hyperactive child, consultation frequently was sought at the point when the mother was at her wit's end due to the havoc caused by the youngster's behavior. Often she had come to a sudden, horrified realization that she had begun to dread this child's presence. Life seemed to be an unceasing round of cleaning up spillage, apologizing to neighbors, replacing broken furniture, and checking on personal safety. Often the father, who arrives on the scene when the child's motor has run down somewhat, implies rather strongly that the child's behavior must be due to maternal rejection. The first need in such cases is to make it clear to the adults involved that the activity level is a built-in characteristic, and that the difficulties which occur are due neither to unhealthy parental attitudes nor to destructive motives on the child's part. The parents need to assimilate the concept that their youngster has motility needs in excess of the average, which, if not given constructive or neutral channels, will find destructive and unhealthy channels. The clarification of these facts is of great value in helping the parents to overcome the feelings of guilt and inadequacy which arise from their belief that they are solely responsible for the child's difficulties. It is only when this is accomplished that the parents can orient themselves to the carrying through of a program which will minimize the undesirable aspects of the child's hyperactivity. Such planning involves the following points:

1. The arrangement of a program of specific activity so that its time, place, and quality is the least destructive, disruptive, and irritating as is possible. In other words, instead of trying to inhibit the child's activity, the parents are advised to try to rechannel it.

2. The formulation for the child, on a day-by-day basis, of a clear-cut distinction between forbidding certain acts which are dangerous or beyond tolerability, and not forbidding movement itself. This is best done by trying to offer substitutions of an active nature for the forbidden activity.

3. The making of a determined parental effort not to permit personal discomfort or the complaints of neighbors to produce perpetual annoyance with the hyperactive child.

4. The refusal to accommodate to the child's nuisance value, so as to avoid the creation of secondary gain.

The over-all purpose of such planning is to arrange a constructive living situation with the child which will prevent the development of secondary reactive and neurotic overlay, and to help the child to learn how to modify the expression of his motility needs in accordance with positive interpersonal relationships.

In certain circumstances, where the level of activity is too high to permit a regime as previously outlined to be put into action, a tranquilizing drug may be helpful. Medication may be required only for a brief period, long enough to get a new set of behavior patterns started. It may be needed over a prolonged period if the level of activity without medication prevents the child's inclusion in normal situations, such as school. Where there is a sleep disturbance which causes excessive child or parent fatigue, medication is indicated. Special circumstances may determine the use of drugs and the regulation of their timing. For example, in one situation a mother who had had multiple miscarriages was once again pregnant. Although she had been able to manage the child without medicine, when she became pregnant the necessity to give her a fighting chance to carry the baby to term was the deciding factor for giving the child medication. The decision was justified. The sibling was born and a possible source of resentment against the older child was avoided. Moreover, the latter actually exhibited an unexpected capacity for gentleness and pride in the new baby.

In school, these children require special recognition by the educational staff of their need for release of motor drives so that a successful school experience can ensue.

Where secondary problems of behavior have already developed, direct psychotherapy with the child may be indicated in addition to the above measures. One may also anticipate that an enormous amount of contact with the school and play group personnel may be required to orient them to the special characteristics and needs of these children.

In 22 cases, or in more than 60 per cent of the physiologically hyperactive children in the study, it was possible to work successfully with the parents on a consultative basis without direct work with the children and without the use of drugs. If one adds the 9 children in this category to whom medication was administered, 86 per cent of the children were managed without direct psychotherapy. Those physiologically hyperactive children with secondary symptoms were handled as previously described with the addition of direct psychotherapy. Attention was given to their neurotic traits as would be done were they not hyperactive, with the exception that both parents and children were prepared for the perpetuation of the hyperactivity after the amelioration of the neurotic issues. In two cases, educational remediation was arranged after sufficient resolution of neurotic issues to permit the children to profit by its use.

In brain-damaged youngsters, the first consideration is to ascertain that an adequate treatment regime for the neurologic disease has been instituted. Only then does it become pertinent to direct one's attention to the behavioral aspects of the illness. Here, parent guidance is of extreme importance also. An interpretation of the effect of chronic brain damage in producing such symptoms as low frustration tolerance, impulsivity, perseveration, short attention span, and emotional lability makes it possible for the parents to recognize these symptoms to be as real as a paralyzed limb. This gives a foundation for a program of rehabilitation through special handling, channeling of activity, and modification of environmental demands made on the child whenever necessary. In many of the brain-damaged children tranquilizing drugs will decrease hypermotility to a variable degree and should be tried empirically in most of these cases. Direct psychotherapy was found useful in approximately 20 per cent of the cases where secondary anxiety symptoms of a neurotic character were prominent. Although the various treatment procedures in this group of brain-damaged children did serve to ameliorate the intensity of the hyperactivity and secondary anxiety, the persistence of the basic disease often did not permit of a degree of improvement for the child to function in a normal school situation.

In the mentally retarded child with hyperactivity, the treatment approaches were similar to the brain-damaged groups. Parent counseling as regards the organic nature of the symptomatology and the institution of daily programming of the child's activities to minimize the destructive effects of the hyperactivity was perhaps most important. Tranquilizing and sedative drugs to reduce the intensity of hypermotility appeared helpful to varying degrees.

In the reactive and neurotic-behavior group, treatment was essentially the same as in similar cases without hyperactivity. In 9 of the 18 cases, intensive parental counseling without direct treatment of the child was adequate. Seven children received direct psychotherapy and 2 others had remedial educational work in addition to parent counseling. Medication was prescribed for only 1 child in the entire group.

In the schizophrenic group, as in the neurotic group, the choices and indications were essentially the same as in similar schizophrenic children without hyperactivity. The only difference involved the greater use of tranquilizing and sedative drugs in the hyperactive children. No difference in treatment results from nonhyperactive schizophrenic children could be noted.

Comment

Hyperactivity in our culture, and particularly in urban life, may be a behavioral manifestation which colors the nature of the child's relationships to his environment and to the people in it. This is particularly true of the physiologically hyperactive youngster who has no other pathology of behavior yet may find himself constantly rejected and scolded for well-meant acts or simply normal expression of the interests of his age group. The fact that these acts and interests are carried out at a high rate of speed and that there are no rest periods taken by the child, and consequently by his guardians, can make the difference between his positive interaction with the environment and the opposite. In children with organic brain damage, mental retardation, reactive and neurotic behavior disorders, and childhood schizophrenia the factor of hyperactivity added to the other symptoms present may complicate the management and treatment of such children to a significant degree.

It is possible with physiologically hyperactive and brain-damaged children to utilize special approaches other than or in addition to the usual child-rearing practices. In both of these categories, one of the important issues is for parents to become aware of the nonpsychogenic character of the annoying and frequently destructive behavior. Particularly they must learn two points: that they did not cause the hyperactivity by their handling of the child, and that the child is not purposefully creating the havoc which occurs.

In laying out such an approach, dramatic results can be obtained with the physiologically hyperactive child, particularly in aborting noxious incipient neurotic overlay in the child. With the brain-damaged child and the mentally retarded child whose behavior is characterized by hyperactivity, such a special approach is helpful in giving parents a more objective understanding of the child's hyperkinesis and hence enhancing their ability to live with it and to minimize its deleterious aspects. The over-all results are, however, limited by the existence of the underlying organic process. In the case of the reactive and neurotic behavior disorders and with schizophrenic children, except for drug therapy, treatment is not particularly modified by the presence of hypermotility.

Drugs are generally useful in all the categories. The drugs employed in the study were the antihistamines, amphetamines, anticonvulsants, sedatives, phenethiazines, the rauwolfia group, and meprobamate. At times a placebo was used. The use of the amphetamines for limiting hypermotility was, of course, limited to the preadolescent age groups. Otherwise, these medications were used interchangeably and empirically with due regard for toxic possibilities and specific contraindications, such as the possibility of lowering a convulsive threshold. Some minor side-effects were met, such as drowsiness or abdominal discomfort, but these disappeared with withdrawal of the medication. If the first drug tried was ineffectual, another was tried, often with positive results. Dosages varied widely, and were arrived at empirically.

Conclusions

The hyperactive child is one who carries out activities at a higher rate of speed than the average child or who is constantly in motion, or both.

Although hyperactivity may be present in all diagnostic categories, its recognition as a physiologic variant in the otherwise psychodynamically-normal child is important. The diagnostic groupings in which such children fall are: (1) physiologic hyperactivity; (2) organic brain damage; (3) mental retardation without obvious brain damage; (4) reactive and neurotic behavior disorder; and (5) childhood schizophrenia.

Special treatment approaches with emphasis on parent counseling are effective with physiologically hyperactive children, of use with brain-damaged and mentally retarded youngsters, and have minimum pertinence with reactive and neurotic behavior disorders and childhood schizophrenia. Drug therapy adjunctive to other treatment is also valuable.

Where reactive or neurotic problems occur, either secondarily to the hyperactivity or as the primary diagnostic issue, treatment must be directed specifically toward the neurotic problem.

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End Results of Surgery for Varicose Veins

Twenty-Eight-Year Study of 200 Cases

H. I. BIEGELEISEN, M.D., NEW YORK CITY

WE MUST revise our thinking about varicose veins. In our earlier report in 1953[1] we presented for the first time the concept that varicose veins is a chronic disease. More and more surgeons are adopting our point of view. Thus, a leading editorial in the *Lancet*[2] summarizes the British viewpoint that "complete and permanent cure cannot yet be guaranteed in the surgical management of varicose veins." This study is aimed at corroborating our initial report by a detailed analysis of the end results in 200 patients who had undergone various types of venous surgery.

The material was chosen at random from our private and clinic records extending over a period of twenty-eight years. In this manner, we felt, the series would represent the results obtained by prevailing surgical practice.

The patients presented themselves for varying symptoms of the lower limbs. Some complained of painful leg syndromes, ulcers, leg edemas, and vascular blemishes of various types. Others came frankly for additional treatment of varicose veins. Many had quite forgotten the original vein operation and did not associate it with their complaints. Some considered their surgery to have been very successful. Very few, if any, had returned to the surgeon who performed the original operative procedure.

Most of these cases have been followed for periods of from ten to twenty-eight years. It was our good fortune to have available this rich source of material on which to base our conclusions. No comparable long-term study has been reported either for injection treatment or for surgery.

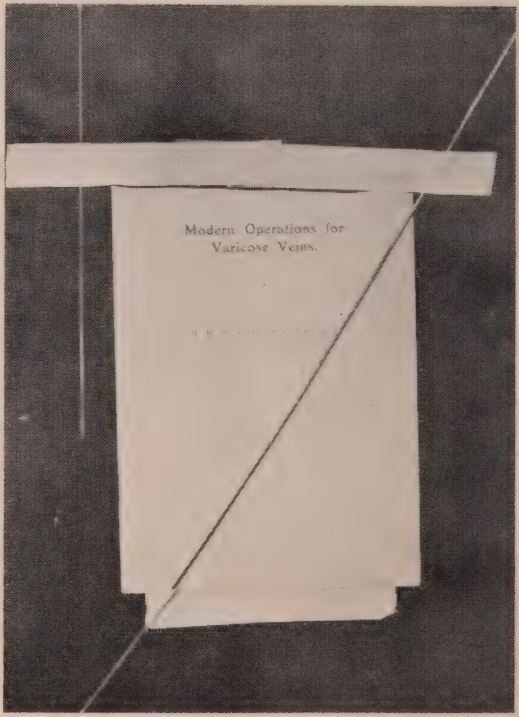

FIG. 1. Early stripper actually in use fifty years ago. Note reprint, "Modern Operations for Varicose Veins," by Gray[3] describing use of this stripper for varicose veins in May, 1909.

There have been three cycles of treatment practices for varicose veins. The first and third involved surgery while the second concerned injection forms of therapy. The original surgical approach, which included stripping, was in vogue up to thirty years ago.

It may surprise many younger men to learn that essentially all modern vein operations were in vogue during this early phase. Thus, Gray[3] in 1909 described the Babcock stripping procedure. Figure 1* shows an early stripper or "extractor" as it was then called. This is the original instrument and was actually in use fifty years ago. Disappointment with results ended this surgical phase.

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* From the collection of Emil Schwarzmann, M.D.

The advent of sodium morrhuate ushered in the second cycle when Higgins and Kittel in 1930[4] placed the injection treatment on a safe chemical basis. The succeeding wave of enthusiasm which lasted for twenty years brought with it a host of new solutions and technics.

A partial list of these sclerosing agents which we helped develop included sylnasol, potassium oleate, soricin, varisol, etalate, and sotradecol. Most of them have been discontinued as injection treatment lost favor.

Meanwhile the sclerosing principle of varicose veins was extended by us and others to various areas of the body. Injection technics were soon developed successfully for hydrocele, varicocele, raised angioma, pilonidal cyst, internal hemorrhoids, bursitis with effusion, ganglion, and other conditions. In 1939[5] we described this new mode of treatment to which we gave the name "sclerotherapy." This term has since been adopted universally. In spite of this, after twenty years of acceptance, disappointment with results in treating varicose veins by injection crept in once more.

Injection treatment has now been relegated to an adjuvant and minor role while surgery is the treatment of choice. Stripping with the recent addition of perforator vein surgery is the latest procedure to find favor.

Too few realize that history is repeating itself. However, even as this is being written warning notes of skepticism are beginning to appear in the literature. Surgeons are warning against dependence on operative procedures as a permanent cure. These viewpoints make a confusing picture. This is emphasized by Figures 2 through 4 which represent 9 postoperative cases chosen from our series to portray some of the end results.

What then is the future of varicose vein therapy? Is the problem to be clouded by alternating cycles of opposing treatment? We feel that a long-term study will provide the answer. Short-term postoperative observations of the past have led to the fallacious conclusions existing today. The material will now be analyzed under appropriate headings.

TABLE I.—INCIDENCE OF VARICOSE VEINS BY AGE

Ages (Years)	Males (78 Cases) (Per Cent)	Females (122 Cases) (Per Cent)
20 to 30	2.5	8.2
31 to 40	16.6	18.8
41 to 50	36.0	27.0
51 to 60	24.3	37.0
61 to 70	15.0	9.0
Over 70	5.6	0.0

TABLE II.—TYPES OF OPERATION

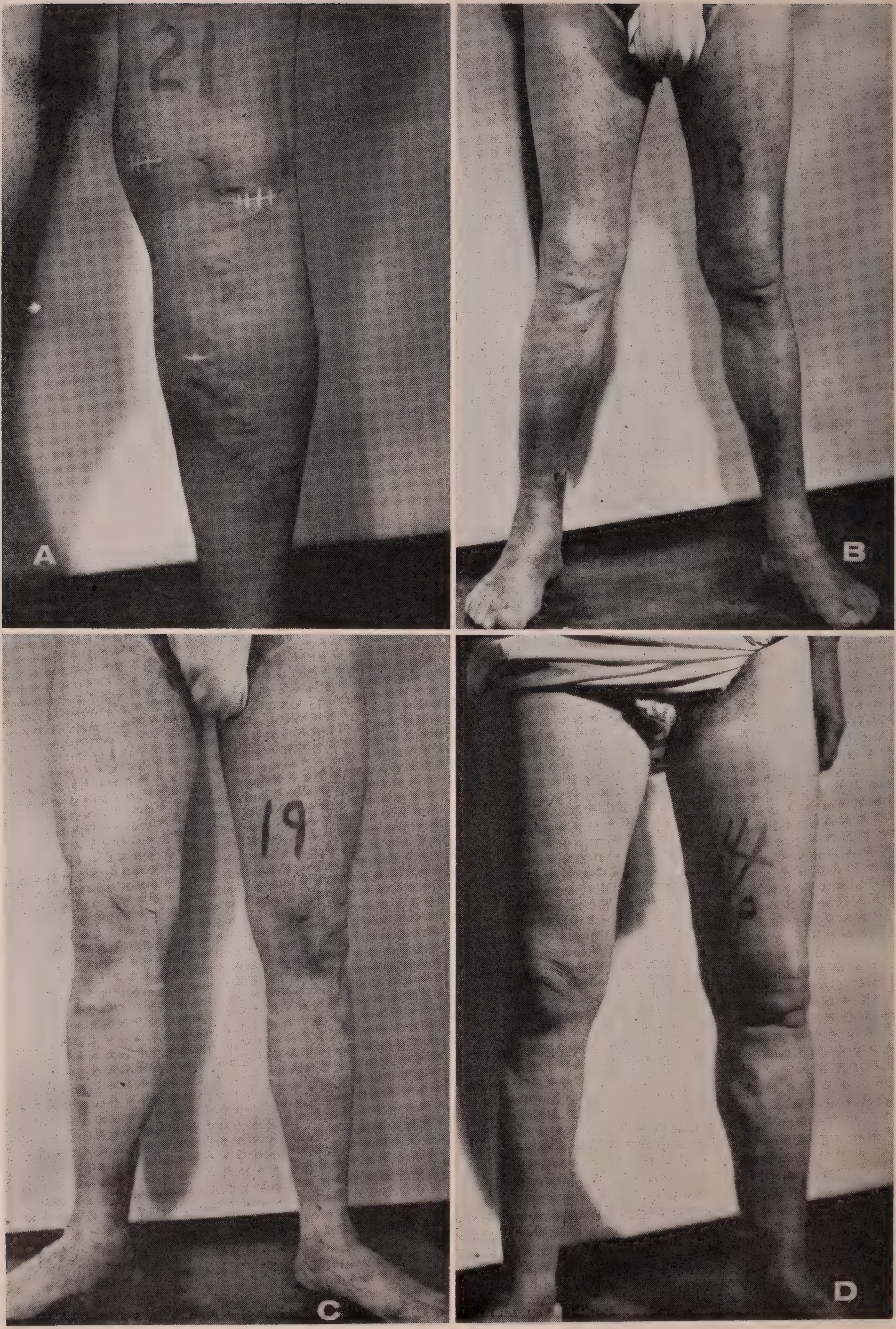
Operation	Number of Patients
Ligation alone	103
Excision alone or combined	18
Stripping alone or combined	50
Two operations	22
Three operations	7
TOTAL	200

Of the 200 cases studied, 122 were females and 78 were males. This is approximately the proportion seen by the specialist in private practice. Contrary to popular opinion varicose veins are not heavily preponderant in females.

It will be noted in Table I that more females than males presented themselves for treatment at an early age. Conversely, above the age of sixty years more males were treated. Up to the menopause the sexes were operated on in approximately equal numbers, but in the decade after this females were more numerous. The influence of childbearing on the development of varicose veins is apparently a transitory one and has probably been overestimated. The late persistence of this syndrome in males may be related to occupation. Varicose veins therefore are a disease uninfluenced in the main by sex. This is decidedly not the case for the condition of telangiectasia (dilated capillaries) which will be discussed later.

Types of Operation

The types of operations studied in this series are indicated in Table II. Since this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A
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TABLE III.—CONDITION WHEN FIRST SEEN

Condition	Number of Patients
New varicosities (recurrence)	189
Active phlebitis (acute, subacute, or periphlebitis)	31
Extensive capillary development (many milder cases not counted)	35
Ulceration (30 cases on same side as operation)	40
Dermatitis, eczema, and other skin complications	17
Lymph leg, total cases	97

TABLE IV.—INCIDENCE OF LYMPH LEG (LYMPHEDEMA)

Condition		Number of Patients
Unilateral		68
Same side as operation	65	
Bilateral		29
Had bilateral vein surgery	24	
TOTAL		97 (48.5 per cent)

study covers a period of twenty-eight years, ligation procedures account for fully half the cases. Excisions and strippings were performed alone or in combination with other procedures in 68 instances. Twenty-nine patients had two or more operations while 7 submitted to three unsuccessful operations. Some of these presented the worst recurrences. It was only with great difficulty that some members of this group were persuaded not to have a fourth procedure.

There were no permanent cures seen in any of the 200 cases in this study. Many of the patients showed a greater development of varicosities than had existed prior to surgery.

The conditions of the patients when first seen by us have been grouped according to their complications (Table III).

Condition When First Seen

When seen over the long range which this study provides, the observer will be amazed at the total failure of the surgical procedure. Thus, 189 cases showed complete redevelopment of the original varicose condition Many cases were worse than ever. The operative procedure had apparently spurred growth of new varicosities. This confirms our earlier observations.[1]

Active phlebitis in acute, subacute, or periphlebitic form was seen on first examination in 31 cases. Some exhibited fresh thromboses, others indolent or subsiding processes. These were often the beginning phase of lymph legs.

Excessive development of capillary dilatations were listed in 35 cases. Many lesser involvements were not included. The condition of lymphedema obscured and prevented formation of telangectasia or more would have been recorded. Thus prior surgery did not cure or prevent the formation of capillary blemishes. Many women had accepted surgery in the hope that it would give them normal-looking limbs. They were openly disappointed with the capillary blemishes as well as with the unsightly scarring.

There were 40 patients with leg ulcers. Significantly 30 cases were on the same side as the operation for varicose veins. The ulcers were single or multiple and venous or lymphatic in type. The latter, of course, were very indurated, chronic, and difficult to heal. Skin complications of varicose veins in the form of dermatitis or eczema were found 17 times in spite of previous surgery.

Lymph Leg (Lymphedema)

The most important complication was the enormous number of lymph legs following

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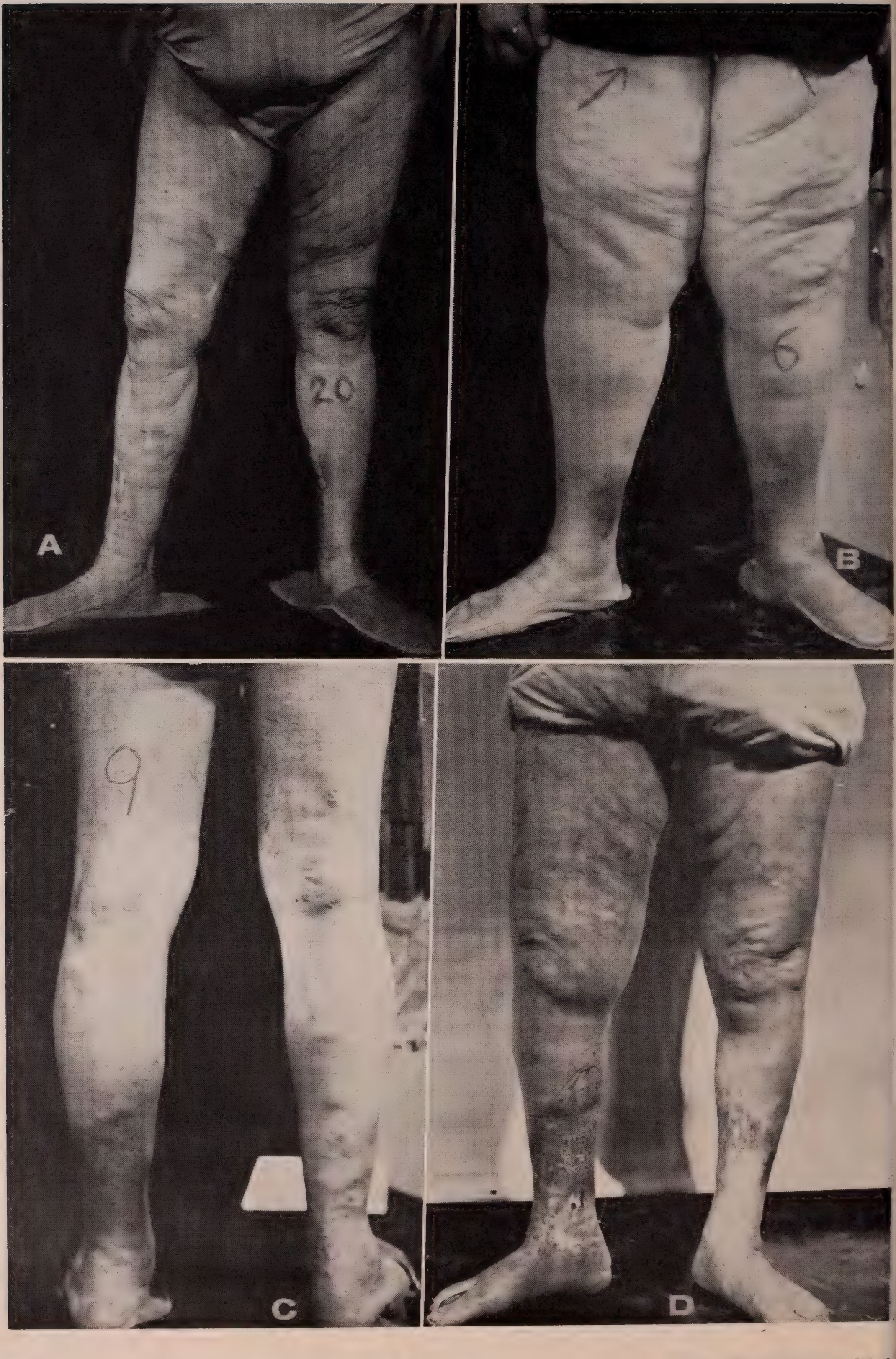
←FIG. 2. (*A*) Scars of multiple excisions emphasized in white. Note new varicosities around site of incisions. (*B*) Note bilateral ligation scars in both groins. On admission patient had 3 ulcers in right leg, bilateral advanced lymphedema, and many varicosities. Condition progressively worse since surgery ten years previously. (*C*) Scars of bilateral ligation and stripping emphasized by white ink. Note recurrent varicosities and beginning lymph leg on right side. (*D*) High ligation left side. Note scar. Complete set of new varicosities with periphlebitis and early lymph leg on left side.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surgery. This has never been stressed enough. Table IV summarizes our findings.

Of the 200 studied 97 cases had developed lymph legs. This is almost 50 per cent and represents an overwhelmingly frequent complication. Furthermore there were 68 cases exhibiting unilateral lymph legs and of these 65 had been operated on the same side. Of the 29 cases showing bilateral lymph legs 24 had undergone bilateral vein surgery. This is confirmatory, clear-cut evidence of the direct relationship between vein surgery and lymphedema. According to this study which confirms our prior report in 1953[1] practically 1 of 2 patients undergoing vein surgery ended up with a case of lymph leg, usually on the same side. This irreversible complication is much more serious than the original varicose vein disease.

We must now raise the question: Is this operation justifiable in the face of lack of permanent cure and a 50 per cent incidence of lymph leg? Many of the patients studied felt they would have been much better off without the operation. The women were especially outspoken because of the additional scarring and disfigurement.

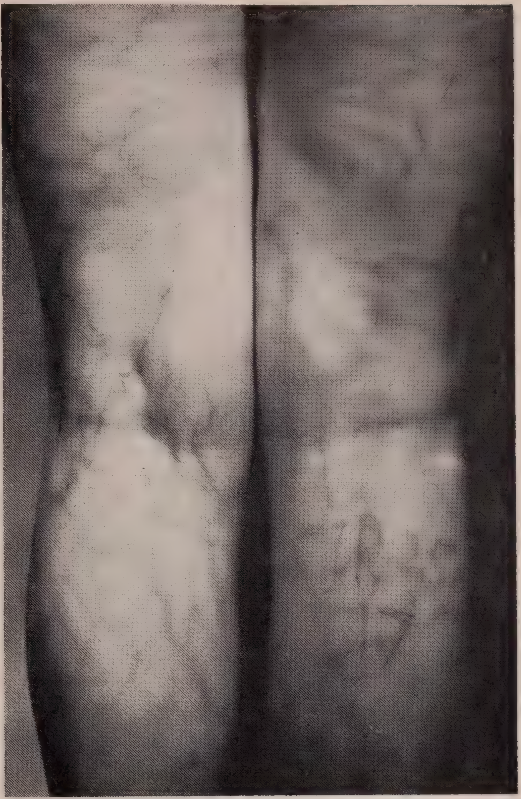

FIG. 4. Infrared photograph one year after surgery to show early development of varicose veins in new areas. This progressive dilatation of superficial veins not eradicated by surgery.

Correct Injection Treatment

The reasons the injection treatment lost favor are twofold: lack of knowledge regarding chronicity and poor technic. The lack of knowledge regarding chronicity of varicose veins was an important reason for the swing back to surgery. Poor results were unfairly blamed on the method rather than on the persistent tendency to new varicose vein formation (Fig. 4). However, almost universally poor technic was the greatest cause for failure.

Many doctors were unaware of the fact that proper injection treatment of varicose veins required training and skill of a high order. Many had been content, and still are, to treat just a few prominent varices and to stop at this point.

It has been our repeated experience that few physicians inject above the knee. It is with even greater rarity that we encounter a patient who has had the great saphenous vein injected near the fossa ovalis. Yet this is vital for effective treatment. Often this vessel does not bulge but must be found by percussion, a technic that requires training.

←FIG. 3. (*A*) Bilateral high ligation with stripping and excision on right side. Note scars on right side emphasized in white. Patient had postoperative infection on right side and was in hospital three weeks. When first seen had multiple ulcerations bilaterally with lymphedema on both sides. Legs pigmented and deformed. Patient converted into case of chronic disability. (*B*) Bilateral ligation. Note arrows. Now has bilateral lymph legs of severe calcified type. (*C*) Stripping operation on left side twelve years previously followed by advanced lymph leg for past five years. Note new varicosities. (*D*) Bilateral ligation resulting in extreme bilateral lymphedema. Excision of tissue with skin grafting performed on right side five years previously made condition worse. Patient faces lifelong disability.

TABLE V.—RESULTS OF INJECTION TREATMENT

Results	Number of Patients
Good	127
No treatment	48
Incomplete treatment	18
Still under treatment	2
Poor 1. Veins cured but new ulcer opened; treatment stopped. 2. Pernicious lymph leg with ulcer. Veins cured, ulcers remained chronic. Treatment stopped. 3. Veins cured. Lymph ulcer unhealed. Treatment stopped. 4. Chronic lymph ulcer with relapses after successful treatment (old luetic). 5. Veins cured, ulcers not cured	5
TOTAL	200

The order of injections is important. The rule is to start centrally and to go peripherally. This simple technic is rarely followed. Few doctors know or attempt the injection treatment of inflamed varicosities. Also the technic for the injection of perforator veins is largely unknown. The cosmetic applications of injection treatment for disfigurement due to dilated venules and capillaries are similarly an unknown quantity.

When it comes to complications such as varicose ulcer, lymph ulcer, and lymphedema even more physicians are unaware of the role modern injection therapy can play in relieving these conditions.[6] Nor do they know that when quick results are called for the trained operator can complete an average case in from one to two weeks by multiple injections every day or two. This means that even when time is of the essence patients can be treated quickly in an ambulant fashion. It is obvious that the injection treatment of varicose veins has been oversimplified and its technic neglected. If we face the fact that this treatment is not a haphazard affair but requires skill and training, medical opinion will be altered.

Results of Injection Treatment

Table V summarizes the results of our injection treatment in members of this group. Of the 200 patients who had been operated on for varicose veins, 127 received a full course of injection treatment with satisfactory results. Treatment was refused for various reasons in 48, while 18 did not complete their injections. There were 5 poor results, as shown. These were in patients with lymph legs which are still a problem.

The mainstay of the injection method is check-up treatment. This is vital to success and cannot be overemphasized. Without it most patients are doomed to relapse. With the aid of annual check-ups varicose veins can be controlled permanently.

In this study 76 patients out of the 127 who received injection treatment came back for check-ups. This is an incidence of 59 per cent. Of these 76 cases 50 came back for more than one annual check-up, while 26 had only one check-up. There were 51 patients who did not come back for any check-ups. More propaganda is needed in this direction.

Earlier in our work we did not emphasize check-ups sufficiently. We now make it mandatory and the results are better. Many patients find it necessary to come back for only one or two visits each year. Others learn they can be controlled when they have one-, two-, three-, or even five-year intervals between injection treatments. This maintains the cure in all who are faithful.

Conclusion

The condition of varicose veins is due to an inherited vascular weakness which cannot yet be eradicated. Because of the stagnant vascular flow there is a continuing tendency for the veins involved to become infected. These infections are often low grade and clinically latent.

Surgery activates and spreads varicose vein infections causing the formation of lymph legs in half the cases. It has failed to cure varicose veins permanently according to this long-term study. The treatment of choice is competent injection therapy with annual check-ups for the lifetime of the patient.

We expect and hope these conclusions will be challenged. More long-term studies of this type are badly needed. To date there has been no comparable study over this length of time to indicate that surgery cures these patients permanently. In the end the patients themselves will have the last word on this problem.

Summary

1. Two hundred patients who had surgery for varicose veins were followed for periods of from ten to twenty years. None showed a permanent cure.
2. The cosmetic results of surgery were disappointing to most women.
3. Lymph legs complicated surgery in almost 50 per cent of cases.
4. In most cases the end results and complications of surgery produced more disability than the original condition.
5. Surgery for varicose veins should be discontinued except for emergency measures.
6. The treatment of choice is competent injection treatment with mandatory annual check-ups.

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Oxygen Saturation Determination of the Newborn in Vaginal and Cesarean Delivery Using Various Anesthetics

A comparison of oxygen saturation of fetal blood in infants born by spontaneous vaginal delivery was made with those born by cesarean section using various anesthetics. On the basis of current knowledge, the best estimate of oxygen saturation of blood in utero is about 67 per cent. Insofar as the averages in any of these groups is concerned it appears that the great majority of infants can survive and thrive on the oxygen saturation levels demonstrated in this study. The author stresses, however, that it was not the averages which were most significant in these groups, but rather the exceptions. In the inhalation anesthesia group (cyclopropane), there were four instances where oxygen saturation was extremely low, perhaps due to severe drops in blood pressure, indicating that prolonged anesthesia of this type should be avoided. In order to guard against lowering of maternal blood pressure, the author says it was found more desirable to use the continuous spinal technic of anesthesia rather than the single injection method, since the former permits smaller amounts of agent to be injected at a time. Any fall in blood pressure over 30 mm. Hg should be restored to normal before proceeding with the delivery, regardless of the anesthetic being used. Local procaine field block carries the least risk of fetal anoxia and is safest for the mother.—*West Virginia Medical Journal, May, 1959, R. T. Brandfass, M.D.*

A Fifteen-Year Review of Immunizations of Preschool Children

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IN THE year 1944, 54.6 per cent out of 350 children were inoculated against diphtheria and tetanus, 23.1 per cent were inoculated against whooping cough, and 45.7 per cent were inoculated against smallpox prior to their admission to kindergarten. At that time we still did not have the benefit of the triple vaccine. It took several years before the medical and pharmaceutical professions gave us the tools to combine these three preventive measures. The figures of 1951 reflect clearly our advance in this particular aspect: 76.7 per cent for diphtheria and tetanus, and 73.7 per cent for whooping cough. We reached the peak of this immunization procedure in 1959, 90.3 per cent of our four- and five-year-old children having received the triple vaccine before entering school.

The figures for smallpox vaccination show a similar rise. In 1944, only 45.7 per cent of the preschool group had smallpox vaccination; in 1959, the number of vaccinations increased to 74.0 per cent.

The latest newcomer among our protective measures has been Salk's poliomyelitis vaccine. In 1959, 91.3 per cent of our preschool group had the benefit of at least 3 poliomyelitis shots. This is a remarkable result of the concentrated efforts of private medicine, public health, and school health services.

TABLE I.—IMMUNIZATIONS OF PRESCHOOL CHILDREN

Type of Inoculation	Years (Number of Children Examined) 1944 (350)	1945 (237)	1951 (300)	1959 (300)
Smallpox				
Number	160	111	189	222
Per cent	45.7	46.8	63.0	74.0
Diphtheria and tetanus				
Number	191	153	230	. . .
Per cent	54.6	64.6	76.7	. . .
Whooping cough				
Number	81	88	221	. . .
Per cent	23.1	37.1	73.7	. . .
Triple vaccine				
Number	. . .	. . .	. . .	271
Per cent	. . .	. . .	. . .	90.3
Poliomyelitis				
Number	. . .	. . .	. . .	274
Per cent	. . .	. . .	. . .	91.3

These figures, more clearly shown in Table I, should be most gratifying to anyone interested in preventive medicine.

The rule of my life is to make business a pleasure, and pleasure my business.—AARON BURR

MODERN MANAGEMENT OF THE MENTALLY ILL*

MAX FINK, M.D., *Editor*

Ward Group Projects as a Focus for Dynamic Milieu Therapy

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USEFUL work has long been employed as a therapeutic measure in mental hospitals. This activity permits gratification of dependency needs, expression of aggression, and outlets for creative ability. However, this general therapeutic aid has not been aimed at specific psychiatric disorders or toward the understanding of individual reactions.[1] This paper reports on the use of the milieu and group work projects as a focus for inpatient psychotherapeutic treatment of male schizophrenic patients.

The experimental design for this investigation derives from and is an extension of the model used in individual psychotherapy. The process of individual psychotherapy has been described by Kolb[2] as one in which the patient is repeatedly confronted with distortions of reality so that he may learn to discriminate more clearly the multifaceted personal contacts of his daily environment. In this way the patient can develop more appropriate emotions in place of the ingrained repetitive responses laid down as a result of unfortunate past experiences. Thus, reactions are traced to the precipitating situation and the distortions are focused on.

In this study, the events to which the patient responded—the group work projects—were set up to elicit individual patient reactions to a common situation so that observations of these reactions could be made as they developed. Because they were able to trace the patient's responses to and distortions of particular events in close time proximity to their occurrence the staff could utilize these observations for psychotherapeutic purposes. In this way ward and individual therapy became integrated.

The ward is conceived of as a community in which the patient's behavioral patterns are expressed in his adaptation to this environment. His daily life activities on the ward provide a focus for therapy by making explicit his realistic and distorted responses to individuals and events. The patient's attitudes become evident through these daily activities with their manifold potentialities for stress in human transactions. Included are the regulated activities that are necessary to group living such as cleaning details, hours for arising and returning to the hospital, food service, laundry schedules, and personal cleanliness, as well as paramedical treatment through occupational and recreational therapy and social events. The therapeutic staff recognizes the fact that the hospital environment does

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* Presented at the New York Divisional Meeting of the American Psychiatric Association, New York City, November 27 through 29, 1959.

have reality restrictions to which the patient responds appropriately, for example, his complaints about food and time schedules. In such matters, emphasis in treatment would center on the discussion of exaggerated responses which combine realistic and emotional components. Discussions at ward meetings, informally with staff members and other patients, and individual therapy serve to complement each other in focusing on emotionally meaningful daily events and the individual responses to them. A hospital ward used in this way becomes a dynamic milieu for treatment.

This therapeutic approach to the treatment of schizophrenic patients assumes the following:

1. Disordered behavior patterns which derive from distortions in perception, meaning, and logic are stereotyped and repetitive.
2. These patterns are expressed in interpersonal relationships.
3. The patient's distortions in verbalization, attitudes, and behavior can be understood.
4. Such understanding can be communicated to the patient with therapeutic effect thereby enabling him to alter these disordered patterns.[3]

The work projects reported here were developed to provide a focus for exploring patient responses to a common activity. The therapeutic goals were: to increase the patient's awareness of his individual responses, to link his responses to specific events, to develop and enlarge his capacity for self-observation, and to further his use of the therapeutic environment. In addition, observations were made of staff responses and of the usefulness of such a focusing technic in hospital therapy.

This study was made on a 30-bed open ward. The large majority of patients were schizophrenic. They had been in the hospital for periods of from several weeks to several months. They remained on the ward for periods ranging from one month to twenty-four months. All were having individual psychotherapy. Ward meetings were held weekly and were attended by the ward administrator, the nursing staff, and all of the patients not at work or attending school. These meetings dealt with general ward problems.

A typical example of the process of the ward meeting is the following: Several patients had been late in returning to the hospital. The matter was presented for discussion at a ward meeting. The point was developed from the group comments that to return on time when that person did not so desire represented a submissive act, whereas to follow one's own impulses indicated independence and assertiveness. The need to demonstrate independence in this manner and the fact that the patient viewed following the community rule as submission was discussed with emphasis on the distortions involved.

The foregoing method of dealing with ward problems had been established at the time this study was undertaken. In addition, at daily service rounds and at informal staff discussions there was a continuous interchange of information among participating staff and individual psychotherapist, thus facilitating the use of such observations in treatment.

Observations

A trial of this technic was oriented around the redecoration of the ward which was under way by the hospital maintenance staff. The patients were invited to join in the planning and work on a voluntary basis with the staff personnel including the ward nurses, the occupational therapist, and a volunteer. The ward administrator participated as the regular discussion leader. About half the patients at any one time held part or full-time jobs or attended school and thus did not participate in the projects. Of the approximately 15 patients who were available, 5 to 8 participated voluntarily in any one project and in all a total of 10 contributed. Suggestions toward improving the ward appearance came from the patient group and the staff. These projects included recommendations and later action in building a bookcase; painting the kitchen and dining room; and making picture frames, window drapes, and other decorative work. Ongoing problems involved in these projects were discussed at the ward meeting and in conferences held specifically to deal with the projects. Questions initially raised were concerned with what projects to undertake, how to get material, leadership of the group, the distribution of work, attitudes toward nonparticipating patients, and personal feelings about doing the jobs. Later problems included interpersonal differences among the group, rivalry situations, and attitudes toward the staff members in authority positions.

I shall describe in brief sketches some of the patients' responses. The patients decided that the first project would be the construction of a bookcase for the living room. There was an eager and enthusiastic response from members of the group and particularly from a forty-one-year-old single, male college graduate who was admitted to the hospital with complaints of chronic anxiety and paranoid ideation. The onset of his present illness was associated with a threat from a rival to an eleven-year relationship he had had with a woman. He felt that he had done much for her by helping her in her business, but that now she was ungrateful and unfaithful. He had become angry and assaultive, had had difficulty concentrating, and had become obsessively preoccupied with revenging himself against his rival. After his admission to the hospital it was noted that he was ingratiating, that he offered to help on the ward and in the hospital, and that he was boastful of his accomplishments. He tended to ally himself with the staff in controlling and dealing with other patients. He responded to the project with, "I'll do anything you want, doctor." He boasted of his capacity to work with his hands and of his contacts with hospital maintenance personnel from whom he said he could get the necessary supplies. On the weekend following the delivery of the lumber, he and several other patients constructed the bookcase. Some indications of a power struggle, later confirmed, were manifested when the group decided to paint the bookcase rather than stain it as had been planned originally. Subsequently, this patient began talking on the ward about the obligations he had felt in making the bookcase and how it had interfered with his doing his own work in occupational therapy. His initial eager, aggressive participation was followed by feelings of deprivation and resentment that repeated a pattern that was evident from his previous relations with others. He was able to utilize the analysis of this experience in the ward group to increase his awareness of this maladaptive reaction.

The other patients resented his aggressiveness and his claim for the credit, while at the same time they followed his authoritative leadership. When he withdrew after completing the bookcase the patients were reluctant to undertake the next project. Their feelings of resentment and inadequacy, pointed up by the aggressive activity of the patient described, then were discussed at a ward meeting. Following clarification of their reactions the patients decided to undertake the next project.

In this project, painting the dining room and kitchen, a quiet competence was demonstrated by a forty-year-old divorced alcoholic electronic technician who had a travel and street phobia. He had been in the hospital for a year. During this time he had been helpful and uncomplaining but at times was sarcastic and aloof. On the termination of this project he expressed anger at the patients who had not participated and expressed the feeling that he had been exploited. He later recognized that he had displaced his rage to the patients from the administrator whom he believed he had to please lest he be discharged.

During and after the painting of the kitchen and dining room, the ward meetings dealt with numerous requests for increased privileges, extended late hours, and better food. Patients expressed their feelings that not enough was done for them. Such requests and complaints also came from the nonparticipants who had rationalized their lack of cooperation as being justified since their requests and needs had not been met. Several meetings were devoted to discussions of the motivational factors underlying their requests. Patients stated that the work was done for the administrator and the nurse. They felt that they had not been given ample recognition and were resentful. During this period work on the projects stopped. Picture frames that had been made from scrap lumber, as well as window drapes, were left in various stages of completion. A number of individual responses were brought out in the ward meetings.

A twenty-four-year-old former seminary student had been admitted with incapacitating symptoms of nausea, vomiting, severe tension, and fear of losing his mind. He said that after committing himself to the other projects he had developed anxiety, fear that he could not do the work, insomnia, and loss of appetite. His attention had been focused on his fear of competition with other males and on his low self-esteem and fear of criticism. After discussion and with considerable reservation he undertook leadership in a project and completed it successfully. The result was an increase in self-esteem and confidence.

Another patient, a thirty-five-year-old executive suffering from an immobilizing fear that he would fail in his work, paranoid ideation, and withdrawal, said that he felt anxious when he did anything out of the ordinary daily routine. Discussion revealed that he was fearful that improvement, evidenced by participation in the project, would lead to a premature discharge and return to a job which he felt made overwhelming demands on him. This experience was helpful to his understanding of his use of avoidance and withdrawal to avoid greater responsibility and opened up a discussion of more appropriate methods to balance the demands of his work and capacity.

A twenty-six year-old technician who had been admitted with symptoms of anxiety, dizzy spells, fear of falling, and ideas that people were laughing at him stated that he could not participate now although he had done so previously. He claimed that he might become dizzy and stated that since his doctor was on vacation he could not utilize this experience in treatment. He later recognized that his resentment concerning his doctor's absence expressed itself in his unwillingness to participate. Some weeks later this patient stated that he had learned to accept these symptoms, dizziness and referential thinking, as a signal to calm himself and to review the situation to find out what had precipitated the reaction. Thus, through the work project activity and individual psychotherapy he learned to view his reaction as ego-alien and to use it as a defense against further disorganization.

Patients' resistance and discouragement were dealt with by the group discussions. Participation in the work by the staff also served to encourage the group. The ward administrator emphasized the psychologic and motivational aspects of behavior. The nurses engaged the patients in conversations about their feelings and encouraged them to continue with the project to improve their living quarters. There was some frustration on the part of the volunteer worker and an occupational therapist who tended to measure success more with completion of the projects than with the patients' participation in them. In addition, because of other commitments they were not able to participate as actively in the group discussions. The differing staff responses appeared roughly related to the individual's personal understanding of the psychodynamic implications of the project which was dependent, in part, on the degree of participation in the discussions.

Comment

The group work projects described here

served to focus attention on individual responses to a common activity. Distortions in perception and thinking were thus related to specific events and transactions observable in the environment and were subject to immediate analysis. The full therapeutic utilization of the projects by the patients depended on ward meetings, informal discussion on the ward with staff and the patients, and individual psychotherapy, each forum serving to complement the others. Patient responses to the projects included the following:

1. Initial participation followed by resentment which was rationalized in terms of feeling deprived of time to work on their own projects.
2. Sulky unwillingness to participate since not enough was done for them.
3. Magical expectations of recognition and praise followed by frustration and anger at the authority figures.
4. Avoidance of the project because of fear of competition, failure, and criticism.
5. Inhibition of aggression due to fear of retaliation.

The projects served to increase each patient's capacity for self-observation and to help him collaborate with the staff to utilize such observations for therapeutic purposes. The patient could and did use insight to make a slow beginning toward new attitudes and actions.

After initial skepticism and mistrust, the patient responded cooperatively and utilized increasingly these activities to explore his own feelings and reactions both in the group and in individual therapy. As Fromm-Reichmann stated in 1954[4] regarding treatment of schizophrenic patients, "We no longer treat the patient with the utter caution of bygone days. They are sensitive but not frail. If we approach them too cautiously, and if we do not expect them to be potentially able to discriminate right from wrong we do not render them a therapeutically valid service. We contribute to their low self-evaluations instead of helping them to develop a healthier attitude towards themselves and others." In this project focus was on the patient and his responses. Helping him to see his distortions included the salutary but unspoken statement, "You can change and do better."

Summary

The dynamic milieu and the projects described here were designed to improve the patient's capacity for self-observation and further his use of the therapeutic relationships available in a hospital setting. The focus was on individual responses and emphasized the intrapsychic distortions of reality. This experience provided a model for the patient to relate his reactions to specific events, to consider his characteristic reactions, and to develop more appropriate emotional responses. The projects served to focus the attention of both the patients and the staff on the therapeutic usefulness of utilizing the ward structure for exploration of individual responses and motivations and to use emotionally meaningful daily activities for psychotherapy.

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Rehabilitation House

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During the past five years the Vermont State Hospital and the Vermont Vocational Rehabilitation Division have been successful in re-establishing a large number of long-term patients in the community. This has been accomplished through a flexible and varied program of preparation within the hospital and a variety of aftercare and transitional facilities. Two hundred and forty-three patients have participated in this program for six months or longer. Of these 138, or 57 per cent, are at present out of the hospital. Seventy-two of the more chronic members of this group were released through our rehabilitation house program. Their average duration of continuous hospitalization before release had been seventy-eight months. Not only have these patients remained out of the hospital but also approximately 3 out of 4 are fully self-supporting and living socially satisfying lives. Six months after leaving the hospital 75 per cent of these patients were fully self-supporting; another 10 per cent were partially self-supporting. The majority were in social settings that required or encouraged much social interaction. This sort of record with a group of such chronicity seems to us quite remarkable.

Two years ago we received a grant, OVR Special Project 180, to expand and study this program. We have been studying our methods and our results intensively in an effort to develop some explanation for our success. The program is so complex that we have not been able to find any simple formula to explain how these patients get well. However, we have arrived at some educated guesses.

Problems of Transitional Period

Transition of long-term mental patients from a total institution to the increased independence and increased expectations of community living presents problems something like those which have been encountered in other cases of social and cultural change. There are a number of parallels between the problems these patients faced and the program we have developed for them and the problems that other groups have encountered in transition between varied cultural settings and the programs developed to meet their needs.

Any person suddenly leaving one situation and going to another which is quite different may suffer feelings of unreality and depersonalization. In many such cases an increased incidence of schizophrenic reactions has been reported. The literature concerning problems in this area is found under a variety of headings including "transition states," "social isolation," "social mobility," "acculturation," "social change," "migration," "repatriation," "detribalization," and so forth. Perhaps the closest parallel that we can draw is to the problem of repatriated prisoners of war. Segal,[1] writing on initial psychiatric findings on 68 repatriated prisoners of war, found that "they appeared bland, apathetic, and retarded. Their affective display was carefully modulated. Talk was shallow, often vague, and with definite lack of content. Large memory gaps were present, particularly for the period of capture and the so-called 'death marches.' There was little if any spontaneous talk of home, family, or future. Such future plans as were mentioned were of a short-term nature, poorly conceived and highly unrealistic." This would serve as an excellent description of the majority of our chronic schizophrenics at the time they entered the rehabilitation program in the hospital and, to a lesser extent, during their early period of adjustment in a rehabilitation house.

Jaco[2] defined social isolation as "the cutting off or minimizing of contact and communications with others." He found that those communities having high rates of schizophrenia also have a high degree of social isolation. His criteria of social isolation were: anonymity, high spatial mobility, remote location of friends, low frequency of participation in groups, low occupational participation, and low frequency of interaction with other communities. This would serve as an excellent description of the social setting of the long-term hospital patient.

Tyhurst[3] describes the effects of what he calls "transition states" such as disasters, migration, and retirement. He cites studies in immigration which showed reactions long felt to be characteristic of the schizophrenic states such as a narrowing of interest to the fulfillment of immediate needs, a feeling of incongruity to the surrounding society, somatic preoccupations and symptoms, some degree of hostility and suspicion, a sense of difference and helplessness, and the occasional development of abnormal mental content and breaks with reality. Perspective was narrowed with loss of interest in the past and the future. These are certainly findings characteristic of long-term schizophrenic patients and also findings which have been reported both by me[4] and by the group at Portals House[5] as being characteristic of the early stages of transition from the mental hospital to the half-way house.

Frankl[6] describes the state of mind of newly liberated concentration camp inmates as one of ". . . 'depersonalization.' Everything appeared unreal, unlikely, as in a dream. We could not believe it was true. How often in the past years had we been deceived by dreams! We dreamt that the day of liberation had come, that we had been set free, had returned home, greeted our friends, embraced our wives, sat down at the table and started to tell of all the things we had gone through—even of how we had often seen the day of liberation in our dreams. And then—a whistle shrilled in our ears, the signal to get up, and our dreams of freedom came to an end. And now the dream had come true. But could we truly believe in it?"

Another suggestive parallel might be drawn with the experience of Nigerians in their adjustment to life as students in the United Kingdom. These students experience very intense culture shock and social isolation combined with a strong motivation to remain in the United Kingdom and be successful in their studies. This apparently results in a high incidence of schizophrenia and other mental disorders.

Scattered and poorly defined examples of similar observations could be cited from all over the world such as high incidences of schizophrenic reactions among the newly arrived English in Australia, immigrants in Formosa, and Scandinavian immigrants in our own northern states.

A partial summary of this literature was recently published by Wittkower and Fried.[7]

I have some appreciation of the theoretical difficulties and practical complexities involved in trying to interpret or evaluate such observations. There are problems of predisposition and selection as well as of the complicating effects of other stresses (economic and nutritional) and grief reactions to the loss of or separation from loved ones. However, many of these complexities are eliminated in two examples which are somewhat closer to home, namely, repatriation of prisoners of war and separation from service in the armed forces after long periods of time. In both of these instances there is a return to loved ones and all the comforts and benefits of the individual's home and community. In both of these instances similar reactions are reported. In our own case—the transition of long-term mental patients back to the community—the problem of selection is not present as there is no question that most of our patients are predisposed to schizophrenic reactions.

Rehabilitation Program

Particularly intriguing to me in browsing through the literature regarding these problems has been the uniformity of the solutions which have been proposed and often found successful. These have somewhat the following pattern: A period of preparation is proposed in which the individuals who are about to undergo a transition rehearse the problems which they will encounter. As much information as possible is given to them about changes that may have taken place since they left their homes, attitudes they may expect to encounter, adjustments they will have to make, and so forth. Then, some sort of half-way house is frequently proposed (readjustment center for prisoners of war; a separation center for returning soldiers) in which some degree of graduated return to the community is effected. During this critical period of transition a number of other supports are generally used such as counseling, social groups or veterans organizations, or group discussions. Community supports such as church or service groups are mobilized. Taken as a broad general outline these are precisely the major factors in our own rehabilitation program for long-term hospital patients.

If there is some element of truth in these parallels which I have drawn it might help to explain the rather unexpected degree of success which our chronic patients have enjoyed. We have organized our rehabilitation house program as if these parallels were true. Sometimes we have done this quite consciously. Other aspects of the program have apparently developed in this manner without conscious direction.

For example, during the period of preparation in the hospital before the chronic patient is released to the rehabilitation house there is an extensive effort to reorient patients to the everyday reality which they may be expected to meet outside. They have to relearn the prices of ordinary purchases. They have to become familiar with new methods of transportation. They have to become familiar with the greatly increased traffic and the problem of stoplights. They need to know about the changed job market and the new technics of job hunting. Apparently an opportunity to learn about these things and meet these problems in their imaginations before they are called on to meet them in reality is valuable to them.

In the early period of adjustment to life outside the hospital in a rehabilitation house, some degree of loss of interest, energy, and activity is always noted. Other expatients treat this reaction spontaneously with a series of orienting discussions and trips around the community. As soon as the patient becomes familiar with his new surroundings this initial reaction disappears.

Over the years, the atmosphere of the rehabilitation house program, while informal, homelike, and supportive, has always remained somewhat hospital-like. There were times when we doubted the wisdom of this. However, in the light of this present comparison it may have been a factor in our success. For example, some of the houses have been operated by houseparents who have been former attendants of the hospital and whose attitudes toward expatients retain a great deal of that which was learned in their many years of service in the hospital. Although the rehabilitation house is not locked there are definite rules about when and how patients may leave and return. Week-end visits away from the house are limited by the need for housekeeping duties to be performed. Patients themselves contribute to this retention of some degree of hospital-like atmosphere by asking permission to do various things which are considered granted without question. They still tend to ask the houseparents to get the doctor's order for any change in their plans and in this way retain some of the features of the collective, orally supported society which they have become accustomed to over the years.

Another feature of the rehabilitation

house program which has been designed as if this were a problem of acculturation has been the extent and variety of visits back and forth between the houses and the hospital. Before going to the rehabilitation houses the patients in the rehabilitation program at the hospital usually have a number of opportunities to visit at the houses for a day or a weekend. Occasionally, patients in the rehabilitation house whose ties to institutional living are especially intense because they have been institutionalized since childhood are allowed to return to the hospital for week-end visits. Patients in the rehabilitation program at the hospital invite the residents of the rehabilitation houses back for recreational activities and, in turn, are invited to the rehabilitation houses for parties and other social events. The expatients' group, "Helping Hands," sends members to visit the hospital at regular intervals to help interpret the rehabilitation house program for those who may eventually leave. The "Helping Hands" also publishes a newspaper which is distributed to the rehabilitation patients in the hospital. Houseparents, vocational counselors, and officers of the Vocational Rehabilitation Division come to the hospital to give lectures and lead discussions about the program.

Comment

I think it may be seen from the foregoing examples that much of the rehabilitation program, and particularly that part of the program involving the rehabilitation houses, is designed without any thought of any specific mental illness in mind. These same measures would be necessary if we were dealing with a group of normal people who had been incarcerated in a total institution for five, ten, or fifteen years.

We would suggest that there is a distinct possibility that the high incidence of relapse following the release of long-term patients and the consequent pessimism about their curability may have been due partly to neglecting the problems inherent in the transition of these individuals back to the community rather than to any inadequacy in the treatment of their original disorder.

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Rehabilitation of Mental Patients in a Comprehensive Rehabilitation Center

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The purpose of this paper is to discuss aspects of the comprehensive rehabilitation center which, although heretofore limited to helping the physically disabled, may be admirably suited to provide the full range of services that mentally ill patients require but do not have available to them in present-day facilities. Beginning efforts to provide such services at the Institute for the Crippled and Disabled, an outpatient comprehensive rehabilitation center affiliated with New York University, will be described briefly.

I am sure we all agree that the traditional mental hospital resources are woefully inadequate. I believe they are inadequate not only because they are not used to capacity but also because the basic philosophy of such hospitals is based on a fallacy, namely, that the patient should be sheltered from his environment. Hospitalization for the mental patient is allegedly not intended to remove him from society but rather to give him a sheltered environment in which specific therapeutic experiences can be provided. In effect, however, this type of "sheltering" leads to isolation of the patient. One of the most consistent characteristics of the psychotic patient is his tendency to isolate himself. Fromm-Reichmann[1] has described the loneliness of the mental patient as nonconstructive and often disintegrative. The patient almost forgets that there were people in his past and he may no longer conceive of the possibility of future interpersonal relationships. We also have abundant clinical and laboratory evidence that isolation and loneliness, whether self-induced or induced by others, can produce a state in which psychotic symptoms develop. Physical or drug-induced deprivation of sensory stimuli or reduction of perceptual organization by specific drugs and certain types of brain damage may effectively isolate an individual from his environment.[2,3] This often leads to panic and to distortion of reality similar to that seen in psychotic patients. If the isolation and loneliness of a patient is more or less continuous, regardless of how it is induced, it may be a major factor in the precipitation or the continuation of mental illness. It therefore seems evident that any therapeutic environment which directly or indirectly encourages or tolerates isolation of the patient is self-defeating.[4] The traditional brick walls isolating patients from the rest of humanity have indeed contributed toward making many of them chronic sufferers and almost completely dehumanized beings. In the process of "sheltering" the patient we deprive him of the very conditions which are necessary for a fully human existence, namely, the media for free, cooperative, and productive interpersonal activity. The hospital reinforces, or may even initiate, the patient's belief or fear that he cannot function in his community. With every day of his limited existence the prospect of a return to social living becomes more fearsome.[5]

Programs to Offset Problems of Sheltered Environment

Recognition of these shortcomings has led to modifications, variations, and innovations in programs and settings for mental patients in the last two decades. Gradually, hospitals have introduced programs designed to stimulate whatever social responsiveness was left in the patient.[6] Programs and therapeutic approaches such as "the therapeutic community"; "total push"; patient government; trial visit programs; and recreational, athletic, vocational and occupational activities were all instituted in an attempt to break down the basic isolation of the patient which has been reinforced by hospitalization. These programs have also helped to de-emphasize the doctor-nurse-ward routine which is generally associated with physical illness and which more or less invites the patient to consider himself physically ill.

The day hospital, developed in Moscow in 1932 and in Montreal in 1947, was the first radical step in the direction of overcoming the shortcomings of the mental hospital and of providing comprehensive care and services to the psychiatric patient.[7] It reflects the beginning of our realization that the patient can best be helped in the stream of his own social and community life.

In more recent years varied programs for the rehabilitation of psychiatric patients within the community have been developed. However, they have been limited usually to specific aspects of the total problem. Recreational centers, such as Fountain House and The Bridge, in New York City, provide valuable programs for lonely and socially inept patients. Other programs such as the one being developed at the Altro Workshop,[8] formerly restricted to the physically disabled, have been providing rehabilitation services with an emphasis on work experience, work training, or work placement. In addition, a few of the rehabilitation centers for the physically disabled have attempted to meet the obvious needs of the mentally ill in their communities by accepting, often unofficially, a scattered few into their programs. All these developments have unquestionably helped many patients but most of them have not been comprehensive in scope. Certainly there is a need for more than a partial approach in our rehabilitation efforts. It requires all of our resources and skills to help the mental patient achieve a rational and constructive way of life.

It is evident that in the case of the physically disabled we have been more farsighted in recognizing the importance of a comprehensive program. For these patients we have built over one hundred rehabilitation centers. Rehabilitation as a method and a science has been developing for over forty years. At first, bed care and medical treatment in the hospital was the total extent of help. Later, hospitals gradually began to import case workers, occupational therapists, psychologists, vocational counselors, and group and recreational workers to provide additional services. However, the services often were (and sometimes still are) used haphazardly, intermittently, and sometimes grudgingly. With the realization of the importance of keeping the patient in his community while he is learning to function in it came the development of the rehabilitation center. But the areas of rehabilitation that have generally been emphasized are vocational in the outpatient centers and medical in the inpatient centers. The truly comprehensive rehabilitation center is the most progressive type of treatment facility. Although such centers are nowhere as fully developed as necessary they are the facilities most likely at present to meet the total needs of the patient.

The development of rehabilitation services for psychiatric patients is following belatedly a similar pattern to that for the physically disabled. Now that we realize the importance of helping mental patients develop and maintain their integration in the community we can learn much from rehabilitation efforts made on behalf of the physically disabled.

Defining "Rehabilitation"

I believe the terms habilitation and rehabilitation should refer to the sum of all efforts made on the part of representatives of all appropriate professional disciplines to help an individual move toward realizing his maximum potential as a human being. In essence and by definition rehabilitation has to be comprehensive if it is to be truly classed as rehabilitation. The following definition of a comprehensive rehabilitation facility appears in Public Law 482 and 565, 83rd Congress " . . . a facility which is operated for the primary purpose of assisting in the rehabilitation of disabled persons through an integrated program of medical, psychological, social and vocational evaluation and services under competent professional supervision, and in the case of which (1) a portion of such evaluation services is furnished within the facility . . . and (2) all medical and related health services are prescribed by or under the general direction of persons licensed to practice medicine or surgery in the state." A rehabilitation center is thus considered comprehensive if it offers services in each of these four basic areas: medical, vocational, psychologic, and social. Nothing in this definition indicates the nature of the "disabled persons" to be treated, and it certainly would not preclude serving the mentally ill. The fact is, however, that not one of the approximately 100 rehabilitation centers in this country is primarily set up to serve the mentally ill. (A new rehabilitation building[9] has recently been opened to patients at the Institute of Living, Hartford, Connecticut, and it will be interesting to watch the development of this facility.) In a report on the operation of 77 rehabilitation centers in the United States and Canada published by the Office of Vocational Rehabilitation[10] a long list of disabilities treated by the various centers does not include psychiatric disability. Furthermore, when asked about plans for research or other future activities, only one of the centers mentioned plans for the psychiatric patient. However, in another survey of 78 centers in which specific inquiry was made concerning the inclusion of "ex-mental" patients in their programs,[11] 23 stated that they had or planned to have exmental or mental patients in their programs.

Although their programs for mental patients are very limited, many of these centers state frankly that they accept these patients only because facilities for psychiatric patients are so few and far between. Thus it seems that, although these rehabilitation centers are not expected or fully equipped to treat mental patients, they are nevertheless attempting to meet the obvious need in their communities.

Rehabilitation Center Best Facility for Treatment of Mental Disorders

I believe that the comprehensive rehabilitation center may be the best facility for treatment of the majority of mental patients just as it has proved to be for the physically disabled. It can effectively provide the building blocks for a new experiential environment, a full range of psychotherapeutic, medical, social, educational, and vocational programs as may be required by the patient. In some cases hospitalization may be necessary as the first step toward comprehensive treatment, but the hospital should be, in the words of George Bell, M.D., originator of the "open door" policy, "but a moment" in the life of the psychiatric patient. The rehabilitation center as it now exists cannot provide help for many acutely disturbed patients. However, rehabilitation planning for bed patients might be developed. There is no reason why patients who need special attention cannot "live in" at a rehabilitation center during the time this is required. The third report of the World Health Organization Expert Committee on Mental Health (1953) recommended that once the necessary minimum of emergency inpatient care is provided we must move "to the development of extramural treatment facilities and other psychiatric facilities in the community." It is estimated that only 5 to 10 per cent of the present mental hospital population are so disturbed or so disturbing to others that they require continued hospitalization.[12] Prolonged hospitalization is an understandable policy of desperation based on the lack of decent community and family environment. Thus the patient is suspended in a setting which offers him little help in coping with the problems of reintegration. He should not continue this incomplete existence.

The extension of comprehensive rehabilitation services to the mentally disabled would undoubtedly be an expensive step. Hopefully, by forestalling the need for hospitalization, by encouraging patients to seek help earlier, by expediting earlier discharge from hospitals (as do the day hospitals), and by helping patients become truly self-supporting, the comprehensive rehabilitation center would, in the long run, prove less expensive to the community.

Although rehabilitation centers as now constituted have had experience almost exclusively with physically disabled patients, the fact is that many such centers, including the Institute for the Crippled and Disabled, have for many years maintained departments and services including the so-called "psychiatric team" or "mental hygiene team." The Institute for the Crippled and Disabled has in actuality been rehabilitating a large number of severely mentally ill patients for many years, since we serve mostly those physically disabled patients who have "problems in adjustment." As might be expected many of our patients have psychiatric disorders, and their physical disabilities are often incidental to their main problems. Often the physical disabilities serve as a camouflage for the mental illness itself. Since 1953, our Social Adjustment Service has been operating as a psychiatric clinic and has been licensed as such by the New York State Department of Mental Hygiene.

The mental patient and the physically disabled patient have similar rehabilitation needs. Each has to learn to live in a world which is new to him; the physically disabled because of changed conditions in his body, and the mentally disabled because the world is actually different from the one he has irrationally conceived. Since they have similar needs they may benefit from the same program.

Pilot Program

I would like now to discuss briefly the pilot program for psychiatric patients at the Institute for the Crippled and Disabled, our theoretical rationale, some of the many problems we are confronted with, and our plans and hopes for the future. Since 1955, we have accepted mental patients on an informal and occasional basis. In September, 1958, the Institute for the Crippled and Disabled began a formal program of accepting a number of patients with histories, or diagnoses of "mental illness." We have initiated this program because of the encouraging results of our work with the physically and nonphysically handicapped disturbed patients in the past and because we have been stimulated by the work being done at some other institutions.[8,13] In developing our criteria for admitting these patients we are trying not to be too restrictive. Our case load includes mentally ill patients, usually schizophrenic, who have no physical disability or brain damage (which we consider a physical disability). Although some of our patients have had many years of previous hospitalization, others have never been hospitalized, and some enter our program before they would ordinarily be discharged from the hospital. Therefore, we do not feel that the terms "posthospitalized" or "exmental" properly apply to our patients. We are looking for candidates who will eventually be able to achieve a vocational goal although they may not be ready for or need vocational training. Certainly there will be some patients whom we cannot help. We may discover this early or later in our evaluation and treatment program, but we are guarding against the kind of pessimism which would lead us to screen out all cases except those that "look good" on referral. Some of our "dubious" patients have turned out to be good candidates, and vice versa. Most of the mental patients in our project are considered to be severely ill.

We expect that the psychiatric patient will try to hold on to his irrational course of existence. However, we must respond to him in terms of his potential and help him reach this potential. This is the goal of treatment. To achieve this goal, we must be able to (1) determine accurately and objectively what his potential is and (2) offer him opportunities for training and experience which may previously have been denied him.

Diagnostic evaluation is naturally our first task, certainly a most crucial one. It is not a separate process but is considered the beginning phase of treatment. It has been our experience that a series of disconnected interviews, examinations, and tests are not sufficient really to get to know the patient. Therefore, in addition, the patient is enrolled in a vocational evaluation program or an activity program so that we can see him in action. There we can observe such patterns as his ability or willingness to follow instructions, be on time, and get along with others. Ideally, the evaluatory experience becomes a therapeutic and growing experience in which the patient as well as the evaluator learns.

The rehabilitation program is carried out by a team consisting of a full range of professional people working together to provide the therapeutic program best suited to each individual patient. To accomplish this the Institute for the Crippled and Disabled is organized in several professional departments, coordinated administratively by a director of patient programs and, professionally, through staff meetings and conferences. The Social Adjustment Service is headed by a psychiatrist and staffed by psychiatrists, psychologists, social case workers, social group workers, and a speech therapist. Besides evaluation, the Social Adjustment Service provides individual and group psychotherapy, chemotherapy, supportive casework, group work programs, retraining for the braininjured, and speech therapy. Evaluation and treatment services are also provided for the family when needed. The Vocational Adjustment Service provides a job skill evaluation of three or more weeks duration which may be followed by a program of complete training in a skill or trade, such as jewelry design, lens making, leather work, and office work, which is in demand by employers. They also provide vocational guidance, group guidance, and individual assistance in obtaining jobs. An industrial workshop provides training in and, when qualifications are met, actual employment in a variety of assembly jobs. Our medical department provides a careful physical examination (which is especially important for the mental patient who has so many anxieties and symptoms related to his body), consultations, and outpatient medical treatment as required by each patient. The medical department also embraces a large physical therapy and occupational therapy unit. Although the psychiatrist is responsible for the treatment or the supervision of the treatment of the mentally ill patient, specific programs to help the patient attain adequate social, vocational, and physical skills must be planned and provided by other specialists. The psychiatrist cannot be a person who prescribes "doses" of programs for these professionals to carry out.

Comment

The rationale for such a complex organization must be presented. The patient usually comes from the most disturbed and exploiting conditions of life. He believes that his social world can bring him no success or satisfaction. He is reluctant to struggle because he expects only pain and disappointment. He is cynical regarding the possibility of constructive living with others. Therefore, he is often not trusting enough to respond immediately to a psychotherapist. The patient is not likely to accept psychotherapy, which requires hopefulness on his part, unless the oppressive aspects of his environment are changed. A nondestructive and nonexploitative social reality may provide a medium in which the patient comes to see his conceptual bias. (The structuring of such an environment is comparable to the therapeutic objectivity of the psychotherapist who maintains a rational, warm, interpersonal relationship which can enable a patient to see himself and his potentials more clearly.)[14] The patient may in time experience successful activity with its consequent satisfaction. Psychotherapy, which is part of the rehabilitation process, can at that point be most effective since the patient can see at first hand the possibilities, the feasibility, and the availability of potentially successful experiences. In the case of patients who are so isolated and cynical that they do not have any conception of a one-to-one relationship such as the psychotherapeutic situation, a group-work program, in which he can be helped to participate in groups of varying social complexities, may serve as a gradual introduction to more personal relationships. It may be only after becoming conscious of his problems in this situation, as well as of new satisfactions he discovers in such a situation, that the patient is ready to discuss with his psychotherapist the schism between himself and others and the distance between his life situation and his goals, and to make efforts toward change. Both activity programs and psychotherapy must proceed as an organic unit for each patient. In this regard, the psychotherapist must guard against allowing the consultation room to become a place where either the patient or the therapist stands aloof from the specific lessons and experiences derived from the activity or training programs in the center. Psychotherapy in such a setting can be most insightful because both the patient and therapist can directly detect and test distortions in the patient's thinking and behavior.

The complex programming outlined in this article in no way obviates the existence of many difficult problems that we have to face with our patients. Many psychiatric patients are not ready for or will not accept a disciplined vocational program. The need for more intensive prevocational and therapeutic activity programs has faced us with the problem of expanding our occupational therapy program and integrating it with the vocational, medical, psychotherapeutic, and group-work areas. Manpower shortage, lack of program development, and inexperience are all problems which are almost inevitable at the beginning and certainly limit the success of a new program such as this. The development of prevocational and therapeutic activity programs is an area which requires serious consideration and a most skilled and experienced professional staff. To my knowledge, such programs have been developed only in a partial way in most institutions, including ours.

Another problem is the difficulty of assessing properly our evaluation findings. Although we proceed on the proposition that we should eventually expect performance in accordance with ability, we must guard against exposing the patient to experiences which might overwhelm him. We should not send a patient to a job merely because he is skilled any more than we would throw a patient into the water just because our tests show that he is able to swim. On the other hand, we must not overextend or oversubscribe our evaluation program lest rehabilitation services for patients be delayed or curtailed. It has been our experience that the patient's progress is built on layers of satisfying experiences rather than on the discovery of talent or skills.

We have not as yet solved the problem of the "out of contact" patient or of the patient who is provokingly aggressive. For these patients we may need to have an activity program that is more carefully supervised by more extensively trained personnel. We must provide an orientation program and close supervision for those staff members who have not been trained to work with the mentally ill and who tend to become punitive toward, or intimidated by, the hostile patient.

Other problems that we have been confronted with are: inadequate information from hospitals, the disturbing effect of long preadmission waiting periods, and the difficulty in coordinating a program for patients who are receiving psychotherapy elsewhere.

One of the major problems we have encountered is the still persisting resistance to hiring individuals with histories of mental illness. Even the State of New York, through its Civil Service medical examination, may bar an individual with a history of mental illness from employment while at the same time its Division of Vocational Rehabilitation refers this same individual to us to make him employable. It is clear that even when an individual is able to become a responsible member of his family and his community he cannot assume this position unless they are ready to accept him. The rehabilitation center must therefore extend its efforts into the community to be of maximum service to its patients.

Present Status of First Patients in Pilot Program

Our specific research design and statistical findings will be the subject of later communication from the research staff of the Institute. However, I would like now to outline the status of the first 18 patients admitted to our program. They were selected from 21 patients originally referred to us. Since then many more patients have been referred and accepted. Ten of these original 18 patients are considered to have acute schizophrenic reactions, 6 have "chronic ambulatory" schizophrenia, 1 is neurotic, and 1 is manic-depressive. Thirteen have been hospitalized previously one or more times. All patients are receiving psychotherapy, 5 of them with psychotherapists not connected with the Institute. All of them have received some other services at the Institute such as chemotherapy, casework counseling for themselves and their families, group counseling, and group work and recreational programs.

Our results with these patients have been gratifying and well worth our efforts. Of the original 18, 7 are now working and 1 is ready to work, 5 are now in a vocational training program and all but 1 of these are doing satisfactory work, 3 who were in a prevocational program are now receiving on-the-job training, 1 has been referred to a vocational school, and 1 left the Institute before completion of his program. We have encountered no difficulty related to the introduction of mentally ill patients into the Institute; all programs they participate in are shared with the physically handicapped. In addition, all facilities of the Institute, such as the cafeteria, are shared by all patients and staff. So far, the relationships of our mental patients with the physically disabled are not noticeably different from the relationships of the physically disabled with one another. However, we are on the alert for status problems since the inclusion of a new group into an already established structure must affect that structure and also be affected by it. The group workers are studying these variables. Many of the physically handicapped at the Institute have nonvisible disabilities such as cardiac and post-tuberculous conditions. The mental patient tends to be identified as a member of that group. This does not seem to be a deterrent to his progress; as a matter of fact, participating with and seeing others who are struggling seems to motivate the psychiatric patient.

Conclusion

The comprehensive rehabilitation center appears to be admirably suited to provide the full range of services that psychiatrically ill patients seem to require. If the rehabilitation efforts for mentally ill patients in a center such as ours prove successful, and early indications appear that they may, then this experience can be used as a springboard to create comprehensive programs in other rehabilitation centers and day hospitals and, finally, to create such centers with psychiatric patients specifically in mind.

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SCIENTIFIC SESSION

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Studies on the Competition Between Antigens

Implications for the Allergist

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Anaphylatoxin, Passive Cutaneous Anaphylaxis and Complement

Their Possible Relation to Clinical Allergy

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AARON SPIELMAN, M.D.: This evening's scientific program brings to mind the statement that immunology seems to be ready for a new phase of activity that may be even more fruitful than the first flowering in the hands of Ehrlich and Bordet half a century ago. In the light of these words, I am certain our program will prove both stimulating and rewarding.

It gives me great pleasure to introduce the first speaker, Frank L. Adler, Ph.D.

Studies on the Competition Between Antigens—Implications for the Allergist

The competition of antigens consists of the partial or complete suppression of the antibody response to one antigen which ensues as the result of the administration of a second antigen. The existence of a competition of antigens was first discovered in the very early days of immunology by Michaelis in 1902.[1] He observed that rabbits, injected with beef serum or horse serum, made little or no antibody against the albumin component whereas other rabbits, injected with purified albumin, responded readily with antibody production to this antigen. From his findings he deduced that the antigenic nature of the globulin predominates and he coined the term *Konkurrenz der Antigene* or competition of antigens. After these original findings Benjamin and Witzinger in 1912[2] discovered that guinea pigs did not become sensitized anaphylactically to an otherwise adequate dose of horse serum if they were injected with a relatively large dose, 1 ml., of beef serum twenty-four hours prior to the injection of the sensitizing dose of horse serum.

Doerr and Berger in 1922[3] re-examined Michaelis' findings, employing anaphylaxis in the guinea pig as their test system. They found that the admixture of 100 parts of euglobulin to 1 part of albumin, both from horse serum, completely nullified the sensitizing power of the albumin. However, attempts to quench the antigenicity of the euglobulin by the addition of albumin failed. These and many similar experiments by others led to the notion that a hierarchy of antigens exists, the stronger ones being dominant over the weaker ones, and that the response to the weaker antigens could be crowded out by large doses of the dominant ones.

Interest in the subject of the competition of antigens waned, possibly as a result of findings by Hektoen and Boor[4] who in 1931 showed that animals could respond to the simultaneous injection of as many as 35 antigens with antibody production against each and every component of this complex mixture. However, Glenny, Hopkins, and Waddington,[5] and Barr and Llewellyn-Jones[6] have patiently and over many years studied the competition of antigens which occurs in the response to certain combined vaccines; for instance, the classical diphtheria and tetanus toxoid combinations with or without added bacterial components.

These studies were carried out in man and in experimental animals, and a competition of antigens was observed to occur in many circumstances. Possibly of greatest interest, from a theoretic point of view, was their observation that previous experience with one antigen of the mixture enhanced its ability to compete against another antigen when it was reinjected with a new antigen. In addition, there appeared in the literature scattered observations which indicated that competition extends to determinant groupings of individual antigens as well as to competition between different antigens.

A series of very recent observations which probably fall into the field of competition of antigens concerns the phenomenon which was dubbed the "Doctrine of Original Antigenic Sin" by Davenport and Hennessey.[7] Briefly, if a person becomes infected or is injected with a strain of influenza A virus, current at the present time, the antibody pattern this person develops will be conditioned to a large extent by the previous experience this person has had with influenza virus.

If he happened to be born prior to the 1918 epidemic, the response to the current strain of influenza A will be one which is practically indistinguishable from a response that the patient would have made had he been challenged with swine influenza. In other words, the response to the new antigens, those antigens characteristic for the current virus strains, is crowded out, and the dominant response is toward the antigen shared by the old and the new strains. Most recently this same situation has been encountered in the study of patients suffering from certain rickettsial diseases. Here again the previous history of the patient conditions his antibody response to the extent that the response will be mainly against antigens common to previously encountered and present strains of rickettsia.

Our own interest in the field of competition of antigens was stimulated by a series of more or less accidental observations which arose from attempts to produce an antiserum against the gamma globulin of rabbit serum in guinea pigs. We found that if we immunized guinea pigs with whole rabbit serum or with a crude globulin fraction of rabbit serum, these guinea pigs responded very nicely with the production of antibodies against everything in the rabbit serum except gamma globulin. The amount of antibody against gamma globulin that was produced was trivial and not sufficient for the purposes we had in mind. It was then found that if one used highly purified rabbit gamma globulin, purified by starch block electrophoresis, or used the expedient of preparing a specific immune precipitate containing rabbit antibody, the guinea pigs responded very well.

The data* which we now wish to present describe some of the features of what appeared to be an instance of competition of antigens. First we established the response of guinea pigs to a standard dose of rabbit gamma globulin, namely 1.25 mg. protein. Then we studied the variation in this response which resulted from deliberate contamination of the purified gamma globulin with known amounts of rabbit serum euglobulin or pseudoglobulin. The response to gamma globulin declined when between 0.25 and 1.25 mg. of the other proteins were admixed with the standard dose of gamma globulin. Albumin, on the other hand, even in amounts as high as 50 mg., failed to modify or to inhibit the response to the rabbit gamma globulin.

It appeared possible that the inhibition which the crude globulin fractions of rabbit serum exerted on the response to gamma globulin might be independent of any antigenic properties inherent in those fractions. To rule out this possibility, we selected an antigen at random and tested it for its ability to interfere with the response to rabbit gamma globulin. We chose hemocyanin from the snail Busycon canaliculatum, an antigen which can be prepared in reasonable purity, and injected graded amounts of this antigen together with a standard dose of rabbit gamma globulin into guinea pigs. The response to rabbit gamma globulin began to drop off significantly when about 190 micrograms of hemocyanin nitrogen were admixed to the standard dose of rabbit gamma globulin.

I should add that whereas 190 micrograms of hemocyanin were required to modify or suppress the response to rabbit gamma globulin in normal guinea pigs, one thirtieth of this amount was sufficient to exert the same depressing effect on the antibody response to rabbit gamma globulin in a guinea pig which had previously been primed by an injection of hemocyanin and consequently was making a secondary or anamnestic response to the hemocyanin. I might mention that in the study of guinea pigs it made no difference where the two antigens were injected, whether into the same site or into different sites. The degree of competition with any given combination of doses of antigen was the same.

To facilitate further studies on the competition of antigens and to gain some insight into its mechanism, it now appeared advisable to employ pure antigens for further experiments so that the response to each of the components of an antigen mixture could be measured by more quantitative means and to employ animals from highly inbred strains so as to eliminate, as far as possible, the scatter in antibody response which comes with genetic heterogeneity. Therefore, we shifted our studies to mice from highly inbred lines, and the data that I will present are results obtained in the DBA strain of mice.

The antigens we used were selected arbitrarily, guided only by the ease with which they could be made available in a reasonably pure form. They were hemocyanin, which I have mentioned before; ferritin, prepared from horse spleen and repeatedly recrystallized; and bovine gamma globulin (BGG). I should mention at this time that the purity of these antigens was tested by precipitin reactions in agar-gel. The ferritin and the hemocyanin both gave rise to a single line of precipitation in these procedures, results which indicate a high degree of purity. The bovine gamma globulin unfortunately has so far defied attempts to purify it. In high-titered sera of mice injected with bovine gamma globulin, antibodies are found against one and usually two contaminants of bovine gamma globulin.

In most of the experiments that I will

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discuss mice were given a single intraperitoneal injection of one or two of the antigens, both incorporated in Freund's[8] incomplete adjuvant, namely, Bayol F and Arlacel A, omitting the acid-fast bacilli. The antibody response of individual mice was measured on test bleedings taken periodically. The antibody was generally determined with the aid of Boyden's[9] hemagglutination method. The results obtained were subjected to statistical analysis using the t test which is of significance in the comparison of mean titers of control and experimental groups.[10] Under these conditions of immunization the serum antibody rises slowly, attains its peak between six to eight weeks after injection, and remains at the peak level for at least twelve additional weeks. Whereas the three test antigens all behave in this manner, ferritin and hemocyanin on the one hand and bovine gamma globulin on the other differ in some other respects.

The response to bovine gamma globulin is sluggish in that (1) relatively large doses are required to obtain a minimal antibody response (more than 10 micrograms of nitrogen), and (2) increases in the antigen dose result in only minor increments in the antibody produced. Ferritin evokes an excellent antibody response in doses of 2 micrograms of nitrogen. A doubling of this dose results in an eight- to sixteen-fold increase in the antibody produced. Further doubling still results in significantly increased antibody production, and only after a dose of 10 micrograms of nitrogen is exceeded does one reach the zone of diminishing returns. On the basis of hemagglutination tests and of quantitative precipitin tests, similar amounts of antibody are produced to the injection under the conditions described of 1 microgram of hemocyanin nitrogen, 2 micrograms of ferritin nitrogen, and 48 micrograms of bovine gamma globulin nitrogen.

When a constant amount, 48 micrograms of nitrogen, of bovine gamma globulin was injected together with graded amounts of ferritin, the following results were observed: The response to bovine gamma globulin was depressed by 2, 4, or 10 micrograms of ferritin nitrogen. The response to the larger doses of ferritin, 4, 10, or 20 micrograms of nitrogen, was depressed significantly, whereas the response to the smallest dose of ferritin, 2 micrograms of nitrogen, was unaffected. As a matter of fact, the peak titer against ferritin in this group was attained more rapidly than in controls treated with ferritin alone.

When a constant amount of ferritin, 2 micrograms of nitrogen, was injected together with increasing amounts of bovine gamma globulin, 16, 48, or 240 micrograms of nitrogen, it was found that only the largest dose of bovine gamma globulin, 240 micrograms of nitrogen, caused a significant reduction in the antibody reponse to ferritin. The smaller doses again had a stimulatory effect in the sense that the peak titer against ferritin was attained sooner than it was in the controls. The smallest dose of bovine gamma globulin did so more effectively than did the intermediate dose.

When this small dose of bovine gamma globulin, 16 micrograms of nitrogen, was injected together with 2 micrograms of ferritin nitrogen into mice that had been previously sensitized to bovine gamma globulin, an entirely different result was obtained. This dose now sufficed to inhibit significantly the response to ferritin, whereas, as mentioned previously, 240 micrograms of nitrogen of bovine gamma globulin were required in normal mice.

To demonstrate that competition is not restricted to the bovine gamma globulin-ferritin system, an experiment was carried out in which mice were injected simultaneously with 15 micrograms of ferritin nitrogen and 8 micrograms of hemocyanin nitrogen. It was found that under these conditions the response to the antigen given in the larger dose, namely ferritin, was inhibited significantly, whereas the response to hemocyanin was unaffected by the simultaneously injected ferritin.

While these results showed that the competition of antigens could be demonstrated in two species of animals with arbitrarily selected antigens, they shed no direct light on the mechanism of this phenomenon. One possible cause appeared to be the competition between antibody-producing cells for precursors of antibody, presumably amino acids, from a common pool. In an attempt to test this possibility, spleen cells from mice immunized with bovine gamma globulin were transferred to three groups of mice: normal, mice making moderate amounts of antibody against ferritin, and mice hyperimmunized against ferritin. The production of antibody against bovine gamma globulin in all three groups of mice was found to be the same. Although these results suggest that the competition for an antibody precursor may not be the mechanism, the possibility remains that such competition on a local and cellular level might indeed occur. This possibility will have to be tested.

The results thus far obtained in mice are essentially preliminary. They suggest that under the experimental conditions employed, evidence of competition is most readily obtained when the antigen to be competed against is administered in doses that approach the optimum for this antigen in terms of the antibody elicited. Under these circumstances even very modest doses of a second antigen suffice. The minimal dose of competing antigen depends on the previous history of the animal. In those which have had previous contact with the competing antigen, a very much smaller dose evokes effective competition than that which is required in previously untreated animals. Although the occurrence of competition appears to depend on the extent of the immune response against the competing antigen, there appears to be no direct relation between the amount of antibody that is produced against the competing antigen and the extent of inhibition of the response to the second antigen.

What bearing these observations may have on the genesis and therapy of allergies goes beyond the scope of our data. That competition of antigens or a closely allied phenomenon may play a role in the acquisition of contact-type sensitization has recently been shown by Kligman and Epstein.[11] In the development of anaphylactic sensitivity it most certainly plays a role as indicated earlier by reference to the work of Doerr,[3] Benjamin,[2] and others. With regard to the possible role of competition in hypo- or desensitization procedures, one hesitates to make any suggestion as long as there exists no unanimity with respect to the underlying mechanism of this procedure. In any case, the members of this audience are vastly better qualified than I am to evaluate and to discuss the possible implications of competition of antigens in the field of allergy.

Dr. Spielman: It gives me great pleasure to introduce our second speaker, Abraham G. Osler, Ph.D.

Anaphylatoxin, Passive Cutaneous Anaphylaxis and Complement—Their Possible Relation to Clinical Allergy

Dr. Abraham G. Osler: These studies were carried out under the auspices of the Armed Forces Epidemiological Board and were supported in part by the Office of the Surgeon General, Department of the Army. The support of the National Science Foundation and the United States Public Health Service is also gratefully acknowledged.

Recent years have witnessed a renewed and increased use of the term "immunopathology" to identify the etiologic basis for certain types of tissue injury. Of course, there are numerous instances in which in vivo antigen-antibody reactions are associated with characteristic disease processes. In some circumstances, as in serum sickness, the nature of the offending antigen and the characteristics of the antibody may often be established. In other situations as, for example, rheumatoid arthritis, the identity of the antigen has still eluded the efforts of many investigators, while detection of the antibody and its characterization with regard to the mechanism of tissue damage remain speculative. Indeed, the manner in which tissue responses are elicited by immune phenomena is very far from clear in most instances. With regard to allergic reactions of the immediate type, such as the pollinoses, it is particularly evident that little is known of those events which follow the union of antibody with antigen in the tissues and which culminate in the release of histamine, serotonin, or other agents with selective toxicity for capillary endothelium.

The Role of Complement.—The incrimination of a host factor in allergic diseases has long been considered, particularly in view of the disproportionate response accompanying the interaction of antigen with antibody at relatively low concentrations. One need only mention the finding that 30 micrograms of antibody nitrogen suffice to induce a fatal systemic anaphylactic reaction in the guinea pig, or that 0.003 microgram of antibody nitrogen suffices to produce an allergic skin reaction in the guinea pig. The present studies have led us to consider complement as a possible mediator of these reactions in the sense that the release of histamine or other pharmacologically active substances from a mast cell may be analogous to the release of hemoglobin from a sensitized erythrocyte.

Consideration has been given to the possible role of complement in the induction of hypersensitivity phenomena on the basis of the following three properties of the complement system:

1. Complement is inevitably present at the presumed sites of in vivo immune reactions.

2. The involvement of complement in some antigen-antibody reactions may proceed without any important consequences related either to the antigen or to the antibody. However, in those circumstances where the antigen forms an integral part of an organized structure like a cell wall, the interaction of antibody with this antigen in the presence of complement may result in the destruction of the cell economy, be that cell an erythrocyte, a leukocyte, an Ehrlich ascites tumor cell, a platelet, a treponeme, a gram-negative bacterium, a paramecium, or possibly a mast cell. Similar results follow the union of antigen with antibody when the latter is fixed to a susceptible cell.

3. The participation of complement in these many and varied reactions lacks the element of specificity in the sense that it may be involved in a wide variety of immune reactions, irrespective of the chemical composition or structure of the antigen.

These properties of the complement system impose two serious obstacles on experimental efforts designed to assign an active and essential role to complement in the mediation of allergic reactions of the immediate type. The first of these problems concerns the lack of absolute methods for the estimation of the individual complement components. These reagents are recognizable and measurable only in terms of their activity in a sequential chain of reactions which results in the lysis of sensitized erythrocytes. Moreover, the properties and activities of the complement components vary in serums of different species and with modifications in the conditions of testing. This means that for the present the identification of complement in reactions other than erythrocyte lysis is limited by the necessity to show parallel effects with hemolytic complement. In consequence, many of the experiments merely serve a correlative rather than a definite function.

The second problem relates to the broad reactivity and relative lack of specificity in complement action. The fact that complement participates in a great many different reactions compels the design of experiments which attempt to differentiate between the interaction of complement as an essential reagent and mediator in the allergic tissue responses from its possible role in a coincidental side-reaction of only trivial significance to the host tissue.

Experimental Model Systems.—As an aid in the design of experiments which might discriminate between these two alternatives, the hypothesis was proposed to the effect that allergic reactions of the immediate type might be envisaged as the final step of a complex and rapid series of successive reactions between an antibody, in the serum or cell-fixed, and an antigen in the presence of complement supplied in great excess by the circulation of blood past the reaction site. Within this frame of reference several experimental model systems have been studied in an attempt to determine whether or not their biologic activity is indeed associated with the participation of complement. Stated in another fashion, the several reactions to be discussed now were studied as a function of at least three variables, namely, antigen, antibody, and complement.

The first model subjected to an experimental investigation was that of passive cutaneous anaphylaxis (PCA). The sequence of events for this reaction may be recalled as follows: (1) The antibody is injected intradermally; (2) following an appropriate latent period, a mixture of antigen with Evans blue is injected intravenously; (3) the union of antigen with antibody initiates a train of reactions leading to a release of capillary dilators; and (4) the extravasation of serum proteins, especially albumin, firmly coupled to the blue dye into the reaction site, produces a blue spot in the skin.

Some of the results obtained in the study of this reaction may be summarized by the statement that the intensity of the passive cutaneous reaction may be correlated directly with the amount of antigen, the level of antibody, and the amount of complement available to the immune reactants.

When rats are rendered relatively deficient in a circulating complement through the interaction of an unrelated immune system or the injection of zymosan, the passive cutaneous anaphylactic reactions are smaller and of lesser intensity than those obtained in normal animals for the corresponding quantity of either antigen or antibody. In this regard the outcome of the allergic reaction corresponds to that of an in vitro complement fixation test, since the latter may also be influenced in the same way by the level of antigen, antibody, or complement. Moreover, the passive cutaneous anaphylactic reaction in the normal animal may be enhanced by the injection of hemolytically active serum or serum preparations containing one or more of the complement components, especially those now known as C′3.

A third line of evidence relating to the participation of complement emerges from the observation that a correlation was found between the complement-fixing potency of immune aggregates and their capacity to elicit passive cutaneous anaphylactic reactions. Among other findings, this correlation was shown to exist in the case of rabbit antibody to the enzyme ribonuclease. This immune system, like many others which have been studied, fixed complement and evoked passive cutaneous anaphylactic reactions. When the enzyme was acetylated so that the antigen could now combine with the antibody but with a markedly lower capacity to fix complement, a diminution in the efficiency to evoke passive cutaneous anaphylaxis was also observed.

It was observed many years ago that less complement was fixed in cross-reacting immune systems than in the homologous reaction. Rather pronounced differences were observed when rabbit antipneumococcic Type 3 antibody was reacted with the polysaccharides of Type 3 and Type 8 pneumococci. Variations in the intensity of passive cutaneous anaphylactic reactions also paralleled these in vitro findings. As was the case in the complement-fixation studies, maximal passive cutaneous anaphylactic reactions required far more antibody and antigen than in homologous reactions. Further, the elevation of serum complement levels which followed the parenteral injection of fresh serum into rats enhanced the passive cutaneous anaphylactic reactions due to the cross-reacting immune system. In this connection, it was also noted that horse antipneumococcic serum which fixes complement very weakly with the type-specific polysaccharide also produces extremely poor passive cutaneous anaphylactic reactions in the guinea pig.

A second experimental model closely akin to the passive cutaneous anaphylaxis studies was used to investigate the possible role of complement. Reference is made to the studies with soluble complexes. Soluble complexes have been used extensively in the study of hypersensitivity phenomena in recent years. The underlying thought in many of these studies is referable to the notion that human diseases of allergic etiology may be caused by the simultaneous presence in the tissues of antigen and antibody in the form of soluble complexes. As an example we can cite the very recent findings showing that soluble complexes injected intravenously into mice lead to the production of glomerulonephritis.

Therefore, it was of great interest to note that the experiments of Ishizaka and Campbell led to the following conclusions. The term soluble complexes represents a family of immune aggregates wherein the individual members differ with respect to the ratio of molecules of antigen and antibody in the aggregate. As the amounts of antigen added to a given quantity of antibody are increased, a limiting complex is formed of the molecular composition Ag_2Ab. These investigators found that this complex does not fix the complement, in agreement with the earlier quantitative studies on complement fixation. As the molecular mass of these complexes is enriched with respect to the antibody, greater complement-fixing potency is observed. Concomitant with the increased in vitro affinity for complement is the ability of the soluble complexes to enhance capillary permeability in the guinea pig skin. In these studies 11 different immune systems were investigated and a perfect correlation was found between the ability of 10 of the different antigen-antibody systems to inactivate complement in the test tube and to induce a skin-bluing reaction in guinea pigs. The only exception concerned 1 immune system, the pneumococcus Type 2 polysaccharide and its homologous rabbit antibody. In this case, a fixation of complement was observed without the capacity to induce the skin bluing. However, this apparent contradiction was resolved when it was suggested and subsequently confirmed that this antibody, like the horse antipolysaccharide antibody in the guinea pig, is not fixed to the skin, thus accounting for the absence of the cutaneous response.

These experimental findings permitted the conclusion that the host provides one of the reagents which participate in allergic reactions of the immediate type. Despite the strongly suggestive nature of this evidence, it was not considered that a definitive identification of the host component as complement had been established. Neither was any clarification achieved as to the nature of the role played by this host factor either as an essential mediator or as an intensifier of the local anaphylactic reaction. It was concluded, however, that the allergic skin reaction could not be adequately interpreted in terms of the antigen-antibody reaction by itself without involving some host factor.

In an attempt to extend the investigation beyond this stage of observations which correlated the hemolytic activity of serum as studied in vitro with a heightened or suppressed cutaneous response, another experimental model was utilized. This model was concerned with the formation of anaphylatoxin in a cell-free reaction medium containing antigen and antibody as preformed immune aggregates and fresh serum. These, it may be recalled, are the ingredients of a classical complement-fixation reaction. A series of experiments was performed which demonstrated that the in vitro fixation of complement may be associated with the following consequences: (1) a loss in the hemolytic activity of the serum, that is, a fixation of complement; and (2) the loss in hemolytic activity of the serum associated with the genesis of anaphylatoxin, a substance or group of substances which have been studied. The importance of this model pertains to the observation that anaphylatoxin is endowed with the capacity to contract smooth muscle and augment capillary permeability, the fundamental tissue reactions in allergic manifestations of the immediate type. Although many would regard the use of this model as an oversimplified approach to the study of anaphylactic phenomena, it was decided to investigate the reaction because the use of a cell-free reaction medium effects a physical separation of those processes which lead to the formation of a substance injurious to the tissues from those processes which are concerned primarily with the tissue responses engendered by it. The study of each of these reaction sequences is thereby facilitated.

The basic plan in these experiments consisted in reacting preformed immune precipitates or aggregates with fresh rat serum under several different experimental situations. At varying time intervals aliquots were removed from each reaction flask and assayed for four different activities: (1) loss of hemolytic activity, that is, complement fixation; (2) loss of activity of the third complement component; (3) increase in the ability of the supernate, obtained after centrifugation of the reaction mixture, to enhance capillary permeability in the guinea pig skin; and (4) ability of the same material to induce contraction of the guinea pig ileum in a Schultz-Dale type of apparatus.

The results of these experiments may be summarized as follows: It has been established conclusively that the fixation of complement requires participation of the divalent cations, calcium and magnesium. These cations participate in the reaction sequences of complement components 1, 4, and 2. When a potent chelating agent like versene is added to the reaction medium, the fixation of complement is repressed. Under these situations the formation of anaphylatoxin is also inhibited. Both the fixation of complement, as evidenced by the loss of hemolytic activity, and the formation of anaphylatoxin are restored on the addition of calcium and magnesium in appropriate concentrations. In this type of experiment the fixation of complement is inhibited at the time the reaction involves the first component. It may be recalled that the complement components react in the order of C′1, C′4, and C′2, and then C′3, the numbering system merely reflecting the chronology of their discovery. These experiments were performed prior to the demonstration of the multiple nature of C′3.

Several years ago we observed that the glycoside, phlorhizin, was able to suppress the process of immune hemolysis by interference with the utilization of the third component of complement in the reaction. Therefore, it was of great interest to ascertain whether phlorhizin would also inhibit the formation of anaphylatoxin. Experiments carried out along these lines confirmed the notion that complement participates in the formation of anaphylatoxin, since the addition of phlorhizin to the reaction mixture yielded the following results.

The loss of hemolytic activity of the complement was observed in the presence of phlorhizin, since this substance acts at a stage following fixation of components 1, 4, and 2. These were fixed, resulting in a hemolytically inactive supernatant. However, the activity of the third component of complement remained virtually intact in the presence of phlorhizin. This glycoside inhibits the utilization of this component. Under these conditions the suppression of anaphylatoxin which contracts smooth muscle and enhances capillary permeability was also noted. It was verified further that the action of phlorhizin involved the formation of anaphylatoxin and not the activity of this material on the guinea pig ileum. In addition, it was observed in several experiments that the injection of phlorhizin in rather large doses could suppress the ability of antibody to evoke passive cutaneous anaphylactic reactions.

In another experiment advantage was taken of the well-known fact that immune aggregates formed at equivalence zone ratios of antigen and antibody fix complement much more effectively than those in antigen excess. It was found that the efficiency of the immune system in the fixation of complement paralleled its ability to form anaphylatoxin, in excellent confirmation of the earlier studies which correlated the fixation of complement with the passive cutaneous anaphylactic reaction.

Still another experimental model investigated in this study involved the anaphylactoid reaction. In these studies dextran, starch, agar, and a variety of other agents were incubated with fresh serum and again a marked parallelism was observed between the ability of these agents to inactivate complement and produce anaphylatoxin. Here too, as was observed with specific immune aggregates and soluble complexes, the utilization of complement was closely related to the size of the aggregate. These experiments remove in part the veil of mystery which has always been associated with anaphylactoid reactions in the sense that these substances, such as starch, agar, and others, in their reaction with fresh serum like antigen and antibody have the capacity to inactivate complement and thereby form tissue-damaging substances. These experiments demonstrated clearly that the formation of anaphylatoxin requires the participation of all of the known complement components, and that therefore undue importance cannot be attached to the role of any single one of these reagents.

The final experimental system to be discussed relates to the activity of aggregated gamma globulin. It has been demonstrated in our laboratory that the mere aggregation of gamma globulin effected by heat or conjugation through diazotization is accompanied by the ability of these aggregates to irritate guinea pig skin. Furthermore, aggregation is accompanied by marked increments in the fixation of complement. These findings may have an important bearing with respect to the role of complement in the mediation of allergic reactions. One need only cite the interesting experiments which have shown that the serums of patients with rheumatoid arthritis contain a substance known as the rheumatoid factor which has been characterized as an aggregated gamma globulin. If one property of the aggregated gamma globulin is to fix complement, and if, as these studies show, the fixation of complement is a necessary prerequisite for the formation of anaphylatoxin, then it may be speculated that the tissue-damaging consequences of the disease known as rheumatoid arthritis may in part be related to the ability of the aggregated gamma globulin to fix complement.

Summary.—On the basis of these studies it appears that the reaction of antigen with antibody or the mere aggregation of gamma globulin may be a prerequisite but an inadequate precondition for the liberation of those pharmacologic agents so intimately associated with anaphylactic manifestations. To this end a host factor is required, and this host factor has many properties reminiscent of hemolytic complement. Since the inhibition of complement fixation leads simultaneously to a suppression of anaphylatoxin formation, it also may be envisioned that the possibility of averting or mitigating the tissue-damaging consequences of allergic reactions of the immediate type may be achieved through interruption of the fixation or utilization of complement in this process.

It should be recognized that these studies have had as their single objective the demonstration of a requirement for complement in several types of immediate allergic reactions. The fact that aggregated human gamma globulin may induce capillary permeability in the guinea pig skin also has been confirmed in experiments with human beings. We have found that aggregated gamma globulin produces a typical wheal and flare reaction in human skin. The possibility may be advanced that an allergic individual sensitive to one or more allergens may react with clinical symptoms to the presence of small molecules, in themselves not antigenic, but presenting the capacity to bring molecules of gamma globulin into sufficiently close proximity to act like aggregated gamma globulin and thus set off the complex series of events which end in the release of histamine or other capillary poisons.

Perhaps the mere statement of this sequence of events emphasizes that nothing at all is yet known as to the manner in which complement initiates the allergic tissue response. As is well known, studies from the laboratories of Elmer Becker, Irvin Lepow, and their colleagues have indicated that the first component of complement may be a proesterase, and that the interaction of this enzymatic component releases the entire chain of reactions. It is felt by many investigators that definitive evidence characterizing the enzymatic activity of the first component of complement remains to be supplied although the present body of data is highly suggestive.

It remains for future investigations to characterize the mechanism of component interaction as an essential link in the entire sequence of events which begins with the introduction of antigen into the tissues of a sensitized individual and which ends in the symptoms associated with allergic reactions of the immediate type.

Dr. Spielman: Thank you very much, Dr. Osler, for this very excellent presentation. Both papers are now open for discussion.

Question and Answer Period

Ely Perlman, M.D.: The first question I have would be addressed to Dr. Adler. I think I speak for all of us in asking him if he would perhaps tell us briefly what is known about something he mentioned only in passing, that is, whether single cell cultures are able to produce antibodies to two different antigens. I would like Dr. Osler to help us by telling us the relationship between complement and the properdin system and also if he had any information, from his own experiments, on the role of steroids on passive cutaneous anaphylaxis. That would be of interest because Halpern, in his studies on dogs, exhausted of their free histamine, was able to show that steroids prevented the replenishment of such histamine in their tissues, and that they could react anaphylactically only when the histamine was replaced. However, it seems here that there is another possible explanation for the way in which steroids might work.

I might also suggest, in relation to the studies on rheumatoid arthritis, that heated gamma globulin which aggregates can react with its own residual gamma globulin, resulting in a true antigen-antibody reaction. This is most easily demonstrated by the precipitation of latex particles. It has led to a lot of confusion on rheumatoid arthritis, but I think it may very well be a true antigen-antibody reaction.

Dr. Adler: Dr. Perlman's question touches on a somewhat controversial topic in immunology to which I cannot contribute anything. The recorded observations of Nossal and Lederberg[12] and Coons and Pressman[13] point to the likelihood that a given cell can produce an antibody against one antigen only. This experimental finding is in agreement with several theories of antibody formation that have been proposed during the past several years. However, there is or will be on record an observation by Attardi, Cohn, Horibata, and Lennox[14] which indicates that in hyperimmunized animals, single cells can make antibodies against two antigens at one time. I think we have to leave matters at rest for the moment and see what further experiments will show.

It may be that the production of antibodies against two different antigens by one cell occurs under intensified immunization, whereas a response to a single antigen by any given cell is the norm under less forceful immunization procedures.

Dr. Osler: I would like to leave the question on steroids to Dr. Ovary who is here and who has done some experiments along these lines, and take a moment with the other two questions that Dr. Perlman raised.

Insofar as the properdin system is concerned, I feel that I am the wrong person to ask because I was never sure that there was such a thing, and I am even less sure now. I think this is a name given to an activity which can be explained in terms of the classical antigen-antibody phenomena. In these studies we attempted to demonstrate some properdin activity in our system, but we found there was no relationship.

The rheumatoid factor is an aggregated gamma globulin, possibly with other materials incorporated therein, and we found that the rheumatoid factor does fix complement rather well and does induce skin bluing in guinea pigs. In other words, it fits into the general scheme of things in terms of complement and the mediation of tissue response. If one can speculate a bit, one might ask whether the tissue damage in rheumatoid arthritis, presumably associated with the rheumatoid factor, might not be due to the in vivo utilization of complement.

Dr. Spielman: Dr. Ovary?

Zoltan Ovary, M.D.: You mentioned that Halpern demonstrated that cortisone inhibits the recharge of the skin in histamine when histamine was depleted. However, it was shown that cortisone does not act on the passive cutaneous anaphylactic reaction by itself even when used in large amounts, 25 mg. for a guinea pig of 250 Gm. weight. The cortisone treatment can be prolonged for three days, 25 mg. per day, and even under these conditions there is a passive cutaneous anaphylaxis reaction as strong as the initial one.

Derivatives of cortisone such as hydrocortisone and hydrocortisone succinate (Solu-Cortef) do not act differently from cortisone. Recent investigations at the New York University Department of Pathology show perhaps some little effect which did not prove significant. In conclusion, however, the clinician must nonetheless understand that cortisone and its derivatives have profound effects on the allergic reaction, although they do not affect the passive cutaneous anaphylaxis in the guinea pig.

Dr. Spielman: Are there any other questions?

Samuel J. Prigal, M.D.: I have a question for Dr. Adler, particularly in view of the recent work done by Loveless and Brown with depot antigen therapy and the like, using very emulsified solutions. I mention this as a distinction from the complete adjuvant in which tubercle bacilli or related organisms are added to enhance sensitization. In the depot preparation you are not adding anything to enhance, you merely use a mechanical device which enables the antigen to stay put in the area longer. There should be a difference, for theoretically when you are not using tubercle bacilli, you are not adding another antigen.

The other question is related to our own work. When we give a combination of dust with timothy or a chenopod, are we enhancing or are we diminishing the response? What effect does one have on the other? I know that you have not had the experience of a clinician, but when we use these substances may we assume that we are getting a specific response to each one?

Dr. Adler: If I may answer your second question first, Dr. Prigal, I would like to add one pertinent observation of ours which I think I failed to mention earlier. Once immunity or primary sensitization to an antigen has been established, an anamnestic response to this antigen is quite resistant to competition, even when massive doses of a second antigen are administered together with the "booster" injection. This observation, together with the findings discussed earlier, suggests that a secondary response is both more resistant to inhibition by a competing antigen and is a more effective competitor.

In hypo- or desensitization procedures the patient receives a mixture of antigens. Presumably he is sensitive specifically to several of these antigens as a result of past exposure. We may now expect that the injection will elicit simultaneous anamnestic responses to several antigens. I would hesitate to predict what the outcome will be. We have not studied anything of comparable complexity in our work with experimental animals.

With regard to your other question on adjuvant action, I would like to clarify one or two points. I have used an incomplete adjuvant, that is, I used a water-in-oil emulsion of the antigens prepared with the aid of Arlacel A and Bayol F without added mycobacteria. It has been shown by Freund[15] that a given dose of antigen evokes similar amounts of antibody whether it is administered with incomplete or complete adjuvant. The action of complete adjuvant, that is, antigen in an emulsion that contains mycobacteria in addition to the other ingredients, differs significantly from that of incomplete adjuvant in one aspect, however: complete adjuvant evokes a delayed type (tuberculin type) of sensitivity which is additional to and superimposed on the immune response of which a circulating, conventional antibody is characteristic.

With regard to the emulsions you mentioned Loveless and Brown are using, I think that if they are of the same type as the incomplete antigen mixtures I have been using, you would expect about the same results.

There is one point too with regard to depot function. As Freund and others have shown, the repository or depot function of the antigens explains their activity in enhancing the antibody response only partially. It has been shown that if you excise the injection site, the depot, even if the excision is in a period of less than one hour after injection, the antibody response of that animal is still significantly higher and persists for much longer periods of time than if the antigen had been given alone. This has been explained by the fact that some part of the emulsion diffuses or is carried away from the site of injection very rapidly. It sets up secondary or tertiary depots in other remote sites in the body. For instance, oil droplets are found in the draining lymph nodes and lungs of experimental animals within a short period of time.

Dr. Prigal: There is one other comment that should be made to relate this to what we see as clinicians.

We have, as allergists, become accustomed to thinking of a certain set of symptoms occurring strictly on the basis of an antigen-antibody reaction. We must have learned tonight, certainly from the work of Dr. Osler, that we can have almost nonspecific reactions; for example, that an aggregation of gamma globulin will give a reaction which will simulate a perfectly typical allergic response. Perhaps these diseases which we group as the so-called collagen diseases may in actuality be reactions in which the gamma globulin is affected in such a way that it releases agents which induce tissue changes of this type. Yet they may not be induced by allergic mechanisms.

Dr. Osler: I think it is possible to so conclude. I would agree with Dr. Prigal that it is tempting to speculate that some of the tissue damage that is observed may be due to factors of this type, but I think much more remains to be done before we can speculate quite that far at this point.

Dr. Spielman: We will have to close the discussion now, and I would like to thank Dr. Osler and Dr. Adler for coming here this evening and talking to us on these very important subjects.

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Brain Damage from Chronic Alcoholism: Diagnosis of Intermediate Stage of Alcoholic Brain Disease

The tendency to overlook the factor of organic damage in chronic alcoholism probably accounts for many of the failures of treatment. Alcoholic brain disease is a public health problem of growing dimensions, underscoring the need of discovery and treatment before the cortical damage reaches the irreversible stage. Results of a study of 227 cases indicated the presence of an intermediate stage of alcoholic brain disease midway between the acute and chronic stages. In this stage, there is incipient cortical cerebral atrophy which still can be reversed if adequate treatment is undertaken at once.

Although the abnormal EEG pattern persists in this group after acute intoxication, it finally returns to normal after months of sobriety. In this interval, the organic factors are often mistaken for personality disorders, with consequent ineffective therapeutic measures. If he is under institutional or supervisory control, such a patient must stop all use of alcohol. When the organic features have improved, the patient is ready for individual and group psychotherapy and a general rehabilitative program.—*American Journal of Psychiatry, February, 1960, A. E. Bennett, M.D., G. L. Mowery, and Joel T. Fort, M.D., Berkeley, California*

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Employment of the Handicapped

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One of the basic precepts of the rehabilitation of the handicapped is that rehabilitation does not stop with the restoration of physical capacities. As stated in the American Medical Association's *Handbook of Physical Medicine and Rehabilitation*, it ends only when the individual is "trained to live and work with what he has left."[1] For some this goal is considered to have been reached when they become capable of unassisted self-care. For many the goal is achieved only when they are placed in remunerative employment, since, in spite of some degree of residual disability, these individuals are capable of meeting the requirements of many jobs in industry. However, the lack of employment opportunities for them is a problem of increasing magnitude.

A study of an important phase of this problem was conducted recently in New York City by the research staff of the Federation Employment and Guidance Service, and a book* enumerating the results of the study has recently been published.[2] Unfortunately the book is not likely to come to the attention of physicians in general. Many of the findings are singularly provocative and offer a challenge not only to those engaged in industrial medicine but to the entire medical profession as well. In this paper, therefore, the findings of the survey will be reviewed.

Nature of Problem

The number of handicapped but employable individuals is growing steadily larger. The increasing number of "senior citizens" and the rise in the relative incidence of chronic diseases are well known. Newer technics of physical restoration, physiotherapy, and rebuilding muscular strength and co-ordination have brought about seemingly miraculous returns of function in patients with apparent total disability. Prostheses and ingenious gadgets have been devised to compensate for lost functional capacities that cannot be restored. The coincident increasing mechanization of industry has lowered the physical demands of many jobs so that they now can be filled quite satisfactorily by workers with limited strength or endurance. Physicians have been learning that their responsibility to their patients does not end with the remission of symptoms or even with the completion of convalescence. Rather, the goal is a full return to all the activities of normal living, including gainful employment whenever possible. In discharging this responsibility, physicians may call on the knowledge and skill of the growing corps of experts in the various branches of rehabilitation medicine and may obtain invaluable assistance from many government and private agencies and institutions actively engaged in rehabilitation. As a result of all these factors, many individuals formerly regarded as permanently and totally disabled are now employable, and, thanks to the continuing advances in rehabilitation medicine, their number will continue to increase.

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* Available from the Federation Employment and Guidance Service, 42 East 41st Street, New York 17, for 25 cents to cover mailing costs.

Experiences born of the demands for manpower during World War II demonstrated that denial of employment to partially disabled individuals represents a tremendous waste of productive potential. The effects of the physical, moral, and economic degradation of these individuals and their families have an obvious adverse impact on the general well-being of the nation. We can little afford to continue under the present burden, let alone contemplate the probability of its increase in magnitude.

The outlook is not altogether black, for there has been some tendency toward greater acceptance of the handicapped worker in industry. For example, Rusk[3] notes that state employment services found jobs for 150,000 such individuals during the first half of 1956, a 25 per cent increase over the average for comparable portions of the preceding five years. The activities of the President's Committee on Employment of the Physically Handicapped, the various governor's committees, and the many public and private agencies concerned with this problem have resulted in some increase in job opportunities for the partially disabled. This tendency, however, has not kept pace with the increase in the number of handicapped individuals suitable for employment. The multiplicity of factors involved, many of which defy tabulation or even comparison, makes this a problem of formidable complexity. Certain qualifications and exclusions, however, may "remove enough of the foliage so that one may examine the structure of the tree itself."

Confines of Study

In referring to handicapped or partially disabled individuals, those who are so badly disabled that at best they can expect permanent employment only in sheltered workshops or as a part-time activity are excluded from the study. Those engaged in home industry or who are self-employed also are omitted. Finally, factors relating to the impaired individual himself, such as the evaluation of the disability, modification of the disability by rehabilitation medicine, vocational aptitude testing, and vocational education, are amply reviewed in medical journals and texts and therefore are not discussed here.

In the present discussion it is assumed that "handicapped" refers to individuals with a permanent partial disability of a relatively stable nature who are capable of fulfilling the demands of the jobs under consideration without endangering themselves or others. Furthermore, it is presumed that these individuals have had sufficient training or experience to qualify for these jobs and that they are properly motivated toward working, all emotional and social difficulties that might hinder successful employment having been eliminated.

Survey Method

How do employers look on such handicapped individuals as job applicants? Do they hire them or reject them, and why? The Federation Employment and Guidance Service asked these questions of New York City firms offering "light" or relatively sedentary jobs. The following industries were represented: apparel, printing and publishing, wholesale trade, retail trade, finance and

TABLE I.—NUMBER OF FIRMS AND ESTIMATED NUMBER OF EMPLOYES ACCORDING TO SIZE OF FIRM FOR SELECTED INDUSTRIES IN NEW YORK CITY, 1956[2]

	Firms				Employes			
		Percentage in Each Category				Percentage in Each Category		
Industry	Total Number	3 to 199 Employes	200 to 499 Employes	Over 500 Employes	Total Number	3 to 199 Employes	200 to 499 Employes	Over 500 Employes
Miscellaneous light manufacturing	7,986	97.3	1.6	1.1	309,000	56	12.9	31.1
Apparel	13,719	99.4	0.5	0.1	376,000	90.9	5.6	3.5
Printing and publishing	3,742	97.8	1.6	0.6	127,000	55.1	15.8	29.1
Wholesale trade	22,976	99.1	0.6	0.3	407,000	71.5	10.3	18.2
Retail trade	28,708	99.3	0.4	0.3	515,000	54.8	6.6	38.6
Finance and insurance	3,434	95	3.2	1.8	235,000	26	14.9	59.1
Hotel and amusement	1,672	96.6	2	1.4	69,000	47.8	17.4	34.8
TOTALS and AVERAGES	82,237	98.8	0.8	0.4	2,038,000	61.4	10	28.6

insurance, hotel and amusement, and light manufacturing. Government agencies, private nonprofit organizations, and public utility companies were omitted. The construction and heavy manufacturing industries were omitted because a large portion of their jobs require relatively heavy physical work. The transportation industry was omitted because of its legal health requirements.

Of special significance is the size of the firms involved.* Initially the research team attempted to include firms having as few as 50 employes, but so many difficulties were encountered that this was relinquished. Although some of these findings are included in the Federation report, the bulk of the data is derived from 174 firms with 200 to 499 employes and 199 firms with 500 or more employes. As shown in Table I, these categories represent respectively 0.8 and 0.4 per cent of the firms and 10.0 and 28.6 per cent of the employes included in the survey.

Unlike previous projects of this type, this study did not rely merely on information obtained by questionnaire. The data were obtained in a personal interview with each firm's personnel director or with another executive concerned with employment and personnel. The basic form of the interview was standardized (that is, questions were asked in a predetermined order) to obtain answers to each question that could be tabulated for statistical comparisons. In many instances, however, the specially trained investigators probed further to uncover personal attitudes and estimates of the problem, especially when the answers to the basic questions revealed uncertainties or apparent contradictions.

The survey was limited to five types of disabilities: cardiac disease, orthopedic disorders, epilepsy, cerebral palsy, and defective vision. Since written medical records either did not exist or were not readily available to most of the respondents, the disabilities were discussed in general terms only. No attempt was made to classify the disabilities according to percentage loss or degrees of impairment. Every effort was made, however, to consider only disabilities of a significant degree and to exclude those of an obviously minor nature.

Survey Findings

Perhaps the most important result of the study was the finding that formal written policies and practices regarding the hiring of handicapped workers were practically nonexistent. In most of the firms the operating policies that guided the day-to-day employment practices in regard to handicapped individuals were not based on deliberate management decisions. Instead, they reflected a combination of individual views and personal prejudices that constituted the prevailing company "climate" toward the physically handicapped.

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* Although classifications differ considerably in the size that distinguishes a "small" firm from a "large" one, it is generally accepted that firms with less than 200 employes are labeled "small" while those with more than 2,000 employes are designated as "large." In every survey the "small" plants comprise well over 90 per cent of the companies questioned and account for the overwhelming majority of the employe population.

In the majority of firms the hiring procedures were decentralized. Following an initial screening by the personnel officer, there was a diffusion of this responsibility among department heads, supervisory personnel, section chiefs, foremen, and related workers. Thus, a host of company personnel had some authority to reject applicants for employment. In view of the lack of a definitive hiring policy, this practice in actuality meant that, while any one of a group of individuals might veto the hiring of a handicapped worker, unanimous approval was required for his acceptance.

About 37 per cent of the firms with more than 500 employes reported having knowingly hired one or more disabled applicants during the year preceding the survey. Among firms with 200 to 499 employes, 22 per cent replied that disabled individuals had knowingly been hired during the same period. The proportion of firms that accepted handicapped applicants was not much greater among those with more than 500 employes than among those with from 200 to 499 employes. Previous questionnaire surveys among firms that have well over 1,000 employes suggest that comparable results would be encountered also in "large" plants. For example, Lee and coworkers[4] found that seven out of nineteen firms with 1,000 to 40,000 employes had a definite policy against hiring individuals with heart disease, and Polner[5] found that in all of the eighteen firms ranging in size from 2,000 to over 10,000 employes that he questioned, there were standards in the required preplacement medical examination that were high enough to cause the rejection of most applicants with heart disease. Although, as the Federation workers learned, practical considerations make the gathering of similar data from "small" plants almost impossible, personal experience leads to the impression that a similar picture would be disclosed in this group as well.

In general, firms with previous satisfactory experience with handicapped workers tended to have a relatively more favorable "operational" policy toward hiring them; however, the extent of this experience had little relationship to its degree of influence.

In reviewing their personnel experience for the five years preceding the survey, between half and two thirds of the firms stated that there had been no change in their hiring practices and policies. When there was difficulty in recruiting, some firms allowed a slight easing of the ban against hiring handicapped applicants, but, on the whole, a tight labor market did not appear to have a marked influence on the employment of handicapped individuals.

Medical departments or the requirement of a preplacement medical examination of all applicants were maintained only by the larger firms. Some firms examined only applicants for executive or supervisory positions. In over two thirds of the firms requiring preplacement medical examinations, the physician was reported to have defined the medical standards for hiring new employes. Nevertheless, the physician did not really seem to have a decisive influence on management's attutude toward the hiring of handicapped workers, since there was no relationship between the actual hiring practices and the physician's policy recommendations. In many instances the physician "seemed to operate largely as a highly specialized technician" who merely screened and classified applicants instead of acting on an executive level to make decisions in individual cases and to help set a definitive over-all policy.

There was no relationship between the requirement of a preplacement examination and the hiring of applicants with known disabilities. The proportion of firms hiring

TABLE II.—REASONS ADVANCED BY 166 PERSONNEL OFFICERS FOR OR AGAINST HIRING WORKERS WITH PHYSICAL IMPAIRMENTS[2]*

Reasons for Hiring	Per Cent	Reasons Against Hiring	Per Cent
They are better than normal workers	34	It makes for bad public and client relations	29
They are less likely to resign	30	They are not as good as normal workers	21
They have a better attendance record	20	They need more sick leave	21
They are more conscientious	16	Their coworkers are negatively affected	20
They try to (or do) work harder	14	They are unable to work properly	19
They are as good as any normal worker	14	They are accident risks	11
They are loyal	13	They have emotional problems	10
They are less accident prone	11	It's hard to fire them (either because of a union regulation or because of pity)	3–10
They have fewer health problems	3–10	They are not promotable	. . .
They are reliable	. . .	They need special hours	. . .
They gossip and fool less	. . .	Poor mobility	. . .
It is good public relations	. . .	Transportation difficulties to and from work	. . .
It is a civic duty	. . .	They are not versatile	. . .
The labor shortage	. . .	The labor market is better	. . .
They appreciate the job more	. . .		
They have greater skills or are more knowledgeable	. . .		
They are always on time	. . .		
They are always motivated to prove themselves	. . .		

* Of the 166 respondents, 48 per cent advanced only reasons against hiring, 31 per cent advanced only reasons in favor of hiring, and 21 per cent advanced reasons both for and against hiring. Many respondents gave more than one answer.

impaired workers was about the same in those that required such examinations and those that did not. In some instances the physicians limited themselves largely to noting the medical findings for evaluation by the personnel department. In many cases, particularly when "outside" physicians were used, management was given much more medical information than advised in the principles governing such examinations suggested by the A.M.A. Council on Industrial Health,[6] and it was the personnel director rather than the physician who made the final decision regarding the significance of the medical findings. True selective placement according to the medical status of the applicant was practiced only in a few of the firms with medical programs. In fact, most of the physicians had only a general knowledge of the specific requirements of the jobs for which they conducted examinations of the applicants.

In previous surveys of employment practices many reasons were advanced for excluding handicapped applicants. Perhaps the most influential were found to be management's fear of liability for excessive workmen's compensation costs and management's concern over an inordinate drain on company-sponsored sickness, medical care, disability, and life insurance programs. Other reasons that were frequently cited were: the physical limitations of the handicapped worker, his lack of versatility, the lack of a suitable job for him, his low productivity, his excessive absenteeism, his accident proneness, and the lack of an adequate inplant medical facility to supervise his health.

The Federation Guidance and Employment Service research team made direct and detailed inquiries about these factors (Table II) instead of relying solely on the checking of items in a questionnaire, the method employed in most of the previous surveys. They found that fewer than one in ten of the personnel executives interviewed were influenced against hiring disabled applicants by the fear of increased compensation costs. Even among those who acknowledged this reason, the majority were obviously not influenced by cost factors alone since they indicated an unwillingness to change their attitude even should changes be made in the workmen's compensation laws and administrative procedures to reduce the costs in such cases.

Although the current Second Injury Law had been in effect in New York State for at least ten years prior to this study (it had superseded a more limited law enacted about thirty years earlier), approximately three fourths of the personnel officers had no knowledge of it. Furthermore, only a few of those who claimed to be familiar with this law reported that it had influenced them to look more favorably on the hiring of handicapped individuals. It therefore appears that if the objective of this law, namely to facilitate the hiring of the disabled, is to be achieved, the fact of the law's existence and its means of application must be more widely promulgated.

Only one in five of the firms that were questioned indicated that concern over increased costs of company-sponsored insurance programs influenced its attitude toward hiring handicapped individuals. It thus appears, notwithstanding the statements emphasized in the reports of questionnaire surveys, that in most instances threatened cost increases do not deter the employment of the disabled. In fact, none of any of the other reasons so often advanced against the hiring of handicapped workers was uniformly a significant deterrent.

The other side of the coin was also examined. About half of the personnel officers indicated that there might be advantages in hiring handicapped workers. When questioned about their reasons for this view, about one out of five replied either that industry had an obligation to hire handicapped workers or that to do so represented performing a "good deed." However, none of the reasons commonly advanced in favor of hiring handicapped individuals appeared to influence more than a small proportion of the firms responding.

It thus appears that there is no single reason or combination of reasons that appears to be consistently important in shaping the attitudes and policies of personnel officers either for or against the employment of workers with disabilities. It is worth noting that about one third of the personnel officers who advanced reasons against hiring such workers had nevertheless knowingly granted some of them employment during the past year. Conversely, almost half of those who had given reasons for hiring workers with physical impairments had not accepted any such applicants during the same period.

Toward a Solution

These inconsistencies demonstrate the complexity of the problem of employment for the handicapped and suggest that the current tendency to approach it along general, broad terms does not appear to be leading toward a solution. Attitudes seem to be expressed in stereotyped terms that appear to have little relation to actual practice. As Viscardi[7] pungently stated in addressing the twenty-fifth anniversary conference of the National Rehabilitation Association:

> The great majority of companies do not employ disabled people as a matter of policy, just as they may not employ Jews, Catholics, Negroes, or the overaged, as the case may be, and they do not intend to do otherwise. All the lip service which has been given to the great cause of employment of the disabled to the contrary, these statements are true, except of course, in periods of critical manpower shortage when it is good business to hire anyone who can breathe, especially if the government is paying the bill.

Education and propaganda, such as lectures, posters and pamphlets, exhortations in luncheon and dinner speeches, and radio and television dramatizations, are useful in creating a climate of interest in this problem. However, they do not appear to offer real promise of its solution.

The demonstration of the Federation Employment and Guidance Service that hiring practices are significantly influenced by previous personal experience with employed handicapped workers is an important clue. This is substantiated by the experiences of such organizations as Abilities, Inc., and the Epi-Hab Shops, whose employes are limited to severely handicapped individuals and to those with epilepsy, respectively. These are not strictly sheltered workshops; they operate as self-sustaining enterprises in open competition with other industrial firms. Both graduate their workers into private industry to make room for new groups of handicapped individuals and at the same time serve as a practical demonstration that a medical disability is not necessarily a handicap in industrial employment. Evidence that this kind of demonstration is fruitful is furnished by a recent announcement from the U.S. Civil Service Commission that epilepsy no longer is a barrier to Federal employment.[8]

There probably is no simple answer to the problem. The Federation study, however, has focused attention on an almost neglected but vitally important link in the chain of rehabilitation: the person who is responsible for hiring or rejecting the handicapped individual. Heretofore, consideration of the plight of the handicapped individual has largely been limited to the problems of the individual himself and to the problems of the physicians, technicians, therapists, educators, and counselors who undertake his rehabilitation.

The Federation's observations of the physician's role in the shaping of company policies and practices in regard to the hiring of the handicapped offer a particular challenge to industrial medicine, especially to the now rapidly expanding "small" plant programs which are served largely on a part-time basis by general practitioners. For this reason and for many others not related to the problem under discussion, it is imperative that the executives of these firms be educated to appreciate fully the role that a physician can play in all matters relating to the health of their employes. The medical program must be organized to permit the physician to function effectively, and to allow management to take full advantage of his activities. At the same time, the physician who occupies such a position must obtain expert guidance and sufficient training to enable him to discharge these responsibilities capably.[9]

Role of Physician

The medical profession would appear to have two vital roles to play in the employment of the handicapped. First, physicians have the responsibility for the rehabilitation of the disabled individual so that this individual can make optimal use of all of his capabilities. In this task the assistance of experts in all of the ancillary disciplines involved in rehabilitation medicine is available to him.

Second, physicians have the responsibility to inform employers and executives, wherever they may be encountered, that medical disability is not necessarily equivalent to industrial disability. Those physicians who are active in industrial medicine should make sure that their company's medical program is properly organized so that they can direct management toward an enlightened policy of the employment of the handicapped.

In "small" industry, which accounts for most of the job opportunities suitable for the handicapped, the lack of an industrial medical program leaves this role to be filled by the private physician. He may obtain assistance from such public and private community agencies as the cardiac work classification units, vocational rehabilitation services, and employment agencies which are active in placing handicapped workers.

The satisfactory performance of these roles by physicians throughout the nation will constitute a tremendous forward step toward the ultimate solution of the pressing and perplexing problems presented by our growing population of partially disabled individuals.

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(*Number eighty-three in a series of Recent Advances in Medicine and Surgery*)

Tax-Deferred Pension Plan Offered

The Treasury Department has submitted a proposal under which self-employed individuals would be allowed to participate in tax-deferred pension plans comparable to those enjoyed by salaried corporation executives.

One of the "hottest" pieces of tax news to come out of Washington in months, the proposal would: (1) Eliminate the need for physicians to establish "Kintner-type associations" in order to participate in a tax-deferred pension plan. (2) Allow a solo practitioner to establish a tax-deferred retirement plan.

The Treasury plan is a counterproposal to the Smathers-Keogh-Simpson bill (H.R. 10) which is presently being considered by the Senate Finance Committee. The counterproposal was submitted in the form of a letter from Fred C. Scribner, under secretary of the Treasury, to Sen. Harry F. Byrd, chairman of the Senate committee.

Under the plan, self-employed individuals—MDs, attorneys, and so forth—must make the retirement plan open to all of their employees, such as nurses, secretaries, office workers, and so forth.

In objecting to H.R. 10, the Treasury stated the bill would allow "self-employed individuals to establish their own voluntary pension plans with tax advantage without making provisions for the retirement need of their employes. For the first time, it would permit the establishment of voluntary retirement plans conferring tax advantages for the exclusive benefit of the employer."

Other important points in the Treasury plan were:

A suggested basic annual contribution for a self-employed individual would be 10 per cent of his earned annual income or $2,500, whichever was less. The contribution could exceed the 10 per cent-$2,500 limit when the employer is contributing a larger annual deductible contribution on behalf of at least one employee.

The present long-term capital gains treatment accorded to lump-sum distributions by qualified plans at the terminations of the employee's service or at his death should be removed. This would be directed not only to plans of self-employed individuals, but would include pension plans established under existing law.

The Treasury proposal is especially significant because the Internal Revenue Service's regulation on "Kintner-type associations—not yet in final form—may still impose restrictions on physicians living in certain states.

—*The AMA News, April 18, 1960*

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

OCTOBER 28, 1959

Discussed by STANLEY J. WITTENBERG, M.D.

A Mass in the Left Upper Quadrant

Case History

FURMAN M. JONES, JR., M.D.: A seventy-six-year-old Negro male was admitted for the first time to Knickerbocker Hospital complaining of intermittent hematuria of two weeks duration. The hematuria was noticed mostly at the beginning of voiding and was not associated with pain or dysuria. The patient had noticed an undetermined amount of weight loss in recent weeks but denied anorexia or general weakness. He also denied chills, fever, back pain, and oliguria, but he did admit to moderate urinary frequency. There had been no previous episodes of hematuria. Twenty years previously he had been treated for hypertension with a course of "pills" with good response. A bilateral inguinal herniorrhaphy had been done in 1946. He denied nausea, vomiting, or change in stool color, caliber, or consistency.

Physical examination on admission revealed an elderly, thin, Negro male who appeared chronically ill. He was alert to his surroundings, but his memory for both recent and remote events was vague. His temperature was 101.4 F., pulse 76, and blood pressure 126/70. His skin was warm and dry and had generalized loss of turgor. The head was normal. There was no scleral icterus, but fundoscopic examination disclosed a small area of organizing exudate near the macula of the right eye. The neck was supple, and the neck veins were flat. There was no cervical lymphadenopathy, but a few small, movable, nontender lymph nodes were felt in the left axilla.

There was a slight increase in the anteroposterior diameter of the chest. The percussion note was hyper-resonant in both lower lung fields, but there were no rales. The heart was moderately enlarged to percussion. The heart sounds were of good quality; the aortic second sound was accentuated. A grade II blowing systolic murmur was heard in the second right interspace, and a softer systolic murmur was detected at the apex. The abdomen was slightly distended. The inguinal herniorrhaphy incisions were well healed. A small epigastric hernia was seen in the midline. The liver edge was not palpable. A large mass was felt in the left upper quadrant extending to about 3 cm. below the umbilicus; it was firm, smooth, and nontender, and it did not move with respiration. Examina-

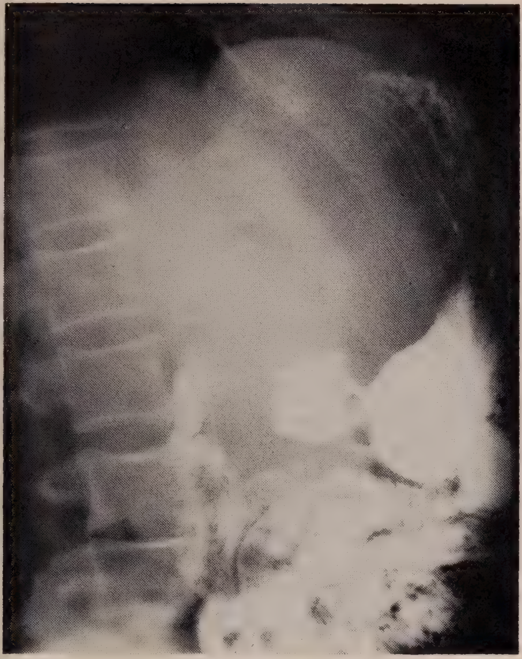

FIG. 1. Lateral view film of gastrointestinal series showing anterior displacement of stomach by mass in left upper quadrant.

tion of the extremities revealed no edema or clubbing, and there were good peripheral pulses. Rectal examination showed a smooth, nontender, small prostate. Neurologic findings was negative except for a fine tremor of the upper extremities.

The urine had a specific gravity of 1.012, was alkaline, gave a 2 plus reaction for protein, was negative for sugar and acetone, and contained a rare white blood cell and 6 to 12 red blood cells per high power field. Culture of the urine yielded Aerobacter aerogenes. The stools contained a trace of occult blood. The hemoglobin was 10 Gm. per 100 ml., the white cell count was 6,200 with a normal differential, and the platelet count was 330,000. The sedimentation rate was 126 mm. per hour. A sickle cell preparation was negative. Serologic tests for lues gave negative results. The fasting blood sugar was 120 mg. per 100 ml., nonprotein nitrogen 88 mg. per 100 ml., uric acid 4.75 mg. per 100 ml., creatinine 2.75 mg. per 100 ml., serum bilirubin 0.75 mg. per 100 ml., total protein 6.4 Gm. per 100 ml. with 3 Gm. of albumin and 3.4 Gm. of globulin. The alkaline phosphatase was 20 Bodansky units, and the thymol turbidity was 1.2 units. The serum sodium was 132 mEq. per L., potassium 4.7 mEq. per L., and carbon dioxide 19 millimols per L.

An electrocardiogram was within normal limits. A chest x-ray film showed that the heart was not enlarged but that there was dilatation and tortuosity of the aorta. An upper gastrointestinal series revealed no intrinsic abnormality of the stomach or duodenum. The stomach was displaced medially and anteriorly by the mass in the left upper quadrant (Fig. 1). A barium enema revealed diverticulosis of the colon and depression of the splenic flexure by the mass. An intravenous pyelogram showed normal filling of the right kidney with a normal pelvic and calyceal pattern. The left kidney did not fill with the dye. A retrograde pyelogram showed normal filling of the right ureter and pelvis; the left ureter filled well until the ureteropelvic junction, but the contrast medium did not pass beyond this point. A roentgenographic bone survey showed irregular radiolucencies in the body of the third lumbar vertebra and some coarsening and sclerosis of its trabecular pattern (Fig. 2). The intervertebral space between the third and fourth lumbar vertebrae was narrowed, and there was some bony bridging between the two bodies.

The therapy in the hospital was directed toward improving the patient's nutritional status. He continued to run a febrile course, his temperature ranging between 100 and 102 F. His urinary tract infection was treated with Gantrisin and neomycin. However, he continued to lose weight. An operation was performed on the fifteenth hospital day.

Discussion

STANLEY J. WITTENBERG, M.D.: A seventy-six-year-old chronically ill Negro

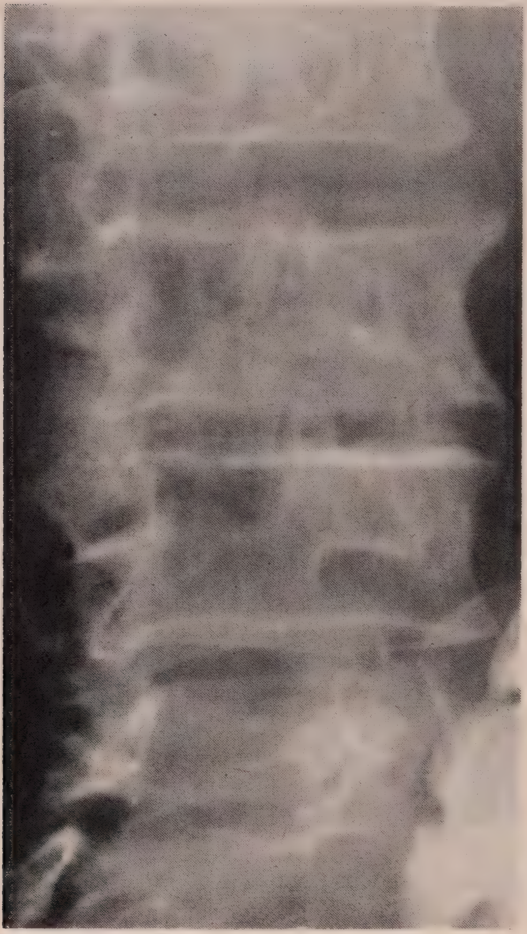

FIG. 2. X-ray film of lumbar spine showing circumscribed area of radiolucency in inferior portion of third lumbar vertebra. There is sclerosis of entire body of this vertebra, and its trabecular pattern is coarse. Space between third and fourth lumbar vertebrae is narrowed.

male entered the hospital with a history of hematuria, weight loss, and a mass in the left upper quadrant. The mass was firm, smooth, and nontender and did not move with respiration. A gastrointestinal series revealed that the mass displaced the stomach medially and anteriorly. An excretory urogram showed normal filling of the right kidney and no filling of the left kidney. A retrograde pyelogram was performed and the right ureter and pelvis again filled normally, but the contrast medium stopped abruptly at the left ureteropelvic junction after filling the left ureter normally. All this evidence points to the fact that the mass in the left upper quadrant was in the kidney rather than in the spleen.

At this point, carcinoma of the kidney appears to be the most likely diagnosis. A renal mass, hematuria, and weight loss in a seventy-six-year-old man certainly make one think of that diagnosis first. It would also explain the lesion involving the third lumbar vertebra, which could well be a metastasis. However, carcinoma of the kidney would be more likely to produce a deformed or distorted renal pelvis on roentgenographic examination rather than the complete absence of filling which we see here. Obstruction at the ureteropelvic junction does not fit the usual picture of renal carcinoma.

What then could be the cause of this degree of unilateral renal enlargement and ureteropelvic obstruction? If we conceive of the left upper quadrant as a hydronephrotic sac, we must explain its huge size and firmness. A hydronephrotic kidney may become quite large if the obstruction develops slowly. The smooth contour of the mass also is consistent with a slowly enlarging cystlike mass. I suppose that the firmness could be ascribed to the sensation given by fluid under considerable tension, irrespective of whether the fluid was clear and sterile or thick and purulent, although the latter state seems more likely.

The most frequent cause for such a hydronephrosis would be a calculus wedged at the ureteropelvic junction with the fluid damming up behind it. However, no stone was visualized on x-ray examination. There is the possibility that there were stones which were not visualized since about 5 to 10 per cent of urinary calculi are not radiopaque. An alternative obstructive lesion might be a carcinoma arising from the epithelium of the renal pelvis or ureter, but these tumors are quite uncommon. Other possibilities include a ureteral stricture, compression of the ureter at the ureteropelvic junction by aberrant vessels, extension of a retroperitoneal sarcoma to this critical point, or even a metastatic tumor from an adjacent organ such as the tail of the pancreas.

The crux of the diagnostic problem really rests on one's interpretation of the x-ray films. If we assume that the mass is entirely a tumor arising from renal parenchyma, we would have also to infer that the tumor grew to a huge size, entirely replacing the pelvis of the left kidney and stopping abruptly at the ureteropelvic junction. Although the patient was elderly and debilitated, therefore probably a poor historian, the only data that I have to go on are symptoms of intermittent hematuria for two weeks and an undetermined amount of weight loss in recent weeks. Under these circumstances such a large renal carcinoma would have to be termed "silent." In favor of the diagnosis of carcinoma would be the presence of the lesion of the third lumbar vertebra; solitary metastasis to a vertebra is not an uncommon finding in renal carcinoma.

Conversely, if we assume that the mass is a hydronephrotic or pyonephrotic kidney, we would also have to infer that its development was "silent" until it attained its present size. However, this diagnosis does conform more closely to the x-ray observations, and the lesion in the third lumbar vertebra need not be a metastasis. The differential diagnosis between hydronephrosis and pyonephrosis sometimes is quantitative rather than qualitative. An active pyonephrosis contained behind an obstruction at the ureteropelvic junction may "burn itself out" and become a hydronephrosis much in the same way that an active salpingitis may lead to a pyosalpinx and finally evolve as a hydrosalpinx. If this patient has such a lesion, it is probably of only low-grade infectious activity. He had moderate fever and a sharp elevation of the sedimentation rate, but his white cell count and differential were normal and he denied chills, fever, or pain in the back or flank.

Let us consider the remainder of the clinical picture and see if it will sway us in the direction either of carcinoma or hydronephrosis. The patient appeared to be chronically ill, wasted, and dehydrated. His blood pressure was normal, his heart was of normal size, and the electrocardiogram was normal. The systolic murmur at the aortic area is probably due to an inelastic arteriosclerotic ascending aorta. The increased anteroposterior diameter of the chest and the hyper-resonant lungs are evidence of senile emphysema. The liver was not palpable. The prostate was normal in size and did not suggest a neoplasm.

The urine contained 6 to 12 red blood cells per high power field and a 2 plus albumin. Aerobacter aerogenes was cultured from the urine, but there were no white blood cells in the sediment. Infection of the genitourinary tract can occur with organic obstruction of any cause, and it is consistent with secondary hydronephrosis, low-grade pyonephrosis, or a tumor with secondary infection. In this case the urinary findings do not really aid in the differential diagnosis; they merely confirm the clinical impression of urinary tract disease. Mild azotemia and acidosis, early uremia if you will, were present. With a nonfunctioning left kidney, this could be explained by advanced nephrosclerosis or chronic pyelonephritis in the right kidney. The elevated alkaline phosphatase, the irregular lesion in the third lumbar vertebra, and the narrowing of the vertebral interspaces could be yoked together without violence into a diagnosis of localized or early Paget's disease. Solitary metastasis to a vertebra is not usually associated with an elevated alkaline phosphatase.

In conclusion, I have to choose between carcinoma of the kidney and some obstruction of the ureteropelvic junction with secondary hydronephrosis. Relying largely on the x-ray evidence and supported by the idea that I can explain the vertebral lesion as Paget's disease rather than as a metastasis, I will make the diagnosis of hydronephrosis (or low-grade pyonephrosis) secondary to an obstructing carcinoma arising from the transitional epithelium of the renal pelvis. Although I am not satisfied with this diagnosis, it seems to be the most reasonable one. I will make the further diagnosis of arteriosclerosis of the ascending aorta, senile emphysema, and Paget's disease of the third lumbar vertebra.

Joseph M. Andronaco, M.D.: I was very much impressed by the patient's weight loss, weakness, and debilitated condition. This, of course, is the advantage that one has when one sees the patient at the bedside instead of reading the cold print of a protocol. However, if the right kidney were normal, mere hydronephrosis and loss of function of the left kidney should not produce this degree of constitutional response. Also, hydronephrosis very rarely will produce the amount of hematuria this patient had. Pyonephrosis usually represents infection superimposed on hydronephrosis; the usual sequence is hydronephrosis, infected hydronephrosis, and pyonephrosis, the last being the end stage from which there is no return. In spite of the unusual x-ray findings my preoperative diagnosis was carcinoma of the kidney.

Diagnoses

Clinical.—*Carcinoma of left kidney.*

Dr. Wittenberg.—*(1) Hydronephrosis, left kidney, secondary to carcinoma at ureteropelvic junction; (2) Paget's disease of third lumbar vertebra; (3) arteriosclerosis, ascending aorta; and (4) pulmonary emphysema.*

Anatomic.—*(1) Carcinoma of left kidney; (2) Paget's disease of vertebrae, diffuse; (3) arteriosclerosis, ascending aorta; (4) pulmonary emphysema; and (5) nephrosclerosis, right kidney.*

Pathologic Report

William B. Ober, M.D.: Before I present the pathologic findings, I would like Dr. Andronaco to tell us what he found at operation.

Dr. Andronaco: On exposing Gerota's fascia, the underlying blood vessels were found to be engorged to a pronounced degree. We incised the fascia, and a large amount of pus gushed out. Further exploration revealed a large friable mass with extensive necrosis adherent to surrounding tissues. We could not mobilize it, let alone attempt to remove it. The patient's condition was poor, and we contented ourselves with a biopsy.

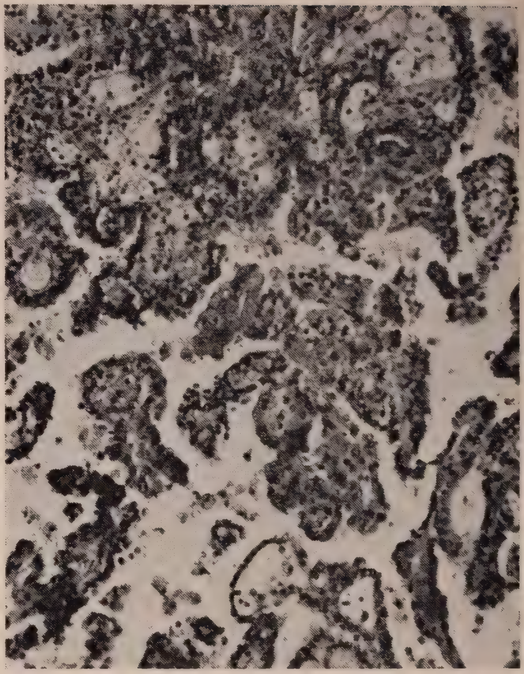

Fig. 3. Microscopic view of portion of biopsy specimen showing renal carcinoma with tufts of small, dark granular tumor cells overlying a stroma filled with clear polyhedral cells which are fat-filled macrophages.

Dr. Ober: The biopsy specimen showed an adenocarcinoma of the kidney with extensive areas of necrosis, hemorrhage, and cholesterol deposition. In the best preserved areas the tumor was seen to be composed of tufts and cords of small dark cells with a finely granular cytoplasm (Fig. 3). The stroma contained many clear cells, but these were not tumor cells; rather, they were lipid-laden macrophages. It is important to be precise on this point, for the patient's tumor is a granular cell carcinoma and not a clear cell carcinoma. In Melicow's[1] classification the granular cell variety has a higher mortality than the clear cell variety.

Following operation the patient continued to lose weight and ran a progressively downhill febrile course. He died about six weeks later. At autopsy, he was so cachectic that the mass in the left upper quadrant bulged above the wasted, scaphoid abdomen. Prosection revealed a huge tumor 24 by 18 cm. replacing completely the left kidney. The tumor stopped abruptly at the ureteropelvic junction, and there was gross invasion of the renal vein by a necrotic tumor which dilated the vein to a diameter of 2 cm. The tumor was tightly adherent to all adjacent structures. On section much of the tumor was liquefied, and there was considerable frank pus. Only rare scattered islands of viable tumor cells were found. In spite of the gross invasion of the renal vein and the ready access to this route of spread, no tumor was found in the right side of the heart or in the lungs. I would think that the material which did embolize was almost entirely the nonviable, necrotic tumor and that the entry of this tissue into the blood stream was responsible for the constitutional symptoms.

Examination of the vertebral bodies did show early Paget's disease. The lesion in the inferior portion of the third lumbar vertebra (Fig. 2) was a Schmorl's node, that is, intrusion of the intervertebral disk into the body of a vertebra. There were no metastases to other parts of the osseous system or to any other tissue or organ. There also was aortic arteriosclerosis and senile emphysema, as Dr. Wittenberg predicted. The right kidney showed a moderately severe degree of nephrosclerosis.

In a recent study Melicow and Uson[2] surveyed 577 consecutive cases of proved renal neoplasm seen at the Squier Urological Clinic and The Presbyterian Hospital, New York City. They found that 183 patients (31.7 per cent) presented with atypical or even nonurologic symptoms. Half of these presented with fever, weakness, anorexia, and weight loss. Gross hematuria was absent in all but 4 of these 183 patients, the 4 having polycythemia. In 109 patients (19 per cent) there was not even microscopic hematuria.

The coexistence of polycythemia with renal cancer has been documented by Damon and his coworkers,[3] who reported 10 cases. This accounts for less than 5 per cent of the cases of polycythemia which cannot be attributed to a known cause, such as exposure to chemicals, cardiopulmonary disease, or an endocrine disorder, and this association is found in only 2 to 3 per cent of cases of renal cancer. This particular variety of polycythemia is not usually associated with splenomegaly, leukocytosis, or thrombocytosis, although exceptions have been reported. There is some evidence that an erythropoietic substance can be elaborated in the kidneys. Whether this humor is produced by the tumor or by the adjacent renal parenchyma in such cases is not known, and our present state of knowledge on this subject is tenuous.

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He who will not reason is a bigot; he who cannot is a fool; and he who dares not is a slave.
—SIR WILLIAM DRUMMOND

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D., Secretary, Medical Education for National Defense (MEND) Committee, Albany Medical College

Survival in a Thermonuclear War

I. The Need for Action

SOLOMON GARB, M.D.,* ALBANY, NEW YORK

The problem of survival, both individual and national, in a thermonuclear war is becoming daily more acute. Unfortunately, very little is being done to solve the problem. Government agencies issue conflicting and confusing reports. They argue over who has the responsibility for protection of the civilian population. Some say the Federal government, others the state and local governments, and still others would have the individual citizen assume the primary responsibility. This controversy has a disturbing parallel to the controversy between the Army and the Navy as to who was responsible for the protection of Pearl Harbor.

This series of articles is not designed to settle the question as to who is responsible primarily for protection of the civilian population. However, it is hoped that by explaining the important facts this series can help generate an informed public opinion. The important information is not secret, but it is so scattered through scores of government and private publications that it is unlikely that many persons will have the time to dig out the material. In a sense, then, this series will serve a function similar to that of a review article.

It is particularly appropriate that the medical profession be well informed about problems of survival and civil defense. Obviously, physicians will assume command of efforts to save as many lives as possible and therefore should understand the forces with which they will be dealing. There are also other reasons. Of all groups in the population, physicians best understand the importance of prevention of morbidity. By education and experience they can also comprehend more readily some of the more technical aspects of the problem. Furthermore, as respected members of their communities they can provide advice and example which will carry great weight. Finally, there is perhaps the most compelling reason—there is no other group which can exert the necessary leadership.

No attempt will be made to discuss the purely medical and surgical aspects of survival, such as triage, since these have been amply covered elsewhere. Instead, this series of articles will consider the effects of thermonuclear bombs, the ways in which to minimize these effects, and related material.

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* United States Public Health Service Senior Research Fellow, SF-11.

Some readers may use the information as a guide for building a shelter for their own families. Others may find it helpful for clarifying their thinking about government participation in a national shelter program. Still others may use it within their own communities. It is less important who protects the American people than it is that it be done properly, and in time.

Public Primary Culprit in Civilian Unpreparedness

Although much of our present predicament is the responsibility of leaders who do not lead, the American public is the primary culprit in our present state of civilian unpreparedness. There has been an apathy —even hostility—to civil defense matters which is not the fault of our leaders. Rather, it seems as if the American public is unwilling to turn from its pursuit of pleasure and status to face the grim realities of a possible war. Such attitudes are not new. They led to the fall of the Roman Empire as well as to the fall of other civilizations. Fortunately, it isn't necessary to convince everyone of the need for action. If a substantial minority of the thinking citizens are convinced, they would tip the scales.

Some Widely Held Misconceptions.—To understand the situation clearly, it is advisable first to clear up some of the widely held misconceptions about hydrogen bomb warfare and protective measures. Many of these misconceptions are held by the more ignorant sections of the population. It is necessary that physicians understand these attitudes so that they may more readily combat them.

Can we run away from the bombs?—Some people believe that it is practical to try to escape death from a hydrogen bomb by fleeing the big cities and "going to the hills." This is an error the roots of which lie in the early civil defense planning against atom bomb attacks. The atom bomb produced most of its casualties by blast, heat, and direct radiation from the fireball. Radioactive fallout was not a significant factor. However, with a hydrogen bomb› radioactive fallout is potentially the most deadly effect, and in the absence of proper shelter can kill over an area between 100 and 1,000 times greater than the area of lethal blast. Adequate shelter against fallout is not available along roads and cannot be constructed in a short time. In the event that the United States is attacked, the probability is that the radioactive fallout will cover almost the entire country, so that no area would be safe without proper shelter. People who are in automobiles when the fallout descends will have practically no chance for survival.

This conclusion is derived to a large extent from some simple calculations based on the known facts about hydrogen bombs which will be discussed in greater detail in the next article. It is also based on House Report No. 2946, 84th Congress, 2nd Sessions, July 27, 1956, and later reports. These reports were made by the Military Operations Subcommittee after careful analysis of all the available information on hydrogen bombs. It should be noted that the congressmen submitting the report have had wide experience in evaluating military operations and are neither hysterical nor easily fooled. They point out that with large yield weapons the value of dispersal without shelter drops to zero.

Are civil defense measures useless in the face of hydrogen bombs?—The dreadful arithmetic of hydrogen bomb casualties apparently stuns many persons, and elicits an attitude of "It's no use." This attitude must be analyzed and combated. It has been stated that an enemy attack on the United States as it is today would kill about 70 million Americans. Shelters would reduce this fatality rate considerably; not more than 35 million would die if we had adequate shelters, and the death toll might go as low as 5 million. Unfortunately, few people can grasp the real significance of these figures. They take the attitude that 35 or 5 million deaths are practically the same as 70 million, and that protective measures are of little value. However, our attention should be focused on the number of people who can be saved, not on those who cannot. A realistic appraisal shows that a shelter program would save 35 to 65 million lives. Surely this is a worth-while objective.

This principle is, of course, familiar to all physicians through their own experience. If the death rate from some disease is high, physicians do not therefore abandon or diminish their efforts to save as many lives as is possible.

A frequent argument is that since hydrogen bomb warfare, even with shelters, would kill millions of people, all our efforts should be directed toward preventing future wars, and shelters should be ignored. This argument, however, misses the point. Building shelters and trying to prevent war are not in any way mutually exclusive. Of course we should try to avoid wars. Shelters do not in any way threaten other nations, so there is no reason why efforts to avoid war would be impeded by having shelters.

Some people fear that a thermonuclear war would eventually kill all life on earth and therefore feel that shelters would be useless anyway. This fear has been increased by the recent motion picture, "On the Beach." However, it must be remembered that motion pictures are flights of fancy, not scientific evidence. Those who have seriously studied the problem have come to the conclusion that although conditions may be stark, man will survive. Not only American[1] but also Russian[2] students of the problem have come to this conclusion.

Is instantaneous death preferable to survival in a devastated country?—At times, in discussions of the value of shelters, some people say they would prefer to perish instantaneously in the flash of the bomb, without knowing what has happened, rather than to live in a world in which civilization and culture are destroyed. This attitude is based on several misconceptions. To be sure, people within a mile of ground zero will probably be killed within a fraction of a second. However, for every person killed so mercifully, between 100 and 1,000 will die a lingering death from radioactive fallout unless they have adequate shelter. Furthermore, if really faced with a concrete choice it is doubtful that many would actually prefer death to life, even in a vastly changed world. Physicians certainly have had considerable experience with the intensity of the "will to live."

There is another aspect to consider. Let us assume that those who say they would prefer not to live after another war still feel that way when the chips are down. Do they then have the right to condemn not only themselves but their children and unborn descendants as well? It is quite likely that life will be bitter for two, perhaps three generations after a war. But the decision to die will involve the destiny of thousands of generations. Can anyone be sure that in five or ten generations life would not become more normal?

These questions have arisen before and have been answered. The Bible gives us some valuable examples. Consider the Israelites in Egypt. For generations they were enslaved. Their lives were as bitter as any we can imagine in à postwar world. They could have given up, said that life wasn't worth living, and died off. If they had, Moses, Isaiah, Peter, Mary, and Jesus would never have been born. Fortunately, however, the Israelite slaves had the courage to survive. We must find the same courage, even after a possible disastrous war.

Are the dangers of a hydrogen bomb attack exaggerated?—Obviously, no one can predict whether or not an attack will come. However, it certainly is better to have defenses that are not needed than to need defenses which we do not have. Construction of shelters does not imply pessimism, but it does mean a realistic appraisal of the existing dangers. The risks of a hydrogen bomb attack do not have to be overwhelming to justify a shelter program. As long as the risks are substantial they call for protection of our population.

Some people believe that the United States government has a great deal of secret information not available to the ordinary citizen and that if there were a real need for special shelters the government would provide them. This belief at first seems reasonable and logical. Indeed, if the government were doing all it could, there would be less need for individual citizens to look to their own survival. However, it should be clear that at many times, and in many ways, the government has not been carrying out its responsibilities properly. It did not seem to do so when it allowed our undefended fleet to be bombed at Pearl Harbor. More recently, it has allowed the Soviet Union to outdistance us in long-range bomber design, the intercontinental ballistic missile, and the earth satellites.

Evidence of the extent of the current danger can be deduced from the fact that the commander of the Strategic Air Command, our major military arm, apparently fears that there is a real danger of attack.

Is our retaliatory force so strong as to make an attack on us unthinkable?—This question has been studied in detail by Brodie.[3] He points out that "So long as there is a great advantage in striking first, and under existing conditions the advantage would be tremendous, we must realize that even rational men could start a total war, and irrational ones would need no such justification." He also states, "The strategy of deterrence ought always to envisage the possibility of deterrence failing."[4]

The Congressional committee investigating this problem has reached similar conclusions. They believe that we cannot rely on the good judgment of a potential enemy "any more than we can rely on their professed peaceful intentions."

Are shelters "unrealistic" in the face of the shortened warning times from the intercontinental ballistic missiles?—This attitude is rather widely held. It is seen in certain publications, and has even been expressed by a United States Senator. It is incorrect.

It is true that an I.C.B.M. can reach the United States in fifteen to twenty minutes. At best, we could expect a fifteen-minute warning before its explosion. Although even a fifteen-minute warning would help save many lives, it would certainly fail to help others. However, shelters will be lifesavers even if there is no warning whatever. Admittedly, in a complete surprise attack, shelters will not be able to protect against blast, initial fireball radiation, or heat radiation, since no one will have time to get to a shelter before these effects occur.

However, the shelter will protect against radioactive fallout even in a complete surprise attack, and *this fallout constitutes about 96 per cent of the danger from the bomb.* There will always be a warning time before radioactive fallout. The bomb flash itself constitutes the warning. This flash will be visible for hundreds of miles and cannot be mistaken for anything else in human experience. At a distance of 100 miles, the sky will become more than 10 times as bright as at noon on the brightest day, and the brightness will last for almost one minute. After the flash, there will be an interval of one half to ten hours before the fallout descends, depending on the distance and the wind velocity. This interval should be enough to allow most people to reach a shelter—if there are shelters to reach. Thus, it should be clear that the I.C.B.M. does not make shelters obsolete; it makes them essential.

Are shelters too costly?—Shelters vary in cost. In a later article, the costs will be discussed in detail. In general, it will be shown that an excellent shelter can be provided at a cost of $150 to $200 per person. A shelter for an average family would cost less than the shelters now used for the family car.

Are civil defense programs inspired by "do-gooders?"—The answer to this question depends on the definition of "do-gooder." Civil defense programs are supported by President Eisenhower, Governor Rockefeller, leading military personages, scientists like Edward Teller, and the medical profession.

Are civil defense programs "defeatist" or "cowardly?" Oddly enough, there are persons who consider protective measures to be cowardly. They are usually people who have had little experience with war or death. Essentially, they are covering up their own anxiety by trying to put on a bold front. Their attitude is akin to the patient who refuses to see a doctor when he has symptoms suggesting cancer. He fears that the doctor might find cancer. Similarly, the objector to civil defense programs is usually afraid to face the reality of the current situation. It has been said that those who haven't the courage to face the possibility of thermonuclear war are not likely to find the courage to cope with that war if it comes.

Clearly, it is no more cowardly to construct a shelter than to be vaccinated against smallpox or to stop for red traffic lights.

Furthermore, it has been pointed out that the national resolve would be strengthened by the existence of adequate civilian shelters. Brodie[5] states, ". . . but surely if they (shelters) existed at the moment of crisis, they would tend to sustain and fortify an attitude in favor of courageous decision."

What good would the shelter be if I am asleep, or downtown when the bomb explodes?— The flash of the bomb will awaken the soundest sleeper 100 miles away. There should also be shelters in downtown areas for people who cannot get home before the probable descent of fallout.

Effect on National Survival

Thus far, the need for shelters has been discussed from the standpoint of family survival. However, another aspect at least as important is also involved. If enough individual shelters are built, they may prevent an attack. A potential enemy is more likely to attack if he believes he can completely destroy us in one day with a relatively small number of weapons. He may even be willing to allow millions of his own countrymen to die in our retaliatory attacks if he can be sure of destroying us. However, if he cannot be sure of our destruction he may, at the crucial time, decide not to risk all-out war. Properly constructed and equipped shelters will make it virtually impossible for any enemy to destroy us completely. The details are presented in the following articles in the series. In summary, they show clearly that if enough good shelters are built, the deadly effects of the hydrogen bomb will be reduced to almost one thousandth of the effects without shelters. The shelter not only protects the civilian population; it reduces the likelihood of an attack.

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(*Number one in a series on The Physician in Civil Defense*)

The fault, dear Brutis, is not in our stars, But in ourselves, that we are underlings.—SHAKESPEARE

CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

Recent Trends in the Management of Hypertension

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THE past decade has seen a resurgence of investigational interest in hypertension with the inevitable result of a better understanding of at least some of the causes of this disease and with a great expansion of the therapeutic armamentarium available for its treatment. This in turn has led to further investigative efforts so that our understanding of these disease processes has improved and continues to improve. While we are still very far from the ultimate goal of complete understanding and effective cure of hypertension, it is quite obvious to those of us who are actively engaged in the management of this disease that we are now able to attack it more effectively and with a somewhat better understanding of the underlying disease processes.

Causes of Hypertension

Hypertension is of course only a symptom due to many diverse causes, both known and unknown. A simple classification which we have found useful is given in Table I. The scope of this report does not permit a detailed comment on the differential diagnosis of all conditions which are capable of producing hypertension. Our screening procedure for the establishment of the diagnosis of hypertension and for separating those cases due to specific causes will be presented briefly.

TABLE I.—CLASSIFICATION OF HYPERTENSION

Hypertension of recognized etiology
- A. Coarctation of the aorta
- B. Unilateral renal disease
- C. Renal arterial or venous thrombosis
- D. Endocrine:
    - 1. Pheochromocytoma
    - 2. Arrhenoblastoma
    - 3. Basophil adenoma of the pituitary
    - 4. Primary hyperaldosteronism
    - 5. Cushing's syndrome
- E. Glomerulonephritis
- F. Chronic pyelonephritis
- G. Increased intracranial pressure
- H. Polycystic renal disease

Hypertension of unknown etiology
- A. Essential (idiopathic) hypertension
- B. Malignant hypertension

Every case referred because of the finding of elevated blood pressure on routine examination is checked repeatedly while the patient is at complete rest in the recumbent position. The persistent finding of an elevated systolic and diastolic blood pressure in excess of 150/90 mm. of mercury leads to further investigation. This begins with a complete history and physical examination, urine analysis, cardiac fluoroscopy, chest x-ray, electrocardiogram, blood count, and blood chemistry (urea, creatinine, and glucose). This simple method of investigation will disclose cases of coarctation of the aorta, glomerulonephritis, many cases of pyelonephritis, and will reveal simple systolic hypertension due to atherosclerosis and those cases due to thyrotoxicosis.

Intravenous pyelography is then employed to screen out at least the most obvious cases of unilateral renal disease, some cases of chronic pyelonephritis, polycystic renal disease, and obstructions of the upper renal passages. Determination of urinary catechol amines serves best for the exclusion of pheochromocytoma and arrhenoblastoma, while cystoscopy with retrograde catheterization of both ureters with a differential study of urinary secretion from each kidney will serve to exclude the more obscure types of unilateral renal disease and on occasion will reveal an otherwise completely obscure chronic pyelonephritis. The determination of serum potassium and bicarbonate serves in the screening for primary hyperaldosteronism and, when suggestive, is followed by a chromatographic measurement of urinary aldosterone. Urinary 17-keto-, and 17-hydroxycorticosteroid determinations will exclude Cushing's disease. Finally, where indicated, perirenal carbon dioxide insufflation combined with aortography will pinpoint renal vascular lesions and adrenal tumors.

After all these procedures have been carried out, one is still left without an etiologic diagnosis in at least 95 per cent of any group of hypertensive patients. These are referred to as cases of idiopathic hypertension and constitute the bulk of hypertensive patients. While it is certain that with each passing year better methods will enable us to remove more and more patients from this diagnostic wastebasket and to treat them specifically, at present our lack of more specific diagnostic and therapeutic methods constrains us to treat this group as an entity.

Selecting Hypertensive Patients for Treatment

Our next problem is to decide which of our essential hypertensive patients require treatment. There is general agreement that all patients with malignant hypertension require treatment since their arteriolar disease is rapidly progressive and produces death within a year or, at most, two years after the diagnosis has been made. It is in this group that the proper application of antihypertensive drug therapy has produced the most striking results. If treatment can be instituted before the onset of azotemia, it is not at all infrequent to see a marked improvement to the point where there is a reversal of eyeground changes. The electrocardiogram and the chest x-ray films show improvement in the usual left ventricular hypertrophy, and albuminuria and cylindruria disappear. The symptoms disappear and the patient continues to lead a useful life.

The symptom of hypertension may be controlled at any desired level by appropriate drug therapy. To date our experience with the newer and more efficient drugs is still too limited for us to be able to predict results much beyond five years. It is even more difficult to predict the long-term effects of drug therapy in the management of severe benign essential hypertension since we have not been able to follow the course of this therapy long enough nor to set up adequate controls. It is more difficult to measure accurately the effectiveness of antihypertensive drug therapy since this group of patients usually suffer not so much from their arteriolar disease but from the associated arterial disease which produces most frequently complications such as coronary thrombosis, cerebral vascular accidents, dissecting aneurysms and congestive heart failure, and only infrequently renal failure. It is therefore wise to treat only those patients with benign essential hypertension who either have symptoms attributable to their hypertension, progressive hypertension, a poor family history with parents or siblings who have died prematurely of complications of hypertension, or who belong to the younger age groups at the time of the onset of their disease. The aim of treatment is to reduce hypertension to normal or to as nearly normal levels as may be compatible with efficient blood supply to vital areas such as the central nervous system, to attempt to control the results of progressive arteriolar disease, and to prevent later arterial degenerative disease.

Planning of Drug Therapy

In planning drug therapy for the treatment of hypertensive patients it is usual today to begin with one or another of the alkaloids isolated from Rauwolfia serpentina of which resperine is the most active agent for the control of hypertension. This drug is exhibited in an initial dosage of 0.25 mg. and may be gradually increased to a total of 1 to 2 mg. daily depending on the response obtained and keeping in mind the undesirable side-reactions which may vary from nasal congestion to gastrointestinal reaction to depressive states. Dosage should be regulated to prevent serious depressive side-reactions.

More recently an alkaloid of Rauwolfia, rescinnamine, and a synthetic drug related to reserpine, syrosingopine, have been introduced which are less likely to cause depressive reactions. Aftereffects of reserpine have been determined over a period of at least four weeks, it is usual to add chlorothiazide or one of its derivatives in those patients in whom response to Rauwolfia alkaloids has not produced normotension. One must keep in mind that chlorothiazide and all of its derivatives are saluretic and also kaluretic and that potassium depletion may produce serious side-reactions in patients on digitalis treatment or those with coronary artery disease. Also, it is necessary to supplement the intake of potassium.

A majority of patients with essential hypertension can be well controlled by the combined use of reserpine and chlorothiazide or one of its derivatives. In those patients where this combined therapy does not produce the desired result, the addition of hydralizine hydrochloride in moderate doses often may be effective. In our own experience we have not encountered patients who have been treated with doses of hydralizine hydrochloride which do not exceed 400 mg. daily who have developed hydralizine disease. This drug has the advantage of having an equal effect on systolic and diastolic blood pressure and of increasing renal blood flow. When first given, it can produce rather severe headaches and should therefore be administered in very small doses, 5 to 10 mg. four times a day initially and gradually increased. Hydralizine hydrochloride tends to increase the pulse rate and may therefore increase anginal seizures in patients with coronary artery disease. The administration of reserpine slows down the pulse rate and therefore tends to cancel out this undesirable side-reaction of hydralizine hydrochloride.

Since none of these therapeutic agents by themselves are capable of producing normotension in the majority of patients, they are generally used in combination with an additional drug for those patients who do not respond satisfactorily to one or more drugs in combination.

In the most severe cases of essential hypertension and in malignant hypertension unresponsive to the previously described measures, the use of ganglionic blocking agents may be justified. The ganglionic blockers are unphysiologic because they reduce the blood pressure by pooling a good part of the blood volume in the splanchnic bed and are only effective in the erect position; they must be used with great care, since an overdose can produce syncope; and they must be adjusted to the individual patient usually by very frequent determination of the blood pressure by the patient or his family.

The earlier ganglionic blocking agents, quaternary ammonium compounds, were troublesome since they were poorly and irregularly absorbed from the intestine. More recent drugs of this type, the secondary or tertiary amines, are absorbed more quantitatively and are more predictable in their action. The most recent and promising drugs of this group are still being investigated and are not available for general use. These are guanethidine and bretylium tosylate which would appear to act by decreasing noradrenalin release at nerve endings and have the advantage of not paralyzing parasympathetic ganglionic synapses. In general, the ganglion-blocking drugs are to be avoided except in malignant hypertension unless one is willing to accept the rather dangerous side-reactions and has a patient sufficiently intelligent to be able to record his own blood pressure and to adjust each dose of drug according to the pressure reading obtained. In any case, this group of drugs should be reserved as a final addition to the currently available drug regimes.

Summary

It is essential that all treatment of hypertension be suited to the particular problem presented. In a patient with severe benign hypertension without symptoms there is no urgency in therapy and gradual exhibition of drug therapy is indicated, while in a patient with malignant hypertension every effort should be made to control hypertension as rapidly as possible to limit the amount of vascular damage.

Edema After Prolonged Sitting

Varying degrees of edema can be detected after any mode of travel during which the passenger remains seated for a considerable time. In the sitting position, venous return from the feet is inhibited proportional to the distance of the vein below the level of the heart. A bending and kinking effect is imposed at the groin and knee regions. Increased intra-abdominal pressure from sitting, wearing of a constricting belt or garment, a large meal or abdominal distention due to decreased atmospheric pressure, compresses the inferior vena cava further impeding venous return. Immobility, compounded by drowsiness and sleep during flight, and inadequate leg room, intensifies the venous stasis of the sitting position by reducing the venous pumping effect of the leg muscles. Other factors which may have contributed to the thrombosis in this series are unrecognized venous disease, dehydration, occult alterations in coagulability and the trauma of the front edge and surface of the seat. "Passenger phlebitis" should be suspected whenever calf pain or tenderness, lameness, painful walking, persistent or recurrent edema, chest pain or hemoptysis follow long flights. Passengers should be briefed regarding prolonged immobility in flight, particularly where previous venous disease or thrombosis has occurred.—*Lieut. Col. M. J. Nareff, Aerospace Medicine, November, 1959*

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.D., *Editor*

Exercise and Weight

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IN RECENT years Nutrition Excerpts has carried a number of contributions related to the problem of weight, more specifically to obesity and weight reduction. This is not surprising since in our land of plenty the greatest single nutrition problem is said to be one of overabundance—obesity—which at the same time may be considered a form of malnutrition. The Excerpts have dealt with various aspects of both the etiology and the treatment of obesity. Subjects have ranged from such basic considerations as the "Physiology of Appetite and Hunger"[1] or "Emotional Conflict and Appetite"[2] to such practical matters as "Patient Selection for Weight Reduction,"[3] "Anorexigenic Drugs,"[4] and "Diet Composition and Reducing Regimen."[5] Yet one important aspect of the subject has received no more than passing mention, namely, the role of exercise and physical activity in the etiology, the treatment, and more importantly, the prevention of obesity.

In the discussion of any factor related to obesity one starts with the fundamental premise that body weight in an individual with normal hydration is a balance between the energy taken in as food and drink and the energy expended in the basic processes of the body (basal metabolism and the specific dynamic action of food) and in activity. When energy intake is greater than energy output the excess is stored as body fat. Accumulation of body fat may be due either to an excessive energy intake with a relatively normal output or to a seemingly normal energy intake coupled with an abnormally small output. Often both factors are at fault. Historically, the output part of the equation first received a large amount of attention, but this was concentrated on the basal processes in an attempt to uncover some hidden error of metabolism. This aspect of energy output received a larger share of attention than it deserved. A low metabolic rate was found in only a very small percentage of cases. Caloric expenditure was then more or less dismissed as a factor in human obesity,[6] and disorders of food intake became the focus of investigation. Hence, for some years in both etiologic and curative considerations much more attention was given to the intake portion of the equation. Now, in our physically inactive culture, more attention is being given to gross lack of exercise as an important contributing factor to the wide incidence of obesity. Much of the credit for forcefully drawing attention to the activity component of the energy equation goes to Jean Mayer of Harvard University. In the past, for several reasons exercise was passed over lightly as a factor in weight control. It was felt that relatively large amounts of exercise were required to result in much caloric expenditure and therefore physical activity was of no particular concern as an aid to weight reduction;[7] also that few persons could be counted on to exercise consistently. Furthermore, it was believed that increased physical activity led automatically to an increased appetite and food intake and that the resultant consumption of far more calories than had been expended might impair the reduction of weight. Perhaps there was more justification for this view in the days when people were generally more active and food intake had a greater range for restriction. However, as activity has decreased more and more many reach the point where the further reduction of food intake to match a reduced energy expenditure may leave them feeling semihungry most of the time.

Much has been written concerning the factors which affect or control food intake and their relationship to obesity. Included are the roles played by physiologic, emotional, and will-power factors. In much the same way various aspects of the physical activity or exercise side of the obesity picture have been studied.

More than twenty years ago Greene[8] studied the records of some 350 cases of obesity for a history of increased food intake or diminished activity during the time of weight gain. In 67.5 per cent of the cases he found inactivity to be coincident with weight gain; much of this was due to illness or convalescence. At about the same time Bruch[9] reported on the energy expenditure of obese children and was one of the first to link the lessened energy expenditure of the obese with psychologic or emotional factors. She inquired into the physical activity of some 160 obese boys and girls. In the majority she found both excessive energy intake and decreased energy expenditure. Food assumed an exaggerated value linked with love, security, and satisfaction. Activity, on the other hand, represented danger and insecurity. Seventy-six per cent of the boys and 68 per cent of the girls were considered physically inactive. Insecurity and delay in social and emotional maturation accompanied decreased muscular activity. Fifty per cent of the children were both inactive and without playmates; 74 per cent did not take part in active games; 65 per cent had appreciable difficulties in social contacts. The majority of the children sought entertainment by frequenting movies, persistent listening to the radio, and reading at the comic strip level. A striking parallel was observed between the extreme apprehension of the parents concerning the dangers of social contact and the physical exercise and inactivity of the children.

Stunkard[6,10] has reported similar findings in adults. His study involved the use of a pedometer to measure the activity of 15 obese women matched in age and occupation with that of 15 nonobese women. Attitudes toward activity were assessed by means of a questionnaire. In addition, to ascertain determinants of physical activity, daily pedometer measurements were made of 8 obese men and women on a long-term basis and the degree of activity correlated with life situations. The obese women were far less active than the nonobese and this difference in activity paralleled differences in attitudes toward activity. Obese women in moments of depression were passive, more apt to sulk or cry. Nonobese women were more positive in attitudes and when depressed more apt to engage in some activity. The obese were also more passive to boredom; the nonobese took a more active course to overcome boredom. Dorris and Stunkard[10] found that obese women often grossly exaggerated their degree of activity.

They point out that this distortion of perception or judgment is analogous to the finding of Beaudoin and Mayer[11] that whereas subjects of normal weight were able to estimate the caloric content of their food intake with considerable accuracy, the reports of obese women were in serious error. These errors were always those of underestimation.

Further evidence of the role of inactivity in obesity was given by the studies of Johnson, Burke, and Mayer[12] of obese adolescent girls compared with nonobese classmates. The underactivity of the obese girls was of such a degree that it appeared more important than overeating in the development and maintenance of their obesity. These girls were far less apt to join in strenuous or competitive sports than were nonobese classmates and preferred noncompetitive sports or sedentary activities. The obese girls ate less, not more, than normal weight controls and underexercising rather than overeating appeared to be a distinctive characteristic of these girls.

More recently Stefanik, Heald, and Mayer[13] have studied the average daily caloric intake and physical activity of 14 obese and 14 paired control nonobese adolescent boys during the school year and for eight weeks at a summer camp. Contrary to general opinion, the obese boys ate less than the nonobese in all cases. Little difference was noted in the amount of time scheduled for light, moderate, and very active exercise, but the degree of participation in the active exercise was observed to be generally less for the obese than for the nonobese. Earlier, in both animals[14] and in adult men[15] Mayer *et al.* had demonstrated that when activity is reduced below a minimum, a corresponding decrease in food consumption does not result and obesity develops. Furthermore, in at least one form of experimental genetic obesity Mayer has shown that decreased activity is responsible for the greater part of the caloric surplus accumulated as fat.[16] He[17] postulates that food intake varies as a linear function of activity only within certain zones termed the range of "normal activity." Below this zone, in a "sedentary range," a decrease in exercise is not accompanied by a decrease in food intake and adiposity results. Above the normal range is the "exhaustive" range of activity in which the food intake does not increase with activity.

As in the energy intake side of the equation, we find that there are physiologic and emotional components in that portion of energy output dependent on activity. Some who are fond of stressing the will-power aspect of controlling food intake could also stress the will-power aspect of making the effort to take regular physical activity.

In practical terms in both the prevention and cure of obesity much more attention needs to be focused on the role which exercise can play. Exercise is the only practical way to increase energy expenditure. As Mayer and Stare[7] have pointed out a decrease in physical activity is not necessarily accompanied by a decrease in appetite nor is a moderate increase in exercise accompanied by an increase in appetite. The increase in weight so common in the less active middle-aged person, in the young man released from active military service, or in the person who switches from walking to driving a car illustrates the failure of appetite to keep pace with diminishing energy expenditures. Energy balance in all cases could be re-established by decreasing the caloric intake, but at a cost in gastronomic discomfort that a moderate and regular increase in activity would overcome. Exercise can be a practical tool both in the prevention and treatment of obesity but only if it is carried out frequently, consistently, and in moderation. One of the principal preventive measures which could be suggested for future generations is the development from earliest childhood of habits of physical activity which could become a part of the child's lifetime living pattern. A dietary excess of only 80 calories per day for a sedentary individual weighing 165 pounds will cause an increase of 13 pounds in five years.[18] By the same token, Mayer[7] points out that if such a man walks about 1 mile at a moderate speed he will use up slightly over 80 calories and he would thus maintain energy balance. As Mayer has indicated, in this age of mechanical labor-saving devices, the surest way for many an American to prevent the development of obesity is to increase his physical activity by moderate, frequent, and consistent exercise unless he wishes to be semihungry much of the time.

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(*Number thirteen in a new series of Nutrition Excerpts*)

Medical Society of the State of New York

ANNUAL CONVENTIONS

1961	May 8 to 12	Rochester
1962	May 14 to 18	New York City
1963	May 13 to 17	New York City

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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Postoperative Pneumothorax

The parietal pleura may be lacerated inadvertently during surgical interventions near the thorax. The resulting pneumothorax may not be detected until after surgery, but the possibility of such a complication should be borne in mind in any operation near the chest. The following 2 cases illustrate that a postoperative pneumothorax may be of little or no consequence if it is detected quickly and treated correctly but that if such a complication is not recognized for several hours it may result in a fatal outcome.

Case Reports

Case 1.—A thirty-four-year-old man was admitted to a hospital two months after a right orchiectomy for embryonal cell carcinoma. A radical right retroperitoneal dissection was proposed. The patient was medicated with meperidine hydrochloride (Demerol hydrochloride) 100 mg. and scopolamine 0.4 mg. forty-five minutes prior to the induction of anesthesia. He arrived in the operating room in a calm state. His arterial blood pressure was 120 mm. Hg systolic and 70 diastolic. His pulse rate was 84 beats per minute, and his respiratory rate was 20 respirations per minute.

Anesthesia was induced with 8 cc. of 2.5 per cent thiopental sodium (200 mg.) followed by cyclopropane and oxygen in a closed system using a circle-type system of carbon dioxide absorption. A number 40 cuffed endotracheal tube was inserted under direct vision without difficulty. The patient's vital signs remained stable, and he was positioned in the lateral decubitus. Maintenance of anesthesia was accomplished with cyclopropane and "top" ether. A 0.1 per cent concentration of succinylcholine drip (totaling 400 mg.) was used for two hours to facilitate muscular relaxation. The

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Discussed at a conference held at Bellevue Hospital, New York City, April 4, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

operation lasted six hours and fifty minutes and was uneventful except for marked blood loss, which was replaced adequately with 2,500 cc. of whole blood. Ventilation was controlled during the administration of the succinylcholine and was assisted during the remainder of the procedure.

The arterial blood pressure remained between 130/80 and 140/80 with a pulse rate of 76 to 88 beats per minute for most of the procedure. There was one five-minute episode of brisk bleeding during which time the blood pressure declined to 80/40 and the pulse rate rose to 120 beats per minute. After seven hours and forty-five minutes of anesthesia the patient was extubated. He left the operating room awake with a blood pressure of 100/60 and a pulse rate of 88 beats per minute.

In the recovery room the patient was noted to be unduly restless. A large amount of bloody drainage was exuding from the wound. The pulse rate rose to 160 beats per minute and the respiratory rate rose to 32 respirations per minute while the arterial blood pressure was 106/90. A whole blood transfusion was started, following which the blood pressure rose to 120/90 and the pulse slowed somewhat to 118 beats per minute while the respiratory rate remained unchanged at 32 respirations per minute.

The patient remained restless and uncontrollable. He was thought to be exhibiting an emergence delirium, and he was sedated with 25 mg. of meperidine hydrochloride. Administration of this drug at the same dose was repeated twice over a period of ninety minutes. The blood pressure rose to 130/80, but the pulse and respiratory rates remained rapid at their last previous rates. A roentgenogram of the chest was taken at this time, and it revealed right-sided pneumothorax. A total of 1,100 cc. of air was withdrawn from the chest. A chest tube was inserted and connected to an underwater drainage system. Thereafter the patient made an uneventful recovery.

Case 2.—A seventy-five-year-old male was admitted to a hospital because of hemoptysis of eighteen months duration. A roentgenogram of the chest prior to his admission revealed a density at the right lung base. The patient weighed 174 pounds and was well developed and well nourished. His arterial blood pressure was 145 mm. Hg systolic and 95 diastolic. The hemoglobin content of his blood was 14.4 Gm. per 100 ml. The red blood cell count was 4.2 million per cu. ml. The urinalysis findings and the electrocardiogram were normal. His temperature, pulse rate, and respiratory rate also were normal. Ventilation studies indicated a vital capacity of minus 70 per cent of normal. The diagnosis was carcinoma of the right lung, and it was proposed to perform a right pneumonectomy.

The patient was given 8 mg. of morphine and 0.4 mg. of atropine intramuscularly ninety minutes before surgery. Anesthesia was induced with cyclopropane and oxygen in a closed circle-type carbon dioxide absorption system. Orotracheal intubation was accomplished with ease, and anesthesia was maintained with small, varying amounts of cyclopropane and ether with oxygen. Anesthesia lasted four and a half hours, and the operative procedure took four hours and twenty minutes.

During surgery 1,500 cc. of whole blood were transfused to compensate for a similar amount of blood loss, and, in addition, 500 cc. of normal saline solution were administered intravenously. The patient's vital signs were within normal limits during the entire operative procedure, and he reacted promptly at the cessation of the procedure. The color of his skin and of his mucous membranes was good. His arterial blood pressure was 110/60, and his pulse rate was 100 beats per minute. His respirations were at a rate of 24 per minute and slightly labored.

The patient was returned to his room and placed in an oxygen tent. Two hours later he was noticed to be cyanotic and in respiratory distress. A roentgenogram of the chest revealed 50 per cent pneumothorax on the left side. It was deemed necessary to remove the air in the chest with simultaneous controlled pneumothorax readings. Accordingly the patient was placed in a sitting position. As soon as this was done, the patient ceased to breathe. A needle was inserted into the left side of the chest, and 800 cc. of air were removed rapidly. However, breathing did not return, and no pulse could be detected. Coramine 1 cc. was injected into the heart but no improvement resulted, and the patient was pronounced dead.

Comment

Postoperative restlessness associated with tachycardia and tachypnea that is not caused by hemorrhage or respiratory obstruction should make one think of a pulmonary complication which interferes with proper alveolar respiration. Two such pulmonary complications are atelectasis and pneumothorax. In both conditions there is improper chest expansion of the affected side, which may be detected by visual observation. Other signs are opposite for both conditions. In atelectasis, chest percussion shows dullness to flatness over the involved area with diminished or absent breath sounds, the mediastinal contents (heart and trachea) are deviated toward the affected side, a roentgenogram shows a shadow indicating the airless lung, the mediastinum is deviated toward the affected side, and the diaphragm is elevated on the affected side. In pneumothorax there is hyper-resonance on percussion with diminished or absent breath sounds on auscultation, the mediastinal contents deviate away from the affected side, and a roentgenogram shows the absence of lung markings peripherally with a definite lung margin.

As soon as the diagnosis of a considerable amount of pneumothorax is made, the air in the pleural cavity should be removed by the insertion of a needle into the pleural space. If the symptoms and signs recur, reinsertion of the needle should be done and the needle should be connected by means of tubing to an underwater trap, as was done in the first case. When this type of pneumothorax is allowed to go untreated for several hours, asphyxia results, especially if the pneumothorax is associated with a recent pneumonectomy of the opposite side, as in the second case. These are the types of cases that merit close and continuous observation by trained personnel, as is being increasingly done in well-organized recovery rooms.

(*Number ninety-two in a series of Clinical Anesthesia Conferences*)

Surgery for Chronic Duodenal Ulcer: Results with Vagotomy-Posterior Gastrojejunostomy

A follow-up comparison of the status of 100 chronic duodenal ulcer patients who had undergone vagotomy-posterior gastrojejunostomy with that of 100 patients who had undergone vagotomy-hemigastrectomy indicated that the former is the safer operation. Stanley O. Hoerr, M.D., of the Cleveland Clinic, Cleveland, Ohio, says that if it is granted that a considerable proportion of patients (13 per cent in this series) will develop evidence of recurrent ulceration, and that some (9 per cent in this series) will come to a second operation, then vagotomy-posterior gastrojejunostomy is a valuable procedure and should be used in preference to gastric resection (1) in poor risk patients or (2) in patients in whom there is an inflammatory mass or other technical hazards that increase the surgical risk. He adds that the effectiveness of vagotomy-hemigastrectomy against recurrent ulceration highlights the conclusion that larger amounts of stomach need never be removed in treating chronic duodenal ulcer. It should be noted that vagotomy-posterior gastrojejunostomy was used several years before vagotomy-hemigastrectomy, so the follow-up for the former group of patients is longer: a median of eight years among 90 living patients as against four years among 94 living patients in the second group.—*Cleveland Clinic Quarterly, October, 1959*

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

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Ingestions With Alarming Symptoms and Suicidal Attempts

The following incidents were reported recently to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Meprobamate and Conjugated Estrogens Combination	2 years	Female

The patient obtained the medication from her aunt's pocketbook in an upstairs room and ingested 8 tablets. When she became stuporous, she was taken to a hospital, where her stomach was lavaged an hour later. She was placed on a regular diet, and fluids and a laxative were given. She was discharged after two days of hospitalization.

The treatment given is essentially symptomatic and supportive. Gastric lavage and emesis are of value if done early. The potential hazard associated with giving children pocketbooks containing medication has been pointed out several times previously.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Hoppe's Solvent Number 9 (Gun Cleaner)	$1^1/_2$ years	Female

A bottle of gun cleaner was in a suitcase in the bedroom. The child opened the suitcase, obtained the fluid, and ingested approximately 1 ounce. The mother detected the odor on the child's breath and took her to a hospital emergency room, where no symptoms were observed. A glass of orange juice was administered, and the child was discharged after three hours of observation.

The potential hazard of this type of preparation is aspiration pneumonia, which fortunately did not develop in this case.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Ammonia	21 months	Male

The child ingested an unknown amount of liquid household ammonia about ten minutes before being seen at the emergency room of The New York Hospital. The symptoms on admission were burning in the mouth and throat with superficial burns of the mouth and marked irritability. Vomiting had been induced at home. In the emergency room a plastic Levin tube was inserted, and the patient's stomach was lavaged with lemon juice and water. About forty-five minutes later the child removed the tube, which was not reinserted.

He then was admitted to the hospital. For three days he was treated with fluids intravenously and prednisone 40 mg. a day, and for six days he was given penicillin and streptomycin. On the third day he was given fluids orally, which he tolerated well. The barium swallow x-ray examination on the fifth day gave a normal result. On the sixth day the patient was discharged as well, with a notation of slight injection of the retropharynx.

In the January 7, 1960, issue of *The New England Journal of Medicine* 2 cases of esophageal and antral strictures from the ingestion of household ammonia are reported.* The patients were a forty-three-year-old Negro male and a twenty-seven-year-old Negro female. They both had ingested the household ammonia in suicidal attempts. Although the complications associated with the ingestion of household ammonia in the cases reported to this Center in the main have not been serious, the lesions which developed in these 2 cases were very severe. Esophageal and antral strictures developed in both patients. The initial symptoms were burns of the mouth and upper digestive tract. Pneumonitis with pleural effusion also developed, and after a period of several weeks both patients developed strictures which had to be treated surgically. It is regrettable that in these 2 cases immediate therapy with gastric lavage was done since ammonia has a corrosive action and that bougienage was not done early. Bougienage was not instituted immediately because it was believed that ammonia would cause only superficial burns without any stricture formation. The ultimate treatment in these cases therefore was surgery, and the course was difficult and prolonged.

It is to be emphasized that ammonia water causes damage to the upper digestive tract in the same manner as lye does, that it does have a corrosive effect, and that the treatment of patients with ammonia burns should be directed toward prevention of strictures. The author of the 2 case reports rightly recommends that an effective treatment program include early x-ray examination of the esophagus and esophagoscopy. If burns are detected, prophylactic bougienage should be attempted. If antral strictures also develop, as in the 2 cases, a surgical bypass also must be planned. If severe burns are found, the use of steroids also may be of value.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Aspirin	3 years	Male

The patient obtained a bottle of aspirin tablets from his grandfather's cabinet. The grandfather found the child with a bottle in his hand and vomiting. Two hours later the patient could not stand up, and he was taken to St. Luke's Hospital, New York City, vomiting and in stupor. He had ingested ten to fifteen 5-grain aspirin tablets.

On admission the following symptoms were noted: dyspnea, cyanosis, vomiting, coma, and shock. The blood pressure could not be obtained. The reported laboratory findings were sodium 137 mg. per 100 ml., potassium 6.2 mg. per 100 ml., chlorides 10 mg. per 100 ml., and carbon dioxide 31.5 volumes per cent. The blood salicylate level was greater than 100 mg. per 100 ml. The patient was treated with an exchange transfusion and fluids intravenously. He was discharged after a month of hospitalization.

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* Norton, R. A.: Esophageal and antral strictures due to ingestion of household ammonia: report of 2 cases, New England J. Med. **262**: 10 (Jan. 7) 1960.

This incident is reported because of the severity of the symptoms, the high blood salicylate level, and the favorable outcome with exchange transfusion therapy. Similar favorable results were reported during the past year from other sources.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Pentobarbital-Aminophylline-Theophylline-Ephedrine Sulfate-Benzocaine Suppository	6 weeks	Male

At midnight a suppository was administered to the infant for "shortness of breath." In about an hour he became very cyanotic, his legs trembled, and he cried constantly. His parents took him to a local hospital emergency room. On his admission the following symptoms were noted: vomiting, cyanosis, and convulsions. He was treated with oxygen and supportive measures and was discharged after eight days.

It was not clear whether this medication was full- or half-strength. Aminophylline by itself could have been responsible for the incident; the contributing factors of the other ingredients can only be speculated. The high incidence of iatrogenic accidents in the use of aminophylline suppositories still needs to be impressed on physicians. It is suggested that prior to prescribing such drugs physicians weigh the possible hazards against the anticipated benefits.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Proprietary Cold Tablet (APC and an Antihistamine)	14 years	Female

This fourteen-year-old female, unmarried and eight months pregnant, in a state of depression ingested 15 cold tablets. On December 27, 1959, she was taken to the hospital with drowsiness as a predominant symptom. Her stomach was lavaged, and she was admitted for observation. On January 20, 1960, she was delivered of a 7-pound baby. On February 1 she was discharged with a diagnosis of schizophrenia. At the time of this incident the patient's mother was under psychiatric care at a hospital mental hygiene clinic.

As noted previously, suicidal attempts with most over-the-counter proprietary medications fortunately are unsuccessful. Attention should be given to the underlying factors which caused the attempt, and psychiatric referral should be made.

INCIDENT 7

Toxic Agent	*Age*	Sex
Aspirin	17 years	Female

This seventeen-year-old female, in her senior year in high school, was six weeks pregnant. The patient was very disturbed about her condition and had not told her mother about it. She ingested about 60 aspirin tablets.

She went to the hospital of her own accord, and on her admission her stomach was lavaged and Synkayvite was administered. She was discharged after two days of observation.

When the nurse visited the girl at home a month later, the patient was referred for prenatal care and medical supervision. The patient indicated that she expected to be married in two weeks.

INCIDENT 8

Toxic Agent	*Age*	*Sex*
Chlorpromazine Hydrochloride	8 years	Male

In the morning the mother had attended a hospital clinic with the patient, where she had received pills for his "nerves" and had put the box in the child's pocket. The child was sent to school. When he returned home, the mother asked him for the box to give him a pill and he informed her that he had ingested the pills, the exact amount unknown.

The child was admitted to Greenpoint Hospital, Brooklyn, in stupor. His stomach was lavaged. Subsequently he was transferred to Kings County Hospital, where he was kept for three days of observation.

The child attends a sight conservation class. He is an albino, as are his 2 sisters. The parents also disclosed that two years ago the patient had fallen out of a second story window without apparent injuries, although he was hospitalized for ten days.

The careless custody of drugs issued to children is frequently reported in accidental poisonings. Greater caution in handling and storage should be stressed by the prescribing physician.

INCIDENT 9

Toxic Agent	*Age*	*Sex*
Proprietary Copper Sulfate Tablet for Urine Sugar Testing	2 years	Male

The child was in the bathroom with 2 siblings, twelve and six years old. He was found by his mother with a tablet in his mouth, which he had obtained while his twelve-year-old sister, who has diabetes, was testing her urine. Spontaneous vomiting occurred. The child was taken to the emergency room of a hospital, where orange juice and mineral oil were given and an ear, nose, and throat consultation was held.

The public health nurse on visiting the home found 4 children (ages twelve, six, five, and two) alone with the younger ones under the care of the twelve-year-old, who stated that the mother was out working. The six-year-old brother was busily lighting a wood fire in a coal stove in the living room. The father is a longshoreman, and the mother supplements the family income by working. When the nurse suggested at a later visit the possibility of financial assistance from the Department of Welfare, the mother stated, "I'd rather starve."

Each tablet of this urine-testing product contains anhydrous cupric sulfate 0.019 grain, anhydrous sodium hydroxide 0.25 Gm., sodium bicarbonate, and citric acid. Ingestions have been followed by burns and strictures similar to those observed in lye poisoning.

INCIDENT 10

Toxic Agent	*Age*	*Sex*
Aspirin	14 years	Female

The patient had been "going" with a handicapped boy, seventeen years of age, against her mother's wishes. She then started seeing a boy of eighteen. When her mother refused to allow her to go out with him, she took forty 5-grain aspirin tablets while at home alone with 2 younger siblings. She became nauseated and was taken to Kings County Hospital, where her stomach was lavaged with saline. After one day of observation she was sent to the psychiatric division, where she was observed for six weeks.

The patient's parents are separated. It was reported that the father on two occasions also had attempted suicide, once with aspirin and the other time with iodine. On her return home from the hospital the patient was given the choice of remaining with her mother and no longer seeing the boys or living with her father. She chose to live with her father. Her progress will be followed by a social worker.

(Number fifty-eight in a series of Briefs on Accidental Chemical Poisonings)

CASE REPORTS

Acute Nonspecific Pericarditis

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ACUTE, benign, nonspecific pericarditis has long been known to the medical profession under many different designations, but it was not until 1942, when Barnes and Burchell[1] described their 14 cases of acute pericarditis of the nonsuppurative type, that interest in this disease was reawakened. Since then the literature has been filled with reports of the condition, and it is clear that its incidence has increased within recent years. Numerous observers have called attention to its close resemblance to acute coronary occlusion with myocardial infarction and have stressed the importance of differentiating between the two inasmuch as the prognosis and treatment are diametrically opposed.

Clinically, the triad of symptoms consisting of chest pain, signs of infection, and a pericardial friction rub would suggest the diagnosis of acute nonspecific pericarditis.[2] Usually serial characteristic electrocardiographic alterations are helpful in confirming the suspicion. Since most patients recover from the syndrome without any sequelae, it is referred to as acute, benign pericarditis.

Recently a case of acute nonspecific pericarditis preceded by pulmonary edema was encountered in a young pregnant woman[2] and another case was found in an elderly male six months after an attack of acute coronary occlusion with myocardial infarction. Since both of these episodes are somewhat unusual, they will be described here.

Case Reports

CASE 1.—A primipara at term and in mild labor was admitted to Manhattan General Hospital on November 11, 1958, at 11:20 A.M. Her past history disclosed that she had never had rheumatic fever, polyarthritis, chorea, or frequent sore throats. The entire prenatal period was uneventful. However, the patient did state that two weeks previously she had suffered a mild respiratory tract infection which subsided spontaneously.

On November 12, at 2:45 P.M., she was given 1 cc. of Pitocin in 1,000 cc. of 5 per cent glucose for the activation of the uterine contractions. At 8:35 P.M. she was delivered of a normal child by low forceps, and the placenta and its membrane were expressed intact. An episiotomy was performed and repaired in the usual manner, and 1 cc. of Ergotrate maleate was given intramuscularly to avoid hemorrhage. At 9:15 P.M. the patient was returned to her bed in good condition. At about 10:00 P.M. a hacking cough developed which prevented comfortable reclining and which increased in severity. At first it was nonproductive, but soon a frothy, blood-tinged sputum appeared. At 11:15 P.M. I was called to see the patient to evaluate her cardiac status.

The physical examination revealed a marked dyspnea, cyanosis, and cough. The heart was enlarged to percussion, and the apical impulse was felt in the sixth intercostal space to the left of the midclavicular line. There was a very rapid sinus tachycardia of 160 and a soft systolic murmur at the apex. The lungs revealed a dullness to percussion in both lower lobes posteriorly, and numerous rhonchi and rales were heard throughout the area. The liver was not enlarged, but a positive hepatojugular reflux was elicited. The abdomen was soft, the uterus well contracted, and the spleen impalpable. There was no peripheral edema nor any evidence of external bleeding.

As the patient was obviously in congestive heart failure, she was immediately given 0.8 mg. of Cedilanid and 0.5 Gm. of Aminophyllin intravenously and 2 cc. of Mercuhydrin and 100 mg. of Demerol hydrochloride intramuscularly. In addition, she was placed in an oxygen tent, and bloodless phlebotomy was instituted for a period of two hours. An immediate portable x-ray film of the chest confirmed the diagnosis of pulmonary edema. An emergency blood count revealed 12.8 Gm. of hemoglobin, 4,280,000 red blood cells, 11,850 white blood cells with 69 polymorphonuclear leukocytes, 2 eosinophils, 1 basophil, 28 lymphocytes, and a hematocrit of 31, thus excluding hemorrhage as an etiologic factor. A urinalysis showed completely normal results.

The following day the patient was somewhat improved with a reduction in dyspnea and cyanosis, but the heart rate was still rapid and the temperature had risen to 101.4 F. In addition, a to-and-fro pericardial friction rub was heard over the entire precordium, continuing for about seventy-two hours despite the progressive improvement. A repeat x-ray examination of the chest a few days later showed a clearing of the pulmonary edema with persistence of a pleuropulmonary involvement in the left lower lung field. One week later the latter also had disappeared. An electrocardiogram taken on November 13 demonstrated a slight elevation of the S-T segment in leads V_3 and V_4 which became inverted in a few days.

The course of the illness was interesting inasmuch as the patient's condition appeared benign despite the presence of a pulmonary congestion. The only complaint was a slight pain in the left lower chest radiating to the shoulders and aggravated by breathing and moving about. The elevated temperature lasted only one day with a slight rise to 100.4 F. three days later. The subsequent hemograms and blood chemistries indicated normal findings. A repeat urinalysis on November 14 disclosed a specific gravity of 1.014 with no albumin, sugar, or cellular elements visible. The sedimentation rate was 45 mm. per hour, the tuberculin test showed negative results, the antistreptolysin titer was normal, and the C-reactive protein was 4 plus.

The patient continued to improve and was discharged on November 21, the tenth hospital day. Thereafter she was seen at weekly intervals for the next six weeks without any evidence of a recurrence. An electrocardiogram performed on December 19, 1958, showed a perfectly normal tracing with a return of the previously inverted T waves to the upright position.

Case 2.—A sixty-nine-year-old white male sustained a coronary occlusion, with an anterior wall myocardial infarction on April 19, 1958. He recovered after several weeks of bed rest and anticoagulant therapy which was continued on an ambulatory basis, and he returned to his usual work on September 7, 1958. On September 24 he developed fever and pain in the upper abdomen and chest, the latter being aggravated by breathing and locomotion. On September 26 he visited me at my office where an examination revealed no abnormal heart sounds or pericardial rub, although many rales were audible in the left base. At this time there was an elevated white blood count of 14,000, with a preponderance of polymorphonuclear leukocytes. A diagnosis of pneumonitis was presumed, and the patient was instructed to remain in bed. Several days later he improved and returned to his job. On October 15, however, he again complained of pain in the lower chest and back which was aggravated by breathing. In addition, there was a rise in temperature to 102 F. He was instructed to rest at home for one week, after which time there was a complete recovery. On November 4, 1958, similar complaints reappeared, whereupon he was admitted to the University Hospital.

A physical examination at this time disclosed a temperature of 103 F. without any evidence of cyanosis or dyspnea. The heart was enlarged to percussion, and a systolic murmur was heard over the precordium, findings which had also been present at the time of the initial coronary insult. There was no audible pericardial rub, and the rhythm was regular. The blood pressure was 140/84, with the aortic second sound greater than the pulmonic second sound. The lungs were clear. The liver was not enlarged, and the spleen could not be felt. There was no peripheral or sacral edema. The rectal examination indicated normal results and the reflexes were physiologic.

The laboratory examinations revealed the following: 13,800 white blood count with a normal differential; 4,850,000 red blood count; 13.5 mg. of hemoglobin; 12.5 mg. of urea nitrogen; 100 mg. of true glucose; a sedimentation rate of 75 mm. per hour, according to the Westergren method; a normal antistreptolysin titer; and a prothrombin time of twenty-four seconds.

An x-ray film of the chest the following day disclosed a cardiac enlargement in the transverse diameter with an elevation of the right diaphragm and a clouding of the right costophrenic sinus. On November 5, an electrocardiogram showed a slight elevation of the S-T segment in leads I, II, aVl, V_2, V_3, V_5, and V_6, in addition to the deep Q waves in several of the V leads, the latter being sequelae of the previous myocardial infarction. Repeat electrocardiograms demonstrated inversion of the T waves in the leads previously elevated. These changes were interpreted by our electrocardiographer as indicative of a new myocardial infarction.

Despite the latter reading, it was the feeling of the author that the clinical picture was compatible with a diagnosis of acute nonspecific pericarditis, and as a result Decadron 0.75 mg. three times a day was given and anticoagulants were stopped. Within twenty-four hours the temperature became normal, the pain disappeared completely, and the patient stated that he felt better than ever before. The steroids were continued for one week in a decreased dosage and then withdrawn. The following day the pain returned and the fever rose to 101 F., whereupon the drug was reinstituted with dramatic relief. A similar schedule was attempted a third time and within several days improvement once more was apparent. This time cessation of the steroid brought about no recurrence of the symptoms. The patient was discharged on the twenty-first day in excellent condition, free from complaints. Several follow-up visits did not disclose any relapses, and the latest electrocardiogram demonstrated normal findings.

Comment

The patients we have described were of opposite sexes and of different age groups, one quite youthful and the other in the sixth decade of life. This conforms to the observation that acute nonspecific pericarditis can attack both young and old people. Fever and chest pain were present in both patients, but the characteristic pericardial friction rub was absent in one. However, its absence here did not negate the diagnosis, since it has been shown that at times a pericardial friction rub may not be audible during the course of such an illness.[3] Strong evidences to support the diagnosis of acute pericarditis were the classic chest pain in the lower part of either side, radiating to the shoulders and aggravated by motion and breathing; the frequent recurrences, with rises in temperature; the serial electrocardiographic alterations; the benign appearance of the second patient, in spite of the deep inversion of the T waves; and his dramatic response to steroids even in the absence of an audible rub. Cardiac enlargement and pleuropulmonary involvement were present in both and the predilection of the latter for the left lower lung field in the first patient conforms with the observation of others. Leukocytosis and an elevation of the sedimentation rate were present in the 2 patients indicating the existence of an infection. The marked rise in the sedimentation rate in the post-myocardial infarction patient was confusing, particularly in view of its long duration. But in pericarditis this determination will often remain high, even after the patient apparently has recovered.

The electrocardiographic findings, usually considered pathognomonic of acute pericarditis, consist of early elevation of the S-T segment in one or more leads with a return to the normal isoelectric level within a short time. Soon thereafter there is an inversion of the T wave in those leads which have been previously elevated. A discordant relation between leads I and III rarely occurs, although theoretically it is possible. Within a few weeks to months the T waves again become upright, and the entire electrocardiogram shows normal results.[3] Drugs, particularly digitalis, and previous myocardial damage with its inherent T-wave abnormalities may indeed have some modifying effect on the afore-mentioned typical patterns. This undoubtedly was the case in the patients we have described. In addition, similar alterations are seen frequently in myocardial infarction, so that at times it becomes extremely difficult to differentiate between the two purely on electrocardiographic grounds. But the clinical course, including the benign appearance of the patient after the initial onset, the tendency to recurrence, the cardiac enlargement with a subsequent return to normal size, the pleuropulmonary involvement, and the normal serum transaminase level help distinguish nonspecific pericarditis from myocardial infarction. The continuance of anticoagulants in pericarditis invites a serious complication, namely hemorrhage into the pericardial sac. Therefore, as soon as the diagnosis is made such therapy should be discontinued at once.

The coexistence of acute nonspecific pericarditis and pregnancy is a rare combination. A review of the literature during the past decade reveals but 1 case occurring in the fifth to sixth month of gestation.[4] Although there is no evidence to indicate any etiologic relationship between the two, it is quite possible that pregnancy may have some direct influence on the behavior of an existing pericarditis.

Despite the fact that congestive heart failure has been reported in nonspecific pericarditis, it is not the rule. Dressler,[5] Gelfand, and Goodkin,[3] as well as others, have noted gallop rhythm, auricular fibrillation, and other signs of congestive failure in this disease. Close scrutiny of the patients reported by the various workers in the field has revealed an apparent underlying cardiac disease which in some way had contributed to the onset of failure. Pregnancy by itself, because of its altered hemodynamics, may have a deleterious effect on the cardiovascular system. Hamilton[6] believes that there is a fall in the vital capacity with a rise in the oxygen consumption from 15 to 25 per cent above normal, and that the uterus with its contents accounts for the greatest increase. The arteriovenous oxygen ratio is higher than in the nonpregnant state. The cardiac output is also affected, and the extent to which it is increased varies depending on the observer.[7,8] The blood volume is elevated and the rate of blood flow is augmented.[9] The hormonal shifts that occur during gestation, with the rise in estrogen and progesterone levels, causes salt and water retention.[6] It has been shown also that in the last trimester of pregnancy an antidiuretic hormone is liberated which continues to rise and reaches a peak in the puerperium, after which it declines. The hormone may be closely related to or actually identical with the recently isolated adrenal substance known as aldosterone. From such data it is not surprising to learn that when an acute infectious process of the heart exists during pregnancy, the organ is not prepared adequately to withstand the physiologic alterations in the hemodynamics of the circulation, and ultimately it fails. This was the case in our first patient.

Dressler[10] has described a series of patients who during the course of an acute myocardial infarction developed a clinical syndrome consisting of pain of the pleuropericardial type with a tendency to recurrence and fever. Usually these symptoms were observed between the first and second week of the illness, and in 1 case they appeared eight weeks after the initial coronary attack. A pericardial friction rub is an outstanding feature of this syndrome, and this may be accompanied by pleurisy and effusion, particularly in the left lung. Pain, frequently described as a cutting, squeezing, pressing, or stabbing sensation, is generally situated either in the precordial region or across the chest including the lower and lateral portions and often radiating to the shoulders or jaw. The pain is also aggravated by breathing or bodily movement. In addition, there is a leukocytosis and elevated sedimentation rate. The x-ray film frequently confirms the presence of pericardial effusion and pleural effusion. How closely this syndrome resembles acute nonspecific pericarditis!

Regarding the etiology of this condition, considerable speculation exists. Faure and Cazeilles[11] suggested that an episode of myocardial infarction provides the groundwork for the development of acute idiopathic pericarditis allegedly due to a virus still obscure. Dressler[10] believes that since the agent has not yet been identified and the clinical picture simulates the postcommissurotomy syndrome, both conditions may well be caused by the same mechanism. He has further speculated and stated that the lesion of myocardial infarction acts in a manner similar to that of trauma or surgery in rheumatic patients, possibly by releasing autogenous antigens which cause a hypersensitivity reaction in susceptible persons. The second patient seems to fit into this category, even though the interval between the initial coronary occlusion and the pericarditis was somewhat prolonged.

Summary

It is apparent, therefore, that acute, nonspecific pericarditis must be suspected in a noncardiac, pregnant patient who develops cardiac decompensation either during gestation or in the puerperium. It must also be remembered that a similar clinical picture may occur in the postmyocardial infarction period anywhere from the second week of the illness to as late as four or more months thereafter. The latter condition is frequently confused with a new episode of myocardial infarction or recurrent pulmonary emboli. An awareness of these facts will permit an excellent prognosis and reduce the anxiety of both the physician and the patient.

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The author wishes to thank the editor of *Obstetrics and Gynecology* for permission to employ Case 1.[2]

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Immersion Seen as Possible Key to Outer Space Travel

Experiments with mice have shown that immersion offers "highly effective protection" against the sudden acceleration in velocity necessary to send man on exploratory trips in outer space.

The experiments were conducted by Drs. B. Black-Schaffer and G. T. Hensley of the University of Cincinnati College of Medicine and reported in the May *A.M.A. Archives of Pathology.*

"Nature has provided the design of an ideal space capsule: the amniotic sac and its fluid," the two pathologists said.

To simulate the conditions of the amniotic sac, the protective enclosure in which the unborn baby develops, they chilled baby mice until they were in a state of suspended animation (that is, a cessation of respiration, heart beat, and metabolism) and immersed them in transparent bags containing a briny solution. The mice then were put in a centrifuge that spun them at various velocities.

They found that immersed mice could survive stresses of acceleration that killed other mice, also in a state of suspended animation, but not immersed.

The exploration of outer space will require the transit of vast distances over periods of time equivalent to geologic eras, the two researchers said. A possibility of circumventing this space-time obstacle exists, however, in Einstein's theory stating that with increasing uniform velocity, time slows relative to an observer on earth, they said.

"This property of uniform velocity begins to assume significance for space travel at a speed approximating that of light itself," they explained. "With this 'relative' clock measuring the passage of time, man could attempt the exploration of outer space if a means could be found of protecting him against the great forces generated in the short time during which such velocities should be attained."

They said their experiments are a step toward solving the problem in that they proved that mice when immersed are protected against an accelerative stress leading to a constant speed of 14,500 miles per second (compared with the speed of light which is 186,300 miles per second).

A constant velocity of 14,500 miles per second would result in a slowing of the space traveler's time relative to that of earth by one per cent.

Cervical Disk Pathology Resulting in Dysphagia in an Adolescent Boy

ERNEST H. BETTMANN, M.D., AND RICHARD J. NEUDORFER, M.D., WHITE PLAINS, NEW YORK

(From the Hospital for Joint Diseases, New York City, and St. Agnes Hospital, White Plains)

THE occurrence of disk degeneration in children with positive findings by roentgenography and with serious clinical symptoms is quite rare. Before the second decade of life, the elasticity of the disk structures is biochemically and mechanically at its optimum to withstand or to compensate for any kind of trauma, even including fractures or dislocations. Coventry, Ghormley and Kernohan published a review of anatomy, physiology, and pathology of cervical disk structures in 1945.[1]

Articles describing cervical intervertebral calcification in children have appeared in the *Journal of Bone and Joint Surgery*[2,3] and other journals[4–6] on several occasions in recent years. We are presenting a case of a sixteen-year-old white male high school student because of the rather unusual history and findings at operation.

Case Report

The patient first came to the office on June 6, 1959, complaining of pain on swallowing, especially of solid food, which had been present for several weeks. Pain was localized behind the cricoid cartilage and occurred only during swallowing. Occasionally it radiated into the left upper inner trapezius region.

At the age of five years this patient fell about 5 feet and was unconscious for one hour. He was hospitalized for three days and x-ray films of the neck and skull were reported to show negative findings. He was treated for cerebral concussion and apparently recovered completely within a few weeks. He was in good general health except for recent weight loss due to reduced food intake resulting from dysphagia.

There were no palpable masses and the anterior, lateral, and posterior neck regions showed no tenderness, swelling, or discoloration. The only objective finding was painful restriction of the cervical spine on maximal forward flexion and on hyperextension, with the pain localized at the level of the sixth cervical vertebra. Strong pressure over the top of the head did not elicit pain. There were no sensory, reflex, or trophic changes, and no increase of pain occurred on coughing or sneezing.

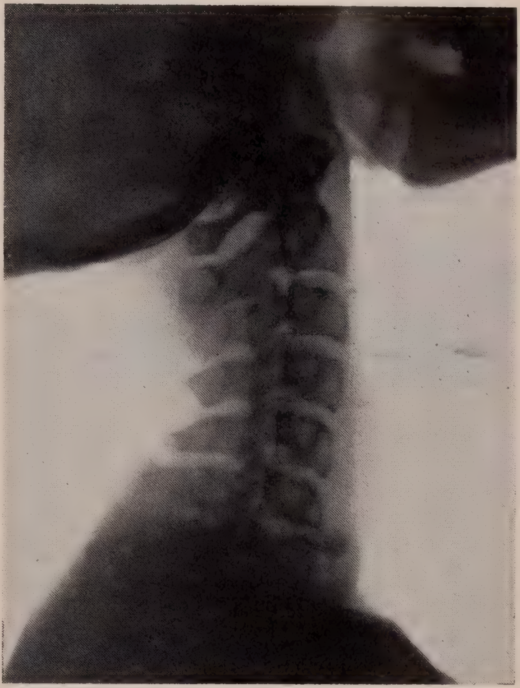

FIG. 1. Calcified anteriorly protruded disk structure at level of sixth and seventh cervical vertebrae.

X-ray pictures taken on June 6, 1959, showed, in the lateral view of the cervical spine, a well-circumscribed solid shadow anterior to the level of the sixth and the seventh vertebral bodies and having the appearance of a calcified, anteriorly protruded disk structure (Fig. 1).

The normal amount of cervical lordosis was reduced and the interspace between the sixth and the seventh cervical vertebrae was narrowed considerably. The sixth cervical vertebra showed some anterior wedging at its upper border, and there was mild osteophyte formation at the mar-

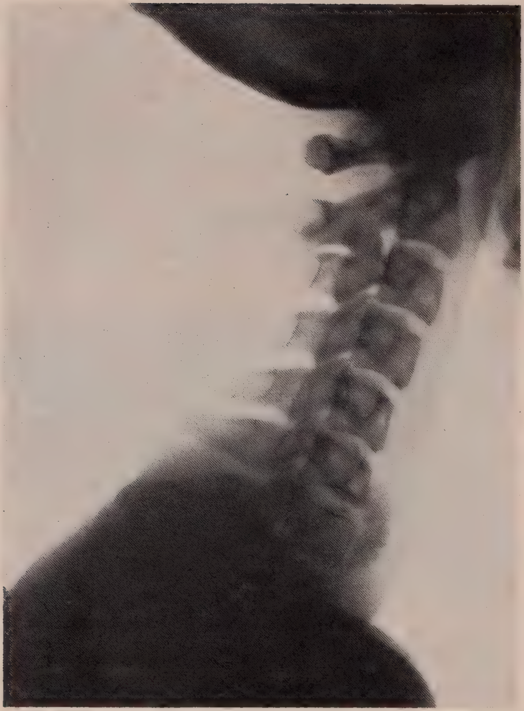

FIG. 2. Changes in appearance of calcific shadow but no clinical improvement after conservative therapy.

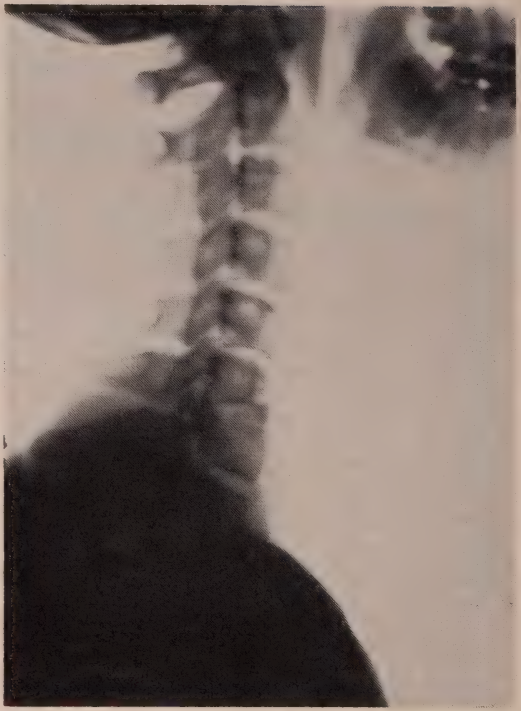

FIG. 3. X-ray film taken two months postoperatively shows solidly fused area between sixth and seventh cervical vertebrae after disk and calcium deposit removal.

gins of the vertebral bodies anteriorly. Various views in other positions showed no other significant changes.

The diagnosis of a calcified protruded disk between the sixth and the seventh cervical vertebrae was made. This evidently was caused by pathologic changes in the cervical disk at this level which had hitherto been asymptomatic. According to the literature conservative treatment was indicated, and a cervical collar was made for the patient. The use of this resulted in complete relief, but after a few weeks the same symptoms already described recurred. No relief was obtained from continuous or from intermittent traction. Some slight improvement was noticed with the use of the turnbuckle cervical spine brace.

Neurosurgical consultation was obtained, and it was felt that conservative treatment should be continued.

In the subsequent weeks, pain during swallowing became more severe and decreased food intake resulted in several pounds of weight loss. X-ray films of the cervical spine taken on July 11, 1959, showed quite marked changes in the appearance of the calcific shadow. Although the area of calcification was larger, it seemed to be less dense than previously (Fig. 2).

Anticipating a calcific deposit that would be amenable to needling, aspiration was attempted through an anterolateral approach without results. X-ray films were taken following a barium swallow, which showed no demonstrable structural esophageal obstruction or abnormality. Esophagoscopy was performed but the findings were negative. Since relief could not be obtained in any other way, the surgical approach was undertaken. On July 15, 1959, with intubation anesthesia, and with the cervical spine under traction through a halter, the area of the pathologic condition was approached through a transverse incision on the right side of the neck at the level of the cricoid cartilage. Immediately on opening the prevertebral fascia a copious flow of milky white material was encountered. This had the consistency of toothpaste. The material came directly from the interspace between the sixth and the seventh cervical vertebrae from which several

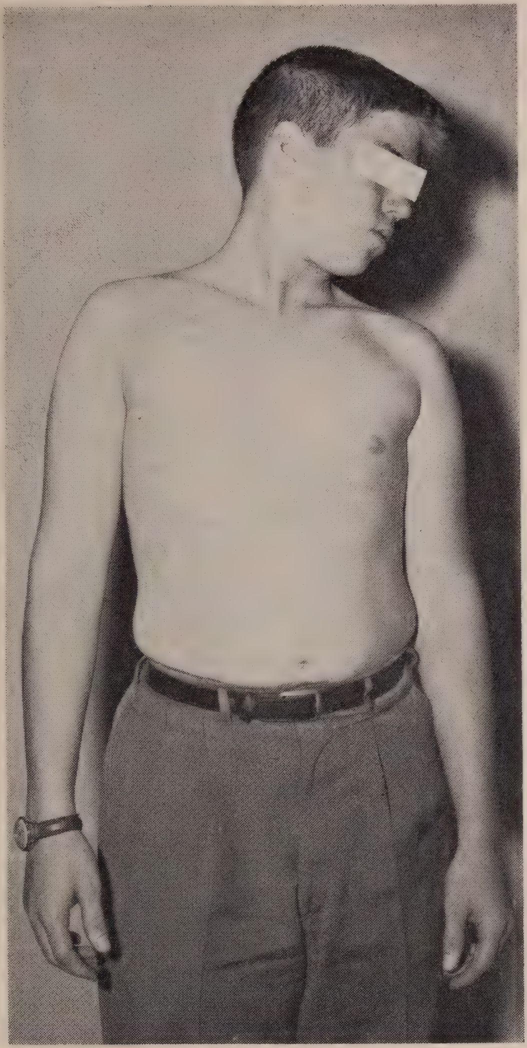

FIG. 4. Picture taken three months postoperatively showing full rotation and flexion to opposite side with well-healed operative scar.

cubic centimeters of material were removed without difficulty. Apparently all this represented degenerated disk material. There did not seem to be any instability of the cervical spine, but a very large hiatus was left following removal of the necrotic disk material. An autogenous bone graft taken from the right ilium was shaped and inserted into this interspace. This was tapped into place and was quite firm. Manipulation of the cervical spine showed no instability of the cervical spine at this level. The prevertebral fascia was sutured over the bone graft and all the other tissues were sutured into place. A soft rubber drain was left in place to the deep tissues and removed in twenty-four hours. There was no unusual amount of drainage. A simple soft sheet wadding dressing was used around the neck and served as the only support.

The patient had no pain following the procedure and was able to swallow without difficulty from the beginning. He had a full range of motion of the cervical spine, was ambulatory on the fifth day, and left the hospital on the tenth day without any discomfort. Although it seemed superfluous, the turnbuckle or leather collar was used for approximately four weeks. X-ray film taken two months postoperatively is shown in Figure 3. In Figure 4 the patient is shown three months postoperatively.

Summary

A sixteen-year-old boy with increasing dysphagia due to a degenerated and protruded cervical disk was operated on because of the failure of conservative treatment. A past history of a cervical spine injury at the age of five was elicited and was probably responsible for the pathologic changes. There has been no ill-effect from surgery and the boy is apparently recovered, exhibiting none of his previous symptoms.

ONE GREENRIDGE AVENUE

ACKNOWLEDGMENT.—The authors wish to thank Kenneth Gang, M.D., Gerhard Reiter, M.D., and Herbert S. Friedman, M.D., for their diagnostic teamwork.

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Bureau of

INDUSTRIAL HEALTH AND WORKMEN'S COMPENSATION

ROBERT KATZ, M.D., *Director, Bureau of Industrial Health and Workmen's Compensation*
PETER J. DI NATALE, M.D., *Chairman, Council Committee on Industrial Health*
WILLIAM E. PELOW, M.D., *Chairman, Council Committee on Workmen's Compensation*

Medical Society of the State of New York

The New Workmen's Compensation Fee Schedule

Revised Procedures

Colonel S. E. Senior, Chairman of the Workmen's Compensation Board, has issued revised procedures promulgated pursuant to recent enactment of legislation that abolished the Medical Practice Committee of the Board.

Previous to the measure passed by the 1960 Legislature in counties with a population of one million or more, jurisdiction with respect to arbitration of disputed medical bills for treatment of workmen's compensation claimants, to the licensing of compensation bureaus and laboratories, and to the authorizing, rating, and disciplining of physicians who treat claimants, had been vested in the Medical Practice Committee. The new amendment extends to the County Medical Societies of Bronx, Kings, Nassau, New York, and Queens the same authority that the other county medical societies in the State have over these matters.

Under the revised Rules of Procedure, which are now uniform throughout the State, the insurance carrier or employer is required to register its written objection to any medical bill with the Chairman of the Workmen's Compensation Board, on a prescribed form, within thirty days after receipt of the bill, and a copy of this objection must be sent to the physician. In all cases of disputed medical bills, parties to the controversy are required to complete a "submission" (form A-2) of the controversy to arbitration.

The arbitration committees, meeting from time to time, will each consist of two physicians designated by the president of the medical society of the county in which the medical services were rendered, two physicians designated by the New York Compensation Insurance Rating Board, and one physician designated by the Chairman of the Workmen's Compensation Board.

Physicians' applications for authorization and rating are to be filed with the county medical society in which the physician maintains his office. The county medical society will then make recommendations to the Chairman of the Workmen's Compensation Board.

The medical society of the county in which a medical bureau or laboratory is located will process applications for licenses for such bureau or laboratory and will forward its recommendations to the Chairman of the Workmen's Compensation Board. In this connection, based on a recent study and pursuant to requests from interested parties, renewals will be processed under a much simpler procedure and a short application form which will be available shortly.

The amended procedures are being incorporated in a revised edition of the Medical Fee Schedule of the Board which was issued last month. The new medical fee schedule will be effective in new compensation cases arising and old cases reopened on and after July 1, 1960.

Revised Fees

"There are no major revisions in the Medical Fee Schedule," Colonel Senior announced. "The Board's Committee on the Medical Fee Schedule and Allied Problems studied the schedule in detail for a number of months. This has resulted in 82 revisions, principally in clarification of definitions of certain types of treatment, in correction of some omissions, and the elimination of several ambiguities and disparities. In total, there are 25 new items and 57 revisions or deletions. The few fee changes are insignificant.

"With the revisions, the rate of charges and descriptions of treatment will be well defined, so as to obviate much of the litigation and attendant delay overpayment of medical bills. Where there is dispute, I hope that we will expedite settlement by making all parties familiar with the steps to be taken toward resolution. That is why we have incorporated the rules of procedure in the new fee schedule."

The revised schedules were mailed to physicians, carriers, and self-insurers. Those who did not receive them should request their copies from the Public Relations Office of the Board at 50 Park Place, New York 7, New York. Physicians, carriers, or employers desiring additional copies of the Medical Fee Schedule should send their requests to the Secretary of the Board at the same address, enclosing 20 cents for each copy ordered.

The new Medical Fee Schedule, effective July 1, 1960, includes fees for treatment rendered by registered physiotherapists at the direction of an authorized physician (see page 5 of Medical Fee Schedule).

Rule 9 of the Rules and Procedure Relative to Medical Care and Treatment under the Workmen's Compensation Law has been amended to establish a procedure for arbitration where the parties fail to agree as to the value of treatment rendered by a registered physiotherapist.

Revised Rule 9 now reads as follows:

> "A registered physiotherapist may treat workmen's compensation cases at his own office or bureau when the case is referred to him by an authorized physician. The authorized physician should, however, give written directions to the physiotherapist as to the kind of treatment to be rendered and the number of treatments to be given. These directions must be given in writing by the physicians and shall constitute a part of the record of the case. Prior authorization for such treatment shall be obtained by the physician as required by Section 13–a(5). The registered physiotherapist shall submit his bill for his services to the physician who shall certify thereon that he directed the physiotherapist to render such treatment and the physician shall transmit this bill for payment to the employer or carrier. Payment shall be made direct to the physiotherapist and controversies as to the reasonable value of such charges shall be determined in accordance with Section 13–g."

Future Revisions

William E. Pelow, M.D., chairman of the Council Committee on Workmen's Compensation, has made the following announcement:

The revised fee schedule does not correct all problems nor does it clear up every area where unilateral interpretation has prevailed. But much time and work was put into the compilation of it and it is an improvement. We know that there are parts that are unsatisfactory, and these will be discussed and attempts made to correct them in the near future. Your Workmen's Compensation Committee is aware of this and will continue to work diligently, by negotiation, to improve the present issue.

Impulsive, invective letters to anyone concerned, especially to the Chairman of the Workmen's Compensation Board, will avail nothing, may create resentment, and surely make new problems for your committee. In accumulated time your representatives, collectively, have spent three times three and a half months on this problem within the past year.

The Chairman of the Workmen's Compensation Board has shown every courtesy and has been more than willing to cooperate with the State Medical Society, so much so that he appointed a special advisory committee, with your committee well represented. This committee has met several times within the past year and many problems were resolved in a pleasant atmosphere which we wish to continue. Remember there are other parties to consider in the economics of the law. It is not a one-way street.

It is urgently requested that you address all your complaints, suggestions, or criticisms of this new fee schedule, or your other problems to the Workmen's Compensation Committee, Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Your Workmen's Compensation Committee, through the Council, is the only negotiating agent in this matter, and no direct impression can be made in any other direction. Do not write or call the Workmen's Compensation Board or any of its members.

Your committee can never be satisfied and will always have to study, analyze, and continue to discuss and negotiate, so please comply with this request as presented.

NECROLOGY

Yolande Arato, M.D., of Binghamton, died on June 20 at the age of sixty. Dr. Arato received her medical degree from the University of Budapest in 1924. She was supervising psychiatrist at the Binghamton State Hospital. Dr. Arato was an Associate of the American Psychiatric Association and a member of the Broome County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George M. Avery, M.D., of Palmyra, died on April 10 at his home at the age of thirty-eight. Dr. Avery was graduated from the Syracuse University College of Medicine in 1948 and interned at Delaware General Hospital, Wilmington, Delaware. He was a member of the Wayne County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Nathaniel Bookbinder, M.D., of Peekskill, died on May 28 at the age of fifty-one. Dr. Bookbinder was graduated from the New York University College of Medicine in 1935. He was an attending physician at Peekskill Hospital. Dr. Bookbinder was a member of the Westchester County Medical Society and the Medical Society of the State of New York.

Elwin Champlin, M.D., of Fleischmanns, died on April 27 at Kingston Hospital at the age of eighty-four. Dr. Champlin was graduated from Albany Medical College in 1902 and had practiced in Fleischmanns for fifty-eight years, where he had served also as mayor. In 1952 he was honored by the Rotary Club for his fifty years of service to the community.

Sol Charles Davidson, M.D., of Rochester, died on May 9 at Highland Hospital at the age of seventy-two. Dr. Davidson was graduated from Albany Medical College in 1912 and served during World War I in France with Mobile Hospital 39. He was consulting roentgenologist at the Monroe County Infirmary, an honorary member of the staff of Highland Hospital, and assistant attending roentgenologist at Strong Memorial Hospital. A Diplomate of the American Board of Radiology and a Member of the American College of Radiology, Dr. Davidson was a member of the American Roentgen Ray Society, the Radiological Society of North America, Inc., the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Milton Harry Goldberg, M.D., of Buffalo, died on May 29 at Millard Fillmore Hospital at the age of seventy-two. Dr. Goldberg was graduated from the University of Buffalo School of Medicine in 1912 and served during World War I with an Army Medical Corps base hospital in France. He had practiced in Buffalo for almost fifty years, limiting his practice recently because of illness. Dr. Goldberg was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Hauswirth, M.D., of New York City, died on June 16 at the age of eighty-six. Dr. Hauswirth was graduated from Columbia University College of Physicians and Surgeons in 1896 and interned at Mount Sinai Hospital. He was consulting physician at Sea View Hospital and the Hospital and Home for Aged and Infirm Hebrews and was director of medicine emeritus at Beth David Hospital, now Grand Central Hospital. Dr. Hauswirth was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leon Edward Kienholz, M.D., of Ossining, died on June 8 in an automobile accident at the age of sixty-five. Dr. Kienholz received his medical degree from the University of Oregon in 1927 and interned at Multanoma Hospital, Portland, Oregon; Rochester State Hospital, Rochester, Minnesota; and Manhattan State Hospital, New York City. He was attending neuropsychiatrist at Phelps Memorial Hospital, North Tarrytown. Dr. Kienholz was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Philip Lubin, M.D., of Brooklyn, died on May 25 at the age of sixty-four. Dr. Lubin was graduated from New York University and Bellevue Hospital Medical School in 1918. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry William Miller, M.D., of Brewster, died on June 22 at his home at the age of eighty-six. Dr. Miller received his medical degree from the University of Toronto in 1895. He had served on the staffs of several mental hospitals in Massachusetts, Illinois, and Maine and had been with the Department of Neurology at Columbia University College of Physicians and Surgeons. A Fellow of the American Psychiatric Association, Dr. Miller was a member of the Association for Research in Nervous and Mental Disease, the Putnam County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Roman Ruwin Perkul, M.D., of New York City, died on June 7 at Mount Sinai Hospital at the age of sixty. A native of Russia, Dr. Perkul received his medical degree from the University of Koenigsberg in 1926 and came to the United States in 1937. He was associate attending physician at Grand Central Hospital and senior clinical attending physician at Mount Sinai Hospital. A Member of the American College of Cardiology and a Member of the American College of Gastroenterology, Dr. Perkul belonged to the Rudolf Virchow Medical Society, the New York Academy of Gastroenterology, the New York Cardiological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James Patten Trotter, M.D., of Yonkers, died on March 18 in Yonkers General Hospital at the age of seventy-eight. Dr. Trotter was graduated from Columbia University College of Physicians and Surgeons in 1907 and served during World War I as a captain in the Army Medical Corps. He had practiced in Yonkers for fifty-three years and was formerly surgeon for the Yonkers Fire Department. Dr. Trotter was a member of the Yonkers Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry John Vier, M.D., of White Plains, died on June 23 at St. Agnes Hospital at the age of seventy. Dr. Vier was graduated from the Fordham University College of Medicine in 1911 and interned at Wyckoff Heights Hospital. For the past twenty-seven years he had been director of surgery at St. Agnes Hospital and was a consulting surgeon at Phelps Memorial Hospital, North Tarrytown. A Fellow of the American College of Surgeons and an Associate Fellow of the American College of Gastroenterology, Dr. Vier was a member of the New York Academy of Medicine, the Westchester County Medical Society, of which he was a past president, the Medical Society of the State of New York, and the American Medical Association.

George Whiting Wheeler, M.D., of New York City, died on June 17 at New York Hospital at the age of seventy-eight. Dr. Wheeler was graduated from Cornell University Medical College in 1907 and interned at New York Hospital. He had been professor of bacteriology at Cornell University Medical College and from 1942 to 1949 had served as superintendent and assistant director of New York Hospital. Dr. Wheeler was a member of the Society of American Bacteriologists, the American Association of Immunologists, the American Public Health Association, the New York Pathological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sun Can Damage the Eye Despite Dark Glasses

Smoked glass or dark glasses cannot protect the eye from the direct rays of the sun. "There is, unfortunately, a widespread misunderstanding that dark glasses are sufficient to protect the eye when one looks directly at the sun," according to William W. Bolton, M.D., associate director, Department of Health Education, American Medical Association.

Writing in the July issue of *Today's Health,* Dr. Bolton said after each eclipse of the sun "a certain number of persons are observed to have permanent damage of the retina, with loss of central vision, even after using smoked or dark glasses."

"Even when the sun is partially observed, its rays are still very intense," he said. "Dark glasses only screen against reflected glare that results as the sun's rays strike the earth."

MEDICAL NEWS

New York Health Exposition—The week of July 17 through 23 was proclaimed by New York City Mayor Robert F. Wagner as Health Exposition Week. The observance occurred during the New York Health Exposition of 1960, sponsored by the City's Health Department, July 16 through 24.

The proclamation was signed in the presence of Leona Baumgartner, M.D., New York City Commissioner of Health, and Norman S. Moore, M.D., Ithaca, newly-elected president of the Medical Society of the State of New York (Fig. 1). Commenting on the Exposition Dr. Moore said: "Medical research has produced more new drugs and technics of treatment than the public is aware of or has had the opportunity to learn about. Our medical progress has accelerated to the point where there is an appreciable lag between medical advances and public awareness of them. That lag can be taken up only as the public avails itself of opportunities to learn and understand what is being done and how it affects them as individuals. The Health Exposition offers an excellent opportunity for the public to observe medical exhibits of new drugs, technics, and equipment for doctors and hospitals."

Proclamation

FIG. 1. *Left to right:* Mayor Robert F. Wagner, Leona Baumgartner, M.D., and Norman S. Moore, M.D.

Retired New York Physician Wins Art Prize—Ben-Henry Rose, M.D., formerly of the Bronx and now a resident of Miami Beach, Florida, won first prize for oil portraiture at the annual exhibition of the American Physicians Art Association. Dr. Rose entitled his painting "Chinese Beggar in the Outer Territories of Hong Kong." The painting also won the prize for the most popular exhibit at the showing.

Nyack Physician Gives LIU Scholarship Fund—Irving Innerfield, M.D., Nyack, research professor of biology at Long Island University and a member of the class of 1932, has given the University $25,000 for the establishment of a biology scholarship fund. Dr. Innerfield also gave $2,000 to the alumni fund's library campaign.

Association for Colon Surgery Holds First Meeting—The first annual meeting of the Association for Colon Surgery was held on June 12. The aims of the new organization are: (1) to create a concentrated platform for intestinal surgeons, physiologists, and pathologists so that they may pool their experience and knowledge; (2) to stimulate and foster interest and research in the function and diseases of the colon and rectum among general surgeons so as to broaden their colorectal base; and (3) to encourage the adequate teaching of anorectocolonic function and diseases to medical students and residents in surgical training. This Association will work in harmony with the American College of Surgeons and the American Board of Surgery.

Nineteen papers and two panel discussions were presented at the meeting. New York State physicians who participated were: *Buffalo:* Theodore Drapanas, M.D., Imran Hatiboglu, M.D., George E. Moore, M.D., John D. Stewart, M.D., and Alvin Watne, M.D.; *New York City:* Ivan D. Baronofsky, M.D., Robert Beck, M.D., George R. Gerst, M.D., Isadore Kreel, M.D., Albert S. Lyons, M.D., and Robert Turell, M.D.

Newly-elected officers of the organization are: Warren H. Cole, M.D., Chicago, president; John M. Waugh, M.D., Rochester, Minnesota, president-elect; and Robert Turell, M.D., New York City, secretary-treasurer.

The Association's 1961 meeting will be held in New York City.

New York City Physician to Do Research in Japan—Stephen Nordlicht, M.D., New York City, assistant professor of psychiatry, New York Medical College, is spending July and August in Japan working on an investigative project in geriatrics for the World Medical Association.

Interstate Postgraduate Medical Association of North America—The Interstate Postgraduate Medical Association of North America will hold its forty-fifth scientific assembly at the Pittsburgh Hilton Hotel, Pittsburgh, Pennsylvania, October 31 through November 3.

New York State physicians who will participate in the program are: Curtis J. Lund, M.D., Rochester, "The Use of Cervical Cytology, Biopsy and Conization"; and Robert E. L. Nesbitt, Jr., M.D., Albany, "Perinatal Casualties."

Attendance at the assembly will qualify physicians for a maximum of $16^1/_2$ hours of category 1 credit by the American Academy of General Practice.

Further information can be obtained from: Mr. Roy T. Ragatz, Executive Director, Interstate Postgraduate Medical Association of North America, Box 1109, Madison 1, Wisconsin.

American Neurological Association Elects Officers—The following New York physicians were among the officers recently elected by the American Neurological Association: Harold G. Wolff, M.D., New York City, president; Harry M. Zimmerman, M.D., Bronx, vice-president; and Melvin D. Yahr, M.D., New York City, secretary-treasurer. J. Lawrence Pool, M.D., New York City, was appointed as representative to the American Board of Neurological Surgery for a period of six years.

Course in Rehabilitation Care of the Chronically Ill Patient—A one-week course for physicians, devoted to the rehabilitation care of the chronically ill patient, will be held November 14 through 18 under the auspices of the Department of Physical Medicine and Rehabilitation, New York Medical College, Metropolitan Hospital Center. The course will offer a review of the principles and technics in the medical care of the chronically ill to meet the needs of the clinician, medical administrator, and public health physician. The course content will include: physiology and pathology of chronic diseases, nutrition and dental care, management of bedridden and incontinent patients, home-care programming, community needs and resources, public health aspects, self-care activities, prosthetic devices, and psychologic and social aspects.

For further information contact: Jerome S. Tobis, M.D., Chairman, Department of Physical Medicine and Rehabilitation, New York Medical College, 1 East 105th Street, New York 29, New York.

Brooklyn Radiological Society Elects Officers—The Brooklyn Radiological Society recently elected the following officers: George A. Manfredonia, M.D., president; Isadore Katz, M.D., vice-president; and Joseph Arcomano, M.D., secretary-treasurer.

The Society meets on the first Thursday of each month, October through May. For further information contact: Joseph P. Arcomano, M.D., 168 Clinton Street, Brooklyn 1, New York.

Hospital Converted to Care for Mentally Retarded—Conversion of the J. N. Adam Memorial Hospital in Perrysburg from a facility for the care of tuberculosis patients to one for the mentally retarded is underway. Formerly operated by the Department of Health, the J. N. Adam unit will be utilized for the care and treatment of the severely retarded. It will be under the direction of Gowanda State Hospital and will be known as the J. N. Adam State School Division of Gowanda State Hospital.

Personalities

New Office

Edward T. Connor, M.D., for the practice of obstetrics in Mechanicville . . . William H. Murray, M.D., for the practice of surgery in Troy.

Speakers

Herman E. Hilleboe, M.D., New York State Commissioner of Health, at the commencement exercises of the Albany Medical College of Union University on May 31 . . . Howard A. Rusk, M.D., New York City, at the graduation exercises of the Mount Sinai Hospital School of Nursing on June 22.

Elected

Robert Boggs, M.D., New York City, to the board of directors of the Field Foundation . . . J. Mark Hiebert, M.D., Port Washington, to the board of directors of the Commerce and Industry Association of New York, Inc.

Awarded

Herman E. Hilleboe, M.D., New York State Commissioner of Health, an honorary degree of Doctor of Science from Albany Medical College of Union University . . . Arthur M. Master, M.D., New York City, the American College of Chest Physicians' Medal for 1960 . . . George T. Pack, M.D., New York City, the Order of Rubin Dario with the rank of Great Silver Cross, from President Luis Somoza of Nicaragua, in recognition of his services to the cancer program of Nicaragua.

Appointed

Robert J. Aquilina, M.D., Poughkeepsie, as an assisting attending neurologist on the staff of Vassar Brothers Hospital . . . Floyd C. Bratt, M.D., Rochester, as chairman of a special "Project Hope" committee of the American Academy of General Practice . . . I. Jay Brightman, M.D., Albany, as Assistant Commissioner for Chronic Disease Services of the New York State Department of Health . . . Alan F. Guttmacher, M.D., New York City, as director of the Margaret Sanger Research Bureau . . . Gordon D. Hoople, M.D., Syracuse, as medical adviser to the Deafness Research Foundation . . . Richard J. Lempke, M.D., New York City, as chief medical director of Mutual Life Insurance Company of New York . . . James E. Perkins, M.D., New York City, reappointed to the Surgeon General's Advisory Committee on Indian Health . . . Howard A. Rusk, M.D., New York City, as a member of the Board of Hospitals of New York City.

Edward R. Schlesinger, M.D., Albany, as Assistant Commissioner for Special Health Services in the New York State Department of Health . . . Robert M. Weiss, M.D., Poughkeepsie, as an assisting attending neurologist on the staff of Vassar Brothers Hospital, Poughkeepsie.

MEDICAL MEETINGS

Fifth International Congress on Nutrition

The fifth international congress on nutrition will meet at the Sheraton Park and Shoreham Hotels in Washington, D.C., September 1 through 7. A feature of the meeting will be an all-day symposium on the subject "World Food Needs and Food Resources."

For further information contact: Mr. Sidney S. Negus, Director of Public Information, Fifth International Congress on Nutrition, Medical College of Virginia, Richmond, Virginia.

Sixth Annual Meeting of American Rhinologic Society

The American Rhinologic Society will hold its sixth annual meeting at the Belmont Hotel, Chicago, October 8. Among the guest speakers at the meeting will be Morris Fishbein, M.D., Chicago, who will speak on the topic "Fifty Years of Medical Progress."

For further information contact: Robert M. Hansen, M.D., Secretary, American Rhinologic Society, 1735 North Wheeler Avenue, Portland 17, Oregon.

Eleventh Augustus B. Wadsworth Lecture

The eleventh Augustus B. Wadsworth Lecture is to be given at the Division of Laboratories and Research, New York State Department of Health, Albany, on October 20. Harry M. Rose, M.D., chairman, Department of Microbiology, College of Physicians and Surgeons, Columbia University, will speak on "A Prospect of Viral Infections of the Respiratory Tract."

The lectureship was established in 1950 by the staff of the Laboratories and the Council of the New York State Association of Public Health Laboratories.

Midwest Allergy Forum

The annual meeting of the Midwest Allergy Forum will be held at the Penn Sheraton Hotel, Pittsburgh, Pennsylvania, October 22 and 23.

The program will include a panel discussion on chronic urticaria, drug allergy, and repository therapy in addition to presentations on bronchial asthma.

For further information contact: Philip Blank, M.D., 3028 Brownsville Road, Brentwood, Pittsburgh 27, Pennsylvania.

MONTH IN WASHINGTON

An omnibus bill approved by the House Ways and Means Committee contains two provisions of major importance to physicians—Social Security coverage for doctors and a Federal-state program to provide health care for older persons with low incomes.

About 150,000 self-employed physicians would be covered by Social Security on the same basis that lawyers, dentists, and other self-employed professional people now are covered. Becoming effective for taxable years ending on December 31, 1960, or June 30, 1961, self-employed physicians would be required to pay a Social Security tax of $4^1/_2$ per cent of the first $4,800 of income. Physicians also would be subject to the automatic increases in the Social Security tax in future years.

Medical and dental interns would be covered for the first time also.

Rep. Wilbur Mills (D., Ark.), Chairman of the Ways and Means Committee, was the main architect of the health program for "medically indigent" aged. It was designed to provide a broad range of hospital, medical, and nursing services for persons sixty-five years of age and older who are able financially to take care of their ordinary needs but not large medical expenses.

It would be up to each state to decide whether it participates in the program. The extent of participation—the number of benefits offered to older persons—also would be at the option of individual states.

The states would determine the eligibility of older persons to receive benefits under the program. However, the legislation laid down a general framework for eligibility: persons sixty-five years and older, whose income and resources—taking into account their other living requirements—are insufficient to meet the cost of their medical care.

The program couldn't become effective until July 1, 1961. Before putting such a program into effect, a state would have to submit to the Federal government a plan meeting the general requirements outlined in the legislation.

The program would be financed jointly by the Federal and state governments. Federal grants would have to be matched by participating states on the same basis as under the present old-age assistance formula.

States could elect to provide, with Federal financial aid, any or all of the following benefits: (1) Inpatient hospital services up to one hundred and twenty days per year; (2) skilled nursing home services; (3) physicians' services; (4) outpatient hospital services; (5) organized home care services; (6) private duty nursing services; (7) therapeutic services; (8) major dental treatment; (9) laboratory and x-ray services up to $200 per year; and (10) prescribed drugs up to $200 per year.

The committee put a $325 million price tag on the program for the first full year of operation; $185 million Federal and $140 million state. However, this estimate could hardly be more than an educated guess of sorts. The actual cost would depend on unpredictable factors—how many states would participate, how many benefits they would offer, and how many older persons would qualify and what services they would require.

The committee estimate was based on between 500,000 and 1 million older persons a year receiving health services under the program. If all states participated fully, the committee said, potential protection would be provided as many as 10 million aged whose financial resources are so limited that they would qualify in case of serious or extensive illness.

Payments under the program would go directly to physicians and other providers of medical, hospital, and nursing services.

In addition to the Federal grants for the "medically indigent," about $10 million more in Federal funds would be authorized for payment to states for raising the standards of medical care benefits under present public assistance programs for older persons.

The approach of the Mills program was similar to that of Point 2 of the American Medical Association's 8-point-program for health care of the aged. Point 2 stated that the A.M.A. supports Federal grants-in-aid to states "for the liberalization of existing old-age assistance programs so that the near-needy could be given health care without having to meet the present rigid requirements for indigency." Such a liberalized definition of eligibility should be determined locally, the A.M.A. said.

Approval of the Mills plan by the committee marked a sharp setback for organized labor leaders. But they continued their all-out pressure campaign in an effort to get Congressional approval of Forand-

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

type legislation that would use the Social Security system to provide hospitalization and medical care for the aged. After being defeated in the Ways and Means Committee, labor union leaders and other supporters of Forand-type legislation directed their major efforts to trying to get the Senate to substitute the Social Security approach.

The committee had been considering health-care-for-the-aged legislation intermittently for more than a year. Hearings were held on the Forand bill last summer but action was postponed until this year.

Prior to approving the Mills plan, the committee rejected the Forand bill (three times) and the Eisenhower Administration's far-reaching public assistance alternative. Both plans were opposed by the medical profession and allied groups.

While these legislative proposals were in the limelight, a little-noticed bill was enacted into law to give $50 million in relief to taxpayers burdened with taking care of ill, dependent parents.

The new law permits taxpayers full deduction on Federal income taxes for medical and dental expenses paid for a depenbent parent sixty-five years of age and older. Previously,such a deduction was limited to costs in excess of 3 per cent of the taxpayer's adjusted gross income.

Changes in the Social Security program called for in the catch-all bill approved by the Ways and Means Committee included: (1) Eliminate the requirement that a disabled person must be at least fifty years old to be eligible for Social Security benefits. (2) Provide Social Security benefits for about 25,000 widows of workers who died before 1940. (3) Increase the benefits of 400,000 surviving children of workers covered by Social Security.

Although all these revisions will increase costs of the program, neither the Social Security tax rate nor tax base was increased.

The revisions will mark the fifth consecutive year of a national election that the Social Security program, originally enacted in 1935, has deen expanded. Some of the expansions have been accompanied by tax increases.

Woman's Auxiliary

to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Food for Thought

THIS year the theme in the Women's Building at the State Fair in Syracuse will be "Food for Thought." As in past years, the Woman's Auxiliary to the Medical Society of the State of New York will be at the State Medical Society's booth. Hostesses will be from the county auxiliaries of Oneida, Oswego, Broome, Cayuga, Jefferson, Tompkins, and Cortland, as well as members of The Syracuse Medical Dames who are wives of medical students.

The Fair will be held from September 2 to September 10, and the booth will be open daily from 10:00 A.M. to 6:00 P.M. There will be the American Medical Association's exhibit on "Adolescent Nutrition" and pertinent literature will be available.

Interesting features will be movies, and among these will be one on "Rescue Breathing" which will afford an opportunity to acquaint viewers with the use and effectiveness of mouth-to-mouth resuscitation; and a twenty-two minute colored film—"A New World for Peter," loaned by the Tompkins County Parents' Committee and appropriate for young people and their parents. Leaflets describing the film will be distributed at the showing.

Many different brochures and copies of *Today's Health* will be available. Literature which will interest young people in health and paramedical careers as well as attractive posters will be distributed. Information about the Future Nurses and Health Career Clubs, scholarships, and student loan funds will be supplied. Although much has been achieved in these fields the Auxiliary is aware that there is still a need for more nurses, technicians, medical secretaries, and such and will take advantage of this opportunity to focus the public attention on this phase of the program.

Doctors and their families and friends are invited to visit the Medical Society of the State of New York's booth at the State Fair in September.

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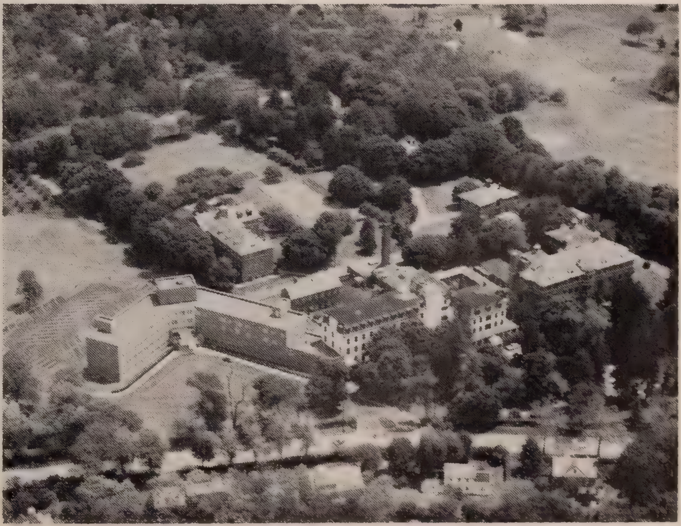

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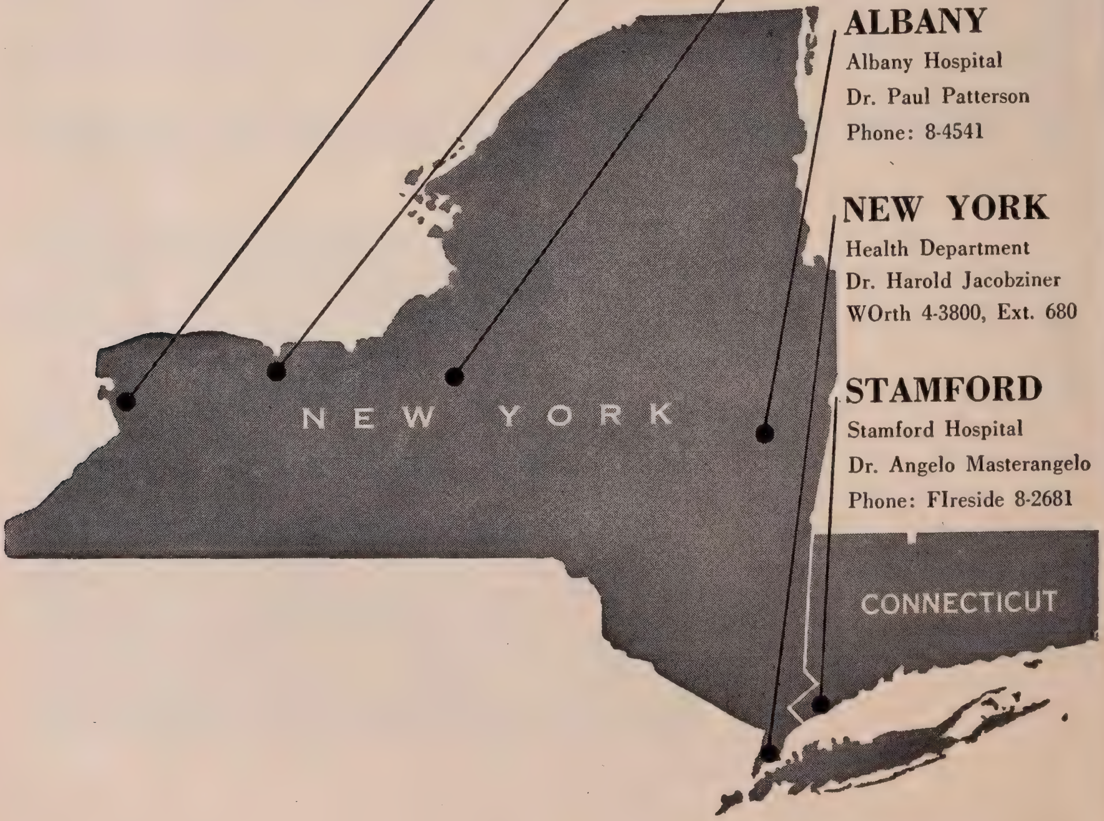

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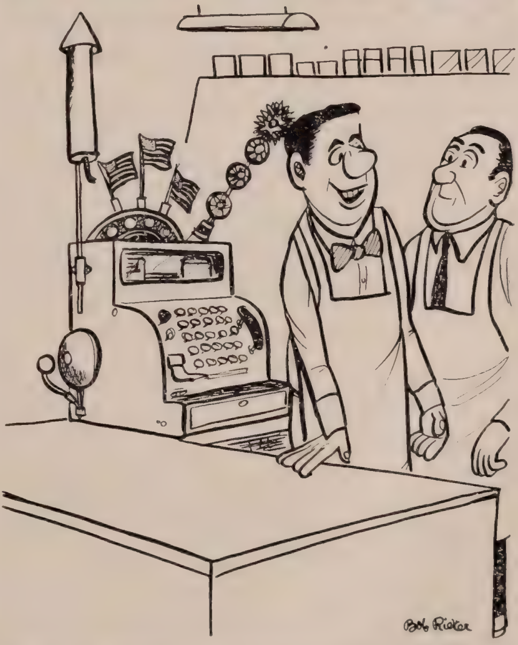

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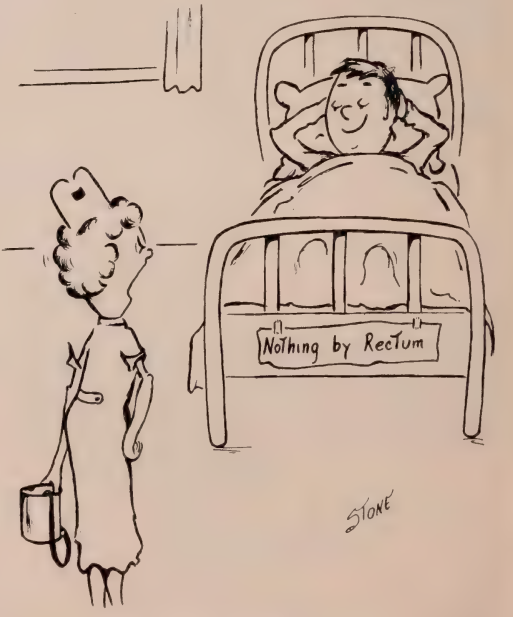

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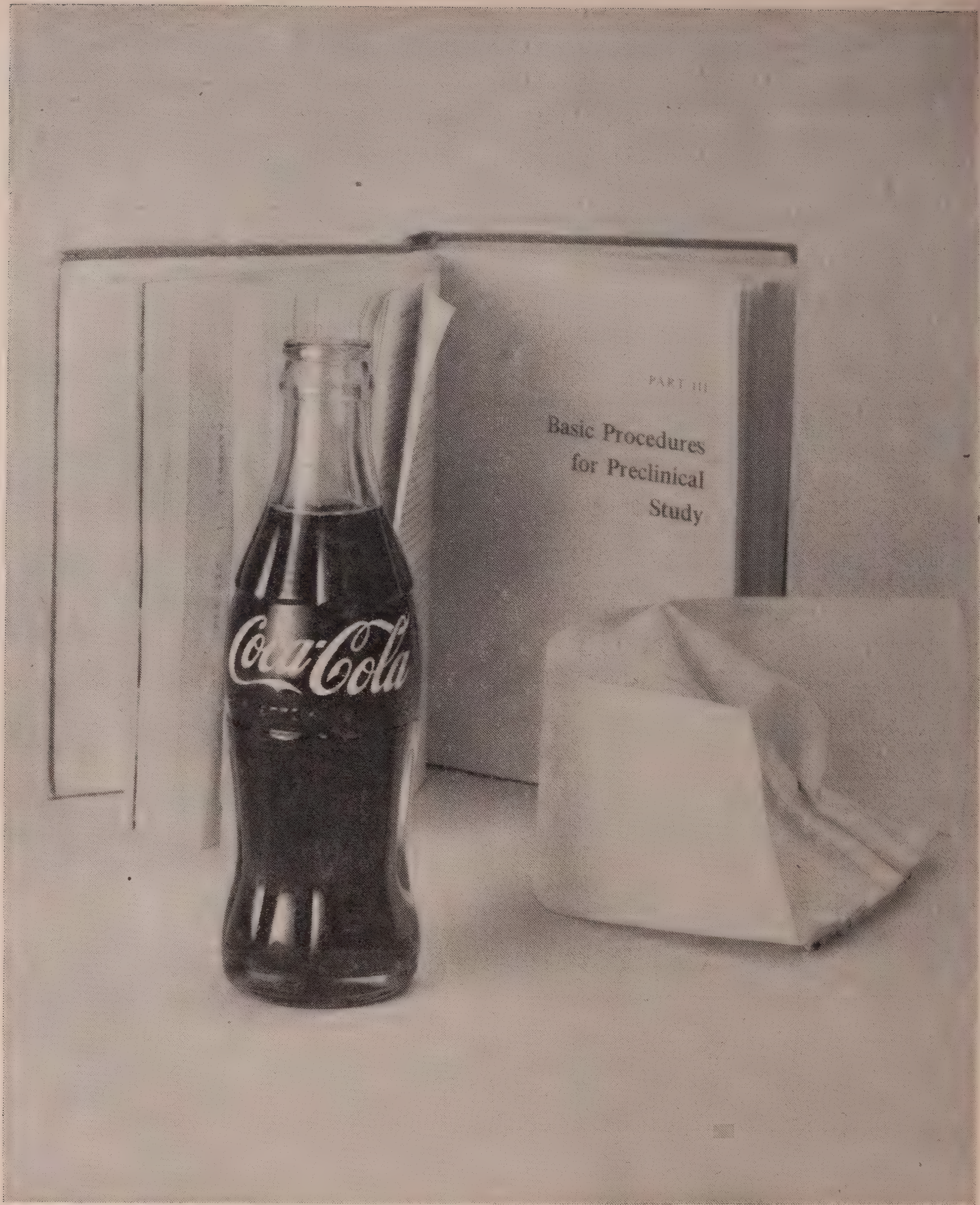
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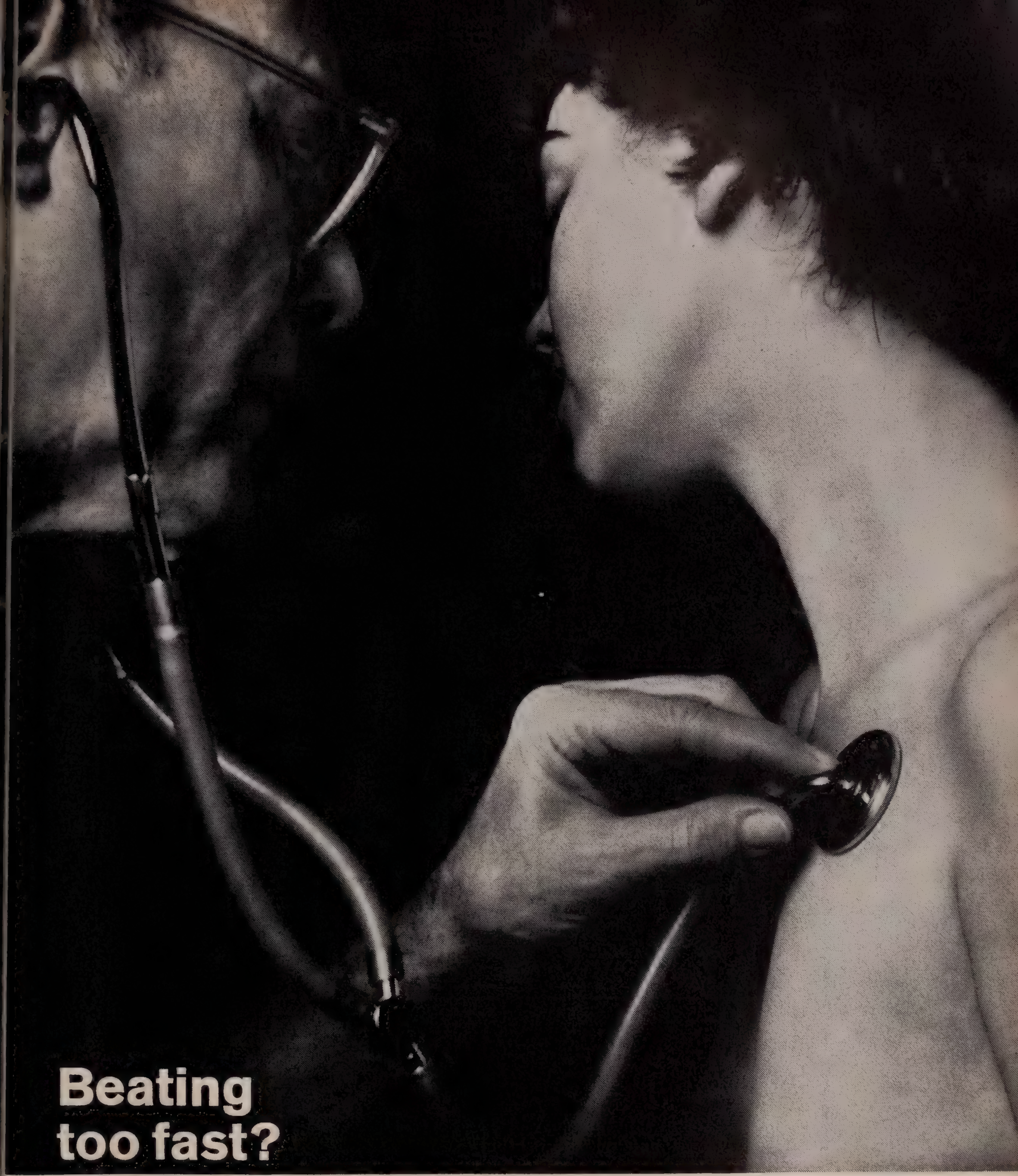

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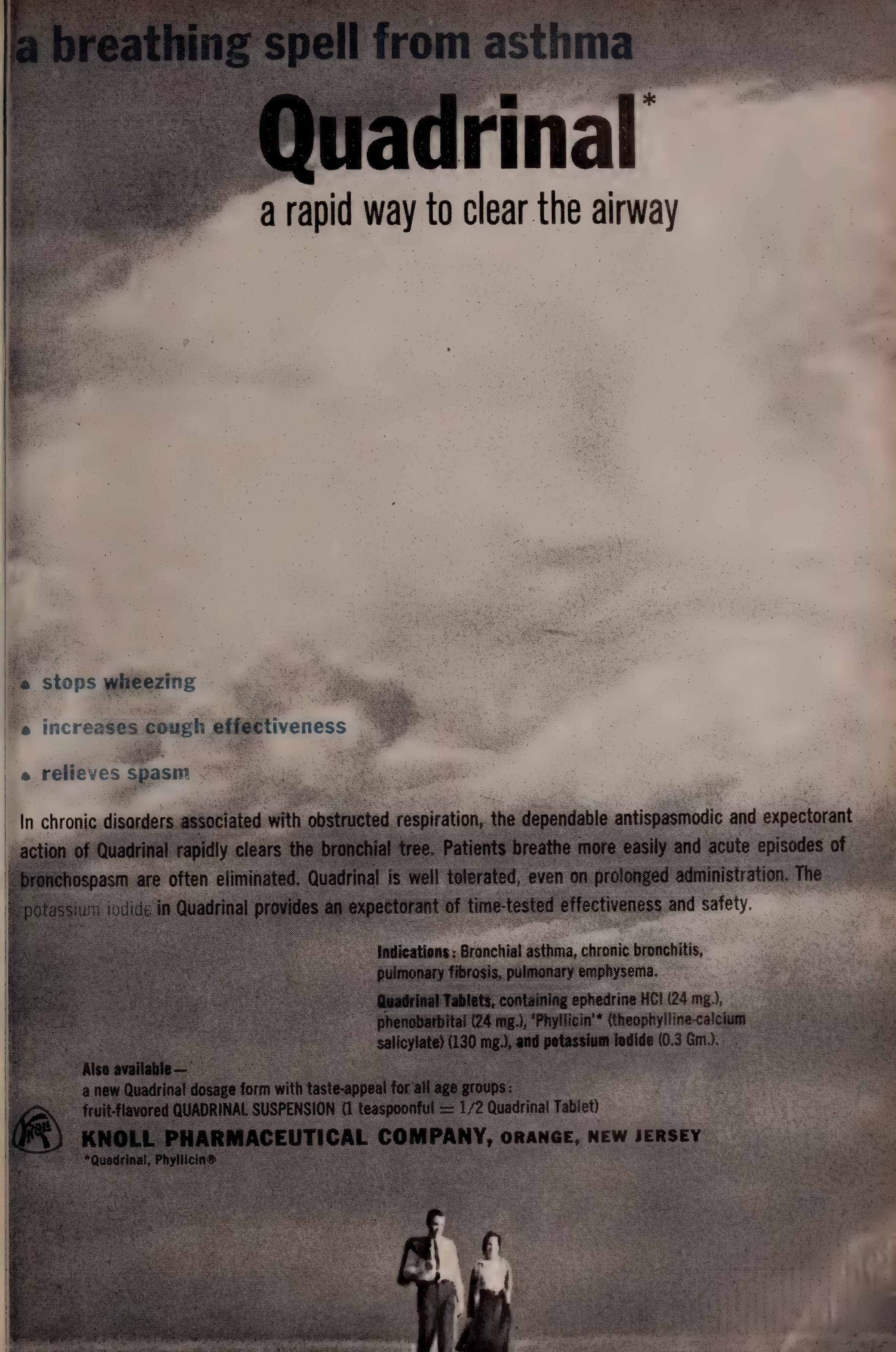

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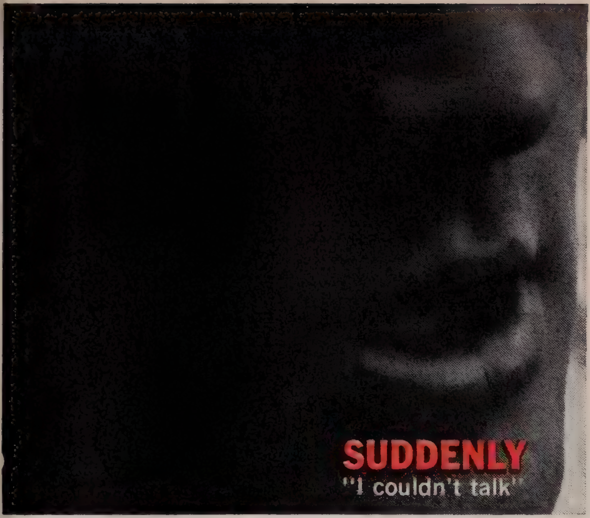
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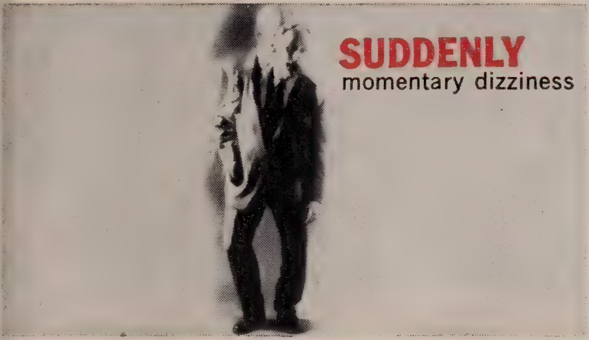
"I couldn't talk"


SUDDENLY
momentary dizziness

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resulting from abnormal capillary fragility. Sudden dizzy spells, blurred vision, bizarre feelings of pain, transitory weakness of arm or leg—all are typical symptoms.[1] It has been suggested that many of these incidents (frequent in the middle years as well as in the elderly[2]) might be due to minor cerebral hemorrhages.

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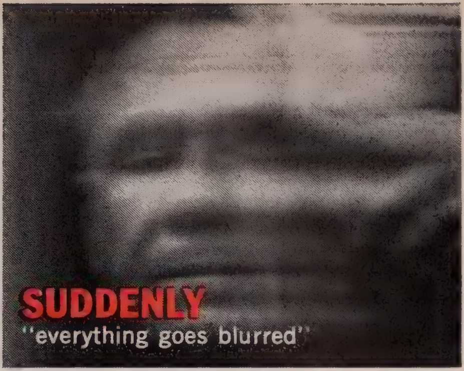
SUDDENLY
"everything goes blurred"

SUDDENLY
she finds herself
dropping things

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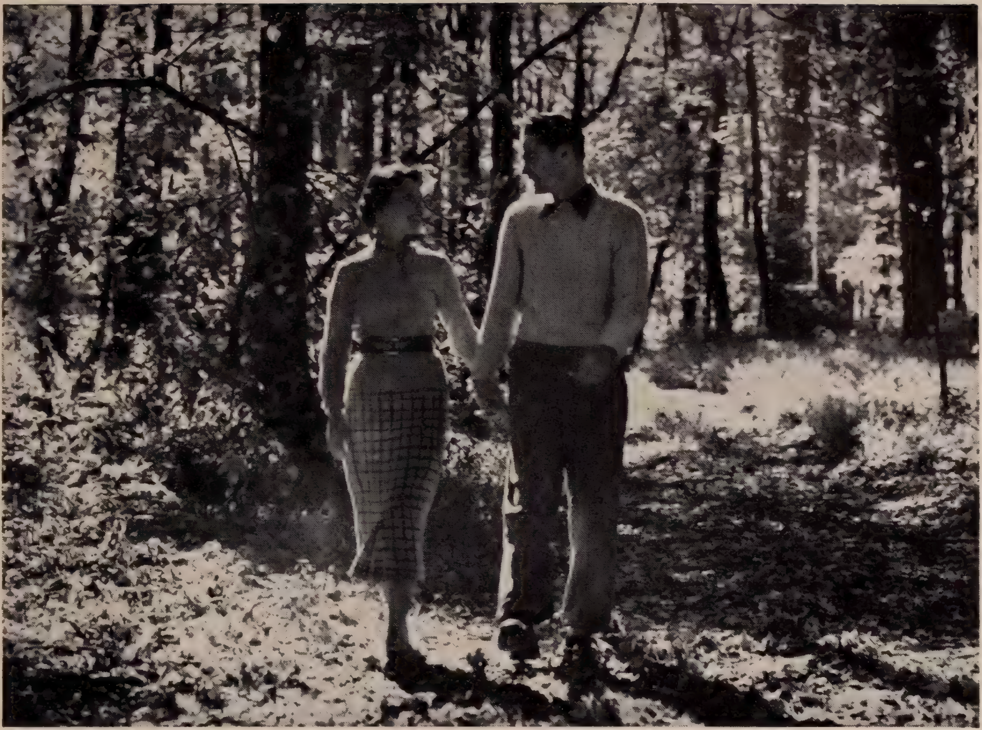

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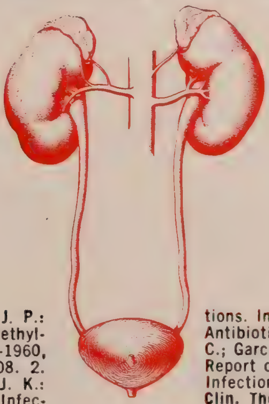

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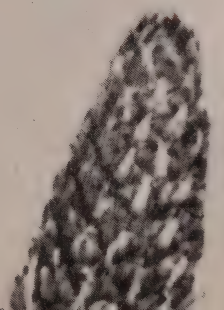

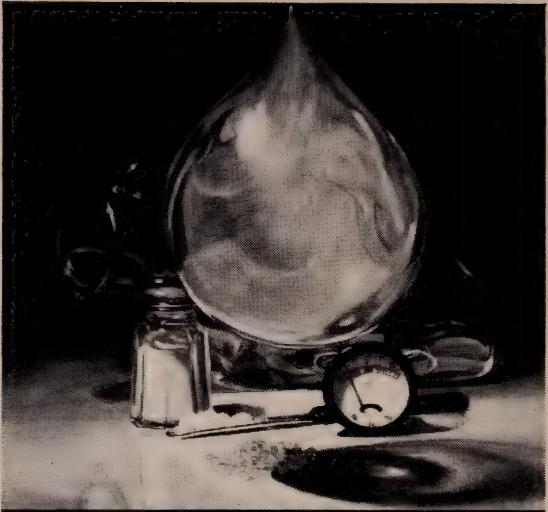

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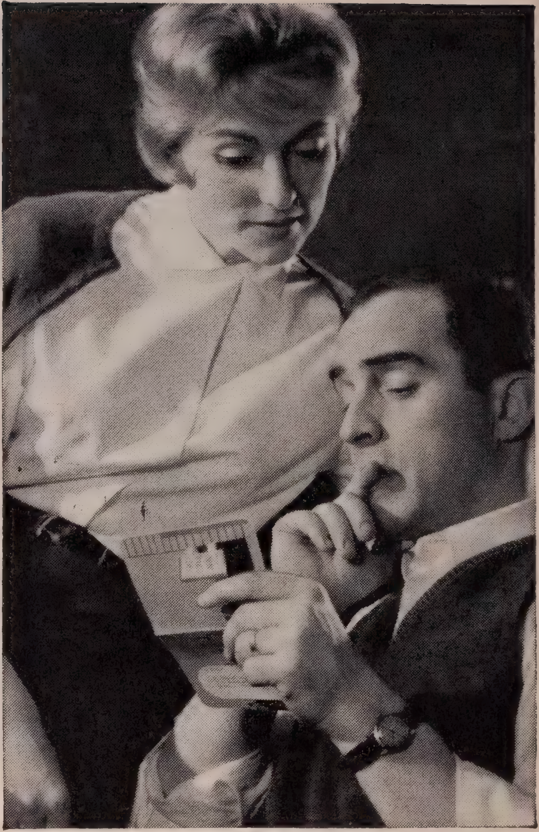

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1. Schluger, J. et al.: Am. J. Med. Sci. 233:296, 1957.
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3. Truitt, E. B. et al.: J. Pharm. Exp. Ther. 100:309, 1950.

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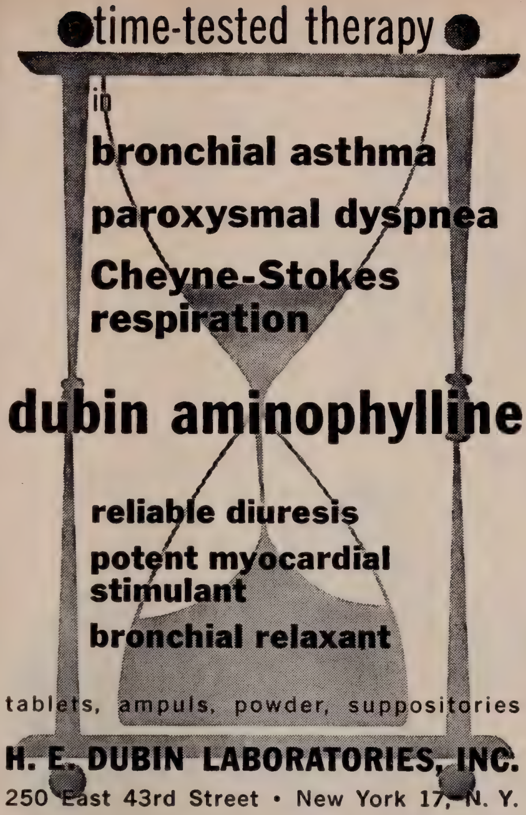

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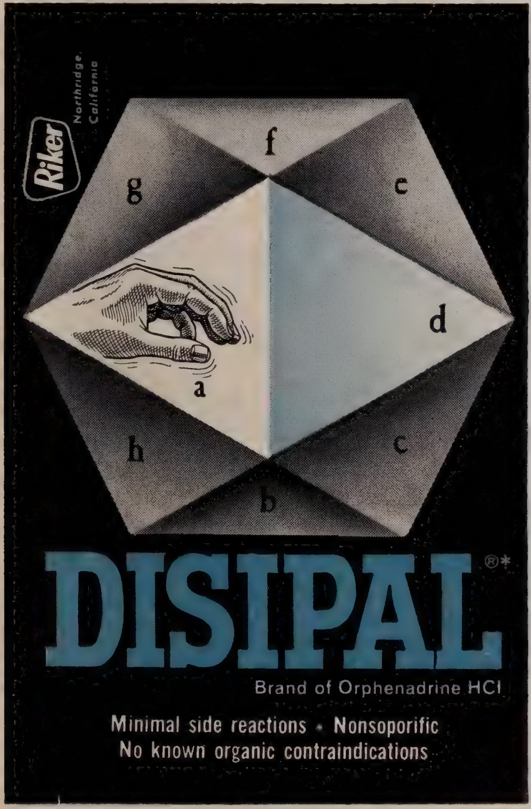

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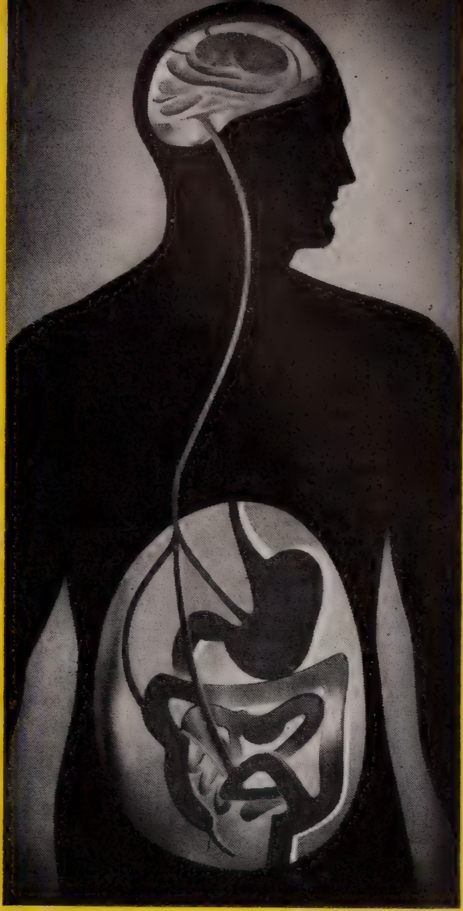

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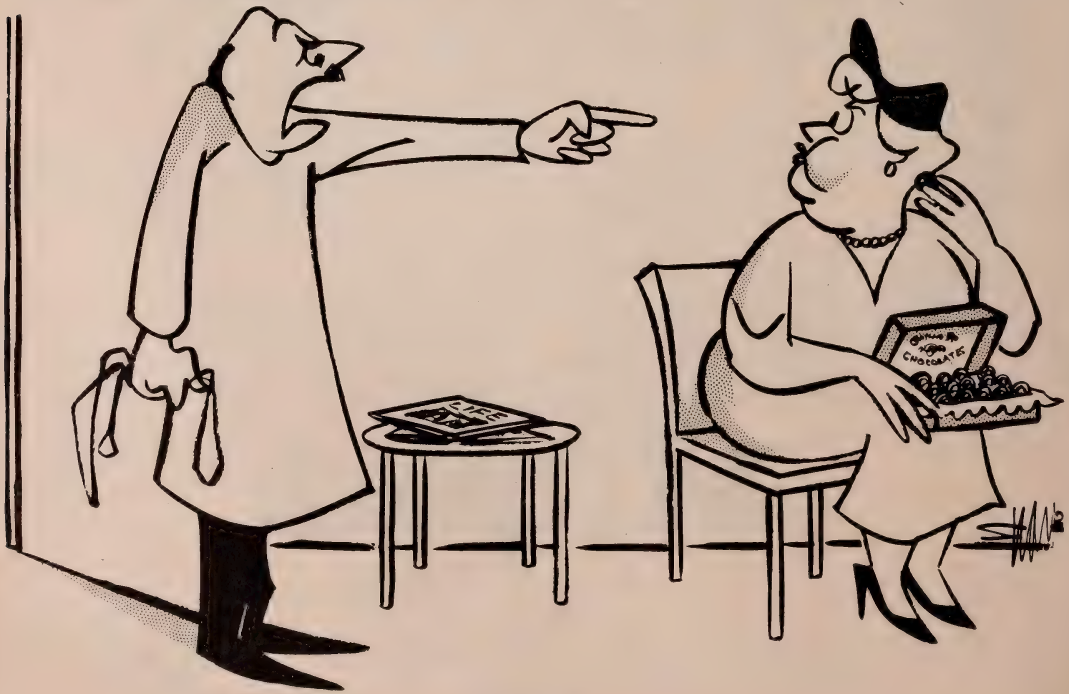

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References: 1. Lichtman, A. L.: *Kentucky Acad. Gen. Pract. J.* 4:28, Oct., 1958. 2. Lichtman, A. L.: Scientific Exhibit, Internat. Coll. Surgeons, Miami Beach, Fla., Jan. 4-7, 1959. 3. Gruenberg, Friedrich: *Current Therap. Res.* 2:1, Jan., 1960. 4. Kearney, R. D.: *Current Therap. Res.* 2:127, April, 1960.

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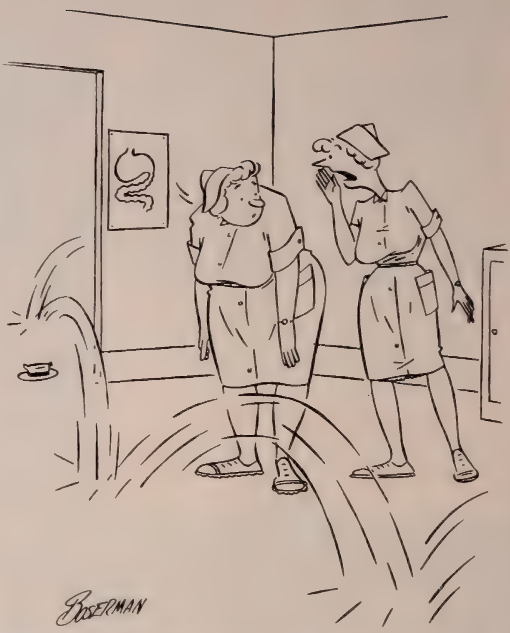

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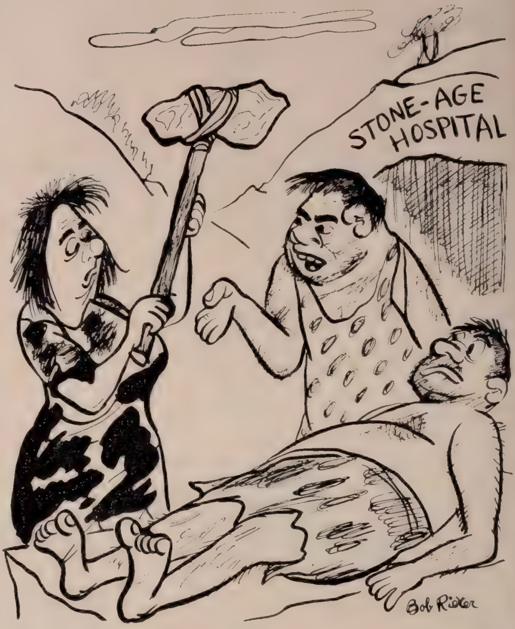

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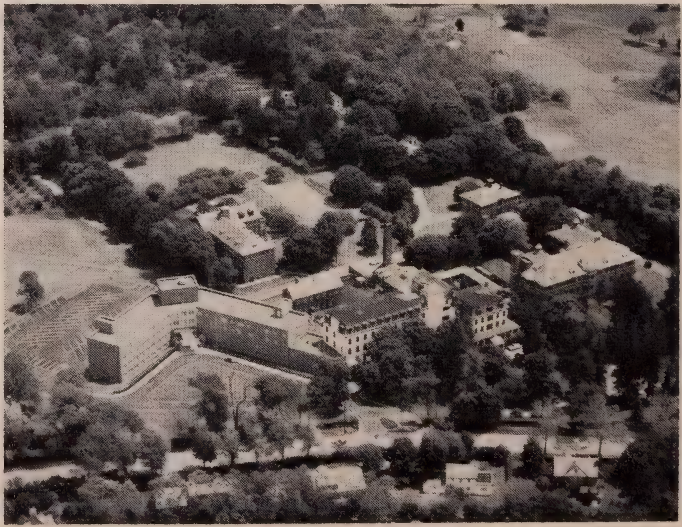

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References: 1. Spielman, A. D.: In press. 2. Schwartz, E., et al.: Am. Pract. & Digest Treat. 7:585, 1956. 3. Ogden, H. D., and Fuchs, M.: J. Louisiana M. Soc. 111:175, 1959. 4. Drill, W. A.: Pharmacology in Medicine, New York, McGraw-Hill Co., 1954, p. 41.

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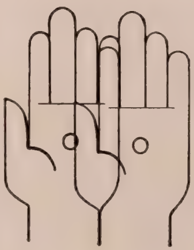

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EDITORIALS

Berlin Is Calling the Physicians of the World

The Secretary General of the World Medical Association, Louis H. Bauer, M.D., extends a cordial invitation to all the members of the Medical Society of the State of New York to attend the XIVth General Assembly of the World Medical Association to be held in West Berlin, Germany, September 15 to 22, 1960.

The World Medical Association needs the support of every American physician in its struggle to maintain high standards in medicine and to protect the freedom of medical practice, both of which are threatened all over the world. Founded in 1947, the World Medical Association is an organization of the national medical associations of the free world. It is our only spokesman before other international bodies.

It is often confused with the World Health Organization, which is an intergovernmental agency representing governments in medicine and is a branch of the United Nations. On the other hand, the World Medical Association is nongovernmental and represents the practicing profession. It endeavors to improve the standards of medical care and medical education and to protect free choice of doctors and the freedom of medical practice.

A United States Supporting Committee has been organized which provides for individual membership, and the American Medical Association and your State Society urge that every member join this committee. Active participation does not merely mean joining another organization but means that you will be aiding in the protection of what you believe most important in medicine.

Further information concerning the Berlin Assembly may be obtained from the World Medical Association, 10 Columbus Circle. New York 19, New York.

A.M.A. Health Program for the Aged

In view of the fact that both major political parties currently are including in their platforms health programs for the aged, and because nation-wide our senior citizens seem to be organizing into a political pressure group of some size and possible effectiveness, it seems wise at this time to publish the 8-point program outlined by Louis M. Orr, M.D., immediate past president of the American Medical Association. This states the position of the Association on the health care of the aged and is unaffected by any considerations of attracting votes. It is derived from protracted and careful studies of available facts.

The physicians of this country are in a position to know *by actual experience* what is needed, what is available, and what should be done to provide necessary help and medical assistance to a respected and respectable segment of our electorate. Few doctors are running for political office. Those who are not are thinking of sick people, not votes; of necessary medical surgical and ancillary patient care based on facts not political considerations. For this reason the JOURNAL is presenting Dr. Orr's outline to our membership since it represents the aggregate opinion through the A.M.A., of the doctors of the nation who daily and every hour of each day and night *actually treat the sick.*

1. *The Needy Aged.*—These aged now receive health care through Old Age Assistance programs. Here the need is for better organized medical care program, including improved preventive medical care;

2. *The Near-Needy.*—This is the group, whose size is indeterminate, who can meet ordinary costs of living but cannot pay for health care costs. The A.M.A. supports a state-administered program of Federal grants-in-aid to the states for the liberalization of existing Old Age Assistance programs so that the near-needy could be given health care without having to meet the present rigid requirements for indigency. A liberalized definition as determined locally would permit an expanded program and encompass the near-needy group;

3. *Facilities.*—Better nursing home facilities for the long-term care of the aged person, especially those over the age of seventy-five, is the most urgent health care need before the nation today. The average age of nursing home patients is eighty, and their average duration of stay is two years. It is here that major improvements can be brought about. A.M.A. supports Federal programs for the provision of grants through the Hill-Burton mechanism to provide for new nursing home additions to existing hospitals. For proprietary nursing homes the A.M.A. supported the recently enacted amendment to the Federal Housing Act providing for government guaranteed mortgage loans to proprietary nursing homes. A.M.A. is also cooperating with the American Nursing Home Association and the American Hospital Association in an effort to bring about a rapid improvement in medical care provided in nursing homes;

4. *Voluntary Health Insurance.*—Health insurance and prepayment policies tailored to meet the needs of the aged for long-term nursing home care must be developed as rapidly as possible. Health insurers and the Blue Cross and Blue Shield plans across the nation are already experimenting in this new area of coverage;

5. *Home Nursing Care.*—Care of the aged patient at home is psychologically, medically, and financially desirable. Many programs to promote home care are being developed. Homemaker's services also provide opportunities for children caring for aged mothers or fathers to continue gainful occupation. They need to be expanded;

6. *Attitude Toward Aged.*—A basic change in attitude toward the aged persons must be brought about. The person who reaches sixty-five has not suddenly become nonproductive and senescent. On the contary, most persons over sixty-five are reasonably well and able to work. Increased productivity by eliminating compulsory retirement and permitting voluntary change of work is an essential part of the answer to the present problem;

7. *Health Education.*—Many older persons are unaware of the need for continuing healthful nutrition and other practices that contribute to good health. Above all the "will to live" is essential to continuing health. Preventive medical measures instituted long before the age of sixty-five also can contribute materially to the promotion of good health after age sixty-five.

8. *The Purchasing Power of the Dollar.*—One of the principal economic problems of the aged person in the last twenty years has been the constant and continuing erosion of the purchasing power of his pension benefits. Any government program to help the aged must be anti-inflationary and maintain the purchasing power of fixed pension and annuity benefits.

World Medical Association

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Editorial Comment

Antiquity of Medical Journalism. Dr. Roma Amyot of Montreal, editor of *l'Union Médicale*, in a recent address[1] said that written accounts of medical knowledge dated back to the Egyptian papyri of 1500 B.C. and the writings of Hippocrates towards 300 B.C.

Dr. Amyot then traced the development of medical writing and medical journalism through Roman, Arab, medieval, and Renaissance periods. The invention of the printing press had given a great impetus to the development of medical science, beginning with the printing of the classical writings of Greek, Arabian, and Roman physicians. Journalism itself began with the notaries. In medieval times they were copyists and also editors of all correspondence, from which they undertook the drafting of newsletters and news bulletins. Information bureaus were formed, and the newspaper and the magazine eventually created. The first information bureau was due to Theophraste Renaudot, who founded the first French newspaper of importance in 1631.

Medical journals themselves began in the learned societies, which are still responsible for the majority of publications in most general medical journals. The first of the medical journals was again due to the French; it was "Les Nouvelles Découvertes sur toutes les parties de la médecine." It was edited by Nicolas de Blegny and appeared in 1679 and 1681. At least 10 medical journals were in existence in the 17th century and no less than 177 in the 18th century. In 1957 the World Medical Association counted over 5,000 journals.

In terms of numbers of issues regularly distributed, the medical press now ranks immediately behind the daily newspapers and the popular magazines. It was true that the general mass of medical literature contained much which was repetitious, but this mattered little in view of the occasional reports of material of great significance for the improvement of the mental and physical condition of the human race. The medical press was one of the most effective instruments of international diffusion of news and information. Physicians throughout the world were united as members of a single corporation constantly linked in thought, in ideas, and in ideals by the medical press. The most intimate thoughts of research workers and clinicians could be exchanged by this method without physical contact.

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[1] World Medical Journal, January, 1960, p. 65.

Accident Toll in 1959. A recent issue of the *Statistical Bulletin*[1] presents the figures on the occurrence of accidents in this country. It is estimated that accidents took about 91,500 lives in continental United States during 1959, a slightly higher toll than in 1958. However, because of population growth, the accident death rate decreased fractionally to an all-time low of 52 per 100,000 population in 1959. The year was the fourth in a row to show a reduction in the mortality rate from accidents.

Motor vehicle accidents continued to be the major cause of fatal injuries, accounting for two fifths of the total accident toll. Such accidents were responsible for the loss of approximately 37,500 lives in 1959, or about 500 more than in the preceding year. The record appears in a somewhat more favorable light, however, when account is taken of the increase in travel. According to data available at this time, the motor vehicle accident death rate per 100 million miles of travel in 1959 was slightly less than the all-time minimum of 5.6 established in 1958.

Public accidents other than those involving motor vehicles accounted for nearly 17,000 deaths in 1959, or somewhat above the total in the year before. Injuries sustained in and about the home resulted in 27,000 fatalities, or the same as in 1958. Accidents arising out of and in the course of employment killed approximately 13,000 persons during 1959; about 2,600 of these were fatally injured in motor vehicle accidents (which number is also included in the total for motor vehicle mishaps).

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[1] January, 1960, p. 7.

Four of the five major catastrophes in 1959 involved civil aviation. One of these disasters—the largest of the year—occurred on February 3, when a scheduled plane plunged into the East River in New York City, killing 65 persons. Another disaster took place near Baltimore on May 12, when a scheduled plane disintegrated in midair during a thunderstorm, taking 31 lives. On October 30, a scheduled plane crashed near Charlottesville, Virginia, causing 26 fatalities; and on December 1, a scheduled plane rammed a mountain near Williamsport, Pennsylvania, accounting for 25 deaths. The fifth major catastrophe was a series of earthquakes which took place on August 17 in the area of West Yellowstone, Montana, claiming about 29 victims—the first earthquake catastrophe in many years.

Motor vehicle accidents were responsible for about two fifths of the lives lost in all catastrophes involving five or more deaths. Fires and explosions—most of them in the home—accounted for almost one fourth of such deaths. Accidents in civil aviation—scheduled and unscheduled—caused somewhat less than one fifth of all fatal injuries sustained in catastrophes. The remaining fatalities were very largely due to natural catastrophes and to accidents involving military aviation, water transportation, and railroads.

Problems of Translation (Invisible Insanity). In a recent issue of the American Medical Writers Association Metropolitan New York Chapter *Newsletter*[1] appears a summary of a talk by Mr. Henry Fischbach before the International Communications Section of the Chapter which we reproduce here for the information of our readers.

> In his more harried moments, the medical translator leads a life haunted by "invisible insanity" and "male water sheep." At other times, he can chuckle with other medical writers over the occasionally odd and sometimes disastrous boner that creates "invisible insanity" from the old saw "out of sight, out of mind," and makes a "male water sheep" out of a hydraulic ram.
>
> In most of his work, however, the translator of medical editorial or advertising copy must go far beyond a check for boners and a mechanical review of vocabulary and grammar. His basic job is to work his translation to follow the thought processes familiar to the reader.
>
> Ideally, the reader should not be made to feel that the copy is a translation. He should not be confused by unusual turns of phrase, odd meanings, unfamiliar metaphors, or unknown background material. A good translation, then, is a rewriting in another language of the original ideas.
>
> Although he should resist it strongly, at times the translator must be prepared to change the original copy—select an entirely different imagery, coin different slogans, devise a different layout, adopt a different tone, and more—so that his copy fits the distinctive structure of the language and the cultural pattern of the audience.
>
> Of course the medical translator must keep his substantive changes to a minimum, and must always be ready to explain them to his client. Often the explanation is simple; sometimes, however, it is as complex as the one recently cited in the *New York Times*.
>
> A big cosmetics firm instructed its translation agency to turn an advertising folder on face cream into Arabic for use throughout the Near East. The copy was to be set in type, and a picture of the Venus de Milo was to go on the cover.
>
> The agency promptly sent back a warning that the ad was faulty. In Arabic countries, convention demands that anything as personal as face cream must not be advertised in ordinary type, but must be made to look like handwriting. Furthermore, in that part of the world, a figure like the Venus—without

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[1] March, 1960, p. 5.

hands or arms—has the bad connotation of a thief punished by mutilation.

With all the things he must keep in mind besides vocabulary and grammar—cultural mores, national prejudices, and even judicial punishments—it is no wonder that the medical translator sometimes lapses into "invisible insanity." But then, even the new electronic miracles, the translating machines, have problems—as witness the one that took "the spirit is willing, but the flesh is weak" and rendered it into "the whiskey is good, but the meat is spoiled."

In recent years the Editor has received many requests for permission to translate articles of interest appearing in the NEW YORK STATE JOURNAL OF MEDICINE for republication with proper credit in many languages. He and his editorial staff have been vaguely aware of the possible difficulties that might be encountered in the process but have not previously seen them so well illustrated as in the above summary.

Incidentally, in reading some of the domestic typescripts submitted for possible original publication in the NEW YORK STATE JOURNAL OF MEDICINE there has arisen at times the problem of "translating" some parts of them into English. We hope this observation may, in the course of time, receive the attention it deserves from our educators. Perhaps to overstate the matter a little, they might call to the attention of the rising generation, some of whom will undoubtedly enter the medical profession and become authors, the venerable admonition:

If I had of knowed
What I'd ought to have knew
I'd never have did
What I done.

Mortality Record for 1959. According to the *Statistical Bulletin*,[1] the death rate for 1959 was fractionally higher than that in the preceding year, but where allowance is made for the increase in the average age of the insured, the mortality record for all ages combined shows a 2 per cent decrease from 1958.

Heart disease is currently by far the leading cause of death among the industrial policyholders, accounting for about 40 per cent of the total mortality at all ages combined. The cardiovascular-renal diseases as a whole—including vascular lesions of the central nervous system—were responsible for more than half the mortality from all causes combined. Cancer (malignant neoplasms) accounts for about 1 death in every 5, and accidents for 1 death in every 20.

Especially notable is the record for maternal mortality. The remarkable progress made over the years in safeguarding maternity naturally is reflected in this insurance experience. In 1959, the death rate from the complications of pregnancy and childbirth remained at the record low of 0.8 per 100,000 industrial policyholders, established the year before. In the general population of the United States, maternal mortality now is only about 4 per 10,000 live births, or less than half the rate for 1950.

The average length of life (expectation of life at birth) among the Metropolitan Life Insurance Company's industrial policyholders reached a new high of 70.5 years in 1959, according to provisional mortality data. This represents an increase of 0.4 years over the figure for 1958, and exceeds the previous high, established in 1956, by 0.3 years. In 1879 to 1894, their expectation of life at birth was 34.0 years, which means that their average lifetime has more than doubled in less than three generations. In the past decade, however, the average length of life among the industrial policyholders has been extended less than three years, a smaller gain than for any other decade in the past half century.

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[1] February, 1960, p. 1.

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LAKESIDE

SCIENTIFIC ARTICLES

Heat Stroke in New York City

Experience with Twenty-Five Cases

MATTHEW FERGUSON, M.D., AND SISTER MICHAEL MARIE O'BRIEN, M.D., NEW YORK CITY

(From the Department of Medicine, St. Vincent's Hospital)

NEW York City's temperate climate does not predispose its citizens to a high incidence of heat stroke. In a twelve-year period, 1948 to 1959, the Department of Health reported 202 deaths attributed to this disease in the five boroughs of New York City.[1] At St. Vincent's Hospital, which is located in the heart of Manhattan island, there were 13 heat stroke fatalities during the same period. These deaths occurred in a total of 25 well-documented cases (Table I).

This paper will review the subject of heat stroke in a metropolitan practice and will point out problems associated with its diagnosis.

Definition and Pathophysiology

Heat stroke is defined as an illness characterized by a temperature of 106 F. or over, the presence of hot dry skin with the absence of sweating, a history of heat exposure (internal or external), and disturbances of the central nervous system.[2]

An understanding of the body's basic mechanisms for heat regulation is necessary if the clinician is to appreciate the evolution of this disease.[3,4]

TABLE I.—HEAT STROKE IN NEW YORK CITY 1948–1959*

Year	St. Vincent's Hospital Cases	St. Vincent's Hospital Deaths	New York City Deaths	Temperature[12]
1948	8	2	59	July: above normal Aug.: 4 consecutive days with record temperatures (93–100.8 F.)
1949	1	0	15	July: highest mean temperature of any month since 1871
1950	1	1	5	Normal for season
1951	0	0	0	Normal for season
1952	2	0	61	June: record temperatures for 3 days July: warmest month on record with warmest 10 consecutive days
1953	6	4	34	July 15–18: temperatures 90 to 96 F. Aug. 25–Sept. 3: 10 consecutive days with temperatures over 90 F., 5 days with temperatures over 95 F.
1954	0	0	6	Normal for season
1955	1	1	10	Aug.: prolonged hot spell for 7 days
1956	0	0	4	Normal for season
1957	3	2	3	Normal for season
1958	0	0	0	Normal for season
1959	3	3	5	Aug. 25–29: unusually hot Sept.: first 10 days warmest for season since 1931

* The incidence of heat stroke is correlated with the external environmental temperature in New York City.

Under normal conditions, the dilatation and constriction of cutaneous blood vessels control the amount of heat lost by the body. These processes, responding to autonomic nervous system impulses, maintain the constant body temperature necessary for life. Heat is conserved by the constriction of these blood vessels and is lost by dilatation. At environmental temperatures below 86 F. this heat is lost by radiation or conduction to the cooler bodies in the environment; above 86 F. vaporization of body sweat is necessary to cool the skin, although some heat is still lost by radiation. Above 95 F. vaporization is the only way by which the body can lose heat. Prevention of vaporization by improper clothing, closed living areas, lack of air currents, or defective sweat glands interferes with heat loss. The insulation provided by adipose tissue also impairs heat loss and leads to an elevation of body temperature.[5,6] This causes an excessive stimulation of the neurons in the heat-regulating center of the hypothalamus and leads eventually to their failure. Because of this breakdown, impulses are not transmitted to the cardiovascular and respiratory centers and the normal increase in sweating and respirations does not occur: The skin becomes hot and dry.[7] This failure in compensation allows the body temperature to rise. With increasing body temperature there is failure of tissue metabolism, enzyme activity, and oxygen exchange. The patient dies when the temperature reaches 110 F. or more.[8]

Analysis of 25 Cases

All the patients in this series fulfilled the aforementioned criteria for the diagnosis of heat stroke. Many cases were excluded from this series because they did not meet these diagnostic requirements, especially the temperature of 106 F. or over.

Incidence.—Over a twelve-year period there were 25 patients who were diagnosed as having heat stroke in 178,133 general hospital admissions. In four of the twelve years, no cases were diagnosed, whereas in two years, 1948 and 1953, 15 cases were found. As the accompanying table indicates (Table II) this proportion parallels the death rate from this disease in New York City. There are two reasons for this preponderance of cases in the two years mentioned: (1) Severe hot spells were present, and (2) there was a consequently high index of suspicion for this disease.

Age and Sex.—The ages ranged from four months to seventy-nine years. With the exclusion of 3 infants and the twenty-seven-year-old male, the youngest patient was forty-five years old and the median age of the group was sixty-seven years. There were 18 men and 7 women.

Accompanying Disease Conditions.—That the majority of these patients had one or more chronic diseases is noteworthy if we consider marked obesity as a disease process. Six of the patients were obese; arteriosclerosis, either generalized as manifested by senility, or cardiac as manifested by arteriosclerotic heart disease, was found in 4 patients; parkinsonism was found in 3; and diabetes, usually moderate, was found in 6. One patient had Laennec's cirrhosis and another had central nervous system syphilis. Two patients suffered heat stroke following major operations. Severe emaciation and debilitation were present in 4 patients.

Clinical Picture

Other than for the two periods of extreme, prolonged heat in 1948 and 1953, these patients presented themselves at sporadic intervals. The duration of heat exposure varied from a few hours to several days preceding collapse. Since the largest single group of patients came from sheltered environments, it becomes evident that a hot, stuffy work area or room can precipitate a heat catastrophe as easily as the broiling sun. Failure to realize this resulted in delayed diagnosis of several patients who were found comatose in their homes and with temperatures of over 106 F.

TABLE II.—ANALYSIS OF 25 CASES OF HEAT STROKE

Case	Age*	Sex	Found	Date	Temp. (F.)	Shock	Central Nervous System	Associated Diseases	Result†	Survival
1	5 mo.	F	Home	Aug., 1948	106.8	No	Stuporous	Otitis—diarrhea	L	. . .
2	79	F	Hosp.	Aug., 1948	108	Yes	Comatose	Carcinoma (postop.)	D	6 hrs.
3	?	M	Street	Aug., 1948	108	Yes	Comatose	Generalized arteriosclerosis	D	1 hr.
4	76	M	Home	Aug., 1948	106	No	Stuporous	Parkinsonism	L	. . .
5	58	M	Home	Aug., 1948	106	No	Twitching	Prickly heat	L	. . .
6	70	F	Home	Aug., 1948	106.8	No	Semicomatose	Central nervous system syphilis	L	. . .
7	61	M	Home	Aug., 1948	106.2	No	Stuporous	Diabetes	L	. . .
8	7 mo.	M	Home	Aug., 1948	107	?	Stuporous	. . .	L	. . .
9	69	M	Penn. Sta..	July, 1949	108	No	Comatose	Arteriosclerotic heart disease—diabetes	L	. . .
10	57	F	Hosp.	July, 1950	108	No	Semicomatose	Carcinoma	D	4 hrs.
11	68	M	Street	July, 1952	106.2	No	Comatose	Obesity—bronchopneumonia	L	. . .
12	4 mo.	M	Home	June, 1952	107.4	Yes	Comatose	Debilitation	L	. . .
13	50	M	Street	July, 1953	110	Yes	Comatose	. . .	D	7 hrs.
14	77	M	Street	Sept., 1953	109.2	No	Comatose	. . .	D	12 hrs.
15	65	M	Street	Sept., 1953	108	No	Comatose	Diabetes	L	. . .
16	68	M	Street	Sept., 1953	106	No	Stuporous	. . .	L	. . .
17	66	M	Street	Sept., 1953	108	No	Comatose	Cirrhosis—obesity	D	3 days
18	?	M	Street	Sept., 1953	109	No	Comatose	. . .	D	1 hr.
19	27	M	Street	Aug., 1955	110^{+}	Yes	Comatose	Obesity	D	5 hrs.
20	72	M	Street	June, 1957	107	No	Stuporous	Arteriosclerotic heart disease—emphysema	L	. . .
21	57	M	Hosp.	May, 1957	107	No	Comatose	Gastric ulcer (postop.)	D	7 hrs.
22	68	M	Home	July, 1957	107.5	No	Comatose	Parkinsonism	D	8 hrs.
23	45	F	Home	Aug., 1959	106	No	Stuporous	Parkinsonism—obesity	D	25 days
24	74	F	Home	July, 1959	107.6	Yes	Comatose	Obesity—arteriosclerosis	D	9 days
25	67	F	Street	Aug., 1959	108	No	Comatose	Obesity—diabetes	D	16 hrs.

* Years, unless otherwise indicated.
† L = survival; D = death.

Prodromata.—Certain prodromata were noted in 8 patients who were able to give an adequate history. Fever, thirst, absence of sweating, vertigo, syncope, and such gastrointestinal symptoms as nausea and vomiting were observed. These symptoms were followed by sudden collapse, convulsions, or the gradual development of coma.

Central Nervous System Disturbances.—At the time they were admitted, 15 patients were in deep coma and 2 were semicomatose. Convulsions were present in 6, 2 exhibited unilateral signs of brain damage, and another complained of a sudden decrease in vision. The remainder showed lesser disturbances of the nervous system.

Cardiovascular Findings.—Four patients were admitted in profound shock, and another 4 were markedly hypertensive. Tachycardia was a frequent finding, and a transient auricular fibrillation was noted in 1 patient.

Laboratory Data.—The laboratory data in this series are considered insufficient for effective analysis. However, leukocytosis and an elevated blood urea nitrogen were noted commonly. Although 2 patients showed signs of a bleeding tendency, thrombocytopenia was not documented. The red cell count and electrolyte values varied considerably and seemed to reflect the patient's state of hydration.

Course.—In those patients who received early, aggressive heat stroke therapy, there was a consistently rapid drop in body temperature, usually within an hour. However, the majority of these patients had a secondary rise as high as 104 F. which responded to treatment. In several patients an elevated temperature persisted for as long as seven days. Those who survived the first forty-eight hours usually recovered completely; however, 1 patient with parkinsonism had a protracted febrile course ending in death twenty-five days after admission.

The drop in temperature was, unfortunately, not always accompanied by an amelioration of the illness. The efficacy of the treatment was related directly to the stage in which it was started. Stuporous or semicomatose patients showed the best response, while those who were deeply comatose failed to respond, as is demonstrated by the fact that 12 patients entering in this state died. This is not true in all reports of survival in comatose patients. However, in our group most of the patients had concomitant diseases and were discovered in a comatose condition of unknown duration.

Treatment.—The most effective treatment was to place the patient in a tub and pack him in ice and wet towels. Rectal temperatures were taken at five-minute intervals and when the temperature reached 102 F. the patient was removed to his bed and observed for the secondary rise or the development of collapse. Several variations of this therapy were used as well as fans, alcohol sponges, and ice water enemas. Vasopressors were used if peripheral vascular collapse occurred. Steroids were used in 1 patient with no effect.[9,10] Antibiotics were used prophylactically in the early years of this study with no demonstrable value.

The greatest inadequacy in therapy was an occasional delay in initiating it. It was noted that the sporadic cases occurring in several of the milder summers were diagnosed as infection or cerebral vascular disease and the patients did not receive vigorous antipyretic therapy until temperatures of 107 F. or over were reached. Because of the potential hazard of such delays, it is suggested that during summer months, in any patient with a temperature of 106 F. or above, with hot dry skin, the diagnosis of heat stroke be considered and immediate treatment instituted.

Mortality.—There were 13 deaths in these 25 patients, a mortality rate of 52 per cent. In previous series, the death rates varied from 20 to 80 per cent. It should be noted that most of the deaths occurred within hours after admission; only 3 of those who died survived more than twenty-four hours after admission (Table II).

The following cases present several clinical variations of heat stroke that were found in private medical practice. They are examples of the occurrence of heat stroke in Parkinson's disease, obesity, chronic illness, and debilitation. The problems of differential diagnosis, especially in regard to cerebrovascular accidents and infections are evident.

Case Reports

Case 1.—A twenty-seven-year-old white male truck driver was found unconscious on the street at 2:00 p.m. on a hot July afternoon. Earlier he had been seen sleeping in the cab of his trailer truck which was parked on a sunny waterfront street. Apparently he left his truck, walked a few blocks, and collapsed. The patient's family stated that he had never been seriously ill and had never been in a hospital. There was no history of acute or chronic alcoholism.

While he was in the ambulance, the patient had a generalized convulsion. His initial temperature on arrival in the emergency room was over 110 F.

A physical examination revealed a short (5 feet, 2 inches), stocky (199 pounds), white male in deep coma with a hot, dry skin. His blood pressure was 72/48, his pulse 160, and his respirations were rapid and shallow. The pupils were dilated and responded sluggishly to light. Fresh blood exuded from the mouth and nares, although no specific bleeding point could be found. Deep tendon reflexes were absent. The rest of the physical examination showed negative findings.

Course.—A diagnosis of heat stroke was made immediately and the patient was immersed in an ice bath and given ACTH intravenously. His temperature dropped to 100.2 F. in one-half hour. However, convulsions recurred and his temperature rose again to 102 F. This was reduced by ice baths. The patient never regained consciousness and was pronounced dead six hours after admission. The medical examiner's necropsy revealed only visceral congestion and moderate cerebral edema.

Comment.—This was the only young adult in our series and he presents the classical picture of fatal heat stroke. The bleeding mucous membranes suggest that thrombocytopenia was present although no platelet count was recorded. The only other significant finding was his marked obesity. It has been noted that obese individuals are unable to eliminate heat from the center of the body as rapidly as lean persons, since the heavy layer of adipose tissue acts as an insulator and prevents heat loss.[3,6] In one series it was recorded that the mortality rate from heat stroke in obese patients was three and one-half times that in the patient of average weight.[3]

Case 2.—A sixty-four-year-old obese white female bookkeeper was found on the street on a hot day in August, 1959, at 9:40 a.m. She was babbling incoherently. She had spent the night in her New York City apartment and was on her way to work when she collapsed. The preceding three days and nights had been unusually hot. Additional history from her relatives indicated that she was a mild diabetic patient under treatment for four years and had always been markedly overweight. She had a history of hypertension but no other diseases were known.

A physical examination revealed a stuporous, markedly obese white female, (210 pounds, 64 inches). Her temperature was 106 F., pulse 120, blood pressure 180/70, and respirations were 40. Her skin was hot and dry. No neurologic findings were present except for a twitching of the right lower extremity. Her neck was supple.

Course.—The patient vomited large quantities of coffee-ground material while she was in the emergency room. She was placed in ice packs and given an ice water enema. However, her temperature continued to rise, reaching 108 F. before dropping to 105 F. Respiratory distress occurred and a tracheotomy was performed. Lumbar puncture revealed an opening pressure of 210 mm. water; the fluid was pink and many red cells were present with no white cells. She had marked leukocytosis, 33,300 white cells, and 93 per cent neutrophils. Despite continuous ice packs, the patient continued to run a temperature of 104 F. and had two convulsive seizures. Her blood pressure dropped to shock levels about five hours after admission and her temperature then dropped to 99 F. Vasopressors were given intravenously with no response. She expired sixteen hours after admission. Necropsy showed a large, dilated heart. Meticulous examination of the brain failed to show a cerebral hemorrhage.

Comment.—Initially a diagnosis of cerebral vascular accident was made because of the elevated spinal fluid pressure and the presence of red cells in the fluid. The high temperature was believed to be due to hemorrhage into the brain with involvement of the hypothalamus. This is a common error in diagnosis and one which should not be made when the patient has an absence of sweating and the environmental temperature is high. Marked obesity and the presence of other disease processes, such as diabetes and hypertension, are serious prognostic signs in heat stroke victims.

Case 3.—A four-month-old white male was admitted to the hospital at 1:30 P.M. on June 27, 1952, with a temperature of 107.4 F. The child had been discharged five days earlier after treatment for pneumonia and had run a low-grade fever during those days. However, on the day of admission, his temperature rose precipitously to 106 F. and was 107.4 F. when he was seen in the emergency room.

A physical examination revealed a comatose infant in shock. The pulse was 170, the skin was cyanotic and dry. The lungs were clear, and there was no sign of infection.

Course.—Ice packs brought the temperature down to 98 F. in one and one-half hours. The child was then placed in a Thermalox hood. His temperature continued to drop reaching 95 F., but then rose gradually to 105 F. over the next sixteen hours. It remained near this level for forty-eight hours then dropped to about 101 F. where it stayed for the next eight days. Antibiotics were started on the second hospital day although no focus of infection could be found then or later despite an extensive investigation.

Comment.—This infant, whose birth weight was 5 pounds, 1 ounce, had been debilitated for the first four months of his life. He had just recovered from bronchopneumonia when he was subjected to high environmental temperatures. It is postulated that his unstable thermoregulator was unable to cope with this additional stress and he developed heat stroke. An occult infection could have been present to initiate the temperature rise, but the presenting symptoms were primarily those of heat stroke. That he survived was most unusual since the presence of shock and severe debilitation indicate a very poor prognosis.

Case 4.—A sixty-eight-year-old white male was admitted in July, 1957. He had had Parkinson's disease for seventeen years and was receiving scopolamine. The week preceding admission was hot. The patient, who was a semi-invalid, was confined to his apartment. About three days before admission, he noted the onset of fever, from 102 to 105 F. On the day of admission, his temperature soared to 108 F. and he became comatose. There was a questionable history of convulsions before the onset of coma.

A physical examination revealed a well-nourished, well-developed white male in a comatose state. He exhibited generalized rigidity. His skin was cyanotic, hot, and dry. The admission temperature was 107.5 F., pulse 132, blood pressure 130/80, and his respirations were rapid and stertorous. Neurologic examination showed dilated pupils, a coarse tremor of the extremities, and muscular rigidity. No lateralizing signs were present.

Course.—Medications were discontinued and ice packs were applied. The temperature fell to 101 F. within one hour. His temperature then varied from 100 to 102 F. throughout the day. The following day he was alert and oriented. Minimal sweating was observed. Despite the lack of apparent infection, his febrile course continued. Lumbar puncture and detailed investigations showed negative findings. A moderate diabetes was present. Antibiotics were given with no effect on the fever. On the fifth hospital day the patient's temperature rose to 105.5 F. and was again controlled by ice packs. However, his condition deteriorated, and on the eighth day he again had a temperature of 105.8 F. He went into shock and despite all therapy expired. No autopsy was obtained.

Comment.—It has long been observed that patients with paralysis agitans tolerate extremes of temperature poorly. The susceptibility of parkinsonian patients to heat stroke has been reported.[11] There are two factors responsible for this. One is the pathologic changes in the hypothalamus and reticular substance of the brain stem which lead to an interruption of normal autonomic functions of temperature regulation. The other is the sweat-inhibiting effects of the belladonna-like alkaloids used in therapy. Three patients in this group had Parkinson's disease and 2 were taking medications prior to the development of heat stroke. The unstable thermoregulating mechanism was strikingly illustrated in 1 patient with advanced postencephalitic parkinsonism who had spiking temperatures of from 102 to 106 F. for twenty-five days without apparent clinical or autopsy cause. An awareness of the danger of heat stroke in this disease has prompted some institutions to place patients with paralysis agitans in air-conditioned wards during the summer months.[11]

Case 5.—On July 3, 1958, a sixty-five-year-old white male painter was admitted to the hospital following a syncopal attack. He had been discharged from the hospital two days earlier after a brief stay for the treatment of a fractured right humerus. Early on the day of admission he noted marked fatigue and a feeling of warmth. Soon after, while shaving, he fainted. He recovered and went to the emergency room where he volunteered that he thought the fainting spell was due to the heat. The physical examination was unremarkable except for a temperature of 100.4 F. and a pulse of 104. He was sent home but was brought back by ambulance eight hours later following another syncopal attack.

A physical examination revealed a well-nourished, well-developed white male who appeared to be apprehensive and dehydrated. His blood pressure was 140/90 and pulse 140. The temperature at this time was 102.2 F. and his respirations were rapid. The rest of the physical examination was unremarkable except for decreased breath sounds, scattered rales at both lung bases, and a hanging cast on the right arm.

Course.—The initial impression was "probable bronchopneumonia and moderate dehydration." An x-ray film of the chest, however, did not reveal a pneumonic process. The laboratory data showed a hemoglobin of 13.5 Gm., a white count of 14,000 with 94 per cent neutrophils, and a blood urea nitrogen of 48. The electrolytes and spinal fluid were within normal limits and a urinalysis showed a specific gravity of 1.012, with innumerable red cells and many white cells. Tetracycline and fluids were given. Six hours later the patient was stuporous, his temperature was 106.4 F., and his blood pressure was 100/50. Aspirin and alcohol sponges brought the temperature down to 103 F. but it rose to 104 and 105 F. when the sponging stopped. This irregular temperature curve persisted. The patient then became hypotensive and was given vasopressors with some response. On the basis of the urinalysis (the urinalysis on the previous admission had shown negative findings) the diagnosis of pyelonephritis was made. However, at least two observers were struck by the height of the temperature and another by the presence of the dry, hot skin. Heat prostration was mentioned in the notes of these observers. Despite this, attention was directed primarily to the infectious process. Thirty-two hours after admission the blood pressure dropped rapidly; the patient became cyanotic and died. A postmortem examination revealed bilateral pyelonephritis and hemorrhagic cystitis.

Comment.—This case was not signed out as heat stroke and is not included in this series. However, the authors feel that this patient was, in fact, suffering from heat stroke which was triggered by the pyelonephritis. It is quite possible that if therapy had been directed immediately at the hyperpyrexia, the final outcome might have been different.

Summary

In this paper, a large New York City hospital's experience with heat stroke has been presented and the problems in diagnosis and treatment discussed. Over a twelve-year period, 25 cases of heat stroke were admitted. The mortality rate was 52 per cent. This high mortality rate is attributed to the preponderance of elderly patients (median age sixty-seven years) and the presence of obesity, generalized vascular disease, and parkinsonism. Delay in instituting vigorous therapy also increased the death rate. Illustrative cases have been presented. Problems in diagnosis, particularly in differentiating between heat stroke, cerebral vascular accidents, and infections have been discussed.

The most effective therapy for the treatment of heat stroke—immersion of the patient in an ice bath to bring the temperature down to 102 F. rapidly, control of shock, and treatment of superimposed infection—has been described. This procedure has been found best in our series as well as in those reported by others.

Awareness that the problem does exist in city practice, knowledge of the criteria for the diagnosis of heat stroke, and prompt institution of adequate, vigorous therapy would help materially in reducing the number of fatalities from this disease.

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Bee Stings More Deadly Than Snake Bites

More Americans will die this year from insect stings than from snake bites. Each year, more Americans die from the stings of the little insects buzzing in our gardens and parks than from bites of all venomous reptiles combined.

Most medical authorities are convinced that severe reactions to insect stings are the result of an allergy. No one knows exactly how many persons are allergic to the stings of insects, but in the opinion of one allergist "severe reactions to insect stings occur more commonly than is generally supposed. In fact, it is possible that unrecognized cases account for some of the sudden deaths attributed to heart failure and heat prostration in the insect season," Harry L. Mueller, M.D., of Boston said.

The insects that cause most of the reactions are the honeybee and bumblebee and three kinds of wasps—yellow jacket, hornet, and Polistes—although about 25 other insects have been reported to produce allergic symptoms in man.

Because their nests are hidden and they are easily irritated, yellow jackets account for most of the insect stings. Honeybees and bumblebees are much less likely to sting.

A knowledge of the nature of bees and wasps can be of help in avoiding stings. It is helpful to remember the following points:

—If you see more than two yellow jackets or bumblebees disappear under leaves in a woods, it is likely that their nest is located there. Bees and wasps usually sting only when their nests are threatened or they are actually touched.

—If you are buzzed by a bee or wasp, never flail at it with your arms. Walk slowly away. Stinging insects are more apt to attack a fast-moving object because they are sensitive to air movements and sudden motion.

—Bees seem to be angered by dark shades, whereas white or khaki clothing does not bother them.

—To keep yellow jackets and bees from gathering at picnic tables, spray the area with a repellent chemical.

—Bees and wasps are attracted by hair oils and perfumes which contain floral odors.

—Finally, be sure that there are no nests of yellow jackets, bees, or other wasps in the immediate area of your house or yard. Destroying a nest is a tricky business and a trained exterminator should be hired for the job.

The author of the article is Peter Farb.

The Effect of Gamma Globulin in Asthmatic Children

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In 1955, Bowen[1] reported that gamma globulin was beneficial in preventing upper respiratory infections in the asthmatic child. In 1956, Bernton[2] presented evidence to the American Academy of Allergy substantiating Bowen's good results even with doses apparently too small, total doses of 0.1 cc. to 0.5 cc. given every two to four weeks, to alter significantly the blood gamma globulin level. Recently Jackson, Dowling, and Anderson[3] confirmed these results.

Four thousand children under the age of nine are under the constant care of the Montefiore Hospital Medical Group pediatricians. Since many of these children have been followed from birth, it was easy to select the group who would be ideally suited for a clinical study of the effectiveness of gamma globulin in the treatment of the asthmatic child.

The gamma globulin, furnished in 10 cc. vials by the American Red Cross, was the same kind that had been used for poliomyelitis contacts. This solution contains 165 mg. in 10 cc. (± 15 mg. per cc.) of the globulin fraction of pooled normal human plasma. Janeway and Gitlin[4] reported that the half life of gamma globulin in agammaglobulinemic children varies between thirty and sixty days. They used a dose of 0.1 Gm. to 0.2 Gm. per Kg. of body weight which was sufficient to obtain a normal blood level of gamma globulin in agammaglobulinemic children.

We administered this 16 per cent solution at dosages of 0.15 cc. per pound of body weight at three-week intervals, a dose 25 per cent lower than the minimum dose advocated by Janeway and Gitlin.[4] In some patients this dosage was increased further to 0.2 per pound of body weight. The interval of three weeks had the theoretic advantage of maintaining a more even blood level than might be obtained in monthly injections.

TABLE I.—AGE LEVELS OF 29 CHILDREN CHOSEN FOR THE STUDY

Age Level	Number of Children	Per Cent of Total
1 year to three years, eleven months	5	17.3
Four years to six years, eleven months	15	51.7
Seven years to ten years, eleven months	9	31.0
TOTALS	29	100.0

Criteria for Study and Material

The patients chosen for this study had a prior history of severe recurrent asthma for at least one year. In all cases the asthma was reported to have followed febrile upper respiratory infections.

As we were interested in evaluating the effects of gamma globulin in "infectious" asthma, we did not include those patients whose asthma was due solely to inhalants or foods. However, those children who had asthmatic symptoms due to inhalants and foods or both, as well as to infection, were included (Table I).

Method and Duration of Study

Prior to the first gamma globulin injection the following studies were performed:

1. All patients were subjected to intracutaneous tests either directly or by the

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TABLE II.—DURATION OF GAMMA GLOBULIN TREATMENT AND RESULTS

Duration of Treatment (In Months)	Number of Fall and Winter Seasons of Treatment	Total Number of Children	Results	
			Successful	Poor
0 to 6	0	1	0	1
6 to 18	1	5	3	2
18 to 24	2	10	7	3
24 to 30	3	13	13	0
TOTALS	6	29	23	6

TABLE III.—RESULTS OF TREATMENT IN 29 PATIENTS

Number of Patients	Results	Per Cent of Patients
23	Successful Excellent (14 or 48.3 per cent) Good (9 or 31.0 per cent)	79.3
6	Poor	20.7
TOTALS 29		100.0

passive transfer (Prausnitz-Küstner test) method to all common household inhalants, pollens, and basic foods.

2. A complete blood count was performed, including a white blood count, differential, hemoglobin, erythrocyte count, and sedimentation rate.

3. Nasopharyngeal cultures were taken to determine bacterial flora.

4. Every patient was seen by the otolaryngologist.

5. Gamma globulin blood levels were determined by paper electrophoresis.

6. Every child had a chest x-ray film taken.

Known food and inhalant allergens to which the child was clinically sensitive were eliminated where possible. Specific hyposensitization and prophylactic antibiotics were discontinued. Symptomatic treatment was given only for the relief of an acute asthmatic attack.

Each patient was given 0.15 cc. of gamma globulin per pound of body weight (0.05 Gm. per Kg.). The injection was given intramuscularly deep in the gluteus maximus every three weeks, at which time an interval history and physical examination was done by the pediatrician. Tests for the determination of the gamma globulin blood level and the sedimentation rate and a complete blood count were repeated every four to six months. On some occasions a gamma globulin blood level was determined during the acute asthmatic episode but failed to show a significant deviation from normal. The gamma globulin blood levels ranged from 0.8 Gm. per cent to 1.2 Gm. per cent. A nasopharyngeal culture revealed only the usual flora. The laboratory results varied within normal limits during the treatment. Physical examination and chest x-ray film showed no emphysema or other abnormalities. The otolaryngologist found no evidence of sinusitis or indications for tonsillectomies and adenoidectomies. The material analyzed in Table II covers the period from November 1, 1956, to May 1, 1959.

For the first nine months of this study all patients were kept on constant dosage of 0.15 cc. per pound of body weight every three weeks and then, if asthma had not been controlled, the dosage was increased to 0.2 cc. per pound of body weight (0.075 Gm. per Kg.).

Results

The results are divided into 3 categories: excellent—patients who have had no asthma or wheezing at any time; good—no episodes of asthma or only occasional wheezing of short duration not requiring medication; and poor—no noticeable change. The excellent and good groups were considered to have had a successful result (Table III).

Of the 6 patients who failed to respond, 3 dropped out of the study before the effect of an increased dose could be tried.

Of the 14 patients who had excellent results, 11 achieved this on 0.15 cc. per pound as follows: (1) one year, through one fall and winter season—1 case, (2) two years, through two fall and winter seasons—3 cases,

TABLE IV.—Age at the Beginning of the Treatment and Results

Age	Results		Total	Per Cent Successful
	Successful	Poor		
One year to three years, eleven months	5	. . .	5	100
Four years to six years, eleven months	12	3	15	80.0
Seven years to ten years, eleven months	6	3	9	66.7
Totals	23	6	29	79.3

and (3) three years, through three fall and winter seasons—7 cases.

The remaining 3 patients' doses were increased to 0.2 cc. per pound, raising them from the good to the excellent category. Two of these patients have now been asthma-free for three winters; 1 has been asthma-free for one winter.

Of the 9 children in the good-result category, 3 achieved this result only after increase of the dose, 4 still have mild transient wheezing despite the increased dose, while the remaining 2 have not as yet had the increased dosage.

After this experience, a patient was given a trial on the increased dose immediately after recurrence of asthma. In view of the cost of gamma globulin, the smaller dose was used initially, as it was sufficient in 11 of the successful 23 cases.

Influence of Age and Duration of Asthma

At the onset of therapy, 23 patients who were successfully treated had a mean age of five and one-quarter years, while those with whom we failed had a mean age of seven and one-half years. This implies that the earlier the treatment is instituted in the duration of the asthma, the better the result (Table IV).

TABLE V.—Age at the Onset of Asthma and Results

Age at Onset	Results		Total	Per Cent Successful
	Successful	Poor		
Birth to two years, eleven months	13	4	17	76.5
Three years to five years, eleven months	9	1	10	90.0
Six to nine years	1	1	2	50.0
Totals	23	6	29	79.3

TABLE VI.—Duration of Asthma Before Treatment and Results

Age	Number of Cases	Results			
		Successful			
		Excellent	Good	Poor	Total
One year to one year, eleven months	10	6	4	0	10
Two to nine years	19	8	5	6	13
Totals	29	14	9	6	23

Table IV indicates that the best results were obtained in children up to the age of seven. This coincides with the known high incidence of upper respiratory infections in this age group. Referring to Table V, it is apparent that those who acquired asthma in the first three years of life responded less successfully. While the group is too small to show significant difference statistically, a definite trend is present. It is also possible that the age at the onset of asthma is less important than the duration of asthma before treatment (Table VI).

One third of our patients were started on gamma globulin treatment one to two years after the onset of asthma. All responded favorably, a statistically significant result ($X^2 = 4.081$, df = 1, $P < .05$). However, response to gamma globulin therapy is not entirely predicated on the length of the asthmatic history. Of the 6 patients who had symptoms for two to three years prior to therapy, there were 3 failures, while of the 5 children with three to four years duration of symptoms, there were none.

TABLE VII.—Skin Tests and Results

	Results			
Skin Test	Successful	Poor	Total	Per Cent Successful
Negative	8	0	8	100.0
Single positive	6	1	7	85.7
(Dust only)	(2)	(0)	(2)	
(Feathers only)	(3)	(1)	(4)	
(Ragweed only)	(1)	(0)	(1)	
Multiple positive	9	5	14	64.3
Totals	23	6	29	79.3

Results of Skin Tests as a Factor

The presence or absence of positive skin tests appeared to have some value in determining the possible effectiveness of gamma globulin prophylaxis. All of the children whose skin tests showed negative results to known inhalants responded favorably to gamma globulin. Only 1 of the 7 patients whose test indicated positive results failed to respond. This indicated that gamma globulin is effective only in preventing asthma secondary to upper respiratory infections. Table VII shows that of the 14 children with multiple positive skin tests, 9 responded well to gamma globulin. Skin test results do not always coincide clinically with the known allergic etiologic agent. Therefore, a child with positive skin tests and history of infectious asthma should be given a trial with gamma globulin. Among our patients in the poor-response category, there were 3 children whose infectious winter asthma was controlled but who continued to have seasonal afebrile attacks. In these patients, after one year gamma globulin treatment was combined with the usual hyposensitization treatment.

We endeavored to determine whether the effectiveness of gamma globulin in asthma was nonspecific or if it acted by reducing the number and severity of upper respiratory infections. The number of upper respiratory infections in our patients during the year preceding gamma globulin injections was compared with the number of infections during the year following the first administration of an effective dose. Only 18 of the 29 cases could be evaluated because of a too short period of observation either before or after treatment. Before the onset of gamma globulin treatment, these 18 children were seen regularly in Montefiore Medical Group for symptomatic treatment of asthma and upper respiratory infections. Since minor symptoms were treated either following consultation by telephone or by the parents themselves, only the more serious incidents were recorded. On the other hand, once this study began the patients were seen regularly every three weeks, and the interval history included even minor ailments. In order to make a comparison of similar material, the minor infections reported by the parents are not included in Table VII. Only infections and attacks of wheezing which were diagnosed by the pediatrician at the regular visits or which necessitated interval house calls or office visits are included. The infections seen after the commencement of gamma globulin injections were much milder, almost invariably afebrile, and needed no antibiotics (Table VIII). Most of the asthmatic attacks were combined with upper respiratory infections except the single attacks in the unsuccessfully treated group. No differentiation is made between asthma without apparent infection and those attacks following upper respiratory infections. All asthma attacks are, therefore, recorded as upper respiratory infections as well.

The patients who responded successfully had much less frequent and much milder upper respiratory infections than before gamma globulin administration. The number of upper respiratory infections without asthma was not reduced drastically. We have several records of an entire family, except the gamma globulin recipient, being severely ill with the grippe. The school attendance record of the successfully treated group was excellent. The striking difference in morbidity of the children being studied and the general child population under the Group pediatrician's care was the main reason that all of the study partici-

TABLE VIII.—UPPER RESPIRATORY INFECTIONS BEFORE AND AFTER ONSET OF GAMMA GLOBULIN TREATMENT*

Three Groups Treated	Infections One Year Before Treatment	Infections One Year After Onset of Treatment	Change (Per Cent)
Ten children with excellent results			
Number of upper respiratory infections seen in the office	7.6	2.1	−72.5
Number of upper respiratory infections seen at home	2.8	0.1	−96.5
TOTALS	10.4	2.2	−79
Number of upper respiratory infections followed by asthma	6.9	0.0	−100
Number of upper respiratory infections without asthma	3.5	2.2	−37.2
TOTALS	10.4	2.2	−79
Five children with good results			
Number of upper respiratory infections seen in the office	4.2	2.2	−47.7
Number of upper respiratory infections seen at home	3.0	0.4	−86.7
TOTALS	7.2	2.6	−63.9
Number of upper respiratory infections followed by asthma	5.4	1.0†	−81.5
Number of upper respiratory infections without asthma	1.8	1.6	−11.2
TOTALS	7.2	2.6	−63.9
Three children with poor results			
Number of upper respiratory infections seen in the office	2.7	4.3	+62.7
Number of upper respiratory infections seen at home	3.3	1.3	−60.7
TOTALS	6.0	5.6	−5.7
Number of upper respiratory infections followed by asthma	5.0	3.3	−34
Number of upper respiratory infections without asthma	1.0	2.3	+133
TOTALS	6.0	5.6	−5.7

* All figures are per child.

† Mild afebrile wheeze of only few hours duration, no attacks of asthma.

pants kept their appointments without fail for as long as three years. The gamma globulin recipients are our most happy and thankful patients.

Comment

Abernathy, Strem, and Good[5] reported poor results in a double-blind study involving 20 children. Eleven of these children were given gamma globulin. The 9 controls were given saline. The doses of gamma globulin were large: 0.6 cc. per pound of body weight given monthly for a period of six months.

The discrepancy between our results and those of Abernathy, Strem, and Good[5] may be explained as follows.

The average age of our patients was much lower than in the study of Abernathy *et al.*[5]: 5.7 years as compared to 8.3 years. As we have noted, the children under seven years of age responded much better to treatment than the older ones (Table IV). The duration of asthma before treatment (Table VI) was much shorter in our study, an average of 3.25 years as compared to Abernathy, Strem, Good's[5] 5.7 years. The most successfully responding patients had had their asthma for less than two years before treatment. All of Abernathy *et al.*'s[5] cases had positive skin tests to common inhalants. More than 50 per cent had more than one positive test. In our material 8 out of the 29 children showed negative skin tests, and only 50 per cent had multiple positive tests.

Prior to this study, our patients whose asthma recurred despite prophylactic antibiotics were probably having asthma secondary to infections due to either virus or antibiotic-resistant bacteria. The superiority of gamma globulin as a prophylactic agent as compared to antibiotics may be due to the ability of the former to protect against viral as well as bacterial infections.[3]

The gamma globulin used in our study was pooled by the American Red Cross from blood donated by many adults. We can presume that this protein substance contains antibodies to many viral and bacterial invaders. The prevention of asthma by the use of gamma globulin after upper respiratory infections is probably accomplished primarily by supplying the necessary antibodies to the patients who lack them. It is a known fact that the younger the child the more frequent are his upper respiratory infections. The highest rate of infections is seen usually in preschool children and in children during the first years of school. We presume that a child younger than seven to eight years does not have enough specific antibodies to counteract upper respiratory infections to which he is exposed. Therefore, the young child is most likely to respond to prevention of upper respiratory infection with gamma globulin. The reduction of the frequency and severity of upper respiratory infections probably accounted for the lessened incidence of asthma. Our experience confirms this theory. We had no failures among children below four years of age, 20 per cent failures in the four to seven age group, and 33 per cent failures in the seven to eleven age group.

Patients with known specific allergies, such as grass pollenosis, should have specific hyposensitization or avoidance of the allergen as indicated along with gamma globulin therapy. This is now being done in our group of children.

Gamma globulin blood levels taken either before or during treatment had no prognostic value as to the effectiveness of gamma globulin treatment. The dosage of gamma globulin depends on the individual response and the potency of the gamma globulin used. Because of the expense and the quantity of material to be injected, the lower dose (0.15 cc. per pound) should be prescribed initially. Subsequently, if the patient fails to respond to 2 injections three weeks apart, the higher dosage should be given.

The favorable response to gamma globulin in preventing asthma was very prompt, occurring after the first or, at the latest, after the second injection of the effective dose.

In only 3 cases we observed a single attack of asthma several months after the first injection of 0.15 cc. per pound. In these patients the increased dose (0.2 cc. per pound) resulted in abolishing asthma.

Conclusion

Not every child with severe asthma is a good candidate for gamma globulin treatment. The most likely to respond is a young child under seven years of age with a relatively short history of asthma, with negative allergic skin tests, and with a history of asthma following febrile upper respiratory infections. A child with a history of both infectious and inhalant asthma will probably benefit from gamma globulin given in the winter when upper respiratory infections are most frequent.

If asthma occurs at the time of pollenosis, hyposensitization with the specific antigen should be given, since gamma globulin alone would have no effect.

Gamma globulin is an effective method of treating the young child with infectious asthma, but it is not to be considered as the panacea for all asthma.

Summary

Twenty-nine children, ranging in age from one year through ten years, with a history of severe asthma of at least one year duration occurring mostly in the fall and winter following febrile upper respiratory infections, were treated with gamma globulin. Gamma globulin was injected intramuscularly every three weeks in doses of 0.15 to 0.2 cc. per pound of body weight. The gamma globulin was supplied in 16 per cent solutions by the American Red Cross.

Twenty-three patients (79.3 per cent) responded favorably, 14 being completely asymptomatic, while 9 suffered rare mild wheezing of a few hours duration. Only 6 patients (20.7 per cent) continued to have asthma. Unfortunately, 3 of the 6 patients did not have a trial on the increased dose (0.2 cc. per pound). Eleven of the 23 children responded successfully only after the dosage was increased.

The successfully treated 23 children appeared to benefit substantially from gamma globulin therapy. The upper respiratory infections were reduced drastically in number and severity in this group. The best results were obtained in young children below seven years of age with a relative short duration of asthma, whose skin tests were negative to common inhalants.

We recommend gamma globulin treatment for children with a history of asthma following upper respiratory infections. In children who have a history of additional sensitivity to common inhalants, the usual hyposensitization treatment should be given simultaneously, since gamma globulin had no effect on specific pollen asthma. If a patient fails to respond to 2 injections of the larger dose (0.2 cc. per pound) at three-week intervals given in the fall or winter seasons, the treatment may be discontinued, since improvement occurs immediately or not at all.

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Masculinity and Smoking

Data collected in a longitudinal study of 252 Harvard alumni (first seen in their sophomore years between 1938 and 1942) show that in this group there is a significant association between smoking habits and masculinity: weakness of the morphologic masculine component is more frequent among smokers than nonsmokers and most frequent among the heaviest smokers. If subsequently gathered data should support this conclusion, it would be relevant to the inquiry into the possible relationship of the smoking habit to lung cancer and coronary disease. If heavy smoking is consistently more frequent in men with a weak masculine component, it would be pertinent to determine the differential frequency of lung cancer and coronary disease in men according to the body build complex in both smokers and nonsmokers. This would help to indicate differences of susceptibility of both smokers and nonsmokers according to biologic characteristics, apart from smoking itself. In this study, it was shown that only 3.3 per cent of the nonsmokers have some degree of weakness of the masculine component, whereas in the moderate smokers the percentage rises to 9.6 and 17.2 in the heavy smoking group.—*Carl C. Seltzer, Science, December 18, 1959*

A Six-Month Continuous Study of Methyprylon in the Geriatric Psychiatric Patient with Insomnia

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(*From the Hudson River State Hospital*)

. . . balm of hurt minds, great nature's second course, chief nourisher in life's feast.

SHAKESPEARE had no difficulty in expressing what all of us, at one time or another, have felt about sleep. But there seems to be no unanimity of opinion among experts on how sleep is brought about; how it is maintained; how it is terminated in the normal course of events; nor why the body, the brain, or both find it necessary to maintain sleep for approximately eight out of the twenty-four hours.

The Nature of Sleep

Recent definitions illustrate this problem. Sleep is described variously as a mechanism for dealing with tension, a physiologic depression, a special state with special characteristics, and an inhibition:

> "Sleep is a normal way of handling excessive tension."[1]
>
> "Sleep is to be regarded as a periodical physiological depression of function of those parts of the brain concerned with consciousness, induced by the appropriate state of the reticulo-hypothalamic system."[2]
>
> "Sleep: A special state of the organism characterized by relative inactivity, reduced consciousness, and reduced responsiveness to external stimuli."[3]
>
> "Under normal conditions, sleep is an inhibitory phenomenon. The conditioned reflexologists have effectively proven this. We might say that sleep is one of the outcomes of the protective and inhibitory processes initiated by fatigue."[4]

An individual's sleep can be measured in hours and crudely "in depth," but there is no test, as far as I know, by which to judge whether or not the amount of sleep a person gets is what he needs. Thus questions concerning sleep can be answered only by personal, clinical, or social observation, preferably over a long period of time rather than by measured and weighed scientific fact.

Sleep and Insomnia

Empiric observation suggests that while sleep is necessary to maintain good physical and mental health, the individual's daily need for sleep may be as little as four hours or as great as twelve hours. Clinical observation suggests that insomnia is at best a sign of a minor transient psychiatric upset and at the worst the prelude to a psychotic episode or even the harbinger of a cerebral tumor. It seems probable that insomnia is never an illness by itself, but always a symptom of psychic or physical distress.

Within two or three days artificially maintained lack of sleep produces nervousness, restlessness, inability to concentrate, and mounting tension. If it is prolonged for another five or more days, the insomniac patient exhibits bizarre behavior; becomes hallucinatory and paranoid; and is subject to many strange thoughts, impulses, and feelings. Thus enforced lack of sleep, over periods of time differing with each individual person, causes all the characteristics of a psychosis.

The beneficial effects of enforced sleep have long been known, and currently it is enjoying a revival in Europe as a general therapy. In the United States it is used mainly in the treatment of certain psychiatric disorders. Klaesi[5] affirms that the treatment is valuable in cases of agitated anxiety, negativistic withdrawal, stereotypy of thinking and wishing, and in acute hallucinatory episodes.

In summation, artificial deprivation of sleep, if protracted for a long enough period, may cause transient or permanent psychiatric illness, while enforced, prolonged sleep has a healing effect on some types of psychiatric illness.

Insomnia in Psychiatric Disorders

Insomnia is a leading, if not the most common, symptom and sign encountered in the State Hospital psychiatric admission wards. Although difficult to treat appropriately, it must always be treated because, by and large, patients who do not sleep enough do not improve and those who do sleep usually tend to improve. Of course, there are some who apparently sleep well yet deteriorate psychiatrically. I have never seen a patient who improved while suffering from chronic insomnia, and since insomnia is a sign of physical or psychic distress which, if prolonged, can destroy mental health, the role of hypnotics in the practice of psychiatry is an important one.

Insomnia and Older People

Sleeping problems among older people in our culture seem fairly common and frank insomnia is quite common. Older people often doze during the day, find it difficult to fall asleep, and tend to sleep fewer hours and less soundly than when they were younger. They also tend to awake more easily and more often and, once awakened, they have greater difficulty in falling asleep again. In the geriatric psychiatric patient insomnia is worse than in the "normal old," and when there is an organic psychosis it is even more exaggerated.

The organic psychotic patients in this study suffered either from senile psychosis, psychosis due to arteriosclerosis, or psychosis complicated by cerebral arteriosclerosis. Since the diseases are progressive and incurable, the patient's problems tend to get worse, eventually demanding permanent institutionalization. In the early stages of diseases recent-memory failure and errors in judgment may be the only obvious signs, but other factors, occurring rapidly in the case of the senile psychotic patient and usually less rapidly in the case of the psychotic patient with cerebral arteriosclerosis, take place until the tragic institutionalized figure is realized.

It must be stressed that to date there is still no known cure and no sure way of arresting either disease process.

Many of the symptoms are exacerbated in the early evening. In the practice of the State Hospital such patients usually are known to wander and to become more restless, obstinate, agitated, disoriented, and suspicious and resistive to direction, help, and suggestion. Usually this nocturnal behavior is accompanied by severe insomnia and complicated throughout the night by auditory hallucinations, confusion, anxiety, and fearful misinterpretations of shadows and commonplace objects. The patients complain a great deal about their insomnia and ask for a sleeping tablet. If sleep can be "given," often the nocturnal exaggerations diminish, and after two months or so usually a general improvement is noticeable in both daytime and prebedtime behavior.

Of course, two ways of improvement are possible. If the patient's organic psychosis begins to improve he is likely to sleep better as a result, while if he is first "given" sleep he tends to improve generally. Because of the second possibility, even though the remission is temporary, the case for giving hypnotics to geriatric psychiatric patients with organic psychoses is a strong one. Often the barbiturates are unsatisfactory for these patients because the morning grogginess which may follow predisposes them to fall, which results in fractures. Even in small doses they may also precipitate clinical catastrophes by causing confusion, overactivity, and excitement in an age group far too frail to stand such stimulation.

For this reason a nonbarbiturate, methyprylon (Noludar*), was chosen for this investigation. Various studies[6–8] have shown this drug, a central nervous system depressant, to be eminently safe, producing no significant urinary abnormalities, blood dyscrasias, undesirable cardiovascular effects, or hepatic dysfunction in doses as high as 1,000 mg. daily for up to one hundred and seven days. Since methyprylon was also found to have a "remarkably broad therapeutic spectrum which makes it suitable for the treatment of almost all forms of insomnia,"[9] it was decided to test its effectiveness severely by prescribing it to insomniac patients in the geriatric psychiatric group with organic psychoses.

Material and Methods

The subjects were 42 geriatric psychiatric State Hospital patients with organic psychoses, 26 females and 16 males, with an average age of seventy-one. All of the patients complained of chronic insomnia, and were observed to be suffering from it, or were reported as insomniac by the night staff. The patients were in a geriatric unit which gave intensive treatment in terms of medication, physiotherapy, occupational therapy, diversions, and psychotherapy with a view to rehabilitating as high a percentage as possible outside the hospital.

The hypnotic was prescribed over a six-month period from July 15, 1958, to January 15, 1959. Each patient was given a 200 mg. tablet on retiring and another 200 mg. tablet forty-five minutes later if sleep had not intervened. No attempt was made to regulate the dosage according to weight, psychiatric diagnosis, or general physical status. The patients were given the tablets with a minimum of fuss and bother and with no attempt to glamorize or praise the medication; the tablets were given "to help you sleep." Patients in good contact wanted very much to be reassured concerning the efficacy of the new tablets, but this was avoided. All patients, whether or not in contact, were carefully observed to make sure they actually swallowed the tablets. This precaution was taken to ensure that those patients with blatant paranoid trends did not spit them out furtively, that the severely confused patients did not lose them or keep them indefinitely in their mouths, and that patients with severe functional overlays did not hoard the tablets for future use.

The progress, lack of progress, or regression of the individual patient was determined through an assessment by me of his or her appearance, behavior, alertness, ability and willingness to respond to other patients, sociability, orientation, mastery of personal hygiene, ability to minister to elementary personal wants and needs, readiness to cooperate with the staff, eating habits, behavior in the evening, ability to rest and sleep, and relief of incapacitating symptoms and signs in all pertinent areas.

Results

Usually a patient went to sleep within forty-five minutes after receiving the first 200 mg. tablet and, if not, almost invariably within thirty minutes after receiving the second one. The few idiosyncratic patients who needed one tablet one night, two tablets another night, and so on, also tended to vary about how long it took them to get to sleep. But the majority responded consistently to a regular one- or two-tablet dose and seemed to establish a regular presleep dozing-off period. No tendency to habituation necessitating increasing doses was noted. None of the patients complained of bad dreams the day after, and all of them ceased to have severe nocturnal problems. No patient refused the tablet because it made him or her groggy in the morning, whereas I have seen similar patients, in good contact and despite their insomnia, refuse barbiturate capsules and compounds because of this fear of grogginess. Patient answers to the question of how they thought the tablets were affecting them ranged from "They're absolutely no use at all" to "The new tablets are

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* Manufactured by Roche Laboratories, Nutley, New Jersey.

TABLE I.—EVALUATION AND DISPOSITION OF 42 PATIENTS BY DIAGNOSTIC CATEGORIES

After Six Months on Methyprylon	Psychosis			
	With Cerebral Arteriosclerosis	Senile	Other	Totals
Discharged	5 } 46 per cent	0 } 25 per cent	5 } 86 per cent	10 } 48 per cent
Improved, but detained	5	3	2	10
Unchanged	5	4	1	10
Regressed	7	5	0	12
TOTALS	22	12	8	42

TABLE II.—EVALUATION AND DISPOSITION OF 42 PATIENTS IN RELATION TO INSOMNIA

After Six Months on Methyprylon	Insomnia			
	Relieved		Unrelieved	
	(Number)	(Per Cent)	(Number)	(Per Cent)
Discharged	10	24	0	0
Improved, but detained	10	24	0	0
Unchanged	9	22	1	2
Regressed	6	14	6	14
TOTALS	35	84	7	16

treating me fine, I sleep good"; in a sampling of 15 patients, 12 commented favorably.

Tables I and II show the evaluation and disposition of the 42 patients, after six months on methyprylon, by diagnostic categories and in relation to insomnia. Combining "discharged" and "improved but detained," 48 per cent of the patients showed psychiatric improvement over the six-month period. With the same criteria, improvement was 46 per cent for psychosis with cerebral arteriosclerosis, 25 per cent for senile psychosis, and 86 per cent for other psychoses. Obviously there was improvement in all categories, but without controls no attempt was made to determine how much improvement was due to the drug. However, it is significant that all but 1 of the 10 patients who showed no real clinical change for better or worse and half of those mentally and/or physically regressed responded well and kept on responding to the drug when initially all patients had had problems with insomnia. Most important is the fact that 35 of the 42 patients in the series, or 84 per cent, ceased to complain of insomnia, to be observed with it, or to be disturbed at night.

Only 7 patients either failed to sleep well or failed to appreciate the improved sleep resulting from the drug. Of these, 1 patient continued to complain of insomnia but was not observed to suffer from it, 2 patients ceased to complain of insomnia but were observed to sleep lightly, and 4 patients continued to suffer from insomnia although they never complained. It is worth noting that all of these unrelieved insomniac patients either regressed or remained the same. However, even these 7 patients became far less troublesome night-time problems.

SIDE-EFFECTS.—During and at the end of six months continuous administration no side-effects attributable to methyprylon were encountered. There were no anemic, leukopenic, granulocytopenic, or renal reactions. No "morning after" grogginess, such as that often associated with the use of barbiturates, was observed.

Conclusion

Methyprylon in 200 or 400 mg. dosages appears to be a safe and effective hypnotic for the treatment of insomnia that arises commonly in the geriatric psychiatric group of patients with organic psychoses.

In this study methyprylon induced sleep routinely over a six-month period with no decline in its soporific effect and eliminated or diminished the disturbance to which the organic psychotic patient is subject during the "before sleep" period. The patients were completely free from discernible side-effects including morning grogginess. There was no tendency to habituation requiring increasingly large dosages.

No conclusion is drawn as to the relationship between methyprylon administration and basic psychiatric improvement. However, there is no doubt that it had a dramatic effect on the patients' insomnia: 84 per cent ceased to complain of it, were not observed to suffer from it, or were not disturbed at night. Anyone who has dealt with a patient's organic psychosis will realize the magnitude of this achievement.

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Hypnosis Does Not Abolish Perception of Pain

Hypnosis does not completely abolish the perception of pain, according to Eugene A. Kaplan, M.D., a Syracuse, psychiatrist.

Writing in the May A.M.A. *Archives of General Psychiatry,* Dr. Kaplan said pain during hypnosis "is not relieved in the sense of being minimized or abolished, but, rather, is denied or repressed via an artificially induced dissociative state." He based his opinion on an experiment conducted with a twenty-year-old white male college student.

The subject, during a course of four hypnotic interviews, developed the ability of automatic writing, that is, his right hand was able "to write anything it wanted to, not subject to the control or restrictions of the 'conscious' personality."

In the experiment, the subject was told in advance that his arm would be pricked several times and that he was to say whether or not he felt anything. It was then suggested to the subject by hypnosis that his left arm would be insensible to pain. The left arm was pricked. The subject indicated no feeling and even asked the experimenter, "When are you going to begin?"

However, Dr. Kaplan said, from the moment the pricking began, the subject's right hand had begun to write: "Ouch, damn it, you're hurting me!"

Dr. Kaplan said this showed that "despite hypnotic anesthesia, and denial of pain by the conscious personality, this pain is perceived and experienced as unpleasant, and evoked a negative reaction in one portion of the subject's total personality. It would also appear likely that under usual circumstances that portion of the personality which experiences the discomfort is unheard (unless it expresses itself in other kinds of symptoms, symbols, or signs sometime in the future).

"This kind of interpretation or explanation of what occurs when hypnosis is used in an attempt to prevent or relieve pain raises certain reservations about its use. Since the human being is still experiencing discomfort which could have been relieved (in the sense of removing or preventing it at a neurophysiologic level) by chemical anesthetics and analgesics, it would seem more appropriate to use these types of agents when possible, rather than hypnosis, in relieving pain of this kind. This conclusion is based on the assumption that it is the physician's task to relieve suffering rather than displace it."

Dr. Kaplan is associated with the Department of Psychiatry, State University of New York, Upstate Medical Center.

Clinical Evaluation of the Latex-Fixation Test

A Preliminary Study

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AN IDEAL laboratory diagnostic test should be practical for routine use, yield positive results in subclinical as well as unequivocal cases, and show negative results in all others. Despite the many tests which have been developed for the diagnosis of rheumatoid arthritis, such an ideal diagnostic tool has yet to be devised. Present laboratory procedures are based on the ability of the rheumatoid serum to agglutinate small particles which have been sensitized by a serum component. Actually the rheumatoid serum, the reactor, is thought to react on the sensitizer, the reactant. The sensitized particles are merely the indicators of the occurring reaction.

The standard serologic tests for rheumatoid arthritis differ only with respect to the type of indicator and reactant employed and to the way in which the rheumatoid serum is used as a reactor.

Streptococci,[1] sheep erythrocytes (fresh[2] or tanned[3]), inert particles of latex,[4] and bentonite[5] have been used as indicators, while rabbit antisheep erythrocyte serum,[6] human gamma globulin,[3] and human anti-D serum[7] have been the reactants employed. To increase the specificity of the tests, the rheumatoid serum can be potentiated by sheep serum dilution.[8] It can be purified by the removal of the heterophil antibody through absorption with normal sheep erythrocytes.[9] The euglobulin fraction, which is thought to contain the rheumatoid factor, can be separated from possible inhibitors by dialysis,[10] cold precipitation,[11] or acid extraction.[12] Last, the presumptive rheumatoid serum can be tested for its inability to inhibit the agglutination of sensitized indicators by known rheumatoid sera.[13]

This article is a clinical evaluation of the euglobulin sheep cell test, the heterophil-absorbed sheep cell test, and the latex-fixation test. These three tests were performed on the sera of 106 hospital patients, most of whom were thought to have rheumatoid arthritis or allied disorders. Emphasis is placed on the latex-fixation test because it is a simpler serologic procedure than its predecessors. A rapid slide modification of this test, the slide-screening latex test, was performed in some cases and is also evaluated in this preliminary report.

Method

CASE MATERIAL.—One hundred and six patients who were admitted to the Brooklyn Veterans Administration Hospital between January and October, 1958, were tested. Most of them had had subjective arthritic symptoms or objective joint involvement at various times. To correlate clinical and serologic findings and to see which of the three serologic tests appeared most helpful in the diagnosis of rheumatoid arthritis, all charts were reviewed carefully and 34 patients were interviewed. For the purpose of this study, the patients were divided into clinical groups according to the diagnostic criteria proposed by the American Rheumatism Association.[14]*

GROUPS.—*Definite Rheumatoid Arthritis.*—Patients who have had symptoms for more than six weeks, and who satisfy five of eleven criteria, including objective joint swelling, rheumatoid nodules, radiologic and histologic findings, and positive serologic tests, belong in the category of definite rheumatoid arthritis. It is noteworthy that the same weight is given to a subjective morning stiffness, to the pathologic microscopy of rheumatoid nodules or synovial tissues, and to significant Rose or euglobulin titers. Patients with advanced and burned-out arthritis (Class IV inactive) have been included in this group, although they do not exactly fit the criteria mentioned.

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* After this study was terminated, the American Rheumatism Association proposed another diagnostic group in rheumatoid arthritis: classical rheumatoid arthritis (patients who satisfy seven of eleven criteria).[15]

Probable Rheumatoid Arthritis.—In the class of probable rheumatoid arthritis patients, only three criteria of the same eleven are necessary with symptoms of not less than four weeks duration.

Possible Rheumatoid Arthritis.—Two of six criteria, including iritis and an increase in phase reactants, are necessary for a diagnosis of possible rheumatoid arthritis. Symptoms have to be present for at least three weeks. Although it has been recommended that this vague diagnostic class should not be used for statistical purposes, it has been included here in the evaluation of the different tests.

Nonrheumatoid Arthritis and Miscellaneous Disorders.—Patients were considered not to have rheumatoid arthritis if their clinical picture failed to meet the preceding criteria or if rheumatoid arthritis was excluded automatically because of the presence of other arthritides, collagen diseases, osteoarthropathies, degenerative diseases, or lymphomas.†

TESTS.—Several patients, mostly those with an established diagnosis of rheumatoid arthritis, were subjected to the tests several times. Each repeated test was considered a new case with a resulting total of 136 series of Euglobulin-Rose-Latex profile tests. The slide-screening latex test was also performed in 81 cases.

The salient features of the three tests mentioned are described in the following section. For further details the reader should consult the list of references.

Heterophil-Absorbed Sheep Cell (Rose-Heller).—In the Heller modification of the original Rose test,[6] Heller, Jacobson, and Kolodny[9] used a 1 per cent saline suspension of fresh sheep erythrocytes as an indicator and rabbit antisheep erythrocyte serum in one half its basic agglutinating titer as a reactant; the patient's serum is inactivated and absorbed with normal sheep erythrocytes to remove the heterophil antibody, and thus the differential titration of the Rose test is unnecessary. Heller originally claimed that 94 per cent of his rheumatoid patients had positive titers with the use of this method. Titers of 1:28 are considered positive, although it has been advised by several authors that the titer with the lowest number of false positive reactions should be considered significant in a series of tests.

Euglobulin Sheep Cell (Euglobulin).—In this study the euglobulin technic employed is that of Craig[12] which is a modification of the original euglobulin sheep cell agglutination devised by Ziff.[10] A 2 per cent saline suspension of fresh sheep erythrocytes is used as an indicator. The reactant, as was mentioned previously, is the rabbit antisheep erythrocyte serum in one half of its basic agglutinating titer. The patient's unabsorbed serum is mixed with 0.027N of hydrochloric acid according to the method of Neurath,[16] and the extracted euglobulin is used as a reactor. In Craig's study 86 per cent of the patients with active rheumatoid arthritis had significant titers of 1:28 or above.

The Latex-Fixation (Latex).—The latex test, devised by Singer and Plotz,[4] has the advantage of using inert and uniform particulate matter as an indicator, namely polysterene latex particles 0.7 to 1.1 μ in size. A 1 per cent dilution of a stock suspension is used. The reactant is a 1 per cent dilution of a stock solution of pooled human gamma globulin (Cohn Fraction II), and the patient's serum or its euglobulin fraction is used without prior inactivation or heterophil absorption. In this study the tests were performed on whole sera. Titers of 1:8 are

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† Agammaglobulinemia has been added to the list of exclusions.[15]

TABLE I.—Results and Distribution of the Three Serologic Tests in Each Clinical Group

		Tests					
		Euglobulin		Rose-Heller		Latex Fixation	
Rheumatoid Status	Total	Negative	Positive	Negative	Positive	Negative	Positive
Nonrheumatoid	75	73	2	75	0	70	5
Possible	20	19	1	19	1	19	1
Probable	15	14	1	14	1	12	3
Definite	26	10	16	12	14	5	21
Total	136	116	20	120	16	106	30

TABLE II.—Results and Distribution of the Three Serologic Tests by Clinical Group in Percentages

	Tests					
	Euglobulin		Rose-Heller		Latex-Fixation	
Rheumatoid Status	Negative	Positive	Negative	Positive	Negative	Positive
Nonrheumatoid	97	3	100	0	93	7
Possible	95	5	95	5	95	5
Probable	93	7	93	7	80	20
Definite	38	62	46	54	20	80

considered positive, and in their original report the authors claimed this to be true in 71 per cent of their rheumatoid cases.[17]

"RA" (Slide-Screening Latex).—A latex test kit has been prepared by the Hyland Laboratories of Los Angeles, California. Sensitized (coated) latex particles are provided together with known positive and negative sera for control. Agglutination is carried out on a slide, very much in the same way as blood group typing. It is read macroscopically, indicating negative, doubtful, weakly positive, and positive results.

The patients' clinical diagnoses were unknown to the serologist who performed the test. However, the author usually did have knowledge of the serologic findings before reviewing the charts.

Results

The results of the survey are summarized in Tables I to IV. Of the 136 cases reviewed, 26 had definite rheumatoid arthritis, and 15 had probable rheumatoid arthritis; 20 were in the possible group, and 75 were considered nonrheumatoid (Table I).

The Nonrheumatoid Group.—In the nonrheumatoid group of 75 patients, the euglobulin titers showed negative findings in 97 per cent, the Rose-Heller test showed negative findings in 100 per cent, and the latex-fixation test showed negative findings in 93 per cent of the cases (Table II). The clinical composition of this group is as follows:

Subjective arthralgias		9
Nonrheumatoid arthritides		37
Arthritis of unknown origin	7	
Arthritis of serum sickness	2	
Infectious arthritis	3	
Osteoarthritis	5	
Acute rheumatic arthritis	4	
Gouty arthritis	16	
Collagen diseases		5
Musculoskeletal disorders		11
Miscellaneous medical conditions		13
Total		75

The patients with subjective symptoms had no positive titers. The euglobulin and Rose-Heller tests showed negative findings in all the cases of arthritis which were thought to be nonrheumatoid. One case of arthritis of unknown origin and one of osteoarthritis showed positive latex titers. None of the cases of rheumatic fever or gout showed any positive serologic titers.

Of the 5 patients with collagen diseases, 2 with scleroderma, and 3 with lupus erythematosus, only 1 patient, with L.E. cells, had a latex titer showing positive findings There were no positive results in the tests of the 11 patients with musculoskeletal disorders consisting mostly of orthopedic problems such as osteomyelitis, sacroiliac sprains, bursitis, and spondylolisthesis.

TABLE III.—Serologic Reactions in Active and Inactive Definite Rheumatoid Arthritis with Various Stages of Severity*

		Tests					
Grade and Activity	Total	Euglobulin		Rose-Heller		Latex-Fixation	
		Negative	Positive	Negative	Positive	Negative	Positive
Grade I							
Active	13	5	8	5	8	1	12
Inactive	3	1	2	1	2	1	2
Grade II							
Active	0	0	0	0	0	0	0
Inactive	1	1	0	1	0	0	1
Grade III							
Active	3	0	3	1	2	0	3
Inactive	3	0	3	1	2	0	3
Grade IV							
Active	0	0	0	0	0	0	0
Inactive	3	3	0	3	0	3	0
Total	26	10	16	12	14	5	21

* Activity is determined by evidence of inflammation, elevated erythocyte sedimentation rate and/or the C-reactive protein. The stages of severity are graded from I to IV according to Steinbrocker's criteria.[17]

In the miscellaneous group of 13 patients with nonarthritic conditions, 1 patient with polycythemia secondary to cor pulmonale had a positive euglobulin titer. One patient with cor pulmonale and another with hepatosplenomegaly and syphilis had positive latex tests. There was 1 patient whose serum contained an abnormal unidentified triglyceride and gave significant euglobulin and latex titers. This patient's serologic test for syphilis showed false positive results. The nature of the triglyceride is under investigation; it was found not to be directly responsible for the false results of the test. Whether it is specifically responsible for the false showings in the positive euglobulin and latex tests has not been determined. There were no false positive results in the Rose-Heller tests in this miscellaneous nonarthritic group.

Possible Rheumatoid Arthritis.—The three tests showed negative results in 19 of the 20 cases (Tables I and II). One patient with arthritis had a positive euglobulin titer; another one had a positive Rose titer; the latex test in a third patient with arthritis and chronic exudative discoid and lichenoid dermatitis indicated positive results on one occasion.

Probable Rheumatoid Arthritis.—Of these 14 cases, 1 showed positive Rose and euglobulin titers, while 3 others showed positive latex tests (Tables I and II). The 3 patients with psoriasis and the 2 with pulmonary tuberculosis, included in the probable rheumatoid arthritis group, showed no positive titers.

Definite Rheumatoid Arthritis.—The latex test showed positive results in 80 per cent of 26 cases, while the euglobulin and Rose-Heller tests indicated positive results in 62 per cent and 54 per cent of the cases respectively (Tables I and II).

When this group is subdivided further with respect to activity and graded from I to IV according to Steinbrocker's[17] criteria, it is found that most of the positive tests are in the active Grade I group. Of 13 such cases, the latex test showed positive results in 12, and the other tests indicated positive results in 8 cases only. Three patients with far-advanced, crippling, burned-out arthritis (Grade IV inactive) had no reactions whatsoever (Table III).

Serologic Titers.—Euglobulin titers ranged from 1:7 to 1:3,584. There were two false positive reactions at a titer of 1:56. Most patients with definite rheumatoid arthritis had euglobulin titers of 1:112 or above.

The Rose titers ranged from 1:7 to 1:448, with two false reactions at titers of 1:14

TABLE IV.—Comparison of the Findings Obtained by the Standard Latex Test and by the Slide-Screening Latex Test

Rheumatoid Status	Total	Tests					
		Latex Negative	Slide-Screening Negative	Slide-Screening Positive	Latex Positive	Slide-Screening Negative	Slide-Screening Positive
Nonrheumatoid	46	42	41	1 weak	4	1	3
Possible	10	10	10	0	0	0	0
Probable	8	6	6	0	2	0	2
Definite	17	4	3	1 (?)	13	1 (?)	12
Total	81	62	60	2	19	2	17

which were not considered positive. In the definite rheumatoid group, most of the positive titers were 1:112 or above. The latex titers ranged from 1:80 to 1:10,240. The three false positive titers of the latex test ranged from 1:640 to 1:5,120. Most positive titers in the definite rheumatoid group were above 1:1,280.

Of 81 cases in which the slide-screening latex test was also performed, the latex test showed negative results in 62 cases and positive results in 19 cases. The slide-screening test showed negative findings in 61 cases, positive results in 17 cases, weak results in 1 case, and doubtful results in 2 cases (Table IV).

The weakly positive reaction was obtained in a nonrheumatoid case, and one doubtful reaction was obtained in a case of definite rheumatoid arthritis. Both cases showed negative results on the latex tests. The slide test indicated a negative showing in 1 case with no rheumatoid arthritis and doubtful showings in 1 case of definite rheumatoid arthritis (Stage III inactive), both of which showed positive latex titers.

Comment

Analysis of Results.—It appears from our study that there was an appreciable number of false serologic reactions. Such a statement obviously implies that we knew a priori what agglutination titers are significant and in what clinical groups the tests ought to show positive or negative results.

Ideally, the three tests should indicate negative results in the nonrheumatoid group. This was true of the Rose-Heller test which yielded no false positive reactions in this category. The euglobulin test showed positive results in 3 per cent and the latex test showed positive results in 7 per cent of these cases.

Conversely, the three tests should yield positive results in the definite rheumatoid group. The Rose-Heller test yielded a proportion of positive titers that was not statistically significant (only 54 per cent); the euglobulin test showed positive results in only 62 per cent of the cases, while the latex test yielded positive results in as many as 80 per cent of the cases. The great majority of positive reactions was obtained in patients with active disease, while the three tests remained with negative showings in the inactive cases, even in those cases of far-advanced arthritis of long duration.

We would have expected the tests to show mostly positive results in the probable rheumatoid cases and to show negative results in the possible rheumatoid cases. However, in this study the three tests had a strong tendency (80 to 95 per cent) to remain with negative showings in both borderline groups.

In this survey we arbitrarily chose as positive the titers that were considered as such when the tests were first described. We might have increased the specificity of the euglobulin test by taking 1:112 as the lowest positive titer. There would then have been no euglobulin tests with false positive showings, but the sensitivity of the procedure would have been somewhat decreased. Conversely, had we chosen 1:14 as the lowest positive Rose titer, this test would have been slightly more sensitive but would have yielded two tests with false positive results. However, positive latex titers could not have been chosen a posteriori since the false positive titers ran as high as 1:5,120. Therefore, the latex test has an inherent tendency to show false positive results in any titer.

From the diagnostic standpoint, the latex test was the most sensitive and the least specific of all three tests. The reverse was true of the Rose-Heller test, while the euglobulin test was intermediate in sensitivity and specificity. From the practical standpoint the latex test is simpler than the hemagglutination procedures.

Positive Rose-Heller tests and negative latex tests are not likely to be false. Thus, if a patient seems clinically not to have rheumatoid arthritis, the Rose-Heller test is best suited to avoid false positive results. However, if the clinical picture strongly suggests rheumatoid arthritis, the latex test seems to be most suitable to substantiate the diagnosis. Since the three tests showed persistently negative results in cases of gout, this may be the only condition which could be ruled out definitely by significant euglobulin, Rose, or latex titers.

In the last analysis, the three serologic tests are of some value in the nonrheumatoid group. They have serious shortcomings in the borderline groups where they are most needed as diagnostic adjuvants. Their role is purely confirmatory in the definite active rheumatoid cases. From this small study their value appears questionable in the advanced inactive cases, when the clinical diagnosis is least doubtful.

The discrepancies between the standard latex-fixation test and the slide-screening test were minimal. Were it not for the inaccuracies inherent in the use of such gradings as weak, doubtful, and so forth, the slide test could be used as a screening procedure for the latex-fixation test. However, it could not serve as a substitute.

Clinical Evaluation of the Latex-Fixation Test.—The introduction of the latex test is of practical interest because it does away with the difficulty of getting fresh supplies of sheep erythrocytes; it is easily read, and its performance takes less than twenty-four hours. It is also of theoretic importance, since it demonstrates that the agglutination of sensitized particles is due primarily to the interaction of the rheumatoid serum and the sensitizing agent without active participation of the indicators.

Plotz and Singer[18] reported positive findings in the tests of 71 per cent of 150 rheumatoid cases, while only 40 per cent of the same patients showed positive titers when their sera were tested by the earlier Rose method. Since then several studies have put the latex test to a clinical trial, and in some the results are evaluated with the same diagnostic criteria used in our report. In these studies, as in ours, the latex test usually yields even more accurate results than in the original report.

Rheins, *et al.*[19] claim positive results in 88 per cent of the 120 definite rheumatoid arthritis cases using their "drop" modification of the original test. As in our study, the sera of possible, probable, and inactive rheumatoid patients yielded very low percentages of positive titers. Other rheumatic conditions gave no positive results. Twelve of 56 patients with infectious mononucleosis, tuberculosis, and syphilis had positive reactions, just as if they had been tested by the earlier hemagglutination procedures.

Thomas, *et al.*[20] reported the latex test to show positive results in 72 per cent of their 105 rheumatoid cases, while Pike, *et al.*[21] reported the test to indicate positive results in 69 per cent of their rheumatoid patients. The diagnostic criteria used in these studies are not stated.

Using Rheins' method, Rothermich and Philips[22] found positive titers in 84 per cent of their 291 definite rheumatoid cases. Titers were positive in 4 per cent of 414 other rheumatic cases and in 5 per cent of 202 nonrheumatic cases.

Olsen and Rantz[23] tested 114 patients by the latex-fixation method, using whole sera. The tests showed positive results in 56 per cent of their 41 definite cases and in 7.4 per cent of their 27 probable cases. The tests indicated negative results in their 5 possible cases and in their 29 nonrheumatoid cases. By performing the latex test on the euglobulin fraction of the negative sera and combining the results with those obtained on the whole sera, they were able to increase their yield of positive test results to 85 per cent of definite and 30 per cent of probable rheumatoid cases without any false positive tests.

Hall, Mednis, and Bayles[24] reported data on the use of a refined and laborious technic combining latex, euglobulin, and inhibition procedures. The standard serum latex-fixation test used in this study yielded positive results in 72 per cent of definite rheumatoid cases; when the latex test was performed on the euglobulin fraction, the yield increased to 82 per cent. The sera which failed to give positive results when tested by the two procedures were then tried for their inability to inhibit agglutination of sensitized latex particles by known rheumatoid sera. The resulting three-step latex test showed positive results in 99.4 per cent of 177 definite rheumatoid patients.

The results obtained with the possible and probable rheumatoid groups were identical to ours when the standard serum latex-fixation test was employed. However, the three-step procedure yielded positive results in 94 per cent of 38 probable rheumatoid cases and in 64 per cent of 79 possible rheumatoid cases. If these results are substantiated in further studies and follow-up observations, the diagnostic criteria for rheumatoid arthritis will have to be revised. However, it is noteworthy that this very involved technic yielded high percentages of positive results among the nonrheumatoid arthritic group in musculoskeletal disorders and in collagen diseases. In addition, it showed positive results in 4 of 12 normal control sera.

With one exception, the reviews report an appreciable incidence of false reactions. In this respect, the latex test is not very different from the hemagglutination technics and their variations, which show positive results mostly in active rheumatoid cases and in conditions which, like lupus erythematosus, are akin to rheumatoid arthritis,[25] or in which abnormal proteins can be demonstrated. An interesting report deals with the high incidence of positive latex tests in patients with rubella arthritis.[26] Patients with the viral condition but without joint involvement had few or no positive titers.

Most of the recent reports reviewed show similar results in the clinical evaluation of the latex test. When no mention is made of diagnostic criteria, the latex tests are positive in about 70 per cent of rheumatoid arthritis cases.[4,20,21] When the criteria of the American Rheumatism Association are used, the tests show positive results in more than 80 per cent of definite rheumatoid cases.[19,22–24] These figures are in agreement with those obtained in our preliminary and less extensive study.

Thus, the latex test is of limited value in the diagnosis of definite active rheumatoid arthritis. In the probable and possible cases, where the need for a reliable diagnostic test is more acute, its diagnostic value is questionable. However, in these cases the latex test is still preferable to the other tests because of its practicability.

Despite the difficulty inherent in the diagnosis of acute rheumatoid arthritis, the clinical picture still seems to be our best guide.

Conclusions

Because of its practical advantages, the latex test may eventually supersede the more conventional procedures. However, like its predecessors, it is a far cry from the kind of laboratory test which would enable us to detect latent or subclinical cases without being labeled ipso facto false positive. It is likely that such a test will not be devised until a rheumatoid factor is found that fills Koch's postulates. Recent qualitative[27,28] and quantitative[29] studies have endeavored further to isolate this enigmatic substance. We hope that future clinical studies will tell whether these attempts were successful.

Summary

The sera of 106 patients were tested by different serologic methods to find out which test was more reliable in the diagnosis of rheumatoid arthritis.

The euglobulin, Rose-Heller, and latex-fixation tests were used in 136 test series, 81 of which were also tested by the slide-screening technic. The latex-fixation test showed positive results in 80 per cent of 26 cases with definite rheumatoid arthritis as defined by criteria proposed by the American Rheumatism Association. It was positive in 7 per cent of nonrheumatoid cases.

The euglobulin sheep cell test indicated positive results in 62 per cent of definite rheumatoid cases and in 3 per cent of nonrheumatoid cases; the Rose-Heller test showed positive results in 54 per cent of definite rheumatoid cases and yielded no false positive titers.

A Rose test with negative results tends to rule out rheumatoid arthritis if the diagnosis is very unlikely, while the latex test seems to confirm rheumatoid arthritis when the diagnosis is strongly suspected. The euglobulin test appears to be the least satisfactory of the three tests from diagnostic and practical standpoints.

The slide-screening test could be a satisfactory screening procedure for the more elaborate latex-fixation test, but it certainly is not a substitute.

Recent and more extensive reports are reviewed. It is hoped that the latest biochemic advances made in the discovery of the rheumatoid factor will stimulate the development of a real diagnostic test for rheumatoid arthritis.

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RECENT ADVANCES IN MEDICINE AND SURGERY

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A Current Study of Psychoanalysis

SAMUEL Z. ORGEL, M.D., NEW YORK CITY

THE impression today is that psychoanalysis has entered into a period of consolidation. The theoretic advances of the past twenty years, especially in the field of ego psychology, are being assimilated and applied. Many clinical entities are being re-examined in the light of the changes which have taken place in psychoanalytic theory. This has resulted in a decrease in the number of theoretic articles appearing in the literature and in an increase in those dealing with clinical material. I shall attempt to report on the psychoanalytic literature in as impartial a fashion as possible.

Additions to Freud Literature

It is well to recall the noteworthy event of the publication in 1954 of an English translation of Sigmund Freud's letters to Wilhelm Fliess under the title *The Origins of Psycho-analysis.*[1] The selections in this anthology were written between the years 1887 and 1902. They elucidate the prehistory and early history of psychoanalysis and provide insight into certain phases of Freud's intellectual processes. They trace the steps in Freud's formulation of theory from his first clinical impressions until the finished product of this period. The blind alleys and wrong roads into which he was diverted in the process of hypothesis building are illuminated, and, in general, the letters furnish a vivid picture of Freud during the shifting of his interest from physiology and neurology to psychology and psychopathology.

After Fliess's death in 1928 his widow sold the 284 letters, notes, and preliminary manuscripts that Fliess had received from Freud to a Berlin bookseller. He, in turn, sold them to Marie Bonaparte, who attempted to persuade Freud of their scientific value; Freud nevertheless was persistent in opposing their publication. Marie Bonaparte did not destroy them but deposited them in the Rothschild Bank of Vienna for future study. Hitler's invasion of Austria caused her to remove them to France, and later, with the invasion of France, she deposited the letters with the Danish Legation in Paris. Still later they reached London.

These letters and notes were edited by Marie Bonaparte, Anna Freud, and Ernst Kris. Of the 284 letters, drafts, and notes, 168 appear in this volume. The primary significance of the book lies in the fact that its selections provide the only means of tracing the development of some of Freud's theories and the phases of some of the ideas that Freud explored, refined, and ultimately published. At the conclusion of the book there are two bibliographies, one of Freud's writings and the other of the writings of authors other than Freud.

Erikson[2] attempted to gain further insight into the origin and development of Freud's ideas by an exhaustive analysis of Freud's Irma dream. Erikson states that the significance of the Irma dream lies in the fact that it was the first dream reported in *The Interpretation of Dreams* and that it bore an important relationship to the creative thoughts that helped to give birth to Freud's theory of dreams.

With the appearance of the third volume of Jones's comprehensive and definitive biography of Freud,[3] covering the years 1919 to 1939 and entitled *The Last Phase,* one can now see the whole work in perspective, admire its superb panoramic quality, and appreciate more fully the remarkable extent of Jones's achievement. Freud is his own monument and needs no other; this biography, however, is a classic tribute to his greatness. It is astonishing that in spite of all the deterrents in Freud's path—his extreme suffering from a malignant affliction of the palate and later the tribulations of the Anschluss—Freud continued his clinical and theoretic work almost to the last day of his life and never showed any signs of mental deterioration. There seldom, if ever, has been a greater victory for genius and personal fortitude over misfortune and bodily disability. The years of personal tribulations and fresh creative output described in the last volume were also the years which saw the expansion of the psychoanalytic movement from a relatively small coterie of enthusiasts to an impressive international organization and saw a steady increase in the public recognition of the significance of Freud's work.

This biography also gives an account of Freud's attitudes toward a number of his disciples and shows that Freud's judgment of individuals was not always sound. Those from whom he expected the most often failed him, whereas several individuals about whom he had some misgivings (for example Karl Abraham and Ernest Jones) never wavered in their loyalty to him or in their efforts to promote the interests of psychoanalysis. Although Freud was concerned about preserving the integrity of psychoanalysis, he did not expect his fellow workers to accept his views uncritically or to waive their right to do independent research. Freud treated his formulations as working hypotheses; he never hesitated to modify his views when he had good grounds for doing so.

Ernest Jones has given us not only the life story and a sympathetic character study of Freud but also a detailed history of the development of psychoanalysis together with epitomes of Freud's works and some personal estimations of their relative importance. Freud's dislike of publicity is well known, but one feels that he would not have objected too much to this biography inasmuch as it presents the whole man, depicting his essentially human traits of character and appraising his intellectual stature and the significance of his lifework.

Freud always was actively interested in the dissemination of psychoanalysis. For example, in connection with the efforts of Max Eitingon, M.D., in 1933 to establish the teaching of psychoanalysis at the Hebrew University in Jerusalem, Freud exchanged letters with Professor J. L. Magnes, at that time president of the University. This correspondence together with the background for it has been presented by Rosenbaum.[4] In 1933 Eitingon left Germany and settled in what was then Palestine. He founded a psychoanalytic movement in that country and proposed to Hebrew University that it establish a department for the teaching of psychoanalysis. At Magnes' request Eitingon wrote a memorandum outlining the advantages to be gained from the addition of such a department.

Freud exchanged two letters with Magnes. In the first he detailed Eitingon's professional background, evaluated him as a teacher, and pointed out the advantages to the University of a department of psychoanalysis. In Magnes' cautious reply there was an intimation that a chair of psychology might be established first, with Kurt Lewin as a candidate for it. Magnes asked for Freud's frank opinion. Freud's reply was direct and sharp: "Psychoanalysis could be taught as an introduction to psychology . . . all applications of psychology to medicine and to the humanities originate from the profound depths of psychoanalysis, while academic psychology has been proven sterile . . . the plan to establish a chair for psychology indicates a barely disguised rejection of psychoanalysis . . . ."

Neurotic vs. Normal Behavior

Kubie[5] in a paper on the difference between normal and neurotic behavior suggests that the differentiation be made on the basis of general considerations. He maintains that normality—manifested by flexible, modifiable, satiable, and controllable behavior—is the result of a dominant alliance between conscious and preconscious forces and that neurosis—manifested by repetitive, obligatory, insatiable, and stereotyped behavior—is the result of a dominant alliance between unconscious and preconscious forces. Kubie points out that in any act the result of the interaction of conscious and unconscious forces determines the degree of flexibility of behavior as well as the form of gratification.

According to Kubie, inflexibility is the essential characteristic of all neurotic manifestations, whereas the essence of normality is flexibility. Repetition of neurotic actions results from the fact that such actions are in part substitute (symbolic) gratifications which really never gratify; therefore no neurotogenic conflict can be resolved by satiation. Neurotic drives give rise to automatic repetition, irrespective of the situation or the utility or the consequences of the act. The goals of such forces are predominantly unconscious symbols, and such symbolic goals never are achievable. Since the motivational forces are unconscious, they are not responsive to pleasure or pain, to reward or punishment, or to logic or persuasion. In contrast, when an alliance of conscious and preconscious systems predominates in the production of behavior, such behavior will come to rest when its goal is found to be unobtainable or ungratifying. Behavior of the type, therefore, never becomes insatiable or stereotyped.

Homeostasis and the Ego

Menninger[6,7] suggested the concept of the "steady state": "All behavior . . . that of organs and that of the total organism, may be defined as a continuous attempt to preserve organismic integrity by homeostatic restoration of disturbed equilibrium." He defines "homeostasis" not only in terms of the maintenance of physiologic or psychologic constancy but also as the integrated operation of all the homeostatic partial systems, physiologic and psychologic, which comprise the total personality. Effecting reconciliation and maintaining a physiopsychosociologic balance is the chief function of the ego.

Menninger classified the various states of disequilibrium and attendant homeostatic regulatory efforts of the ego in quantitative terms. He listed and explained five types of regulatory devices in ascending order of pathologic significance, emphasizing that the listing is only a schematic classification. Recovery from disequilibrium may take place at any of the various stages. Perennially the ego attempts to restore itself, and homeostasis is the effort to maintain integrity in the face of external and internal threats. The five types of regulatory devices of the ego under stress naturally overlap, and the adjustments are dynamic, not static. These formulations allow "diseases to be seen not simply as a lack of ego strength or as a defense but as an effort toward survival."

In a panel discussion[8] which centered around these concepts of Menninger, the basic concepts of psychoanalytic theory, a revision of nosologic distinctions, and the use of Cannon's term "homeostasis" as it applies to ego function were the major topics under consideration.

Norman Reider, M.D., a panelist, discussed psychoanalytic theory from two points of view: (1) the unconscious and (2) ego functions. Psychoanalysis presented in terms of the unconscious met with great resistance, whereas presented in terms of the ego and ego control it gained acceptance because, since "the theory gives us controlling mechanisms to combat the unconscious and disturbed magical thinking," it gives a greater degree of comfort and freedom from anxiety. Reider believes that the advantage of Menninger's nosologic classifications is that they point to ego defects which may be used effectively in methods of psychotherapy which are especially manipulative in character. "It is only with what remains of an intact ego that work can be done. Only by studying these ego functions does one get clues for manipulating or strengthening defenses for re-establishing equilibrium."

David Brunswick, Ph.D., another panelist, believes that at the present time the purely psychologic approach to ego functions is of more value than an attempt to apply some general principle not yet elucidated. Knowledge is lacking not only in regard to ego functions but also in regard to physiologic mechanisms in the operation of the fundamental instincts. Therefore, Brunswick feels, when we understand the psychophysiology of the instincts in greater detail, we shall be able to discover some general principle analogous to homeostasis in the operation of the ego functions.

Carel Van der Heide, M.D., attempted to distinguish theoretically between homeostasis and ego function. Certain similarities are striking: their evolutionary nature, the danger signals they produce, and the capacity to provide wider margins of safety. On the efficiency of these functions depends man's ability to live in civilization; their failure means extinction, cultural and organic.

Norman Levy, M.D., agreeing with Menninger, stated that every organism functions in an operational field of which it is one functional-structural node of focus. During the organism's entire existence there are always interactional and transactional processes between the organism and the surrounding environmental field. Every organism is equipped with certain phylogenetically and ontogenetically derived tools with which it maintains homeostasis and the steady state. Drives and ego functions develop as a result of underdeveloped and developing attempts to maintain a steady state. There is evidence that the so-called instinctual drives and patterns in all animals develop as a result of this basic biologic tendency to maintain homeostasis.

Ives Hendrick, M.D., objected to interpreting ego functions in somatic terms. He pointed out that the pleasure principle is a principle of stability. He compares homeostasis with a pendulum, which tends to return to dead center yet never stays at dead center while it is swinging. What apparently is sought in the trend to a steady state is conscious mental pleasure and a reduction of pain, for all of life is experienced in the mind.

George Devereaux, Ph.D., stated that viewed theoretically homeostasis, by implying that the organism automatically moves toward absolute stability (death), has been mistakenly derived from the law of entropy. In practice, homeostasis is derived from the third law of thermodynamics, and its purpose is to preserve life (change). Homeostatic processes should be labeled as heterostatic ones since, by keeping all externally induced changes within safe limits, they seek to perpetuate the organism's capacity for continuing change. The limitations of externally induced changes are compensated for by means of other, internally induced changes. "Instinct" implies a goal-directed drive, that is, a force behind the equivalent of a mechanical, reversible process.

Eugene Pumpian-Mindlin, M.D., called attention to the fact that the principle of homeostasis has been implicit in the psychoanalytic concept of constancy, as mentioned by Freud in *Beyond the Pleasure Principle.* He explains that our present psychiatric nosology is based on forces within the individual.

Neurologic and Neurophysiologic Considerations

Ostow[9] and Linn[10] attempt to correlate neurologic and neurophysiologic findings with psychoanalytic theory. Ostow deals with the experimental evidence bearing on the functions of the frontal lobes of the brain and offers a theoretic formulation which takes this evidence into account. Human beings and animals deprived of the function of the anterior segment of the frontal lobes show impairment in the strength and consistency of motivation. Strength of motivation is a function of the ability to construct derivatives of instinctual drives and unconscious fantasies and to transfer psychic energy from these forces to their conscious derivatives. Impairment of consistency of motivation is a consequence of the impairment of function of the device that regulates the orderly process of fantasies without rigidity. Damage to the frontal lobe, therefore, can relieve an individual of neurotic and psychotic symptoms by depriving him of the power to create symptoms, but it also deprives him of the power to create and to express and enjoy himself.

The available evidence indicates that the anterior segment of the frontal lobe participates in the psychic life. The results of frontal lobe damage which have been observed include disinterest in the nature of the disability and the inability to comprehend it, inattentiveness and deterioration of intellectual capacity, poor performance (attributed to impairment of the "abstract attitude"), and loss of initiative. Also, talkativeness, lack of tact, naïveté, and emotional instability have been observed. In addition, there is impaired ability to adopt a set direction toward a goal or to assume an attitude of expectancy in the face of interference. Robinson, in Freeman and Watts's book *Psychosurgery,* lists the effects of lobotomy on personality as follows: Anterior incision produces a loss of fantasy, creative drive, sensitivity, and sympathy. In radical operations patients remain as they were before operation—gross in the appetite for sex and food, slovenly in appearance, and impervious to criticism. Their goals are immediate and insistent; they can recall the past, but it has diminished interpretive value for them.

Normally most fantasy shifts result from the interplay of intrapsychic forces, although at any time a sufficiently strong external or internal stimulus will evoke in the individual a fantasy appropriate to the management of that stimulus; for example, the threat of a surgical operation usually evokes castration fantasies, and disappointment in competition usually evokes rivalry fantasies. The device that determines the duration and prevalence of each fantasy and selects succeeding fantasies has an effect comparable to a flywheel, since in the absence of severe neurosis it insures a certain degree of continuity of behavior. These virtues are specifically lacking in the individual with damaged frontal lobes.

Linn[10] in discussing the ego employs a neurophysiologic approach, based on Pitts and McCulloch's theory of scanning circuits in the cerebral cortex. According to Linn, a concept is not a fixed entity, but rather is a cluster of ideas which are grouped together by some common denominator of meaning. The second set of factors arises in response to the stimulus, depending on the individual's prior experience, emotional state, age, intelligence, motivation, and so on. One of the main tasks of the ego is the scanning of each cluster in the course of adjusting to reality. The ego, in a matching process, compares the presenting stimulus with a series of memories until one is found which corresponds best to the stimulus. The ego registers "yes" only for the correct element. This mental functioning corresponds to the secondary process. Should the ego scan the cluster incompletely or not at all, manifestations of the primary process result. Contaminations that thus occur are often shown to be attempts at wish fulfillment. Topographically the scanning process occurs in the preconscious. However, each element in the cluster is associated with elements in the unconscious. It is the unconscious which produces the affective reverberations. The scanning process extends from wished-for to anxiety-producing elements. If the latter elements are skipped completely, they are considered to be repressed.

Neurophysiologically, disturbances in the discriminating function of the ego occur when abnormal slowing of the electrical rhythm is diffusely present over the cortex. In cases of brain injury the discriminating function of the ego is impaired because the scanning circuit functions incompletely. If it is hypothesized that the intensity of the elements of the volley is a function of the cathexis of the ideas behind these elements, the most highly cathected ideas will be the most likely ones to pass critical synapses. With pathologic slowing of the scanning rhythm, this selective tendency will become exaggerated.

Theories of the Mind

Winnicott[11] makes a distinction between "mind" and "psycho-soma." He states that there is no place for the existence of the mind as an entity in the individual's diagram of himself if the body scheme, or "psycho-soma," has weathered the earliest developmental stages successfully. When these stages are experienced successfully, the mind is but a special portion of the functioning of the psycho-soma. Psyche is defined as the imaginative elaboration of somatic parts, feelings, and functions—that is, of physical aliveness—and depends on healthy brain function. A theory of mind is offered in which one of the important roots of the mind is considered to lie in the need of the developing individual for a perfect environment, one which adapts actively to the infant's needs. When the mother fails, the infant's mental functioning must assume the burden of achieving such an environment. Thus, opposition between mind and the psycho-soma can develop. This occurs because thinking must take care of the psycho-soma instead of the environment doing so.

Commonly in such instances mental functioning becomes an entity in itself, replacing the good mother and making her unnecessary. The psyche is seduced away from the soma by the mind, giving rise to a pathologic mind-psyche. This is localized either inside or outside the head but always in some special relation to the head. Excessively disturbing impingements on the infant's continuity of being can be reacted to only with confusion or with the cataloguing (memorizing) of the reaction. Clinical material indicates that cataloguing occurs in a very exact way with the traumatic events of the birth process. This cataloguing type of mental functioning acts as a foreign body if it is associated with environmental adaptive failure.

It is felt that one aim of psychosomatic illness is to draw the psyche away from the mind and back to its original intimate association with the soma.

French[12] constructs a picture of the mental apparatus based directly on the empiric observations of psychoanalysts and others in this field of study in which he challenges the distinction made by Freud between the type of thinking which characterizes the primary process and the logical thinking patterns of the secondary process. French believes that there are many similarities between rational and irrational behavior and that these similarities tend to come into focus when the approach to mental processes by considering them as products of chains of association is replaced with that of Gestalt psychology.

Synergy

Schneider[13] advanced the principle of synergy in psychoanalysis. With respect to the problem of heart attacks, the principle of synergy in psychoanalysis is introduced as the dominating neuropsychic force determining immediate survival and ultimate longevity. The basic synergy of the postnatal ego centers around the image of the heart and the heart's dynamic relationship to the rest of the ego. Together with the later synergies inherent in heterosexual identification and the nature of one's talents, the image of the heart influences the directional activity of the ego. The first act of birth and therefore of the postnatal ego—namely the ending of umbilic circulation and the closure of the foramen ovale—is that of the completion of heart independence. The image of the heart thus exists at the root of the postnatal ego and branches into the growing ego.

Schneider defines anxiety as the dyssynergy between the image of the heart and the rest of the ego; the heart image recoils and tends to become too organized and in extreme cases is suppressed and appears in dreams. The psychosomatic syndromes are seen as defenders of the heart. This definition of anxiety brings a new orientation to the problem of premature coronary death and of paroxysmal auricular tachycardia whose rate returns to the rapid intrauterine fetal heart rate. The psychosynergic function of the image of the heart is illustrated in its relationship to sleeping and dreaming. In night terror the child awakens in response to the dyssynergic palpitation of the heart; in day terrors the adult may go into sudden inhibitory sleep to achieve the cardiac standstill of intrauterine fantasy. This indicates the involvement of the cardiac conduction mechanism and psychic injury to the arteries supplying the heart in very severe traumatic situations.

Against these basic considerations, the premise is offered that premature coronary death in relatively young men is the result of a very severe, although masked, continuous onslaught against the child—pressures which produce too organized, too invasive, and too pervasive an image of the heart and its derivatives. The major preoccupation of such individuals is defense of the heart at all costs. Physiologic research must take these factors into account.

Theory of Instinct

Basic to analysis is the instinct theory. In neurologic terms instinctual impulses recurrently reduce excitation, and in metapsychologic terms they recurrently lead to satisfaction. The word tension refers to the strength of the impulse. If the impulse persists without satisfaction, desire appears. If the impulse persists for even a longer period of time without satisfaction, tension increases; if it persists long enough, pain appears.

Freud assumed that early behavior resulted from a fusion of the two instincts. When activity leads to satisfaction, love predominates and hate adds only to the total energy of the activity. With frustration, hate predominates and defusion begins. Melanie Klein assumed a second possibility: that the two instincts are present simultaneously, that primary activity always shows a mixture, and that conflict is present until defusion occurs as a defense. Bowlby subscribes to the frustration theory in which it is stated that hate activity is the reaction to a trauma.

Scott[14] suggests a fourth hypothesis: that love and hate are present together but in an oscillating, not a fused, form. He speculates that loving instinctual energy in the absence of satisfaction leads to a sequence—desire, tension, pain, and finally disorganization. In contrast to fusion and later defusion of the two instincts, this sequence may be seen as well organized at the beginning and disorganized toward the end of the process. The disorganization is reorganizable but only with the energy unchanged. Consequently, when during analysis hate is reorganized into love, the energy of the hate will be manifested in the energy of the love and the anxiety of the hate will be found equally in the anxiety of the love until further progress occurs. Similarly, with the disorganization of love, equivalent energy will appear in hate.

Anxiety and Its Role in the Development of Personality

Pasche[15] attempts a general approach to the concept of anxiety. He defines anxiety as a feeling of imminent internal dissolution which is not referred to any definite part of the body but which is located in the center of the psychic structure. While fear implies a relationship to the external world and is always connected with something definite, anxiety relates exclusively to the relationship of the subject with himself. Anxiety has its roots in the ego, which is torn by the fundamental biologic instincts—the life and death instincts.

In the newborn child and in the infant, anxiety is provoked by sudden, intense, and extensive stimulation which cannot be discharged through sensory and motor pathways. It is expended in a subjective impression by manifestations of the autonomic nervous system, that is, in the vasomotor, cardiac, respiratory, peristaltic, and sphincteric spheres. This type of anxiety in the newborn child and in the infant is caused by the fact that an abnormally high stimulation of the centers cannot be disposed of because of the immaturity of the voluntary nervous system. What causes the disturbance is the absence or the partial deficiency of a function, not the refusal to exert a function which has already matured.

In the course of a child's development, separation anxiety emerges. The discharge of the libido is related to the satisfaction of a privileged organ of the subject and to the contact with a privileged object, any separation from which creates the conditions for anxiety. The privileged object need not be a specific person; rather, it may have numerous aspects which multiply as the child develops and may assume the character of a definite visual or auditory image. These images constitute the representation in which object relations express themselves, and any detachment of the ego from such representation will bring about a damming up of the libido.

When the genital phase is reached, new frustrations may bring about a damming up of the libido, either because of the absence or opposition of the object or because the ego itself tends to frustrate its own drives. In certain individuals all the drives will be equally repressed; in others the ego will sacrifice some of its drives and favor others, concentrating the total energy at its disposal on those drives which have the greatest possibility of success. When sublimation and other mechanisms of defense cannot solve a situation, the choice remains between anxiety, dangerous psychosomatic processes, and forms of behavior which entail serious risks to the subject.

When the subject must renounce the object, it can avoid anxiety without risk and without neurosis only if its finds a new means of discharge. He must replace this missing object either by means within himself or by choosing a new one. At times he may find equivalent substitutes in reality. At other times this goal is reached by the maturation of functions which, together with the structures subserving them, appear in the course of development. The most typical and most comprehensive of these mechanisms are the hallucinatory fulfillment of the desire and the formation of the ego and ego-ideal functions. These systems could not build themselves up without the constant stimulus furnished by anxiety.

The hallucinatory fulfillment of the wish is the most primitive way of compensating for the absence of the mother; it corresponds to a condition of real introjection. This appears to be the beginning of the building up of the ego, which originally represents a pure and simple incorporation of the object. As time passes, the possibility of discharging these hallucinatory wishes becomes smaller and smaller, and it is at this point that the maturation of voluntary muscle control offers the subject a new avenue of discharge, by permitting thumb sucking and masturbation. Under the pressure of these progressive tendencies, autoerotism ceases to be completely satisfactory. At this point the libido becomes invested in the image of the mother. The anxiety provoked by the danger of this loss is counteracted by the formation of the ego ideal, whereby the subject becomes the object, which thus cannot be lost any more. On the other hand, although the formation of the ego ideal is an advantageous stage in development, it entails dangers which may interfere seriously with character formation, particularly if the ego ideal is too greatly separated from reality.

Early Childhood

Servadio[16] discusses preoedipal conflicts from the synthetic and pathogenic viewpoints. The term "preoedipal conflict" presupposes the presence of an ego at the time in an individual's life when typical superego formation is not, as yet, present. He classifies this state as that phase in the child's development which, in both sexes, is dominated by the child-mother relationship and occurs before the father's image has reached decisive importance.

The infant's first conflictual situation is his dependence on the mother and the impossibility of freeing himself from this dependence. This phase is dominated by autoerotism and primary narcissism. The protective mechanisms at the disposal of the elementary ego are introjection and projection. Identification with the breast and later with the mother contributes to the infant's increasing ability to assert himself and to differentiate and consolidate the infantile ego. Servadio differentiates between the undifferentiated stage of primary identification, which has a passive character, and the first active identifications. The infantile need to keep within the boundaries of the somatic and psychic ego is accomplished by introjection of the pleasurable experiences connected with the breast.

In discussing Spitz's view on ego formation,[17] Servadio states his belief that object relations may start earlier than the third month. He tries to reconcile the conclusions of Spitz with those of the English school of psychoanalysis by means of the views of Federn and their further elaboration by Weiss. The latter point of view is that those objects which are narcissistically invested acquire the character of libidinal objects and allow for the union of libidinal desires and the functions of the instinct of conservation, whose representations are felt to belong to the ego.

Servadio believes that the contributions of Melanie Klein would have considerable value if they were completed and revised. In the revised form the classic oedipal situation would be viewed as a crystallization and a simplification of a diffuse and complex phenomenon relating to the instinctual development of the infant. The dichotomy between "good" and "bad" objects according to clinical concepts occurs later and is represented by the two parental images.

In both sexes the breast is the first object of this dichotomy; thus, the oral relationship becomes the prototype of all later object relationships. The involvement of the parental image gives the necessary elements for the formation of an embryonic oedipus complex with monstrous and unreal fantasies. In both sexes the embryonic oedipus complex has as its essential primary elements the maternal breast and the paternal phallus, both of which, through alternate identifications, may be considered as "good" or "bad." Since infantile sexual development involves sensations which at the beginning are predominantly influenced by oral, introjective, and projective mechanisms, we may find in the boyhood fantasies of appropriation of the "bad" paternal phallus anxiety-ridden fantasies, such as being attacked and devoured by this "bad" object. In the girl the desire may be to receive the paternal phallus, and there may be aggressive drives against the mother's body to deprive her of the incorporated paternal phallus. There may be manifestations of the negative oedipus complex, for instance the boy's desire to incorporate the paternal phallus as a source of libidinal satisfaction and the girl's desire to appropriate it and thus possess a virile organ. Servadio therefore views those infantile objects which the Kleinian school considers oedipal as simple nuclear elements of the oedipus complex.

Spitz[17] has summarized the findings in his extensive research on infant development. These studies were conducted by direct observation of children by a male or a female observer supplemented by monthly tests; the development of intelligence, control, perception, physique, interpersonal relations, memory, imitation, and manipulation of objects were evaluated. This study was supplemented by the study of films, interviews with parents, and occasionally the testing of mothers. Spitz thus was enabled to make a longitudinal and horizontal study of infancy.

It was found that the development of object relations falls into three successive stages: (1) preobject, (2) precursor object, and (3) object. The first stage coincides with the stage of primary narcissism. The newborn infant is incapable of distinguishing objects from himself, and he receives only interoceptive perceptions. During the first days of life external stimuli are perceived only if they create displeasure. No object relations exist; responses are in the nature of a conditioned reflex. Specific responses establish themselves in the first eight weeks, when the baby becomes capable of perceiving visually the approach of people; two or three weeks later he gazes at the human face while he is being nursed. The mother's face becomes the most frequent visual stimulus during the first months of life.

In the stage of the precursor object, at the third month, the infant responds to the face of an adult, provided the face is vis-à-vis and in motion. The infant's response is to a signal and not to an object. This response is provoked by anyone but is established only through the mother as intermediary. This period is important because it represents the point at which the infant turns from interior to external reception. Conscious memory traces are already established, implying a division between the preconscious and the conscious states and the beginning of the thinking process. It also marks the beginning of the rudimentary ego, the passage from passivity to directed activity, and the beginning of social relations. In the next three months the infant widens the boundaries of his capacity. The plasticity of this period of development is due to the helplessness of the infant, the transitional and therefore vulnerable nature of the developmental process during the first two years of life, and the absence of a solidly established ego.

Spitz examined the formative influences which play a role in the relationship between mother and infant. The mother's unconscious attitudes, desires, unconscious responses, and affective blocks influence considerably the actions of the baby. This unconscious system of communication between mother and baby establishes itself during the first months of life, before object relations develop. It is based on a phylogenetic anlage and is an expressive, affective form of communication, a type of body language. The signals emanate from the mother and are received kinesthetically by the baby, whose responses are total, like visceral responses. Since the infantile psyche is archaic in this period, Spitz uses the term "somatopsyche."

The signs and signals during the first month of life pertain to equilibrium, tension, temperature, posture, vibration, contact, rhythm, tempo, duration, sound, and probably many other entities. Adults who have maintained the ability to use one or several of these lost types of sensibility become specialists, such as composers, musicians, dancers, equilibrists, and aviators; whereas the average occidental person has largely withdrawn his attention from the perception of these phenomena, both in himself and in others.

The capability of kinesthetic perception is reacquired by the mother during pregnancy and the period which follows. The signals of affective climate of the mother become a system of communication to which the child and mother respond. The infant's personality and character are continuously shaped by these experiences. Pathologic phenomena thus are due not to traumatic events but to the effects of cumulative experiences, including stimuli and repeated responses; this is the affective climate. Spitz calls the production of its effect the "principle of accumulation."

The child manifests displeasure from the third month on only when left by his mother or mother substitute. After six months the response is to a large number of stimuli. Thus, the affects of pleasure and displeasure begin early in life and are necessary to the development of perception, thought, and action. Depriving the infant of the affect of displeasure during the first year of life is as harmful as to deprive him of pleasure.

Between the sixth and eighth months of life the baby discriminates between friend and stranger. A reaction to strangers is one of withdrawal; this "eight-month anxiety" is the first manifestation of anxiety. This reaction is different from the affect of displeasure as manifested by the displeasure of birth, which is physiologic in character and therefore a state of tension. This state of tension becomes organized during the first eight weeks, loses its diffuse character, and becomes understandable to those surrounding the infant. Thus, beginning at the third month a code signal is established by the child.

In the second trimester the fear reaction presents itself. This is a reaction to persons or to an object in the outside world which is associated with an unpleasant experience. This reaction indicates that the child has formed an object reationship and that the mother has become the libidinal object. It demonstrates the acquisition of the function of judgment, a new ego function.

This period of development corresponds to that of the organization of the instincts. Both the libidinal and aggressive instincts are directed against the mother. This fusion of the two instincts reinforces the child's capacity to tolerate frustration, which is the necessary basis for the reality principle. After the eighth month, new and more complex social relations are established, comprehension of the surroundings begins, and the ability to communicate develops. The affective development is marked by the formation of increasingly refined nuances of response, such as jealousy and rage.

Spitz defines a normal relationship between mother and baby as one which is satisfactory to both, highlighted by continual reciprocity and interchange. As deviant types of relationships he lists the following regarding the mother's behavior: active or passive primary rejection, anxiously exaggerated primary solicitude, hostility disguised as anxiety, rapid oscillations between spoiling and aggressive hostility, cyclic oscillations of the mother's moods, and consciously compensated hostility.

Primary passive rejection leads to coma of the newborn infant; active primary rejection leads to vomiting and to respiratory disease. Anxiously exaggerated primary solicitude gives rise to colic during the first few months of life. Hostility disguised as anxiety causes infantile eczema, and rapid oscillations between spoiling and aggressive hostility result in disturbances in the motor sphere. Consciously compensated hostility gives rise to what Bowlby classifies as an "aggressive hyperthalmic personality." Spitz discusses the role of partial emotional deprivation in anaclitic depression and the role of total emotional deprivation in infantile marasmus.

He concludes this paper by pointing out that object relations are the basis of social relations; their alterations, as found in studies of primitive societies, indicate the close correspondence between maternal attitudes and the development of the individual.

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(*Number eighty-four in a series of Recent Advances in Medicine and Surgery*)

Study Shows That Elderly Persons Remain Sexually Active After Ninety

Elderly persons, if reasonably healthy, continue to be sexually active beyond the age of ninety, a study showed today.

The sexual activities and attitudes of 250 volunteer geriatric subjects were studied by members of the Duke University Department of Psychiatry, Durham, North Carolina, as part of an extensive evaluation of the aging process.

An article on the study by Drs. Gustave Newman and Claude R. Nichols appears in the May *Journal of the American Medical Association.*

"Little has been reported concerning the sexual activity and attitudes of older people. There have been many misconceptions, certainly, about the role of sex in the lives of older people in our society."

The group studied represented a generally successful adaptation to aging. None was hospitalized or living in nursing homes or homes for the aged. They ranged in age from sixty to ninety-three.

The authors concluded that "although older people experienced a decline in sexual activity and strength of sexual drive . . . given the conditions of reasonably good health and partners who are also physically healthy, elderly persons continue to be sexually active into their seventh, eighth, and ninth decades."

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by JOHN W. PICKREN, M.D.

DECEMBER 20, 1958

Discussed by ALVIN WATNE, M.D.

Painful Jaundice in a Patient with Urinary Tract Disease

Case History

A seventy-three-year-old white male was first seen at Roswell Park Memorial Institute with acute urinary obstruction three years before his death. At that time he had bilateral hydroureter and hydronephrosis, and the nonprotein nitrogen level was 89 mg. per 100 ml. Following a temporary urinary decompression a suprapubic prostatectomy was performed for adenomatous hyperplasia. During the next three years he had repeated urinary infections, and he required dilatations for a urethral stricture. The nonprotein nitrogen level dropped to and remained at about 45 mg. per 100 ml. The urine frequently contained up to 2 plus albumin, and the specific gravity was always between 1.005 and 1.012. The last dilatation was performed one week before his final admission.

On his final admission he complained of burning on urination, "bloody" urine, vomiting, and abdominal pain for most of the previous week. He appeared to be confused, was dehydrated and icteric, and had a dilated urinary bladder. On the second hospital day the abdomen was noted to be moderately distended with infrequent high-pitched sounds. The patient complained of pain over the entire right side of the abdomen. A roentgenogram of the abdomen showed a pattern consistent with ileus and absence of free air under the diaphragm. While in the x-ray department the patient fell and hit his head, and a hematoma developed over the left temple.

His hemoglobin was 11.8 Gm. per 100 ml., and his leukocyte count was 18,300 with 56 per cent neutrophils. His blood chemistry levels were: blood urea nitrogen 88 mg. per 100 ml., sodium 132 mEq. per L., potassium 4.1 mEq. per L., carbon dioxide 21.7 millimols per L., chlorides 104 mEq. per L., phosphorus 5.4 mg. per 100 ml., and calcium 8.6 mg. per 100 ml. The urine contained 1 plus albumin, 2 plus white cells, and urobilinogen and was bile stained. Decompression of the bowel by a nasogastric tube was attempted.

During the second hospital day the patient developed a tachycardia of 240 beats per minute, which proved to be an auricular flutter and was restored to normal rhythm by carotid artery pressure. Prior to the onset of the flutter the electrocardiogram showed changes suggestive of coronary sclerosis, a condition which was slightly more marked than that present at the initial examination on his first visit to the Institute. His blood pressure was 130/80. In the afternoon and evening of the second hospital day he had a fever of 102 F., and bowel sounds were absent. The patient was treated with fluids intravenously and antibiotics. On the third hospital day he developed signs of pneumonia at the right base, and he was digitalized. The blood urea nitrogen was 102 mg. per 100 ml., bilirubin 4.4 mg. per 100 ml. at one minute and 6.6 mg. per 100 ml. at thirty minutes, serum amylase 55 units, transaminase 54.5 units, lipase 1.5 units, and alkaline phosphatase 34 units. On the fifth hospital day he was stated to have been almost anuric for two days. The blood urea nitrogen then was 150 mg. per 100 ml. The icterus had lessened. On the sixth hospital day the patient's urinary output increased, the distention seemed less, and bowel sounds were present. However, the pain was more localized to the periumbilical area, radiated through to the back, and was more severe.

On the morning of the seventh hospital day bowel sounds were audible, and it was shown that during the previous twenty-four hours the nasogastric tube had drained 1,200 cc. and the urinary catheter 500 cc. of fluid. However, the patient was more confused, and a tremor was present. A flat plate of the abdomen showed gaseous distention of isolated loops of the small bowel, probably some intraperitoneal fluid, and high diaphragms suggestive of increased intra-abdominal pressure. Blood chemistry values were: blood urea nitrogen 113 mg. per 100 ml., sodium 139 mEq. per L., potassium 5.8 mEq. per L., carbon dioxide 19.2 millimols per L., chlorides 95 mEq. per L., calcium 5.9 mg. per 100 ml., and phosphorus 11.2 mg. per 100 ml. The leukocyte count was 22,000. The patient died that afternoon.

Discussion

ALVIN WATNE, M.D.: The information in the first paragraph of the protocol reveals that for three years an elderly male had had hydronephrosis and hydroureter with moderately severe renal damage, indicated by the low and constant specific gravity of the urine and the albuminuria. Repeated bouts of lower urinary infection may have been associated with some ascending pyelonephritis. The patient also had a urethral stricture which necessitated treatment.

The information in the first three paragraphs is that known by the clinicians when they were first confronted with the patient's problem. Several diagnoses must be considered. When a patient with known urinary tract trouble develops additional symptoms, one must think of the possible complications of the urinary system:

1. Urinary extravasation. Urinary extravasation from a rupture of the urethra may present in the perineum or suprapubic region. Hematuria often is associated with the pain and the tenderness of this condition. If the urethra is badly traumatized or transected, the patient cannot void. Rupture of the bladder by a transurethral sound is a very rare occurrence. If the rupture enters the peritoneal cavity, the patient rapidly develops signs of peritonitis, ascites, and advancing uremia from the presence of urine in the abdomen.

2. Perinephric abscess. An acute perinephric abscess causes flank pain and tenderness, and a mass often is palpable. The disease often progresses rapidly to the stage where it necessitates surgical drainage. It may present in the flank, subdiaphragmatic region, or groin.

3. Renal or ureteral calculus. Calculus formation in the kidney or ureter often takes place in patients with chronic urinary infection, especially if the infection is associated with urea-splitting organisms and urinary stasis. In a patient with a renal calculus the pain is in the renal region and radiates down toward the groin and the lower portion of the abdomen. The pain often is crampy or colicky. The presenting symptom often is painful hematuria. These stones usually contain calcium and are visible roentgenographically. Many of these

patients have a previous history of stones.

4. Intestinal obstruction. In over 40 per cent of cases of intestinal obstruction the obstruction is secondary to postoperative adhesions. The patient under discussion had a suprapubic prostatectomy. If the peritoneum was opened, he could have had postoperative adhesions and small bowel obstruction. Sometimes these patients show a palpable mass, tenderness over the obstructed intestinal area, and progressive symptoms. This patient had roentgenographic findings consistent with paralytic ileus. He did not have a localized area with marked intestinal dilatation, nor did he have hyperactive bowel sounds with cramping abdominal pain, symptoms which accompany mechanical obstruction. Other causes of mechanical obstruction are inguinal, umbilical, diaphragmatic, or femoral hernias. Umbilical or inguinal hernias are diagnosed easily. A femoral hernia is dangerous and may be missed even when an inguinal hernia is repaired. A certain percentage of these can present as a Richter's type of strangulation. I have seen 1 patient with a Richter's hernia whose bowel became gangrenous and dropped back into the peritoneal cavity, resulting in generalized peritonitis. Generally when a patient has a strangulated hernia, tenderness in the area of strangulation and the symptoms and signs of mechanical bowel obstruction are present; hyperactive bowel sounds and cramping abdominal pain are followed by nausea and vomiting. The patient did not present this series of symptoms and signs.

This patient had an abdominal problem which may have been due to a disease of another system:

1. Appendicitis. Appendicitis in an elderly patient can be so atypical that it is a frightening possibility. Acute appendicitis is a progressive disease; it either recovers spontaneously or progresses to form a localized abscess or generalized peritonitis. Point tenderness usually is present over the area of the appendix. However, in an elderly patient atypical pain and tenderness may occur; only 8.5 per cent of cases present the typical periumbilical pain that localizes to the right lower quadrant. However, the pain generally is in the right lower quadrant, and point tenderness can be demonstrated. The disease can be progressive and is accompanied by leukocytosis, tachycardia, and very mild fever.

2. Carcinoma of the cecum. Carcinoma of the cecum in an adult patient may perforate and simulate appendicitis. These patients often have anemia. Sometimes they have a palpable mass in the right lower quadrant. Otherwise it is very difficult to differentiate the condition from appendicitis. This patient was not anemic, nor did he have diarrhea or melena.

3. Perforated peptic ulcer. A perforated peptic ulcer does not necessarily cause severe pain in the epigastrium. It can drain and localize to the right lower quadrant. About 80 per cent of these patients have pneumoperitoneum, and about 80 per cent have a previous ulcer history. This patient had neither. Also, his pain was not typical of an ulcer, so I believe that he had some other condition.

4. Mesenteric thrombosis. Mesenteric thrombosis can be either arterial or venous. The arterial occlusion may be embolic or the result of arteriosclerosis. In venous occlusion, hemorrhagic gangrene develops over a period of time. These patients present with diffuse abdominal pain and tenderness. The disease is progressive but does not cause death rapidly. Shock is relatively late. Some of these patients live ten days with relatively nonspecific abdominal pain before they expire.

5. Cholecystitis. Cholecyctitis may progress to gangrenous cholecystitis. Harridge and Helsby[1] showed that the average attack of acute cholecystitis is of very short duration, lasting less than one hour in 41.6 per cent of cases. If the disease progresses, the patient shows localization of the process with pain, tenderness, and often a palpable gallbladder. Free perforation of the gallbladder into the peritoneal cavity is a

relatively rare occurrence. Generally the adjacent viscera will wall off the gallbladder so that the stone passes into the lumen of a nearby hollow viscus—the colon, stomach, or duodenum. The patient under discussion could have had a disease entirely limited to the biliary tract.

6. Pancreatitis. Chronic relapsing pancreatitis is unlikely in this instance because the patient's disease was neither chronic nor relapsing. He had no known previous attacks. Many patients with acute pancreatitis have concomitant biliary tract disease associated with some specific or nonspecific symptoms. Classically, upper abdominal pain radiates through to the back. Shock occurs relatively early, and dehydration is common because of early and persistent vomiting. The disease often occurs after an operative procedure of some type, generally an intra-abdominal process; this patient had had urethral dilation.

7. Myocardial infarction. Myocardial infarction must always be considered in a seventy-three-year-old man. Classically the symptoms are chest pain radiating down the left arm, but occasionally the presenting symptom is abdominal pain. An electrocardiogram is very helpful. This man's symptoms do not point toward his myocardium. In the fourth paragraph of the protocol it is stated that the patient developed tachycardia which was restored to normal rhythm by carotid artery pressure. Auricular flutter very often has the same etiologic background as auricular fibrillation: mitral stenosis following rheumatic heart disease, active rheumatic myocarditis, or, especially in an elderly patient, septic toxemia. The latter may have been the etiologic factor in this patient.

8. Dissecting aneurysm. A dissecting aneurysm is an abdominal catastrophe that is often missed when it occurs in elderly individuals. An abdominal mass generally is present. Roentgenographically, at least, a widened aorta with calcification is visualized, and the x-ray films may show obliteration of the psoas shadow because of a retroperitoneal hematoma. Characteristically the pain radiates to the back and down toward the legs. Hypertension is not essential, and patients often develop shock. Ecchymosis may be seen in the lower part of the abdomen. Obliteration of the pulses in the leg may be associated with a loss of deep tendon reflexes because of lower spinal cord ischemia.

At this point in the discussion the potential diagnoses in this patient are appendicitis, mesenteric thrombosis, and pancreatitis, with or without biliary tract disease. The information contained in the last two paragraphs of the protocol may help to differentiate between these diagnoses. Appendicitis gives rise to atypical symptoms in elderly patients, but in these instances either spontaneous recovery or complications such as generalized peritonitis or an abscess occur; this patient's course did not progress in that manner. The patient remained sick. His pain did not localize in the right lower quadrant and he had bowel sounds, findings which militate against generalized bacterial peritonitis. I therefore believe that this patient did not have appendicitis.

In mesenteric thrombosis a prodromal period of vague abdominal discomfort or previous thrombophlebitis is usually recognizable. Early in the course of the disease the bowel sounds may be hyperactive, and the patient may have cramping and intermittent abdominal pain. About 50 per cent of these patients develop vomiting, with the vomitus occasionally blood stained if the level of infarction is high. If the level is low and peristalsis continues, melena may occur. An enema to see if there is blood in the stool may be a helpful diagnostic procedure. The abdominal rigidity and tenderness are rapid in onset. The duration of the disease is relatively long. Distention is very slight because there is very little gas in the bowel, which is filled with blood and quite edematous in the infarcted area. Cole[2] was able to show that in dogs ligation of the bowel in the area of venous return causes shock by loss of blood into the bowel lumen and wall. The hematocrit and the leukocytic count often decrease from loss of blood into the infarcted bowel, especially in venous thrombosis.

A peritoneal tap has been recommended as an aid in the differential diagnosis of certain abdominal lesions. Moretz and Erickson[3] advocate this procedure, for they have found it to be relatively safe in carefully conducted animal experiments and valuable and without serious complications in 75 patients. The composition, appearance, and odor of the fluid are of diagnostic importance. In patients with mesenteric thrombosis the fluid is reddish brown, has a fecal odor, and contains bacteria. Fluid that has the appearance of "prune juice" indicates peritonitis. Fluid that is yet more bloody and with a fecal odor suggests a gangrenous bowel. Whole blood is found in cases of a ruptured spleen. Milky fluid is seen in patients with early appendicitis. Frank purulent material is found in patients with bacterial peritonitis. Bile-stained fluid with a few particles of mucus tends to point toward a perforated ulcer.

Acute pancreatitis may be hemorrhagic or interstitial. The interstitial form is more difficult to diagnose than the hemorrhagic one. The symptoms are epigastric pain radiating through to the back, which is what this patient eventually developed. Nausea and vomiting occur early in the course of the disease, and they persist. Ileus is a common sign. A sentinel loop may mark the area of pancreatitis in its early phase. About 25 per cent of these patients have jaundice, although it may be mild, and 66 per cent have previous gastrointestinal symptoms. Many of these individuals have an associated biliary tract disease. A mechanism of jaundice, such as an impacted stone, is found in only 25 per cent of the patients who demonstrate jaundice. The jaundice may be entirely due to edema of the pancreas or associated ascending cholangitis.

In 50 per cent of patients with acute pancreatitis the serum amylase level is elevated during the first forty-eight hours of the disease. However, there is absolutely no relationship between the level of the serum amylase and the severity of the disease. The serum lipase level rises later in the course of the disease. The urinary amylase level rises and returns to normal levels a little more slowly than the serum amylase does. After two or three days of symptoms a urinary amylase determination may be of some value. Early in the course of the disease half of the patients show cyanosis with hemoconcentration and impending shock. In contradistinction to some of the other disease entities, such as mesenteric thrombosis, the degree of shock may be out of all proportion to the other findings. The serum calcium level decreases, not early but after five to ten days from the time of fixation of calcium in the fat saponified by lipase. The lowest levels occur in pancreatitis, but low levels are seen here because of leakage from the upper gastrointestinal tract, especially from a duodenal stump. When calcium levels drop below 7 mg. per 100 ml. the prognosis is poor; the calcium in this patient was down to 5.9 mg. Low calcium levels are present in parathyroid disease, but there is no other evidence of this disease in our patient. Tissue destruction associated with acute hemorrhagic pancreatitis can lead to an elevation of the serum potassium and the blood urea nitrogen. However, in this patient the increased amounts of blood urea nitrogen and potassium could be entirely related to the renal disease.

This patient had no previous history of a gastrointestinal disease that is helpful to distinguish between mesenteric thrombosis and acute pancreatitis. Thrombophlebitis is uncommon in pancreatitis, and it did not occur in this patient. This patient had icterus. In mesenteric thrombosis, jaundice usually is absent. However, in 25 per cent of patients with pancreatitis, jaundice is present. Symptoms of intestinal obstruction, such as cramping, intermittent abdominal pain and hyperactive bowel sounds, occur early in the course of mesenteric thrombosis. In pancreatitis the picture of paralytic ileus with nausea and vomiting develops. In this patient the findings do not indicate mechanical intestinal obstruction, especially since hyperactive bowel sounds were not heard, and they therefore are consistent with paralytic ileus.

Shock in the early stages of mesenteric thrombosis is not too common; when it finally occurs, it indicates a very grave prognosis. In pancreatitis, shock may occur quite early and out of all proportion to the other findings. This patient was dehydrated, but there was no sign of impending shock. Late in the course of the disease he was anuric, which may have been due to hypovolemia, but his blood pressure at no time was low enough to be considered as a sign of shock. Pain radiating through to the back is not common in mesenteric thrombosis, but in pancreatitis it is classic. Elevated serum amylase levels occur early in the course of pancreatitis but not in mesenteric thrombosis. No elevation was seen in this patient, but no amylase determinations were made within the first forty-eight hours of his illness. A decrease in the serum calcium content does not occur with any frequency in mesenteric thrombosis. It may accompany pancreatitis and may be a rather severe complication. It was present in this patient.

The final symptoms of our patient fit those of pancreatitis. Some complications of pancreatitis are: abscess, hypocalcemia, and diabetes. A common cause of death, of course, is shock. In this patient hypocalcemia occurred. When the calcium becomes low and the potassium is high, death results from cardiac arrest. His tetany and neurologic symptoms could be entirely accounted for on the basis of hypocalcemia. At no time were there symptoms or signs to suggest increased intracranial pressure resulting from a subdural hematoma that might have developed from the patient's fall in the x-ray department.

I would say that the patient's primary problem was acute hemorrhagic pancreatitis. Whether or not he had concomitant biliary tract disease, I cannot say for sure. I see nothing in the findings which indicates that he did. I would say that his death probably did not result from shock but may well have resulted from cardiac arrest secondary to hyperpotassemia and hypocalcemia. The patient also had hydronephrosis with what I would call pyelonephritis. He had fluid or pneumonia of some type in the lower lung field. This could have been secondary to an intraperitoneal disease or hypostatic pneumonia. In this patient hypostatic pneumonia is highly probable, and I would say that he had this in addition to his abdominal condition.

JOHN W. PICKREN, M.D.: The floor is now open to discussion or questions.

HERSCHEL MOSS, M.D.: Did anyone examine the patient's eyegrounds after his fall?

C. LENORE SIMPSON, M.D.: His eyegrounds showed no changes.

ROBERT TARAIL, M.D.: Hypocalcemia occurs frequently in renal disease and in renal failure. Although I share Dr. Watne's opinion that the patient had pancreatitis, hypocalcemia in renal failure must be considered.

JULIAN AMBRUS, M.D.: Dr. Watne indicated that thrombophlebitis occurs with mesenteric thrombosis but does not occur with pancreatitis. Several recent papers indicate a very good correlation between pancreatitis, as well as carcinoma of the pancreas, and thrombophlebitis.

Diagnosis

Clinical.—*(1) Obstructive jaundice, etiology unknown; (2) chronic pyelonephritis; and (3) pneumonia.*

Dr. Watne.—*(1) Acute hemorrhagic pancreatitis with obstruction of common bile duct, (2) chronic pyelonephritis, and (3) pneumonia.*

Anatomic.—*(1) Carcinoma of head of pancreas with obstruction of common bile duct, (2) perforation of common bile duct with bile* *peritonitis, (3) pneumonia, (4) chronic pyelonephritis, and (5) extradural hematoma of left middle fossa.*

Pathologic Report

Dr. Simpson: At autopsy several conditions were found: right lower lobe pneumonia, bilateral hydronephrosis, chronic pyelonephritis, 25 cc. of an extradural hematoma in the left middle fossa, and minimal pericarditis (probably related to the patient's elevated blood urea nitrogen). His heart weighed 810 Gm. A large myocardial infarction involved the anterior wall, septum, and posterior wall.

When the peritoneal cavity was opened, 3,000 cc. of thick, viscid, yellowish green fluid was seen and recognized as bile. There was active peritonitis. A distended gallbladder measured 28 by 8 by 5 cm. and projected 4 cm. below the liver edge. The cystic duct was dilated, measuring 1.4 cm. in circumference, and the common bile duct measured 3.5 cm. Through a 1.5-cm. area of necrosis in the terminal portion of the common bile duct, bile could be emptied into the peritoneal cavity. Five free, small, black, polyhedral bile stones were found in the peritoneal cavity.

Directly posterior to the ampulla of Vater a 3-cm. mucinous mass appeared to compress the terminal portion of the common bile duct. The pancreatic duct was dilated, having a circumference of 5.5 cm. at the head and 3.2 cm. in the body and tail, and it contained mucin. Most of the pancreas was fibrosed. There was mild dilatation of the intrahepatic bile duct, the liver was fatty, there was some evidence of active cholangitis, and there was acute inflammation in the wall of the gallbladder.

The provisional anatomic diagnoses were cholecystitis, chronic pancreatitis, and perforation of the bile duct. Sections for microscopic study showed a fibrous pancreas with large pools of mucin. In close association with these pools of mucin were atypical columnar neoplastic cells. I feel that the patient had carcinoma of the head of the pancreas. The malignant lesion had obstructed the common bile duct, and rupture of this duct led to remission of the icterus but resulted in bile peritonitis and death.

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You really aren't getting old until acquaintances ask you how you are and you tell them.—Robert Quillen

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D., Secretary, Medical Education for National Defense (MEND) Committee, Albany Medical College

Survival in a Thermonuclear War

II. The Effects of Hydrogen Bombs

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To evaluate the effectiveness of any proposed defensive measures, we must know something about the offensive weapons which may be used and the possible methods of delivering them. This problem at first seems complex since there are so many possible variables. For example, bombs range in size from 1 kiloton (1,000 ton T.N.T. equivalent) to 20 megatons (20,000,000 ton T.N.T. equivalent). Each bomb produces a somewhat different pattern of destruction depending on the height at which it explodes. There may be bursts beneath the earth's surface, at the surface, high in the air, or under water. Bombs can be delivered by plane, ship, or intercontinental ballistic missiles. There may or may not be any warning before the bombs explode.

In the face of all these possibilities, it is understandable that many people become confused about the entire situation. Nevertheless, it is possible to simplify the problem so as to be able to plan defensive measures intelligently. Fundamentally, this involves preparing for the worst while hoping for the best. Thus, the assumptions which will be made are based on the concept that if we are attacked, the enemy will use his maximum power and that all his missiles and bombs will perform perfectly. If, as seems quite possible, the enemy's efficiency is less than perfect our defensive measures will be even more effective than was planned.

The first assumption is that if war comes there will be no humanitarian deterrent. An enemy can be expected to try to destroy us as quickly as possible. It follows that unless protective measures are taken, radioactive fallout would be the major cause of death. Radioactive fallout can kill about 100 times as many people as can the other effects of the bomb. Furthermore, contrary to some reports, there would be no substantial danger to any enemy from distant fallout, that is, a fallout from a bomb explosion in America. Thus, it is foolish to hope that they will use "clean" hydrogen bombs.

The second assumption is that the enemy will use his large bombs. Therefore, we must prepare for attacks with 20 megaton bombs. It may be that 20 megaton bombs will be too large for rocket delivery. In that event, our protective measures will be more effective. It is unlikely that weapons larger than 20 megatons will be used. A law of diminishing returns applies, and beyond the 20 megaton size there is little added destruction. Most of the extra force is wasted in the air. Thus, two 20 megaton bombs would cause much more destruction than a 40 or even a 60 megaton bomb.

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The third assumption is that the enemy will try to deliver his bombs with the greatest surprise and least possible warning (remember Pearl Harbor). If bombers are used, we may expect at least a one-hour warning. If intercontinental ballistic missiles are used, the warning period may not exist, or if it does, it may be very short, certainly not more than fifteen minutes. It is encouraging to read that the American government is working on a radar system which will give some warning of approaching missiles. Even a five-minute warning would be quite helpful. However, it is not possible at this time to make any definite assumptions about whether or not there will be any warning at all. Therefore, the benefits of defensive measures which will be discussed in a later article will be considered under two headings: effectiveness with some warning, and effectiveness in the absence of warning.

The argument might be raised that an enemy would not dare use as many as 250 hydrogen bombs at once because of the fear that the long-range fallout might descend on them and kill their people. Actually, there is very little chance that the fallout from bombs bursting in the United States would hurt seriously a European or Asiatic country. In the first place, almost all the heavier fallout particles fall to earth within 150 miles of the burst. These heavy particles contain the major portion of the radioactivity. Medium-sized particles would fall out over other areas of the continent, and smaller particles would fall out over the oceans. Only the extremely small particles would get as far as Europe or Asia, and they would be scattered over a vast area. Furthermore, the radioactivity of the fallout particles from a hydrogen bomb explosion is reduced very rapidly. At the end of seven hours it is only one tenth of what it was at the end of one hour. At the end of two days it is about one hundredth of its level at one hour. Since it takes many days for small dust particles to be blown from the United States to Europe or Asia, it follows that most of the radioactivity will be gone even from the particles which do fall out. Based on these facts, it is possible to estimate conservatively that if an overseas enemy does explode a large number of hydrogen bombs in this country, the amount of radiation which eventually reaches that country will be considerably less than one ten thousandth of the amount falling on the United States. This represents no real hazard to them.

TABLE I.—Lethal Effects of 20 Megaton Bomb

	Ground Burst—No Shelter	
Effect	Probable Lethal Radius in Miles	Probable Lethal Area in Square Miles
Crater	0.35	
Absolute destruction of underground shelter	1.0	3.14
Initial nuclear radiation	2.5	20.0
Blast effects	10.0	314.0
Flying missiles	10.0	314.0
Initial heat radiation	12.0	452.0
Firestorm*	Up to 20	1,250.0
Radioactive fallout	140 (oval)	10,000 to 20,000

* This effect is unpredictable.

The dangerous effects of a thermonuclear weapon can be considered under several headings:[1]

1. Initial nuclear radiation from the fireball.
2. Initial heat radiation.
3. Firestorm following initial heat radiation.
4. Blast effect.
5. Flying missiles secondary to blast.
6. Radiation from fallout.

In Table I, the radius and area of these effects are listed. It will be shown that adequate precautions can reduce the dangers appreciably.

It is important to consider each of these effects singly to understand the significance and importance, as well as the limitations, of defense measures.

The zone of absolute destruction which extends up to 1 mile from ground zero, depending on the soil structure, includes the crater and the disrupted soil immediately around it. No practical defense measures exist in this zone, and any person within the area will probably die within a fraction of a second. The area of about 3 square miles represents the limitation of all practical defense measures. However, this is a comparatively small area, less than 1 millionth the area of the United States.

The initial nuclear radiation from the fireball consists mainly of neutrons and very high energy gamma rays. These are far more penetrating even than the gamma rays from fallout. Ordinary shelters do not protect against these rays within the 2.5 mile radius. For reasonable protection, about 6 feet of earth or $3^1/_2$ feet of concrete are needed. In some cases, shelters of this nature can be built at a very small increase in cost over that of the ordinary shelter.

The blast wave and flying missiles will destroy almost all conventional frame houses up to 10 miles away. Reinforced concrete buildings may remain standing even up to 5 miles of ground zero. Underground shelters give a variable degree of protection against blast, depending on their design. Those designed only for fallout may be only slightly stronger than a frame house. Those designed to resist blast are, of course, stronger. It is helpful to think of blast effects in terms of pounds per square inch of overpressure. One pound per square inch equals 144 pounds per square foot. As a basis of comparison, the floors of homes are designed to withstand pressures of 40 pounds per square foot (0.28 pounds per square inch). In shelter design, the ranges of blast overpressure extend up to 100 pounds per square inch.

The initial heat radiation from the fireball is released in 2 separate pulses within a period of a few seconds. This heat is in the neighborhood of millions of degrees in the fireball center and falls off rapidly. Its importance would depend on many factors, including the clarity of the air, the time of year, the presence of buildings, and so forth. In theory, the heat radiation on a clear day could burn fatally a nude person at a distance of more than 20 miles. However, cloudiness would reduce its intensity, and, of course, clothing gives excellent protection, as does a building between the person and the fireball.

The initial heat radiation also can produce a firestorm, which is a fire raging over a wide area of a city, at least 1 square mile, with the air so hot that everything combustible in the area begins to burn even before directly touched by flame. During a firestorm a large area acts as if it were a fireplace. From all sides air rushes in with gale force and speed. This air is heated in the fire and rises in a column over the burning area. The air temperature on the streets may reach 1,400 F. (The maximum temperature in an ordinary oven is 500 F.) In addition to the intense heat, there is a shortage of oxygen in the entire area, and a lethal concentration of carbon monoxide. Firestorms are usually over within six hours. There is one hopeful aspect of firestorms, however. Once established, they do not spread to other areas. The reason is that the winds, usually 50 miles an hour and more, blow from outside the firestorm area towards its center.

Firestorms were produced in Hamburg in 1943 and in several Japanese cities.[2] One firestorm in Hamburg killed 60,000 people. As yet, all the factors involved in the production of a firestorm are not known. Humidity, prevailing winds, and terrain all probably play a role. It is not possible to state that a firestorm will occur in any particular area if multiple fires start. On the other hand, we do know that firestorms will *not* occur unless buildings are fairly close together. If less than 20 per cent of an area is under roof, firestorms will not occur. Thus, most suburban, and all rural areas, will be safe from firestorm unless they contain dry vegetation.

Ordinary shelters do not provide protection from firestorm. If deep enough underground, they might keep the occupants safe from the heat above. However, special measures would be needed to provide oxygen and to protect against carbon monoxide poisoning. The only feasible method of overcoming this problem appears to be the storage within the shelter of a compressed oxygen supply adequate for six hours (the usual duration of a firestorm). One large cylinder of oxygen can supply 5 people for over six hours if the exhaled carbon dioxide is absorbed. When apparatus for protection against firestorm is available, it can be fitted into existing shelters.

Although firestorms are frightening things, and although we can't at present get adequate protection from them, we must keep them in perspective. Firestorms may not follow a hydrogen bomb explosion. Even if they do, they are relatively restricted in area. A firestorm can kill 60,000 or even 600,000 people. However, it cannot compare in deadliness with radioactive fallout from a single bomb which could easily kill 6,000,000 to 12,000,000 people. The fact that we cannot be optimistic about saving the 600,000 should not discourage us from taking all possible steps to save the remaining 5,400,000 or more. For the time being, until adequate measures are designed to prevent firestorms, it seems wisest to concentrate our efforts on the major threat, radioactive fallout.

The greatest hazard from hydrogen bombs comes from the radioactive fallout. The explosion of a bomb sucks up millions of tons of earth which become radioactive. This material is carried for varying distances by the winds in the stratosphere until it falls to earth. The heavier the particle, the sooner it falls to earth. The fallout pattern usually has the shape of a fat cigar. The area of fallout is not completely predictable since the stratospheric winds may not have the same direction as the ground-level winds.

The fallout from a 20 megaton bomb extends many hundreds of miles beyond ground zero. However, the most intense fallout usually extends to about 140 or 150 miles from ground zero. Ordinarily, within the fallout pattern, the fallout radiation intensity is greater near ground zero.

Persons who are 140 miles or less from the explosion site, and in the cigar-shaped pattern, will probably receive a lethal dose of fallout unless they have some shelter. However, a relatively small degree of shelter, such as an ordinary basement, can save the lives of most of them. On the other hand, in areas closer to ground zero, ordinary basements provide inadequate shelter. Thus, people living about 50 miles from the center of the explosion in the cigar pattern will probably receive a lethal dose of radiation from fallout even if they remain in an ordinary basement.

Accordingly, it should be clear that radiation fallout constitutes the major hazard of a hydrogen bomb, and, furthermore, that it is a far greater hazard than all the others combined. It is important to consider just how great this hazard really is. Let us assume that people are equally distributed within the 15,000 square mile area of lethal fallout and have no shelters at all. Less than 1 per cent will be killed within the zone of absolute destruction. Less than 1 per cent will be killed by initial nuclear radiation. Approximately 2 per cent will be killed by blast and flying missiles. An additional 1 per cent might die of initial heat radiation, and, if a firestorm occurs, perhaps an added 5 per cent would die. The remaining people, between 91 per cent and 96 per cent, will die of fallout radiation.

As another example, let us assume that everyone has a good basement and stays in it. This will reduce the deaths from radiation fallout considerably, perhaps to as low as 30 per cent. Even so, many more persons will die of radiation fallout than of all the other effects combined.

Fortunately, simple shelters can give ex-

TABLE II.—RELATIONSHIP OF BOMB SIZE TO RANGE AND AREA OF EFFECTS

Bomb Size (Megatons)	Radius of Effect in Arbitrary Units	Area of Effect in Arbitrary Units
20	2.71	7.34
10	2.15	4.62
5	1.71	2.92
2	1.26	1.59
1	1.00	1.00

This table may be used to estimate effects of a bomb of a size other than that listed in Table I. For example, if we wish to estimate the probable lethal radius of the blast from a 2 megaton bomb, knowing that a 20 megaton bomb has a 10 mile radius, we use the proportion $\frac{2.71}{1.26} = \frac{10}{x}$. Thus, the probable lethal radius of blast from a 2 megaton bomb (no shelter) is 4.65 miles.

cellent protection against fallout.

It may also be of interest to consider the relationship of bomb size to the range of its lethal effects. Some missiles are designed for bombs smaller than 20 megatons. The radius of any effect of a bomb is proportional to the cube root of its explosive power in megatons. The area of its effect is proportional to the square of the cube root. In Table II, a comparison of different size bombs is presented.

There are also important indirect effects of hydrogen bomb attacks. It is obvious that most of the ordinary activities of the country will come to a halt. This includes the production and distribution of food. The Federal Civil Defense Administration advises that a seven- to fourteen-day food supply be kept for emergencies. This amount may be completely inadequate. Unless much larger amounts of food are stored, many survivors of the attack will probably die of slow starvation. All standing crops will probably be destroyed or so contaminated as to be useless. Farmers are unlikely to start farming until the radioactivity of their fields has fallen to safe limits. Most farm animals will be dead.[3,4]

It is true that we have in this country about 2 billion bushels of surplus grains, equal to several years supply for the population. However, all this grain is stored *above* ground. Some of it would be destroyed in an attack, and much of the remainder would probably be so badly contaminated that it could not be eaten until after about six months or until the radioactive contaminants decayed to a safe level. Thus, unless proper precautions are taken, starvation may be a major cause of death. Fortunately, it is relatively simple to store food in safety. The details will be discussed in a subsequent article.

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(*Number two in a series on The Physician in Civil Defense*)

I never had a piece of toast
Particularly long and wide
But fell upon the sanded floor,
And always on the buttered side.—JAMES PAYN

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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Respiratory Obstruction Following Endotracheal Intubation

IRRITATION resulting in edema of the larynx and trachea due to endotracheal intubation in a child may cause respiratory obstruction after the endotracheal tube is removed, as occurred in the following case. This possibility should be considered in the immediate postoperative period whenever an endotracheal tube is inserted into a child.

Case Report

A ten-year-old boy was admitted to a hospital for surgery to lengthen his soft palate by means of a postpharyngeal flap technic. He had had a congenital cleft palate which had been repaired several years previously; however, the palate was fairly soft and the boy's speech carried a fair degree of nasality.

His physical condition was good. He weighed 28 Kg. His arterial blood pressure was 110 mm. Hg systolic and 70 diastolic, and his pulse rate was 110 beats per minute. His lungs were normal to auscultation and appeared normal on roentgenologic examination. The hemoglobin content of his blood was 12.3 Gm. per 100 cc.

At 6:30 A.M. for preanesthetic medication he was given Seconal 60 mg., morphine 6 mg., and scopolamine 0.3 mg. intramuscularly. At 7:30 A.M. he arrived in the operating room awake and slightly apprehensive. At 7:55 A.M. anesthesia was induced by the intravenous administration of thiopental sodium in increments of 50 mg. for a total of 200 mg. The patient was well ventilated with oxygen, and he then was given intravenously 40 mg. of succinylcholine prior to laryngoscopy.

At this time the vocal cords were sprayed with 2 per cent Xylocaine, and a number 24 anode tube was inserted into the trachea. The tube was sewn into place by the surgeon, who then proceeded to raise a flap of the posterior pharyngeal wall measuring 3 by 4 cm. The nasal surface of the posterior portion of the soft palate then was

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Discussed at a conference held at Bellevue Hospital, New York City, April 4, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

raised and turned downward and backward to create a raw surface to receive the anterior surface of the posterior pharyngeal flap. This was done while the patient received nitrous oxide, oxygen, and ether anesthesia by means of a semiclosed technic through the endotracheal tube. At the end of the operation no active bleeding was noted. A gauze pack was applied to keep the teeth from tight approximation, and the tongue was sutured to keep it from retracting.

Within twenty minutes after the patient's arrival in the recovery room his mouth was observed to be filled with blood, and simultaneously his respirations became obstructed, presumably by blood at the vocal cords, causing laryngeal spasm. Blood was suctioned from the mouth and the pharynx. An endotracheal tube was reinserted rapidly. Some blood-tinged secretions were aspirated from the trachea through the tube. The surgeon then decided that a tracheostomy should be performed, since there was a good possibility of edema and swelling in the operative area because of the two endotracheal intubations which had been performed within a short period of time. This was done accordingly.

At the time of this episode physical examination revealed no significant abnormalities in the lungs. However, a roentgenogram of the chest the following day revealed a poorly defined density in the left retrocardiac region which could conceivably represent an area of pneumonitis, possibly secondary to aspiration; the lung fields otherwise were clear. A widening of the superior mediastinum, conceivably secondary to the tracheostomy, also was noted. Postoperatively the child's course was not remarkable. He did have an elevation of temperature ranging from 38 to 39.2 C. for the first three days after surgery and between 37.5 to 38.2 C. thereafter. The tracheostomy tube was removed on the fifth postoperative day, and the child was discharged from the hospital on the tenth postoperative day.

Comment

This is precisely the kind of case and incident for which the recovery room is ideally suited. The prompt recognition of respiratory obstruction occasioned by blood in the pharynx and the prompt handling of this emergency by suctioning and reintubation can be considered lifesaving. One wonders, however, whether the subsequent therapeutic measures were a little too vigorous for this situation.

There were two matters for concern in this case. One was the possibility of the aspiration of blood, which presumably had regurgitated from the stomach since no active bleeding points were seen. Suction through the endotracheal tube did demonstrate the presence of some blood in the tracheal tree, and it is within the realm of possibility that suction through a tracheostomy tube would have been a more efficient means of clearing the lungs, assuming that blood was still present. With this line of reasoning one also might have suggested aspiration bronchoscopy in the immediate postoperative period for the purpose of clearing the tracheobronchial tree. Militating against this procedure, however, would have been the surgeon's unstated but implicit reluctance to endanger the plastic operative procedure, that is, the postpharyngeal flap, by the manipulations necessary in bronchoscopy.

The other matter of concern was that of airway obstruction due to edema as a possible complication of both the pharyngeal dissection and the two endotracheal intubations. Had this child been in a much younger age group, such as under three or four years of age, the possibility of postoperative pharyngeal and subglottic edema would have been a much more cogent matter of concern. With a tracheal diameter of 7 to 10 mm. in a child in the one- to five-year age group, 1 or 2 mm. of submucosal edema circumferentially could be a serious encroachment in the airway. The 10 to 12 mm. diameter of the trachea in a ten-year-old, however, is less critically encroached on by an equivalent amount of edema.

Although in principle an orderly tracheostomy is to be preferred to a hurried emergency tracheostomy, it does seem that this child could have been placed in a croup tent or croupette and watched closely for a few hours so that the earliest sign of respiratory obstruction would have been noted and accepted as an indication for tracheostomy.

On the whole, however, one might summarize by saying that this patient presented an acute respiratory problem in the recovery room during the immediate postoperative period which was handled promptly and well, if perhaps somewhat vigorously.

(*Number ninety-three in a series of Clinical Anesthesia Conferences*)

Causes of Oral Cancer

In this two part article the authors present their conclusions on the complex problems of oral cancer based on experience from the care of 783 cases. Their discussion covers pathology, etiology, location of lesions, and management. Only the section relating to causes will be reviewed here. Covered are: the use of tobacco; rubbing dentures, malocclusion, and sharp teeth; carious teeth; galvanism between different metals in the mouth; and the chronic use of alcohol. The possibility of an association between syphilis and leukoplakia of the tongue with subsequent cancer also is considered. In the experience of the authors simultaneous syphilis and cancer have always given a poor prognosis.

Tobacco.—A total of 74 patients gave a history of using tobacco: pipe, 26; cigarets, 18; snuff, 16; cigars, 7; chewing, 7. Heat from the pipe may be a factor; the area is usually localized to the point where the pipe is held, placing the lesions, as a rule, in the interdental line in the buccal areas and over the gingiva on each side of the tongue and the floor of the mouth. In the cigaret smokers, the malignancies usually arose in each buccal commissure or posteriorly on the tongue, or the posterior tonsillar-buccal area. In the snuff dippers (all women seventy to eighty years old who would rather dip snuff than eat), there was deficiency of vitamin B complex and vitamin C. If cancers are cured in these older people, they should get multiple vitamins orally with mineral contents in proper proportions, also 10 to 15 units of crude liver extract parenterally once or twice a week.

Rubbing Dentures, Malocclusion, Sharp Teeth.—These factors were thought to operate in 59 cases. In 20, there were sharp, carious teeth close to the area of cancer growth. Obviously sharp, ragged teeth causing direct trauma should be eliminated; rounding off the sharp points is preferred to extraction. In 5 cases there was a malocclusion or a narrowing of the horizontal plane of the floor of the mouth. The lower molars and bicuspids angled inward on each side, thereby causing a saw-like action as the tongue goes in and out of the mouth. Teeth causing such trauma, the authors believe, should be removed and, if there is a malignancy present, should be left out permanently; no partial dentures are advised.

Carious Teeth.—These constituted the positive etiologic factor in 22 patients. The authors say that in their practice, these teeth are left in place about 95 per cent of the time before radiation therapy. This is done because it is believed that the damage has already been done and removal in the presence of malignancy would be dangerous. However, necessary measures are taken to clean up the mouth. If the teeth are to be removed later, an interval of three to four years is allowed after radiation therapy. Where artificial dentures were used, the patient is advised to wear them only for short intervals, as for a special public appearance, after the cancer has been cured. Rubbing of the plates, it is felt, may cause a recurrence.

Galvanism.—Electric currents between dissimilar metals in the mouth was a definite factor in the cause of leukoplakia, leukokeratosis, and cancer in the mouth in 5 patients. There are many amalgam fillings which show 20 to 30 microamperes of current running toward a gold filling immediately adjacent to the squamous cell tongue cancer.

Alcohol.—This was rarely recorded but the authors think it is an etiologic factor much more often than is suspected.

—Minnesota Medicine, February, 1960, John H. Lamb, M.D., and Dwane B. Minor, Oklahoma City, Oklahoma

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

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Nitroglycerin, Thallium, Antifreeze, and Tung Seed Poisonings

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Nitroglycerin	$2^1/_2$ years	Female
	$4^1/_2$ years	Female

While the mother was in the kitchen visiting with her mother-in-law and drinking coffee, both patients came into the kitchen and related that they had taken some medicine from the grandmother's purse and had swallowed it. The grandmother did not know exactly how many tablets were missing from the bottle which she had had in her pocketbook. Although there were no symptoms, the patients immediately were taken to a hospital emergency room, where their stomachs were lavaged within fifteen minutes after ingestion. After a short period of observation the patients were sent home.

Both patients were judged to be of average intelligence, to have normal growth and development, and to be rather active. The parents were of low socioeconomic and educational levels. In answer to a report form question whether or not these incidents could have been prevented, the interviewing public health nurse replied "yes, by placing the medication out of the girls' reach."

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Nitroglycerin	2 years	Female
	5 years	Female

The children climbed into a closet and obtained the nitroglycerin tablets which the grandmother was using for a cardiac condition. They ingested an undetermined amount of $^1/_{150}$-grain tablets. Both children were admitted to a hospital. The only symptom in the younger child was drowsiness. She was given syrup of ipecac and was discharged as recovered after six days.

On admission the older child was comatose and reacted only to strong stimuli. Her blood pressure, pulse rate, and respirations were within normal limits. Blood chemistry and urinalysis findings were essentially negative. The electrocardiogram showed normal chest leads. The patient was treated with methylene blue 20 cc. intravenously, oxygen by tent, a Levin tube with 5 per cent dextrose in water 500 cc., and 1:1,000 epinephrine 0.3 cc. intramuscularly. Overnight the blood pressure rose from the 80/40 on the patient's admission to 100/40. The patient was in a semicomatose state for two days. On her recovery all physical findings were essentially negative. She was discharged after eleven days.

No methemoglobinemia was observed in either child. The severe coma exhibited in the older child is outstanding among the cases of nitroglycerin ingestion in children reported to this Center. The parents of these 2 patients are of low socioeconomic and educational levels. The children were judged to be of average growth and development, physically and mentally. In this instance the preventability aspect is obvious.

Incident 3

Toxic Agent	*Age*	*Sex*
Thallium	5 years	Male

This incident was reported to the Center by Sidney Cohlan, M.D., associate director of the Department of Pediatrics of the New York University-Bellevue Medical Center. The patient was admitted to the hospital because of ataxia and alopecia of recent occurrence with progressive left eyeground changes and papilledema of the disk which later subsided. Three months prior to his admission the mother noted that the child had become "lazy" and had an uncertain gait, using his right foot more than his left and stumbling going downstairs if he did not hold on to the rail. The patient became unable to run for any length of time, was quiet, and had vague complaints of pain in his legs. He became more withdrawn and frequently had a bewildered expression on his face. Three months prior to admission he began losing his hair, and shortly afterward the mother noted a slight tremor of his left hand.

The patient's past history included a full-term, normal, spontaneous delivery with no complications; normal growth and development; a normal diet for his age; no allergies; and diphtheria and poliomyelitis immunizations. The family history disclosed that the patient's father had had ulcers and had died of leukemia at the age of twenty-seven. A cousin of the father has leukemia at the present time. There also is a family history of diabetes.

The physical findings were negative except for baldness in the occipital region; the eyebrows were intact. The laboratory findings were negative except for very mild anemia. The x-ray findings likewise were negative, showing no abnormalities of the heart, lungs, skull, or long bones. The electroencephalogram was within normal limits. During the patient's hospital stay thallium was demonstrated to be present in the urine and in the blood. The child improved, and he was discharged on the fourteenth hospital day with a final diagnosis of thallium poisoning. No definite exposure to thallium could be elicited. The child, however, lives on a farm, and there is the possibility that a thallium pesticide might have been ingested accidentally.

It is reported that a single dose of 8 to 10 mg. of thallium acetate per kilogram of body weight has been fatal to some children. Since it is believed that thallium preparations can be replaced by less hazardous substances, the New York City Health Code now restricts the use of thallium to those with special permits for each use, except for sealed containers having less than 1 per cent of the substance.

There is no specific or satisfactory treatment for thallium poisoning, although BAL reportedly has been used with some beneficial effect.

Thus far, the best treatment available is symptomatic and supportive. Immediately after such an ingestion an emetic and a gastric lavage with a 1 per cent solution of sodium iodide or potassium iodide are advisable.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Prestone Antifreeze	45 years	Male

This incident was reported from Westchester County, New York. The patient ingested an unknown amount of antifreeze fluid. He was taken to a hospital, where the following symptoms were noted on his admission: abdominal pains, respiratory distress, convulsions, stupor, and coma. The laboratory examination showed acidosis and albuminuria. The patient developed renal insufficiency with a rising nonprotein nitrogen level. He was treated at Grasslands Hospital, Valhalla, with sodium lactate and fluids intravenously. Since hemodialysis was felt to be indicated, he was transferred to Bellevue Hospital (Second Division), New York City. Fifteen days following his admission, however, the patient died. The final diagnosis was diethylene glycol toxicity.

The incomplete reporting of this very interesting case does not permit a fuller discussion. A strong plea is made to all hospitals for prompt and complete reporting.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Tung Seeds	23 years	Male
	28 years	Male
	38 years	Male

These are the first 3 cases of tung seed poisoning reported to the New York City Poison Control Center. On February 26, 1960, at noon, 3 longshoremen working at Pier 23 in Brooklyn became ill with symptoms of diarrhea and vomiting. There were 2 complaints of cramps and 2 complaints of nausea. The 3 men were taken to the Lutheran Medical Center in Brooklyn, where they were admitted.

The first individual was a twenty-three-year-old white male. On February 26 at 11:00 A.M. he found a tung seed on the floor close to an open bag of tung seeds. He ate one of the seeds at noon. At lunch he ate some fish cakes, and he immediately became sick with nausea, vomiting, abdominal cramps, and diarrhea. He was admitted to the hospital at 1:00 P.M., where he remained until March 2. The initial urinalysis disclosed the presence of four to six red blood cells. A complete blood count and blood chemistry determinations for renal and liver functions gave essentially negative results.

The second case occurred in a white male thirty-eight years of age. At about 11:30 A.M. he ate several (seven to ten) tung seeds. At noon, while eating his lunch, he began to have a burning pain in his epigastrium. This was followed by nausea, abdominal cramps, and diarrhea. At the hospital, complete blood counts, a urinalysis, and blood chemistry determinations for renal and liver functions were done; these tests gave essentially negative results.

The third case occurred in a white male, age twenty-eight. At 11:30 A.M. he ate three quarters of a tung seed. A few minutes later he became nauseated, and then vomiting and diarrhea ensued. Laboratory studies similar to those for the other 2 cases were done at the hospital. Urinalysis disclosed the presence of occasional red blood cells; the remaining laboratory findings were essentially negative.

All 3 patients became ill following tung seed ingestion. One became ill immediately after the ingestion, and the other 2 became ill thirty-five to forty-five minutes later. It was ascertained that a bag of tung seeds had opened accidentally and some of the seeds had fallen to the floor.

The tung seed has a nutlike appearance and an almond-like taste so that the longshoremen believed that they were eating one of the edible nuts.

The following information was obtained from Muenscher's *Poisonous Plants of the United States**:

> Tung seeds come from the tung tree whose

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* Muenscher, W. C.: Poisonous Plants of the United States, New York, Macmillan Company, 1939, p. 151.

genetic name is Aleurites Fordii, Hemsl. This is a small tree with stout branches, and alternating palmated veined leaves. The tree gives forth flowers in large showy clusters. It bears fruits with five large nutlike seeds. The tree was originally introduced from China in 1905. It is grown mainly in the Southeastern section of the United States, from Georgia to Florida and westward to Texas. It is used mainly for the seeds from which tung oil is extracted, which oil is used in the manufacture of varnish. The poison of the tung oil has been found to be a saponin which can be isolated from the leaves and from commercial tung meal. The poisonous nature of the leaves and the tung seeds was first discovered when animals such as cattle accidentally ate the dry leaves, the flower, or the seeds. In animals a profuse watery bloody diarrhea results accompanied by nausea and vomiting. The clinical condition may go on into shock and death. Postmortem findings in animals disclosed generalized inflammation of the mucous membranes of the gastrointestinal tract, with hemorrhage, edema, and necrosis. A general passive congestion of the internal organs is also found.

One of the occupational hazards of longshoremen is the temptation to eat the agricultural raw products that they handle. We previously have reported poisonings in longshoremen who while loading the product ingested castor beans to cure constipation. An internationally accepted warning symbol for products of this nature is necessary, such as has already been proposed by the World Health Organization for industrial hazardous materials.

Table I lists poisonings about which information was requested from the Center over a recent weekend.

TABLE I.—POISONINGS ABOUT WHICH INFORMATION WAS REQUESTED OVER A RECENT WEEKEND*

Product Ingested	Patient	
	Age†	Sex
Analgesic (aspirin, acetophenetidin, caffeine)	21	F
Analgesic (dextropropoxyphene hydrochloride)	23	F
Anticonvulsant (trifluoropyrazine dihydrochloride)	40	F
Antihistamine (chloroprophenpyridamine maleate, acetylsalicylic acid, acetophenetidin, caffeine)	6	M
Antihistamine, pediatric (chlorprophenpyridamine maleate, aspirin, acetophenetidin)	$2\frac{1}{2}$	F
Aqualine bleach	2	F
Aspirin	2	M
Aspirin	25	F
Aspirin, baby	3	F
Baby oil	1	M
Barbiturate	$2\frac{1}{2}$	F
Barbiturate	42	F
Diphenhydramine hydrochloride	2	F
Diphenhydramine hydrochloride	18	M
Effervescent salt, merbromin, polyvinylpyrrolidine-iodine	26	F
Cathartic (phenolphthalein)	3	F
Clorox (bleach)	15 months	M
Comet cleanser	45	F
Easter egg dye	3	..
Gentian violet	2	F
Hydrogen peroxide	2	M
Javelle water (bleach), 1 ounce	6	M
Lighter fluid	4 months	F
Mennen spray deodorant	2	F
Mum deodorant	$1\frac{1}{2}$	F
Nail polish remover	2	F
Pharoah's Serpent for magic tricks (mercury and thiocyanate)	4	M
Antiseptic detergent	Adult	F
Anorexigenic tablets	$1\frac{1}{2}$	F
Reserpine	2	M
Insecticide, $\frac{1}{2}$ tablet	2	F
Safety matches	18 months	F
Shoe polish	1	F
Skotch ice (refrigerant), 2 ounces	4	M
Sodium acid sulfate	$3\frac{1}{2}$	M
Tintex (clothing dye)	2	F
Tranquilizer (perphenazine)	27	F
Wax grapes	9 months	F
Wisk (detergent)	8 months	F
707X (rodenticide)	1	F

* Minor events on which complete information is unavailable not included.

† In years unless months is indicated.

(*Number fifty-nine in a series of Briefs on Accidental Chemical Poisonings*)

I prefer the challenges of life to the guaranteed existence.—DEAN ALFANGE

CASE REPORTS

Acute Allergic Reactions to Morphine, Codeine, Meperidine Hydrochloride, and Opium Alkaloids

MYRON R. SCHOENFELD, M.D., YONKERS, NEW YORK

While acute generalized allergic reactions to the opium alkaloids are known to occur,[1,2] they are decidedly infrequent. Comroe and Dripps[3] studied the side-reactions to single doses of morphine in over 200 carefully supervised cases and failed to note a single instance of urticaria. Many physicians who have the occasion to use opiates frequently in their practice have never seen a case of morphine allergy.

To draw attention to this entity and to point out its possible relation to histamine release, 3 cases of giant urticaria secondary to opiate administration are reported.

Case Reports

Case 1.—The patient is a thirty-nine-year-old white male with congestive heart failure due to rheumatic heart disease. He has aortic insufficiency and stenosis, mitral insufficiency and stenosis, and atrial fibrillation. The heart failure is moderately well controlled with digoxin and Diuril. He has had a gastroenterostomy and bilateral vagotomy for a bleeding duodenal ulcer. He has bilateral calcific bursitis in the shoulders and a low-back syndrome due to spondylolisthesis. The patient is almost constantly incapacitated by pain: angina, backache, and shoulder pain. Frequent analgesics are therefore indicated.

There is no family history of allergies. He is allergic to Bicillin but can tolerate "ordinary" penicillin with impunity. He does not have hay fever, asthma, or food allergies.

Three years ago he developed angioneurotic edema shortly after taking codeine by mouth for the first time. Some time later he received morphine by injection for the first time, and this too evoked giant urticaria. A subsequent injection of opium alkaloids (Pantopon) also resulted in angioedema. These episodes were alleviated by oral and parenteral antihistaminic agents. Meperidine hydrochloride (Demerol) in doses up to 200 mg. has been injected on innumerable occasions over the past two years without local or generalized allergic reactions. On one occasion the patient was told that he was being given meperidine hydrochloride while in reality morphine 15 mg. was injected intramuscularly. Within an hour he erupted with giant urticaria. Pyribenzamine was prescribed and the resolution of symptoms and signs was complete within between six to eight hours.

Case 2.—The patient is a forty-eight-year-old white female with a long-standing history of abdominal and anginoid pain due to a hiatus hernia, severe peptic esophagitis, and duodenal ulcer. In 1947 she had a cholecystectomy for gallstones. Because of frequent episodes of pain, she has been on a wide variety of medications, including the frequent administration of opiates. Several years ago she was given codeine for the first and only time, and within an hour she experienced severe epigastric pain and giant urticaria. On the only occasion in which morphine was administered, the patient erupted within twenty minutes with giant urticaria associated with severe epigastric pain. Both episodes required hospitalization. She was treated with atropine, sedation, and diphenhydramine hydrochloride (Benadryl hydrochloride). Symptomatic improvement occurred in a matter of hours, and recovery was complete within two days. Meperidine hydrochloride, 50 to 150 mg. by intramuscular injection, has been given on numerous occasions for pain. At first little or no reaction occurred, but in the past several months there have been severe local reactions with intense pruritis, swelling, erythema, and wheal formation within a radius of from 3 to 4 inches from the site of injection. There is also mild generalized pruritis. Very recently, an injection of 100 mg. of meperidine hydrochloride resulted in generalized angioedema. A variety of oral and parenteral antihistaminic agents provide a measure of symptomatic relief, and the local reaction disappears over a period of several hours. There has never been any allergic reaction to the sundry other medications she has taken.

Case 3.—The patient is a fifty-one-year-old white female requiring opiates to control the pain of a hiatus hernia. There is no family history of allergy. She did not have hay fever or asthma.

Prior to 1953 she had received injections of morphine and atropine on several occasions without allergic reaction. In 1953, immediately following an injection of morphine and atropine, she went into anaphylactic shock and lost consciousness. There was no urticaria. In 1954 an injection of penicillin resulted in mild shock, without loss of consciousness, and generalized urticaria. In 1956 a more severe degree of shock occurred following another penicillin injection. In 1957 there was an episode of generalized angioedema with massive swelling of the tongue immediately after receiving a "sterile hypo." Shortly thereafter, there was a similar reaction to the injection of an unknown drug. In November, 1957, $^1/_6$ gr. of morphine and $^1/_{50}$ gr. of atropine were given preoperatively. As soon as the injection was completed, swelling became evident, with involvement of the face, neck, eyes, tongue, lips, hands, and larynx. The tongue became so enlarged that it protruded from the patient's mouth. Repeated injections of adrenaline, Hydrocortone, and diphenhydromine hydrochloride were unavailing, and a tracheotomy was performed. Convalescence was prolonged and incomplete, so that, at present, she is quite incapacitated. She has episodes of dyspnea, choking, gagging, coughing, and wheezing. There are also episodes of fear of impending disaster associated with tachypnea, weakness, giddiness, paresthesia, and syncope (hyperventilation syndrome). She is fearful of remaining alone, and has become so dependent psychologically on her portable oxygen tank that she rarely leaves her house.

Comment

It has been shown that opium alkaloids cause the release of histamine.[4,5] This has been held at least partly responsible for the pruritis and sneezing of the opium addict, the instances of contact dermatitis due to opiates in medical personnel,[6] and for cases of anaphylactoid shock and urticaria following opium administration. A similar explanation has been offered for the hypersensitivity of asthmatic patients to morphine.[7] In view of the widespread use of these drugs and of the large numbers of habitual users under medical observation,[8] it is not so surprising that allergic reactions have been reported to occur as that they are not more common than they are.

Of all the organs in the rat the skin contains the greatest total amount of histamine.[5] If this is true of human beings, it would help explain why the allergic reactions have a predilection for the skin.

The first patient developed urticaria to morphine and codeine on his first exposure. This would suggest a true idiosyncrasy. In the third case, the allergic reaction to morphine developed after several asymptomatic exposures. The second case lies midway between these two extremes. The patient developed angioedema on her first exposure to morphine and codeine, but on repeated administration of meperidine hydrochloride there was a steady chronologic progression from lack of reaction through a marked local sensitivity to full-blown giant urticaria.

While the opiates are direct histamine liberators,[5] it is also possible that in some instances histamine release may be secondary to an antigen-antibody reaction. Studies are presently in progress by the author to delineate between these two modes of histamine release.

Whatever the method of histamine release, it is clear that antihistamine drugs can be expected to give some measure of relief by competitive inhibition of histamine at the end organ. The glucocorticoids, on the other hand, are of benefit partly through their antiphlogistic action and partly by virtue of their ability to depress the tissue biosynthesis of histamine.[5,9]

In the second case both morphine and codeine evoked severe epigastric pain. This has been attributed to spasm of the sphincter of Oddi and/or pylorospasm, both histamine-like reactions.

Occasionally, drugs have been held responsible for an allergic reaction when, in fact, the allergy was due to contamination of the syringe by penicillin. That this is not the case here is indicated by the fact that disposable syringes were used on several occasions in the first 2 cases.

Contributory psychogenic factors are suggested in the third case. In the first case, however, a psychogenic influence in the development of the allergy was ruled out when it was shown that giant urticaria developed in response to an injection of morphine despite the fact that the patient was told he was receiving meperidine hydrochloride, a drug which did not produce a reaction.

The first case exhibited the mildest reaction. The allergy was confined to the skin and could be handled safely at home with antihistamines. The second case was more severe. While the allergic manifestations were also confined to the skin, the degree of reaction was greater, necessitating hospitalization and the usual supportive measures in addition to antihistamines. In the last case the reaction was extreme, requiring heroic therapy and resulting in debilitating sequelae.

Experimentally, refractoriness to the repeated use of histamine liberators can develop.[5] In selected instances, this fact may have a clinical application.

Cutaneous tests for allergy to morphine and codeine have no validity since these drugs are highly urticariogenic even for normal skin.[2]

Codeine is morphine methyl ether, the methylation of the phenol group at the number 3 carbon being the only chemical difference between the two substances. Meperidine hydrochloride, on the other hand, bears only a very gross molecular similarity to morphine. It is not surprising, then, that a closer cross-sensitivity exists between morphine and codeine than between morphine and meperidine hydrochloride.

Summary

Three cases of acute giant urticaria secondary to opium hypersensitivity are described. In 1 case anaphylactoid shock also resulted. It is pointed out that morphine and its analogues are known to be histamine liberators, and presumably the reactions are on this basis. At present it is not known whether the histamine is liberated by a direct chemical action of the drugs or whether it follows from an antigen-antibody reaction.

11 BRONX RIVER ROAD

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No person will have occasion to complain of the want of time who never loses any.—THOMAS JEFFERSON

Subacute Bacterial Endocarditis Sixteen Months After a Hufnagel Operation

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BACTERIAL endocarditis has been reported following surgery for both congenital and acquired cardiac lesions. This complication has appeared after operations for the tetralogy of Fallot,[1] patent ductus arteriosus,[2] transposition of the great vessels,[3] atrial septal defect,[4] and, more recently, for lesions of the aortic and mitral valves.[5–16] The endocarditis occurs most often within a few months after surgery, and at times it may be difficult to recognize since the clinical picture may be atypical or confused with other postoperative complications. Infrequently the infection may be noted at a much later date and may be considered unrelated to the preceding surgery.

The Hufnagel operation[17] for reducing the regurgitant flow in aortic insufficiency has been performed less frequently than operations for other valvular lesions. In this procedure, there is inserted in the descending aorta just below the left subclavian artery a plastic prosthesis containing a ball valve which offers little obstruction to forward flow but retards the back flow in diastole. Circulatory dynamics appear improved with a reduction in cardiac work, an increase in cardiac output, and an improvement in exercise tolerance. Although the occurrence of an acute fulminating septicemia during the postoperative period has been observed,[18] there have been no reports of subacute bacterial endocarditis appearing at a later date after the insertion of a Hufnagel valve.

The following case report will describe the onset of sepsis and symptoms indicative of bacterial endocarditis sixteen months after a Hufnagel operation.

Case Report

A twenty-eight-year-old white male was admitted to the hospital on December 18, 1959, because of recurrent fever. The present illness began four weeks before admission with a sudden onset of nausea and vomiting, followed by chills and fever. The administration of penicillin and an oral antibiotic resulted in good response for several days, after which time there was a recurrence of chills and fever associated with progressive weakness and exhaustion. This sequence of events was repeated several times until the patient's admission to the hospital.

In 1939, when the patient was nine years old, he had an attack of rheumatic fever which resulted in hospitalization for two months and required bed rest for about one year. Although a heart murmur had been present since that time, he felt well with no restriction of activity until the advent, in 1949, of a febrile illness which was treated with penicillin injections several times a day for six weeks. Afterward a progressive deterioration in his condition was noted. The patient noticed that he tired easily, had occasional dizzy spells, and had dyspnea on exertion which improved following digitalization.

In August, 1957, a Hufnagel valve was inserted in his descending aorta. Subsequently a moderate improvement was apparent with a definite increase in exercise tolerance; the patient was able to walk several blocks without discomfort. This state continued up to the present illness. No recent dental work had been performed, and the patient had not received penicillin prophylaxis.

On admission the temperature was 102 F., and the pulse rate was 88 per minute. A physical examination revealed a thin, sallow white male appearing acutely and chronically ill and sweating moderately. Slight dyspnea but no cyanosis was present, and a minimal clubbing of the fingers was evident. An active pulsation of the neck vessels was visible. The pupils were equal and reacted to light and accommodation. No icterus was present, and examination of the nose and throat disclosed no abnormality. There was a scar over the left side of the chest beginning in the axillary area and extending posteriorly in the fifth intercostal space toward the scapula.

A visible and palpable apical impulse was present in the fifth intercostal space at the anterior axillary line. A regular sinus rhythm was present. At the aortic area there was a Grade III systolic murmur, and just after the aortic second sound a blowing diastolic murmur was transmitted down the left sternal border. Over the entire chest loud systolic and diastolic clicking sounds, synchronous with each heart beat, were heard. The blood pressure was 140/0 in the arms and 150/40 to 50 in the legs. Corrigan's pulse was present in the arms, and the lungs were clear. The liver was not felt, but the spleen was palpable just below the costal margin. No petechiae could be identified positively, but a small ecchymotic area on the left clavicle was considered suspicious.

An examination of the blood showed a hemoglobin of 10.9 Gm. per 100 cc. of blood; a hematocrit of 34; and a white cell count of 8,350 of which 84 per cent were neutrophils, 10 per cent lymphocytes, and 6 per cent monocytes. The corrected sedimentation rate was 30 mm. per hour. The C-reactive protein was 2 plus; and the antistreptolysin titer was 125 units per cc. The urine was yellow, clear, and acid; specific gravity was 1.008; and no albumin or glucose was present. A microscopic examination revealed occasional white blood cells. Repeated urine examinations during his hospital stay showed only the intermittent presence of albumin. The Kolmer and Kahn tests indicated negative results, and the result of the Mazzini test was 2 plus on one occasion and showed negative findings on another occasion. The blood glucose concentration was 71 mg. per cent, urea nitrogen was 14 mg. per cent, and serum albumin and gobulin were 4.1 mg. per cent and 3.2 mg. per cent respectively. Serum cholesterol was 202 mg. per cent of which 22 per cent was free. Cephalin flocculation was 3 plus, the thymol turbidity was 3 units, and the alkaline phosphatase was 5.5 King-Armstrong units. The total bilirubin, bromsulphalein retention, calcium, phosphorous, and serum transaminase activity showed normal results. First strength purified protein derivative and a histoplasmosis skin test showed no reaction.

The electrocardiogram showed deep S waves over the right and depressed S-T segments over the left precordium and was interpreted to indicate left ventricular hypertrophy and strain. An x-ray film of the chest showed that the lungs were well aerated with innumerable calcific shadows suggestive of histoplasmosis scattered throughout both lung fields. The heart was moderately enlarged in its transverse diameter due to the dilation of the left ventricle. The ascending and descending aorta was also enlarged. There was some displacement of the barium-filled esophagus which might be explained by the elevation of the left atrium due to a marked dilation of the left ventricle. A metallic suture was present near the aortic arch.

Each one of the eight blood cultures drawn from the antecubital vein yielded Streptococcus viridans which was sensitive to all antibiotics tested except streptomycin. Treatment, consisting of a daily administration of 40 million units of penicillin intravenously and 2 Gm. of streptomycin intramuscularly, was maintained for four weeks. Because the gastrointestinal symptoms which had been present at the onset of the illness raised the possibility that an enteric pathogen might be the etiologic agent, chloromycetin was also administered the first few days until the Str. viridans was definitely identified.

With the onset of treatment, improvement was quickly evident. The signs of toxicity and sweating soon diminished, and the temperature dropped to normal limits within three days and remained at this level during the entire hospital stay. The patient's strength and well-being improved, the hemoglobin rose to 13 Gm. per 100 cc. of blood, and after several negative blood cultures had been obtained, the patient was discharged six weeks after admission.

Comment

In most of the reported cases of endocarditis, symptoms appeared within a few months following surgery, but in some instances the disease was not manifest up to ten months after the operation. In this patient the time interval of sixteen months between surgery and the appearance of the septicemia makes it unlikely that the infecting organism was introduced at the time of operation. Furthermore, the organism recovered was the Str. viridans which is responsible for the majority of the cases of subacute bacterial endocarditis occurring in nonsurgical patients and only infrequently occurring after operative procedures on the heart and great vessels.

The incidence of bacterial endocarditis in patients with rheumatic aortic insufficiency is fairly high; in one group 18 of 83 cases developed this complication.[19] The patient we have described apparently was treated for this condition in 1949. Experience with the operative procedure aimed at reducing the regurgitant flow in aortic insufficiency is not yet adequate enough to determine whether or not it will lessen this marked susceptibility. Studies with experimental animals have indicated that the insertion of a Hufnagel valve after the induction of aortic insufficiency by mechanical valve injury does not decrease the incidence of endocarditis usually obtained following the intravenous injection of bacteria.[20] In fact, vegetations frequently appeared in these animals not only on the aortic valve leaflets, but also at the junction of the prosthesis and the aorta. Although the aortic valve was the probable site for the bacterial growth in this patient, the presence of the prosthesis creates another susceptible area on which vegetations may be implanted. However, no facts are available to determine its exact location.

Since no definite conclusions can be drawn from a single case, further observations will be necessary to determine whether or not the insertion of the Hufnagel valve in a patient with aortic insufficiency will influence the incidence of bacterial endocarditis.

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What I must do is all that concerns me; not what other people think.—Ralph Waldo Emerson

Gout in the Negro Female

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It has long been known that gout is a rare condition in the female, and it has usually been considered that the Negro is in comparison with the white race spared this ailment. It would follow, therefore, that gouty arthritis should be exceptionally rare in the Negro woman. However, a perusal of recent publications on this subject, referred to later in this report, indicates that this may not be entirely the case. Actually gout is not an uncommon disease, certainly not nearly so uncommon as most people assume. The typical case of gout seldom escapes detection. However, difficulty arises when the disease appears in an atypical form, as if often does, or when it presents itself in an unfamiliar guise, as is the case in the female sex in whom gout is known to be rare.

More often, the diagnosis goes unsuspected, as it may when the disease occurs in the Negro female in whom gout is considered to be rarer still, although it is difficult to understand the basis for this assumption. Undoubtedly the abnormal gene which determines the presence of hyperuricemia, although not sex linked,[1] conceivably could be further restricted in its transition to the overt disease by factors related to sex such as muscle mass, endocrine status, and others. It is well known that race may be influential in determining the incidence of many diseases.[2]

One important factor in the alleged rarity of gout in the Negro woman is the lack of reliable statistics to alert the physician to such a possibility. The statistics that are available concerning the incidence of gout are widely divergent. Thus the over-all world-wide incidence of gout is estimated to range from less than 1 per cent to 7 per cent, and the surveys of unselected autopsy cases reported by Bauer and Calkins[3] claim an incidence of from 1.1 per cent to 5 per cent.

It has been estimated that there are 480,000 persons suffering from gout in the United States[4] with females generally accounting for only about 5 per cent of the cases. However, a recent study by Kuzell, *et al.*[5] of 504 cases of primary gout estimated that 26 per cent occurred in the female. There were no clinical cases of the disease in the Negro included in the study.

It is even more difficult to find any reliable statistical information on the frequency of gout in the Negro female. One creditable report of 94,000 male medical admissions to the Cook County Hospital, with a ratio of 5 whites to 3 Negroes over a nine-year period from 1944 to 1952, disclosed a total of 70 cases of gout with an incidence of 0.08 per cent in white and 0.06 per cent in Negro males.[6] This difference is certainly not impressive. Whether or not there is any real difference in the proportion of gout in females to males in the Negro race as compared with that in the white race is not clearly evident from the literature, but, as previously implied, the fact remains that there are very few reported cases of gout in the Negro female.

It was not until 1953 that the first such case was reported.[7] About a year later a second case was reported,[8] and a few other case reports have been published subsequently. In September, 1958, Rodnan and Golomb[9] were able to accumulate 7 cases of typical gout in the Negro female from a clinic treating a large number of Negroes, which convinced them that gout was really not so uncommon in this race and sex.

Gout is known to be exceptionally rare in women before the menopause. However, several such cases in white women have been reported, even in very young girls. In 1 case of tophaceous gout in a twenty-seven-year-old white female, reported by Recht,[10] the onset occurred at the age of five years. Another case was reported by Coodley[11] in which the onset occurred at the age of eleven years. In 1958 in the same paper Coodley also reported the first case of gout in a Negro female before the menopause.

Because of the paucity of reported cases of gout in Negro women and because of the associated difficulty in the recognition of such cases, we are presenting a case of this type recently encountered by us.

It may also be worth while to comment on those aspects of the case that seem pertinent to the reputed scarcity of such similar occurrences together with a brief review of some of the medical literature on this subject.

Case Report

A fifty-year-old Negro female was admitted to the City Hospital at Elmhurst complaining of fever, arthralgia, low back pain, and weakness of four days duration. At first there was only a slight fever and some pain in the lower back, in both ankles, both feet, the left knee, the right elbow, and both wrists. The pain grew worse, the left foot and ankle gradually became swollen and red, and the fever increased.

The patient had always been in good health until about eight years ago when a hysterectomy for a uterine fibroid with severe bleeding was performed. Sixteen pints of blood were transfused at that time. A few months later she began to suffer with a mild arthralgia first involving the small joints of the hands and feet and both knees, occasionally with moderate joint swelling, and a low-grade fever. These attacks would resolve completely within a few days or a few weeks. She had several similar minor attacks intermittently, but sought no medical attention until eight months previously when she experienced a particularly severe and prolonged attack of "arthritis" involving several joints with swelling, stiffness, pain on motion, and high fever. This episode lasted for about a month and then resolved completely. Five months before admission she had experienced another even more severe attack which continued periodically until about two weeks prior to admission. During this time she was treated with steroids and antibiotics and then placed on a prophylactic regime of these agents by her local physician. This medication was maintained until two weeks before admission when she stopped of her own accord. No colchicine or probenecid was given.

Her past history included the hysterectomy mentioned, a fracture of the right arm two years previously, and a tonsillectomy at the age of twelve years. A small nodule on the right ear was noticed by her for the first time about four months before admission. She had gained 60 pounds in the last eighteen months. The family history was noncontributory. There was no familial or hereditary disease; specifically, no arthritis, gout, obesity, or hypertension. As far as she could trace them, her ancestors were all full-blooded Negroes for at least the last three generations. Her habits were good except for evident overeating. She did not indulge in alcoholic beverages and smoked only occasionally.

Physical Examination.—The patient was a well-developed, obese, dark-skinned Negro woman in acute distress. Her temperature on admission was 101 F.; twelve hours later it was 104 F. Her pulse was 120, and her respirations were 30 per minute. She weighed 227 pounds and her blood pressure was 180/130. There was a Grade II hypertensive retinopathy. There was a small, firm, pea-sized nodule over the helix of the right ear. This was more darkly pigmented than the surrounding skin and somewhat tender, and was thought to be a nevus rather than a tophus. Permission for a biopsy was refused by the patient. The lungs were clear to percussion and auscultation. The heart was not enlarged by percussion; the rate was 120 and regular, but the sounds were of good quality; no murmurs were audible. The aortic second sound was greater than the pulmonic second sound. The abdomen showed a well-healed hysterectomy scar. The kidney, liver, and spleen were not palpable. No hernias were present. The pelvic examination showed negative results except that the uterus had been removed surgically. The rectal examination also indicated negative findings. Both feet were swollen, warm, and extremely tender, especially the left one. The left knee was markedly swollen, very tender, and any motion was extremely painful.

Laboratory Data.—In the urine the specific gravity was 1.013, there was a trace of glucose, and no albumin and sugar were found. There were many uric acid crystals, and, after a low-purine diet for three days, the uric acid was 0.31 Gm. every twenty-four hours with a volume of 700 cc.

The hemoglobin was 13 Gm. per cent, the hematocrit was 41, and there were 338,000 platelets per cubic millimeter. The white blood count was 10,500 per cubic millimeter, with segmented cells of 76 per cent, stab cells of 3 per cent, lymphocytes 18 per cent, and monocytes 3 per cent. The sedimentation rate was 44 mm. per hour, and the VDRL test gave negative results. The latex fixation and the lupus erythematosus cell tests also showed negative findings.

The serum uric acid was 11.5 mg. per cent, obtained by the Henry, Sobel, and Kim method.[12] The blood urea nitrogen was 18.5 mg. per cent. The fasting blood sugar was 72 mg. per cent; thirty minutes after meals, 150 mg. per cent; one hour after meals, 168 mg. per cent; two hours after meals, 140 mg. per cent; and three hours after meals, 120 mg. per cent. The serum alkaline phosphatase was 6.3 Bodansky units. The phosphorus was 3.1 mg., calcium was not determined, albumin was 3.8 Gm., globulin was 3.1 Gm., and cholesterol esters were 204/118.

In the joint fluid, 25 cc. of viscous yellow fluid were obtained by aspiration. The uric acid was 11.2 mg. per cent, protein 5.6 Gm. per cent, polymorphonuclear cells 98 per cent, and lymphocytes 2 per cent. A smear showed no bacteria including a search for acid-fast bacilli. There was no growth by culture.

The results of the x-ray films showed that both feet indicated a moderate osteoporosis of the small bones with no intrinsic abnormalities. The lumbar spine showed an arthritic process involving the apophyseal joints. The heart was enlarged in the transverse diameter with a straightening of the left cardiac border. The examination of the lung showed negative results.

COURSE IN THE HOSPITAL.—On admission the temperature was 101 F.; twelve hours later it was 104 F. and continued to be in that range. The pain in the left knee increased in severity. Because of the clinical picture and the possible tophus on the helix of the left ear, the clinical diagnosis of gout was made and confirmed by the high uric acid levels in the blood and joint fluid, and prompt relief was obtained with colchicine. The patient was placed on a low-purine diet and was given eight doses of colchicine grain $^1/_{120}$ every two hours with a dramatic therapeutic response and without any gastrointestinal reaction. The temperature then promptly fell to a normal level and stayed that way, and the subjective symptoms were greatly relieved. Ten grains of aspirin given three times daily controlled the minor residual complaints. She was permitted out of bed in a wheelchair on the twelfth hospital day. Balance studies with zoxazolamine were instituted using 250 mg. every six hours at first for five weeks and then 500 mg. every six hours for another two weeks. The uric acid showed only a moderate reduction, from 12.5 to 10.3 mg. per cent.

Comment

The diagnosis of acute gouty arthritis in this case rests on the observation of an acute polyarthritis unrelieved by antibiotics and steroids with periods of remission between attacks, with prompt and complete relief by colchicine, and a strikingly high uric acid content in the serum and joint fluid. The uric acid elevation was unequivocal; as a matter of fact, it was at the extreme range of abnormality in the female cases of gout reported by Rodnan and Golomb,[9] Coodley,[11] and Kuzell, *et al.*[5] The blood urea nitrogen was normal and there was no evidence of kidney involvement, blood dyscrasia, or other pertinent disease to be considered, except possibly the hereditary asymptomatic hyperuricemia that may be found in 25 per cent or more of the relatives of patients with gout.[13] In this case, however, the gout was frankly overt.

Although the small nodule in a location typical for a tophus led to the suspicion of gout, with later laboratory and therapeutic confirmation, this nodule could not be accepted as a tophus since the patient would not permit the needling or biopsy necessary to establish chemical or microscopic verification. It is quite true that a tophus is the one pathognomonic sign of gout, but it is absent about as often as it is present, and actually it may never be found.[3]

The period required for the development of a tophus varies widely but depends in some measure at least on the duration and concentration of the blood uric acid.[3] It can be found in the initial attack in only 2 per cent of cases.[14] In females where the blood uric acid normally is lower than in the male by about 25 per cent one would expect to find a retarded tophus formation, possibly even more so in the Negro woman where the incidence of gout is believed to be so rare. However, tophi do occur in women regardless of race, and although the nodule in this particular case probably was a tophus because of its location and appearance, there are other possibilities, and the diagnosis of gout in this case must necessarily rest on other grounds.

Not all tophi occur in the subcutaneous tissue where they are visible. They can occur in the walls of bursae, in cartilage, and in bone as well, and they may be found only by punch biopsy or their presence may be inferred by x-ray films of suspicious areas. In this case, x-ray films of both feet showed negative results.

The nature and prolonged duration of the acute attacks in this case call for some comment. It is well known that inadequate or improper treatment may prolong an attack of acute gouty arthritis, especially when it is treated with corticosteroids and more particularly when colchicine is not given concurrently. Prolonged acute attacks lasting for weeks may occur in the intermittent phase.[4] In fact, as Steindler states,[15] atypical gout occurs as often as, if not oftener than, the typical form. In middle-aged women the initial attack is not likely to be so sudden or dramatic as in men.[16] In women especially gout is often atypical and may greatly resemble rheumatoid arthritis. In the 9 cases observed by Gray,[17] only 2 were typical; the others resembled rheumatoid arthritis. The diagnosis is not made any easier by the fact that rheumatoid arthritis is so much more frequent than gout in the female and the fact that tophi are so often absent in gout.

In the early stages of rheumatoid arthritis synovial swelling may come and go for some time before the joint enlargement becomes fixed, and the serologic tests for the rheumatoid factor are apt to show negative results in this stage. It may be impossible to differentiate the bony erosions about a joint that can occur in either gout or rheumatoid arthritis. The onset in rheumatoid arthritis may be abrupt and acute in approximately 20 per cent of the cases and may involve the feet in about 15 per cent or the knees in around 20 per cent of the cases.[17] These features, which are all typical of gout also, may serve to confuse the diagnosis. Again, the attacks may recur frequently, effusions may last for months, and remissions may be incomplete even in the early phases of gout.

Moreover, the difficulty may be compounded by the fact that, although rare, rheumatoid arthritis and gout may coexist.[18] Short, Bauer and Reynolds,[19] however, could not find even 1 such case in a numerical study of 295 patients and controls or subsequently. Kuzell, *et al.*,[5] however, in their study of 504 cases of primary gout, found 30 cases of coexisting rheumatoid arthritis, 20 in males and 10 in females.

Joint infection or infectious arthritis may be suggested, in the absence of definitive laboratory data, by the abrupt onset with fever and by joint involvement. However, even then careful questioning, especially for prior involvement of the same joint, and the response to specific therapy may be of help.

It is no wonder then that the patient in this case received antibiotics and corticosteroids, either of which is capable of provoking an acute attack. The prompt response to the delayed administration of colchicine was fortunate and was conclusive diagnostically.

Summary

A case of gout in the Negro female has been presented, and some of the attendant difficulties in diagnosis have been examined. We have mentioned some of the recent data which may indicate that gout in the Negro race, and in the Negro woman in particular, is not nearly so rare as has been presumed. It is hoped that an increasing awareness of this fact will lead to the increased awareness of such cases, and that in time their true incidence will become apparent together with some of the reasons for the varied clinical and laboratory aspects.

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NECROLOGY

Isidor Abrahamer, M.D., of Toronto, Canada, formerly of Elmhurst, died on April 9 at the age of fifty-eight. Dr. Abrahamer received his medical degree from the University of Prague in 1926. He was director of the United States Public Health Service in Toronto. Before going to Canada, he was senior medical officer of quarantine activities for the Port of New York.

Norbert Andersen, M.D., of Jamaica, died on May 18 at the age of sixty-six. Dr. Andersen received his medical degree from the University of Berlin in 1923. Dr. Andersen was a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Morris Ant, M.D., of Brooklyn, died on June 25 at Grace-New Haven Community Hospital at the age of sixty-five. Dr. Ant graduated from Fordham University School of Medicine in 1919 and interned at Sydenham Hospital. He was an attending physician at Beth-El Hospital, chief of the diabetes section of East New York Dispensary, and an associate attending physician at Kings County Hospital Center. Dr. Ant was a member of the American Public Health Association, the Brooklyn Society of Internal Medicine, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Iverson Baker, M.D., of New York City, died on March 7 at the age of sixty-three. Dr. Baker graduated in 1926 from Jefferson Medical College of Philadelphia. Dr. Baker was a member of the Industrial Medical Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

George Shepard Berg, M.D., of Coral Gables, Florida, formerly of New York City, died on June 13 at the age of forty-six. Dr. Berg graduated from New York University Medical College in 1948 and interned at Mount Sinai, Bellevue, and New York Hospitals. He was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics.

Otis Jameson Case, M.D., of Salamanca, retired, died on May 15 in Salamanca District Hospital at the age of seventy-seven. Dr. Case graduated in 1907 from New York Homeopathic Medical College and Flower Hospital. He had been an attending in surgery at Salamanca District Hospital before his retirement. Dr. Case was a member of the Buffalo Academy of Medicine, Cattaraugus County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Eron Cohen, M.D., of New York City, died on June 18 at the age of seventy-six. Dr. Cohen graduated in 1905 from Long Island College Hospital Medical School. He was a consultant in pediatrics Gouverneur Hospital. Dr. Cohen was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Max Dannenberg, M.D., of Brooklyn, died on May 31 at Beth-El Hospital at the age of sixty-three. Dr. Dannenberg graduated in 1920 from Long Island College Hospital Medical School and interned at Beth-El Hospital. He was director of roentgenology and an attending in roentgenology at Brooklyn Women's Hospital and chief of roentgenology at Beth-El Hospital. Dr. Dannenberg was a Diplomate of the American Board of Roentgenology (Roentgenology), a Member of the American College of Radiology, and a member of the Radiological Society of North America, Inc., the Kings County Radiological Society of which he was a past president, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralph De Baun, M.D., of Congers, died on March 20 at the age of seventy-nine. Dr. De Baun graduated in 1903 from Columbia University College of Physicians and Surgeons. For many years he had served as health officer of the town of Clarkstown and also as physician at the county jail at New City. He had been on the staff of the Nyack Hospital and retired several years ago as Congers school physician. Dr. De Baun was a member of the Rockland County Medical Society and the Medical Society of the State of New York.

Gerald Francis Drumm, M.D., of Rochester, died on February 18 at the age of sixty-four. Dr. Drumm graduated in 1920 from the University of Buffalo School of Medicine.

Vernon R. Ehle, M.D., of Johnstown, retired, died on April 23 at Johnstown Hospital at the age of seventy-eight. Dr. Ehle graduated in 1906 from Albany Medical College. He was a member of the Fulton County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank Otis Garrison, M.D., of Bath, died on March 31 at the age of eighty-nine. Dr. Garrison graduated in 1899 from New York University and Bellevue Hospital Medical College. He was a member of the Steuben County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sol Wiener Ginsburg, M.D., of New York City, died in Mount Sinai Hospital on July 2 at the age of sixty. Dr. Ginsburg graduated in 1924 from Columbia University College of Physicians and Surgeons. As consultant in psychiatry to the Conservation of Human Resources project, he played an important role in the basic research investigations which were conducted at Columbia University during the last twenty years and had also served as associate professor of clinical psychiatry at the Long Island College of Medicine and attending psychiatrist at Hillside Hospital and the Home for Aged and Infirm Hebrews. From 1947 to 1950 he was attending psychiatrist with the New York Veterans Administration and in 1954 Mayor Wagner appointed him one of the original members of the New York City Community Medical Health Board, from which he resigned last year. Dr. Ginsburg, who was consulting psychiatrist to the Arthur Lehman Counseling Service and on the board of advisers in the Program of Psychiatry and Religion at the Union Theological Seminary, was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Fellow of the American Psychiatric Association, and a member of the Association for Psychoanalytic Medicine, the American Orthopsychiatric Association, the New York Academy of Medicine, the New York Society for Clinical Psychiatry, the New York Neurological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Emil Haskel, M.D., of White Plains, died in St. Agnes Hospital on July 2 at the age of forty-seven. Dr. Haskel graduated in 1936 from the University of Vermont College of Medicine. He was a consultant in obstetrics at Dobbs Ferry Hospital and director of obstetrics at St. Agnes Hospital. Dr. Haskel was a Fellow of the American College of Surgeons and a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert John Hewson, M.D., of Monroe, died on June 26 in Goshen Hospital at the age of fifty-nine. Dr. Hewson graduated in 1928 from Long Island College Hospital Medical School. He was an attending in surgery at Goshen Hospital, a vice-president of the Odell Sanitarium in Newburgh, and a director of the Heart Association. Dr. Hewson was a member of the American Academy of General Practice, the Pan-American Medical Association, the Association of Military Surgeons of the United States, the Orange County Medical Society of which he was a past president, the Medical Society of the State of New York, and the American Medical Association.

Erich Kuznitzky, M.D., of New York City, died on March 1 at his home at the age of seventy-six. Dr. Kuznitzky received his medical degree from the University of Breslau in 1912 and interned at the Beekman-Downtown Hospital. He was a consultant in dermatologic pathology at Fordham Hospital and a former professor of dermatology at the University of Breslau before settling in the United States. Dr. Kuznitzky was a member of the New York County Medical Society and the Medical Society of the State of New York.

Ernest Less, M.D., of Cheektowaga, died on February 17 at the age of sixty-six. Dr. Less received his medical degree from the University of Rostock in 1920. He was an attending physician in general practice at St. Francis Hospital in Buffalo. Dr. Less was a member of the Erie County Medical Society and the Medical Society of the State of New York.

Leo A. Lynch, M.D., of Brooklyn, died at his home on May 27 at the age of eighty-four. Dr. Lynch graduated in 1903 from Johns Hopkins University School of Medicine. He was a consultant in surgery at Swedish Hospital in Brooklyn where he had served as chief surgeon. Dr. Lynch was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gustav Mandl, M.D., of Long Island City, died on March 1 at the age of sixty-three. Dr. Mandl received his medical degree from the University of Vienna in 1924. He was a member of the Queens

County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Thomas H. McClintock, M.D., of Hempstead, retired, died on June 25 at his home at the age of eighty-four. Dr. McClintock graduated in 1898 from Boston University School of Medicine. Before his retirement he had been a physician with the Standard Oil Company of New Jersey. Dr. McClintock was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alfred Pelzig, M.D., of Forest Hills, died on March 21 at the age of forty. Dr. Pelzig graduated in 1943 from Middlesex University School of Medicine, Waltham, Massachusetts, and interned at University Hospital. He was an assistant attending in dermatology and syphilology at University Hospital and staff dermatologist at Booth Memorial Hospital. Dr. Pelzig was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology and Syphilology, the Society for Investigative Dermatology, the Long Island Dermatological Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Rachel Perry, M.D., of New York City, died on June 21 at the age of seventy-one. Dr. Perry received her medical degree from the University of Kharkov in 1914. She was an assistant in pediatrics at Elmhurst General Hospital. Dr. Perry was a member of the New York County Medical Society and the Medical Society of the State of New York

Henry Reiss, M.D., of the Bronx, died on March 10 at the age of eighty-three. Dr. Reiss graduated in 1900 from Columbia University College of Physicians and Surgeons and interned at Lebanon Hospital. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph M. Samostie, M.D., of New York City, died on February 22 at the age of seventy-two. Dr. Samostie received his medical degrees from the University of Moscow in 1917 and the University of Berlin in 1923.

Charles R. Sawyer, M.D., of Yonkers, died on June 17 in Yonkers General Hospital at the age of seventy-seven. Dr. Sawyer graduated in 1912 from Columbia University College of Physicians and Surgeons and interned at Methodist Hospital of Brooklyn. Dr. Sawyer, who was a past president of the Yonkers Academy of Medicine and of the Yonkers Practitioners Club, was a member of the Yonkers Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hans G. K. O. Schaller, M.D., of Poughkeepsie, died on April 10. Dr. Schaller received his medical degree from the University of Dusseldorf in 1936. He was a senior psychiatrist at Hudson River State Hospital.

Sam Schwarzbart, M.D., of Syracuse, died in Crouse-Irving Hospital on May 31 at the age of sixty-two. Dr. Schwarzbart received his medical degree from the University of Berlin in 1924. He was a senior physician in general practice at Midtown Hospital (formerly Onondaga General Hospital). Dr. Schwarzbart was a member of the American Academy of General Practice, the Onondaga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Roger Scott, M.D., of Niagara Falls, died on May 21 at the age of sixty-three. Dr. Scott graduated in 1921 from Syracuse University College of Medicine. He was an honorary member of the staff at Niagara Falls Memorial Hospital. Dr. Scott was a Diplomate of the American Board of Radiology (Roentgenology), a Fellow of the American College of Physicians, and a member of the Radiological Society of North America, Inc., the Niagara Falls Academy of Medicine, the Buffalo Radiological Society, the Buffalo Academy of Medicine, the New York Society of Industrial Medicine, the Niagara County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Selkin, M.D., of the Bronx, died on June 8 at the age of forty-seven. Dr. Selkin received his medical degree from the University of Milan in 1938. He was a member of the Bronx County Medical Society and the Medical Society of the State of New York.

Abraham Seltzer, M.D., of the Bronx, died on February 15 at the age of sixty-one. Dr. Seltzer graduated in 1925 from Cincinnati Eclectic Medical College. He was a member of the New York State Eclectic Society.

Louis Shaffer, M.D., of New York City, died on December 28, 1959, at the age of seventy-two. Dr. Shaffer graduated in 1918 from Fordham University

College of Medicine and interned at Sydenham Hospital. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Reuben Spencer Simpson, M.D., of Lyons, died on March 4 at the age of seventy-nine. Dr. Simpson graduated in 1909 from Cornell University Medical College. He was a member of the Wayne County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alvin Slipyan, M.D., of Elmhurst, died on July 5 at the age of fifty-three. Dr. Slipyan graduated in 1931 from George Washington School of Medicine and interned at St. Peter's Hospital, Brooklyn. He was an attending physician at Greenpoint Hospital and director of medical research for Abilities, Inc., Albertson, Long Island. Dr. Slipyan was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Allergists, a Fellow of the American College of Physicians, and a member of the New York Allergy Society, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jacob Steinberg, M.D., of the Bronx, died on June 15 at the age of seventy. Dr. Steinberg received his medical degree from the University of Munich in 1913.

Frederick D. Stern, M.D., of New York City, died on April 3 in Montefiore Hospital at the age of sixty-three. Dr. Stern received his medical degree from the University of Wurzburg in 1924. He was an associate in neuropsychiatry at Montefiore Hospital, professor of neurology at Columbia University College of Physicians and Surgeons, and chief of neurology at the New York regional office of the Veterans Administration. Dr. Stern was a Diplomate of the American Board of Psychiatry and Neurology, a Member of the American Psychiatric Association, and a member of the American Academy of Neurology, the Association for Research in Nervous and Mental Disease, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Timothy Francis Xavier Sullivan, M.D., of New York City, died at his home on June 25 at the age of seventy-four. Dr. Sullivan graduated in 1914 from Columbia University College of Physicians and Surgeons and interned at Presbyterian and St. Luke's Hospitals. He was retired as senior surgeon at St. Clare's Hospital and was a consultant in surgery at the House of Calvary (Bronx) and St. Clare's Hospital. He had been an associate professor of gynecology at the Polyclinic Hospital and Medical School. Dr. Sullivan was a Fellow of the American College of Surgeons and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

S. Theodore Sussman, M.D., of New York City, died on February 11 at the age of forty-eight. Dr. Sussman graduated in 1935 from New York University College of Medicine. He was an associate attending physician at New Rochelle Hospital. Dr. Sussman was a member of the American Academy of General Practice, the Westchester Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralph Ten Broeck Todd, M.D., of Tarrytown, died at Tucson Medical Center on July 9 at the age of sixty-eight. Dr. Todd graduated in 1919 from Columbia University College of Physicians and Surgeons and interned at Sloane and Presbyterian Hospitals. He was an attending surgeon at Phelps Memorial Hospital Association, North Tarrytown. Dr. Todd was a Fellow of the American College of Surgeons and a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Werner, M.D., of New York City, died on June 11 at the age of fifty-two. Dr. Werner graduated in 1916 from New York Homeopathic Medical College and Flower Hospital. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Never claim as a right what you can ask as a favor.—Churton Collins

MEDICAL NEWS

Course in Corneal Surgery to be Given in Brooklyn—A two-and-a-half day course in corneal surgery will be given under the direction of A. Benedict Rizzuti, M.D., at the Brooklyn Eye and Ear Hospital, Thursday through Saturday, December 8 through 10.

Present surgical concepts of kerectomies and keratoplasties will be stressed. Allied subjects such as beta radiation, contact lenses, operating room photography, and instrumentation, will be discussed by staff members. Surgical procedures in the operating room will be demonstrated according to the availability of donor material. Participants will be offered an opportunity to apply surgical principles on animal eyes.

The course is limited to six ophthalmologists. For information concerning tuition and registration contact: Mr. Henry Williams, Superintendent, Brooklyn Eye and Ear Hospital, 29 Greene Avenue, Brooklyn 38, New York.

Urological Association Offers Award—The American Urological Association offers an annual award of $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing research work in urology. The essays must be submitted to the executive secretary of the Association before December 1.

The first prize essay will appear on the program of the forthcoming meeting of the Association to be held in Los Angeles, in May, 1961.

For further information contact: William P. Didusch, Executive Secretary, 1120 North Charles Street, Baltimore, Maryland.

Three New York Institutions Affiliate—A joint announcement has been made by Deane W. Malott, president of Cornell University, Philip Bastedo, president of the New York Society for the Relief of the Ruptured and Crippled, and Francis Kernan, president of The Society of the New York Hospital, that a new formal affiliation has been signed by the three institutions. In effect this is an affiliation between Cornell University's Medical College, the Hospital for Special Surgery which is maintained by the New York Society for the Relief of the Ruptured and Crippled, and The New York Hospital which is maintained by The Society of the New York Hospital.

Mr. Malott, in announcing the affiliation said, "Both the New York Hospital and the Hospital for Special Surgery are impressed with the importance of rendering a larger, better, and more important service to the sick of the community and of the nation, and to medical education and medical science through a more intimate and organic affiliation with Cornell University Medical College."

Under the terms of the new agreement the three institutions will each continue their independent corporate existences. However, cooperative programs have been outlined concerning faculty and hospital appointments, appointments of resident staff and Fellows, Cornell University-New York Hospital School of Nursing rotation program, as well as the organization of committees relating to these departments. The new affiliation will give impetus to the steadily advancing program in the teaching of medical and nursing students and of the resident staff in the development of medical research.

Postgraduate Courses at The New York Polyclinic Medical School and Hospital—The New York Polyclinic Medical School and Hospital has announced its schedule of postgraduate courses for the fall of 1960 and spring of 1961. The following is a list of the courses offered; other courses not included in this listing will receive consideration if enough applicants are interested:

Anatomy: surgical and regional; Anesthesiology: anesthetic technics, endotracheal, regional, and spinal; Basic Sciences; Comprehensive Course in Medicine; Culdoscopy; Evening Courses for the General Practitioner; Gynecology and Obstetrics; Laryngology, Bronchology, and Gastrology; Operative Obstetrics (manikin); Pathology: gynecologic and obstetric, surgical, and urologic; Proctology: colorectal surgery (with operative proctology on the cadaver); Radiology; Survey Course; and Urology: retropubic prostatectomy.

Most of these courses are given on October 1, 1960 and again on April 1, 1961; others are given by special arrangement. For full information send for a detailed brochure to: Dean's Office, The New York Polyclinic Medical School and Hospital, 345 West 50th Street, New York 19, New York.

Postgraduate Course in Gynecologic Endocri-

nology at NYU—New York University Post-Graduate Medical School will present a five-day, full-time postgraduate course in gynecologic endocrinology (#563), October 17 through 21.

The course will consist of a practical, didactic, and clinical presentation with emphasis on the therapeutic management of endocrine disorders in the female, including a discussion of the diagnosis and management of intersex. Endocrine therapy for menstrual abnormalities and ovulatory defects will be presented. Adrenocortical, thyroid, ovarian, and pituitary abnormalities will be emphasized. Practical diagnostic tests will be discussed and demonstrated, as well as the therapeutic use of the newer progestational, gonadal, and corticoid steroids. Some pertinent aspects of male endocrinology will also be included.

The course will be given under the direction of Herbert S. Kupperman, M.D.

For further information write to: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

"Fight for Sight" Applications Due March 1st—The National Council to Combat Blindness, Inc., "The Fight for Sight," announces that the closing date for receipt of completed applications for full-time research fellowships, grants-in-aid and summer student fellowships for the 1961–1962 period, has been designated as March 1, 1961.

In general, notification to applicants for full-time research fellowships and grants-in-aid will take place in July with August 1 as the commencement date for the project. Under special circumstances, where earlier notification is essential, the Scientific Advisory Committee may consider applications in advance of the scheduled date.

Applicants for student fellowships will be notified in May of the action taken by the Scientific Advisory Committee in order that arrangements may be made with their respective institutions to commence work in early summer.

Appropriate forms may be obtained from: Secretary, National Council to Combat Blindness, Inc., 41 West 57th Street, New York 19, New York.

New York State to Get Air Monitors to Measure Radioactivity—Five continuous air monitors, designed to measure radioactivity, will soon be in operation in New York State. The monitors will be located at the Johnson City water treatment plant; University of Buffalo; Watertown water treatment plant; Suffolk County Civil Defense headquarters, Yaphank; and the Peekskill water treatment plant.

The air monitors will be used to determine variations in background radiation and other man-made sources such as nuclear fallout from weapons testing or local sources of air contamination.

Each monitor consists of a vacuum air pump, special filter paper to remove air particulates, a detecting device, electronics system, and meters. The detecting device is located directly below the area of the filter paper on which air particulates are collected. Any excessively high levels of radioactivity will immediately set off an alarm. The filters will be examined at the State Health Department's Division of Laboratories and Research.

Postgraduate Course in Cerebral Palsy—The International Society for Welfare of Cripples and United Cerebral Palsy, Inc., will present an international postgraduate cerebral palsy course September 6 through 23. The course will be conducted at the Institute for the Crippled and Disabled, and at metropolitan medical schools and clinics.

The course will consist of a study of the whole set of disorders labeled "cerebral palsy" and will attempt an appraisal of present-day management. It is open to participants of the eighth world congress, to foreign students in the United States, and to a limited number of rehabilitation personnel of the United States.

For further information write to: Dr. Isabel P. Robinault, Institute for the Crippled and Disabled, 400 First Avenue, New York 10, New York.

Association for Psychiatric Treatment of Offenders—The Association of Psychiatric Treatment of Offenders announces the formation of two new chapters, in Northern California and in Florida.

The Association is a nonprofit organization established in 1950 to provide individual psychiatric treatment to offenders, stimulate interest in the psychotherapy of offenders, conduct research into the most effective methods, and develop a plan for the training of specialists.

The New York address of the Association is: 444 Central Park West, 9 East 97th Street, New York City. Telephone MOnument 6–6128.

Symposium on Surgery of Endocrine Organs—A three-day symposium on the surgery of endocrine organs will be presented by the schools of medicine of the New York University Medical Center, November 17 to 19.

Surgical diseases in which the endocrine system is directly involved or in which endocrine influences are important will be discussed. Functioning tumors of endocrine structures, derangements of internal secretions that are amenable to surgical treatment, and endocrine factors in metastases of cancer are considered from physiologic and diagnostic standpoints.

For further information contact: Office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

Section of TB Association Changes Name—The medical section of the National Tuberculosis Association has changed its name from the American Trudeau Society to the American Thoracic Society.

MEDICAL MEETINGS

Public Convocation on Medicine to be held in New Hampshire

A public convocation on "The Great Issues of Conscience in Modern Medicine" will be held in Hanover, New Hampshire, September 8 through 10. Rene Dubos, Ph.D., will serve as chairman of the convocation. Other participants will include: Mahomedali Currim Chagla, Indian Ambassador to the United States and Mexico; Aldous Huxley; Sir Charles Snow; Sir George Pickering; Warren Weaver, M.D.; George Kistiakowsky, M.D.; Walsh McDermott, M.D.; Brock Chisholm, M.D.; Ralph Gerard, M.D.; Wilder Penfield, M.D.; and Sandor Rado, M.D.

The public is invited. Arrangements for lodging and meals may be made through the Convocation Office, Dartmouth Medical School, Hanover, New Hampshire.

Second International Meeting on Forensic Pathology and Medicine

Milton Helpern, M.D., Chief Medical Examiner, City of New York, reminds New York physicians of the second international meeting on forensic pathology and medicine to be held at the New York University Medical Center, 550 First Avenue, New York City, September 18 through 21.

A well-rounded social program is planned for physicians and their families in addition to the extensive scientific program.

For further information contact: Milton Helpern, M.D., Professor and Chairman, Department of Forensic Medicine, New York University Medical Center, 550 First Avenue, New York 16, New York.

MONTH IN WASHINGTON

Congress returned to work this month to take up its unfinished business, including the controversial issue of health care for the aged, in an atmosphere dominated by election-year politics.

The three-or four-week, tag-end session of Congress loomed as one of the most important meetings in the past decade as far as possible impact on the medical profession is concerned.

The lawmakers are slated to decide whether to embark the Federal government on a course that could threaten the private practice of medicine, or to adopt a voluntary program that would pose no such danger.

The omnibus Social Security bill approved by the House Ways and Means Committee was easily cleared by the House, 381 to 23, and sent to the Senate Finance Committee, which held two days of hearings. The measure contained a voluntary, Federal-state program for assisting needy aged persons in meeting their health care costs. Both the Administration and the American Medical Association endorsed the House measure as in keeping with the concept of giving the states prime responsibility for helping their citizens, for aiding those who are most in need of help, and for avoiding the compulsory aspects of health plans involving the Social Security mechanism.

A vote by the Finance Committee, headed by Sen. Harry F. Byrd, (D., Va.) was scheduled shortly after the Senate resumed operations in August. Whatever action the Committee took, however, proponents of schemes such as the Forand bill to provide a compulsory Federal medical program promised a determined fight on the floor of the Senate.

In the event Congress should approve a government medicine plan, opponents were counting on a Presidential veto to kill the measure. The Chief Executive repeatedly has asserted in strong language his all-out opposition to any compulsory plan for health care financing.

At the Senate Finance Committee hearing, Arthur S. Flemming, Secretary of Health, Education, and Welfare, renewed the Administration's flat stand against the Social Security avenue to financing health costs. Such a plan, he said, would inevitably lead to pressures for expanding the benefits and lowering or eliminating the age requirement. Under such circumstances, a 15 or 20 per cent Social Security payroll tax would not be too far off, he said. "We believe it is unsound to assume that revenue possibilities from a payroll tax are limitless."

Leonard W. Larson, M.D., president-elect of the American Medical Association, told the Committee the House bill is the "antithesis of the centralized, socialized, statist approach of the proposals advocating national compulsory health insurance. To those critics who call this program modest, we say that fiscal irresponsibility, unpredictable cost, and maximum nationalization are not the accepted criteria for good legislation."

A spokesman for the insurance industry pointed out "giant strides" made by private health insurance in recent years in covering aged persons. E. J. Faulkner declared that one of the most prevalent and erroneous assumptions on the matter is that most of the aged aren't able to contribute to financing their own health care costs.

The Social Security health bills, he said, "would impair or destroy the private practice of medicine, would add immeasurably to our already crushing tax burden, would aggravate our severe public fiscal problems, and would entail other undesirable consequences."

On another legislative proposal of interest to the medical profession—the Keogh-Simpson bill—a Senate debate was scheduled this month. Sen. Gordon Allott (R., Colo.) said in a Senate speech that "I believe that this legislation will have the overwhelming support of this body."

The bill, which would encourage retirement savings by the self-employed such as lawyers, small businessmen, and physicians, has already been approved by the House. The Senate bill, voted by the Senate Finance Committee, would require participating self-employed to establish retirement plans for their employes.

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

Argument is the bad talker's substitute for conversation.—W. Somerset Maugham

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Appointment—Irwin J. King, M.D., New York City, was appointed as an instructor in anesthesiology.

Summer Research Fellowships—Fellowships granted the College from the government and private health agencies have been awarded to 46 undergraduates. The health agencies and drug firms which contributed the grants were: U. S. Public Health Service, American Cancer Society, National Science Foundation, Albany County Heart Association, Arthritis and Rheumatism Foundation, Lederle Laboratories, National Foundation, National Association for Retarded Children, Tobacco Industry Committee, Albany County Tuberculosis Association, and National Cystic Fibrosis Foundation.

Fulbright Fellowship—Charles A. Hall, M.D., was awarded a Fulbright Fellowship to lecture at the University of Turku, Turku, Finland. Dr. Hall will give a series of lectures on hematology and clinical use of radioisotopes.

College of Physicians and Surgeons

Retired—Rustin McIntosh, M.D., Carpentier Professor of Pediatrics, retired from the faculty on June 30. In recognition of his teaching career of more than thirty years, the Trustees appointed Dr. McIntosh Carpentier Professor Emeritus of Pediatrics which became effective July 1. Dr. McIntosh also retired as attending pediatrician and director of Pediatric Service at Babies Hospital and on July 1 began serving as consultant to Presbyterian Hospital. Edward C. Curnen, Jr., M.D., was appointed to succeed Dr. McIntosh. Other emeritus appointments are: George Winthrop Fish, M.D., clinical urology; Robert Frederick Loeb, M.D., Bard Professor Emeritus of Medicine; Harry Pratt Smith, M.D., Delafield Professor Emeritus of Pathology, who was succeeded by Donald G. McKay, M.D., a former assistant professor of pathology at Harvard Medical School; William Benham Snow, M.D., physical medicine, and John Caffey, M.D., radiology.

New York Medical College

Appointed—Bernard M. Wagner, M.D., has been appointed professor and chairman, Department of Pathology. He will also be chief of pathology at Flower and Fifth Avenue Hospitals and Metropolitan Hospital.

New York University Medical College

University Hospital—A grant by the John A. Hartford Foundation of $234,383 was awarded for a three-year study of the causes of eczema in infants. The team of investigators is headed by L. Emmett Holt, Jr., M.D., chairman, Department of Pediatrics, who retired July 1 to devote full time to research. Saul Krugman, M.D., succeeded Dr. Holt as chairman.

New York University School of Medicine

Alumni Association—Edgar H. Bates, M.D., was elected president of the Alumni Association. Dr. Bates is assistant clinical professor of surgery at the School of Medicine.

State University of New York Downstate Medical Center

Research Grants—Eight research grants, one training grant, and one service grant were received during May, 1960. The service grant of $51,345 was awarded by the Office of Vocational Rehabilitation to Dr. Maurice H. Miller, coordinator of the new Speech and Hearing Center, to be used for the evaluation, selection, and fitting of hearing aids for middle aged and old persons who are hard of hearing.

The training grant of $49,744 was awarded by the National Institutes of Health to Dr. Robert F. Furchgott, chairman, Department of Pharmacology, to support the Department's graduate program for training Ph.D.'s.

Frank C. Hamm, M.D., head, Division of Urology, received $24,688 from the American Cancer Society to study the effects of certain drugs on experimentally induced bladder cancer. The Atomic Energy Commission awarded $21,292 to Dr. Robert S. Speirs, associate professor of anatomy, to continue his radioactive studies of tetanus toxin and the formation of antibodies in the human body. The other research grants were presented to: Jonathan T. Lanman, M.D., chairman, Department of Pediatrics, $19,000, from the National Institutes of Health, to determine why the adrenal gland of the human fetus is so much larger in relation to body weight than in the adult; Merel H. Harmel, M.D., chairman, Department of Anesthesiology, $6,499, from the Office of the Surgeon General, to study the effects of narcotics and respiratory gases in brain injury; Clarence D. Dennis, M.D., chairman, Department of Surgery, $3,000, for cancer research from the Sidney Gelb Chapter for Cancer Research; Lawrence Frank, M.D., head, Division of Dermatology, $3,000 from the Upjohn Company, to evaluate various new medications in treating warts; Harry H. LeVeen, M.D., associate professor of surgery, $2,500 from Travenol Laboratories, to study the effects of a new drug on blood cholesterol; and Bernard Schwartz, M.D., assistant professor of ophthalmology, $1,750 from the Ortho Research Foundation, to experiment with a new substance recently isolated from human blood in the hope of dissolving clots in retinal veins and retaining the patient's vision.

David Grob, M.D., professor of medicine, and director of medicine at Maimonides Hospital of Brooklyn, received a grant from the Health Research Council of the City of New York, for research in diseases of muscle in the amount of $48,980. Coinvestigator is Daniel S. Feldman, M.D., assistant professor of neurology, and director of neurology at Maimonides.

Alumni Association—Albert W. Cook, M.D., of Brooklyn, class of 1946, was elected president of the Association for 1960 to 1961. Dr. Cook is head, Division of Neurosurgery, Department of Surgery, Downstate Medical Center, and director of neurosurgery, Long Island College and Methodist Hospitals. Other officers elected were: vice-president, Robert J. Hubbard, M.D.; secretary, George Liberman, M.D.; Dennis J. Fiorentino, M.D., all of Brooklyn; Stanley D. Berliner, M.D., New Hyde Park, historian; and associated historian, Walter J. O'Connor, M.D., Brooklyn.

State University of New York Upstate Medical Center

Commencement—June 12 was the commencement for 73 students who received medical degrees. The speaker was Gordon K. Moe, M.D., professor and chairman, Department of Physiology, who spoke on "Science or Medicine?" Dr. W. W. Westerfeld, professor and chairman, was the chief marshall and the marshals were: Philip B. Armstrong, professor and chairman, Department of Anatomy, Marc H. Hollender, M.D., professor and chairman, Department of Psychiatry; and Max G. Menefee and Louis Ripich, class of 1961. Dr. Carlyle Jacobsen, president, Upstate Medical Center and dean of the College and George Shapiro, L.L.B., chairman, Council of the Upstate and Downstate Medical Centers, conferred the degrees. Richard H. Lyons, M.D., professor and chairman, Department of Medicine, presented the candidates for medical degrees. C. Barber Mueller, M.D., professor and chairman, Department of Surgery, administered the Hippocratic Oath. Ten of the graduates received their degrees cum laude. These were: Daniel L. Dombroski, Samuel D. McFadden, Jr., C. Kay Millar, Ralph Reichert, Samuel O. Thier, and Alan R. Winterberger, all from Syracuse, and Robert E. Alessi, Rome; Melvin J. Klein, Flushing; Allen H. Unger, South Fallsburg, and Philip A. Wolf, Yonkers.

Resignation—Gordon K. Moe, M.D., professor and chairman, Department of Physiology, resigned July 1 to become director of the Masonic Medical Research Laboratory, Utica. Dr. James B. Preston, assistant professor, succeeded Dr. Moe.

Conference on Medical Education—A Conference on Medical Education was held June 15 through June 18 for the purpose of giving 40 visiting Indian educators an over-all view of American Medical education. The conference was sponsored by the

State University of New York College of Medicine, the Public Health Division of the International Cooperative Administration, and the Rockefeller Foundation. A high light of the visit was an Indian dinner at which Dr. Edward Dempsey, professor of anatomy and dean, College of Medicine, Washington University, St. Louis, Missouri, gave the keynote address.

Other speakers were: Kurt Deuschle, M.D., assistant professor of public health and preventive medicine, Cornell Medical College; Fred Kern, Jr., M.D., associate professor of medicine, University of Colorado College of Medicine; Ivan Bennett, M.D., professor of pathology, Johns Hopkins University College of Medicine; Manson Meads, executive dean, Bowman Gray College of Medicine, C. Barber Mueller, M.D., professor and chairman, Department of Surgery, Upstate Medical Center; and William A. Harris, M.D., assistant dean, Upstate Medical Center.

Appointed—Allen B. Dobkin, M.D., from the University of Saskatchewan College of Medicine, Saskatoon, Canada, has been appointed head of the Department of Anesthesiology. The Department of Anesthesiology was formerly affiliated with the Department of Surgery and the office will be located in the University Hospital until the new Teaching and Research Hospital is built.

University of Buffalo School of Medicine

American College of Chest Physicians Awards—Theodore H. Noehren, M.D., received honorable mention for his scientific motion picture "Intermittent Positive Pressure Breathing (IPPB/I)—Its Clinical Applications and Administration," at the twenty-sixth annual meeting. First prize winner of the 1960 Essay Award Contest of the College was D. Jackson Coleman for his essay "High Frequency Phonocardiographic Analysis of Cardiovascular Sounds."

Antibiotic Warrants Attention as Cancer Inhibitor

Actinomycin D, an antibiotic isolated in 1954, has demonstrated sufficient antitumor potency to warrant a study of its ability to inhibit cancer. An article on the effect of the antibiotic on childhood tumors appears in the May A.M.A. *Journal of Diseases of Children.*

Actinomycin D was administered intravenously to 12 youngsters with inoperable malignancies during a two-year study at the General Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland. Antitumor responses were observed in 7 of the children.

"The antitumor effect of actinomycin D in 6 of the 12 patients was very dramatic," the article said. "The rapid reduction in size of tumor masses within a few days and the prompt reversion of severe metabolic abnormalities towards normal . . . indicate that this compound is very active in certain childhood neoplasms.

"Unfortunately the duration of the remissions is short, usually about four to six weeks."

However, the authors of the article said "the marked, albeit transient, antitumor effect of this antibiotic indicates that this class of compounds deserves major attention in cancer chemotherapy investigation."

The article was written by Drs. Richard K. Shaw, Edward W. Moore, Peter S. Mueller, Emil Frei, III, and Donald M. Watkin.

They said the antibiotic is of interest in cancer chemotherapy for several reasons. "On a weight basis it is the most active antitumor agent now available. The structural formula of this agent is unrelated to any other type of antitumor agent now known, indicating that it probably has a unique mechanism of action. Finally, of several antibiotics which have been tried in cancer chemotherapy, it is one of the few with definite clinical benefit."

The drug caused some side effects. However, the researchers said, recovery from toxicity was rapid.

MALPRACTICE INSURANCE AND DEFENSE BOARD

Medical Society of the State of New York

JOHN C. BRADY, M.D., *Chairman*

AN INCREASE of 1,361—or more than 10 per cent—in the membership of the State Society's Group Plan of Malpractice Insurance and Legal Defense was experienced in 1959, according to the last annual report of the Malpractice Insurance and Defense Board. As of the end of the year, 12,474 members were insured under the State Society program.

This is the second consecutive annual increase in participation in the Group Plan, a small increase having been registered in 1958, the first year since 1952 to show a gain.

Of the total membership increase, 1,020 were in counties in the metropolitan and suburban areas. The largest increases by specialty or type of practice were in internal medicine, general practice, psychiatry, and pediatrics—in that order.

During the year, more than 1,000 physicians returned to the Group Plan after having tried other insurance. A number of these doctors returned because they realized the long-range advantages of a State-wide program that includes general practice and the various specialties and thus avoids conflicts of interest that often arise when codefendants are insured with different companies.

Other doctors indicated that they had learned through bitter experience that insurance in a financially sound company such as the Employers Mutual Liability Insurance Company of Wisconsin and the assurance that their protection can be terminated only by action of their State Society are benefits of over-riding importance to them.

According to doctors interviewed by the Board, other insurance failed to give them the feeling of security they needed and the efficient service they wanted. Many of them, ironically, were confronted with rate increases by companies from which they had bought insurance on the basis of price alone.

Their experience underscored for them two inescapable facts about malpractice protection:

—Inadequate premiums necessitate sacrifices in protection and service; and

—The protection of a doctor's practice and the welfare of his family cannot justifiably be jeopardized for the sake of temporary and often insignificant savings in premium.

For the coming year, Group Plan rates will be the same as those of last year. This is the third consecutive year—in these times of generally rising prices—that the Group Plan has avoided an increase in its over-all premium; in two of those years there have actually been decreases. In contrast, the trend outside the Group Plan has been toward increased rates or restricted coverage.

The men whom I have seen succeed best in life have always been cheerful and hopeful.—CHARLES KINGSLEY

BOOKS RECEIVED

(The following books were received during the month of June, 1960)

Tumors of Childhood. By Harold W. Dargeon, M.D. Quarto of 476 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Cloth, $20.

Leukaemia, Research and Clinical Practice· By F. G. J. Hayhoe, M.D. Octavo of 335 pages, illustrated. Boston, Little, Brown and Company, 1960. Cloth, $16.

Nonpenetrating Injuries of the Abdomen. By Robert H. Kennedy, M.D. Octavo of 121 pages. Springfield, Charles C Thomas, 1960. Cloth, $4.75.

The Head, Neck, and Trunk. By Daniel P. Quiring, Ph.D. Second Edition, revised and edited by John H. Warfel, Ph.D. Octavo of 124 pages, illustrated. Philadelphia, Lea and Febiger, 1960. Cloth, $3.25.

Injuries of the Brain and Spinal Cord and Their Coverings. Edited by Samuel Brock, M.D. Fourth edition. New York, Springer Publishing Company, Inc., 1960. Cloth, $18.50.

Epilepsy and Related Disorders. Two volumes. By William Gordon Lennox, M.D., with the collaboration of Margaret A. Lennox, M.D. Octavo of 1,168 pages, illustrated. Boston, Little, Brown and Company, 1960. Cloth, $13.50.

Psychoanalytic Education in the United States. By Bertram D. Lewin, M.D., and Helen Ross. Octavo of 478 pages, illustrated. New York, W. W. Norton & Company, Inc., 1960. Cloth, $10.

The List Method of Psychotherapy. By Elizabeth Sher, Eleanor Messing, Theodora Hirschhorn, Enis Post, Annette Davis, and Arthur Messing. Octavo of 258 pages. New York, Philosophical Library, 1960. Cloth, $7.50.

Thoracic Surgery Before the 20th Century. By Lew A. Hochberg, M.D. Octavo of 858 pages, illustrated. New York, Vantage Press, 1960. Cloth, $15.

Viral Infections of Infancy and Childhood. A Symposium of the Section on Microbiology, The New York Academy of Medicine. Edited by Harry M. Rose, M.D. Octavo of 244 pages, illustrated. New York, A Hoeber-Harper Book, 1960. Cloth, $8.00.

A Doctor in Many Lands. The Autobiography of Aldo Castellani. Octavo of 359 pages. Garden City, N. Y., Doubleday & Company, Inc., 1960. Cloth, $4.95.

Recent Advances in Biological Psychiatry. The Proceedings of the Fourteenth Annual Convention and Scientific Program of the Society of Biological Psychiatry, Atlantic City, June 1959. Edited by Joseph Wortis, M.D. Octavo of 417 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $13.50.

Neuropharmacology. Transactions of the Fifth Conference, May 27, 28, and 29, 1959, Princeton, N. J. Edited by Harold A. Abramson, M.D. Octavo of 251 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1960. Cloth, $6.00.

Medical Research and the Death Penalty. By Jack Kevorkian, M.D. Octavo of 75 pages. New York, Vantage Press, 1960. Cloth, $2.50.

Professional School Psychology. Edited by Monroe G. Gottsegen, Ph.D., and Gloria B. Gottsegen, M.A. Octavo of 292 pages. New York, Grune & Stratton, 1960. Cloth, $7.75.

Attenuated Infection. The Germ Theory in Contemporary Perspective. By Harold J. Simon, M.D. Octavo of 349 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $10.

Nine Months' Reading. A Medical Guide for Pregnant Women. By Robert E. Hall, M.D. Octavo of 191 pages, illustrated. Garden City, New York, Doubleday & Company, Inc., 1960. Cloth, $2.95.

The Pharmacopeia of the United States of America. Sixteenth Revision (U.S.P. XVI). Published by United States Pharmacopeial Convention, Inc., 1960. Octavo of 1,148 pages, illustrated. Cloth, $10.

Electrophysiology of the Heart. By Brian F. Hoffman, M.D., and Paul F. Cranefield, Ph.D. Octavo of 323 pages, illustrated. New York, The Blakiston Division, McGraw-Hill Book Company, Inc., 1960. Cloth, $12.50.

Psychotherapists in Action. By Hans H. Strupp, Ph.D. Octavo of 338 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $8.75.

The Office Assistant in Medical Practice. By Portia M. Frederick and Carol Towner. Second edition. Octavo of 407 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $5.25.

The Medical Clinics of North America. New York Number. May, 1960. Diseases of the Liver, Pancreas and Biliary Tract. Thomas P. Almy, M.D., guest editor. Octavo. Philadelphia, W. B. Saunders Company, 1960. Published bi-monthly (six numbers a year). Cloth, $18 net; paper $15 net.

The Multilingual Manual for Medical Interpreting. By Louis R. M. Del Guercio, M.D. Octavo of 160 pages. New York, Pacific Printing Co., Inc., 1960. Paper.

BOOKS REVIEWED

Fundamentals of Modern Allergy. Edited by Samuel J. Prigal, M.D. (Sponsored by the New York Allergy Society.) Octavo of 690 pages, illustrated. New York, The Blakiston Division, McGraw-Hill Book Company, Inc., 1960. Cloth, $18.50.

This is a valuable compendium of monographs which originally appeared in the NEW YORK STATE JOURNAL OF MEDICINE. Several original papers have been added which have not been published before and which are of considerable value in that they broaden the usefulness of the book. While each chapter carries the weight of the authority of its author, the subject matter is stated with economy and lucidity of style.

Specific commendation should go to Dr. Prigal for the beautifully balanced job of editing which he has accomplished in this exhaustive compilation. He has succeeded in amassing in one volume a wide source of information to which the average physician will have recourse quite frequently. This reviewer is especially thankful to have come upon a work which combines between the covers of a single book the information which heretofore made it necessary to resort to a number of texts and directories.

The work is divided into five main divisions: Part I deals with mechanisms and causal factors in allergy; Part II delves into tests, procedures, technics for diagnosing of allergic conditions; the third main division concerns itself with manifestations and forms of allergy; Part IV treats of allergy in childhood and old age; Part V is an exposition on general treatment and prophylaxis in allergy.

There is a foreword, a historical note, a preface, a brief biographic data of contributors, and a general introduction to the work. Far more important, however, is an appendix listing the organizations and institutions active in the field of allergy and an index of names and one on subjects.

This reviewer has found the book instructive and worthy of joining the other prized source works on his shelves. It is a symposium on allergy which the allergist will do well to read and which the general practitioner will find invaluable.—HARRY LEIBOWITZ

The Medical Clinics of North America. November, 1958. Common Pain Problems. Howard C. Coggeshall, M.D., Consulting Editor. Octavo of 284 pages, illustrated. Philadelphia, W. B. Saunders Co., 1958. Published bimonthly (six numbers a year). Cloth, $18 net; paper $15 net.

This November, 1958, edition of "Medical Clinics of North America" devotes approximately 200 pages to a consideration of pain. There are a few appropriate illustrations. In general, this is an outline of the various causes of pain and its management.

The edition is divided into 15 chapters each one considering some special aspect of pain. The treatise on "Psychogenic" pain, by George L. Engel, M.D., proved very interesting and challenging. The "Differential Diagnosis of Chest Pain," by Alfred W. Harris, M.D., is complete and informative. Otto Steinbrocker's, M.D., study of "Shoulder-Hand Syndrome" is provocative of considerable thought.

The other chapters are equally well done; particularly interesting is the evaluation of "Painful Disorders of the Foot" by Mark B. Coventry, M.D.

The reviewer considered this symposium constructive and a useful edition to a medical library.—A. Sidney Barritt, Jr.

Doctors and Patients. Stories by Leading American Physicians. Edited by Noah D. Fabricant, M.D. Octavo of 204 pages. New York, Grune & Stratton, 1959. Cloth, $5.25.

Thirty-one distinguished physicians have each contributed a tale in medical adventure to this delightful collection. Except for novelist Frank Slaughter, none are writers by vocation but all have earned distinction by their literary efforts even outside the profession, including such personalities as columnists Howard Rusk, Morris Fishbein, and Walter Alvarez, lecturers Dick Read and Paul White, poet William Williams, historian Ralph Major, and the collecting editor, author Noah Fabricant.

With each story, the reader will recall similar incidents, and be tempted to write of these reminiscences. It may be taken a-tale-at-a-time, for interval relaxation, or in larger doses whenever time is available, and might well be prescribed for consumption by the general public upon whom it will have a salutory effect.—Milton B. Spiegel

Childbirth Without Fear. By Grantly Dick-Read, M.D. Second revised edition. Octavo of 361 pages, illustrated. New York, Harper & Brothers, 1959. Cloth, $4.00.

In the second edition of this well-known book, the author has revised the text as a result of many years of personal experience in the practice of "natural childbirth." He also combines the results of his observations of other physicians practicing this type of management of labor. While there has not been complete acceptance of the practice of "natural childbirth," and indeed considerable skepticism by some, there are clearly many who are most enthusiastic concerning the benefits gained by its use.

This revised text explains what can and cannot be accomplished by this technic. As in previous editions, the author describes the development of the child from conception to birth, the morphology and physiology of pregnancy and labor, the causes for painful labor, and the proper use of analgesics and anesthetics in labor. The exercises, which help the expectant mother prepared for childbirth, are also included and illustrated.

The recent passing of Grantly Dick-Read, M.D., the undisputed pioneer in this field, leaves this revised text as the last to find new adherents for his methods.—Alexander H. Rosenthal

Diabetic Manual. By Elliott P. Joslin, M.D. Tenth edition. Duodecimo of 304 pages, illustrated. Philadelphia, Lea & Febiger, 1959. Cloth, $3.75.

This is the tenth edition of a classic manual. The previous edition was published in 1953. The notable addition to the present volume is the discussion of the oral hypoglycemic agents.

It is an excellent book for the diabetic patient from which he can learn nearly all he needs to know about his role in the management and care of diabetes. Innumerable examples will show how good diabetic control is rewarded by an almost normal life span without vascular complications or infections. Moreover, he cannot fail to be impressed for the book is written with understanding and charm by the world's leading diabetic specialist.

It would be a wise and prudent investment if physicians would present a copy of this book to their diabetic patients. It is so much easier to get cooperation from a well-informed patient.—Felix Taubman

J.-M. Charcot 1825-1893, His Life—His Work. By Georges Guillain, M.D. Octavo of 202 pages. New York, Paul B. Hoeber, Inc., 1959. Cloth, $7.00.

In the present rush of the busy practice of medicine and the ever-growing body of new ideas and concepts being applied in modern diagnosis and therapy it is well to pause and reflect on the origins of these ideas. It is a lesson in modesty: the brilliant shine of our progress which is mainly technical dulls a bit when compared with intellects who by sheer force of observation and incisive thinking were able to make discoveries without the benefit of modern gadgetry. Charcot was one of the intellects and to a great degree the founder of classical neurology. The present volume deals with Charcot as person, teacher, and scientist-clinician against the backdrop of Salpêtrière, the famous medical center of Paris. The range of his interests was amazing; and his contributions to identification of neurologic disease entities were so durable that some have not been surpassed yet and others modified but little.

This book is very warmly recommended to students of neurology and to all those who consider the intellectual exploits the most exciting of all adventures. It is recommended to young neurologists in particular; it will show them that not all that glitters today is necessarily gold and it will teach them that even amidst our technologic progress there is need for critical clarity of thinking.—Ladislav P. Hinterbuchner

Synopsis of Gynecology. By Robert James Crossen, M.D., Daniel Winston Beacham, M.D., and Woodard Davis Beacham, M.D. Fifth edition.

Duodecimo of 340 pages, illustrated. St. Louis, C. V. Mosby Company, 1959. Cloth, $6.50.

This small text, originally published in 1932, has two able clinical gynecologists as well as the original author to help in the revision. The major number of chapters have been completely rewritten, others brought up to date, and two new chapters have been added, one on pregnancy complications and the other on endometriosis. The recognition of the psychosomatic elements in gynecologic disorders is stressed. Considerable space, some 61 pages in length, is devoted to the anatomy and physiology of the female genitalia and the subject matter is presented in a lucid fashion. The book is an excellent brief text in gynecology and is recommended to students and the profession.—Alexander H. Rosenthal

Metabolic Aspects of Renal Function. By William D. Lotspeich, M.D. Octavo of 214 pages, illustrated. Springfield, Charles C Thomas, 1959. Cloth, $7.50.

This monograph is a compilation of recent reports of experiments done in the field of renal biochemistry. As professor of biochemistry at the University of Cincinnati the author is eminently qualified to discuss this subject. Moreover he has contributed some of the original observations and has been active with other investigators in discussions and presentations of the subject.

This field of endeavor has been defined as a study of the methods by which the kidney cells maintain their own metabolism and effect the transfer of metabolites from serum into urine. It is only by studies of this sort that drugs will be evaluated which can alter abnormal renal physiology. Also, this fundamental knowledge may elicit some of the mechanisms of the formation of calculi in the urinary tract.

The monograph is recommended to all physicians and students interested in this fundamental aspect of renal physiology.—Sidney R. Weinberg

Diseases of Metabolism. Detailed Methods of Diagnosis and Treatment. Fourth edition. By Garfield G. Duncan, M.D. Octavo of 1,104 pages, illustrated. Philadelphia, W. B. Saunders Co., 1959. Cloth, $18.50.

This work on metabolism has become the bible in its field. Not only is it a practical reference book but it authoritatively covers the best points on every subject under consideration. Duncan has selected his essayists with religious zeal. Each of his writers has already won laurels in his given field, e.g. Salter in protein metabolism, Rachmiel Levine in carbohydrates, Gurin in lipids, Cantarow in minerals, Welt in water, Spies, R. W. Hillman, *et al.*, in the vitamins and the avitaminoses, Keys in nutrition, Strang in obesity, Watson in the porphyrins, Rawson on the thyroid, and Max Miller on diseases of the kidney. The editor has acquitted himself very well and practically on his pet subject, diabetes mellitus. The book is one for easy reading and each subject is well high-lighted with pertinent references.

It is difficult for the reviewer to conceive of anyone's practicing in the field of metabolism without having this volume on his ready-reference shelves.—George E. Anderson

Current Problems in Allergy and Immunology. Papers dedicated to Bela Schick on the occasion of his 80th birthday. Edited by William Kaufman. Quarto of 992 pages, illustrated. New York, S. Karger, 1959. Cloth, $14.40.

This imposing volume is composed of a series of papers dedicated to Bela Schick on the occasion of his eightieth birthday. More than 60 authors in the fields of immunology, allergy, and pediatrics have contributed to this Festschrift.

The reports on original studies covering a wide variety of subjects include significant contributions on the fate of antigen in the liver, labels for determining the localization of antitissue antibodies, the nature of tumor antigen, the pathology of lung allergy, the histology of experimental allergic lesions, the immunologic basis of carcinogenesis, passive cutaneous anaphylaxis, and the chemistry and immunology of sputum in asthma. Some articles are in the nature of historical reviews and evaluations of some of Schick's most important scientific contributions, including the test which bears his name and his participation in the development of the concepts of serum sickness and of allergy.

Contributors from many countries have participated in this Festschrift. English summaries are appended to all articles in foreign languages. Bibliographies, tables, and illustrations appear in most of the original articles.

In order to expedite publication, this series of papers was presented originally in *The International Archives of Allergy and Applied Immunology*, volumes 12 to 15 inclusive. Because of its historical interest, this fitting tribute to a great pioneer in medicine belongs in all medical libraries, particularly in collections dealing with the subject of hypersensitiveness.—Matthew Walzer

Molecules and Mental Health. Edited by Frederic A. Gibbs, M.D. Octavo of 189 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $4.75. (Published for the Brain Research Foundation)

This is a transcript of papers and discussions of two scientific meetings held under the sponsorship of the

Brain Research Foundation. The first part "Amines in Relation to Brain Function and Behavior" deals with more recent developments in research on mental illnesses. Ceruloplasmin, taraxein, hallucinogens, tryptophan, epinephrine, and norepinephrine metabolism as well as acetylcholine are discussed.

The second part is about infantile spasms and their EEG correlates called hypsarhythmia. The pathogenesis, pathology, clinic, and therapy are rather extensively discussed by numerous experts.

The first part will be of interest to neurochemists and neurophysiologists in the first place. The second part is probably the best comprehensive treatment of the subject of infantile spasms and is recommended to neurologists and pediatricians in particular.—Ladislav P. Hinterbuchner

The Acute Medical Syndromes and Emergencies, Diagnosis and Treatment. By Albert Salisbury Hyman, M.D. Octavo of 442 pages. New York, Landsberger Medical Books, Inc., 1959. Cloth, $8.75.

A. S. Hyman, M.D., of the New York Medical College is the senior author of this small handbook devoted to the diagnosis and treatment of medical emergencies. He discusses in a little over half the book the cardiovascular emergencies. Other authorities discuss gastrointestinal, pulmonary, diabetic, and renal syndromes and there is a chapter on barbiturate intoxication. All are well written and the book may be commended to general practitioners without a large or very up-to-date library.—Milton Plotz

The Surgeon and the Child. By Willis J. Potts, M.D. Octavo of 255 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $7.50.

This short and perhaps dogmatic presentation is a fine summary of an extensive experience with special surgical situations pertaining to the newborn and young child. However, the important clinical and technical accomplishments are presented. The general surgeon will find much of interest in the chapters on gastrointestinal pathology, the recognition and handling of omphalocele, malrotation of the bowel, atresias, and stenosis of the intestine, to mention a few of the subjects, and the book will give important information which will enhance his knowledge of the occasional case which comes his way. The parts concerned with cardiovascular and pulmonary anomalies and pathology are a good review of their current status. These are of particular importance to pediatrician, general practitioner, pediatric and thoracic surgeon.

The book is easy to read and very informative. It would be difficult to find more authoritative information on this subject in such economical fashion.—William I. Sheinfeld

Anatomy of the Human Body. By Henry Gray, F.R.S. Edited by Charles Mayo Goss, M.D. Twenty-Seventh edition. Quarto of 1,458 pages, illustrated. Philadelphia, Lea & Febiger, 1959. Cloth, $17.50.

Twenty-seven editions in one hundred years! Such is the enviable record of Henry Gray's *Anatomy.* The first American edition was published at Philadelphia by Blanchard and Lea in 1859.

Henry Gray, who lived from 1827? to 1861, was a diligent worker and a student of remarkable talent. He won the Triennial Prize of the Royal College of Surgeons for an essay on the nerves of the human eye, graduated in 1849 from the Medical School of St. George's Hospital (London), and the following year was appointed house surgeon. Gray's dissections, continuing during a time in which such studies were beset by many difficulties, culminated in his definitive work, the *Anatomy,* which first appeared at London in 1858. Even more than the competing anatomic works of that time in the British Isles—the works of Quain, Wilson, and Turner—Gray's work, with drawings by H. Van Dyke Carter, was astonishingly popular and eventually became the standard textbook for the medical student on both sides of the Atlantic.

Gray's *Anatomy* soon found its way to America and thereby started the saga which has culminated in the present centennial edition. Since Henry Gray died in 1861, the long succession of American editions has been influenced by the eminent anatomists who have undertaken this editorial work. These men, each in his turn, have "cast their glow" upon the original work of Gray, coloring it to accord with their own special fields of interest. Thus, in the present edition (as in the two previous editions of 1948 and 1954), the emphasis on fascial connections and their components reflects the dominant interest of the present editor, Charles Mayo Goss.

This centennial edition, in effect, preserves the essence of the original work of Gray plus the contributions of the distinguished succession of later editors. They have attempted to display, in words and pictures, the whole body of our knowledge of human anatomy. Certainly an enormous task of organizing and presenting a subject admittedly overwhelming in its magnitude—a task shared alike by all anatomic writers.

The need for a new edition of Gray's *Anatomy* is founded upon the continuing desire of students, scholars, and investigators for an authoritative source of information pertaining to human anatomy, and the appearance of the present edition is dictated by the celebration of the centennial year just past. Certainly there are other authoritative texts available, and the choice among them becomes largely an academic question. In Gray one finds a trustworthy text with the force of tradition back of it as being the best known name in the field—nurturing many generations of medical students for whom such books are principally written. It can certainly be highly recommended for them.—Gordon E. Mestler

Metals and Engineering in Bone and Joint Surgery. By Charles Orville Bechtol, M.D., Albert Barnett Ferguson, Jr., M.D., and Patrick Gowans Laing, M.D. Quarto of 186 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1959. Cloth, $8.00.

This book by Bechtol, Ferguson, and Laing and their coauthors gives an up-to-date account of the entire history and development of internal fixation. At times it becomes difficult to read because of the engineering and chemical processes which it describes.

The book is written for the trained orthopedist and is well worth the time spent in reading it.—Otho C. Hudson

Acute Pericarditis. By David H. Spodick, M.D. Octavo of 182 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $6.50.

David Spodick, M.D., chief of the cardiographic laboratory of the Lemuel Shattuck Hospital in Boston, has written an able short monograph on pericarditis. Anatomy, physiology, pathology, physical and laboratory signs are well presented after which many disease entities are covered in some detail. While the work is not exhaustive, it is a sound monograph and will be a welcome addition to any medical library. There is a good index.—Milton Plotz

Surgical Pathology. Second edition. By Lauren V. Ackerman, M.D. In collaboration with Harvey R. Butcher, Jr. Octavo of 1,096 pages, illustrated. St. Louis, The C. V. Mosby Co., 1959. Cloth, $15.

The revised edition of *Surgical Pathology* has been greatly improved by the addition of several unique features which the first edition lacked. The collaboration of a surgeon's point of view with the pathologist's has indeed contributed to a much better understanding of the clinical and pathologic correlations. The introduction of several chapters begins with the elaboration as to the value of certain technical procedures for diagnosis such as the comparative value of the use of incisional or needle biopsies, the use of exfoliative cytology in the diagnosis of certain conditions, and also there are comments as to the clinical-pathologic correlations. The photographic plates of gross and microscopic material are beautifully reproduced. The references at the end of each chapter are well selected and useful to the student of pathology and medicine. It is a reference book which should be in every hospital library and essential for every pathologist to own.—Caspar G. Burn

The Medical Clinics of North America. Nationwide Number. November, 1959. Commonly Mismanaged Urologic Problems. David M. Davis, M.D., guest editor. Octavo. Philadelphia, W. B. Saunders Company, 1959. Published bimonthly (six numbers a year). Cloth, $18 net; Paper, $15 net.

This nationwide issue of the Medical Clinics is devoted to a symposium on commonly mismanaged urologic problems. It is an extremely good collection, ably written and ably edited and will instruct any reader whose major field is not urology.—Milton Plotz

The Diabetic's Handbook. By Anthony M. Sindoni, Jr., M.D. Second edition. Octavo of 285 pages, illustrated. New York, The Ronald Press Company, 1959. Cloth, $4.50.

The author is indeed well qualified to write with authority on any phase of diabetes because of his long experience in diabetes and metabolism and his multiple hospital associations in both of these fields. He is particularly skillful in devoting a large portion of his book to "Questions the Diabetic Asks, and the Physician's Answers." These are practical and very pertinent and answered clearly and succinctly.

This book is for the laity and is written with the aid of 18 authoritative collaborators.—Samuel G. Slo-Bodkin

The Physiological Basis of Diuretic Therapy. By Robert F. Pitts, M.D. Octavo of 332 pages, illustrated. Springfield, Charles C Thomas, 1959. Cloth, $9.75.

Renal physiology is complex because of the numerous processes occurring simultaneously. Robert F. Pitts, M.D., professor of physiology at Cornell Medical College and one of the leading experimenters and teachers of this subject, has succinctly summarized the present-day knowledge of these processes in the first part of his book. The second part is concerned with the rationale of various diuretics in current usage and their comparative efficiency. A complete discussion of the renal factors which affect edema are presented.

The discussion is presented in a monograph of about 300 pages. The material selected contains pertinent matter for the student and practitioner rather than for the investigator. The illustrations are line drawings or diagrams and are readily understood.

The text is recommended to all physicians who examine or treat patients with edema. The urologist will find the discussion an excellent current summary of renal physiology, helpful in elucidating the complexities of prescribing pre- and postoperative fluids.—SIDNEY R. WEINBERG

Metabolic Care of the Surgical Patient. By Francis D. Moore, M.D. Quarto of 1,011 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $20.

The introduction to this volume begins with a quotation from the works of William Beaumont, 1833: "The present age is prolific of works on physiology; therefore in offering to the public another book relative to an important branch of this science, it will perhaps be necessary to assign my motives." Dr. Moore's motives are to provide a general text and guidebook for metabolic care in surgery. That he succeeds is obvious to the reader.

This volume deals with a complete spectrum of metabolic problems which face the clinician and the investigator. The foundation of the text is an extensive bibliography of the entire medical literature over the last fifty years. This is closely integrated in the six main parts of the book. In addition to this there are 32 detailed case reports with running commentary to illustrate and add to many of the chapters. The parts dealing with major aberrations of the blood volume, body fluid and electrolytes, and visceral disease in surgical patients are especially excellent. The recent advances in cardiovascular surgery and tissue transplantation illustrate the broadening scope of surgical metabolism.

"Surgery is an effective area of applied biology—the specialty of getting patients well—and in much of its research and development it remains close to the patient." For those whose direct or indirect interest is the deranged metabolism of the sick patient, this text will be an invaluable aid. It is probably the most complete and definitive book of its kind in many years.—DAVID A. TICE

Surgery of the Foot. By Henri L. DuVries, M.D. Octavo of 404 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $12.50.

This is an excellent book. Many of the author's own operative procedures are described in detail. These procedures are sound and should accomplish relief of the symptoms for which they are devised.

The book is very extensive and covers all phases of foot surgery. In his treatment of fractures the author is too energetic doing open procedures when not indicated. He also gives incorrect periods of immobilization.

The book contains a very extensive bibliography.—OTHO C. HUDSON

Recent Advances in Cardiology. By Terence East, F.R.C.P., and Curtis Bain, F.R.C.P. Fifth edition. Octavo of 421 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $10.

This is the fifth edition of a very fine and informative book on cardiology. It is much more than a review of recent advances in the field. It is indeed a practical manual of clinical cardiology. Each section includes clinical findings, laboratory findings, etiologic treatment, and a review of the pertinent recent literature. Unfortunately the literature reviewed does not date beyond 1957. However the clinical aspects of cardiology are stressed. Discussions are succinct and full of valuable information.

This book is a gem and is highly recommended.—FELIX TAUBMAN

Smoking and Health. By Alton Ochsner, M.D. Octavo of 108 pages, illustrated. New York, Julian Messner, Inc., 1959. Cloth, $3.00.

As yet another public service by an outstanding member of the professional peerage, this book is an extension of the author's earlier mission to describe the dangers and to discourage the habit of smoking. It documents, forthrightly and with uncompromising vigor, the impressive evidence for a relationship between tobacco consumption and the occurrence of lung cancer, cardiovascular disease, digestive, and other disorders. In delineating the present morbidity and mortality reportedly attributable to smoking, it depicts and decries the even more dismal prospects predicted on the seeming expansion of this practice.

That medicine has not only the prerogative but also the obligation to be its lay brothers' keeper and to inform and to motivate the community towards preventive measures is unquestioned. That the presentation of facts alone is commonly ineffective and that an appropriate emotional overlay is essential to this process of education—of insuring commensurate action—also is not debated. It may be wondered, however, whether the generally desired end here excuses the means—whether so much objectivity can be legitimately sacrificed to the achievement of this commendable goal. To even a nonsmoking reviewer who shares the nonsmoking author's partisan perspectives as well as his aims, this book has perhaps too much of the hard sell component, of the insistent shrill to shrieking promotion which seemingly equates desire with demagoguery and dedication with decibels. Decrying, but apparently also respecting the manifestly successful tobacco hucksters, the author almost seems to despair of beating them without joining them.

Never easy, the transition from bedside byline to billboard broadside inevitably invites losses as well as gains. While moving many less critical readers, this effort risks offending the more scientifically sophisticated audience who alerted, rather than impressed by the jacket-cover portrait of the laboratory investigator, reasonably anticipates a less dispassionate discussion of the problem. A sustained sermon is sometimes a poor substitute for a reasonable exposition—a recapitulation of all the facts, on every side of the question.

In recognizing what is deemed may be a negligible public impact of this worthy undertaking, there may be perceived a need also for a review and reevaluation of the complex human beings to whom these exhortations are directed. Perhaps physicians may thereby come to understand—as certainly someday we must—the dynamics of a society's value system that, conceivable with more logic than our professional prejudices permit us to presume, consistently rejects our proselyting and obliges us to re-examine the ultimate purposes as well as the technics of health education. Although the tobacco devotee can scarcely be expected to have derived comfort from current advertising compromises of his source of supply, or to have found a reassuring refuge in Berkson's "The Statistical Investigation of Smoking and Cancer of the Lung." (Proc. Staff Meet. Mayo Clin. **34**: 187 [1959]), his rationalizing, sometimes self-salvaging sense of humor may have hazarded a few blue rings around a recent contribution to one of our leading dailies: "It is now proved—beyond doubt that smoking is one of the leading causes of statistics."—Robert W. Hillman

Soil, Grass and Cancer. By André Voisin. Translated from the French by Catherine T. M. Herriot and Dr. Henry Kennedy. Octavo of 302 pages, illustrated. New York, Philosophical Library Inc., 1959. Cloth, $15.

The title of this book suggests the nature but scarcely the scope of its proselyting mission. The author, an apparently well-regarded French, agricultural scientist has elected not so much to describe as to promulgate his interpretation of relationships between soil and disease. Specifically the concept is developed that many, predominantly chronic disorders are attributable to food consumed and ultimately to the soil in which the food is grown. Cancer in particular is depicted as the result—in part at least—of soil-plant-animal mineral deficiency, through still hypothetic mechanisms represented as consistent with other, more prevalent theories of causation, not expecting virus agents. In general a lack of copper and calcium, and an excess of zinc and potassium have adverse effects which are characterized by nonspecific enzyme changes and mediated through humoral modalities. Iodine also exerts a generic effect through the thyroid and, indirectly, the pituitary. Although food sources per se are increasingly varied and scattered, relatively constant community water supplies are implicated, not only for their mineral content but also for their waste originating contribution of urochrome—still another agent of disease. Support for these concepts is marshalled from world-wide sources in agriculture, animal husbandry, biochemistry, clinical medicine, and epidemiology with selected evidence forged into a not so formidable forensic facade over an even less substantial skeleton.

It would be a disservice to judge this volume solely on its apparent limitations—conclusions seemingly not yet warranted by available evidence, any reasoning which seems more tenuous for its poorly integrated presentation. Too, the best translation may fail to capture each critical element of logical development. While not a good book, it is nevertheless an important one—not alone for its provocative ideas but for its admirable example of interdisciplinary thinking and its timely reemphasis of basic biologic principles. The concept of significant, qualitative variation, referable to soil differences may prompt mixed reactions in readers whose natural inclinations towards this belief have so long been dissuaded by authoritative insistence that the size, but not the composition of established plant species is a function of the specific element content of the soil. While affirmative resolution of this question is essential to acceptance of the author's fundamental premise, it is not a requisite for supporting his contention that mineral components of the diet exert a critical influence on total body metabolism, and that their role cannot be properly assessed through purely chemical analysis—the method of the "ash mentality." Rather, the living, functional, or biologic approach is indispensable to valid appraisal of mineral metabolism which, it is rightly reiterated, necessarily also involves consideration of concepts of biologic antagonism (copper and molybdenum), synergism (copper and calcium), and, especially, of optimum as distinct from less favorable smaller or larger amounts of essential micronutrients. Although the importance attached to blood concentrations of these substances is probably unwarranted in light of their demonstrated lability and inconstant relationships to cellular status, emphasis is appropriately on ultimate availability to the tissues—the critical consideration which alone has meaning for the indiscriminately ingesting organism.

That this book has certain merit is attested in two short prefaces by Alan Fraser and H M. Sinclair, leading nutrition scientists in the United Kingdom, whose qualified recommendations are here duly conveyed to all those whose skeptical curiosity has not yet degenerated into cynical prejudgment.—Robert W. Hillman

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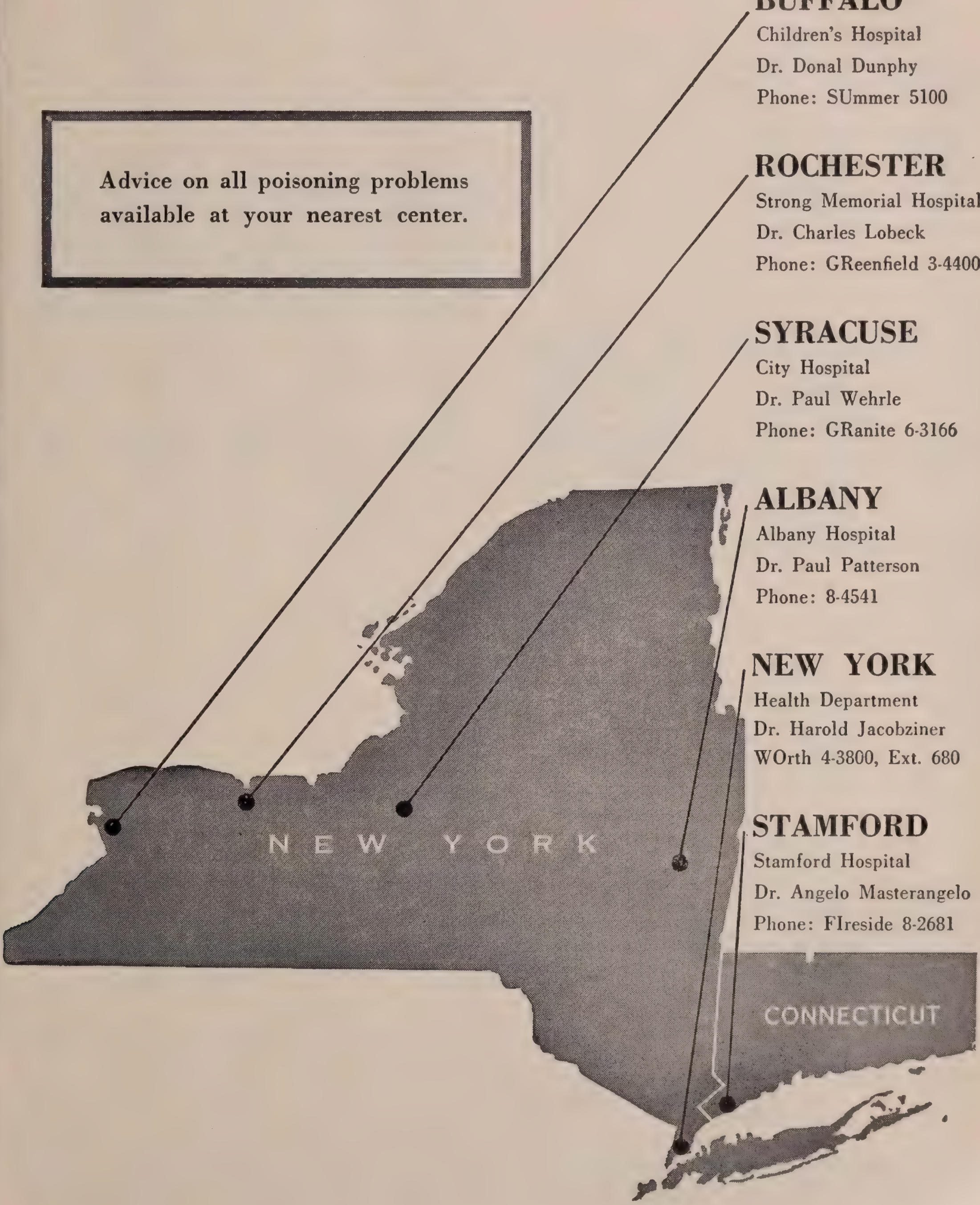

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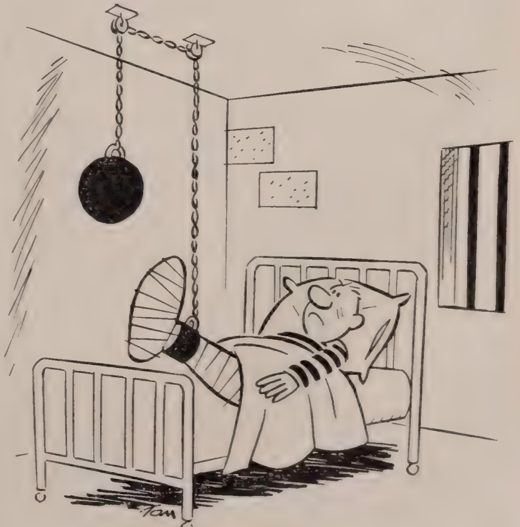

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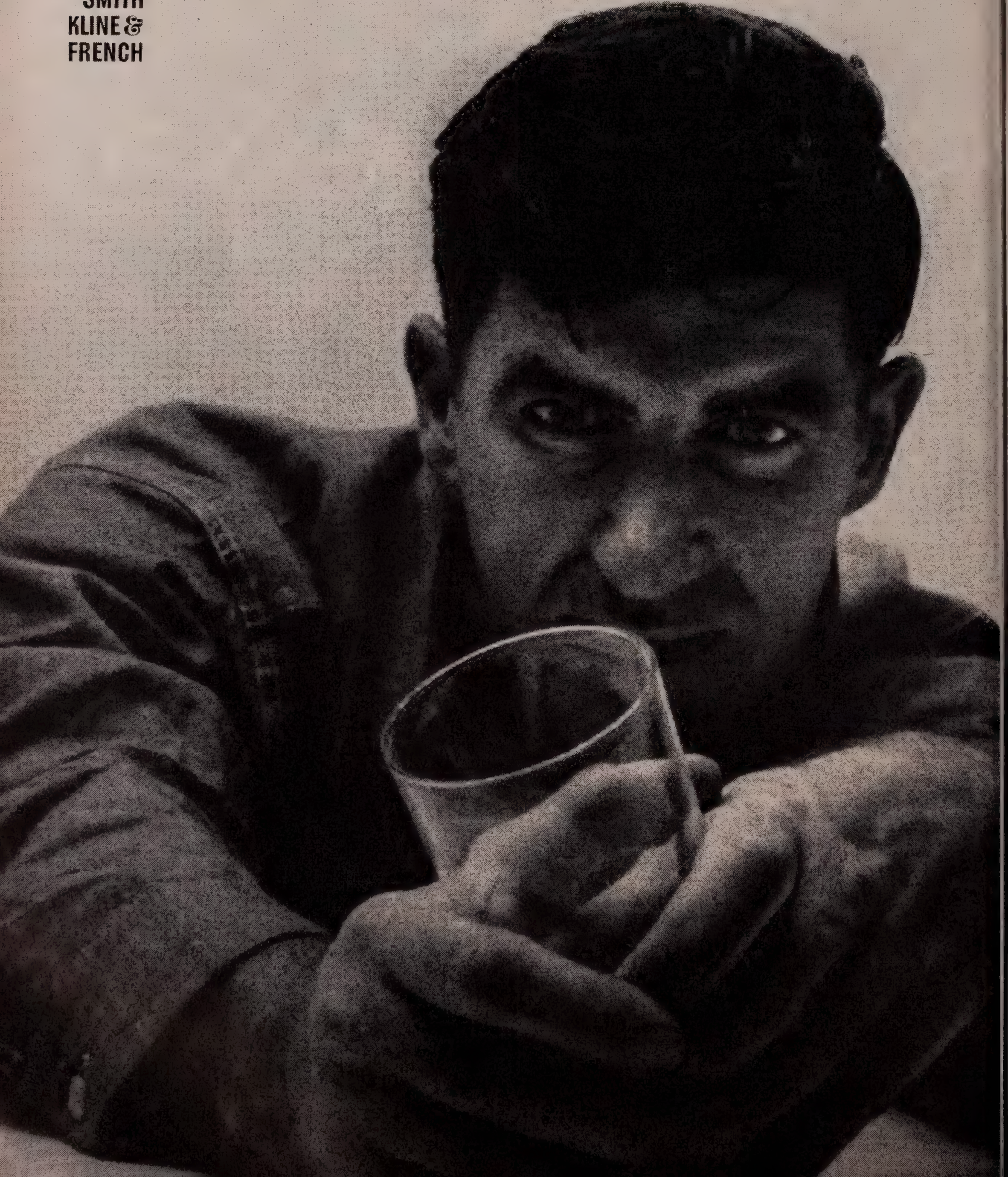

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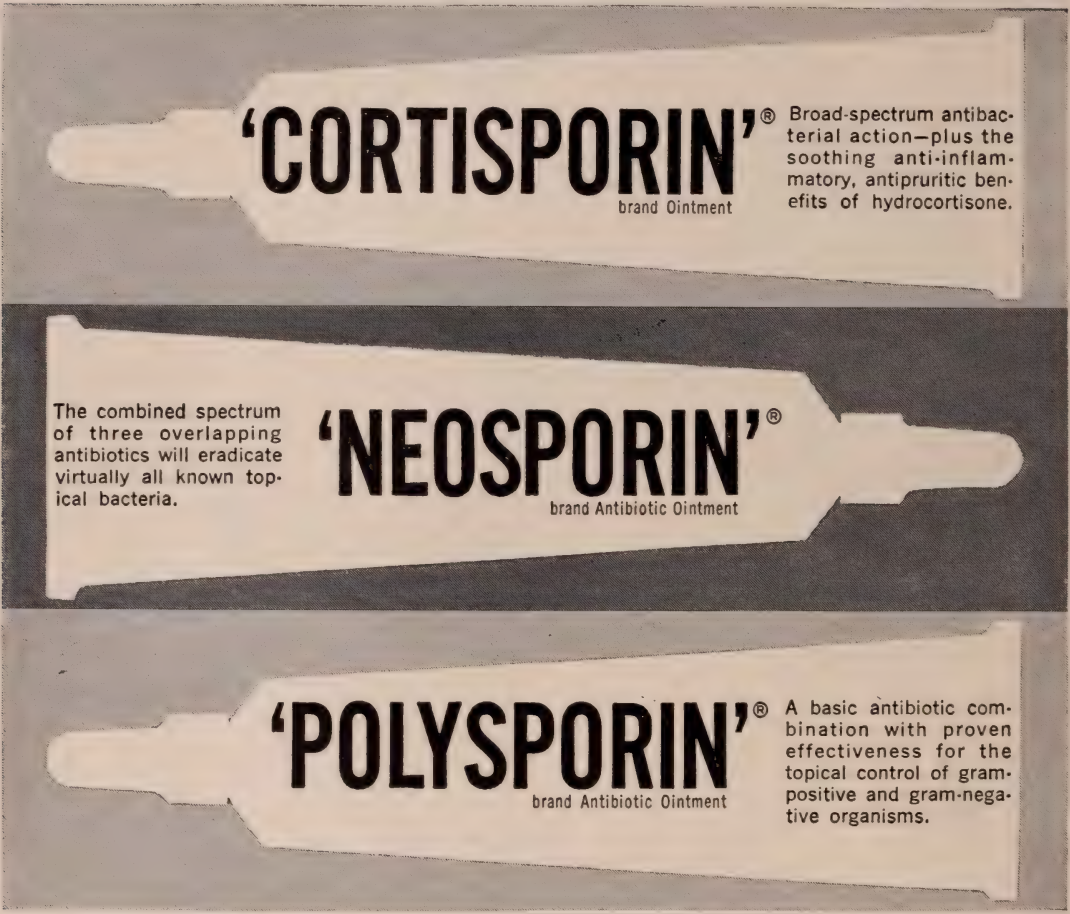
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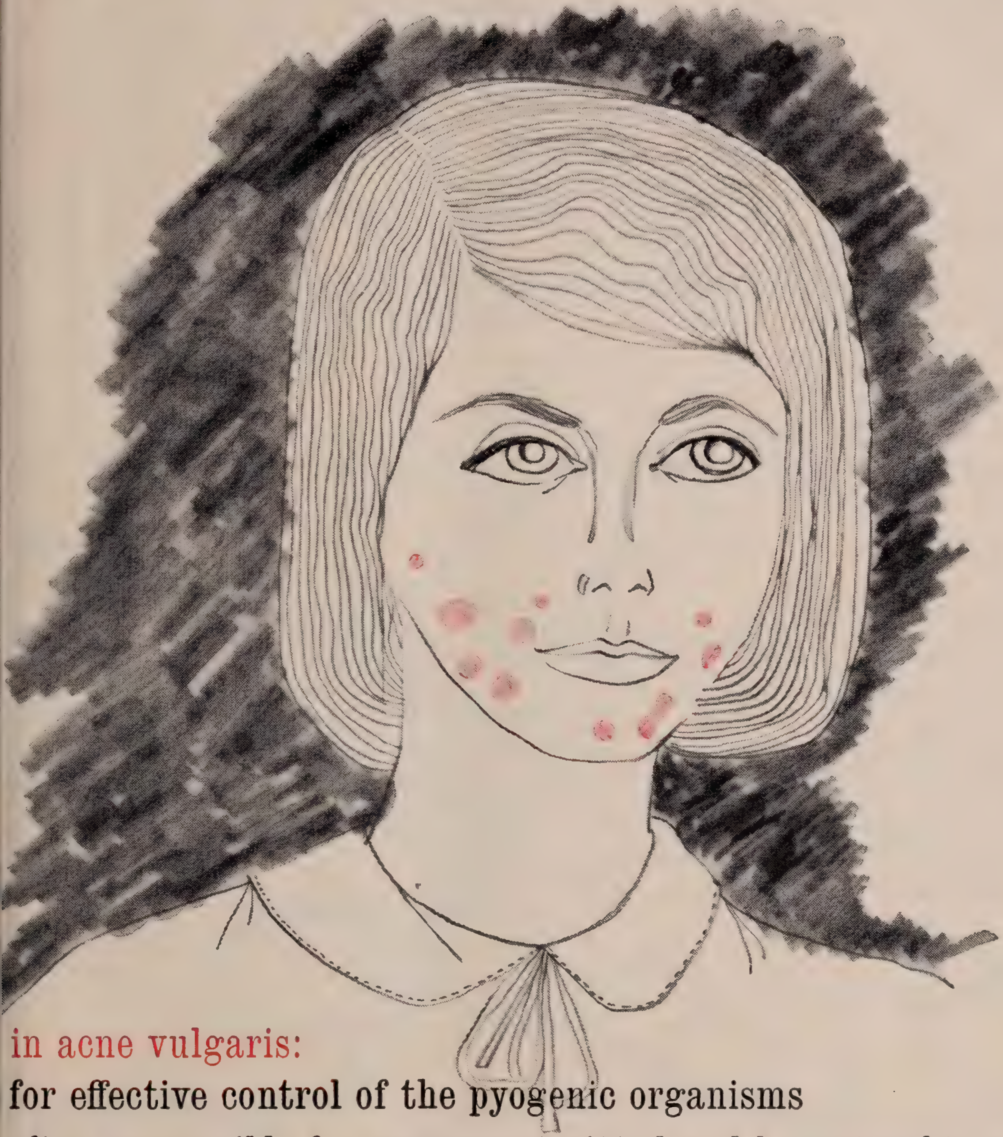

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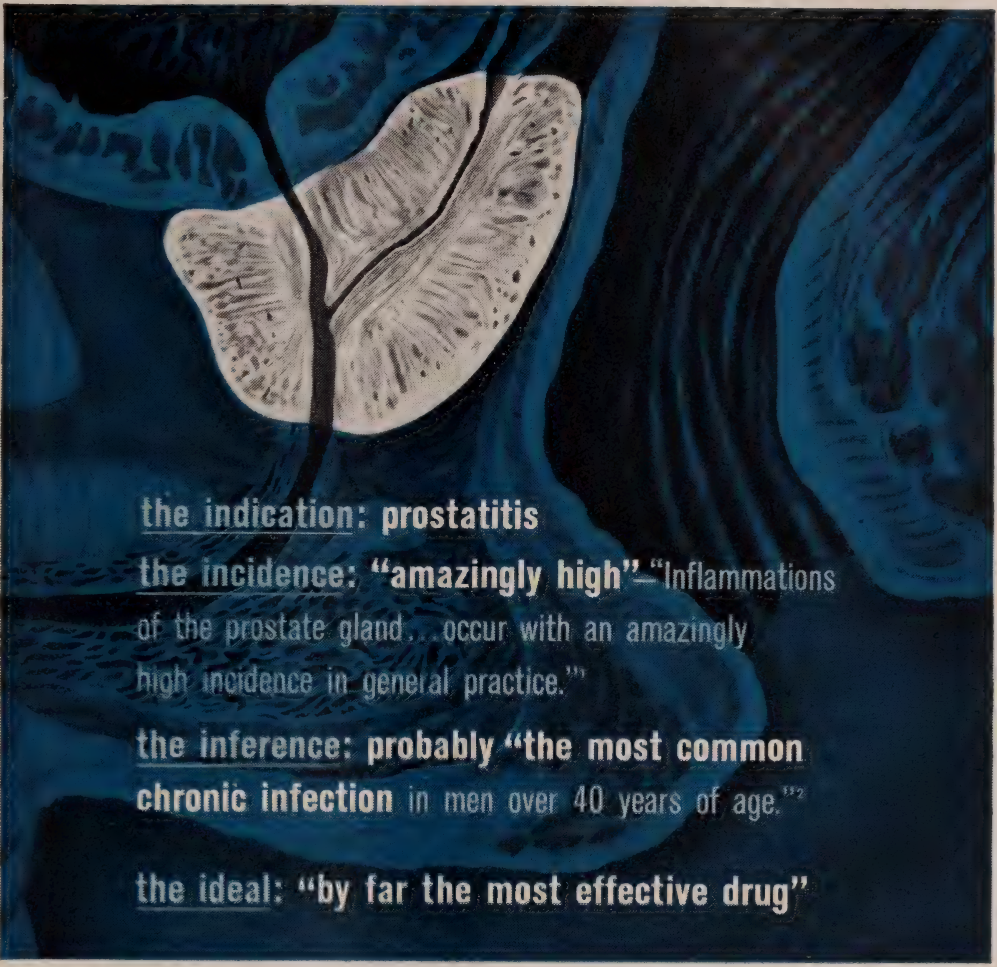
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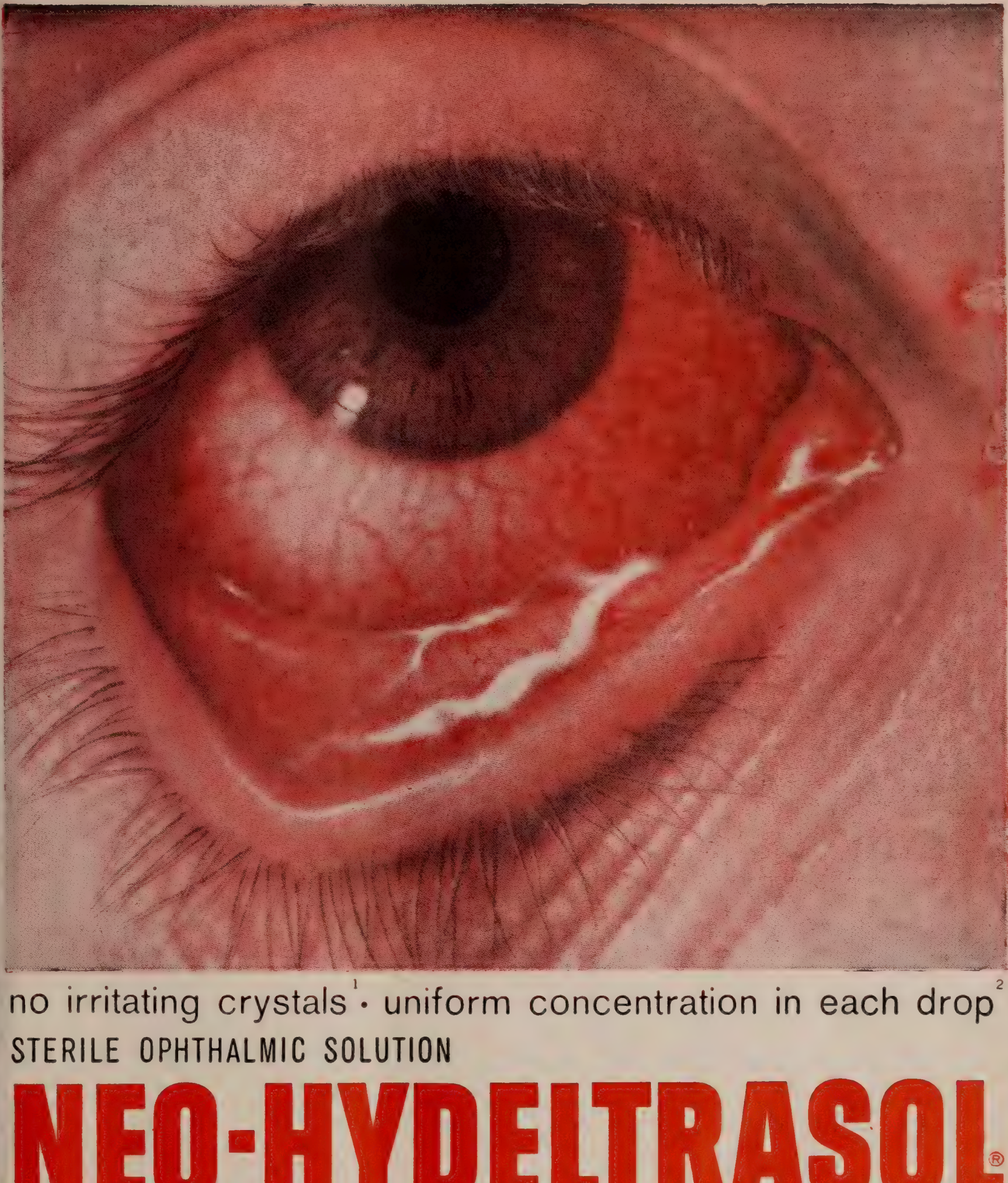

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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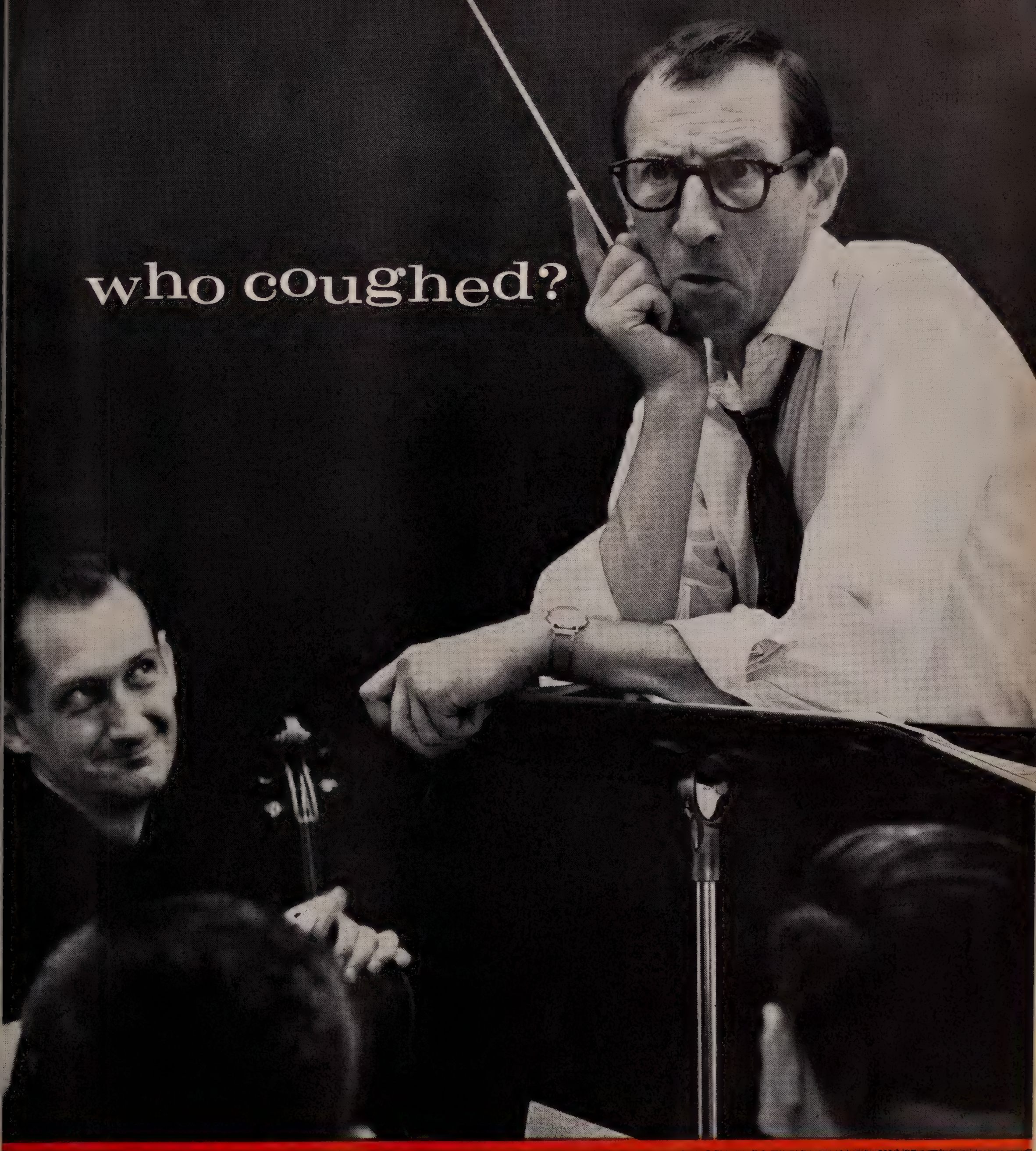
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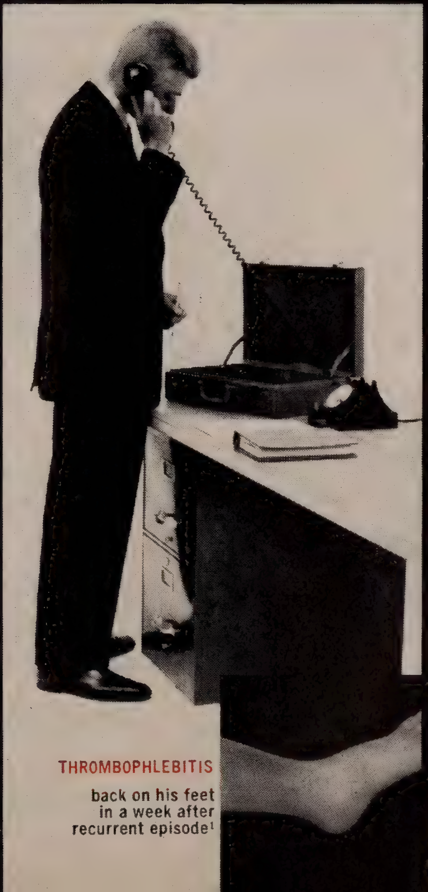

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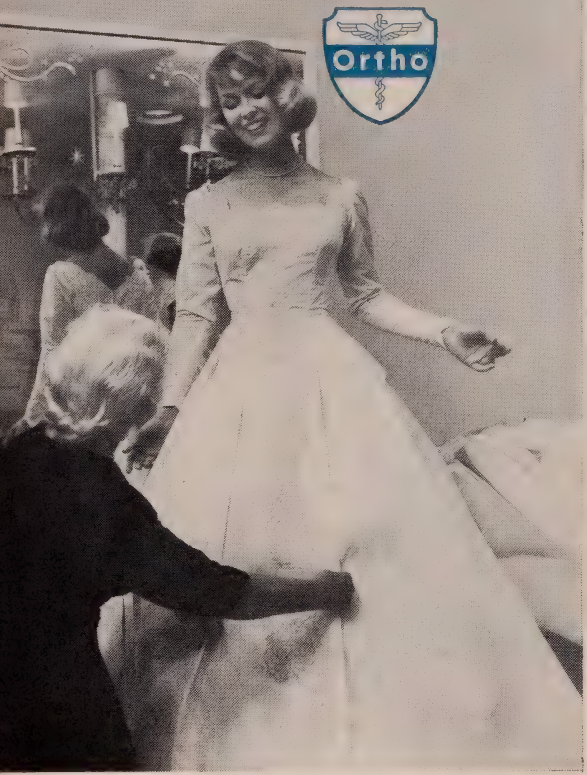

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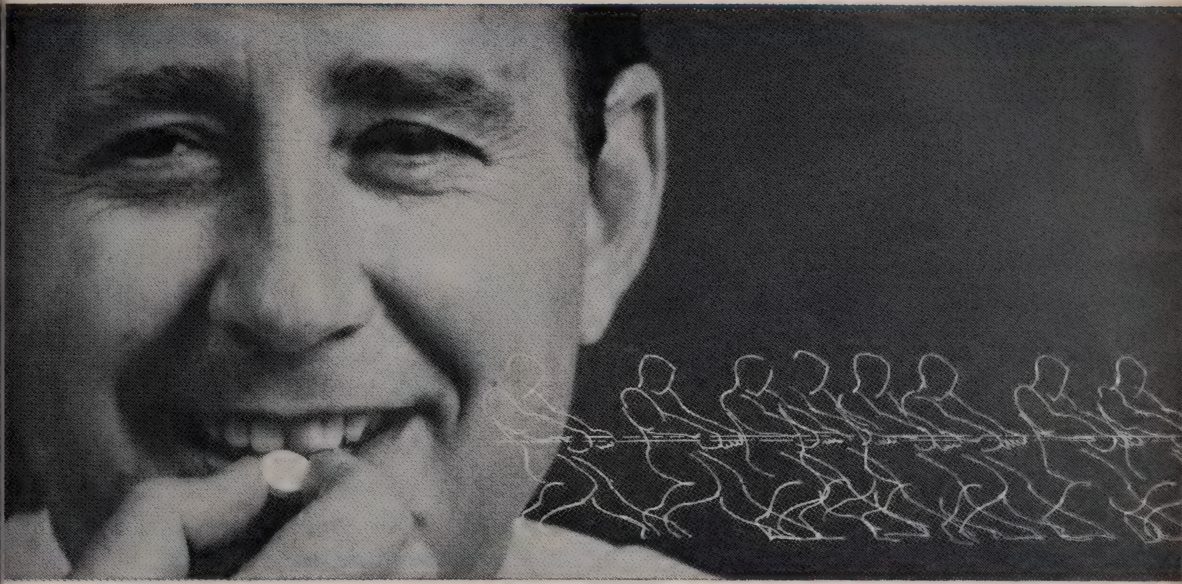

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CIBA
SUMMIT, N. J.

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955. /2830MB

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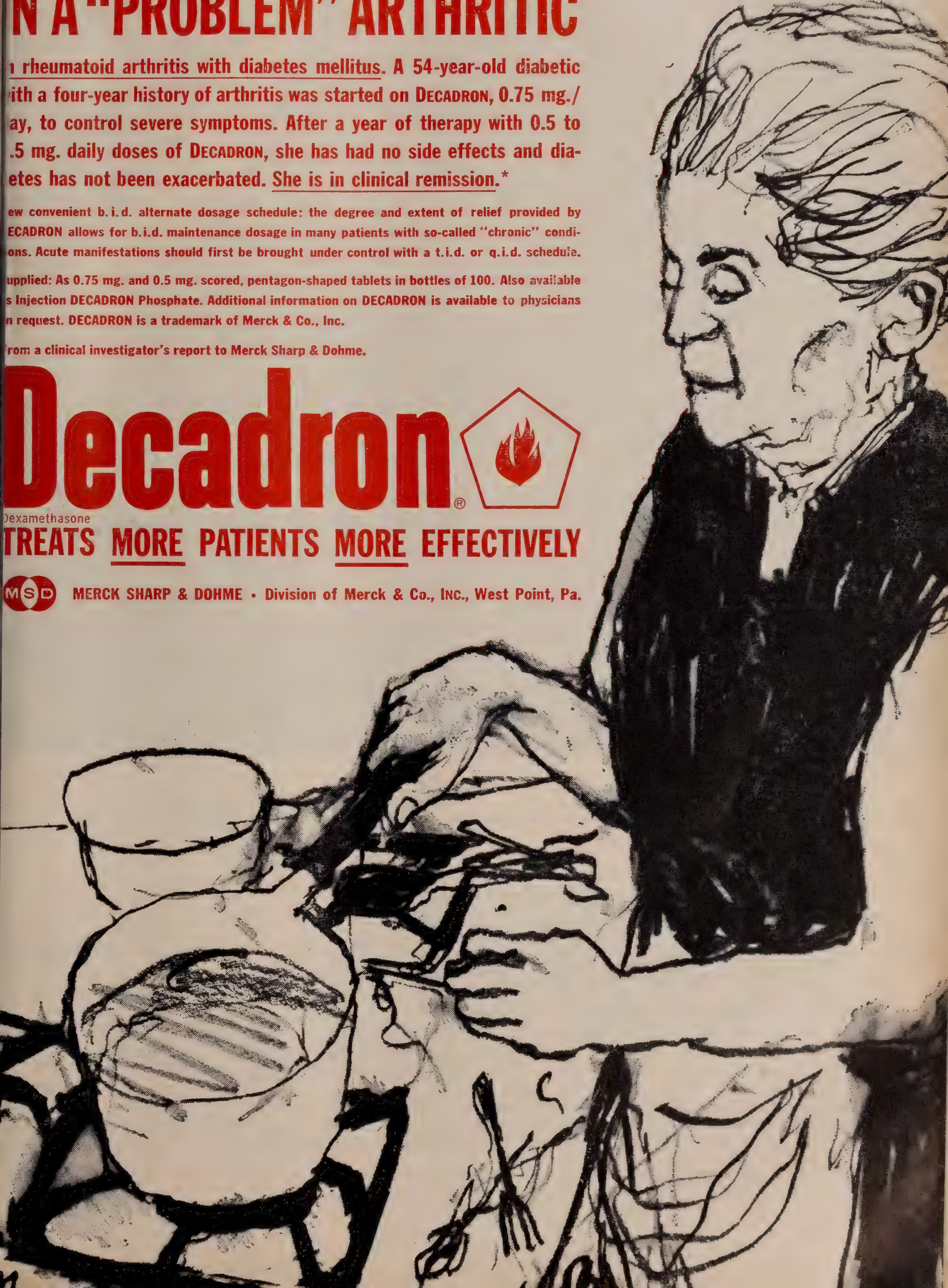

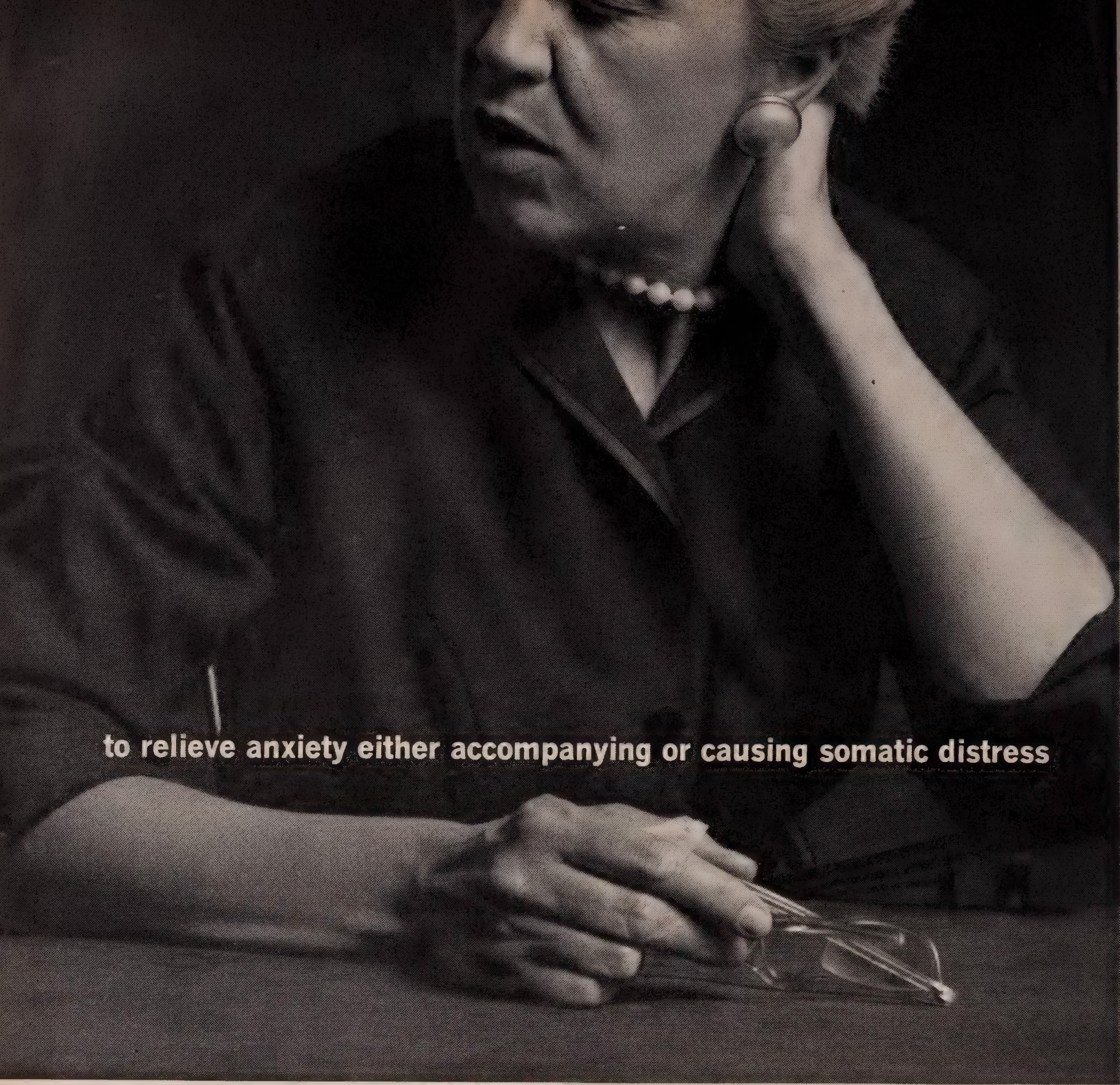
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1. Marx, F.J., in *Trifluoperazine: Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959, p. 89.
2. Winkelman, N.W., Jr.: *ibid.*, p. 78.

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1.) Stoughton, R. B.: Report To The Council; Steroid Therapy In Skin Disorders, J.A.M.A. 170:1311-1315 (July 11) 1959. 2.) Goodman, H.: Concentration of Topical Medications Dispersed in Evaporating Vehicles with Particular Reference to Hydrocortisone Alcohol, Clin. Med. 6:781-784 (May) 1959.

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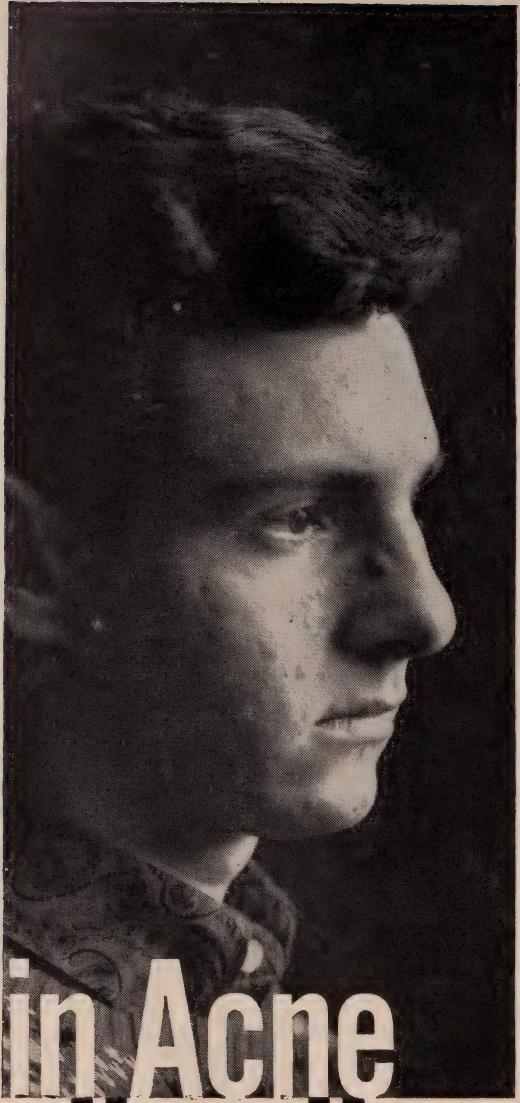

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1. Smylie, H. G.; Webster, C. U., and Bruce, M. L.: *Brit. M. J.* 2:606, Oct. 3, 1959. 2. Hodges, F. T.: *GP* 14:86, Nov., 1956.

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*Nembutal rapidly produces
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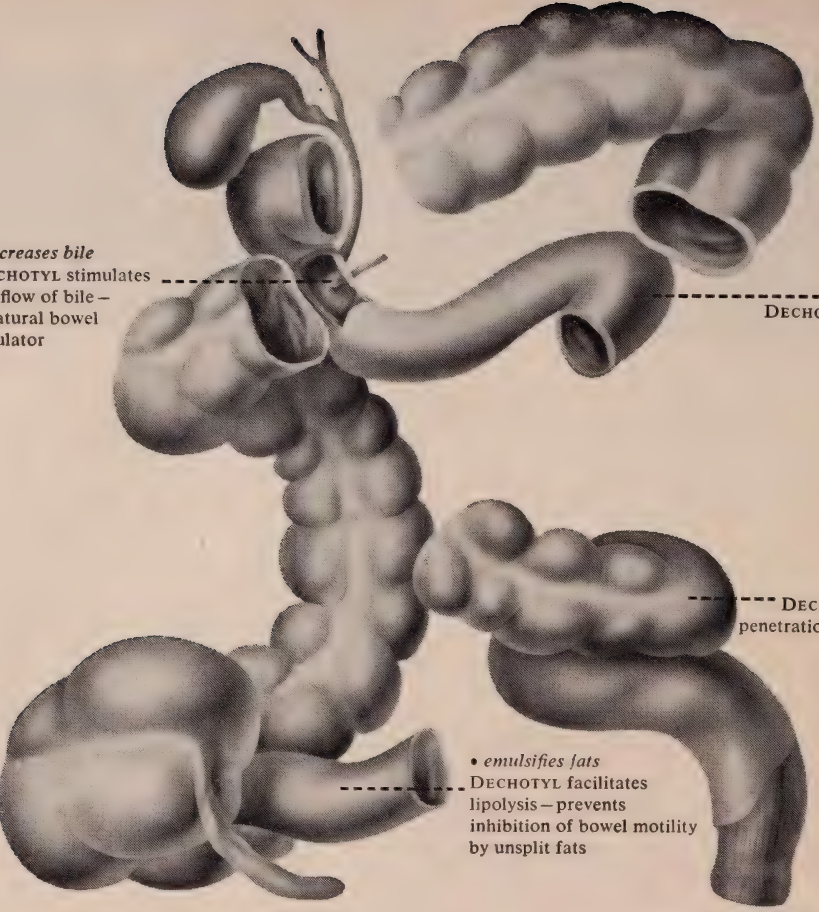


• *increases bile*
Dechotyl stimulates the flow of bile – a natural bowel regulator

• *improves motility*
Dechotyl gently stimulates intestinal peristalsis

• *softens feces*
Dechotyl expedites fluid penetration into bowel contents

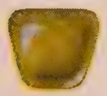
• *emulsifies fats*
Dechotyl facilitates lipolysis – prevents inhibition of bowel motility by unsplit fats

helps free your patient from both... constipation and laxatives

DECHOTYL®

TRABLETS*

well tolerated...gentle transition to normal bowel function



Recommended to help convert the patient – naturally and gradually – to healthy bowel habits. Regimens of one week or more are suggested to assure maintenance of normal rhythm and to avoid the repetition of either laxative abuse or constipation.

Average adult dose: Two Trablets at bedtime as needed or as directed by a physician. *Action usually is gradual, and some patients may need 1 or 2* Trablets *3 or 4 times daily.*

Contraindications: Biliary tract obstruction; acute hepatitis.

Dechotyl Trablets provide 200 mg. Decholin,® (dehydrocholic acid, Ames), 50 mg. desoxycholic acid, and 50 mg. dioctyl sodium sulfosuccinate, in each trapezoid-shaped, yellow Trablet. Bottles of 100.

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Controls congestion
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Controls aches and fever
with well-tolerated APAP, non-addictive analgetic[4] and excellent antipyretic.[5]

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TRIAMINIC®	50 mg.
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pheniramine maleate	12.5 mg.
pyrilamine maleate	12.5 mg.)
Dormethan	
(brand of dextromethorphan HBr)	30 mg.
Terpin hydrate	180 mg.
APAP (N-acetyl-p-aminophenol)	325 mg.

References: 1. Lhotka, F. M.: Illinois M. J. 112:259 (Dec.) 1957. 2. Fabricant, N. D.: E.E.N.T. Monthly 37:460 (July) 1958. 3. Farmer, D. F.: Clin. Med. 5:1183 (Sept.) 1958. 4. Bonica, J. J.: in Drugs of Choice, Mosby, St. Louis, 1958, p. 272. 5. Dascomb, H. E.: in Current Therapy, Saunders, Phila., 1958, p.78. 6. Bickerman, H. A.: in Drugs of Choice, Mosby, St. Louis, 1958, p.547.

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with non-narcotic Dormethan, possessing "amply demonstrated" antitussive activity,[6] as effective as codeine.

Liquefies tenacious mucus
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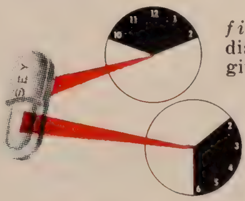

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Dosage: One tablet in the morning, midafternoon and at bedtime. Pediatric dosage chart for Tussagesic Suspension available on request.

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"Life expectancy seems to be the one criterion that is most reliable and least questioned as a method of evaluating treatment for patients with elevated blood pressure."[1] "It is evident that effective therapy of hypertension will prolong the life of the patient by preventing the dreaded complications of this disease in the brain, the heart and the kidneys ." "There is no doubt of the prolongation of life in group 3 and 4 (Keith-Wagener-Barker) by adequate antihypertensive treatment. Some authorities report a 50 per cent, five year survival ratio for treated patients with malignant hypertension as against a 1 per cent survival ratio for untreated patients."[2]

Evaluation based on life expectancy is extremely difficult because of the peril of maintaining an untreated control group.[1] The doctor, however, can evaluate the symptoms related to the elevated blood pressure. . . . We know that retinopathy may improve, the heart may be reduced in size, the electrocardiogram may improve and in favorable cases the blood urea nitrogen level may fall.[2] These are reasonably objective criteria on which to base one's evaluation of treatment.[1]

On the succeeding page is evidence that Unitensen included in any therapeutic regimen may improve the results in hypertension as measured by a regression of objective clinical changes in a substantial proportion of the patients treated.

1. Currens, J. H.: New England J. Med. *261*:1062, 1959.
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6. Kirkendall, W. J.: J. Iowa M. Soc. *47*:300, 1957.
7. Cherny, W. B., *et al.*: Obst. & Gynec. *9*:515, 1957.
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9. McCall, M. L., *et al.*: Obst. & Gynec. *6*:297, 1955.
10. Finnerty, F. A.: Am. J. Med. *17*:629, 1954.

Unlike diuretics or ganglionic blocking agents, Unitensen lowers blood pressure through widespread vasorelaxation. Normal vasomotor responses are not altered, and there is no venous pooling with resulting postural hypotension.[3-5] Through alleviation of cerebral vasospasm, Unitensen promotes cerebral blood flow and oxygen utilization.[6-9] Furthermore, Unitensen increases cardiac efficiency, improves renal function and tends to arrest the progress of vascular damage.[3, 4, 10]

Progress of Objective and Subjective Symptoms in Grades III and IV Hypertension Following Treatment with Unitensen and Unitensen-R

The Course of Subjective Symptoms

	Observations in Patients* Treated up to 2 Years			Observations in Patients* Treated up to 3½ Years		
Symptom	Number**	Improved	% Improved	Number**	Improved	% Improved
Headache	27	21	77.7	43	38	88.0
Palpitation	20	13	65.0	29	19	65.5
Angina	15	9	60.0	21	16	76.0
Dyspnea	17	8	47.0	27	14	51.0

Objective Changes Following Treatment

	Observations in Patients* Treated up to 2 Years			Observations in Patients* Treated up to 3½ Years		
Finding	Number**	Improved	% Improved	Number**	Improved	% Improved
Funduscopic Changes	41	24	58.5	59	38	66.0
Enlarged Heart	20	13	65.0	35	23	65.7
Abnormal ECG	37	10	27.0	45	25	55.5
Proteinuria	31	12	38.7	43	27	62.7
Nitrogen Retention	17	6	35.2	28	10	35.7

Left hand charts from Clinical Exhibit "The Ambulatory Patient with Hypertension" presented AMA Convention, San Francisco, June 22-27, 1958, by B. M. Cohen, M.D.

*All patients in this study were initially classified as Smithwick Grades III and IV.

**Expressed as the number of patients exhibiting the symptom recorded.

Right hand charts include patients previously reported who had been continuously maintained on Unitensen and Unitensen-R, plus additional patients later added to the study. From Clinical Exhibit "The Office Diagnosis and Treatment of the Patient with Hypertension" presented American Academy of General Practice, Indianapolis, March 18-19, 1959, by B. M. Cohen, M.D.

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Each tablet contains: Cryptenamine (tannates) 1.0 mg., Reserpine 0.1 mg.

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new from Neisler
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a new class of drug
for the relief of pain and muscle tension

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In trichomonas vaginitis "...permanent **CURES** in 84.6%"[1] ▪ "...symptomatic and bacteriologic **CURES**" in 100%[2] ▪ "symptomatic **CURE** was obtained in 100%, and bacteriologic **CURES** in 82.5%"[3]

in moniliasis "symptomatic **CURE** was effected in about 80%"[4]

in mixed infections "complete symptomatic and bacteriologic **CURES** in 92%"[3]

in endocervicitis 75% "were clinically and bacteriologically (as indicated by vaginal smears and cultures) **CURED**"[5]

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STOPS THE TORMENT
DESTROYS THE CAUSE

CURES[1-5]

Vaginitis (trichomonal, monilial, nonspecific), Cervicitis

References: 1. Angelucci, H. M.: Am. J. Obst. & Gynec. **50**:336, 1945. 2. Hensel, H. A.: Postgrad. Med. **8**:293, 1950. 3. Cortese, J. T.: Clin. Med. **2**:45, 1955. 4. Dill, L. V., and Martin, S. S.: M. Ann. District of Columbia **17**:389, 1948. 5. Horoschak, A., and Horoschak, S.: J. M. Soc. New Jersey **43**:92, 1946.

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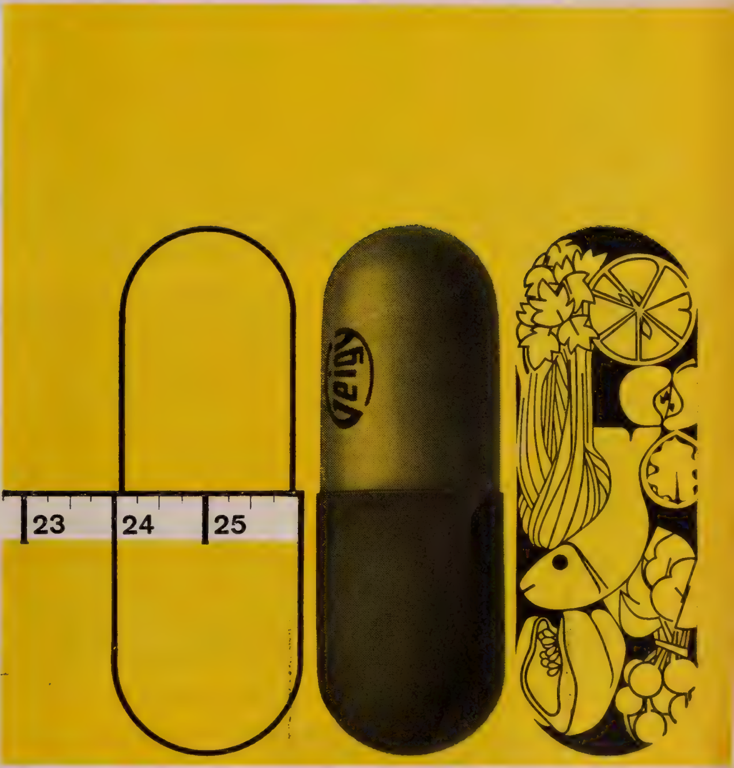

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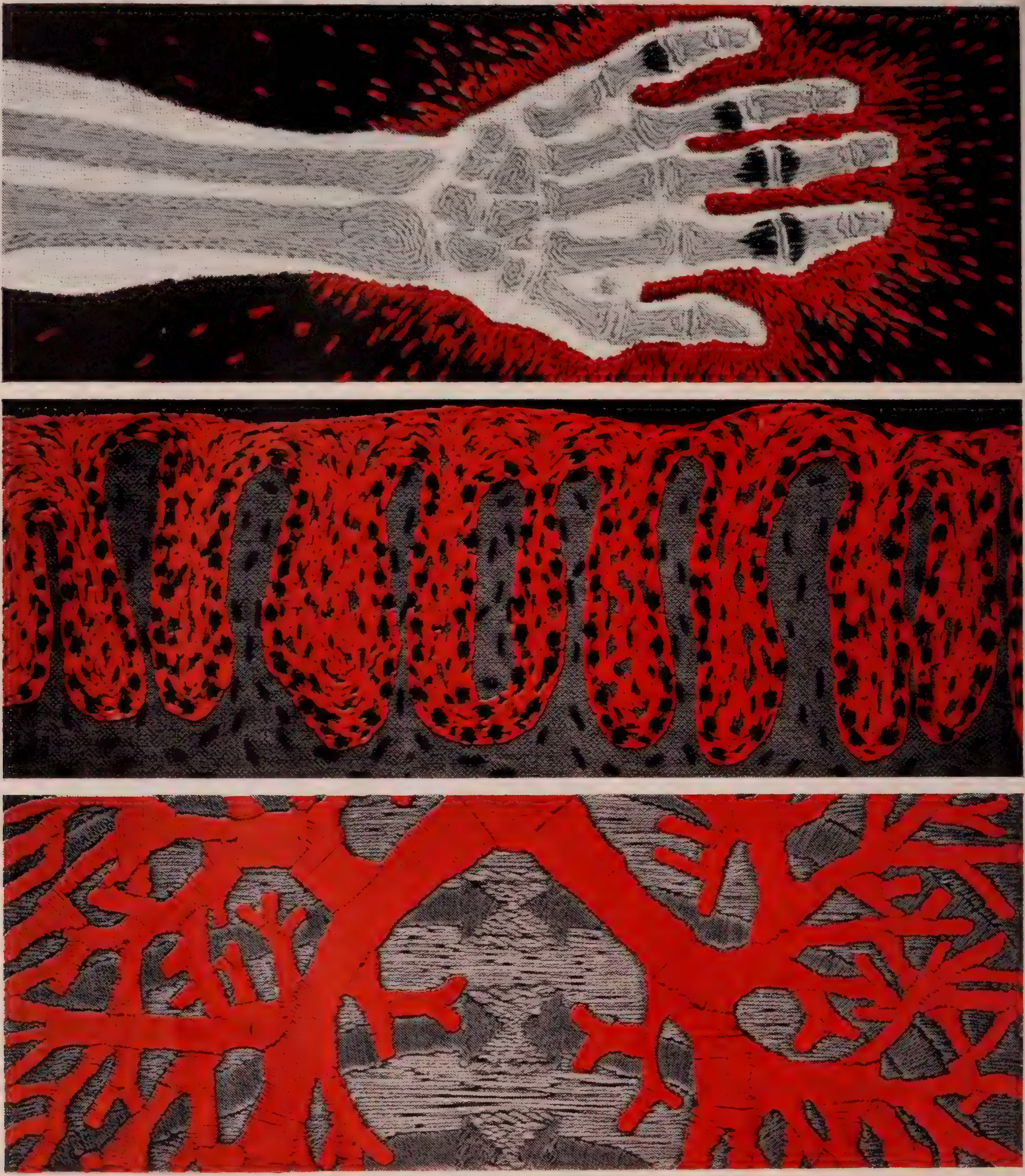

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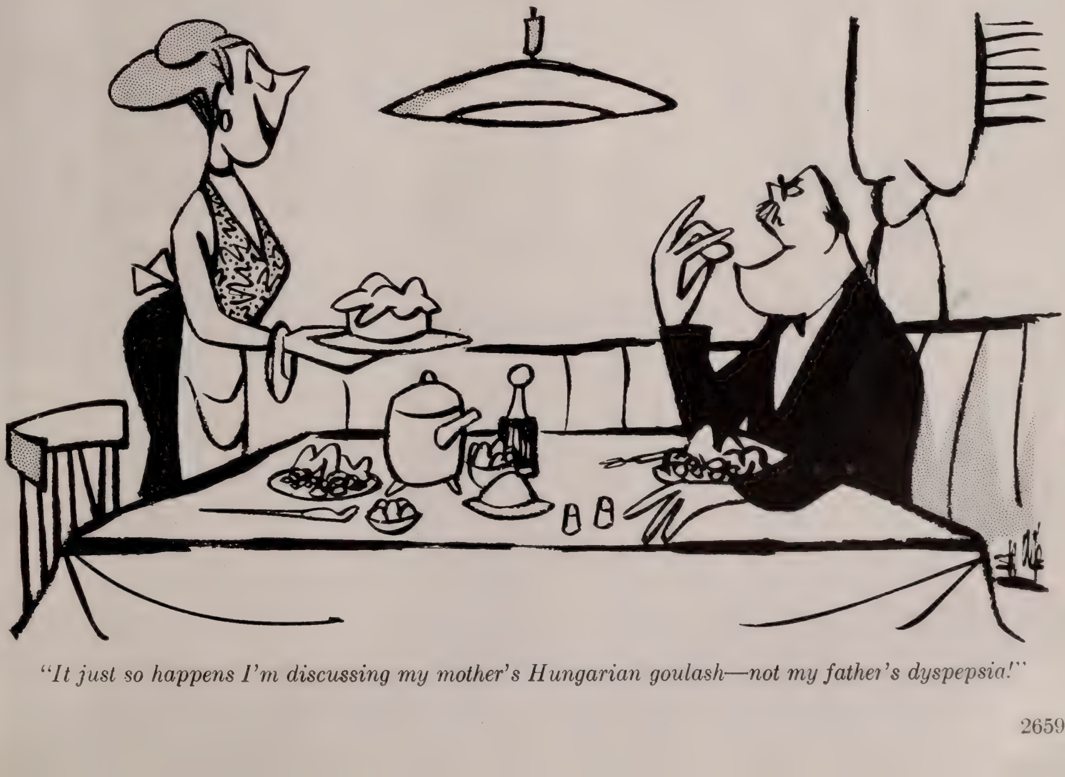

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alert tranquillity

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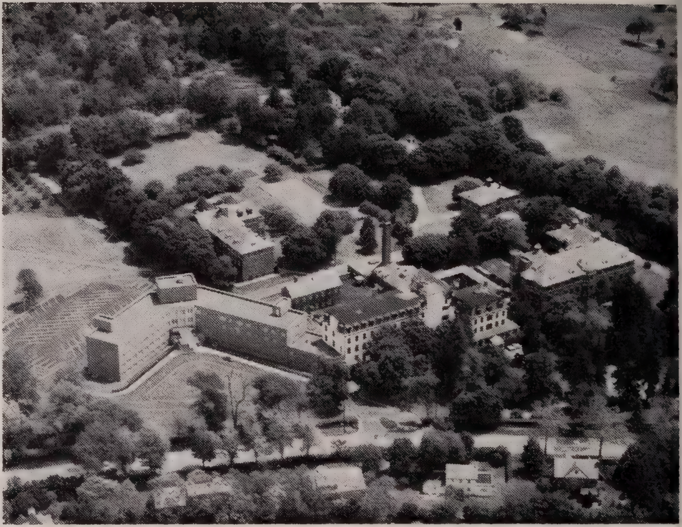

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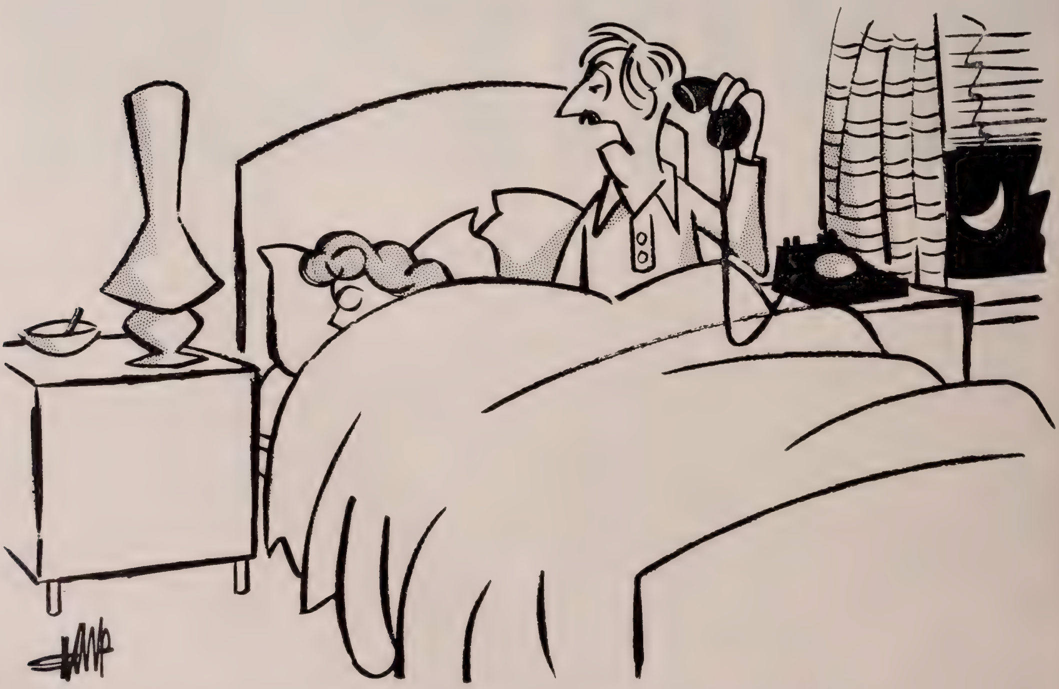

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1. Beil, A.: Management of Constipation in the Puerperium. To be published.

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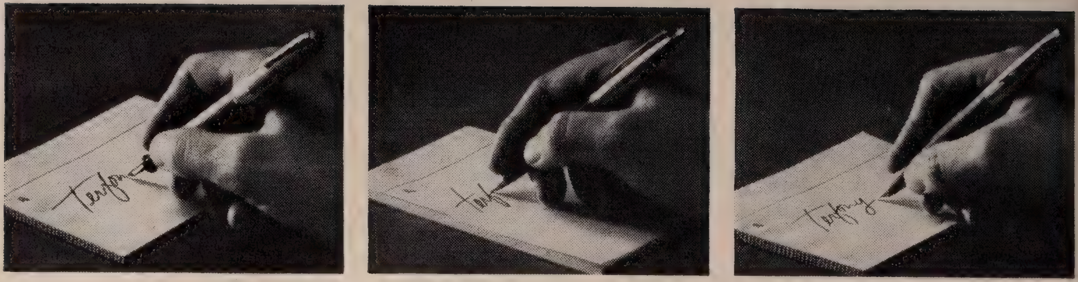

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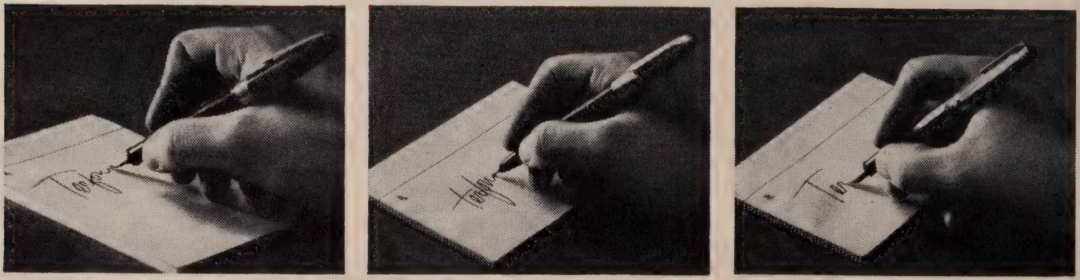

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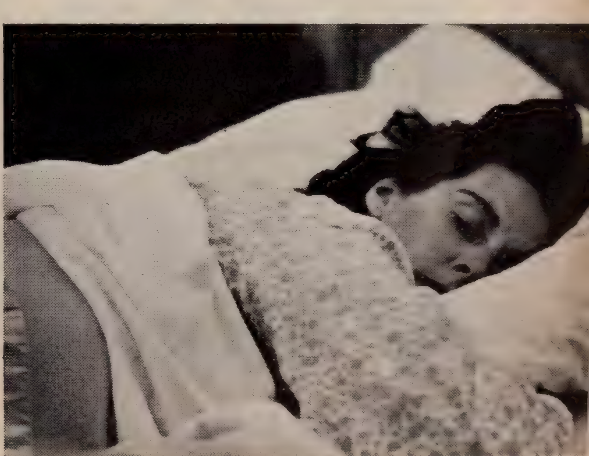

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Kestler, O.: Conservative Management of "Low Back Syndrome",
J.A.M.A. 172: 2039 (April 30) 1960.

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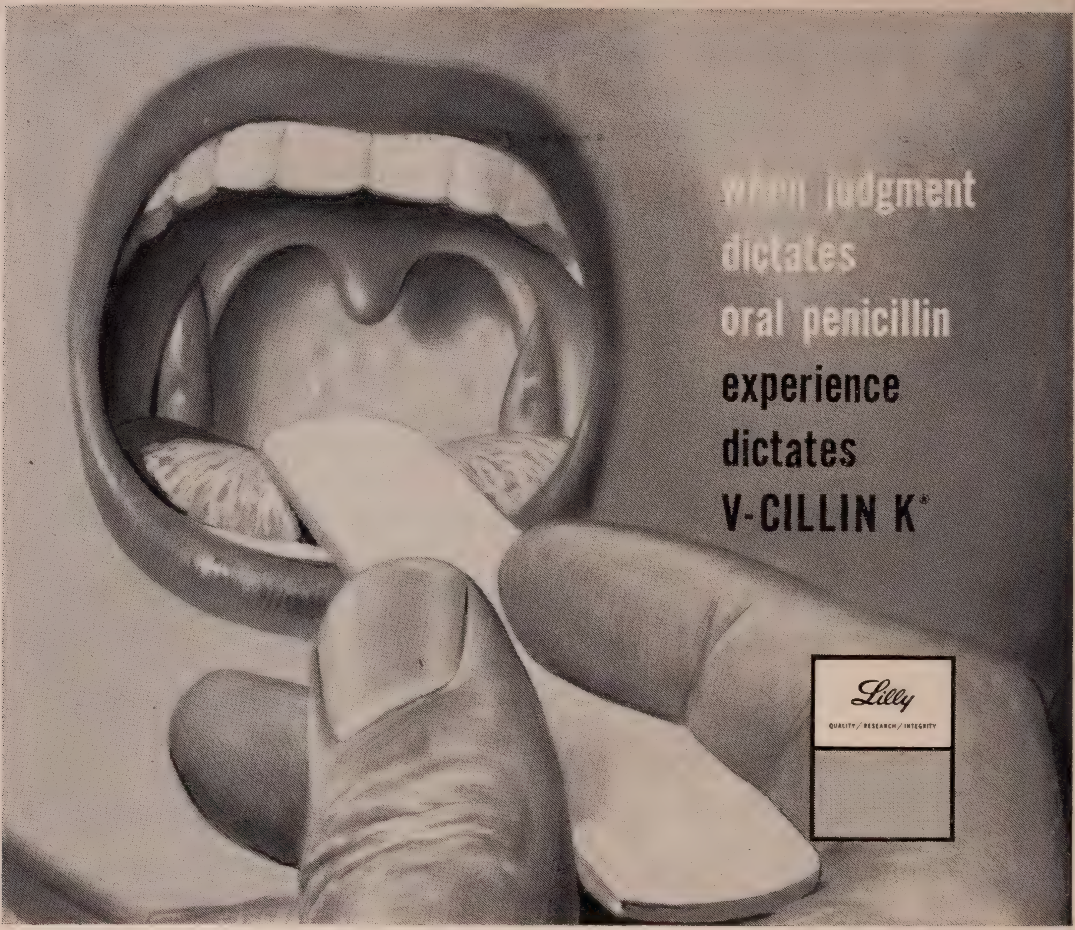

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1. Griffith, R. S.: Comparison of Antibiotic Activity in Sera Following the Administration of Three Different Penicillins, Antibiotic Med. & Clin. Therapy, *7:* No. 2 (February), 1960.

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EDITORIALS

Welfare of the Mentally Retarded

Our profession and our thinking citizens are showing an increased interest and concern for the welfare of the retarded in our communities. A two-year study in New York City by New York University, conducted by Gerhart Saenger, Ph.D., director of the Research Center of the Graduate School of Public Administration and Social Service, sheds new light of statistical significance on the factors leading to institutional care for retarded individuals. The long list of cooperating individuals and agencies is indicative of the scope of the research program.

In New York City approximately 1,000 individuals per year are placed in tax-supported "state schools," a rate comparable to New York State as a whole. This is in spite of increasing acceptance for the care of the retarded at home and in the community. The question of home versus institutional care leads naturally to the nature of the home and the family group that may or may not be willing and able to give proper care to the retarded member. It was noted that the proportion of parents who displayed affection and love and were deeply attached to the retarded child was just as high among those who had placed their child elsewhere as among those who kept the child at home.

This project has clearly defined some factors predisposing to institutional placement. Severe retardates (I. Q. below 20) are committed relatively early. Individuals from lower economic levels and from certain ethnic groups are shown to have a high rate of institutionalization. Family maladjustments, broken homes, and acute behavior problems in the home and in the community lead to early placement. Overt sexual misconduct is an accepted reason for institutional care. Where the I.Q. exceeded 50, placement was more apt to be for delinquency than for retardation alone.

The study highlights the problem we all share as we plan toward the future and attempt to balance the ever-increasing costs of institutional care and the humanitarian aspects of providing the best service for the individual in need. Dr. Saenger points out that readily available rehabilitative services for the retarded in New York are the exception. Services for parents, whether or not they wish to place or to keep their child, are scarce. Very few doctors or social workers have special training in the field of mental retardation. Dr. Saenger states: "There is a tendency to recommend institutionalization which appears to exist somewhat more frequently among the doctors than among the social workers. For example, in some hospitals studied the physicians recommend institutionalization of all mongoloids. In another, the staff and workers expressed the opinion that all retardates not capable of entering public school should be committed." In most instances parents are not encouraged to seek treatment or help, and very little treatment or help is available. Other countries are surpassing us in their efforts to secure help for the parents of retarded children. Foster home programs are being provided for these children if their own homes are unsuitable or cannot be used. As a result, the Netherlands, for example, shows a definitely lower rate of institutionalization.

More research of the type reported is needed. The New York State Interdepartmental Health Resources Board is to be commended for sponsoring this study and publishing the report. Dr. Saenger points out in a footnote that changes are already underway in the commitment process. Thus through knowledge and evaluation of the present we can plan a better future.—
G. M. H.

Democracy Is Not a Spectator Sport!

The Constitution of the United States says nothing about political parties. The Founding Fathers, in fact, looked upon parties as an evil, but a necessary evil. Yet political parties have become as vital to the proper functioning of democratic government as have the legislatures, the executive, and the courts.

The men who built this republic were proud to be politicians, because they were rugged individualists who had come to the new world to worship God in their own fashion and to run their own affairs. In their town meetings every man had his day and most spoke their mind boldly.

In Greece, the name for a town was "polis." Those who ran the town, its citizens, were "politikos." Our forefathers knew this and knew they had to be politikos, or politicians, to keep their freedom. They instituted government to secure our inalienable rights to life, liberty, and the pursuit of happiness. Government derived its power only from their consent. They proudly gave their time for it, for they wished to govern themselves.

We still have self-government and it still works, but it must have the *active* support of all the citizens. Over the years our country has grown and prospered and life is becoming more and more complex. People are no longer able to attend to all their needs themselves. Therefore we have to specialize. Our professional politicians are specialists too—specialists in making the laws or in administering them. The rest of the people are largely content with voting for or against them, and only about 60 per cent do that much.

In 1958 a total of 104,600,000 Americans were of voting age, but only 44,550,000 of them went to the polls to select their senators, congressmen, governors, state legislators, and so on. The senators and congressmen, governors, and others are the men and women who have been taxing us, spending our money, regulating us, telling us—in many cases—how we can run our businesses, resolving our place in the world. But a good deal less than half of us seem to care.

In 1956 some 102,000,000 Americans were old enough to vote, but only a little more than 62,000,000 were counted in the presidential contest, while 59,000,000 were all that cared about who made up the House of Representatives, and only 44,000,000 expressed themselves on the Senate.

An active, intelligent interest in government is an inherent part of good citizenship. After all, we were citizens before we received our degrees in medicine, and even after retiring from practice we will continue to be citizens and must play our role with vigor and courage.

The first political obligation of each physician and his family is to register and vote in the party of his choice. Before he does register and vote, the physician should play an active role in the functioning of a party. As long as our country has a two-party system the candidates will be chosen and the platforms determined by those who participate actively in political affairs.

Most people confuse politics with issues. They do not know or they forget the "mechanics of politics," the mechanics of selecting, nominating, and electing citizens to public office. It means that politics and government should be in the mainstream of every adult's life. They are America. Freedom is something that is maybe the most glorious of all things. The entire complexion of life. liberty, and the pursuit of happiness changes abruptly when freedom passes by. Think of Hungary and some other countries. Think of many places where freedom does not exist.

History has demonstrated that governments begin to disintegrate when the people tend to depend on the "State" for everything. Paternalism is just as fatal as dictatorial power.

You, as an American, have an obligation to protect the independence and freedom which our forefathers gave to us. Nowhere else on earth at that time did people know the joys of being proud and free. It was considered the American experiment. News of it spread like lightning from shore to shore. This experiment is not dead. It has proved itself through years of stress and years of brilliance, from the town meeting to the halls of Congress. But are we as free today and will we be as free tomorrow?

The best way to preserve this freedom is to have millions of Americans taking an active part in government through politics. Responsible people from all walks of life should and must take an interest. Remember that our government can be no better than the men you elect. More and more of our citizens must get to know the candidates, know the issues, and take an active part in politics. Good government and freedom are your responsibilities. If any group neglects to participate actively in the election of political leaders and the formation of political decisions, to that extent the democratic processes fail to function as intended by the authors of our Constitution.

The time has come for us to plunge into the cold waters of reality and to take an active part in political campaigns. What we are going to be able to do as medical men will depend upon *what* we are doing as *citizens.*

Learn the value of one vote—YOUR OWN.

Democracy is not a spectator sport!—J. F. R.

Comment on Matter of the Claim of Gertrude Goldman v. White and Case et al.

The Appellate Division of the Supreme Court, Third Department, by a four to two decision has held that the death of a sixty-eight-year-old messenger due to a coronary insufficiency was not an accident within the terms of the Workmen's Compensation Law of the State of New York (in the Matter of the Claim of Gertrude Goldman *v.* White & Case et al.).

In this case the decedent had been employed for eleven months before his death. On the date in question he left his office at 14 Wall Street after one o'clock in the afternoon to make a delivery to the Bankers Trust Company at Rockefeller Plaza.

Apparently the following facts could be inferred or presumed from the established facts: The decedent used the subway to travel uptown; to get from the subway station to the street at his destination he had to climb 32 steps; when he reached the street, he met with a cold temperature (about 25 F.) and had to walk three and one-half blocks against a powerful westerly wind (at the Battery maximum wind velocity of 43 miles an hour was recorded); he made his delivery and started to leave the bank when he slumped over dead.

A physician who had attended the decedent for a heart ailment for some years prior to his death testified that it was "probable" or speculative that overexertion could be a cause of death but made the observation that "to me it sounds like a ridiculous morning for a man of sixty-seven who uses nitroglycerin. When you use nitroglycerin, you have a real coronary disease." A doctor testified for the carrier that the decedent died because of the natural progression of an antecedent disease.

The court reversed the decision and award of the Workmen's Compensation Board. In a well-reasoned opinion for the majority, Mr. Justice Herlihy stated in part as follows:

> The cause of death here was not coronary occlusion or thrombosis but coronary insufficiency which does not imply any new

cardiac pathology . . . and there is no evidence of any. Such condition is due to the gradual progression of coronary arteriosclerosis.

The record as a whole is convincing that there was no accident but rather deceased's death was caused from wear and tear of life . . . There is no testimony that the work he did November 29 was different from any other day and under the circumstances herein, the weather conditions—strong wind and cold—should be considered an incident to employment rather than factors in compounding unusual effort or strain as found by the board.

In a dissenting opinion it was stated that the Board could properly find for the claimant since there was evidence that there was unusual exertion and exposure in the course of duty leading to the heart attack and the claimant's death.—D.J.F.

ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. ANGRIST, M.D., *Chairman*
Committee on Prize Essays

PRESIDENT'S PAGE

Ionizing Radiation

NORMAN S. MOORE, M.D.

Chapter XVI of the New York Sanitary Code prescribes rules and restrictions in the use of equipment and isotopes which emit gamma, beta, alpha, and neutron particle radiation. While the code exempts doctors from some regulations in prescribing dosage for patients, physicians must conform to the code's specific regulations restricting the amount of exposure for employes and the general public. In the matter of therapeutic dosage for patients, judgment is the physician's only guide.

In the near future, when industry develops the extensive use of atomic energy for power, there will be, in general, two types of patients appearing—those who are exposed to radiation in their employment and those who are not so exposed. The former group will be trained to keep account of their exposure, since their employment will depend on accurate control. To their physician who desires to take an x-ray, some patients may say that their total accumulated dosage will not permit it. A patient from the latter group of the public not exposed in their work will react most probably in quite a different way—with docile submission to the doctor's wishes.

Thus it becomes important—even urgent—that the medical profession know the biologic effects of radiation on critical tissues and the established levels of maximum permissible dose for both radiation workers and nonradiation workers.

There will be an increasing number of workers in radiation installations who because of their working environment will receive more radiation than the general public, they being allowed ten times the accumulated total dosage permitted for the nonradiation worker. It is the accumulated absorbed dose that has genetic influence. More than 85 per cent of the genetically significant dose from diagnostic x-ray exposure is contributed by six or seven procedures—those involving the region of the lower abdomen, lumbosacral area, pelvis, and hips, where the gonads are usually in the primary field or immediately adjacent. Fortunately these procedures constitute only about 10 per cent of all x-ray examinations.

Because of the importance of this subject and the magnitude of the task of informing physicians about radiation doses and effects, the Council of the Medical Society of the State of New York has approved the creation of an ad hoc committee on ionizing radiation, whose job it will be—among other things—to devise ways and means of informing the physicians of our State what they should know about radiation terminology, biologic effects of radiation, and safeguards which are necessary to respect when practicing medicine in the atomic age.

It is my hope that by the time industry has provided these nuclear-powered plants, our profession will be equally equipped in knowledge and experience to cope with the medical problems of radiation workers.

Norman S. Moore

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IN EDEMA

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Aldactone inactivates a crucial mechanism producing and maintaining edema — the effect of excessive activity of the potent salt-retaining hormone, aldosterone. This corrective action produces a satisfactory relief of edema even in conditions wholly or partially refractory to other drugs.

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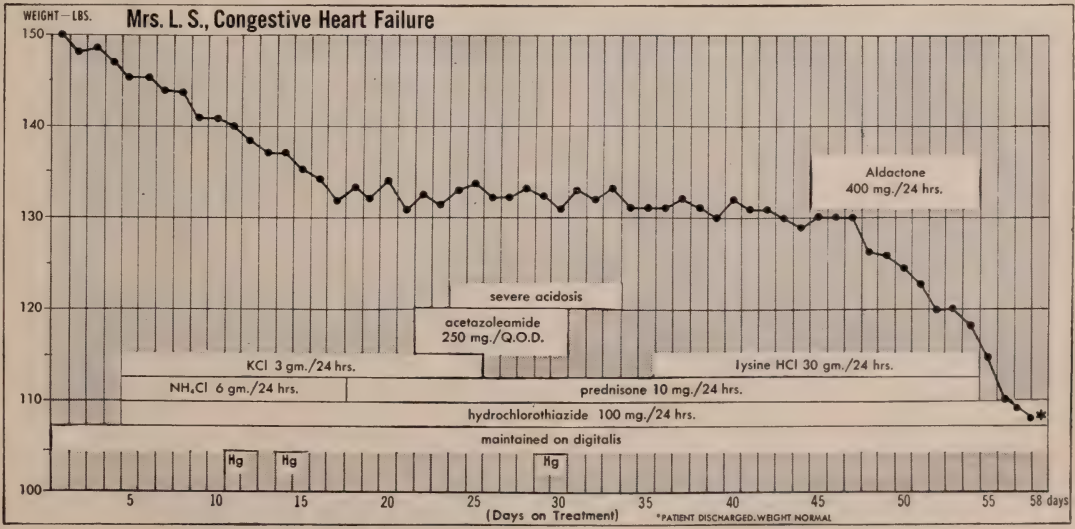
Research in the Service of Medicine.



You see an improvement within a few days
Thanks to your prompt treatment and the smooth action of Deprol, her depression is relieved and her anxiety and tension calmed – *often in a few days.* She eats well, sleeps well and soon returns to her normal activities.

Lifts depression...as it calms anxiety!

Smooth, balanced action lifts depression as it calms anxiety...rapidly and safely

Balances the mood – no "seesaw" effect of amphetamine-barbiturates and energizers. While amphetamines and energizers may stimulate the patient–*they often aggravate anxiety and tension.*

And although amphetamine-barbiturate combinations may counteract excessive stimulation–*they often deepen depression.*

In contrast to such "seesaw" effects, Deprol's smooth, *balanced* action lifts depression as it calms anxiety – both at the same time.

Acts swiftly – the patient often feels better, sleeps better, within a few days. Unlike the delayed action of most other antidepressant drugs, which may take two to six weeks to bring results, Deprol relieves the patient quickly–often within a few days. Thus, the expense to the patient of long-term drug therapy can be avoided.

Acts safely – no danger of liver damage. Deprol does not produce liver damage, hypotension, psychotic reactions or changes in sexual function–frequently reported with other antidepressant drugs.

Dosage: Usual starting dose is 1 tablet q.i.d. When necessary, this dose may be gradually increased up to 3 tablets q.i.d.

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SCIENTIFIC ARTICLES

Medical Therapy of Hypertension, III

Results of Long-Term Treatment with Presently Available Drugs

MARVIN MOSER, M.D., WHITE PLAINS, AND ALICE I. MACAULAY, M.D., VALHALLA, NEW YORK

(From the Department of Medicine, Grasslands Hospital, Valhalla)

DURING the past twenty years, many methods of treating essential and renal hypertension have been subjected to trial. All of these methods have had as their objectives both the lowering of the blood pressure and the prevention of the complications of elevated blood pressure. Many have resulted in great inconvenience to patients without achieving either of these results. In previous reports we have outlined the preliminary results obtained in the treatment of a group of patients with hypertension of various etiologies who had received some of the potent antihypertensive agents that had been introduced between 1951 and 1957.[1-3] It is the purpose of this follow-up report to summarize additional results obtained over a four- to five-year treatment period in the group of patients who have been maintained on drug therapy. In addition to results obtained with the Rauwolfia derivatives, hydralazine hydrochloride (Apresoline hydrochloride), and the ganglion-blocking agents, a summary of the response of these patients to chlorothiazide (Diuril) and its derivatives dihydrochlorothiazide (Hydrodiuril and Esidrix) and flumethiazide (Ademol), in combination with the preceding medications will be reported.

Justification for Treatment

In several well-controlled long-term studies of the natural history of essential or primary hypertension, it has been demonstrated that the prognosis for patients with elevated blood pressure without organ system involvement (Group 1 patients) is good, especially for women.[4,5] Data have indicated that the average survival, untreated, is approximately twenty years in the majority of patients after the discovery of elevated blood pressure in the twenty- to thirty-year age group. Longevity in this group is, therefore, decreased when compared with the life span of people with normal blood pressure. Essential hypertension is benign but eventually produces organ changes that are deleterious.[6] From these observations as well as from animal experiments that indicate the development of arteriosclerotic changes following the induction of elevated blood pressure,[7] it would seem logical and important to lower the blood pressure of all hypertensive individuals even before organ changes occur if this could be accomplished without undue risk or inconvenience. Unfortunately, a safe, simple, universally effective method of treatment is not as yet available. In treating the group of patients with early essential hypertension, the risk and inconvenience of therapy with drugs that are available often outweigh the possible improvement, and the decision regarding therapy should be made only after considering the natural history of the disease.

In hypertension with heart, brain, or kidney involvement (Groups 2 and 3) the prognosis is extremely poor. Approximately 20 per cent of males and 25 per cent of females survive untreated for ten years or longer. In malignant or accelerated hypertension (Group 4) less than 20 per cent of the patients survive for longer than one year, and few, if any, are alive at the end of five years.[8] The criteria utilized in grading the severity of hypertension have been reviewed previously.[3] These latter groups, that is, patients with elevated blood pressure and organ system involvement, should be treated vigorously. It is reasonable to assume some risk or produce some inconvenience in these cases in the hope that the prognosis can be improved.

Effective Available Therapy

Diet.—Drastic low sodium diets (under 500 mg. of sodium daily) and the Kempner rice diet are effective methods for lowering blood pressure and improving the status of hypertensive individuals, and they have, in many instances, improved the prognosis, especially in the malignant stage of the disease. Few patients, however, will tolerate this form of therapy for long periods of time, and it has not proved practical in the treatment of primary hypertension. Less drastic sodium restriction will rarely affect blood pressure.[9] Fortunately, the effects of dietary sodium restriction may now be achieved by administering certain of the newer oral diuretic agents continuously without resorting to impractical diets.

Surgery.—The interruption by surgery of sympathetic nerve impulses, splanchnicectomy, has now been utilized for almost twenty years in the treatment of hypertension. Long-term follow-up studies indicate that the prognosis in severe cases (Groups 3 and 4) is definitely improved.[10] In the milder cases the results, in our opinion, are not impressive. In all groups the lowering of the blood pressure over a long-term period of time is not achieved in many cases. At present we believe that this procedure should be reserved for use in patients who do not respond to drug therapy or in conjunction with drug treatment in severe cases; patients who have had a surgical sympathectomy have proved to be more responsive to drug treatment. Adrenalectomy, with or without sympathectomy, is utilized at present in several medical centers in the treatment of severe hypertension.[11] Results in some instances are impressive, but, in our opinion, this treatment has no place in the modern therapy of hypertension since comparable results may be achieved medically without the morbidity and hazards of surgery.

Drugs.—The most effective agents in the treatment of hypertension are listed in Table I. All of these drugs produce definite side-effects, but, with the exception of the rheumatoid-like syndrome observed in less than 2 per cent of patients on long-term hydralazine hydrochloride therapy, few of these effects have proved to be of serious import. Many side-effects, such as impotence and constipation which result when ganglion blockers are employed, are troublesome and are overcome with difficulty. If the physician and the patient both have decided before undertaking treatment that in severe hypertension the use of potent drugs is important, they will be willing to battle through each side-effect as it occurs. Patients are able to carry on normal activities while under even the most potent drug therapy. They need not be incapacitated by treatment, and after the first difficult month or six weeks of treatment most of them accept the side-effects. At present, we believe that the Rauwolfia derivatives, hydralazine hydrochloride, and mecamylamine hydrochloride (Inversine hydrochloride) are the specific antihypertensive drugs of choice for use in treatment. Because of frequent side-effects we do not

TABLE I.—EFFECTIVE DRUGS IN TREATMENT OF HYPERTENSION

Drug	SIDE EFFECTS	DOSAGE	POTENCY
Rauwolfia Drugs Little difference in clinical response to whole root or purified alkaloids.	1. Stuffy nose 2. Diarrhea } usually decrease in severity on continuation of therapy 3. Weight gain 4. Depression — Rare on average dosage 5. Activation of bleeding ulcer-- Stop Drug	Reserpine .25 mg./day Rauwolfia Larger doses usually not more effective	MILD
Hydralazine	Early 1. Palpitations-- rare in combination therapy 2. Headaches 3. Periorbital, Ankle } EDEMA } Respond to antihistamines-- usually disappear in 2-3 weeks Late 1. "Rheumatoid-like" syndrome with/without Lupus cells-- less than 2% } disappear on cessation of therapy; may require steroids. Extremely rare on average dose of 500 mg./day or less.	300-400 mg./day	MODERATE
Mecamylamine	1. Constipation 2. Blurring of vision 3. Weakness } usually controlled by laxatives and/or neostigmine. 4. Dizziness-- rarely syncope-- usually disappears on continued Rx.	Mecamylamine 20-40 mg./day	POTENT
Chlorothiazide	Skin rashes Nausea Electrolyte imbalance (Hypokalemia)	1 gm. daily	
Derivatives			
(a) Di Hydrochlorothiazide		150 - 200 mgm. daily	
(b) Flumethiazide	possibly less effect on potassium excretion	1.0 - 1.5 gm. daily	

believe that the veratrum derivatives, alone or in combination, are suitable for the long-term practical management of the patient with essential hypertension. Limited experience with an iproniazid derivative, 1 - benzyl - 2 - (5 - methyl - 3 - isoxazolylcarbonyl) hydrazine (Marplan) and a peripheral sympathetic blocking drug (N-o-bromobenzyl-N-ethyl-N: N-dimethylammonium p-toluene sulphonate) (Darenthin) indicate that these drugs may be useful antihypertensive agents. Our experience with a recently introduced ganglion-blocking drug, trimethidinium methosulfate (Ostensin) suggests that this drug may also be useful in those patients who are unable to tolerate mecamylamine hydrochloride.

Chlorothiazide, hydrochlorothiazide, flumethiazide and its more potent derivative, 3-benzyl dihydroflumethiazide (Naturetin), are effective oral diuretic agents that have proved to be valuable adjuncts in therapy.[12] In most patients the use of these drugs has simplified management greatly and in some instances the more potent drugs, especially the ganglion blockers, were eliminated from therapy when the diuretic agents were added to the treatment.

Methods of Treatment

The methods of treatment are shown in Figure 1. In Group 1 patients with fixed high diastolic blood pressures but with no evidence of heart, kidney, or cerebral disease, and with no, or minimal, symptoms, the following method of treatment is indicated: de-emphasis of blood pressure, reassurance of the patient, and the use of sedatives and

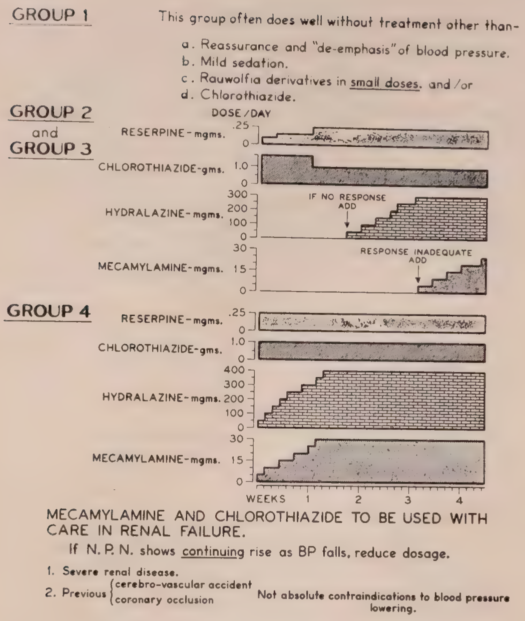


FIG. 1. Methods of treatment used in four groups.

the Rauwolfia derivatives, with or without chlorothiazide or one of its derivatives. Therapy with potent agents that cause annoying side-effects does not appear to be justified in this group. Many middle-aged women or patients with arteriosclerotic hypertension are included in this group. The prognosis without any therapy is good. If Rauwolfia therapy is instituted, minimal doses of the drug selected should be used to avoid side-effects (whole root [Raudixin] 100 mg. per day; reserpine [Serpasil] 0.25 mg. per day). We have observed a small number of depressions following the administration of Rauwolfia and, consequently, believe that its use is contraindicated in any patient with a history of previous depression. The drug is not a life-saving measure and a risk of this sort is not justified. If nightmares or dreams occur under Rauwolfia therapy, it is often best to stop treatment and substitute sedatives or attempt to manage the patient on chlorothiazide alone. It is our impression that psychic side-effects are less common when the whole root of Rauwolfia is used.

In Group 2 or 3 where diastolic blood pressure is fixed at a higher level and there is definite evidence by funduscopy and by electrocardiography of organ system involvement, more potent agents are indicated. In the advanced Group 3 patients, the simultaneous use of all four drugs, namely the Rauwolfia derivatives, hydralazine hydrochloride, chlorothiazide, and a ganglion blocker, mecamylamine hydrochloride, is often indicated. Daily therapy is usually titrated according to blood pressure response and divided into three or four doses. If evidence of the progression of the disease occurs while therapy is being instituted, drugs should be pursued more vigorously and increased more rapidly. The division of these patients into groups is an arbitrary one and, of course, the clinical appraisal of the individual is most important before specific treatment is decided on.

It is always wise to begin with the less potent drugs (see Fig. 1). If no response is achieved ganglion blockers may be added. An effective dose of mecamylamine hydrochloride, the ganglion blocker that we have used most extensively, has been between 15 and 60 mg. a day. When chlorothiazide is given also the dosage may be reduced dramatically without loss of the blood-pressure-lowering effect. If the patient is observed carefully there is little danger of a severe reaction with combination drug treatment. He should be made aware of any possible side-effects. There is usually some initial tolerance to a drug effect, so that an effective dosage the first few weeks may have to be increased later to achieve an equivalent response. With the administration of a ganglion-blocking agent there may be marked postural hypotension during the first week of treatment.

Although some physicians have abandoned the use of hydralazine hydrochloride, we are convinced that its addition to the treatment program often converts a poor to a good response. This has been illustrated graphically in patients who have become normotensive on combined mecamylamine-hydralazine-Rauwolfia treatment. When hydralazine hydrochloride is discontinued, complete blood pressure control is not usually achieved despite the use of higher doses of the other drugs. Initially hydralazine hydrochloride is given in doses of 25 mg. twice daily and is increased by increments of 25 or 50 mg. a day until a dose of 300 to 400 mg. a day is achieved. It is usually not necessary to administer a daily dose of above 400 mg. In our experience we have not observed a case of the "hydralazine syndrome" (rheumatoid-like symptoms with abnormal liver function tests with or without lupus cells in the peripheral blood) using these doses. We do not believe that the administration of hydralazine hydrochloride should be continued if toxic symptoms do occur or that it should be restarted in a patient after the rheumatoid-like syndrome has been alleviated satisfactorily.

Early side-effects (Table I), such as headaches, ankle edema, and aches and pains, can usually be controlled by salicylates and/or antihistamines and do not constitute a reason for stopping treatment with hydralazine hydrochloride. These are not the forerunners of the "hydralazine syndrome" and usually disappear within two to three weeks. Hydralazine hydrochloride causes an increase in pulse rate and cardiac work and, consequently, should be used with great care in patients with coronary artery disease. Because of reported instances of gastric hemorrhage following its use the drug probably should not be used in patients with a history of a peptic ulcer.

Chlorothiazide, although not a specific antihypertensive drug, has been useful in the treatment of patients with both mild and severe hypertension. The average dosage is 500 mg. twice daily. The drug is easy to use, requires little changing of dosage, and is remarkably safe.

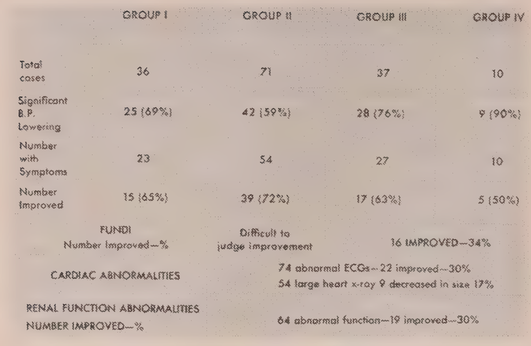
Side-reactions (Table I) include: skin rashes, nausea (in a small percentage of patients), excessive loss of potassium, and occasionally the exacerbation of gout with hyperuricemia. In patients receiving digitalis, or with renal insufficiency, where potassium loss may be of serious import, supplements must be given in the form of from 3 to 5 Gm. of potassium chloride a day. In other patients, experience indicates that the addition of bananas, orange juice, or dried apricots to the diet will usually suffice to prevent significant hypokalemia.

Dihydrochlorothiazide is a more potent derivative of chlorothiazide on a milligram-for-milligram basis. The average effective dose in the treatment of hypertension is 150 to 200 mg. daily. In our experience, however, this new drug presents little practical advantage over the parent compound.

In instances where tolerance to the use of chlorothiazide develops or a sensitivity reaction occurs, a change to dihydrochlorothiazide will often provide a satisfactory response although side-reactions may recur. We have, so far, observed only one photosensitivity skin reaction in a patient receiving the dihydro compound, but it is to be expected that side-effects of all of the chlorothiazide-like compounds will be similar.

Flumethiazide is approximately equipotent to chlorothiazide but may offer the advantage of less potassium loss per milligram of sodium excretion.[13] Further studies are necessary to confirm this. Experience with 3-benzyl dihydroflumethiazide indicates that this drug is approximately 80 to 100 times as potent as chlorothiazide and is effective in doses of between 10 and 15 mg. daily in hypertensive patients. Potassium loss with this compound is somewhat less than with the other thiazide derivatives and for that reason the drug may prove to be useful in treatment.

In Group 4, accelerated or malignant hypertension, treatment with all of the drugs available is justified. Dosages should be increased rapidly, as outlined in Figure 1, since time is an important factor in recovery. In patients with azotemia or renal failure, treatment should be attempted with care. We do not believe, however, that azotemia per se represents a contraindication to lowering of the blood pressure. Although evidence suggests that the renal flow is decreased and



	GROUP I	GROUP II	GROUP III	GROUP IV
Total cases	36	71	37	10
Significant B.P. Lowering	25 (69%)	42 (59%)	28 (76%)	9 (90%)
Number with Symptoms	23	54	27	10
Number Improved	15 (65%)	39 (72%)	17 (63%)	5 (50%)
FUNDI Number Improved—%	Difficult to judge improvement		16 IMPROVED—34%	
CARDIAC ABNORMALITIES		74 abnormal ECGs—22 improved—30% 54 large heart x-ray 9 decreased in size 17%		
RENAL FUNCTION ABNORMALITIES NUMBER IMPROVED—%		64 abnormal function—19 improved—30%		

FIG. 2. Results of therapy in four groups, a four- to five-year study.

TABLE II.—DEATHS IN 14 (9 PER CENT) TREATED PATIENTS

Complication	Number of Patients	
Treatment continued		8 (5 per cent)
Carcinomatosis	1	
Postoperative complications	2	
Renal failure	3	
Cerebral hemorrhage	2	
Treatment stopped (one to four weeks prior to death)		6 (4 per cent)
Cerebral hemorrhage	3	
Congestive heart failure	1	
Renal failure	2	

the blood nonprotein nitrogen rises after a dramatic lowering of the blood pressure in patients with poor renal function, it has been our experience that if the blood pressure is lowered carefully serious reactions are rare. An initial rise of the blood urea nitrogen is almost always to be expected following effective antihypertensive drug therapy in patients with extremely poor renal function, but after a period of stabilization the blood urea levels usually return to pretreatment values. The prognosis for these patients is so poor that we believe that any measure, if attempted carefully, is justified.

In patients with a previous cerebral vascular accident or coronary occlusion, lowering the blood pressure should also be attempted with care, although here too such complications are not absolute contraindications to therapy. Several episodes of coronary insufficiency resulting from rapid lowering of the blood pressure have been noted.

Results of Therapy

The results of therapy are shown in Figure 2. Significantly lowered blood pressure has been obtained in approximately 70 per cent of a group of 154 patients treated over a four- to five-year period. Symptomatic improvement, although difficult to judge in many instances, also has been observed in approximately 65 per cent of the group to date. Improvement in the fundi in Group 3 and Group 4 hypertensive patients has been noted in one third of the patients. Of 74 definitely abnormal findings on pretreatment electrocardiograms, 22 (30 per cent) improved following therapy. S-T and T-wave abnormalities disappeared and in some instances an actual decrease in the voltage of the QRS waves occurred. Seventeen per cent of patients with definitely enlarged hearts as indicated on x-ray films showed a decrease in heart size. Of 64 patients with definitely abnormal renal function as judged by the phenol red clearance, 19 (or 30 per cent) showed a definite improvement once lowering of the blood pressure had been achieved and maintained.

Seven of the 12 patients with azotemia prior to treatment and with Group 3 or Group 4 accelerated or malignant hypertension are alive after a period of from three to four years. In all of these surviving patients the pattern has been similar. A rapidly progressive hypertension apparently has been changed to a more benign type. Renal functional abnormalities have not improved significantly in most instances but rapid deterioration has not occurred as would be expected in an untreated group. In 3 of the patients who expired in this group, renal function remained the same for from one to three years, and then, within a short period of time, rapidly progressive renal failure occurred, followed by death.

Complications of Therapy

Some complications of therapy are presented in Table II. Renal, cardiac, and

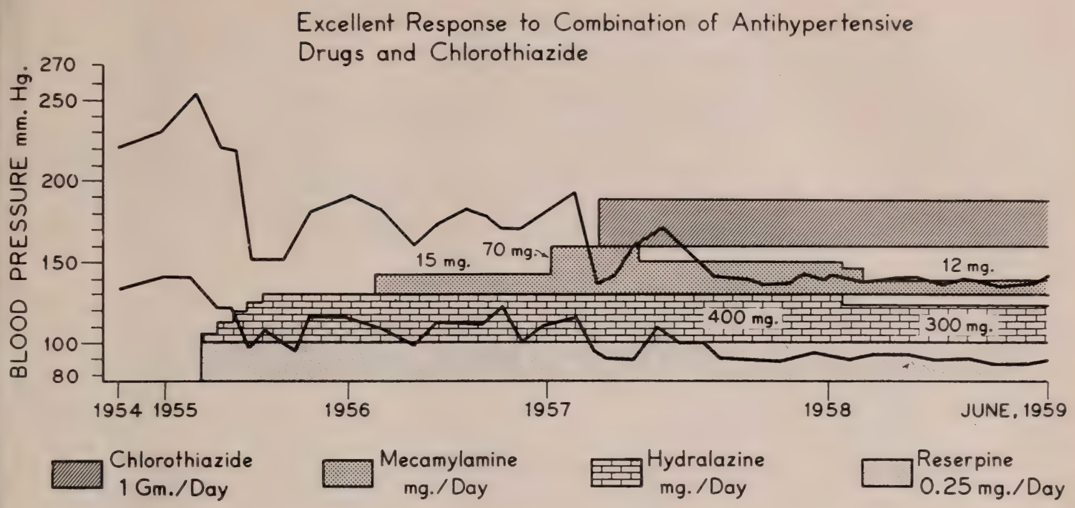


Fig. 3. Group 3, Case 1. Results of combination therapy.

cerebral complications have occurred in a small percentage of cases. Four patients experienced episodes of acute pulmonary edema and during the treatment period one coronary occlusion occurred in a patient who was being given effective therapy. There have been four cerebral vascular accidents, (hemorrhages and/or thromboses) in the group. Fourteen patients have died. Of these, 6 had stopped treatment at least one to four weeks prior to death. Three of these experienced cerebral hemorrhages; 1, congestive failure; and 2 died of renal failure. Of the remaining 8 patients, 1 died of carcinomatosis, 2 died postoperatively, 3 died of uremia, and 2 died of cerebral hemorrhages despite continued therapy. In the Group 4 patients 3 who had continued on treatment for from three to four years have expired.

The following cases illustrate methods of treatment.

Case Reports

Case 1.—A forty-two-year-old Negro (Group 3) male who had had hypertension for from three to four years was seen in 1954 with blood pressures of 220/130 mm. Hg. His fundi revealed narrowing and nicking with hemorrhages and exudates. Left ventricular hypertrophy was indicated on x-ray film and electrocardiogram. On combination treatment with hydralazine hydrochloride (400 mg. a day), reserpine (0.25 mg. daily), and mecamylamine hydrochloride in doses as noted in Figure 3, the patient experienced an excellent blood pressure response over a two-and-one-half-year period. With the addition of chlorothiazide in doses of 1 Gm. per day, the dosage of mecamylamine hydrochloride has been reduced and a smoother blood pressure response has been noted. The size of the heart has decreased, the hemorrhages and exudates have disappeared, and the patient is well and working. No evidence of renal deterioration has occurred in this patient, who represents a case of Group 3 hypertension without renal damage.

Case 2.—During a routine physical examination in 1952 severe hypertension was discovered in a forty-two-year-old male. His blood pressure prior to therapy had varied between 220/140 and 270/150 mm. Hg (Fig. 4). The patient experienced a fairly good blood pressure response on various therapies and was finally stabilized with reserpine, 0.25 mg. a day; hydralazine hydrochloride, 600 mg. a day; and mecamylamine hydrochloride, 75 mg. a day. Funduscopic examination prior to treatment revealed Group 2 fundi. Cardiac enlargement was indicated on an x-ray film, and left ventricular hypertrophy was seen on the electrocardiogram, but renal function was excellent. The patient developed a typical "hydralazine syndrome" several years after treatment was begun (1956)

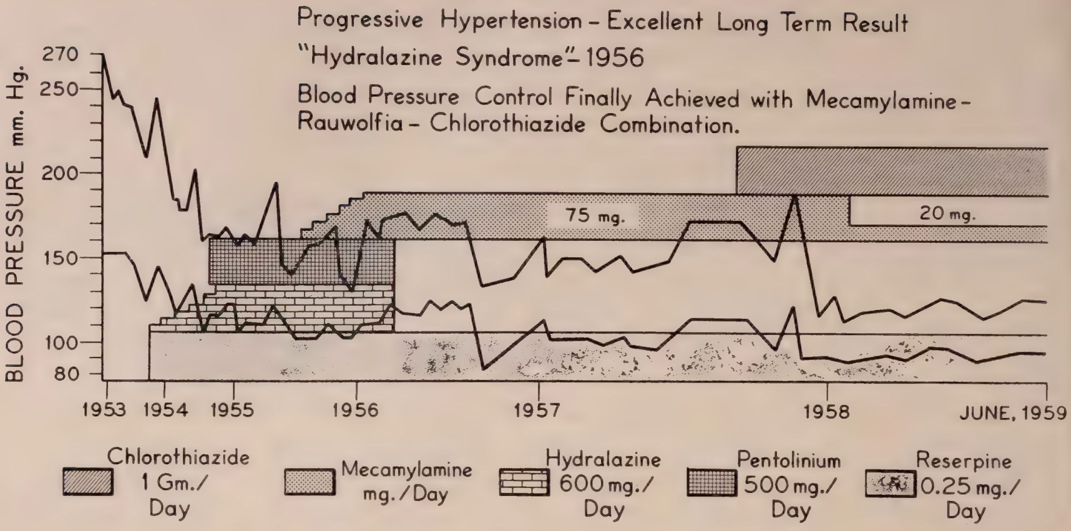


FIG. 4. Group 2, Case 2. Results of combination therapy.

with joint pains, pleuritic pain, and fever. Hydralazine hydrochloride was discontinued, followed by some rise in the diastolic blood pressure. Excellent control of the blood pressure was achieved subsequently with the addition of chlorothiazide in doses of 1 Gm. a day. The dose of mecamylamine hydrochloride has been reduced to 20 mg. a day. The patient is well and is working full time. His fundi have shown no change, the cardiac silhouette is somewhat smaller, and definite improvement has been shown on the electrocardiogram with reversion of the abnormal T waves.

CASE 3.—A forty-three-year-old Negro female presented a history of hypertension of eight years duration on the basis of chronic glomerulonephritis (Fig. 5). Renal failure was present prior to treatment. Left ventricular hypertrophy and arteriolar narrowing and nicking in the fundi (Group 2) were present. Despite the evidence of renal failure, it was believed that lowering of the blood pressure would be beneficial to this patient. On combination therapy, the patient has done well, with improvement showing in the electrocardiogram and chest x-ray films. Renal function has remained poor but, contrary to what might have been expected, there has been no progression of renal failure. Several attempts to withdraw ganglion-blocking therapy have been unsuccessful to date. The patient is presently being maintained on chlorothiazide, mecamylamine hydrochloride, hydralazine hydrochloride, and reserpine.

Comment

Much controversy continues to exist regarding the efficacy of the drug treatment of essential and renal hypertension. Follow-up studies to date are, of necessity, meager and of short duration, since effective drug treatment has been available only for the past seven years. Although lowering of the blood pressure can be achieved in most cases of hypertension by the proper regulation of drugs, there is little evidence to date to substantiate the claim that in mild or moderately severe hypertension (Group 1 and Group 2) prognosis has been altered, despite lowering of the blood pressure. Follow-up studies of from ten to fifteen years or longer will be necessary before such claims can be substantiated.

In Group 3 or Group 4 hypertension, with organ system involvement, with or without renal failure, there is evidence to suggest that the lowering of the blood pressure may in many cases convert a rapidly progressive course to a more benign one. In these cases it would appear that therapy is justified and that some risk can be taken in view of the possibility of improvement of prognosis. Heider[14] and Dustan *et al.*[15]

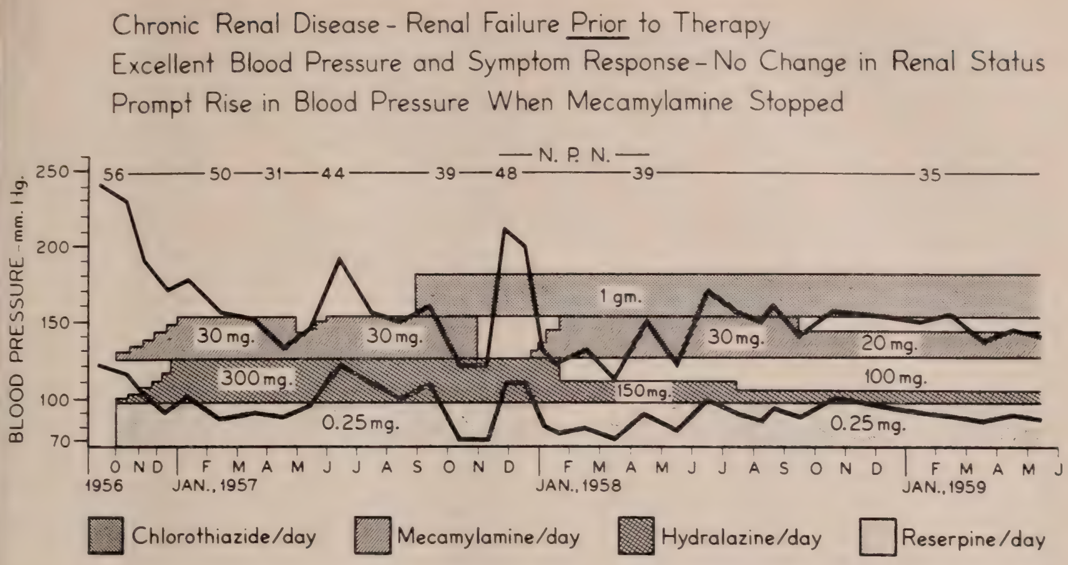


FIG. 5. Group 2, Case 3. Results of combination therapy.

have demonstrated a definite increase in survival in severe hypertension following the effective lowering of the blood pressure by drug treatment. Our results would appear to agree with these conclusions.

Moyer[16] has demonstrated the fact that renal function deteriorates in the untreated patient with hypertension as blood pressure continues to rise, but as the blood pressure is lowered renal function may remain stable or in some instances improve. These studies also suggest strongly that patients with high diastolic blood pressures, especially males and especially those with organ system involvement, should be treated vigorously, in spite of the fact that the etiology of hypertension is not known.

Summary

Therapy with antihypertensive drugs is still in its infancy. Preliminary results are encouraging and indicate that in from 60 to 70 per cent of carefully selected cases the effects of rapidly progressive hypertension may be reversed by adequate continuous treatment. Until more satisfactory methods of therapy become available, the use of the Rauwolfia drugs, hydralazine hydrochloride, chlorothiazide and its derivatives, and the ganglion-blocking agents offers a practical method of controlling blood pressure. Whether the use of the amine oxidase inhibitors or one of the recently introduced peripheral sympathetic blocking drugs will alter present methods of treatment materially remains to be seen. Careful supervision, a cooperative, intelligent patient, and a persistent physician are necessary if good results are to be obtained.

Once a decision is made to treat a patient with potent drugs, that is, that the risk of therapy is justified in view of a poor prognosis, treatment should be pursued and interrupted only in cases where serious side-effects occur (less than 2 per cent). The ultimate value of the drug therapy of hypertension will be determined only after additional long-term studies are made of large groups of patients.

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ANNUAL CONVENTION

Medical Society of the State of New York
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Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 2638) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before October 30, 1960.

*Use of Oral Hypoglycemic Agents in Treatment of Diabetes Mellitus**

A Critical Analysis

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BEFORE undertaking an evaluation of any agent in the treatment of diabetes mellitus, it may be well to clarify our understanding of the disease and what we aim to accomplish in treating this condition. So far as the authors understand, diabetes mellitus, in most cases, is a disease of unknown origin in which there occurs a disturbance in the capacity of the human organism to utilize satisfactorily the glucose molecule. By utilization is meant the transfer of glucose from the peripheral circulation across the cell membrane into the cell structure and the subsequent degradation of the glucose molecule by a system of intracellular enzymes. In addition, it is established that in the controlled disease there occurs, as in the pancreatectomized dog, a disturbance in the capacity of the organism to store glycogen in such organs and systems as liver and muscle. Under these circumstances then, the detection of an elevated blood sugar level reflects merely the failure of dextrose to leave the blood either to enter the cell for its metabolic needs or to participate in building up glycogen stores in liver and muscle (Fig. 1). It should be stated at this point that the derangement in the metabolism of carbohydrate represents only one facet in a series of events that are known to occur in diabetes mellitus, some related to the derangement in carbohydrate metabolism and others arising from still unknown sources. Thus may be listed derangements in protein, lipid and electrolyte

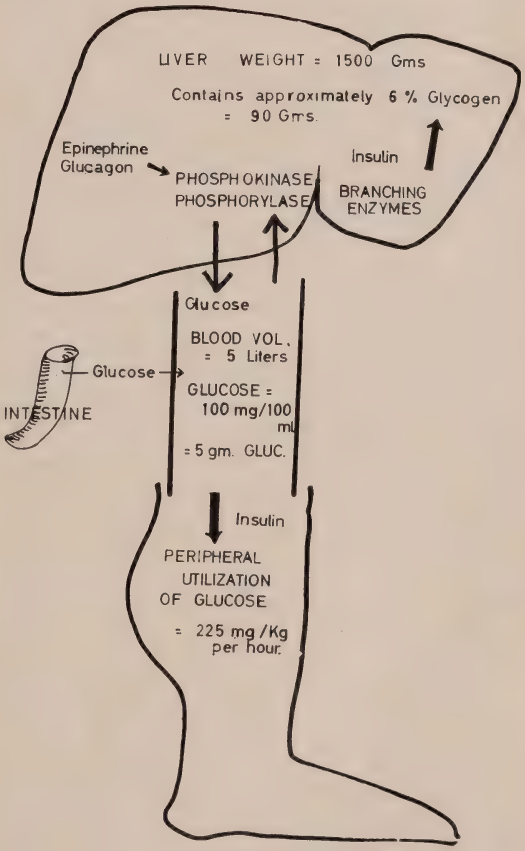

FIG. 1. The liver stores close to 100 Gm. of glycogen which is made available on demand for glucose by the tissues. Insulin plays a part in activating the branching enzymes in the liver to synthesize glycogen from glucose. Glucagon and epinephrine play a part in activating phosphokinase for glycogenolysis. The blood serves as a carrier of glucose from the storehouse to the cell which is the combustion chamber. Insulin at the peripheral cell level participates in effecting a transfer of glucose across the cell membrane into the cell structure. There is evidence that insulin also participates in the intermediary metabolism of glucose in the cell.

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* Presented in part in a panel discussion on Oral Hypoglycemic Agents at the Annual Meeting of the American Diabetes Association, June 7, 1959.

metabolism, and in vitamin function; and in vascular, neural, retinal, and renal disorders.

The basis for the satisfactory treatment of the diabetic patient should be predicated logically on the use of those measures which can reverse these phenomena and recreate a normal physiologic state. As far as the disorder in carbohydrate metabolism is concerned, it has already been proved definitively that insulin, the hormone derived from the beta cell of the pancreatic islets, can reverse this disturbance. It was demonstrated shortly after insulin was discovered that following the injection of this hormone, the pancreatectomized dog is capable of increasing the peripheral utilization of glucose by demonstrating an increase in respiratory quotient and at the same time by depositing increased quantities of glycogen in liver and in muscle.[1]

Insulin is today recognized as an autopharmacologic factor derived from the pancreas which appears to correct certain defects in diabetes including those related to the metabolism of carbohydrate, protein, fat, and electrolytes. It seems to have no effect on vascular, neural, retinal, or renal changes. Following insulin therapy, the return of the blood sugar to normal levels appears to be secondary to the improvement in carbohydrate utilization.

As with insulin, it would follow that any substance that is to be employed as a therapeutic agent in diabetes should first be proved to be capable of correcting the derangement in the metabolism of glucose in the body. There are available today procedures to test this capacity, and strict criteria can be set up to determine whether or not a drug is effective. Among the procedures to be included are studies of the respiratory quotient both in the human diabetic patient and in the experimentally induced diabetic animal, glucose uptake by the rat hemidiaphragm, glycogen synthesis in liver and in muscle, the analysis of the glycogen content of the liver of a pancreatectomized animal before and after the administration of a drug to be tested, the determination of blood glucose arteriovenous differences, nitrogen balance studies, the determination of the rate of glucose clearance from the circulation, and, more recently, studies of glucose oxidation and lipogenesis in epididymal adipose tissue.

The observation that certain sulfonamide derivatives and certain guanidine compounds can lower the blood sugar has had the natural effect of opening up a series of investigations to inquire into their mode of action and to determine whether or not such suppression is accompanied by a reversal in the disturbed metabolism of carbohydrate that occurs in diabetes mellitus.

The literature today is replete with reports dealing both with the laboratory investigations in which a variety of technics are used in an effort to identify the mechanism by which these agents effect a drop in blood sugar and with observations by many physicians concerning these hypoglycemic agents in the treatment of diabetes.

A study of these reports reveals an increasingly complex situation caused by conflicting observations and conclusions regarding the elucidation of the mechanism of the blood sugar-lowering effect of these hypoglycemic agents, frequently even when the same set of laboratory conditions are set up. This has been particularly true with regard to the use of such systems as that of glucose uptake by the rat hemidiaphragm and of mouse epididymal fat. This problem becomes further complicated when methods which provide indirect data are used to draw conclusions concerning the human diabetic patient.

Review of Reports on Drugs

The following is an incomplete summary of the most important work done to clarify the mechanism of action of certain drugs. An attempt will be made to reconcile some of the conflicting reports. There are included those studies that show that none of the oral hypoglycemic agents have any capacity to increase the peripheral utilization of glucose or to participate in glycogen synthesis. There are others which indicate that there occurs a release of insulin from the beta cells of the islets following the production of these agents. There are some reports that reveal positive evidence of an increase in plasma insulin-like activity and assume that it represents an increase in insulin release, and there are still others that appear to demonstrate a pathway of glucose degradation which reduces the glucose pool without effecting any peripheral utilization.

INSULIN AND TOLBUTAMIDE.—Goetz[2] studied the respiratory quotient in 2 diabetic patients who were given large doses of tolbutamide (Orinase) for two weeks. He found no rise in the respiratory quotient and concluded that tolbutamide does not influence peripheral utilization of glucose.

Craig *et al.*[3] compared the effects of tolbutamide and insulin on the arteriovenous glucose difference. They found that while insulin produced a prompt and significant increase in arteriovenous glucose difference, tolbutamide failed to produce this difference.

Recant and Fischer[4] showed that with hypoglycemia following intraperitoneal tolbutamide injection into rats, a decrease in glucose release from liver slices took place. Also there was no effect on pyruvate formation in the muscle. Similar experiments with insulin showed a striking increase in glucose release and a significant increase in pyruvate accumulation. Also, in the human being they were unable to show any increase in peripheral arteriovenous glucose difference after the intravenous administration of tolbutamide, as occurred following intravenously administered insulin.

Cahill, Hastings, and Ashmore[5] studied the effect of tolbutamide on the uptake of glucose by the rat hemidiaphragm, using the method of Vallance-Owen and Hurlock,[6] and concluded as follows: "It can be inferred that not only do the sulfonylureas fail to have a direct effect on glucose uptake by the rat diaphragm, but they also do not facilitate or augment the action of what insulin is available even when the insulin is present in barely subthreshold amounts."

Gordon, Buse, and Lukens[7] studied the effect of hypoglycemic sulfonylureas in various types of experimental diabetes and concluded as follows: "These experiments indicate that the sulfonylureas (carbutamide and orinase) have little or no effect on the secretion or potentiation of insulin."

Renold *et al.*[8] measured plasma insulin-like activity by the glucose uptake of a rat hemidiaphragm. They compared insulin with tolbutamide in normal subjects. While tolbutamide administration resulted in marked hypoglycemia, they stated that "in *no* instance did plasma insulin-like activity increase after tolbutamide administration." For comparison, 2 subjects were given intravenous insulin (0.1 units per kilogram). They stated that "in both instances plasma insulin-like activity was markedly elevated 10 minutes after insulin injection. The blood glucose changes were quite similar to those after tolbutamide."

They also showed that there is no demonstrable tolbutamide effect on intravenous glucose tolerance or on serum phosphate levels and blood pyruvate levels after the intravenous injection of glucose. They stated, also, that "the respiratory quotient of a patient with untreated diabetes failed to increase after acute tolbutamide administration by mouth, despite a marked hypoglycemic response."

Ashmore, Cahill, and Earle[9] compared the effects of insulin and tolbutamide on various aspects of glucose disposition in dogs and rats and in isolated tissue preparations. They concluded that "studies in vitro on the action of tolbutamide indicate that this compound neither stimulates glucose utilization by muscle nor augments the effect of insulin on muscle. However, effects that have been obtained in vitro would indicate that tolbutamide can decrease hepatic glucose production."

"Insulin and tolbutamide also differ in their ability to stimulate peripheral glycogen deposition and lipogenesis. When quantities of insulin and tolbutamide that produce identical blood glucose changes were compared, insulin markedly stimulated incorporation of C^{14}-labeled glucose into muscle glycogen and peripheral fatty acids. Tolbutamide did not cause a significant increase in the C^{14} content of either glycogen or fatty acids. At the present time we conclude that, although both insulin and tolbutamide will produce comparable degrees of hypoglycemia, there is a marked difference in the disposition of blood glucose following their administration."

In contrast to these findings are the reports by Canal,[10] Pletscher,[11] Lundbaek,[12] and more recently Rafaelsen[13] who show evidence of glucose uptake by the rat hemidiaphragm. While these differences apparently cannot be reconciled, Rafaelsen believes that fasting his animals before testing and using a bicarbonate buffer in his system instead of the customary phosphate buffer used by the American investigators probably made the difference between their results and his. However, he was unable to obtain any evidence of glycogen synthesis in his system.

While this dispute generally is regarded as irreconcilable since the conditions of the experiments are not similar, the fact remains that the respiratory quotient does not rise and the glucose anteriovenous difference is not increased. These facts in themselves support the findings which proved the failure of the sulfonylureas to increase glucose uptake in the rat hemidiaphragm and thus create serious doubt that they can increase peripheral utilization of glucose as is the case after insulin.

Vaughan[14] showed that tolbutamide interferes with the conversion of liver glycogen to glucose. She studied the role of phosphorylase and phosphokinase as they relate to glycogen synthesis and glucose release in liver slices and observed the effects of tolbutamide. She stated that "it is evident that under the conditions of these studies, tolbutamide interferes with the conversion of liver glycogen to glucose. More specifically it may be deduced that the phosphokinase which catalyzes the formation of active phosphorylase is inhibited."

Experiments which showed that tolbutamide is devoid of any action resembling insulin were performed by Frawley *et al.*[15] They compared the clearance of intravenously injected d-xylose and l-arabinose from the blood when it was injected with insulin and tolbutamide. This test is based on studies by Goldstein *et al.*[16] which showed that the mechanism of action of insulin in peripheral tissues lies in its capacity to effect the transport of sugars across the cell membrane. This important contribution was accomplished with studies on the effect of insulin on the disappearance of injected pentoses in the eviscerated dog. Frawley concluded as follows: "The degree of enhancement of xylose disappearance compares remarkably well with the effect of insulin on glucose disappearance. A strikingly different pattern was observed with intravenous tolbutamide. This substance did not alter the disappearance curve of d-xylose and l-arabinose in spite of the fall of blood glucose. This is strongly suggestive of the fact that tolbutamide is devoid of any insulin-like action."

A number of reports have already appeared which indicate that the sulfonylureas do have the capacity to effect a release of a small amount of insulin from the beta cells of the pancreas and that therefore the use of these agents is, in effect, equivalent to an injection of insulin.

Volk and Lazarus[17] showed that after the daily administration of tolbutamide and carbutamide (BZ-55) a degranulation of the beta cells of the pancreas occurs. These authors postulated that these agents may have the effect of stimulating insulin release from the beta cells of the pancreatic islets. They also showed that after cessation of use of these agents, regranulation of the beta cells can occur, indicating that they did not produce permanent changes in the beta cells. It is interesting that in a subsequent study the authors administered diabetogenic hormones to rabbits, including cortisone, glucagon, and adrenalin and found that extensive beta cell degranulation takes place in the presence of most pronounced hyperglycemia.[18] While observations have been made that both hypoglycemia and hyperglycemia can be accompanied by beta cell degranulation, it would appear to be rather hazardous to interpret them in terms of insulin function in human diabetes.

Other evidence which points to the pancreas as the target for the action of sulfonylureas lies in the observation that these compounds are ineffective following pancreatectomy.[19] While this observation has been confirmed repeatedly, interpreting this to mean that these agents serve to stimulate the release of insulin is not warranted. Houssay *et al.*[20] performed total pancreatectomies on dogs and observed that when these dogs were not given insulin the sulfonylureas failed to drop the blood sugar, but when they gave insulin in small doses sufficient to maintain the blood sugar level between 200 and 300 mg. per 100 ml. the addition of a sulfonylurea provoked a fall to normal or even hypoglycemic values (58 mg. per 100 ml.). This means only that while the sulfonylureas do not act in the absence of the pancreas, they are effective when circulating insulin is present to effect peripheral utilization of glucose. The significance of this difference will be discussed later.

Sirek and Sirek,[21] however, found that carbutamide lowers the blood sugar in pancreatectomized and hypophysectomized dogs. They concluded that carbutamide is effective in the absence of the pancreas and is not mediated through the pancreas. Gordon and Lukens[7] also showed no evidence of enhancement of the hypoglycemic response to tolbutamide in hypophysectomized cats, a condition where increased insulin sensitivity should be expected. Colwell, Colwell, and Colwell[22] performed perfusion studies in dogs with carbutamide and tolbutamide, infusing these substances into the femoral vein, the portal vein, and into the arteries supplying the pancreas and liver. The perfusions were compared with perfusion of the same organs with inactive substances. These authors pointed to the action of these drugs as being mediated through the pancreas. A study of their protocols indicates that the drop in blood sugar did not appear to be convincingly different whether the tolbutamide was perfused through the pancreatic artery, hepatic artery, or femoral vein.

Fajans *et al.*[23] found a rise in blood pyruvate after insulin which they were unable to obtain after tolbutamide, again indicating that there had been no enhancement of an insulin effect. They also presented data which showed that sulfonylureas do not increase insulin release. A comparison of the sugar tolerance curves done in human diabetic patients before and after treatment with tolbutamide for several days showed the same character of curve, although the level at which it starts is close to the normal in the tolbutamide-treated patient. They concluded that "sulfonylurea compounds do not potentiate the activity of insulin."

Jacobs *et al.*[24] studied simultaneously the rate of clearance of intravenously injected C^{14}-labeled glucose and the blood glucose concentration of normal and diabetic patients under fasting conditions over a two-hour period. They indicated that the rate of disappearance of the radioactive glucose represented a replacement or turnover rate of glucose in the blood. They studied 4 nondiabetic patients and found that the turnover rate ranged from 0.7 to 1.2 mg. per 100 ml. per minute. On the other hand, they also reported a higher turnover rate in 2 diabetic patients of 1.9 and 1.6 mg. per 100 ml. per minute. This seems to be a rather unusual finding in view of the known reduction in the peripheral utilization of glucose in the diabetic patient.

The authors found that after giving 20 units of insulin by intravenous injection to a nondiabetic person there occurred almost a fourfold increase in turnover rate above the control. In giving 6 units of insulin intravenously to a diabetic patient, they observed a rise in turnover rate from 1.9 to 7.0 mg. per 100 ml. per minute, an increase of over three times the preinjection level. They inferred that this rate of turnover with the dropping of the blood sugar level represented increased peripheral utilization. It is interesting that promptly after the injection of insulin the authors observed a plateau in the specific activity curve and interpreted this to represent a transitory suppression in the glucose entry rate. They then showed that following intravenous tolbutamide administration in critical doses the removal of glucose was not enhanced. They showed also that the entry rate fell to zero. This confirms all the reported studies which indicate that the only effect which tolbutamide appears to possess is to interfere with the normal enzymatic activity related to supplying the circulation with glucose on demand by the tissues. Jacobs *et al.*[24] state as follows: "The rates calculated for this experiment demonstrate a remarkable difference between the two substances (i.e. insulin and tolbutamide) in that the removal of glucose was not enhanced by tolbutamide. Repeatedly, it has been observed in similar experiments that the entry rate drops to zero but the removal rate does not increase significantly on tolbutamide injection."

Their observation that 6 units of insulin given subcutaneously to a nondiabetic patient failed to increase the entry rate caused them to suspect that insulin in small doses and tolbutamide both fail to increase peripheral utilization and have a comparable effect on suppressing glucose release from the liver. In studying their curves, it is seen that with insulin there occurs a sharp decline in the curve describing the rate of C^{14}-glucose clearance after the "plateau." While no figures are presented in the paper, it would appear that there occurred an increase in peripheral glucose utilization at that point. A delay in this phenomenon is to be expected after a small subcutaneous injection of insulin. It is interesting that Hawley and Murlin[25] observed a lag of one hour in the response of the respiratory quotient after giving insulin to normal dogs. They found that the respiratory quotient rose sharply in the second hour.

While Jacobs' data are factual observations, Steele[26] is critical of the interpretations placed on them because of the design of the experiment, for he found with a "priming dose-continuous infusion" technic that there was a lesser effect on hepatic glucose output. He even suspected that the "plateau" may prove to be an artifact. Furthermore, Tarding and Schambye[27] do not agree with Jacobs in their studies of specific activity decline after insulin and tolbutamide in a C^{14} glucose single injection experiment. They found that insulin hypoglycemia is always accompanied by increased peripheral glucose utilization and hepatic glucose release, while tolbutamide hypoglycemia is associated with an inhibition of hepatic glucose release and has no effect on peripheral glucose uptake.

To maintain an established radioactivity of the glucose pool De Bodo *et al.*[28] found it necessary to provide a constant intravenous infusion of C^{14} glucose. Under such conditions it was possible to study glucose uptake by the tissues and glucose release by the liver when insulin was injected. They found that "insulin hypoglycemia was due almost entirely to an increased utilization of plasma glucose by the tissues. Glucose production (from the liver) remained almost at the pre-insulin level. The restoration of the plasma glucose concentration to the pre-insulin level was due entirely to an increase in glucose production."

These divergent reports using isotopically tagged glucose would indicate at this time that the results obtained are influenced by the design and conditions of the experiment. Thus Jacobs' interpretation of his studies regarding the role of insulin in regulating glucose release from the liver may be premature and will have to await further study.

Recently Pfeiffer *et al.*[29] have reported studies which appear to provide clear evidence that tolbutamide and metahexamide stimulate increased insulin secretion into the circulation. This was obtained by a bioassay of insulin-like activity which utilized rat epididymal adipose tissue to transform glucose C^{14} to $C^{14}O_2$. Renold[8] who developed this method was unable to find this increased insulin-like activity in systemic venous blood, but he did observe a small increase in pancreatic vein blood after tolbutamide was administered, which made him suspect that there was a small insulin release. It should be stated parenthetically that the uptake of glucose by adipose tissue has been found to be associated with the degradation of glucose through the recently discovered CoA shunt by which surplus glucose is converted to triglyceride.

The difficult question to answer is why, if there does occur an increased insulin release from the beta cells, is it not detected by evidence of peripheral glucose utilization by the studies on the respiratory quotient, glucose arteriovenous differences, glucose uptake by the rat hemidiaphragm, or increased pyruvate levels in the blood. If these observations by Pfeiffer should be confirmed and prove to be correct, it would be the most important factor in helping to explain the fate of ingested glucose under the influence of tolbutamide. Besides the well-documented data that the sulfonylureas serve as hepatic enzyme blocking agents to prevent glucose release from the liver, it may be possible that these agents accelerate the conversion of glucose to fat by way of the direct oxidative hexose monophosphate shunt and may have its major site of action in adipose tissue. This then could be reconciled with all the reports which failed to show any increase in glucose utilization by the muscle.

One of the discrepancies in Pfeiffer's work appears to be that three hours after the administration of metahexamide, when the blood sugar still remains low, there appears to be a reduction in plasma insulin-like activity.

An interesting report by Baender,[30] who made pharmacologic studies of the sulfonylureas, revealed that four weeks after the administration of tolbutamide to rats, he found that on performing a glucose tolerance test these animals showed a diabetic-type curve. He also showed the development of a diabetic curve in dogs on metahexamide when these animals were given 20 times the therapeutic human dose.

It has been suggested that sulfonylureas may cause hypoglycemia by inhibiting insulin destruction. Berson *et al.*[31] injected insulin-I^{131} into control rabbits and rabbits treated with sulfonylurea and compared the rate of disappearance of insulin-I^{131} between the two. They found no difference. They performed the same experiment with glucagon-I^{131} and found no difference between control and tolbutamide-treated animals. They suspected that sulfonylureas may act as enzyme poisons and doubted that their action could be attributed to an insulin-like effect.

They concluded that "the administration to rabbits of BZ-55 (orally) and orinase (orally and intravenously) in doses sufficient to induce hypoglycemia, does not alter the rate of degradation of I^{131}-labeled insulin or glucagon."

PHENFORMIN HYDROCHLORIDE.—With regard to phenformin hydrochloride (DBI), a recently introduced biguanidine derivative of formamidine, it may be stated that it is a modification of synthalin, a diguanidine introduced in 1926 by Frank, Nothmann, and Wagner[32] as an insulin substitute because of its oral hypoglycemic effects. Synthalin fell quickly into disuse when it became evident that it was an hepatotoxic agent which resulted in some fatalities.[33] However, interest in this agent was revived when phenformin hydrochloride, a modification of synthalin, was found to reveal little toxicity and was made available for treating diabetes. Its pharmacologic effects are not too vastly different from synthalin. While it was originally suspected that the mechanism of synthalin hypoglycemia resulted from severe liver damage, recent studies on the mechanism of action of the guanidines would lead one to suspect that they serve to block certain enzyme systems related to electron transport in the Krebs cycle at the cytochrome oxidase level.

Phenformin hydrochloride is found to produce hypoglycemia in the human diabetic patient but not in the normal person. However, it appears to be effective in the normal monkey, rabbit, guinea pig, and rat, but not in the dog. It also has no effect in the pancreatectomized dog.

Nielsen *et al.*,[34] in studying the effect of this agent with the rat hemidiaphragm and in using quantities equivalent to 50 times the dose used in human beings, observed that it increases glucose uptake, increases lactate production strikingly, reduces the glycogen concentration of muscle, and has no effect on oxygen consumption. They concluded that this meant the utilization of glucose by anaerobic glycolysis. Steiner and Williams[35] found that phenformin hydrochloride in liver homogenate produced an alteration in electron transport in the Krebs cycle at the cytochrome oxidase level. They did not observe this effect with doses used at therapeutic levels but only when it was increased a thousandfold.

Wick, Larson, and Serif[36] reported that phenformin hydrochloride altered electron transport between succinic dehydrogenase and reduced cytochrome C. Williams[35] concluded on the basis of these studies that phenformin hydrochloride is an effective hypoglycemic agent because it promotes tissue anoxia, which produces anaerobic glycolysis and leads to increased blood lactate and a resulting drop in blood sugar. If this proves to be confirmed, then the wisdom of effecting hypoglycemia by tissue anoxia might well be questioned. It is interesting that a striking increase in blood lactate was recently observed following the injection of glucagon, an important hyperglycemic glyogenolytic factor, in a case of glycogen storage disease.[37]

Craig[38] found that the quantity of lactate formed after the administration of phenformin hydrochloride accounts for, at most, 2 per cent of the glucose which disappears after the use of phenformin hydrochloride in the human diabetic patient. This would cast doubt on the hypothesis presented by Williams.

Madison and Unger[39] studied the glucose arteriovenous differences in 5 normal and 7 diabetic patients after the administration of phenformin hydrochloride. They stated that "in no instance was the A-V glucose difference increased despite the fact that the blood glucose declined significantly in the diabetic subjects. This data is interpreted to indicate that either there is no increase in peripheral glucose utilization after DBI or that the increase occurs at a rate which cannot be detected by this experimental approach."

It appears at present that there is no definitive study to provide a physiologically acceptable explanation for the mode of action of phenformin hydrochloride. What is apparent is that this agent does not increase the respiratory quotient in isolated tissue, has no effect on glycogen in liver and muscle, and does not increase the glucose arteriovenous difference. Further it causes a decrease in muscle glycogen.

Comment.—It may be said then that the weight of evidence indicates that none of the recently introduced oral hypoglycemic agents are able to correct the defects in carbohydrate metabolism that are known to occur in diabetes. Some evidence appears to indicate that there may be minimal quantities of insulin released from the beta cells of the pancreas under the influence of the sulfonylureas. If this occurs in quantities sufficient to reduce the blood sugar, then it becomes difficult to understand why many excellent investigators have been unable to detect the activity of this additional insulin in the circulation by all of the biologic tests already discussed.

The other argument, that these agents may stimulate the disappearance of ingested glucose by conversion of carbohydrate to fat through the hexose monophosphate shunt and bypass the physiologic activity of carbohydrate in muscle and liver completely, is of course a possibility, as is indicated by the recent work on glucose disappearance into adipose tissue. This explanation, however, will have to await further elucidation.

Clinical Application

The introduction of the oral hypoglycemic agents into clinical practice has provided a plethora of publications on their effect on the human diabetic patient. Before assessing the clinical use of these agents, it may be timely at this point to take note of what we aim to accomplish in treating the patient who has diabetes.

It is well established that the diabetic patient suffers from two defects in the disturbance of carbohydrate metabolism: (1) His capacity to handle glucose in his peripheral tissues is impaired—the more severe the diabetes, the greater the impairment; and (2) his capacity to synthesize and store glycogen in his liver and muscles is reduced.

These two metabolic disorders operate regardless of the mechanism responsible for the development of human diabetes, whether it be inactivation, destruction, or binding of insulin; or insufficient insulin production.

While the correction of the defect in the cellular oxidation of glucose is necessary to good diabetic management, one should not lose sight of the important role which improving the capacity to synthesize glycogen plays in physiologic recovery. This is especially true when one recalls that glycogen, besides providing the storehouse from which circulating glucose is replenished on demand from the peripheral tissue cell, is also playing an extremely important part in muscle contraction. It is well to recall at this point that among other mechanisms in physiologic muscle contraction, such as the breakdown of phosphocreatine, glycogen is associated intimately with this phenomenon, without which the efficiency of muscle contraction is greatly impaired. One should recall that the contraction of muscle is accompanied by an increased production of lactic acid from glycogen in the muscle cell, and that lactic acid then requires large amounts of oxygen for its further clearance, a part for complete oxidation and part for resynthesis to glycogen during the phase of recovery.[40]

An analysis of the investigations reviewed in this paper all lead to the following conclusions: (1) The sulfonylureas interfere with enzyme systems regulating glycogenolysis thus blocking the entry of glucose into the circulation from the liver, (2) there is dubious and equivocal proof that these agents increase peripheral glucose utilization, and (3) none of the oral hypoglycemic agents affect glycogen synthesis actively in muscle or liver. As to phenformin hydrochloride, there is good evidence that it not only prevents glycogen synthesis but also interferes with the normal disposition of lactic acid.

If there does occur a disappearance of ingested carbohydrate under the influence of the oral agents, at least they do not increase peripheral glucose oxidation by the well-known Embden-Meyerhof scheme. The clearance of glucose by way of the hexose monophosphate shunt into adipose tissue represents a possibility, judging from the studies by Pfeiffer.[29]

Thus, if the defect occurring in diabetes is not corrected, then certainly merely depressing the blood sugar would not appear to be a logical approach to seeking clinical control of the diabetic condition.

The published clinical experiences would indicate that there are variations in the degree of effectiveness that the four oral agents have to depress the blood sugar. Thus chlorpropamide is more effective than tolbutamide and metahexamide more than chlorpropamide. The more effective ones, however, appear to present more serious side-actions which would have a tendency to limit the value of these agents. As a matter of fact, the Lilly Company has found the undesirable effects of metahexamide so serious, particularly so far as its hepatotoxic effects are concerned, that it has decided to discontinue further clinical evaluation of this drug. Recently Krall[41] has reported an incidence of 38 per cent of undesirable side reactions arising from the use of phenformin hydrochloride. This then would tend to limit the clinical value of this agent. Thus, one is left with tolbutamide as the only agent of the entire group which one may at least say is relatively free from toxic side-effects.

The clinical studies to date would indicate that there exists a very limited group of diabetic patients who may be treated with the present oral hypoglycemic agents. While they were initially regarded as opening a new epoch in the treatment of diabetes, it now seems that less than 10 per cent of all diabetic patients derive any benefit at all from these agents. Certainly the juvenile and the severe adult diabetic patient have been eliminated as possible candidates. According to Marble[42] the chief value of these agents seems to lie in the treatment of the mild, obese, maturity-onset diabetic patient whose daily insulin needs are less than 20 units a day. This group might easily get along solely with dietary restrictions.

Special Problems

Our own experience with 173 patients who were treated with tolbutamide before coming under observation indicates that while they were often made aglycosuric and normoglycemic, they showed no evidence of having corrected their metabolic disorder. Weight loss and weakness appeared to be two outstanding complaints. This is understandable when one realizes that the oral hypoglycemic agents actually interfere with glycogen deposition in the muscle. If the mechanism of tolbutamide activity is to block the entry of glucose into the blood, then the patients could be regarded as individuals who were starved of carbohydrate at the tissue level. Their symptom complexes were much like those patients who were treated in the preinsulin era with diets that kept them just short of starvation. Those patients too were able to establish normoglycemia and aglycosuria. The rapid clinical improvement of those who were willing to accept the transfer to insulin could not be ignored.

There are certain undesirable features about keeping a patient on tolbutamide. It should be remembered that the carbohydrate tolerance of a diabetic person is not static. It is affected by such conditions as infections, vascular accidents, dietary indiscretion, and frequently for some unknown reason. In the insulin-treated case this is controlled quickly by increasing the dose of insulin, but it is not yet known how this can be combatted when tolbutamide is used.

It should be remembered, too, that as soon as a treatment is initiated a newly treated diabetic patient shows consistent improvement in carbohydrate tolerance, whether the treatment be by dietary restriction or by the use of insulin. This initial remission in diabetes is a well-known phenomenon. When the use of any oral hypoglycemic agent is introduced, one should be careful under these circumstances not to interpret improvement in the blood sugar and glycosuria mistakenly as due to the oral agent. The termination of such a remission, which usually lasts from four months to one year after treatment is initiated, may be responsible for what has been described as secondary failure with tolbutamide therapy.

Another disturbing aspect in the use of the oral hypoglycemic agents is the fact that these compounds have created a psychologic barrier to insulin injection when the physician finds insulin necessary. We recommended the transfer of 140 tolbutamide cases to insulin and found 62 patients who refused to accept the recommendations. This is a completely new experience and creates the danger that the patient may try to play too great a part in determining what is best for him, particularly since he is exposed to the contingency of serious complications if his carbohydrate tolerance should suddenly deteriorate.

It is possible to explain partially the mechanism of the hypoglycemia following

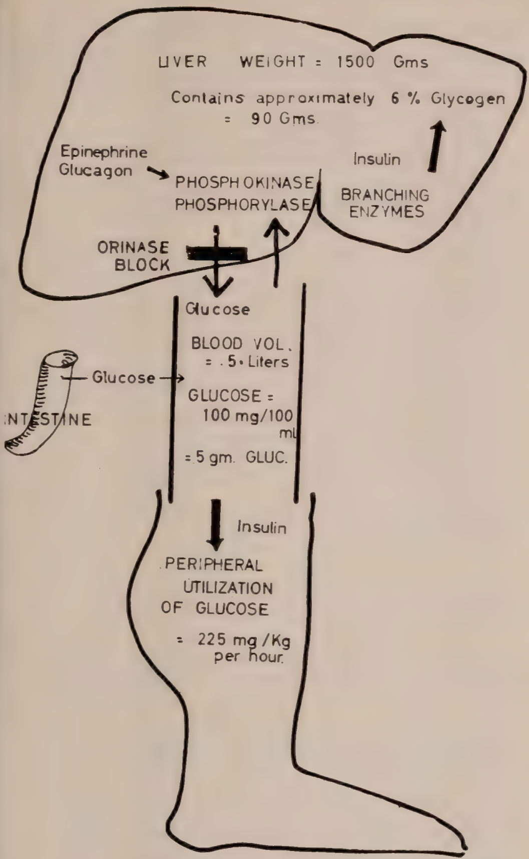

FIG. 2. It appears from the studies analyzed and reported in this paper that the chief site of action of tolbutamide is in the liver where it serves as an enzyme-blocking agent to prevent the release of glucose into the circulation.

TABLE I.—COMPARISON OF EFFECTS OF INSULIN AND TOLBUTAMIDE ON CARBOHYDRATE METABOLISM

Function	Insulin	Tolbutamide
Respiratory quotient	Elevated	No effect
Glucose uptake in rat hemidiaphragm	Increased	No effect(?)
Glucose arteriovenous difference	Increased	No effect
Glycogen content in liver	Increased	No effect
Glucose turnover in circulation	Increased	No effect
Nitrogen balance	Increased	No effect
Blood pyruvate	Increased	No effect

sulfonylurea administration on the basis of certain known physiologic facts:

1. The liver serves as the storehouse for carbohydrate from which glucose is made quickly available to the peripheral tissues on demand. The liver, weighing about 1,500 Gm. and normally containing 6 per cent glycogen, will store about 90 Gm. of glycogen.
2. The blood serves as the transport carrier for the glucose from the liver stores to the combustion "chamber," the peripheral tissues. Normally the 5 L. of circulating blood, which contain approximately 100 mg. of glucose per 100 ml., carry a total of 5 Gm. of glucose at any one time.
3. The rate of utilization of glucose by normal tissues, established by Soskin and Levine[43] in the eviscerated dog, is approximately 225 mg. of glucose per kilogram of tissue per hour. Adding to this the glucose utilized by the viscera brings the rate of glucose consumption to about 2 Gm. per hour in a 60 Kg. man.

Several fundamental studies quoted in this paper have shown that the sulfonylureas distinctly block the release of glycogen from the liver. It is understandable then that a call for glucose by the tissues at 2 Gm. per hour from a limited circulating 5 Gm. can easily deplete the blood of 40 per cent of its glucose, particularly if the glycogen stores are not available for replenishing the glucose in the blood (Fig. 2). Thus the reason for a drop of 40 per cent in the blood sugar one hour after tolbutamide has been taken becomes clear. It is clear, too, that the severely diabetic person who is incapable of using glucose at the peripheral level will not show this hypoglycemic effect after tolbutamide therapy. For the same reason the pancreatectomized dog, with no circulating insulin, fails to experience hypoglycemia following sulfonylurea because no glucose is being taken up by his peripheral tissues.

A comparison of the effects of insulin and of tolbutamide is seen in Table I.

Conclusion

Diabetes mellitus is a complex disease in which, among other things, there occurs a disturbance in the peripheral utilization of glucose and glycogenesis. Any agent used in the treatment of diabetes should be capable of reversing both of these disturbed mechanisms. There are several criteria by which this can be tested. They include respiratory quotient studies in the human diabetic patient and in the experimentally-induced diabetic animal, glucose uptake by the rat hemidiaphragm, glycogen synthesis in liver and muscle, determination of blood glucose arteriovenous difference, and the clearance of isotopically-labeled glucose from the circulation.

The literature is reviewed and there does not appear to be any definitive evidence that the sulfonylurea compounds are capable of reversing the disturbance in carbohydrate metabolism which occurs in diabetes mellitus. In attempting to seek an understanding of the mechanism which accounts for the hypoglycemia that follows the use of these drugs, it becomes evident that it results from enzyme poisons which block the normal release of glycogen from the liver when a demand for glucose is called for by the peripheral tissues. This process has the obvious effect of depleting the small quantity of glucose circulating in the blood which cannot be replenished by glycogen release. It is possible that the fate of some ingested glucose may be taken up by adipose tissue by way of the hexose monophosphate shunt.

Clinical experiences with 173 cases show that only the mildest adult diabetic patients appear to be controlled with tolbutamide. However, on analysis, it becomes clear that they are the patients in whom the capacity to utilize glucose is so mildly impaired that they could just as easily be desugarized by mild dietary restrictions. In actuality, the diabetes in these patients cannot be regarded as being controlled. These compounds, in lowering the blood sugar of the patient, appear to produce carbohydrate starvation at the peripheral cell level and actually create the same metabolic condition which severe dietary restrictions accomplished in the pre-insulin era.

Summary

1. The oral hypoglycemic agents including the sulfonylurea compounds and phenformin hydrochloride fail to correct the defect in carbohydrate metabolism occurring in diabetes mellitus.

2. The evidence that the sulfonylureas stimulate the endogenous production of insulin from the beta cell is inconclusive.

3. The use of phenformin hydrochloride appears to indicate an effect on glycogen metabolism which is not in keeping with normal muscle function.

4. The use of presently known oral hypoglycemic agents serves as a good tool in carbohydrate research. Their use in the treatment of the human diabetic patient, judging from the literature, seems to be premature and of dubious value.

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You traverse the world in search of happiness which is within the reach of every man. A contented mind confers it.—HORACE

Treatment of Obesity with a New Anorexiant, Diethylpropion, Without Special Stress on Diet

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THE need for a good anorexic drug has long been evident. This need was met partly with the introduction of the amphetamines. In general, however, most of these drugs are not ideal for such purposes because of their side-effects, most of which are referable to the central nervous system. Recently, a new compound, diethylpropion,* has been developed which seems to curb appetite without stimulating the central nervous system. Considerable attention is being given to this drug in Germany,[1,2] and interim reports[3-5] so far available from this country indicate that this agent is effective as an anorexiant.

Diethylpropion (1-phenyl-2-diethylamino-propanone-1-hydrochloride) is another amphetamine compound having the beta-phenylethylamine basic structure.[5] Studies on rats showed that during the first half-hour following administration of 5 mg. per kilogram of diethylpropion, the food intake was reduced seven times. The same anorexogenic effect was observed in prolonged experiments carried out for six months.[4] The acute toxicity in mice was found to be 100 mg. per kilogram of body weight when given intravenously and 600 mg. per kilogram of body weight when given orally.[2] Tests for toxicity indicate a large margin of safety for this compound.[5] No changes in blood pressure or respiration were noted in dogs and cats after doses of 1 to 10 mg. per kilogram of body weight were given intravenously, 10 to 50 mg. per kilogram were given intraperitoneally, or 50 to 100 mg. per kilogram were given subcutaneously. Observations in the human being indicate no change in the pulse rate, blood pressure, gastric acidity, basal metabolism rate, serum bilirubin, urea, uric acid, urinalysis, blood count, or electrocardiogram.[2] Available studies[2-4] indicate a low incidence of side-effects. In a series of 70 patients, 2 complained of thirst, 1 complained of headache, and 1 complained of insomnia.[4] It was necessary to discontinue treatment only in the last-mentioned case.

We have been engaged in a systematic study of this drug since July, 1958. Although many more investigations are needed to evaluate it properly, we have been encouraged sufficiently by the results of our present study to feel that it represents a definite advance in this field.

Material and Method

The study was originally carried out with 72 patients referred to us by the different departments of the Community Hospital. However, patients with conditions such as edema and congestive heart failure were excluded because of the complicating features they presented in the evaluation of the results. Also excluded were those who did not attend the clinic regularly or who did not take their medication as prescribed. Present data were obtained on the remaining 23 female and 5 male patients, their ages ranging from twenty to seventy-one years with an average of forty-two years. Their original weights ranged from $139^1/_2$ to $235^1/_2$ pounds, with an average of 179 pounds. Since the weight tables seemed to be unrealistic,[6] no special attention was given to the deviation from standard weights.

During the first interview a history was

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* The diethylpropion used in this study is available as Tepanil from the National Drug Company, Philadelphia, Pennsylvania, and it is available as Tenuate from the Wm. S. Merrell Co., Cincinnati, Ohio.

TABLE I.—THERAPEUTIC RESULTS AND SIDE-EFFECTS OF PATIENTS TREATED WITH DIETHYLPROPION AND PLACEBO

Items	With Diethylpropion	With Placebo
Number of individuals	15	13
Sex		
Female	12	11
Male	3	2
Average age	43.6	40.1
Number of patients who lost weight	13	7
Number of patients who failed to lose weight*	2	6
Average time of treatment (weeks)	8.4	9.1
Average weight loss in pounds per week	1.26†	0.49†
Average weight loss in pounds	10.30	4.42
Anorexic effect		
Decidedly produced	13	4
Irregularly produced	1	4
Not produced	1	5
Side-effects		
Dry mouth	2	. . .
Constipation	1	1
Insomnia	. . .	1

* Weight reduction of less than 0.25 weekly was considered a failure.

† The difference in average weight loss per week between the placebo and the diethylpropion group is statistically significant as determined by Student's t test. (p 0.01 per cent).

TABLE II.—SUMMARY OF CLINICAL AND LABORATORY DATA IN TWO GROUPS OF PATIENTS

Items	Number of Subjects	Diethylpropion		Placebo	
		Range	Average	Range	Average
Pulse rate	28	68 to 88	82	70 to 86	80
Blood pressure	28	110/62 to 170/110	124/80	102/66 to 190/108	132/86
Hemoglobin (in grams)	18	9* to 13.9	12.8	10 to 14.2	12.1
Leukocytes	18	6,250 to 10,750	7,140	5,250 to 9,480	6,850
Polynuclear leukocytes	18	53 to 73	58	51 to 64	61

* Two patients, mother and son, had Thalassemia minor.

taken and causes of obesity were explained. It was made clear to all patients that we had no previous personal experience with this compound, and, therefore, their impartial opinion concerning the effect of the drug on appetite or any complaints that they might have after its use would be of importance in the assessment of this product. A special effort was made to differentiate between two patterns of anorexic effects; namely, the sensation of appetite depression between meals as distinct from the feeling of earlier satisfaction during meals. Because of the reactions of some patients who had previously been on amphetamine and were disappointed in not getting the same elevation of mood from diethylpropion, it was explained to all patients in this series that irritation of the central nervous system was not a desirable effect and that possibly appetite could be curbed without stimulating mental and physical activities.

Since a definite restriction of food intake might complicate the evaluation of the results, a rigid caloric restriction was not required; nevertheless, the importance of a low-calorie diet was explained with special reference to carbohydrates. Patients were examined every two weeks. They were questioned as to any change in appetite and as to their adherence to the drug and diet regime suggested, as well as to any evidence of possible side-effects. Their weights, pulse rates, and blood pressures were recorded. Blood counts and fractional urinalyses were done while under treatment.

The 28 patients included in the study were selected alternately for active medication or placebo. Fifteen patients were given a supply of diethylpropion for self-administration between visits, whereas 13 patients were given a placebo similar in appearance to the active medication. The patients did not know which tablet contained the active medication. They were given 3 tablets a day to be taken thirty minutes before each meal. The tablets of active medication contained 25 mg. of diethylpropion. For this study, the period of observation for each subject was considered completed at the end of eight to nine weeks.

Results

A summary of the therapeutic results and side-effects is given in Table I. With diethylpropion all but 2 patients lost weight, the average weekly loss for the group being 1.26 pounds. With the placebo 6 patients did not lose weight, and 7 lost weight, the average weekly loss being 0.49 pound.

While taking diethylpropion, the pulse rate and the blood pressure, recorded for each patient at each interview, and the blood counts and determination of hemoglobin revealed no deviation from the normal levels (Table II). Five patients on active medication and 4 patients on placebo had diastolic blood pressures over 90. No adverse effect on the blood pressure was noted in either group during the entire course of treatment. Fractional urinalyses revealed no abnormality.

Side-Effects.—Although patients were questioned carefully for possible side-effects referable to the central nervous system, there were no complaints of insomnia, irritability, headache, palpitation, or increased mental stimulation. Also, no increase in physical activity was noted immediately after the administration of the drug. However, 4 patients stated that they developed a desire for overactivity several weeks following the initiation of the treatment which could be accounted for by the loss of weight. Two patients complained of dry mouth of a mild degree, and 1 patient complained of constipation of three days duration. In the placebo group 1 patient with a previous history of insomnia complained of the recurrence of the condition and another patient reported having constipation every other day for one week.

Comment

An analysis of the results indicates that in all but 2 patients a significant reduction of weight was achieved with diethylpropion. One of the patients who failed to lose weight was a forty-two-year-old woman who previously had been treated unsuccessfully with desiccated thyroid, amphetamine, and other medications. Although she claimed that her appetite was decidedly decreased with diethylpropion, she retained her weight. In the second patient who failed to lose weight, the drug produced no anorexic effect. Since the patient said that she could not reduce the amount of daily food intake, it is possible that the absence of the anorexic effect contributed to her failure.

TABLE III.—Different Patterns of Anorexia Produced by Diethylpropion and the Placebo in 28 Obese Patients

Patterns	Diethylpropion	Placebo
Early satisfaction during meals	4	...
Anorexia in intervals between meals	1	1
Early satiety and anorexia in intervals	8	3
No effect*	2	9

* The anorexic effect was considered a failure when the patient responded with irregular or no anorexia.

It is interesting to note that the patients could differentiate between the feeling of earlier satiety during meals and suppression of appetite in intervals between meals (Table III). It is possible that these two patterns are the results of the same anorexic effect, the latter being a delayed effect. In practice, the questioning of each patient for these patterns of anorexia may have a value concerning the timing of the medication for individual subjects.

The results of this study cannot be considered subjective impressions in view of the fact that the patients were informed in advance that this was an experimental study on a new compound with which we had no personal experience. Although the patients did not know which group had the active drug and which group had the placebo, there was a significant difference between the two groups concerning the numbers of individuals who responded with anorexia, the numbers of those with weight loss, and the amounts of weight loss in each group (Table I). This difference indicates the effectiveness of diethylpropion as a weight-reducing compound. Undoubtedly, the suggested dietary restrictions, although far from being rigid, played an important role in producing weight loss. However, the fact that both groups were under the same restrictions but revealed different results is indicative of an additional weight-reducing factor related to the presence of the drug in the one group. It is reasonably safe to assume that the weight loss is the direct result of inhibited appetite, since the drug produces no increase in the basal metabolic rate[1,2] and does not seem to increase the total daily consumption of calories as evidenced by the absence of any noticeable overactivity, both physical and mental, immediately following the administration of the drug.

Summary

Preliminary observations are reported on weight reduction using a new anorexic drug designated as diethylpropion. A total of 28 patients divided into two comparable groups were used; one group on active medication, the other on a placebo similar in appearance. Neither group was on a rigid caloric restriction. The average weekly rate of weight reduction was 1.26 pounds for patients who took diethylpropion, while for those who took the placebo it was 0.49 pound. The difference of weight loss between the two groups was significant statistically. No discernible adverse effect on the blood pressure or pulse rate was present. Leukocyte and erythrocyte counts, hemoglobin, and urinalyses showed no deviations from normal findings.

There were no serious side-effects and no symptoms referable to the central nervous system, that is, insomnia or irritability. Only 2 of the 15 patients who used the active drug had dry-mouth even of a mild degree. In no instance did a patient discontinue treatment because of any untoward reactions. The results of the present study indicate that with diethylpropion appetite can be curbed without stimulating the central nervous system.

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Medical Society of the State of New York
District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
I	May, 1961	. . .
II	October 26 and 27, 1960	Grossinger
III & IV	October 14 and 15, 1960	Schroon Lake
V	Spring, 1960	. . .
VI	September 28, 1960	Ithaca
VII	October 13, 1960	Corning
VIII	September 29, 1960	Jamestown
IX	May, 1960	. . .

Management of Constipation During the Puerperium

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CONSTIPATION is a frequent complication of pregnancy and one which is aggravated during the puerperium by the patient's fear that defecation may cause injury to the hypersensitive perineum. In hospitalized patients the unpopular second-day enema does not provide a satisfactory solution to the problem if for no other reason than that it adds to the demands on the time of already overburdened nursing staffs. Many of the laxatives in general use do not meet all the requirements of sound obstetric practice. Thus, it is well recognized that irritant purgatives are to be avoided, especially in nursing mothers. Bulk laxatives may cause bloating and fullness; the repeated use of saline cathartics is exhausting to the patient and may lead to laxative habituation; and mineral oil is esthetically undesirable and often difficult to take. Moreover, these latter forms of treatment are largely ineffective in the spastic type of constipation that is seen most commonly in postpartum patients.

In 1955 a new concept in laxative therapy was introduced by Wilson and Dickinson,[1] who directed attention to the usefulness of dioctyl sodium sulfosuccinate both in severe fecal impaction and in lesser degrees of constipation. The effectiveness of this agent for treating constipation is a consequence of its surfactant action. By lowering the interfacial tension between the intestinal fluid and the feces, the wetting agent enables water to penetrate and soften hard dry stools thereby greatly facilitating their passage through the colon and their expulsion from the rectum. Dioctyl sodium sulfosuccinate is nontoxic even when used over prolonged periods of time.[2] It causes no intestinal irritation, is not absorbed, and does not interfere with normal bowel function. Unfortunately, it is not of value in constipation arising from endocrine and neuromuscular changes, both of which have been shown to play an important role during pregnancy and in the puerperium.[3–5]

Material and Method

We have recently had an opportunity to evaluate a new bowel "normalizer" in which the valuable features of fecal softening agents are retained while their limitations are overcome. The preparation we have studied (Doxidan†) is a true synergistic combination of a superior new wetting agent, calcium bis-dioctyl sulfosuccinate, and a mild peristaltic stimulant, 1,8-dihydroxyanthraquinone, danthron. Calcium bis-dioctyl sulfosuccinate possesses more than double the surfactant action of the corresponding sodium salt, permitting a reduction in dosage without loss of efficacy. Through the action of the wetting agent the fecal mass is rendered soft and mobile so that it is propelled effectively along the colon by the gentle peristaltic stimulation resulting from a minimal dose of danthron. The advantages to the patient are manifold since the agent creates the least possible disturbance of normal physiologic function while providing positive and reliable laxative action free from the annoyance of oily leakage and the discomfort of bowel distention, pain, and cramping.

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* Deceased.

† Kindly supplied by Lloyd Brothers, Inc., Cincinnati, Ohio.

In our evaluation, one capsule (50 mg. danthron and 60 mg. calcium bis-dioctyl sulfosuccinate) was administered daily to each of 270 consecutive postpartum patients on the obstetric service of the Methodist Hospital of Brooklyn. The results were compared with those in a similar group of 220 postpartum patients who were given an emulsion of mineral oil with phenolphthalein, milk of magnesia, or cascara fluid extract. Careful records were kept in which were entered the frequency of bowel movements, the character of the stool, the incidence and nature of side-effects, and whether or not enemas were required (cases in which no bowel movement had occurred by the third day).

Results

In the group receiving the combination drug it was necessary to give an enema on the third postpartum day in only 22 cases (8 per cent). In contrast, 35 patients (16 per cent) of the group receiving ordinary laxatives required enemas when no bowel movement had occurred by the third day. The combination drug, therefore, was approximately twice as effective.

The decreased incidence of significant-unpleasant side-effects in the group receiving the combination agent was even more striking than the increased effectiveness. With the ordinary routine medicaments, patient acceptance was poor. However, the small, soft gelatin capsule containing the preparation was taken readily. Side-effects such as flatulence, cramping, and griping were notably absent.

In a dosage of one capsule a day, approximately two thirds of the patients experienced a single bowel movement per day, while in the remaining group one or more bowel movements occurred, especially on the second or third day. Looseness of the bowels was not a problem, however, since diarrhea occurred in only 1 of the 270 patients treated.

Conclusion

In postpartum patients we consider the combination drug superior to the agents we have employed previously in the treatment of constipation. Not only is it more effective, but also its use is associated with almost complete freedom from side-effects. The ease of its administration and the reduced nursing care required add to the value of this new therapy. The mild peristaltic stimulant action of the agent is limited to the large bowel, with the result that the normal physiologic stimulus to defecation is retained. The phenomenon of "rebound constipation" and the danger of subsequent habit formation are largely obviated by the use of this logical combination of a potent fecal softener with a mild peristaltic stimulant.

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Habit is a cable; we weave a thread of it every day, and at last we cannot break it.—Horace Mann

A Plan to Help Break the Nursing Shortage

A High School Prenursing Program to Develop Professional Nurses

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THE growing need for more and better nursing care is a serious cause for concern among all interested in the health of individuals and of the public at large. The shortage of professional nurses, at a time when advances in medicine require more nurses with skill, understanding, knowledge, discrimination, and sound judgment, may have dire consequences. The revolutionary changes in medical practice also foretell a still greater need for qualified nurses in the immediate future. Unless plans are formulated to alleviate the critical shortage of professional nurses, the entire pattern of patient care and doctor-nurse relationships may seriously suffer.

The several kinds of nursing programs which have been developed throughout the country reflect the interest and concern of those involved with recruiting and training nurses. The traditional three-year hospital program has been supplemented by the four-year degree program; the two-year community college program has complemented the four-year program. Yet despite these developments the professional nurse shortage remains acute.

There are many factors which contribute to this shortage. In addition to those associated with the increased demand for professional nurses necessitated by medical advances and a growing population, there is the failure of present nursing programs to attract and retain more young persons. In schools of nursing about one third of those admitted fail to graduate, an attrition rate of about 33 per cent.[1] The majority of drop-outs occur during the first year.

The high school prenursing program as outlined in this paper is intended to overcome these shortcomings. It is not designed to dilute the effectiveness of the already established programs or to interfere with their existence. On the contrary, it is designed to contribute to their success. Among the purposes of the high school prenursing program are the recruitment of student nurses and retaining them throughout the training period.

Coincidental with these purposes is the evidence it may supply of the need for establishment of a high school of medical arts where young men and women interested in medical or hospital work—nursing, x-ray, medical and laboratory technic, physical therapy, rehabilitation, and so forth—could get their preparatory training.

The incorporation of a prenursing program into the high school curriculum would be consistent with contemporary secondary school curriculum design, since it is a practice of secondary schools to begin professional or vocational training of young men and women before graduation. Furthermore, there is sufficient precedent for colleges and professional schools to grant advance standing credit for certain approved courses completed at the high school level. The *New York Times* on Sunday, March 13, 1960, reported, "At present 560 secondary schools are offering college-level courses for able students, and advanced placement for such studies is being given by about 400 colleges.

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In addition, a number of colleges are permitting high school seniors to enroll in regular courses while completing their last year of school. Last year, 5,825 students took the advanced placement tests of the College Entrance Examination Board." The granting of advance standing credit for completion of a preprofessional nursing program in high school would be in keeping with the trend among professional schools and colleges today.

The exposure of students to a variety of curricula gives them an opportunity to explore, investigate, and become familiar with vocational disciplines, as well as to discover their own potential for success in selected vocations. Student nurses should be offered a similar opportunity through the introduction of a preprofessional nurse training program into the high school curriculum.

The high school training program for nursing education, therefore, has the following objectives:

1. The recruitment of student nurses.
2. The introduction of specialized educational training for nurses at the high school level.
3. The elimination of those who do not have the mental and physical qualifications required of nurses before they go on to hospital or college-level work.
4. The redirection of students who may not qualify for the hospital or college program into other branches of nursing or public health.
5. The reduction of attrition among student nurses.
6. The possible reduction of the hospital program from three years to two and one-half years or even two years.
7. The introduction of the requirements and demands of nursing as a profession to new students.

The recruitment of nurses should be facilitated because high school students will be periodically reminded at program planning time that nursing is one of the elective curricula. The presence of a qualified professional nursing education staff on the high school faculty will make it possible for students to have direct contact with nurses who could guide them and enrich their knowledge about nursing. This association with nurses should act as a stimulant to kindle an interest in nursing as a profession.

The introduction of preprofessional courses during the senior year will be a boon to professional schools of nursing. Young men and women seventeen and eighteen years of age are sufficiently advanced educationally and emotionally to pursue basic nursing education courses in high school, thereby enabling them to spend more time in advanced areas of study during their professional training period.

The high school program will provide an opportunity to identify those students who may not have the mental and physical qualifications to meet the demands of professional nursing. The discovery of even a small percentage of those students who do not possess the essential requirements will save time, money, and energy for both the student and the nursing school.

The introduction of a preprofessional nursing program at the high school level should significantly reduce the attrition among nursing school students. Students will learn about professional nursing requirements, demands, rewards, and hardships. This early orientation will enable them to determine whether or not they wish to continue with nursing as a profession. Since only those who have a positive reaction to nursing will desire to continue their nursing education, the withdrawal rate should be reduced.

Students who decide to discontinue their studies toward the R.N. may find outlets in other branches of nursing, such as practical nurse and nurse's aide programs. As a result practical nurses and nurses' aides would be better trained.

The high school experiences in specialized course work may make it possible to reduce the traditional three-year hospital program to two and one-half or even two years. The student nurse, who boards at the hospital,

TABLE I.—Suggested Curriculum for High School Preprofessional Nursing Program

First Term	Second Term	Third Term	Fourth Term
English	English	English	English
Algebra	Algebra	Geometry	Geometry
General Science	General Science	Biology	Biology
Civics	....	....	World History
Language	Language	Language	Language
Fifth Term	Sixth Term	Seventh Term	Eighth Term
English	English	English	English
Intermediate Algebra	American History	American History	Nursing Course
Chemistry	Chemistry	Nursing Course	Nursing Course
World History	Economics	Nursing Course	Nursing Course
Elective	Elective	Nursing Course	Nursing Course

spends most of her time during the first year in concentrated study of nursing subjects. This first year of professional school studies may be partially replaced or supplemented by the work completed during the senior year in high school.

High school students could study required biologic, physical, and social sciences, including nutrition courses, during their last year of high school. Arrangements could also be made with local hospitals to offer coordinated clinical instruction. These courses completed in high school could be applied toward the fulfillment of nursing school requirements for graduation. Furthermore, students who decide not to train for professional nursing will still have the necessary course requirements for admission to liberal arts colleges. Those who decide not to continue any formal education beyond high school will have received training which will make them better parents, wives, and homemakers.

A typical four-year curriculum for a high school student interested in professional nursing is shown in Table I. The senior year (seventh and eighth terms) provides for as many as seven half-year courses in the nursing curriculum. It is also possible to include hospital clinical experience. If it is not feasible to allow time for clinical work during the senior year, it could be done during the summer immediately following graduation. The high school nursing faculty will be responsible for the supervision of students in the clinical area selected.

Students should be selected on the basis of interest, ability, and aptitude, and they should have the necessary scholastic standing. They should be subjected to the required achievement and aptitude tests given by the various professional schools. It will also be necessary for the high school guidance counselors to plan programs of study for these students so that they meet the basic requirements for admission to professional schools of nursing.

The success of the high school program depends on the cooperation of high school guidance personnel and hospital and college nursing training administrators. Although there are many implications to the program, those which should receive careful attention are as follows:

1. The program is dependent on a well-trained, highly qualified faculty in nursing education.
2. The curricula of hospital and college programs will have to reflect the prior training received by the high school students.
3. The nurse education program at the high school level is designed to select students with academic backgrounds and with an interest in professional nursing as a career.
4. The student will pursue a normal academic program until the senior year of high school, for it is only at that time that the specialized nurse training courses will be offered.
5. The faculties of the high school nursing program will have to be in close communication with the local college or hospital school in order to effect harmonious coordination and to eliminate overlapping services.

6. The preprofessional nursing courses in the high school should be approved by the National League of Nursing and the State Education Department before they officially become part of curriculum.

In summary, it is quite obvious that one year of nursing education at the high school level will serve several purposes. The student will be introduced to nursing without the initial "shock" of being removed from home to hospital. The first year's educational phase will be accomplished under normal school conditions. The student will have an opportunity to appraise the desirability of pursuing the nursing profession as a lifelong career. The high school experiences in specialized course work may make it possible to revise the traditional hospital program from three to two and one-half or even two years. With such a program, recruitment will be facilitated and, perhaps most important, by retaining a greater number of better oriented and motivated students who complete their professional nursing education, the current critically small supply of qualified professional nurses will be increased substantially.

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ANNUAL CONVENTION

Medical Society of the State of New York
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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

*Insurability in Heart Disease**

ALBERT A. POLLACK, M.D., NEW YORK CITY

(*Medical Director, Mutual Life Insurance Company of New York*)

THE correct estimation of a risk in terms of mortality and morbidity is a challenging problem to the insurance underwriter. The physician of a patient with a cardiac disturbance may tend to be optimistic and view his patient's status in the best light. On the other hand, the vast quantities of medical mathematic analyses which are compiled by the insurance companies, reflecting general experience with each kind of impairment and free of personal factors, may contradict the physician's favorable prognosis of his patient's state.

Impairments are graded according to their severity, duration, and history and in many other ways. It is important for both the patient and the physician to realize that risk selection is based both on the facts of the individual case and on the general experience with large groups of persons with similar impairments. Once established, the contract terms are binding on both parties.

Determination of Insurability

The risk classification given to each applicant for insurance is based on the applicant's medical history and on the medical findings. Each classification is assigned a rating, which, in effect, is the ratio of the actual to the expected mortality. The applicant then is rated, according to standard mortality statistics, on the effect of his medical impairments on his longevity. Certain conditions may not permit accurate assessment at the time of examination, and in such instances the applicant sometimes is assigned a temporary rating and after an appropriate interval is re-evaluated. The disappearance of the defect or its lack of progress beyond certain minimal levels usually results in a more favorable rating and thus in the reduction or elimination of the increased premium charge.

If clinical questions appear to be unanswered or if differences of opinion on insurability exist between the findings of the attending physician and those of the insurance company physicians, the applicant may be referred for consultation to a car-

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* The material in this paper is based on consultations with the medical staffs of several insurance companies as well as on the practices of the Mutual Life Insurance Company of New York.

TABLE I.—Mortality Ratios Suggested by the 1951 Impairment Study of the Society of Actuaries[1]

	No Associated History (Age–Years)		History of Rheumatism, Chorea, or Rheumatic-Type Infection (Duration–Years)			
Type of Murmur and Valvular Lesion	10 to 40	Over 40	To 3	3 to 7	7 to 10	Over 10
Pulmonic systolic, not transmitted	100	100	175	150	150	150
Systolic apical, tricuspid or precordial inconstant, not transmitted	100	100	400	285	245	215
Systolic basic inconstant, not transmitted	100	100	285	245	215	175
Systolic apical, constant, not transmitted	150*	100	400	285	245	215
Pulmonic systolic widely transmitted, congenital	215	215	285	245	215	215
Mitral regurgitation, apical or precordial systolic, transmitted to left	215	175	400	285	245	215
Mitral stenosis, apical or precordial diastolic or presystolic	500	500	D†	D	500	500
Mitral regurgitation and stenosis	500	500	D	D	D	500
Aortic stenosis, rough aortic systolic, transmitted upward with aortic second sound weak or absent	285	215	D	500	400	285–215**
Aortic stenosis suspected, constant, not transmitted, not characteristic	215	215	400	285	245	215
Aortic regurgitation, soft diastolic blow from base downward along sternum, aortic insufficiency	400	400	D	D	500	400
Aortic stenosis and regurgitation	500	500	D	D	D	500

* If the examiner is well qualified and gives the opinion that the murmur probably is not organic, the case may be approved as standard.

† Declined insurance since mortality ratio is over 500.

** Higher rating for younger ages. Declined insurance if under age fifteen.

diologist of established reputation. When indicated, electrocardiograms and roentgenograms may be repeated, and occasionally stress tests, such as an exercise tolerance test, may be performed.

The decision in any insurance case always is based on the findings in the case and on the actuarial data as expressed in terms of mortality ratios or disability ratings. These designations serve a statistical function and often appear to be at variance with the conventional clinical prognosis; hence, they have no place in clinical practice. When this is fully realized by physicians and by their patients who apply for insurance and when there is a clear understanding that the awarding of an insurance policy is a business transaction in which the applicant and the carrier accept the conditions specified in the contract, much of the confusion and controversy that too frequently attend these matters will disappear.

A traditional misconception is that all patients with cardiac defects are categorically ineligible for insurance. In fact, the practice of insurance companies in granting coverage to patients with various heart lesions is to keep pace with the continual improvements in the management of such patients.

Types of Heart Disturbances

Rheumatic and Congenital Heart Disease.—The vast majority of patients with rheumatic heart disease are eligible for life insurance. They merely pay an additional premium reflecting the increased statistical risk.

Table I gives the mortality ratios suggested by the 1951 Impairment Study of the Society of Actuaries[1] for the different types of murmurs and for specific valvular lesions. As an example, an applicant with mitral insufficiency or with a systolic murmur at the apex which is transmitted to the axilla has been found to belong to a group with a mortality ratio of about 200; this means that the death rate per thousand for such individuals will be twice that expected from a comparable group of normal individuals.

The apical diastolic murmur of mitral stenosis has a mortality ratio of about 500. A history of cardiac enlargement, congestive heart failure, or certain arrhythmias usually is enough evidence to bar a patient with rheumatic heart disease from all types of insurance. Aortic stenosis has a mortality ratio of 400 if it is caused by rheumatic fever and only of 200 if it is a result of arteriosclerosis. The mortality ratio of aortic insufficiency is 400. Pulmonic stenosis usually is classified with simple congenital heart lesions, such as patent ductus arteriosus and atrial septal defects, which are considered to have a mortality ratio of about 300. However, the congenital heart lesions which are more complicated, such as a patent interventricular septal defect, tetralogy of Fallot, or other multiple congenital anomalies, currently are not insurable. A prominent right ventricular outflow tract, usually the result of pulmonary hypertension or some disease of the pulmonary valve, technically is an enlarged heart. However, it usually is considered a congenital anomaly and has a mortality ratio of about 300.

Most insurance companies grant insurance to individuals with coarctations of the aorta or patent ductus arteriosus who have undergone repair of the condition if there is a complete return to normal of cardiac functions, but after the repair of interventricular septal defects or valvulotomies patients currently are not insurable. However, studies of the latter types of cases are being made, and soon some such patients will be insured on an experimental basis. As a rule, accident and sickness insurance and hospitalization insurance are not available to those with rheumatic heart disease.

Coronary Occlusion.—Today life insurance is offered at an increased premium in certain instances of well-healed coronary occlusion. The standards observed in these cases are dictated largely by recent experience[2] and of necessity will change with medical progress in this field. Some of the present criteria are:

1. The applicant should have suffered no more than one attack and should have no residual insufficiency.

2. The applicant must have been working full time for at least twelve months at the time of examination for insurance.

3. He must not have been disabled for more than six months at the time of the attack.

4. The applicant's weight and blood pressure must be normal for his age and body build at the time of examination.

5. The electrocardiogram does not necessarily have to be normal but it should be stable, showing no acute changes since the recovery.

Any associated impairments, such as peripheral occlusive arterial disease, eyeground changes, or a history of congestive heart failure, disqualify the applicant for insurance. The average mortality ratio of persons with coronary occlusion has been found to be 400 regardless of the person's age. Accident and sickness insurance and hospitalization insurance usually are not available to applicants with coronary artery disease.

Chest Pain.—Episodes of chest pain of undetermined cause which were severe enough to have required the attention of a physician pose a very difficult underwriting problem. These occurrences are frequently diagnosed as myalgia, neuralgia, chest wall pain, and so on.

Standard insurance usually is issued if the applicant has had no attacks for at least one year and if the electrocardiogram was normal at the time of the pain and a current tracing shows no change. The underwriter in deciding on the insurability of this type of case often must rely largely on the observations and opinions of the physician in attendance at the time of the episode. If, in retrospect, the patient's physician believes that the attacks were indicative of coronary insufficiency, the applicant usually is refused the insurance. The insurance examiner invariably is asked to re-evaluate the diagnosis, but in deciding whether to accept or reject the application the impressions of the attending physician of necessity are given more weight than the current appraisal.

If an applicant has had chest pain within a year of the application, it is the practice of most insurance companies to add a slight additional premium for at least a year even if the electrocardiograms and the physical examination findings are normal. This is to cover the possibility of coronary artery disease that has not yet progressed sufficiently to be detected by changes in the electrocardiogram. If after one year the patient has had no further episodes of pain and no changes in the electrocardiogram, it seems reasonable to assume that coronary disease is absent. Again, it should be stressed that insurance companies may differ from each other in their actions in individual cases, the decision depending on the experience of the particular company in these types of cases. In general, insurance companies are guided by the over-all statistical data representing the general experience.

Electrocardiogram Abnormalities.—Individuals who have electrocardiographic abnormalities but no past history of chest pain or any cardiac illness are much easier to evaluate since there is no need to rely on subjective symptoms or clinical impressions. Perhaps the most common abnormalities are a prolonged P-R interval (0.24 second or greater) and an incomplete right bundle branch block (in which the QRS duration is 0.12 second or greater, with the greatest duration usually in the upward rather than in the downward deflection in lead I). In the clinical evaluation of an individual case both of these abnormalities usually are regarded as benign, but actuarial studies have shown them to be a hazard for insurance purposes since they give the individual a mortality ratio of about 150 per cent, that is, one and a half that of normal.

Arrhythmias.—Arrhythmias may present difficult problems in the determination of a rating. Frequent premature ventricular or auricular contractions whose frequencies remain the same or increase after exercise have been statistically analyzed, and different ratings have been assigned. However, since these calculations were made on the basis of averages, it often falls on the medical underwriter to find the proper rating group for a particular case. Here again, the clinical impressions of the attending physician play an important role.

Applicants who have had more than one episode of auricular flutter or auricular flutter-fibrillation are not insurable. Interestingly, it has been found that after a period of five years an otherwise healthy individual who has had only one episode of auricular fibrillation is considered a standard risk. Until an electrocardiogram reveals the diagnosis, these occurrences usually are thought to represent paroxysmal tachycardia. Paroxysmal tachycardia in the absence of other signs of heart disease carries a mortality ratio of 175 if there are no more than four attacks within a year.

Hypertension.—Although perhaps not the most common cardiovascular impairment seen in life insurance medicine, the one most widely discussed is hypertension. Pollack, McGurl, and Plucinski[3] reviewed 2,500 cases of substandard insurance for elevated blood pressure. They found that lability of blood pressure was not a significant factor in the mortality from hypertension. The mortality ratios were about the same for the labile as for the nonlabile groups in which the systolic and diastolic pressures were analyzed separately. Thus, the average degree of elevation in blood pressure was as significant as the range of variation.

Hines[4] reported on a twenty-year follow-up survey of 1,522 patients with hypertension and found that a diastolic pressure of 85 mm. Hg was the critical level and that a higher diastolic pressure was frequently followed in later years by the development of clinical hypertension. Master, Garfield, and Walters[5] found that blood pressure in both sexes normally rises with age. Bolt, Bell, and Harnes[6] found that women with hypertension have a consistently lower mortality rate than do men of comparable age and blood pressure levels.

Much study has been done and many words have been written in an attempt to define the normal blood pressure. Actuarial statistics set the normal blood pressure at a lower level than clinical impressions of this imaginary status.[2,6] The mortality ratio is above normal when the systolic pressure is over 140 mm. Hg and the diastolic pressure is over 88 mm. Hg.

Types of Coverage

Disability.—In instances in which an insured individual qualifies medically for disability benefits, a question sometimes arises as to the period of the disability. There is no doubt that the duration may depend to a considerable degree on the particular patient, the type and severity of the disease, the extent of the loss of function, and the attitude of the patient. For example, an acute coronary occlusion of any but the mildest variety results in at least three months of total disability; whether or not the disability benefits continue thereafter depends on the degree to which the patient's activity is affected and on the degree of angina pectoris, congestive heart failure, or, in some instances, even anxiety.

In many instances of cardiovascular impairment it is extremely difficult to evaluate the extent of the disability since the functional nature of the disease is crucial. Anxiety is perhaps the most difficult factor to evaluate. Cardiovascular disease creates some degree of anxiety; even well-adjusted individuals who have heard or read about their particular disease become somewhat apprehensive. It certainly is best for the patient to extend his activities, but he should do so gradually. As he becomes increasingly successful with each endeavor, he learns that he can do more and more until finally he is functioning at full capacity with confidence. It is merely a matter of the patient's learning that when he functions his disability will decrease.

Many insurance companies cooperate with the attending physician in a program aimed at getting these patients back to work. This attitude is shared by industrial organizations which obtain modern medical advice. For example, 19 such organizations questioned by Lee *et al.*[7] stated that it was their policy to return an employe to work after his recovery from a "heart attack." The willingness to give the patient with a cardiac ailment a chance to resume work encourages a return of confidence, a state of mind which is very important in the rehabilitation of those who have suffered a disability. However, most persons work in small industries, and unfortunately these industries are not equipped financially to assume the necessary after-care until the patient is able to perform all of his duties.

Accidental Death Benefits.—Many life insurance policies contain double indemnity clauses which call for payment of twice the face amount of the policy if the insured individual dies as a result of an accident. The death must have occurred independently of all other causes and have been the direct result of the accidental bodily injury. The insurer does not assume this risk when the death has been caused or contributed to by any disease process or, for that matter, by any circumstance either incompatible with the accident or as the result of a risk specifically excluded in the insurance policy. It is especially important in evaluating the cause of death involving an accident to assess properly the possible role of a preexisting disease, such as arteriosclerotic or rheumatic heart disease.

Group Insurance.—Most group insurance plans in which more than 50 lives are involved do not require medical evidence of insurability. In instances in which a small number of employes are involved, insurability is determined for each individual. In both types of group plan a minimum number of people must be covered.

From Table II it is obvious that although the number of claims is about the same for each listed type of insurance plan, the cost of circulatory diseases is greater in the group plans for which no evidence of insurability is required.[8] There is no doubt that in combined medical care and insurance programs those with cardiac disturbances increase

TABLE II.—CLAIMS FOR DISEASES OF CIRCULATORY SYSTEM IN THREE TYPES OF INSURANCE PLAN*

Type of Plan	Amount (in Dollars) of Circulatory Claims	Number of Circulatory Claims	Total Number of Claims for Plan
Group[8], †	368,845	182	1,053
Disability	32,607	73	1,018
Hospitalization	9,954	42	1,093
TOTALS	411,406	297	3,164

* For men only.
† Evidence of insurability not necessary.

greatly the cost of this protection. These individuals are productive and thus can be of use so that some employers will assume this extra burden. Although the carrier does not give a lower rate to an employer who does not employ individuals with cardiac disturbances, this employment practice reflects as a saving to such an employer since premium rates in large group coverages fluctuate according to the cost of the administration of the plan. It is for this reason that many large companies which offer major medical care to their employes are denying employment to individuals who have some type of heart disease.

In an industry with a good medical department individuals with certain types of cardiac disturbances can be hired and given selected jobs, for they can be carefully followed at regular intervals by the industrial physician. Such individuals certainly will benefit from this type of medical supervision, and industry also will benefit from it because it will have loyal, grateful workers in those whom it has helped to return to gainful employment.

Some companies hire persons with heart disease but put a waiver or exclusion in their insurance; that is, they will cover all illnesses except heart disease or the specific heart ailment. If an employe should have serious effects from a waivered illness, other employes might resent the fact that the insurance program did not account for this. There are inequalities as well as benefits that result from hiring cardiac patients.

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Conducted by PATRICK J. FITZGERALD, M.D. OCTOBER 30, 1958

Discussed by PERRIN H. LONG, M.D.

Systemic Manifestations and Roentgenographic Findings in a Case of Scleroderma

Case History

WARREN GLASER, M.D., and SUN HAK CHOY, M.D.: A twenty-six-year-old Negro housewife was admitted to Kings County Hospital in December, 1956, because of painful swelling of the joints for the previous two months. She had been well until two months prior to admission, when she developed a severe sore throat and noted the onset of swelling and pain in many of the joint areas. Initially she awoke to find her hands "coiled up," and "the fingers had to be pried apart." Subsequently her shoulders and knees became involved, and at the time of her admission her hands, wrists, ankles, and feet were affected. On her arising the involved joints were stiff; the pain would subside during the day and return at night. She was treated at a local hospital with aspirin, tripelennamine (Pyribenzamine), and penicillin with no relief resulting.

Three weeks before her first admission to Kings County Hospital the patient experienced a sensation as of food being stopped retrosternally when swallowed. Two weeks before admission she had several episodes of crampy abdominal pain which were relieved by bowel movements. For the previous two months the patient felt tired and sleepy, had frequent chills, and perspired profusely at night. The day before admission she noted a postnasal drip and developed a cough which was productive of green sputum. There was no pleuric pain or hemoptysis.

The patient had had good general health until the present illness and had no knowledge of having had rheumatic fever, scarlet fever, nephritis, diphtheria, pleurisy, or asthma. For many years she had hay fever during the early and late summer periods. She had frequent sore throats all her life, and her tonsils were said to have been lanced when she was seven years old and again when she was fourteen years old. Two years before admission she developed a rash between her fingers, and the condition then was diagnosed as an allergy dermatitis due to household detergents. She was said to have broken out in a rash when exposed to tomatoes. Four years prior to admission the patient was delivered of a seven-month stillborn fetus with no postpartum complications, and the following year she gave birth to a healthy male infant.

For many years both of her parents were suffering from rheumatism. An uncle who visited her occasionally had been treated for pulmonary tuberculosis three years before her admission. Before she met him her husband also had been hospitalized for tuberculosis. There was no family history of Bright's disease, heart disease, hypertension, stroke, diabetes mellitus, goiter, obesity, gout, or mental disorders.

The physical examination revealed the patient to be a well-developed, well-nourished Negro female with a temperature of 101.4 F., pulse 94 beats per minute, respirations 22 per minute, and blood pressure 126/68 mm. Hg. There was swelling, heat, and marked tenderness of the right ankle and foot. The remainder of the physical findings were unremarkable except for the fact that the pulmonic second sound was louder than the aortic second sound.

A chest roentgenogram revealed prominence of the pulmonary artery segment. X-ray films of the extremities revealed no abnormalities of the bones or joints. The electrocardiogram had normal tracings except for low T waves in leads V_5 and V_6. Other laboratory examinations showed a very strongly positive reaction (1:2,048) to sheep cell agglutinins, a positive latex fixation test result, and a positive C-reactive protein finding (1 plus to 2 plus). The trichinella skin test, serologic tests for syphilis, and lupus erythematosus preparations gave negative results. The complete blood count was normal except for 9 per cent eosinophilia. Urinalysis showed a 1 plus glycosuria. The total serum protein was 7.4 Gm. per 100 ml. with an albumin-globulin ratio of 2.9:4.5. The uric acid content of the blood was 4.7 mg. per 100 ml. The blood chemistry values otherwise were within normal limits.

The patient was treated with aspirin, diphenhydramine hydrochloride (Benadryl hydrochloride), and penicillin with ensuing slow improvement of her joint symptoms. She developed a reaction to penicillin, and it therefore was replaced by erythromycin (Ilotycin). In spite of the therapy she continued to run a low-grade fever, and on her discharge six weeks after admission her temperature was 101 F.

About one week after discharge the patient came to the clinic because of the recurrence of joint pains. She was found to have pitting edema of the legs, hepatomegaly, a diastolic gallop, and moist rales in both lung bases. She was given an injection of the sodium salt of meralluride combined with theophylline (Mercuhydrin). When she was admitted to the hospital two days later, there were no signs of congestive heart failure.

On her second admission the patient had a temperature of 103 F. and signs of pneumonitis in the lower right lobe. The heart showed a soft systolic murmur at the apex and a split pulmonic second sound which was louder than the aortic second sound. There were swelling, heat, and pain on motion of the wrists and the proximal interphalangeal joints of both hands. A papular eruption was noted on the face, both arms, chest, and abdomen.

Laboratory tests revealed a hemoglobin of 10 Gm. per 100 ml. and a white cell count of 7,700 which by three days later increased to 16,300. There was a positive reaction to sheep cell agglutination (1:256). The latex fixation and C-reactive protein tests both gave positive results. The erythrocyte sedimentation rate was 22 mm. per hour (corrected). There were 2 to 10 per cent eosinophils on a peripheral blood smear. Urinalysis revealed 1 plus to 2 plus glycosuria. The fasting blood sugar was 175 mg. per 100 ml., and the glucose tolerance curve was compatible with diabetes.

The patient was given tetracycline (Achromycin) and aspirin. She became afebrile in a few days, and on serial chest x-ray films clearing of the pneumonic densities was evident. Her joint manifestations also subsided, and she was discharged three weeks later on a low-salt diabetic diet.

For one year subsequently the patient was followed at the arthritic and medical clinics. She was given a course of gold therapy in the spring of 1957 and subsequently was placed on prednisone (Meticorten) 10 mg. daily and chloroquine. She did well and had only a few episodes of stiffness of her knees and of her hands, a sensation which usually lasted for one day.

In March, 1958, the patient was readmitted to the hospital because of increasing edema of the ankles, exertional dyspnea, and paroxysmal dyspnea during the previous three weeks. Acetazolamide (Diamox) was administered, from which she had a good remission. Three weeks prior to the third admission she noted a gradual onset of progressive ankle edema and shortness of breath. There was no history of chest pain, orthopnea, or palpitation. During the prior winter she had had minor episodes of pain in her fingers lasting for a few days and headaches and blurring of vision lasting for a few hours. Her voice had been hoarse for about two years.

On physical examination the patient appeared to be somewhat lethargic. Her temperature was 100 F., pulse 140 beats per minute, respirations 20 per minute, and blood pressure 95/65. There was an eruption which was distributed symmetrically over the face and extensor surfaces of the forearms. It consisted of aggregates of papules 2 to 3 mm. in diameter with whitish centers and hyperpigmented margins. Many were confluent, and the surfaces were dry and scaly and showed no vesiculation or discharge. The patient dated the appearance of the rash on her arms back to the penicillin reaction during her first admission in 1956 and stated that since then the condition had not changed significantly. The papular rash noted on her chest and abdomen during her second admission apparently had disappeared. The facial rash had appeared initially on her forehead, where it was first noted at the clinic about one year previously and from which it had since, in the space of two months, spread to her entire face. The patient attributed this to the gold therapy. Within the month before the third admission she noted the bilateral appearance of a similar rash on the index finger and thumb. Generally the rash was nonpruritic except for a period ten months previously, when it itched considerably.

The eyes and ocular fundi were unremarkable. One observer noted enlargement of the lacrimal glands. The buccal mucosa was clear, and the pharynx was hyperemic. There was marked distention of the neck veins with filling from below. The trachea was in the midline, and the thyroid was not palpable. A few small, soft lymph nodes were present in the posterior cervical regions.

The chest was symmetrical with fair excursions. There were moist rales in the lungs at an area over two thirds of the distance up from the bases posteriorly with normal breath sounds. The heart was markedly enlarged to the left and moderately to the right. There was sinus tachycardia with occasional premature ventricular contractions. A diastolic gallop was heard over the entire left side of the precordium. The heart sounds were of poor quality. The pulmonic second sound was greater than the aortic sound, and the mitral first sound was greater than the mitral second one. A pericardial friction rub was heard in the fourth intercostal space 6 cm. to the left of the sternum only at the time of admission. There were no murmurs.

The abdomen showed moderate distention with shifting dullness. The liver edge was palpable 10 cm. below the right costal margin and was tender; the tip of the spleen also was palpable. There were no other palpable organs or masses. The extremities and the presacral region showed marked pitting edema. The peripheral pulses were present and were equal bilaterally. The reflexes were hypoactive but symmetrical. Examination of the joints revealed moderate limitation of motion of the wrists with swelling and tenderness but without heat or redness. There also was limitation of motion of the interphalangeal joints of the second and third fingers bilaterally without any rheumatoid deformity.

A dermatologic consultant was doubtful that the rash was caused by gold or penicillin. He suggested that the lack of free mobility of the skin over the distal phalanges of the right hand might be the result for sclerodermatitis, and that the papular lesions could not be diagnosed clinically although they strongly resembled sarcoid.

Laboratory examination revealed a urine with an albumin of 1 plus to a trace, which subsequently cleared, and with 1 plus glycosuria on many occasions. The blood had a hemoglobin of 12 to 13 Gm. per 100 ml. and a white cell count of 9,000 to 11,000 with a differential of 80 per cent polymorphonuclears, 20 per cent lymphocytes, and no eosinophils. Initially the erythrocyte sedimentation rate was 50 mm. per hour, but repeated determinations gave lower readings ranging from 3 to 11 mm. The hematocrit was 45. The stools gave a guaiac-negative result.

Blood chemistry determinations for blood urea nitrogen, fasting blood sugar, chloride, carbon dioxide, sodium, potassium, calcium, phosphorus, alkaline phosphatase, and bilirubin were all within normal limits. The albumin-globulin ratio ranged from 2.6:5.3 to 3.4:4.3 (Gm. per 100 ml.). The thymol turbidity was 12, 13, and 14 units. The bromsulphalein test showed 10 per cent retention in forty-five minutes. Serum electrophoresis revealed a highly elevated gamma globulin. The serologic test for syphilis gave a negative result. The latex fixation test result was strongly positive. The antistreptolysin titer was greater than 2,500 units; subsequently it dropped to 1,250 units. The Coomb's test result was negative, and the test for C-reactive protein also gave a negative result. The patient gave a negative reaction for cold agglutinin, and the heterophil agglutination was 1:28.

Blood cultures repeatedly gave negative findings (at a magnification of four times). Stool cultures showed no enteric pathogens. Throat cultures revealed an occasional hemolytic streptococcus. A lupus erythematosus preparation gave a negative result (at a magnification of three times). Purified protein derivative cultures in first and second strengths yielded negative results at forty-eight hours. The Frei test, sickle cell preparation, and determinations for cryoglobulin and macroglobulin all gave negative results. The bone marrow had 5 per cent plasma cells; otherwise it was normal.

The electrocardiogram showed a regular sinus rhythm at 140 beats per minute with occasional premature ventricular contractions. The P-R interval was 0.21 second, and the QRS complex was 0.10 second. There were absent R waves in leads II, III, aVf, and V_1 through V_4. Subsequent tracings for about three weeks showed similar findings, after which time R waves reappeared in all leads mentioned and a pattern of right bundle branch block was evident. At various times coupling, ventricular premature contractions, dropped beats, and Wenckebach's cycle were demonstrated. The chest x-ray film showed marked enlargement of the heart without specific chamber enlargement and an infiltrative process and pleural thickening in the lung bases. X-ray films of the hands showed only mild demineralization of the bones and no abnormalities of the joints.

The patient was placed on strict bed rest and a low-salt diet and was given full doses of digitalis, chlorothiazide (Diuril), and prednisone 40 to 60 mg. daily. She responded with marked diursis, losing 40 pounds of weight during the first two weeks. The heart rate slowed to 100 beats per minute, and she became afebrile. However, the patient developed a gallop rhythm and became toxic to relatively small doses of digitalis. The edema and pulmonary rales disappeared completely. The hepatomegaly decreased somewhat but persisted (6 cm. below the right costal margin), and the splenomegaly disappeared. In May the patient showed psychotic signs and symptoms, and the prednisone was reduced to 30 mg. daily. In June the patient developed a spiking temperature to 103 F., and a few days later she suddenly went into shock. She recovered following the intravenous infusion of glucose and saline with levarterenol bitartrate (Levophed bitartrate) and Solu-Cortef and cautious digitalization; her blood pressure returned to the previous level in eight hours. Four days later the patient suddenly expired.

The final diagnosis was systemic disease of unknown etiology.

Discussion

Perrin H. Long, M.D.: The history of this patient is a very interesting one. The patient was a young Negro woman who in her childhood, adolescence, and young adult life had tonsillitis on a number of occasions. When a history reveals that the tonsils were lanced, we can assume that the patient had a peritonsillar abscess, which I like to call a quinsy, which was drained. Another characteristic of the young woman's life prior to her admission to the hospital is that she had hay fever and other manifestations of an allergy disease, such as the fact that she was said to be sensitive to tomatoes.

The patient complained of a bad sore throat for two months prior to her admission. She had joint pains and swelling in many of the multiple joints involved. It was said that she had to have her fingers pried apart. Whether or not that meant that there was very much pain or stiffness, I do not know. She also had trouble getting out of bed in the morning because she was stiff. She was treated with aspirin and tripelennamine with no relief resulting. She finally came to Kings County Hospital.

When she came to the hospital it was found that she had fever and a somewhat rapid pulse but a normal blood pressure. There was some swelling and tenderness of the right ankle and foot and of both wrists and hands; there was no tenderness in the left ankle and foot. The chest x-ray films showed some prominence of the pulmonary artery. Other x-ray films were normal, and the electrocardiographic tracing was essentially normal.

The other laboratory examinations which were done showed that the patient had strongly positive sheep cell agglutinins, a positive latex fixation, and a moderately positive C-reactive protein. A number of tests gave negative results, such as the trichinella one, the serologic tests for syphilis, and the lupus erythematosus preparation. It was found that she had 9 per cent eosinophils. Throughout her subsequent history she had a varying number of eosinophils except for one occasion, and on every other admission her serum proteins and globulin were elevated. I will say no more about this because it is one of the puzzling features of this case.

After the patient arrived at the hospital, she was treated with aspirin and diphenhydramine hydrochloride instead of with tripelennamine and penicillin. This is interesting because, after all, she was given essentially the same therapy at another hospital and it did her no good there. As it turns out, neither did it do her any good here, for six weeks later she still had a fever of 101 F. She had been treated with penicillin, and then the antibiotic was changed to erythromycin. I am a little puzzled as to why she was receiving penicillin and erythromycin except for the fact that I suspect that it was thought that she had rheumatic fever and that this was an attempt to eliminate a beta-hemolytic streptococcal infection. But if that is what the clinicians had in mind, I am also puzzled why no one at that time did an antistreptolysin titer; there is nothing in the protocol to this effect. It is one of the determinations in which I would have been very much interested even though all the other tests bearing on rheumatoid arthritis were done and in spite of the negative roentgenographic findings of the fingers, joints, and so on. The one test result that I like to see in rheumatic fever is that of the antistreptolysin test.

The patient went home and returned in a week because she had joint pains again with pitting edema of the legs, a large liver, a diastolic gallop, and rales at both bases—meaning that she had pretty severe heart failure. She was given an injection of the meralluride-theophylline combination, and, much to my surprise, when she returned to the hospital two days later it is stated that the edema fluid had disappeared completely. There was no sign of congestive heart failure, which is pretty good for one injection of meralluride-theophylline, but she had a temperature of 103 F. and some evidence of pneumonia in her lower right lobe.

She was readmitted to the hospital, and at the time of this admission her heart had a soft systolic murmur at its apex and the second pulmonic sound was louder than the second aortic sound. Throughout the patient's course it was stressed that the pulmonic sound was larger than the aortic sound, but it is a finding which I would expect in a young woman of this age; therefore, I do not believe that it has any real bearing on the diagnosis. The protocol goes on to say that there was swelling and pain in both wrists and in the interphalangeal joints of both hands and a papular eruption on both arms, the face, the chest, and the abdomen.

On the second admission the patient's white cell count ranged up to 16,000. The patient appeared to be slightly anemic. There was a new finding; she apparently had mild diabetes on this admission, a suspicion which was confirmed by a glucose tolerance test. She was given aspirin and tetracycline, and in a few days she became afebrile. The pneumonia cleared after three weeks. The patient was discharged on a low-salt, diabetic-type diet.

Then she apparently was referred to the arthritic clinic, where she received a course of gold. This would tend to make one believe that at that time the physicians caring for her seemed to think that she might have some form of arthritis. Then she was placed on prednisone and chloroquine. These drugs also were given to her because her physician wondered if she had arthritis. She did pretty well in the spring of 1957, having only a few episodes of stiffness in the knees and hands.

In March of 1958, which is about a year later, the patient again was admitted to the hospital, this time because she had heart failure for a week or longer and because she became increasingly edematous with exertional dyspnea and paroxysmal nocturnal dyspnea. For several months she had been receiving acetazolamide in the outpatient department to reduce the edema, but apparently the therapy was not successful. If a young woman like this patient really did have paroxysmal dyspnea, I would be wondering, regardless of the cause, whether or not she had concurrent aortitis. There is no history of chest pain, but there is a history of paroxysmal nocturnal dyspnea, which makes me wonder.

On physical examination the pulse rate again was elevated. The patient's temperature was 100 F., and her blood pressure was low. She was not in real shock, but she was lethargic and had a low blood pressure. Also, she had a rash, a papular eruption over her face and over the extensor surfaces of her forearms. She blamed the rash on the penicillin that she had received in 1956 and on the gold therapy. The rash was nonpruritic with the exception of itching ten months previously.

There were no other findings of real significance on this physical examination until we come to the chest, and there we find that the patient had moisture in both bases and that her heart was very much enlarged to the left and moderately to the right. There was tachycardia and a diastolic gallop, and the heart sounds were of poor quality. The first mitral sound was greater than the second one. A pericardial friction rub in the fourth intercostal space was heard for the first time, and there were no murmurs. This is important. The fact that there were no murmurs has intrigued me throughout my deliberations on this case. She had anasarca, as evidenced by free fluid in her lungs, fluid in her abdomen, and a large liver. She probably had some enlargement of the spleen and pitting of the presacral area and of the extremities. There is no question of her again being in heart failure, and she had moderate limitation of motion of the wrist, swelling of the joints, and tenderness but without heat and redness. Limitation of the interphalangeal joints of the second and fourth fingers bilaterally without a rheumatoid deformity was found.

A dermatologic consultant ventured the opinion that the skin lesion looked like sarcoid. I am amazed that during his examination he did not snip off one of the lesions. The usual practice of dermatologists is to do so for a biopsy examination. No biopsy of the skin lesion was taken, I presume. Is that correct, Dr. Glaser?

Dr. Glaser: Yes.

Dr. Long: We look at the laboratory findings and note that the patient had a little albumin and a trace of sugar in her urine. The hemoglobin level was fairly normal. There were no eosinophils. The hematocrit was within normal limits. Most of the blood chemical values were normal. Here again there was the high reversed albumin-globulin ratio. There was some increase in the thymol turbidity, and the bromsulphalein test showed 10 per cent retention. Again I do not know whether or not these findings mean anything because the protocol does not state whether or not the patient had any edema at the time these tests were done. If the patient had a large swollen liver and edema, it was ridiculous to do the blood bromsulphalein test. Neither would I have done the other liver function tests because a large, wet liver in heart failure invalidates the results of many of the tests so that there is nothing but abnormal readings, and, of course, they don't mean a thing. A serum electrophoresis showed a highly elevated gamma globulin. For the first time we now know that the high level of globulin that was recorded was gamma globulin.

During the patient's final stage she had an elevated antistreptolysin titer (greater than a dilution of 1:2,500 and subsequently 1:1,250), a strongly positive latex fixation result, and a negative C-reactive protein finding. These findings are peculiar, and actually they do not make sense. The C-reactive protein test is a test of broad antigenicity and does not mean anything in certain effects. There are many conditions in which the result is positive, depending on the circumstances. Because the antigens that can be found in a number of normal persons and in a number of disease states are known, I said broad antigenicity. The purified protein derivative in first and second strengths gave a negative result, and the cryoglobulin determination was negative. The bone marrow showed 5 per cent plasma cells and otherwise was normal.

The electrocardiogram, which I will consider briefly, obviously reveals that the woman had diffuse myocarditis and that her heart was failing. Just prior to the patient's death there were two interesting findings. One is that there was an infiltrated process at the base of her lung and only mild demineralization of the bones and no abnormalities of the joints. We are thus presented with a two-year history of symptoms with no changes in the joints, which could occur in rheumatic fever. The patient was put to bed and given full doses of digitalis; she was sensitive to the digitalis and went in and out of digitalis poisoning. She was given chlorothiazide and was placed on prednisone. She had marked diuresis and lost 40 pounds of weight, and her heart slowed to 100. She became afebrile, but she had a gallop rhythm and difficulty in tolerating the digitalis. The edema was resolved completely. The liver remained somewhat enlarged, but the spleen returned to its normal size.

Then it is stated that because of the prednisone the patient began to develop signs of emotional disturbances so that the dosage of the prednisone had to be reduced. During the next month she developed fever. Two days later she went into shock, a state which in this case I interpret as a very low blood pressure and a rapid pulse. Levarterenol bitartrate, or noradrenalin, was administered to elevate the blood pressure, and a corticoid preparation and digitalis were given. The blood pressure returned to its previous state. Four days later the patient suddenly died.

Harry Z. Mellins, M.D.: The chest film taken in 1953 shows a prominent pulmonary artery segment, which is not unusual in asthenic women and may have been due to rotation of the heart on its vertical axis, an action which brings the pulmonary conus to the left so that it is border-forming. It is not certain that this picture is not pathologic, but one always has to consider the possibility that it is normal. At that time the lung markings in the middle third or central third of the lung field were within normal limits, and the remainder of the lung field appeared to be clear.

By 1956 the heart shadow had increased in size. There still was prominence of the pulmonary conus. There was some increase in the vascularity of the lung, but the increase was not very marked. There also was poor definition of the diaphragm, such as that seen in the early stages of pleuritis. There was a small amount of fluid or pleural reaction, which makes the definition of the domes of the diaphragm very poor.

Early in 1957 the patient showed essentially the same findings. There was prominence of the pulmonary artery and evidence of pleural effusion or pleural reaction on the left side and probably also on the right side with further slight enlargement of the vascular markings in both lungs. The lateral film shows the irregularity of the diaphragm, a picture which very often is evidence of a pleural change. In June of 1957 the heart was larger still, and the vascular markings in both lung fields were quite prominent. The films show a fine irregular prominence of both lung fields and prominent vascularity, again with bilateral pleural reaction.

By 1958 the heart was decidedly enlarged. To the best of my ability to notice these changes, there was a nonspecific cardiac enlargement accompanied by increased vascularity of the lungs and by a pleural reaction. The possibility that there was a pericardial effusion at that time had to be considered because many of the characteristic curves of the normal heart outline were lost. These films were made with a barium swallow and cardiac fluoroscopy for evidence of specific chamber enlargement. Although there was slight posterior enlargement, produced by the displacement of the left atrium, I cannot be certain that this enlargement was a specific chamber enlargement, for example, secondary to mitral disease. Rather, generalized enlargement of the mitral chamber together with that of all the chambers is seen. There is an increase in size of the right ventricle, as indicated by the loss of retrosternal space, and a probable increase in the size of the left ventricle, as shown by the displacement downward and outward of the left apex. There is evidence of pneumonitis in the right base and of vascular irregularities that were seen previously.

The last chest film that was taken prior to the patient's death shows prominence of the pulmonary artery segment, indicative of or suggestive of pulmonary hypertension; generalized cardiac enlargement; considerable prominence of the vessels to the periphery; and additional evidence of change in the right lung base. There is evidence of scarring; whether there would have been infarction in that area as a result of the vascular disease of the lung or whether the scarring was within the parenchyma, I cannot state.

We look at the hands, keeping in mind that they are of a person who over a period of three years had generalized cardiac enlargement together with evidence of pleural effusion, possible pericardial effusion, and increased vascularity of the lung fields. We are thinking in terms of a collagen disease and notice that the hands show one change which was not recognized on the original readings. I would think that the bone changes are in the limits of normal. I am not able to consider this a punched-out lesion, as one gets in sarcoid. However, I would like to call attention to the fact that in January of 1957 there was no evidence of soft tissue calcification around the joints, such as one sees in rheumatoid arthritis, but that by April of 1958 there was definite periarticular calcification; I think that an x-ray film shows that. I believe that in the distal interphalangeal joint of the right hand a calcification is evident, which is periarticular in character, and it can be seen in several other joints.

Dr. Long: There was no destruction of the joints?

Dr. Mellins: There was no destruction of the joint surface, but there was periarticular calcification in the region of the lateral collateral ligaments of the joint. This is a fairly unusual finding for a person of this age. If I had to explain these findings, I would say that of the collagen diseases that might give the lung picture of this patient, scleroderma and dermatomyositis, particularly the latter, should be strongly considered in the differential diagnosis.

Dr. Long: Clinically this patient showed some changes that correspond very strongly with rheumatic disease and some findings that coincide very well with sarcoid. Other aspects of her clinical course could be explained by periarteritis nodosa. She also had certain findings suggestive of scleroderma, such as the tightening of skin around the fingers and the calcium around these joints.

The final clinical diagnosis that went into the record was a systemic disease of unknown etiology, which shows the difficulty that all the consultants had in arriving at a diagnosis. I must say that with the clinical data that I have on hand I cannot tie the case into a neat package. I will have to say that the patient's condition belongs to the group of collagen diseases and that this woman died of one of them. Obviously she also died of heart failure, and she had extensive myocarditis. I do not know just what was revealed at autopsy since there was not much valvular injury. The patient died of heart failure, but what caused it? I think that if I would suggest a diagnosis it would be a pure guess; therefore, I would rather wait for the pathologic findings.

Patrick J. Fitzgerald, M.D.: The clinical record gives none of the findings that Dr. Mellins described, such as the calcium.

Robert C. Austrian, M.D.: I saw the patient during the course of her illness and was very perplexed, even more so than Dr. Long is. I thought that she probably had a diffuse form of arthritis with the myocarditis as the most prominent feature of her illness. I could not exclude sarcoid from consideration, although I believe that in this instance this condition is less likely.

Question: I would like to ask Dr. Mellins whether or not any of the barium entered the stomach while the esophagrams were being taken. As far as I could see from the three projections of the esophagus that were shown, none of the barium entered the stomach. Am I correct? If that is the case, I think that scleroderma would also have to be considered.

Dr. Mellins: The esophagrams were done for cardiac examination, and so the films that we have are underpenetrated for the abdomen. I do not know if some of the barium did enter the stomach. The patient was examined by fluoroscope, and no mention was made to the effect that the barium did not enter the stomach. On the other films we can see that there was barium within the stomach. Of course, these films were done with the patient in the upright position. If the diagnosis of scleroderma is to be ruled out, one would have to see whether or not the esophagus emptied in the horizontal position. It would have emptied in the vertical position because of gravity, and it would not have emptied in the horizontal position because of the lack of peristalsis.

Samuel L. Solomon, M.D.: I would like to comment on the confusing laboratory test results that Dr. Long mentioned, namely the strongly positive latex fixation and sheep cell test results and the slightly positive and subsequent normal C-reactive protein. The sheep cell test is much less sensitive but much more diagnostic for rheumatoid arthritis than the latex fixation test, and the fact that the sheep cell test result became normal while the test result for latex fixation remained positive militates against the disease being a rheumatoid one and somewhat against its being disseminated lupus. The fact that the latex fixation test gave a stongly positive result is indicative of two possibilities: (1) the presence of an abnormal amount of globulin in the gamma or (2) scleroderma.

Dr. Fitzgerald: Do you care to choose between the two alternatives?

Dr. Solomon: On the basis of the data presented, it seems that scleroderma is more likely.

Dr. Fitzgerald: The student diagnoses are as follows; disseminated lupus 13, periarteritis 10, rheumatic fever 1, subacute bacterial endocarditis 1, rheumatoid arthritis 2, scleroderma 1, heart failure 1, sarcoidosis 1, and multiple myeloma 1.

Diagnoses

Clinical.—*Systemic disease of unknown etiology.*

Dr. Long.—*One of the group of collagen diseases, giving rise to extensive myocarditis and heart failure.*

Anatomic.—*Scleroderma with involvement of the upper extremities, face, myocardium, and endocardium; (2) myocardial decompensation; and (3) bronchopneumonia.*

Pathologic Report

Dr. Fitzgerald: I will discuss only the positive autopsy findings. At autopsy the papulomacular dermatitic lesion of course was evident. It was present bilaterally on the posterior surfaces of the forearms, the elbows, and the cheeks. The serous cavities were essentially normal. The only finding of major interest in terms of the weight of organs was the heart, which weighed 500 Gm. One certainly would expect this from the clinical and roentgenographic findings. Essentially the aorta was normal except for a few small, white, raised plaques about 2 mm. in diameter. The lungs were within normal upper limits, weighing 1,400 Gm., and were described as having only a few areas of consolidation and a few emphysematous areas. The spleen was slightly enlarged in the upper limits, weighing about 200 Gm.; the liver was slightly enlarged, weighing about 2,000 Gm. The kidneys and all the other organs were completely normal.

There was nothing very striking in the gross picture of the heart except for a few strands of fibrosis along the papillary muscles. There was some diffuse fine subendocardial scarring and the possibility of some scarring in both ventricles. I think that this is clearer in the connective tissue stain; the pale gray-blue indicates fibrosis in the subendocardial area and extending into the myocardium. The fibrosis was fairly extensive and essentially subendocardial in some areas. It also surrounded the subendocardial regions of the papillary muscles in some areas of both ventricles and was rather diffuse in the myocardium. It was patchy in several areas not necessarily connected with the endocardium.

The subendocardial changes were rather minimal; the more extensive changes appeared in the myocardium. There were large focal areas or diffuse strands of connective tissue that can be seen at this level. In the histologic sections on higher magnification fine fibrils of collagen extending throughout the musculature, associated fibrosis, the disappearance of myocardial filaments, the appearance of atrophy, and the disappearance of muscle fibers are evident. There was proportionally more connective tissue. These presumably were emphysematous blebs, seen by the prosector, which were characterized by cystic areas in the periphery of the lungs with some areas of fibrosis and some patchy areas of bronchopneumonia. These are characteristic lesions. The musculature of the heart at higher power shows some cellulosity, apparently secondary to the atrophy necrosis of the muscle; replacement by connective tissue; and some cells. As the elaboration, the replacement of mature collagen, and the hyalinization occur, there are old scars. The process was relatively young, and there was some cellular infiltrate. This is not primarily an inflammatory lesion.

The lesion seen at biopsy was defined as a relatively nonspecific lesion. There was some atrophy of the muscle and a cellular infiltrate in the interstitium. This lesion, which caused much difficulty in diagnosis, was recorded as possible dermatomyositis or scleroderma since it had some features that are nonspecific and that would be consistent with both of these diagnoses. There was some plugging of the follicle with keratin. Cellular infiltrate and increased collagenization was seen. Again there was more subacute chronic dermatitis, which to our minds certainly is not pathognomonic.

There was atrophy of the skin appendages, a condition emanating from the back of the hand. There was some hyperkeratosis, but, in general, the skin condition was characterized by a flattening of the epithelium and a marked increase of collagen tissue. There was a hyalinized old collagenous lesion which was not entirely specific; it was characteristic first of scleroderma and second of the old healed dermatomyositis although the muscle component was not illustrated.

The lung lesion and the heart failure aided considerably in the diagnosis. As far as we are concerned, pathologically this is a fairly typical case of scleroderma with involvement of the heart and secondary myocardial decompensation. The lung lesions aid us considerably because this particular cystic lesion of the lung has not been described, at least to my knowledge, in dermatomyositis.

Scleroderma was first given publicity in 1896, when Hutchinson pointed out its association with Raynaud's phenomenon. The next advance did not come until 1924, when Matsui[1] carefully examined 6 patients at autopsy. He described muscle degeneration and progressive interstitial sclerosis. He also mentioned some vascular changes including arteriosclerosis. Since then, not much has been added to the pathologic description. In 1944 its association with dysphagia gained prominence as a result of Hale and Schatzki's[2] work in the Massachusetts General Hospital. Schatzki pointed out that most of these patients have difficulty in swallowing and that about 50 per cent show a progressive lack of propulsive force at about the middle of the esophagus. In 5 recent cases Dowling[3] was able to show this lack of propulsive force in the esophagus. This is an important feature of scleroderma.

In 1924 Matsui described the renal findings in scleroderma, and Talbott and Gull of the Massaschusetts General Hospital showed the intralobular changes, the arteriosclerosis, and the necrotizing arteritis. In 1931 Rake[4] of Johns Hopkins described the small bowel and colon lesions. Since then, they have been confirmed as important lesions in some cases of scleroderma. These lesions were not seen in the patient under discussion. In 1945 Goetz[5] compiled a list of the changes in the heart. Fairly characteristic of the disease is diffuse fibrosis scattered throughout both ventricles. In some cases the auricles have been mentioned as being involved. The big disagreement has been over whether the atrophy of the muscles occurs first and is followed by fibrosis or whether this is a progressive disease with sclerosis of the connective tissue and with the muscle fibers caught in the sclerotic process so that they become strangulated and atrophic and consequently die. I do not believe that this problem can be solved morphologically.

One feature of the disease is the muscle changes. There may be marked necrosis, atrophy, and hyalinization of muscle. The big problem for the pathologist is the differentiation between scleroderma and dermatomyositis. There are three schools of thought on this subject: (1) the two diseases are separate entities, (2) they are the same disease, and (3) they are stages of a different process.

It even has been suggested that this condition might be called a mesenchyme disease. The term collagen is a very poor one because, as Paul Klemperer, M.D., has pointed out repeatedly, most of the lesions grouped under this term do not have a primary collagen defect. There are defects in other components, and certainly the muscular component is extremely important so that technically this condition should not be considered a collagen disease. It might be better to label this a mesodermal disease. I think that the term "progressive mesodermal sclerosis" is a good one for either or both of these entities.

The only really significant difference between these two disease entities, and it is a fairly clear-cut one, is that in dermatomyositis distal involvement of the heart and lung is quite unusual. A few such cases have been described, but the experts will argue that these cases are instances of scleroderma and not of dermatomyositis. In a high percentage of cases of scleroderma there is gastrointestinal, cardiac, or lung involvement. An interesting fact is that in about 10 per cent of cases of dermatomyositis there is associated carcinoma in some portion of the body. In a review of the literature of 600 cases of scleroderma, Dowling[3] did not find 1 case of cancer. A few cases of concurrent cancer have been reported, but Dowling insists that they were instances of dermatomyositis. There are clear-cut clinical and pathologic differences but not in the nature of the muscle changes. There has not been much progress in the understanding of either of these diseases. The only recent research in this field that seems to be of much value is that which is being done by means of the electron microscope; it has been found that in scleroderma the collagen fibrils are normal and that probably the defect is in the ground substance.

The final diagnosis of our patient as far as we can determine is scleroderma with involvement of the upper extremities, face, myocardium, and endocardium. This is not primarily an endocardial disease. One would assume the changes to be secondary to dilatation and hypertrophy because there was no real resemblance to fibroelastosis. There was relatively little elastica, and the changes in the cardium appeared to be minor because of early involvement. The cystic lesions in the terminus of the lungs were not specific but were fairly characteristic of this disease; some consider these lesions to be bronchiolar changes, and others, such as Gordon Henninger, M.D., consider them to be due to diffuse fibrosis with cystic dilation. In the liver, focal necrosis, which was much more extensive than the acute hemorrhagic necrosis of the cardiac lesion, and a small abscess 2 cm. in diameter were found by the prosector. The abscess was filled with pus. I do not know whether or not this explains the patient's terminal increase in fever and shock. It certainly was not the overwhelming cause of death. She had some bronchopneumonia.

I believe that the best clinical descriptions of dermatomyositis and scleroderma and good reviews of the subject are those by Dowling,[3] Goetz,[4] and Getzowa.[6]

Question: What is the relationship between the biopsy specimen and the initiation of steroid therapy, and what alterations in the histopathologic picture do steroids produce?

Dr. Fitzgerald: I do not recall the chronologic data of our patient in this regard. In general, in almost every lesion steroid therapy creates extensive difficulties in the histopathologic diagnosis, for example, the case of Boeck's sarcoid reviewed here a few weeks ago in which we were fortunate that at least one nodule that showed the lesion was available. Steroids promote healing and by that token reduce the specific findings.

Dr. Long: I have very little to say except that even if we had known the results of the biopsy which was taken we would not have been very much better off, because it is obvious that it took quite a bit of cogitation to come up with the diagnosis of scleroderma. Dr. Mellins probably came closest to the diagnosis, for the roentgenographic character of the lesions in the fingers that he describes occurs in scleroderma.

Dr. Fitzgerald: They occur in both scleroderma and dermatomyositis with equal frequency, do they not?

Dr. Mellins: Yes.

Dr. Fitzgerald: Would you expect to see the cystic changes?

Dr. Mellins: I was pointing to it in the right lung base. It is interesting that in my notes there are two descriptions. Had I really read my notes, I think that I would have chosen the correct description of the pulmonary manifestations. Under scleroderma the process is recorded as a collagen disease with diffuse fibrosis, emphysema, suggestions of honeycomb changes in the bases and soft tissue, and calcification in the limbs. Under dermatomyositis is listed diffuse nonspecific cardiac enlargement and soft tissue calcification. I fell the wrong way.

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THE PHYSICIAN IN CIVIL DEFENSE

***A series of articles prepared by Solomon Garb, M.D.,
Secretary, Medical Education for National Defense (MEND)
Committee, Albany Medical College***

Survival in a Thermonuclear War

III. Important Aspects of Nuclear Radiation

SOLOMON GARB, M.D.,* ALBANY, NEW YORK

ATOMIC radiation is a force with which few people have any real familiarity. Its major importance at the moment lies in its ability to kill and maim. Although it might be helpful if people understood more about atomic radiation, this article will have to be restricted to those minimum aspects which must be understood to plan intelligently for personal and family survival.

There are several types of atomic radiation, but all have at least one important thing in common. They cannot be seen, heard, felt, or in any way sensed by human beings until the damage has been done. Special instruments are required to detect them.

Types of Radiation

The types of radiation with which we are concerned are alpha particles, beta particles, gamma rays, and neutrons.

ALPHA PARTICLES.—Alpha particles are identical to the nuclei of helium atoms. They have a relatively high mass and charge and very poor powers of penetration. Probably a few inches of air, a layer of clothing, or even the outer horny layer of skin can stop them. Therefore, alpha particles from outside the body itself present no hazard. However, if enough material which emits alpha particles should be swallowed or inhaled, the particles could cause serious internal damage and sometimes even death. The ordinary Geiger counters and radiation survey meters do not pick up alpha particles. Special instruments are needed for this purpose.

BETA PARTICLES.—Beta particles are the same as electrons. They are somewhat more penetrating than alpha particles. They cannot cause damage at a distance, but if they come from materials on the skin they can cause serious burns. Like alpha particles, they are most dangerous if emitted internally from radioactive material which has been swallowed or inhaled. Some Geiger counters have so-called "beta windows" which enable them to measure beta activity.

GAMMA RAYS.—Gamma rays are related to x-rays. They can travel for miles through the air and through several feet of most materials. They can kill even if the material emitting them is some distance away.

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* United States Public Health Service Senior Research Fellow, SF-11.

They can be picked up and counted by Geiger counters and various radiation survey meters.

Neutrons.—Neutrons are particles found in atomic nuclei and have no electric charge. Because of this, they can penetrate many materials. When they hit nuclei of certain atoms they can knock out other neutrons just as a billiard ball can transmit its energy to another billiard ball. As a result, even a thick layer of steel may not give good protection against neutrons. However, damp earth and concrete, because of their content of water, will protect. The exact mechanism is complex and need not be described here. It is discussed in detail by Glasstone.* Neutrons are not picked up by ordinary radiation detection instruments.

Some Commonly Used Measuring Units

The dangers from all of these nuclear emanations depend on the total amount that has been received. Thus, it is important to have some understanding of the measuring units and of some of the terms in use. No attempt will be made to explain the technical aspects which are discussed in physics textbooks.

The Roentgen and the Milliroentgen.—A commonly used measuring unit is the roentgen, often abbreviated to r. A roentgen can be defined roughly as the amount of x-ray or gamma-ray radiation which will form 1.16×10^{12} ion pairs when absorbed in 1 Gm. of air. However, for practical purposes, it is enough to consider it merely as a standard unit of measurement. In many cases, a smaller unit is needed, and so there is the milliroentgen, or milli r. It is one thousandth of a roentgen. At sea level we usually receive about one tenth of a milliroentgen per day or about $2^1/_2$ roentgens from cosmic rays in the usual seventy-year lifetime.

The roentgen and milliroentgen have certain drawbacks in terms of defining effects on living organisms; therefore other units have been developed also. It is useful to know what these units represent.

The Roentgen Equivalent Physical.—The roentgen equivalent physical (rep) is a unit based on and roughly similar to the roentgen. Because of certain technical difficulties it is being used less and less. A millirep is one thousandth of a rep.

The Rad.—A rad is a more precise measurement of the absorbed dose of radiation. It too can be considered as roughly equivalent to the roentgen for civil defense purposes. A millirad is one thousandth of a rad.

The Relative Biologic Effectiveness.—The relative biologic effectiveness (R.B.E.) differs with the various types of radiation. Alpha particles hitting the skin do practically no damage, but alpha particles radiated from materials swallowed or inhaled produce much more damage than the equivalent number of rems or rads in gamma rays. The R.B.E. for alpha particles emanating from within the body is about 20, meaning that 1 rep of alpha particles will produce about as much damage as 20 reps of gamma rays coming from the same source. The R.B.E. of beta particles is about 1, and the R.B.E. of gamma rays averages about 1 with a little scatter above and below. Neutrons from hydrogen bomb explosions probably have an R.B.E. of about 1.7.

The Roentgen Equivalent Man.—A unit of measurement which is being used more and more is the roentgen equivalent man (rem). In the future, it will probably supplant the roentgen, rep, and rad for civil defense purposes. The rem is defined as the dose in rads multiplied by the R.B.E. The millirem is one thousandth of the rem.

For practical civil defense purposes, when we refer to gamma radiation, we can use the terms roentgen, rep, rad, and rem interchangeably, but not when discussing alpha particles, beta particles, or neutrons.

When a radioactive material emits radiation, it changes or "decays" into another material. Sometimes the product of decay is itself radioactive, but eventually the radioactive material decays to a stable element which does not emit any radiation. The time taken to decay to one half of the original mass is called the half-life. If a material has a half-life of one day, only one half of it will remain at the end of the first day, one fourth at the end of the second day, one eighth at the end of the third day, one sixteenth at the end of the fourth day, and so forth. Half-lives may vary from about one millionth of a second to thousands of years. Fortunately, in most cases, the elements which produce large amounts of radiation have a short half-life so that they only present a serious threat for a relatively short time.

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* Glasstone, S.: The Effects of Nuclear Weapons, Atomic Energy Commission, Washington, D.C., United States Government Printing Office, 1957.

When a hydrogen bomb is exploded as many as 40 different radioactive materials are produced, with differing half-lives. From studies of test explosions, the ratio of decay of radioactivity of these materials has been determined. For practical civil defense purposes, it is sufficient to remember that the radioactivity decays to one tenth of its previous level with every sevenfold increase in elapsed time. The base is customarily the radiation level at one hour after explosion. Thus, if the radiation level at one hour is at the rate of 1,000 r per hour its level at later times will be as follows:

Elapsed Time	Radiation Rate (r Per Hour)
1 hour	1,000
7 hours	100
49 hours (2 days)	10
343 hours (2 weeks)	1
14 weeks	0.1

This emphasizes the importance of protection during the first two days.

Our present knowledge of the dangerous effects of radiation is incomplete but should be fairly reliable as a general guide.

A total body dosage of less than 50 r will probably have little noticeable effect. With a dose of between 50 and 250 r there will be some radiation sickness but no deaths. As the dose increases beyond 250 r deaths will increase in frequency, and at about 450 r, half of those exposed will die within one month. At about 750 r, almost all those exposed will die.

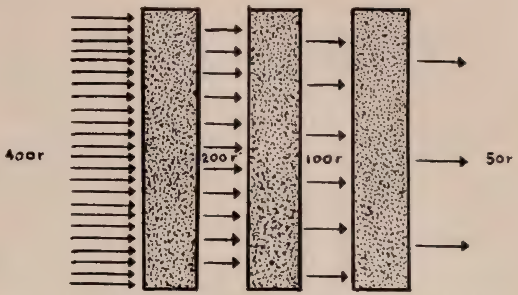

FIG. 1. Diagrammatic representation of half-thickness principle.

Those who receive doses of over 200 r but survive will be sick and weak for long periods of time. Although an acute dose of radiation is somewhat more dangerous than prolonged chronic exposure, all exposures are cumulative for a lifetime. Thus, if a person received 10 r each week to his entire body, he would probably die within one and a half to two years.

Protection against external radiation can be accomplished by interposing sufficient material between the radioactive source and the person. In general, the ability of materials to reduce the passage of gamma rays depends on the mass of the material. The heavier the material, the better the protection. Usually, the degree of protection for a particular type of ray is given in terms of a half-thickness. For example, if the half-thickness of a material for fallout gamma rays is 1 inch, then a 1-inch thickness reduces the radiation to one half, 2 inches to one fourth, 3 inches to one eighth, 4 inches to one sixteenth, 5 inches to one thirty-secondth, and so forth (Fig. 1). The half-thicknesses of materials suitable for bomb shelters is given in Table I.

Protection against radiation from inhaled or swallowed radioactive material can be obtained only by keeping such inhalation or swallowing to an absolute minimum.

TABLE I.—Approximate Thickness in Inches of Materials Needed to Reduce the Amount of Radioactivity from Fallout

Substance	Reduction to One Half	Reduction to One Thousandth
Steel	0.7	6.7
Concrete	2.2	23
Packed Earth	3.3	36
Water	4.8	50
Wood	8.8	90

In addition to the direct hazards of radiation there is the indirect hazard of injuring the germ cells so that future generations will bear congenital defects. Here our knowledge is extremely limited. It is believed that the risk is directly related to the amount of exposure, and that even amounts of radiation which do not cause illness can injure generations yet unborn. For this reason, it is advisable to avoid exposures as much as possible, even if the risk of death has passed.

A special hazard comes from radioactive strontium-90. This material has a half-life of twenty-eight years and so it remains dangerous for a very long time. It is so similar to calcium that if swallowed it is picked up by the bones. It then releases beta particles which tend to produce bone cancer. Children with growing bones are most susceptible. Fortunately, it may be possible to reduce considerably the amount of strontium-90 which might be absorbed.

(*Number three in a new series on the Physician in Civil Defense*)

"Cluster Headache" Called Type of Migraine

Repeated daily attacks of migraine headache are actually a specific type of migraine—"cluster headache."

Also called "Harris's migraine" after the man who first systematically described the condition, "cluster headache" occurs after weeks of freedom from pain. A bout usually lasts for weeks, with the patient having at least one attack daily.

Other characteristics of the condition, as described in an editorial in the October 31 *J.A.M.A.*, are:

—The patient is more often a man than a woman (between two and four to one) and between the ages of thirty and fifty years, although first attacks have been reported in patients as young as eleven and as old as fifty-nine.

—The attacks of pain are intolerable, but their duration is relatively short—minutes to an hour. The constant boring or throbbing pain is at the outer side of the eye. It may spread to the remainder of the cheek, the forehead, the scalp, and occasionally, the neck.

—The pain usually affects the same side repeatedly, in fact, the same spot. Most attacks occur on the right side.

—In contrast to the more usual migraine where the patient prefers to lie down and pull the covers over his head, the cluster headaches, he cannot recline and usually must pace. There seems to be a relationship between the pain and the muscular activity that it causes.

—The attacks tend to occur at the same time of day or night, most frequently between 2:00 and 3:00 A.M.

—The bouts recur irregularly and then may cease after occurring for years.

—Most patients have previously had the more classic form of migraine, which is replaced by the Harris form.

Preventive treatment consists of regular injections of ergotamine tartrate, a drug commonly used in oral form for the treatment of regular migraine. The patient is taught to give himself the injections daily for five days in each week. The two free days allow the patient to determine whether the bout of pain has ceased.

Another interesting fact about this "variant of the galaxy that is migraine" is that the patient cannot tolerate alcoholic drinks during a bout, presumably because of the alcohol's dilating effect on the blood vessels of the head.

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.D., *Editor*

The Bureau of Nutrition of the New York State Department of Health

JOHN H. BROWE, M.D., M.P.H., ALBANY, NEW YORK

THE study of man as he is affected by his food has always been of great concern to human beings. Many ancient dietary regulations have been found not to have had a scientific basis, although in some instances they have been shown to be good public health practice. Superstitions forbade the use of particular foods for some people under various circumstances. In addition, folklore prescribed the use of certain herbs as remedies. Hippocrates encouraged moderation in eating. Some dietary recommendations, such as liver for night blindness, were appropriate prescriptions for deficiency diseases. But this was all empiric.

In the latter part of the eighteenth century, Lavoisier's classic experiments laid the foundation for our present understanding of caloric requirements and expenditures including the increase in caloric expenditure due to increased physical activity. Digestion and absorption were studied. Foods were analyzed for protein, fat, and carbohydrate, with protein considered of prime importance. Then came the realization that certain nutrients are essential because they cannot be synthesized by the body. The systematic employment of known nutrients in the diets of experimental animals resulted in the discovery that previously unidentified factors were necessary for a minimum adequate diet in the rat. From this was developed the concept of deficiency diseases.

Further investigations showed the effect of suitable and sufficient amounts of vitamins and minerals, in addition to calories, protein, fats, and carbohydrates on the growth and development of experimental animals. This knowledge of nutrition was then put to use for the benefit of those groups in the population most in need of it, infants and children. It was quickly realized that such knowledge would also be helpful for mothers.

It is interesting to note that in the early 1920's Massachusetts and New York became the first two states to create the position of nutritionist in their health departments. These first nutritionists were placed in the maternal and child health unit and were given the responsibility for the dietary instruction of pregnant women and of infants and children. This origin of nutrition services is reflected in the fact that nutritionists are still in the maternal and child health services in about half the state health departments in this country.

Just as it was realized that a knowledge of nutrition could operate for the benefit of the mother as well as for the child, it soon became evident also that nutritional support was of importance to all members of the population.

While in no way minimizing the importance of nutrition in maternal and child health, nutritionists were called on for teaching and consultation for other groups in the population, not only for those who were well but also for those who were suffering from illness and other conditions that had become a public health concern. All of this brought about an increase in the number of positions for nutritionists throughout the country, higher professional standards, and, in several instances, the creation of separate nutrition units in health departments so that nutrition services could be made generally available.

In 1948, the nutrition section in the Bureau of Maternal and Child Health, Division of Medical Services (now the Division of Special Health Services) in the New York State Department of Health was made a separate bureau, and a public health physician with special training in nutrition was named full-time director. The number of nutritionist positions was increased from five to eight, and provision was made for professional advancement. A position of consultant to institutions was also established. A training program to provide public health experience for persons with a master's degree in nutrition was initiated to insure a well-qualified staff. In 1956, the five senior public health nutritionist positions were assigned to each of the five regional offices of the State Health Department so that there could be resident nutritionists in Buffalo, Rochester, Syracuse, Albany, and White Plains.

Meanwhile, responsibilities had multiplied and had become more complex as the implications of new nutrition knowledge became apparent. Nutrition services, which heretofore had been limited to children who were tuberculosis contacts, to the promotion of good growth and development of children, and to nutritional support in pregnancy, expanded to include the prevention of deficiency diseases, therapeutic nutrition, and the study of the role of nutrition in degenerative diseases. It is now acknowledged generally that what is in the diet can be just as important as what is not in the diet.

Objectives

One of the objectives of the State Health Department and of the local health departments is to prevent and remedy those conditions in well and sick people which are related to deficiency—excess and imbalance of nutrients. The activities of the Bureau of Nutrition are designed to assist the health departments in developing and improving their public health programs in this regard. The team approach, in which nutrition is integrated with the various public health disciplines in the solution of health problems, is basic to the activities of the Bureau.

In support of the objectives of health departments, one objective of the Bureau is, through education, consultation, and research, to provide assistance to health departments and other groups in the development and improvement of their health programs. Other groups include: State departments, such as Mental Hygiene and Social Welfare; voluntary health agencies, such as visiting nurse associations, tuberculosis and heath associations, heart chapters, home care programs, and homemaker services; and professional organizations, such as hospital associations, dietetic associations, public health associations, and nutrition committees and councils.

A second objective is to assist in the development and improvement of the nutrition component of programs of various groups, organizations, and institutions which are not engaged primarily in health activities but in whose activities nutrition is an important consideration. Such groups again include as examples other State departments such as the Departments of Correction and Education; custodial institutions; migrant labor camps; and day care centers, day and boarding summer camps, and boarding schools.

These two objectives are achieved through the following major functions: the provision of educational services and inservice training for professional personnel; the development and evaluation of nutrition educational materials; and consultation, surveys, and research.

Education

Among the groups for whom the Bureau offers educational assistance and inservice training in the rationale and application of nutrition in health and disease are public health nurses in official and voluntary agencies and nurses in hospitals, nursing schools, and in nursing associations. Examples of the subject matter covered are: nutrition in growth and development, in pregnancy, and in chronic diseases such as cancer and heart disease; and the rationale of weight control and sodium-restricted and diabetic diets, including methods for the teaching of patients. Dietitians on hospital staffs and in professional schools have been assisted by the development and adaptation of diet manuals for use in their particular hospital situation, in the organization and methods of teaching therapeutic diets for classes of inpatients and outpatients, and in the standardization of recipes and quantity food purchasing. They have also been introduced to the use of meal planning with exchange lists for diabetic patients.

The Bureau members also participate in meetings, seminars, and conferences for and with physicians, dentists, dental hygienists, physiotherapists, and other professional groups on the nutritional aspects of any number of problems ranging from chemical additives in foods to feeding the aged and chronically ill in nursing homes. Individual conferences, institutes, and the actual teaching of demonstration classes are all used to instruct those who teach others about food and nutrition in various classroom situations and to instruct those who are involved in group feeding.

Since 1947, the Bureau and the College of Home Economics, Syracuse University, have cosponsored a community nutrition institute for physicians, dentists, nurses, health educators, social workers, home economists, dietitians, and nutritionists. Over the years 304 students from all parts of the United States and from several other countries have attended. Current nutrition research with application to public health programs is presented by eminent authorities. The fourteenth Community Nutrition Institute was held at Syracuse University this year from June 20 through July 1. The subjects for discussion included the growth processes of cells and tissues as they develop and differentiate to produce the whole functioning human organism, and a review of recent research in agriculture and food technology.

The development and evaluation of nutrition education materials for both professional and lay people and guidance in their proper use is a second major function of the Bureau. Such materials and teaching aids cover both normal and therapeutic nutrition and quantity food preparation in both large and small feeding operations. When good teaching aids are not available or none seems to fit the need, the Bureau works with the Office of Public Health Education in preparing suitable materials. Examples are "Nutrition Reference for Nurses," "Nurses Guide For Teaching Maternal Nutrition," "Foods To Eat . . . And Why!," and "Main Dishes at Low Cost." The Bureau collaborates in the preparation of publications of other bureaus such as the Bureau of Maternal and Child Health and the Bureau of Chronic Disease and Geriatrics.

Consultation

A third function is the provision of consultation services to professional personnel on food, nutrition, and related matters. These services are available to and are provided for all of the groups mentioned previously, as well as for social workers, sanitary engineers, home economists, and private hospitals and institutions. Consultation is available to help guide the individual patient in following the physician's dietary prescription from the nutritionists in the regional offices of the State Health Department and the Erie, Nassau, and Westchester County Health Departments. In addition to the adaptation of therapeutic diets to the patient's racial, religious, social, economic, and other environmental factors, the subjects of such consultations may include food budgeting and management and the interpretation of the welfare standards of assistance for food.

Research

Finally, research is an important function of the Bureau. The major effort by the Bureau is the study begun in 1958 of the eating habits of the approximately 1,600 subjects at the Albany Cardiovascular Health Center at Albany Medical College. At present, data on usual dietary intake and physical activity have been obtained on most of these participants and analyses have been begun.

Persons interested in a more detailed description of the organization, functions, and activities of the Bureau of Nutrition may request copies of the annual report. These are available for the years 1955 through 1959. Publications of the Bureau will also be sent on request.

(*Number fourteen in a new series of Nutrition Excerpts*)

Vascular Neck Pain: a Common Syndrome Seldom Recognized

A common and frequently misdiagnosed cause of neck pain is related to the overdistention, relaxation, and increased pulsation of the carotid artery, a syndrome closely related to the various forms of extracranial vascular headache. Patients with this type of vascular neck pain, which is a manifestation of autonomic nervous system dysfunction, may be treated mistakenly with courses of sulfonamide, penicillin, broad spectrum antibiotics, by removal of teeth and tonsils, or by treatment with x-rays or steroids for thyroiditis. Out of a series of 100 consecutive cases, the 50 patients who had previously sought medical care were all incorrectly diagnosed. Among the supposed disorders were tumor, tonsillitis, throat infection, aneurysm, thyroid disease, and mononucleosis.

The series showed that the syndrome is more common among women than among men (about 4 to 1); that it occurs at any age, but mostly in the fourth and fifth decades; and that usually there is a history, individual or familial, of vascular headache. The only abnormality revealed by physical examination is a tender, throbbing carotid artery. The preferred treatment is similar to that of the other painful vasodilating conditions of the head.—*Cleveland Clinic Quart., Jan., 1960, Leonard L. Lovshin, M.D.*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Dyspnea Following Brachial Plexus Nerve Block

THE management of anesthesia in patients with pulmonary disease presents several difficulties. The administration of inhalational anesthetic agents may aggravate pulmonary function by producing excess bronchiolar secretions or bronchiolar contractions or by diminishing the tidal volume exchange. Intravenous anesthetic agents, such as thiopental sodium or other barbituric acid derivatives, may also produce bronchiolar constriction with hypopnea.

Regional anesthesia would seem to be preferable. However, even with these technics, respiratory embarrassment may result. For instance, if during spinal analgesia the anesthetic level reaches the thoracic area, the resulting intercostal paralysis may diminish and aggravate respiratory exchange. When the operative procedure is to be performed on an upper extremity, the use of a brachial plexus nerve block by the supraclavicular route may result in dyspnea, as it did in the following case.

Case Report

A fifty-eight-year-old male with a diagnosis of Dupuytren's contracture of his right hand was brought to surgery for a fasciectomy in the areas of the contractures. The preoperative review and examination revealed that the patient's arterial blood pressure was 100 mm. Hg systolic and 70 diastolic. His pulse rate was 100 beats per minute with occasional irregularity. There was evidence of arteriosclerotic heart disease. The electrocardiogram indicated a markedly depressed S-T segment and a questionable old myocardial infarct.

The examination of the respiratory system revealed extensive bilateral pulmonary emphysema.

Discussed at a conference held at Bellevue Hospital, New York City, May 2, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

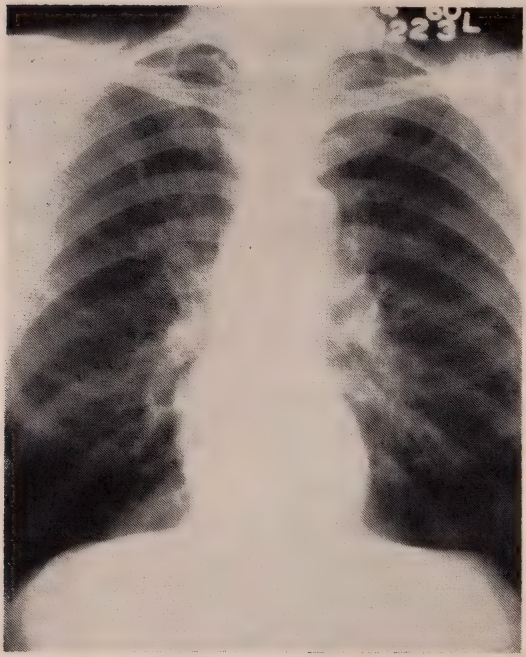

FIG. 1. Roentgenogram of chest taken prior to brachial plexus nerve block in which bilateral pulmonary emphysema is revealed.

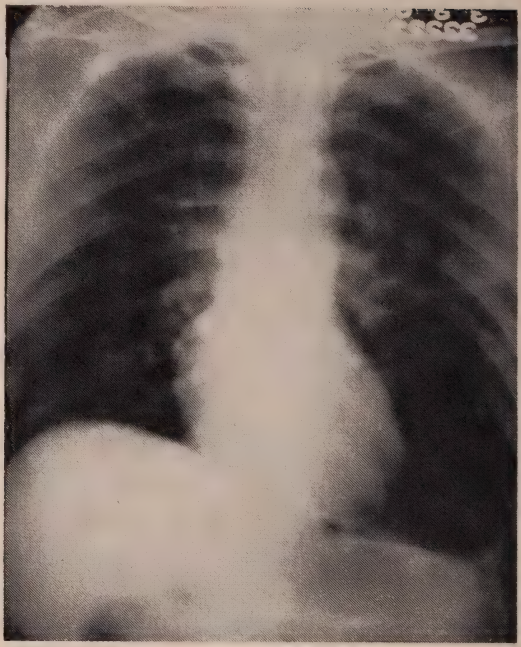

FIG. 2. Roentgenogram of chest taken thirty minutes after brachial plexus nerve block in which, in addition to pulmonary emphysema, elevation of right hemidiaphragm is shown.

On auscultation the breath sounds were distant. There were rales in both bases and bronchial wheezing throughout. Dyspnea on exertion was manifested easily. A roentgenogram of the chest gave further evidence of bilateral pulmonary emphysema (Fig. 1). Laboratory determinations showed that the hemoglobin content of the blood was 14.2 Gm. per 100 ml., and the urinalysis findings were normal.

Since surgery had been scheduled for the early afternoon, in the morning the patient was given orally 50 mg. of Seconal, and a similar dose was repeated intramuscularly two hours prior to surgery. In the operating room the patient appeared to be apprehensive. His arterial blood pressure was 140/70, and his pulse rate was 95 beats per minute. With the patient in the supine position a right brachial plexus nerve block was accomplished by means of the supraclavicular approach. Paresthesias were difficult to secure. Occasionally the patient would admit to a "funny feeling" along the right arm or right hand. Twenty cubic centimeters of a 0.2 per cent solution of Pontocaine were injected in divided doses. The area of the first rib was injected, and, because of questionable paresthesias, the needle was directed also toward the sixth and seventh cervical transverse processes, which became infiltrated with the local anesthetic solution. Pinprick tests failed to yield consistent results in all areas. There was no arm drop or loss of hand grip, indicating the absence of motor impairment.

Soon after the nerve block had been completed, the patient became uncomfortable. He started to complain of some shortness of breath. To alleviate this condition oxygen by a nasopharyngeal catheter was administered. His shortness of breath gradually became severe, and oxygen was given by mask. The patient became increasingly agitated. His blood pressure rose to 170/90, and his pulse rate rose to 130 beats per minute. Breath sounds could be auscultated bilaterally, and the pre-existing bronchial wheezing was not altered. It was noted that the respiratory difficulty was more marked on the inspiratory phase. Cyanosis was not apparent at this time, but the patient's skin was cold and clammy and he was perspiring profusely.

A roentgenogram of the chest was taken, and it revealed, in addition to the old findings, an elevation of the right hemidiaphragm (Fig. 2). The bronchospasm and bronchial wheezing increased significantly. There was diffuse cyanosis of the nail beds, and the patient's apprehension in-

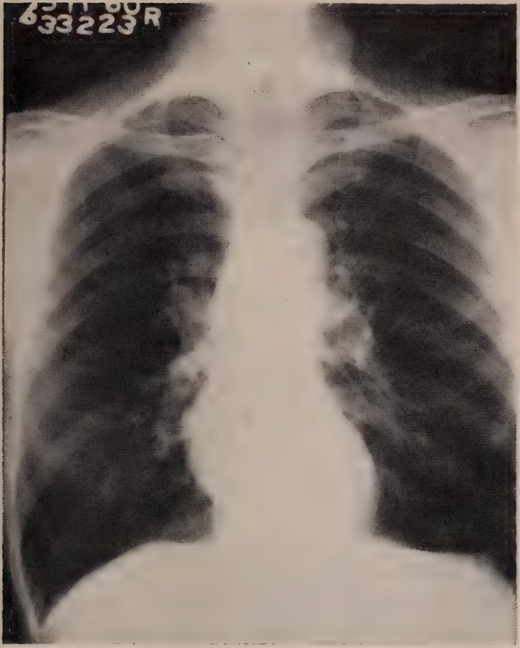

FIG. 3. Roentgenogram of chest taken three days after brachial plexus nerve block; paralysis of right hemidiaphragm no longer is present.

creased. Oxygen by mask was continued, and when this procedure was tolerated by the patient it alleviated the cyanosis. Following the intravenous injection of 225 mg. of aminophylline there was some improvement in the patient's condition, and a similar dose was continued by intravenous drip.

In the recovery room, treatment was continued with oxygen, antibiotics, Alevaire, and postural drainage. The patient's vital signs were satisfactory, and his status improved gradually. His respiratory difficulty ceased after three hours. A roentgenogram of the chest taken three days later revealed disappearance of the elevation of the right hemidiaphragm (Fig. 3).

Comment

Prior observations have shown that in some patients who received a brachial plexus nerve block by the supraclavicular route, paralysis of the phrenic nerve could be demonstrated by roentgen ray examinations.[1] This paralysis is of little significance if the block is unilateral and the pulmonary parenchyma and/or muscles of respiration are not affected by other diseases. In the presence of pre-existing respiratory deficiency, phrenic nerve paralysis produced by a brachial plexus nerve block and inadvertent involvement of the phrenic nerve, resulting from the use of the supraclavicular approach, may prove critical in some patients, as it did in the case reported here.

In addition to phrenic nerve paralysis, a respiratory complication that may result following such a procedure is induced pneumothorax by perforation of the parietal pleura by a needle and the inflow of air into the subatmospheric pleural space.[2] To avoid such complications it is recommended that the nerves of the brachial plexus in the axillary or brachial area be blocked.[3]

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(*Number ninety-four in a series of Clinical Anesthesia Conferences*)

Silence and reserve suggest latent power. What some men think has more effect than what others say.—LORD CHESTERFIELD

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

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Salicylate, Phosphorous, and Nicotine Poisonings

The following incidents were reported recently to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Rodenticide (Phosphorous Paste)	$2^1/_2$ years	Male

The following case was reported by William Burks, M.D., of St. Luke's Hospital, New York City. The Center was called by Dr. Burks about a two-and-a-half-year-old child who became seriously ill following a phosphorous (rat poison) ingestion. Information on the most current recommended treatment was requested. The Center attempted, by calling a number of consultants, to obtain reliable information on the effectiveness of dialysis and whether or not phosphorus is a dialyzable product. Most of the consultants agreed that if the substance is dialyzable an attempt at dialysis should be made; however, it was not ascertained whether or not phosphorus is dialyzable. Since the patient improved clinically, hemodialysis was not done although preparations for it were made.

This patient was reported to have swallowed an unknown quantity of Hobson's rat poison at 3:00 P.M., or five hours prior to his admission. This preparation is packaged in paste form in a tube and contains 2.5 per cent elemental phosphorus by weight. The mother related to the admitting physician that she had found the child holding the tube of rat poison with fumes coming out of his mouth. The child was taken immediately to Bronx Hospital, where his stomach was lavaged with potassium permanganate and glycerin. He then was referred to Lincoln Hospital, Bronx, where he began vomiting yellowish, foul-smelling material. At 6:00 P.M. he was brought to St. Luke's Emergency Clinic. He still was vomiting intermittently malodorous material. He then was transferred to the inpatient service.

At the time of his admission the physical examination revealed a temperature of 97.4 F., pulse 110, respirations 30, and blood pressure 115/85. He appeared listless and lethargic, responded to unpleasant stimuli, and retched persistently bringing up clear, yellow vomitus which gave off a strong garlic odor. There was congestion of the pharynx and the mouth but no burns. The pupils reacted to light and accommodation, but the eye movements were somewhat wandering. No other abnormalities were found.

The admission laboratory findings were as follows: Urinalysis gave normal findings with two to three white blood cells in the urine. The hemoglobin content of the blood was 11 Gm. per 100 ml. The white cell count was 6,450 with polymorphonuclears 63 per cent, lymphocytes 30 per cent, monocytes 5 per cent, eosinophils 1 per cent, and basophils 1 per cent. The carbon dioxide content was 39.3 volumes per cent, blood urea nitrogen 9.2 mg. per 100 ml., potassium 3.8 mEq. per L., chloride 99 mEq. per L., and sodium 136 mEq. per L.

The patient was treated with massive doses of glucose, both orally and intravenously. He was fed lumps of sugar and 50 cc. of glucose in water every hour during his waking hours, and he was awakened at night every two hours to force glucose. By the seventh hospital day the child appeared to be considerably improved. He was alert and responded to all questions, and he began to regain his appetite. He played actively in his crib and by the tenth hospital day he appeared to be clinically normal except for his liver, which, as previously, was palpated 2 fingerbreadths below the right costal margin, and for residual icterus in his scleras.

The patient's liver chemistry values were as follows:

		Cholesterol						
Hospital Day	Bilirubin (Mg. per 100 Ml.)	Total (Mg. per 100 Ml.)	Esters (Per Cent)	Thymol Turbidity (Mg. per 100 Ml.)	Cephalin Flocculation	Serum Transaminase (Units)	Blood Urea Nitrogen (Mg. per 100 Ml.)	Alkaline Phosphatase (Mg. per 100 Ml.)
2	10	170	125	...	...	...	...	...
5	10	...	...	...	1+	...	...	...
7	10	118	62	17.2	...	144	9	...
9	3.5	...	...	...	...	...	...	44.4
11	...	...	...	13.2	...	...	...	...
13	...	...	...	...	...	84	...	16.7
15	1.5	...	...	5.7	...	...	...	...

On the eleventh hospital day a finding of basophilic stippling of the red cells was noted on the normal blood count. At that time the urine was positive for coproporphyrin and remained so for two days. On the nineteenth hospital day the blood lead level was reported as 40 gamma, which is normal. On the eighteenth hospital day the child developed acute tonsillitis, but this subsided rapidly on aspirin and penicillin therapy. An x-ray film of the long bones showed that both the distal femoral metaphysis and proximal tibia had increased in density, a picture which was definitely suspicious of chronic heavy metal ingestion. The remainder of the metaphyses noted in the ankles and wrists showed a less definite increase.

Chronic lead poisoning was suspected on the basis of the roentgenographic findings of the long bones, the basophilic stippling of the red blood cells, and the positive urinary coproporphyrin. In addition to the acute phosphorous poisoning, a diagnosis of chronic lead poisoning was made. The patient therefore was treated with calcium versenate $^1/_2$ Gm. every two hours for five days. On his discharge from the hospital on the twenty-fifth hospital day the patient was scheduled to be observed periodically in the outpatient department.

In a review of the patient's past history, it was noted that he previously had been admitted to the hospital with iron deficiency anemia, and he presumably had idiopathic epilepsy with a history of two episodes of generalized tonic clonic convulsions, each of about seven minutes duration. Fever was not associated with the convulsions, nor was there a history of trauma. In retrospect, one wonders whether or not the original admission and the occurrences which led to the diagnosis of idiopathic epilepsy were not actually due to lead intoxication. Unfortunately, lead poisoning in children often is misdiagnosed owing to the absence of pathognomonic findings.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	64 years	Male

When brought to the hospital by the police at 11:20 A.M., the patient was stated to have taken about a quart of oil of wintergreen in an attempted suicide.

At the time of his admission his physical symptoms were tremors, pallor, vomiting, and depression; subsequently he developed convulsions, coma, and cyanosis. The patient stated repeatedly, "You can't do anything for me; I have committed suicide." A diagnosis of salicylate poisoning (suicidal) was made.

Ten minutes following his admission the patient's stomach was lavaged, and phenobarbital sodium was given. The treatment also included the universal antidote, egg white, milk of magnesia, airway intubation, oxygen, and Levophed bitartrate and dextrose intravenously. Soon thereafter the patient began to convulse, and he went into coma. He died an hour and a half following his admission.

In view of the patient's statement that he had ingested a quart of oil of wintergreen, a public health sanitarian was assigned to investigate the facts. The patient had discarded the container before his admission, and while still conscious he refused to give further information. A search of his home and its surroundings was not fruitful. The inspector suggested that since oil of wintergreen usually is not sold in the large amount ingested, the patient must have made a series of purchases of smaller amounts and ingested the entire amount at one time.

The reported amount of methyl salicylate ingested is the largest in a single ingestion ever reported to this Center and perhaps anywhere else.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
J-O Roach Paste (Phosphorous Compound)	3 years	Male

According to the public health nurse who visited the home, the patient's father had put the insecticide on a potato which he then had placed behind the refrigerator, the back of which faces the bedroom and is covered by a curtain. The child got out of his crib while the parents were sleeping (between 7:00 and 8:00 A.M.) and played with the potato.

When the parents awoke, they noticed finger marks on the potato. The child had his fingers in his mouth and complained of a stomach-ache. The father immediately gave him a salt solution to swallow, which helped to induce vomiting. Although the vomitus had a clear appearance, the father took the child to a hospital emergency room by police car (between 9:00 and 10:00 A.M.), where his stomach was lavaged. He was discharged as symptom-free.

The absence of symptoms and complications in this case may have been due to the emergency treatment given by the father.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
J-O Roach Paste (Phosphorous Compound)	$2^1/_2$ years	Male

Although the roomer in the patient's home had taken precautionary measures to place the insecticide away from the children, the family dog foiled the precautions by pulling the potato on which the insecticide had been smeared into full view and thus enabling the child to obtain and ingest it. Although the patient was asymptomatic, his breath had the foul odor of phosphorus. He was taken to a hospital emergency room, where his stomach was lavaged with whole milk about fifteen minutes following the ingestion. He was observed for two hours and then was discharged home.

The child was said to be of average intelligence and rather active. Since he was not under well-child supervision and since the family was of a low socioeconomic level, a parent was instructed to take the child to a nearby child health station for the needed well-child supervision and immunization.

The late development of symptoms in many cases of phosphorous poisoning is worth re-emphasizing for the guidance of physicians. The treatment with whole milk is not recommended because of the fat solubility of phosphorus.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Aspirin	3 years	Male

The child was given ten to fifteen 5-grain aspirin tablets by a five-year-old brother at about midnight. He became ill, began vomiting at about 4:00 A.M., and was admitted to St. Luke's Hospital, New York City, at about 8:00 A.M. The hospital reports the following findings:

The child appeared moribund. His blood pressure was unobtainable, his respirations were rapid, and his breath had a marked fruity odor. One hour later, after the administration of 600 cc. of plasma and 500 cc. of 5 per cent dextrose in one-quarter normal saline with 1.5 Gm. of sodium bicarbonate, his condition improved only slightly with a pulse rate of 160 beats per minute and respirations of 60 to 68 beats per minute with Kussmaul breathing. At 10:00 A.M. an exchange transfusion with 1,000 ml. of blood was carried out in the operating room with marked improvement resulting. Electrolytes and fluid content were watched very closely for the first twenty-four hours.

By the following day the child was alert and doing well. He developed a slight fever and a cough two days later, a condition which cleared quickly. The renal tract was investigated because of difficulty in catheterization at the time the patient was admitted and because red blood cells were found in the urine for one week subsequently. No abnormality was found.

The laboratory results were as follows:

Date (1960)	Blood Salicylate (Mg. per 100 Ml.)	Urine Salicylate (Mg. per 100 Ml.)	Urine Acetone
January 29			
8:00 A.M.	100	150	4+
1:30 P.M.	70	. . .	4+
2:30 P.M.	62	. . .	. . .
January 30	46	. . .	0
February 2	0	. . .	. . .

Blood Chemistry

Date (1960)	Blood Urea Nitrogen	Carbon Dioxide	Potassium	Chloride	Sodium
January 29	21	31.5	6.2	101	137
January 30	. . .	48.5	. . .	. . .	. . .
February 2	15.2	48	4.1	101	136

Primary tuberculosis was diagnosed on the basis of a positive Mantoux test result, roentgenographic evidence of slight tracheal compression, and a history of contact (the patient's father had had tuberculosis). The patient was discharged home on treatment and was scheduled to be followed in the chest clinic.

It is interesting that the child made such a rapid recovery from the salicylate intoxication in spite of the very high level of salicylate in his blood and urine. The prompt treatment and the mode of therapy (exchange transfusion) used in this case apparently were responsible for the favorable outcome.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Black Leaf 40 (Nicotine Sulfate)	10 years	Female

The child was given her daily vitamin preparation by her mother, but she cried out in pain soon after tasting it. The mother looked at the bottle from which the presumed medication was taken and discovered that the child mistakenly had been given an insecticide containing 40 per cent nicotine. The mother gave her 2 glasses of milk in an attempt to induce vomiting. The child was taken to a nearby hospital, where the only symptoms noted were nausea and vomiting. Her stomach was lavaged within thirty minutes following the ingestion. The patient was also given a combination of caffein and sodium benzoate, milk of magnesia, and tannic acid. She then was discharged.

Since the vomiting and burning of the mouth and throat persisted, the patient was taken to another hospital the same evening, where her stomach again was lavaged (this time with saline) and a sedative was given. In addition to the symptoms mentioned, a rapid pulse rate also was noted. After four days of hospitalization and supportive therapy the patient was discharged as improved.

The early and spontaneous vomiting following the ingestion was apparently lifesaving in this case. It is puzzling why it is popularly believed that milk will cause vomiting.

(*Number sixty in a series of Briefs on Accidental Chemical Poisonings*)

Aneurysms of the Abdominal Aorta and Its Branches

The authors studied the necropsy records of 68 untreated patients with a total of 96 abdominal aneurysms in the hope that their findings might serve as a basis of comparison, especially of survival time, with patients subjected to grafting procedures. Although the writers estimated that 48 per cent might have been saved from vascular rupture by a grafting operation, they point out that the question of whether ultimate survival might have been longer remains to be resolved by experience with large groups of patients in whom such procedures have been performed.

Of the group studied, the survival time was found to be comparable with findings of other investigators. Of the total, 30 per cent of the patients were dead within one month of symptoms; 74 per cent were dead in six months; 80 per cent were dead in less than one year.

The survival rate of this group was much lower than it was in a group in which aneurysms were incidentally noted on diagnosis. Nine out of 14 patients with luetic abdominal aneurysms (64 per cent) had another aortic aneurysm. Almost half of the patients with abdominal aneurysms died of a vascular rupture. Of the aneurysms 7 cm. wide or over, 72 per cent were ruptured, while less than 18 per cent under 7 cm. were ruptured. Hypertension was evident in 47 per cent of the patients with ateriosclerotic aneurysms, and 35 per cent showed definite evidence of previous myocardial infarction.—*Annals of Surgery, August, 1957, Marvin L. Gliedman, M.D., William B. Ayers, M.D., and Betty L. Vestal, B.A., Kings County Hospital, Brooklyn, New York*

CASE REPORTS

*Asymptomatic Acquired Complete Heart Block**

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(*From the U. S. Naval Home*)

Complete heart block is a rather uncommon finding, its electrocardiographic incidence varying from 0.27 to 0.79 per cent in several large series.[1-4] Prolonged life after the onset of permanent acquired complete heart block is much rarer in contrast with congenital heart block which is compatible with a long, active, and asymptomatic life.[5-7]

There are few reported well-documented cases of significant longevity in patients with acquired permanent complete heart block. The vast majority of such patients are dead within a decade of the documentation of this arrhythmia. An apparent exception to the usual early demise of these patients is seen in those whose heart block is the result of diphtheria: Survival of from twenty-two to forty-four years after the onset of complete heart block has been reported in these patients.[2, 8-10]

Several of the case reports of unusual longevity in acquired complete heart block are incomplete or are suspect for one or more reasons: Either the report is very brief, the date of onset of the arrhythmia is very vague, or one must question the assumption that the arrhythmia is acquired rather than congenital.[1,11-13] Kessler and Heyer[14] have noted: "In reviewing the literature it appears that the case reported by Von Schmidt-Weyland endured the longest." Von Schmidt-Weyland's[15] patient received a gunshot wound of the heart in 1895. Shortly after emergency surgery, a pulse rate of 42 was noted, but prior to his hospital discharge his pulse rate was normal again. In 1907 his pulse rate was 48, but the first electrocardiogram was not obtained until eighteen months before the report was recorded in 1931.

In a review of 251 cases of complete heart block, Penton, Miller, and Levine[16] refer to a case of forty-seven years duration on a clinical basis, but they do not discuss the etiology or the details of the case. One of their patients developed partial and then complete heart block following a foot infection at the age of twenty-one years. He lived for twenty-four years after the onset of a complete heart block. The authors suggest the possibility of pyogenic myocardial abscess with subsequent healing as the etiology of the arrhythmia. Rowe and White[10] have reviewed 278 cases of complete heart block with apparently well-documented survival of seventeen, twenty, and seventeen years with coronary, hypertensive, and rheumatic heart disease, respectively. The rheumatic patient was alive and asymptomatic at the time of their writing.

The subject of the following case report was asymptomatic for more than twenty-four years after he was first noted to have a significant bradycardia and for nearly fourteen years after his first electrocardiogram revealed a complete heart block.

Case Report

A seventy-year-old white male entered the United States Navy in 1909 at the age of nineteen years. At that time no physical abnormalities were noted, and a re-enlistment physical examination at the age of twenty-four years also showed normal findings. In February, 1916, he was hospitalized because of migratory polyarthritis. His temperature was 102 F.; the pulse rate was 98; and arthritis of the ankles, knees, right wrist, and fingers was noted. On admission he was free of heart murmurs, but three weeks later an apical systolic murmur was heard and the diagnosis of rheumatic fever was made. Five weeks thereafter the murmur was no longer present and he was released from the hospital. Re-enlistment physical examinations in 1917 and 1920 revealed no abnormalities. At the time of his voluntary discharge from the Navy in 1926 the patient's blood pressure was 122/80, resting pulse rate was 80, and the physical examination disclosed normal findings.

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* The opinions contained herein are those of the author and are not to be construed as official or as reflecting the views of the Navy Department.

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Between 1929 and 1937 the patient was imprisoned in Auburn, New York. When examined there in 1931, his resting pulse rate was 86, blood pressure 134/72, and the examination of the cardiovascular system showed normal results. In 1932 he was hospitalized at the prison hospital for a hemorrhoidectomy, and his pulse rate ranged from 64 to 72. In 1935, during hospitalization for grippe, his pulse rate varied between 48 and 64; this was the first time in the patient's long, well-documented medical history that a bradycardia was noted. In 1936 he was hospitalized again at the prison for two months. His pulse rate varied between 36 and 52, and it was 40 at the time of his discharge from the prison hospital on May 15, 1936. The diagnosis of cardiorenal complex was made at that time. The prison hospital records are inadequate as to the actual details of that illness; the patient recalled that his complaints were malaise and easy fatigability, and that he had had no fever or joint pains.

In 1939 the patient received a Naval Reserve physical examination. His blood pressure was 164/72 and his heart was described as normal. The resting pulse rate was 60, but immediately after exercise the pulse rate was 38, and three minutes later it was 44.

In 1941 he was hospitalized in Dunkirk, New York, with severe abdominal pains. His pulse rate was 48. A laparotomy revealed a perforated gastric ulcer. The perforation was closed and the patient did well postoperatively, his pulse rate varying between 46 and 92, and averaging 57.

In 1942 he was examined again by a Navy physician. His pulse rate was 48, blood pressure 136/70, and blowing systolic murmurs were described. He was rejected as being unfit for active duty with a diagnosis of bradycardia and a systolic murmur.

The patient was hospitalized a second time in Dunkirk, in August, 1945, and again a month later, each time because of a chronic burning midepigastric pain. On each occasion the blood pressure was normal and no heart murmurs were heard. During the August admission the pulse rate varied between 32 and 85; the median rate was 40. During the September admission the pulse rate varied betwen 28 and 90 with a median rate of 46.

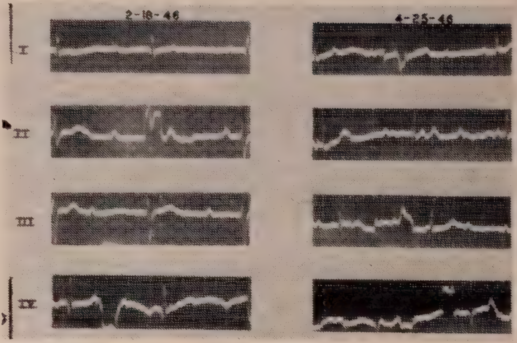

FIG. 1. Two electrocardiograms showing complete auriculoventricular dissociation.

In 1946 he was hospitalized for three months in Batavia because of vomiting. The admitting physician found the pulse rate to be 36 and the blood pressure 136/92; he noted no murmurs, but a cardiac consultant heard a blowing systolic murmur all over the precordium but mainly at the apex. He made the diagnosis of coronary arteriosclerosis. A chest x-ray film revealed a normal-sized heart, and a gastrointestinal series showed marked duodenal deformity. A four-lead electrocardiogram taken on February 18, 1946, the patient's first electrocardiogram, revealed complete auriculoventricular dissociation with an auricular rate of 58 and a ventricular rate of 35. There was left axis deviation, the QRS interval was 0.12 second, and there was a deep (5 mm.), wide (0.04 second) Q wave in lead IV (Fig. 1). A repeat electrocardiogram on April 25, 1946, again showed complete auriculoventricular dissociation. However, the QRS axis and the QRS interval (0.08 second) were normal, and the Q wave in lead IV was insignificant (Fig. 1).

The patient was admitted to the U. S. Naval Home in Philadelphia on May 5, 1947. At that time his pulse rate was not recorded, but the admitting physician noted that the blood pressure was 180/60 and that an apical mitral systolic murmur and a diastolic murmur were heard.

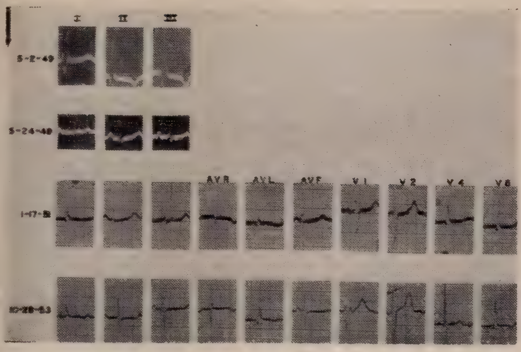

FIG. 2. Four electrocardiograms showing complete auriculoventricular dissociation.

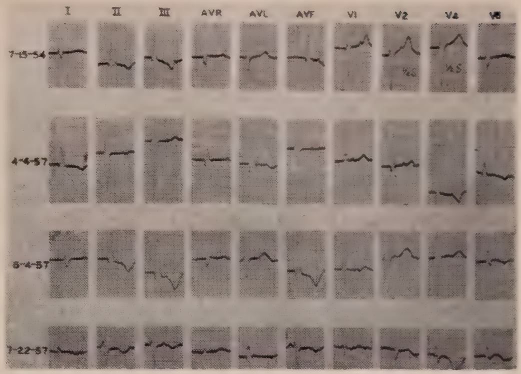

FIG. 3. Four electrocardiograms showing complete auriculoventricular dissociation.

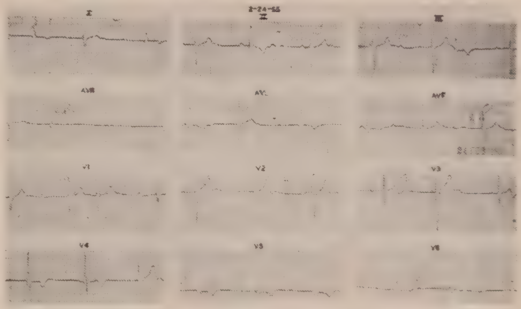

FIG. 4. Twelve-lead electrocardiogram of February 24, 1955.

During the period between April, 1949, and June, 1957, the patient was admitted to the U. S. Naval Hospital on eleven separate occasions. In 1949 he had an inguinal herniorrhaphy under local anesthesia. In 1951, because of gross hematuria, a left nephrectomy was performed under nitrous oxide-ether endotracheal anesthesia. A pathologic examination revealed an adenocarcinoma involving the cortex and medulla of the kidney with invasion of the renal pelvis but without renal capsular disruption. Seven hospital admissions resulted because of peptic ulcer pain, and finally there developed an evidence of a partial duodenal obstruction. In July, 1957, under pentothal-nitrous oxide-ether endotracheal anesthesia, a bilateral transabdominal vagotomy and gastrojejunostomy was performed. The patient was under anesthesia for four hours.

On only two occasions during the eleven hospitalizations at the Naval Hospital did a physician find the patient's pulse rate was above 44, (rates of 50 and 60), although an occasional rate above 60 was recorded by the nursing staff. On two occasions the results of a physical examination at the time of the hospital admission revealed a few bibasilar rales. An occasional wheeze also was noted on rare instances, but for the most part the patient's lungs were described as clear. On only one occasion was a peripheral edema described (1 plus pedal edema). An apical systolic murmur, usually Grade III, was noted by most observers. No diastolic murmur was heard while the patient was at the Naval Hospital.

Between May 2, 1949, and July 22, 1957, 16 electrocardiograms were taken and each revealed complete auriculoventricular dissociation; 8 of these are shown in Figures 2 and 3. The ventricular rate varied from 28 per minute on January 17, 1951, to 54 per minute on July 16, 1957, with a mean rate of 39. The QRS interval is prolonged (0.10 second) in the three-lead electrocardiogram taken on May 2, 1949, which shows right axis deviation, deep wide Q waves in leads II and III, and discordant T-wave changes. Between May 24, 1949, and October 28, 1953, the QRS interval was normal.

Since July 15, 1954, each electrocardiogram has shown an abnormally wide QRS interval. In Figure 3 we can observe the similarity between the electrocardiograms of July 15, 1954, and June 4, 1957, and between those of April 4, 1957, and July 22, 1957. In the electrocardiogram of February 24, 1955, both patterns are represented (Fig. 4). There was question in the minds of those who interpreted these tracings whether they represented varying ventricular pacemakers or whether the pacemaker was in the auriculoventricular node with varying intraventricular disturbances.

With these questions in mind, I referred the electrocardiograms to Pick[17] who very kindly gave me his interpretation. He noted that the two principal types of ventricular complex, A and B, are not so bizarre as the usual beats of idioventricular origin and that they have a contour of supraventricular beats with a right or left intraventricular block. Moreover, he noted in Figures 2 and 3 a gradual evolution of the ventricular complex (B) represented in the electrocardiogram of April 4, 1957, " . . . apparently caused by an anterolateral wall infarct. . . ." Furthermore, he noted that the premature beats in leads III and V_1 of Figure 4 resemble closely the ventricular complex (A) of July 15, 1954, and June 4, 1957, " . . . and the following pause equals, or is shorter than, the interval between two automatic beats measured in the same leads. This suggests that beats A and B share a common path through a part of the A-V junction and therefore are 'supraventricular' in origin. If this is true then the variations in contour have to be attributed to an intermittent conduction disturbance, of varying unequal degrees, in both bundle branches. This would be in keeping with the so common finding of bilateral bundle branch lesions in complete A-V block. . . ."

The patient was first seen by me on November 13, 1958. At that time he denied that he had any chest pain, dyspnea, orthopnea, nocturnal dyspnea, or syncope. He had had ankle edema after prolonged standing. He had never had diphtheria. A physical examination revealed the blood pressure to be 220/70, and the pulse rate 40 per minute. The patient was small and thin but not malnourished. His lungs were clear except for a few expiratory wheezes at the lung base anteriorly. The anteroposterior diameter of the thorax was wide and the heart size was indeterminate. Its rhythm was regular and a Grade II harsh apical systolic murmur was transmitted widely, particularly to the left axilla. M_2 was split, A_2 was louder than P_2, and no other murmurs were heard. The liver was not felt, and, although there was a trace of bilateral pedal edema, significant lower-leg varicose veins also were present.

An electrocardiogram taken on November 24, 1958, again revealed a complete heart block and a wide QRS interval (0.13 second). There was a left axis deviation (−45°), a leftward direction of the mean vector for the terminal 0.04 second of the QRS interval (−75°), and a wide angle between the initial and terminal 0.04 second vectors (150°), consistent with anterolateral peri-infarction block.[18] This pattern persisted without change in the patient's last seven electrocardiograms, taken between January 11, 1959, and January 6, 1960. One of these, taken on July 11, 1959, is shown in Figure 5.

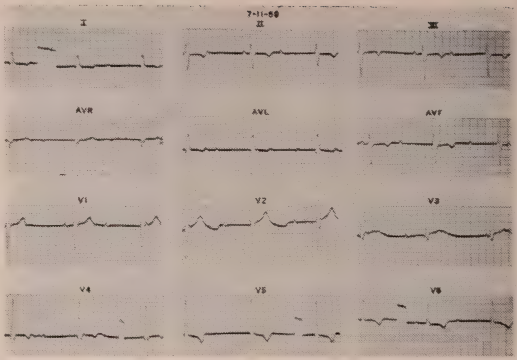

Fig. 5. Twelve-lead electrocardiogram of July 11, 1959.

A fluoroscopic and roentgenographic examination of the chest on January 22, 1959, revealed evidence of a minimal left ventricular enlargement. A twenty-four-hour uptake by the thyroid gland of a tracer dose of radioactive iodine showed normal results (26 per cent).

On November 4, 1959, at which time the patient was asymptomatic, I noted that his liver was large (four fingerbreadths below the right anterior subcostal margin), firm, and nontender. Laboratory studies on November 5 and 9 were as follows: Serum bilirubin, 1.75 mg. per cent (direct, 0.68 mg. per cent); alkaline phosphatase, 17.3 Bodansky units; total serum cholesterol, 119 mg. per cent, cephalin flocculation, 4 plus; thymol turbidity, 17.8 units; serum glutamic pyruvic transaminase, 520 units; serum albumin, 2.75 Gm. per cent; and serum globulin, 3.55 Gm. per cent. After forty-five minutes, there was a 53 per cent retention of the injected dose of sulfobromophthalein sodium (5 mg. per kilogram of body weight).

In view of these findings, I hospitalized the patient at the U. S. Naval Hospital on November 18, 1959. No new physical findings were noted at the time of hospital admission, and the patient remained asymptomatic throughout most of his hospital course. It was felt that a biopsy of the liver was justified in view of the fact that there was no history of alcoholism, jaundice, or hepatitis; that the liver was never palpated prior to November, 1959; that he had had several blood transfusions at the time of surgery in 1957; and because of his past history of renal carcinoma. The procedure was postponed because the patient's prothrombin time was persistently low. However, after nearly two months of bed rest, a nutritious diet, and supplementary vitamin K, the prothrombin time climbed to 74 per cent of normal. On the morning of January 5, 1960, under local anesthesia, a needle biopsy of the liver was performed without technical difficulty through the ninth intercostal space in the right midaxillary line. That evening the patient complained of right upper quadrant abdominal pain. His heart and respiratory rates were 36, his skin was pallid, his neck veins were distended, and coarse ronchi were heard throughout his chest. He was believed to be in acute congestive heart failure and was given 1 mg. digoxin by mouth. On January 6, by 4:00 P.M. he had received 3 mg. digoxin and his condition seemed to have improved. However, that evening the patient was very restless, his blood pressure began to fall, and he expired on January 7, 1960, at 4:45 A.M. Seven hours antemortem the patient's pulse rate was 58, but ten minutes later the same observer noted it to be 72. Five minutes antemortem the pulse rate was 46. Seven hours antemortem the hemoglobin was 13.7 Gm. per cent, and the hematocrit was 44.

At autopsy, performed on the day of death, the heart was found to weigh 430 Gm. There was scattered calcification of the coronary arteries, but their ostia and lumina were patent. The left ventricular wall measured 1.5 cm. in thickness, and the right ventricle measured 0.3 cm. The mitral valve and its cordae tendinae were slightly thickened, especially along the base of the valve; there was no fusion of the valve commissures. The remaining cardiac valves were normal. There was no gross evidence of myocardial fibrosis.

The right lung weighed 750 Gm., the left lung weighed 500 Gm., and there was gross and microscopic evidence of pulmonary edema. The peritoneal cavity contained approximately 750 to an absolute maximum of 1,000 cc. of unclotted blood. The liver weighed 1,300 Gm., its surface was irregularly granular, and there was a puncture wound on the right surface surrounded by a large blood clot. There was no laceration of the liver nor any subcapsular hematoma, and the puncture wound extended to a depth of but 6 mm. There was no evidence of recurrent renal carcinoma.

Numerous sections were taken through the myocardium, and the area presumed to contain the auriculoventricular node was dissected according to the method of Lev.[19] The latter area was seen to be replaced with an extremely dense acellular hyaline tissue, and the area presumed to contain the bundle of His was similarly involved. Sections through the myocardium of the left ventricle were unremarkable.

A microscopic examination of the liver showed the portal triads to be infiltrated with mononuclear inflammatory cells and fibrous tissue. The central veins were dilated. Aside from splenic congestion, other autopsy findings are not pertinent to this report.

Comment

Aside from this patient's unusual longevity, several other features of his medical history are of interest. In the first place, he was able to tolerate four major surgical procedures without incident, although on each occasion he was considered preoperatively to be a poor surgical risk. In the series of Penton and his coworkers,[16] 19 patients with complete heart block underwent 24 surgical procedures with no operative mortality, although 2 patients had multiple episodes of asystole during anesthesia and surgery. Vandam and McLemore[20] studied the records of 22 patients with complete heart block on whom operations had been performed. Of the 11 patients who had had Adams-Stokes seizures, 5 had respiratory or circulatory arrest during surgery; only 1 of the 11 patients without a preoperative history of Adams-Stokes attacks experienced a major complication of surgery.

Perhaps less unusual than this patient's history of having withstood four major operations was his demise following a minor bedside procedure. Vandam and McLemore[20] have noted that "local anesthetics, because of their quinidine-like effect, are hazardous in the presence of heart block," although it would appear that the local anesthesia in itself did not play a role in our patient's death. Stack *et al.*[21] studied the cardiovascular hemodynamics of 8 patients with complete heart block. Four of the patients were elderly but without evidence of congestive heart failure. In each of these patients the stroke volume was elevated, but the cardiac index was lower than normal and the arterial-venous oxygen difference was increased, signifying an inability of the cardiac output to meet the bodily demands fully. It is not difficult to understand why the stress of a painful procedure and the loss of a pint or two of blood might result in fatal congestive failure in such a patient.

Between February 18, 1946, and January 6, 1960, the patient had 27 electrocardiograms, and each showed a complete heart block. However, the etiology of his irregular bradycardia between 1935 and 1946 must remain in doubt in the absence of electrocardiographic documentation. It is possible that he had a paroxysmal complete heart block during that period. On the other hand, the fact that his pulse dropped from 60 to 38 immediately following exercise during a physical examination in 1939 would suggest that at that time he had a partial heart block.[22]

Several authors have noted that the prognosis as to longevity in patients with complete heart block is primarily a function of the severity of the associated heart disease.[1,5,14,23,24] This observation would seem to apply in the patient whose history has been presented; his heart block presumably was rheumatic in origin, yet the rheumatic process resulted in no significant valvular dysfunction.

Summary

A case of asymptomatic acquired complete heart block of long duration has been presented. The patient underwent four major surgical procedures without incident, yet he expired in pulmonary edema about forty-three hours after a needle biopsy of the liver which had resulted in a loss of one to two pints of blood. An autopsy revealed a thickening of the mitral valve and a microscopic scarring of the auriculoventricular node, presumably due to rheumatic fever which the patient had had at age twenty-six years.

Acknowledgment.—I wish to express my appreciation to Anthony Cimildora, M.D., of Auburn, New York, who documented the date of onset of the patient's bradycardia, to Alfred Pick, M.D., for his electrocardiographic interpretation, and to Francis K. Moll, Jr., M.D., who performed the autopsy.

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He who is not ready today will be less so tomorrow.—Ovid

Bronchial Asthma, Transient Migratory Pulmonary Infiltrations, and Eosinophilia

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TRANSITORY pulmonary infiltration in association with eosinophilia of the peripheral blood was first reported in 4 cases by Löffler in 1932.[1] Since then many additional cases have been contributed to the medical literature by Löffler and others.[2,3] Currently, Löffler's syndrome is considered the benign form of a disease entity with many gradations of severity, the more serious phases exhibiting generalized systemic involvement with a prolonged and in many cases a terminal course. This case report concerns a patient with bronchial asthma, eosinophilia of the peripheral blood, and migratory pulmonary infiltrations. The duration of the patient's illness has been of unusual length.

Case Report

A twenty-seven-year old white female was first seen at Kips Bay Chest Clinic on October 31, 1947. She was referred by her private physician because of bronchial asthma and a previous history of pulmonary tuberculosis. The following history was elicited from the patient. She was born and lived in Texas until 1945, since which time she has resided in New York City. Her bronchial asthma began at the age of five years and has persisted intermittently to the present time. At the age of ten she was hospitalized for eight months with a diagnosis of pulmonary tuberculosis, and then two years of bed rest at home were required. At nineteen years of age she suffered from a "breakdown" and was hospitalized for two years; a right pneumothorax was attempted but without success. Since her discharge from the hospital she has suffered from frequent asthmatic attacks and has had so-called pneumonia several times with elevated temperature. The pneumonia she had in 1944 required confinement to her home with medical supervision for five weeks.

A review of the family history revealed that her maternal grandmother had pulmonary tuberculosis and that a sister had active pulmonary tuberculosis. Her mother had eczema and two sisters had hay fever.

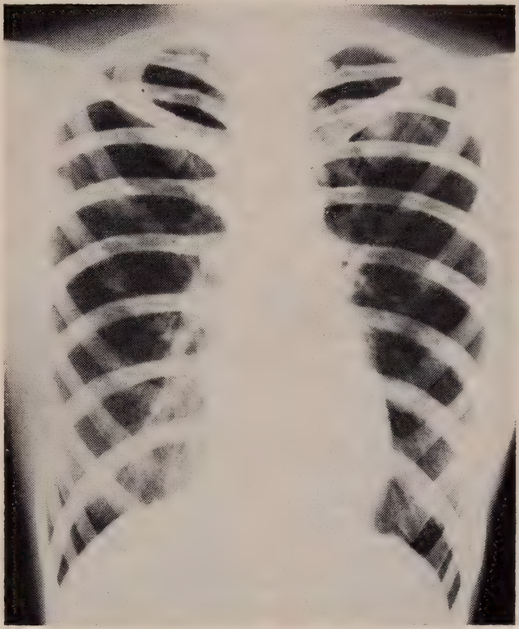

FIG. 1. November 5, 1947. The chest x-ray film shows infiltration at level of first left rib and first left intercostal space.

There was no history of industrial exposure. Her present occupation was that of salesgirl.

A physical examination revealed that the patient was a fairly well-developed, thin white female in no apparent acute distress. No cyanosis or dyspnea was present. Significant findings were confined to the lungs. Percussion was normal. Auscultation revealed sibilant rales throughout the left hemithorax. A conventional chest x-ray film (Fig. 1) revealed a soft pulmonary infiltration at the level of the first left rib and the first left intercostal space. There was also an infiltration at the periphery of the lung at the level of the first and second right intercostal space. This appeared to be soft with an additional fibrotic element. In view of the past history and present findings a presumptive diagnosis of pulmonary tuberculosis, probably active,

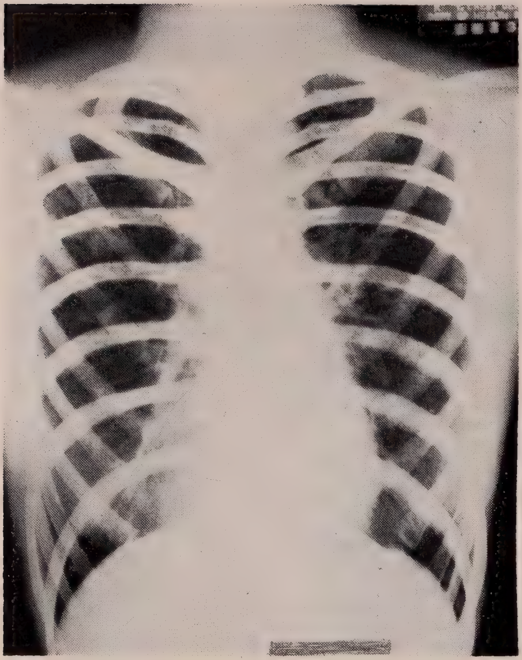

Fig. 2. November 21, 1947. Almost complete resolution of infiltration previously observed in Figure 1.

as well as of bronchial asthma, was made.

On November 6, 1947, during a moderately severe asthmatic episode, a blood count revealed leukocytosis with 21 per cent eosinophils. The erythrocyte sedimentation rate was 8 mm. per hour. A white blood cell count on November 19, 1947, revealed 16 per cent eosinophils. Twenty-one days after the initial roentgenogram was taken, another chest x-ray film (Fig. 2) revealed an almost complete resolution of the infiltrate in the upper lobe of the left lung with a slight increase in the infiltration in the right lung. A tuberculin skin test (O.T., 1:100) showed negative results as did a skin test for histoplasmosis. Sputum concentrates for acid-fast bacilli gave negative findings. Because of the transient nature of the left upper lobe lesion, eosinophilia, and the negative tuberculin skin test, Löffler's syndrome or a variation of the syndrome was considered as the most likely diagnosis. Abstracts of previous admissions of the patient to hospitals in Texas did not suggest the presence of pulmonary tuberculosis. The sputums either did not contain acid-fast bacilli or were not obtained. The patient was discharged as nontuberculous after an eight month-period of hospitalization. Another discharge diagnosis was "acute bronchitis, bronchial asthma."

Fortunately, two chest films taken prior to her admission to our clinic were obtained and reviewed. One dated September 11, 1942, showed a soft infiltration in the left midlung field. A film taken November 7, 1946, revealed a minimal fibrotic lesion at the periphery of the right lung at the level of the first and second interspaces but was otherwise not remarkable.

Since the patient was first seen at the Kips Bay Chest Clinic, she has been under the medical supervision of several private physicians and has continued to visit the clinic periodically. Close and cordial liaison has been maintained between her physicians and our clinic. Attacks of asthma have continued intermittently, and she has had recurrent episodes of pneumonia accompanied by high temperature. At our clinic she has had repeated chest x-ray, blood count, and sputum studies. All sputums have shown negative findings for acid-fast bacilli.

The white blood cell count has varied from 7,000 to 10,500. The percentage of eosinophils has varied from 4 to 21 per cent. Chest x-ray films (Fig. 3) have revealed transitory pulmonary infiltrations appearing in all areas of the lungs. Areas of hyperaeration indicative of emphysema and a localized fibrosis in the second and third right intercostal space have appeared. Skin-sensitivity tests, performed by her private physicians, have shown positive results for ragweed, grasses, dusts, and molds. There has been no response to antihistamine therapy; steroid therapy provided relief for her acute asthma attacks but has been of no prophylactic value.

This patient has been under the observation of the Kips Bay Chest Clinic for eleven years, during which time she has pursued the clinical course that has been described. Chest x-ray films obtained five years and one year prior to admission to our clinic are suggestive of a similar disease pattern during this period of time.

Comment

In the past many organisms which have been detected in patients with pulmonary infiltrations and eosinophilia have been considered as primary etiologic agents.[4] A significant number of patients in Löffler's series were found to be infested with Ascaris. Strongyloides, Filaria, and Fasciola hepatica are other parasites that have been found; Histoplasma and Coccidioides have been isolated in some cases.

Hypersensitivity to the preceding organisms

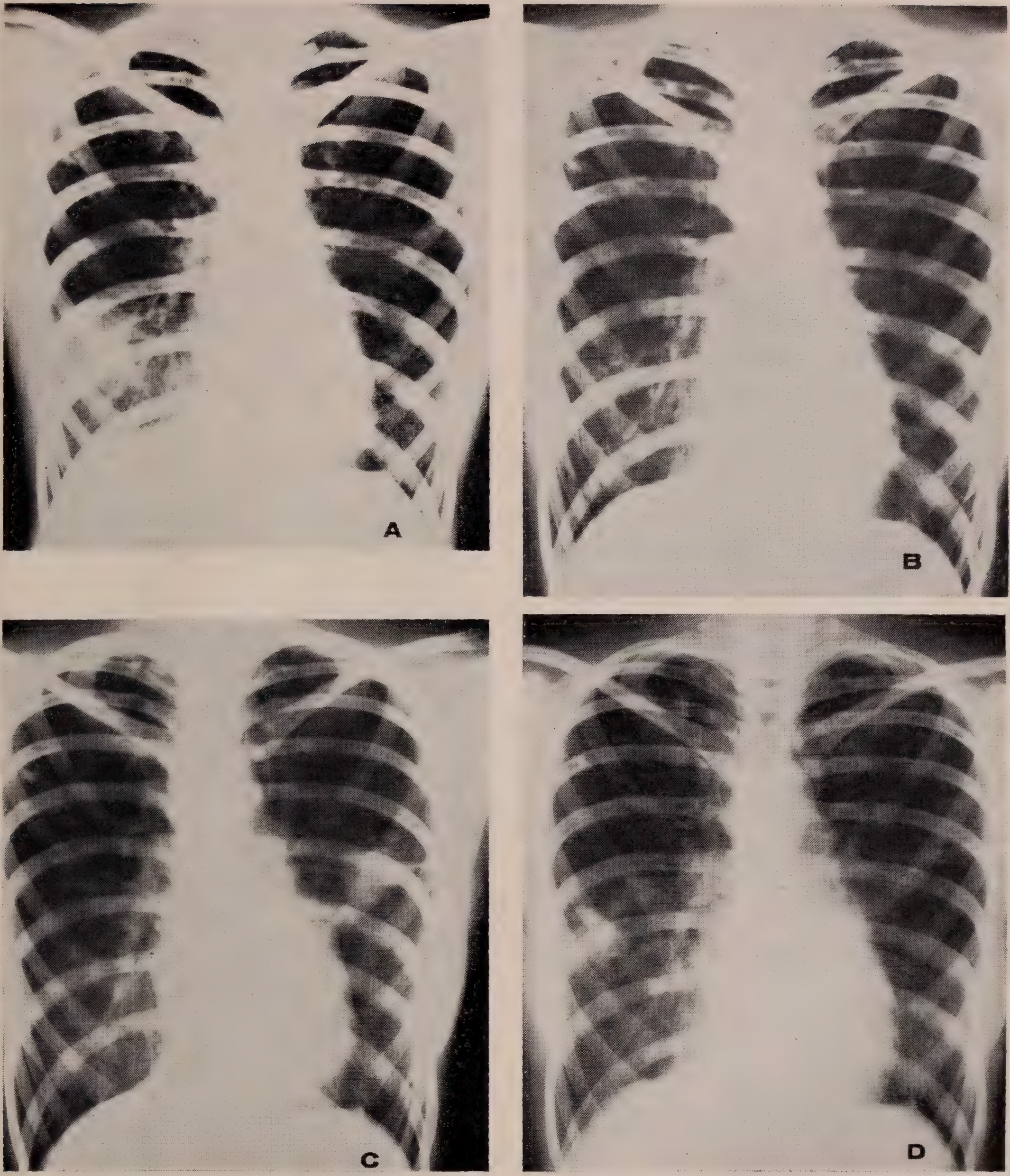

Fig. 3. (*A*) February 3, 1950. Chest x-ray film reveals infiltration in right lower lung field. (*B*) February 15, 1950. Marked regression of infiltration previously noted in Figure 3A. (*C*) April 7, 1952. Infiltration observed in left midlung field. (*D*) December 16, 1957. Infiltration seen in right midlung field. Areas of fibrosis noted. Upper half of both lung fields hyperaerated, consistent with emphysema.

and to many other organisms and antigens is now considered as the causative factor. The role of hypersensitivity in the pathogenesis of this entity is substantiated by experimental, clinical, and histopathologic evidence. Sprent[5] demonstrated marked pulmonary infiltrations, some including infiltrations with eosinophils, in mice sensitized with Ascaris extracts. This suggests that sensitization may account for pulmonary infiltrations without invoking the pulmonary migratory phase of the Ascaris cycle in man. Herbut and Kinsey[6] instilled horse serum intratracheally into previously sensitized rabbits. The animals presented only slight clinical disturbances, but x-ray films revealed transitory pulmonary infiltrations which were resolved in from seven to thirteen days. Sacrificed animals revealed eosinophilic pneumonitis and eosinophilic infiltration of the submucosa of the trachea and bronchi. The syndrome in rabbits differed from that in man in that no eosinophilia was demonstrated and pulmonary infiltrations were not migratory.

Harkavy[7] reported 16 patients with bronchial asthma, eosinophilia, and pulmonary infiltrations. All these patients had chronic sinus infections and in 6 patients tested with pneumococcus polysaccharide and autogenous vaccines the observed cutaneous and systemic reactions seemed to suggest some relationship to the presenting symptoms. Positive reactions to foods, pollens, and inhalants were present in 11 patients; in only 7 were they found to be of clinical significance in conjunction with bacterial hypersensitiveness. Five of the 16 patients had a family history and 7 had a personal history of allergy.

Tuchman[8] recorded a patient who received para-amino salicylic acid and streptomycin and who developed acute bilateral pneumonitis and a 26 per cent eosinophilia. This syndrome was attributed to para-amino salicylic acid and was reinduced by a test dose of the drug.

Periarteritis nodosa is one of the vascular lesions observed in the more prolonged terminal cases of pulmonary infiltration and eosinophilia. Rich[9] demonstrated the role of hypersensitivity in periarteritis nodosa in patients with serum sickness and sulfonamide hypersensitivity. In rabbits sensitized to horse serum Gregory and Rich[10] demonstrated further the production of all stages of a widespread periarteritis nodosa.

In addition to the experimental evidence cited, there are other features suggestive of an allergic diathesis. Symptoms accepted as allergic manifestations have been found in patients with this syndrome. Frequently bronchial asthma is present; less commonly urticaria, angioneurotic edema, nonthrombocytopenic purpura, and nasal polyps. A personal or family history of allergy is frequent. In many patients skin tests showing positive results to allergens such as pollens, dusts, animal products, and foods have been demonstrated.

Clinically, patients with pulmonary infiltrations and eosinophilia may fall within the spectrum of a transitory Löffler's syndrome to a disseminated periarteritis nodosa with signs of generalized as well as of pulmonary involvement. Cases of Löffler's syndrome may have minimal symptoms or no symptoms whatever with only roentgenologic evidence of pulmonary infiltration. The eosinophil percentages in Löffler's series range from 3.5 to 60 per cent. The white blood cell count may be within a normal range or may be elevated. Chest x-ray films reveal pulmonary infiltrations which may be migratory, unilateral, or bilateral, and which are usually resolved within a month. Some patients may have more significant symptoms, and the pulmonary infiltrations may be more persistent, but without bronchial asthma. Cough, fever, and an eosinophilic leukocytosis, usually higher and longer sustained than in Löffler's syndrome, may be present. The syndrome in these patients represents a more severe grade of the same pathologic process as in Löffler's syndrome, but the prognosis is usually benign.

A more prolonged clinical course with bronchial asthma, hypereosinophilia, pulmonary infiltrations, and fever usually bears a graver prognosis and may terminate fatally. Churg and Strauss[11] reported 14 cases of this syndrome, 13 of which showed disseminated vascular and extravascular changes in the lungs and other tissues. Clinically, in addition to pulmonary symptoms, signs of cardiac, renal, and neurologic involvement were present. Of special interest is the fact that 7 of these 13 patients had cutaneous or subcutaneous nodules which provided the diagnosis on biopsy. The pathologic findings were termed allergic granulomatosis, allergic angiitis, and periarteritis nodosa. In the fatal cases, the duration of the terminal illness varied from three months to five years.

Ehrlich and Romanoff[12] described a case of allergic granuloma of the lung. Their patient had an initial episode of bronchial asthma ten days prior to demise and died in status asthmaticus. Pathologically, two macroscopic granulomas were found in the lungs, and widespread disseminated foci of eosinophilia infiltrations were found in many organs. An allergic angiitis was also observed in the lungs.

The pathologic findings in this syndrome vary from pulmonary changes considered transient to extensive vascular and connective tissue changes in the more prolonged and serious cases.[13,14] Because of its benign course, the histopathology of Löffler's syndrome has rarely been studied. Von Meyenburg[15] reported the pathologic findings in 4 soldiers; 3 died in accidents and 1 of tetanus. They were not examined clinically but the pathologic findings were considered transient. Focal areas of pneumonitis were found with the alveolar exudate rich in eosinophils and also containing giant cells. There was also eosinophilic infiltration of the interstitial tissue, septa, bronchi, and bronchioles. Eosinophilic infiltration of the vascular walls was present but there was no additional vascular pathologic condition. In 1 case eosinophilic infiltrations were found in the portal tract of the liver. Charcot-Leyden crystals were found in some of the pulmonary and hepatic infiltrations. In more advanced cases the connective tissue and vasculature of any organ in the body may be involved.

The extravascular pathologic condition consists of changes attributed to a hyperergic phase: inflammatory exudates rich in eosinophils with giant cells, necrosis of the exudate, and fibrinoid degeneration of the collagen fibers. Granuloma formation and fibrosis are considered part of the reparative phase. Vascular lesions may vary from more exudative changes in the walls to findings consistent with periarteritis nodosa. Fibrinoid, necrotizing, and granulomatous changes may be found in the vascular walls. Nonspecific venous inflammation and necrotizing phlebitis have been found.

Additional pulmonary findings which have been observed in this syndrome are cavitation,[16] fibrosis, emphysema, and bronchiectasis. Histologic evidence of asthma, manifested by hyalinization of the basement membrane, eosinophilic infiltration of the bronchial wall, and excessive bronchial secretions containing eosinophils, is found in asthmatic patients. Pleural effusions may occur because the serous fluid contains many eosinophils.

The histopathology that has been described is consistent with that seen in allergic reactions.[17] The lung is only one of many shock organs involved in a hyperergic reaction. Löffler's syndrome is a manifestation of a mild transient hypersensitization with primary involvement of the lung; more sustained and severe reactions may involve any organ of the body.

Summary

A report of a patient with bronchial asthma, transient migratory infiltrations of the lungs, and eosinophilia of the peripheral blood is presented.

The course of this patient's illness has been observed for eleven years, and her past history suggests that the syndrome existed for many years before the patient came under our observation.

The pertinent literature is reviewed.

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fifty-fourth annual

DISTRICT BRANCH MEETINGS

Medical Society of the State of New York

THIRD DISTRICT BRANCH AND FOURTH DISTRICT BRANCH

Wednesday and Thursday, September 14 and 15, 1960
Scaroon Manor, Schroon Lake

Wednesday, September 14

Third Regional Conference on Medical Services

Morning

8:30 A.M.—Registration

9:00 A.M.—"Welcome"
NORMAN S. MOORE, M.D., President, Medical Society of the State of New York

9:20 A.M.—Resolution 58-49: "Medical Care—the Job of the Medical Profession"
CARLTON E. WERTZ, M.D., *Chairman*, Standing Committee of Council on Medical Service, A.M.A., under Committee on Insurance and Prepayment Plans

9:50 A.M.—Introductions
Review of Committee Activities
GEORGE J. LAWRENCE, JR., M.D., *Chairman*, Special Committee on Resolution 58-49

10:20 A.M.—"Medical Legislation—the Job of the Medical Profession"
JAMES M. BLAKE, M.D., *Chairman*, Legislation Committee, Medical Society of the State of New York

10:50 A.M.—"Medical Economics Applied to the Practice of Medicine"
WARING WILLIS, M.D., *Chairman*, Council Committee on Economics, Medical Society of the State of New York

11:20 A.M.—"Health Insurance—Professional Controls"
PAUL I. ROBINSON, M.D., Medical Director, Metropolitan Life Insurance Company

11:50 A.M.—"Responsibility of Doctors to Blue Shield Plans"
JOHN H. WADSWORTH, M.D., Medical Director, Northeastern New York Medical Service

12:20 P.M.—"Conserve the Public's Health-Care Dollar"
JAMES A. CADDY, M.D., *Chairman*, Voluntary Health Insurance Committee of Nassau County

Afternoon

1:00 P.M.—Luncheon
"Medical Legislation Before Congress"
HONORABLE SAMUEL S. STRATTON, Congressman, 32nd Congressional District of New York State

3:00 P.M.—Discussions—"Resolution 58-49"

3:15 P.M.—"Medical Legislation—the Job of the Medical Profession"

3:30 P.M.—"Medical Economics Applied to Medicine"

3:45 P.M.—"Health Insurance—Professional Controls"

4:00 P.M.—"Responsibility of Doctors to Blue Shield Plans"

4:15 P.M.—"Conserve the Public's Health-Care Dollar"

4:30 P.M.—Summary
HENRY I. FINEBERG, M.D., Immediate Past President, Medical Society of the State of New York

Evening

6:30 P.M.—Cocktail Party

7:30 P.M.—Banquet

Introduction of Officers and Guests

Remarks: **Herbert T. Wagner**, M.D., Executive Director, Medical Society of the State of New York

Remarks: **Mrs. Milton W. Kogan**, President, Woman's Auxiliary to the Medical Society of the State of New York

Remarks: **Norman S. Moore**, M.D., President, Medical Society of the State of New York

Entertainment and Dancing Following Dinner

Thursday, September 15

Morning

8:30 A.M.—Breakfast Business Meeting of Third and Fourth District Branches

9:30 A.M.—"Treatment of Cardiac Emergencies"
Louis A. Soloff, M.D., Philadelphia, Pennsylvania, Director, Department of Cardiology; Professor of Medicine, Temple University Medical Center
Discussion: **Preston W. Reynolds**, M.D., Schenectady, Assistant Attending Physician, St. Clare's and Ellis Hospitals

10:45 A.M.—"Surgery of the Gallbladder and Bile Ducts"
Richard B. Cattell, M.D., Boston, Massachusetts, Chief of Surgery, Lahey Clinic
Discussion: **Stuart F. MacMillan**, M.D., Schenectady, Chief of Surgery, Ellis Hospital; Assistant Clinical Professor of Surgery, Albany Medical College

Officers—Third District Branch

President........Lee R. Tompkins, M.D., Liberty
First Vice-President............Eugene F. Galvin, M.D., Rosendale
Second Vice-President..........Albert R. Vander Veer, M.D., Albany
Secretary-Treasurer..............Henry J. Noerling, M.D., Valatie
Delegate......Edwin J. Mulbury, M.D., Windham

Presidents—Component County Medical Societies

Albany........Frances E. Vosburgh, M.D., Albany
Columbia.....Thomas C. Seymour, M.D., Hudson
Greene............Jerome Gerber, M.D., Catskill
Rensselaer...........John J. Keenan, M.D., Troy
Schoharie.....Robert Greenwald, M.D., Cobleskill
Sullivan..........Lester Lipson, M.D., Monticello
Ulster...........Habeeb Maroon, M.D., Kingston

Officers—Fourth District Branch

President....Roman R. Violyn, M.D., Amsterdam
First Vice-President.......Milton J. Greenberg, M.D., Hudson Falls
Second Vice-President...........Arthur Q. Penta, M.D., Schenectady
Secretary...Webster M. Moriarta, M.D., Saratoga Springs
Treasurer.......Arthur Howard, M.D., Johnstown
Delegate.....Roman R. Violyn, M.D., Amsterdam

Presidents—Component County Medical Societies

Clinton......Dean H. Wheeler, M.D., Plattsburgh
Essex......Rudolph J. Martin, M.D., Ticonderoga
Franklin.......Carl P. Sherwin, Jr., M.D., Malone
Fulton......Samuel L. Russell, M.D., Gloversville
Montgomery....Harry Lebman, M.D., Amsterdam
Saratoga..........Max M. Vinicor, M.D., Corinth
Schenectady.......Maurice A. Donovan, M.D., Schenectady
Warren.........E. Yale Clarke, M.D., Glens Falls
Washington..Clarence V. Latimer, Jr., M.D., Hudson Falls

EIGHTH DISTRICT BRANCH*

Thursday, September 29, 1960
Hotel Jamestown, Jamestown

Morning

11:00 A.M.—Registration

12 NOON— Luncheon meeting of Advisory Council, local Committee on Arrangements, and Officers of State and County Medical Societies

Afternoon

2:00 P.M.—"Recent Advances in Pediatric Cardiology"
Edward C. Lambert, M.D., Buffalo, Chief of Cardiology, Children's Hospital

3:00 P.M.—"Medical Education"
Charles S. Cameron, M.D., Philadelphia, Pennsylvania, Dean, Hahne-

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* This will be the fifty-fifth annual meeting of this branch.

mann Medical College and Hospital

4:00 P.M.—"Automobile Crash Investigation and Results" (with motion pictures)
MR. EDWARD DYE, Safety Crash Research, Cornell University; at present professional engineer, New Products Co., Orchard Park, New York

5:00 P.M.—Business Meeting

Evening

6:30 P.M.—Cocktails

7:30 P.M.—Dinner and Dance

Introduction of Officers
Address: NORMAN S. MOORE, M.D., President, Medical Society of the State of New York
Remarks: MRS. MILTON W. KOGAN, President, Woman's Auxiliary to the Medical Society of the State of New York
Dancing

Officers—Eighth District Branch

President	Clyde L. Wilson, M.D., Jamestown
President-Elect	Richard A. Loomis, M.D., Springville
Secretary	Joseph A. Wintermantel, M.D., Olean
Treasurer	Irwin Felsen, M.D., Wellsville
Delegate	Wilfrid M. Anna, M.D., Lockport

Presidents—Component County Medical Societies

Allegany	Vincent Ciampa, M.D., Cuba
Cattaraugus	James F. Durkin, M.D., Olean
Chautauqua	Alfred D. Heinemann, M.D., Dunkirk
Erie	Kenneth H. Eckert, M.D., Buffalo
Genesee	Myron E. Williams, M.D., Batavia
Niagara	Courtland Van Deusen, M.D., Niagara Falls
Orleans	James G. Parke, M.D., Albion
Wyoming	James D. MacCallum, M.D., Warsaw

Multiple Pregnancy Can Be Diagnosed in Fifth Month

By using the machine ordinarily used to measure brain waves, doctors now can detect tiny heart beats in the womb and tell an expectant mother whether she will bear a single child, twins, or triplets. The diagnosis can be made with 100 per cent accuracy between the fifth and seventh months of pregnancy.

C. A. Novotny, M.D., W. K. Hass, M.D., and D. A. Callagan, M.D., of the U.S. Navy Medical Corps reported this finding in the October 17 issue of the *Journal of the American Medical Association.* They conducted electroencephalograph tests on 295 women at the U.S. Naval Hospital, Portsmouth, Virginia.

Electrodes of the electroencephalograph are pasted to expectant mother's bodies, permitting a systematic search for fetal heart beats. The machine picks up the electrical impulses from the fetal heart and records them on a graph. The number of fetuses is indicated by slightly different heart beats.

Three hundred and twenty-one tracings were obtained from the 295 patients by this method. In a vast majority of case studies it also was possible to support the occurrence of fetal death.

Tracings were taken at random between the eleventh and fortieth week of pregnancy. The twentieth through the twenty-seventh week was the most favorable period, the doctors said, and 100 per cent accuracy was possible when diagnosing twins or triplets during this period. In all diagnoses during the twentieth through twenty-seventh week, a 90 per cent degree of accuracy was obtained. In all cases between the eleventh and fortieth week of pregnancy they said an 81 per cent degree of accuracy of diagnosis was obtained.

The earliest positive diagnosis of twins was made at sixteen weeks. An accurate diagnosis of triplets was easily made at twenty weeks. The doctors noted that an x-ray made of the same patient was still inconclusive for triplets four weeks later.

Their investigation was prompted by a desire for early diagnosis due to complications of multiple pregnancies; by concern about irradiation hazards of x-ray diagnosis, and by the increasing availability and efficiency of the electroencephalograph.

NECROLOGY

Victor Vance Anderson, M.D., of Staatsburg, died on July 26 at his home at the age of eighty-one. Dr. Anderson graduated in 1903 from the University of Louisville School of Medicine. In 1924 he founded the Anderson School and was its director. From 1913 to 1918 he was psychiatrist and medical director of the Municipal Court in Boston. In 1919 he was scientific adviser to the New York Prison Commission when he then became associate medical director of the National Committee for Mental Hygiene, after which he was named psychiatrist and director of medical research for R. H. Macy and Co., a post he held until 1930. In his association with the National Committee for Mental Hygiene, Dr. Anderson had helped to establish the first child guidance clinics in the country. He also directed and wrote official reports of mental delinquency surveys by the states of Georgia, West Virginia, and Wisconsin and mental hygiene surveys of Maryland, South Carolina, Kentucky, Missouri, and the City of Cincinnati. Dr. Anderson was a Fellow of the American Psychiatric Association and a member of the American Orthopsychiatric Association of which he was the first president, the American Psychopathological Association, the American Academy of Child Psychiatry, the American Association on Mental Deficiency, the New York Neurological Society, the New York Society for Clinical Psychiatry, the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Alexander John Ferris, M.D., of Buffalo, died on June 5 in Deaconess Hospital at the age of fifty-seven. Dr. Ferris graduated in 1930 from the University of Buffalo School of Medicine. He was a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Aaron N. Gorelik, M.D., of the Bronx, died on July 17 at Parkchester Hospital at the age of fifty-eight. Dr. Gorelik received his medical degree from the University of Beirut in 1925. He was a Fellow of the American College of Cardiology, a Fellow of the American College of Angiology, a Fellow of the International College of Surgeons, and a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Vincent Sumner Hayward, M.D., of the Bronx, died in Boulevard Hospital on June 12 at the age of seventy-five. Dr. Hayward graduated in 1908 from Columbia University College of Physicians and Surgeons. He had been an associate attending physician at Union Hospital of the Bronx and at Goldwater Memorial Hospital.

Robert Ernest Kinloch, M.D., of Brooklyn, died on July 12 in Methodist Hospital of Brooklyn at the age of eighty-six. Dr. Kinloch graduated in 1899 from Albany Medical College. He was a consultant in urology at Cumberland Hospital. Dr. Kinloch, who retired in 1953, was a Fellow of the American College of Surgeons and a member of the American Urological Association, the Brooklyn Urological Society, the Brooklyn Surgical Society the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Edwin Kleinschmidt, M.D., of Mystic, Connecticut, formerly of Manhasset, died at his home on July 24 at the age of seventy-six. Dr. Kleinschmidt graduated from Washington University School of Medicine, St. Louis, Missouri, in 1909. He was health and education director of the National Tuberculosis Association from 1927 until 1942. During World War II he was North Atlantic area director for the American Red Cross. Until his retirement in 1959, Dr. Kleinschmidt was a member of the Nassau County Medical Society.

Herman Levinsohn, M.D., of New York City, died on July 24 in Manhattan Hospital at the age of eighty. Dr. Levinsohn graduated in 1905 from Long Island College Hospital School of Medicine. He was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Stephen C. Meigher, M.D., of Schenectady, died on July 27 at the age of forty-seven. Dr. Meigher graduated in 1938 from Cornell University Medical

College and interned at New York Hospital. He was chief of surgery at St. Clare's Hospital, an attending surgeon at Ellis Hospital, and a consultant in surgery at Schenectady Rehabilitation and Day Hospital (formerly Schenectady City Hospital), and Eastern New York Orthopedic Hospital-School. Dr. Meigher was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the Schenectady County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

P. Francis Mestice, M.D., of Yonkers, died on July 16 in his summer home at Candlewood Trails, New Milford, Connecticut, at the age of forty-three. Dr. Mestice graduated in 1943 from New York Medical College. He was attending in gynecology at St. John's Riverside Hospital Outpatient Department. Dr. Mestice was an Associate of the International College of Surgeons and a member of the Yonkers Academy of Medicine, the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Norman Louis Schmidt, M.D., of New York City and Stamford, Connecticut, died at the Veterans Administration Hospital in Newington at the age of sixty-three. Dr. Schmidt graduated in 1927 from Vanderbilt University School of Medicine. A special fellow in oncology and a research associate in cancer at the Yale School of Medicine, Dr. Schmidt was a member of the Industrial Medical Association.

Michael Shander, M.D., of New York City, died on July 8 at the age of seventy-one. Dr. Shander graduated in 1913 from New York Homeopathic Medical College and Flower Hospital. He was a member of the East Side Clinical Society, the New York County Medical Society, and the Medical Society of the State of New York.

Wilhelm Swienty, M.D., of New York City, died at Elmhurst General Hospital on July 13 at the age of sixty. Dr. Swienty received his medical degree from the University of Berlin in 1929. He was an assistant in obstetrics and gynecology at St. Clare's Hospital. Dr. Swienty was a Fellow of the American College of Obstetrics and Gynecology, a Fellow of the International College of Surgeons, and a member of the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry G. Wincor, M.D., of the Bronx, died on July 17 at the age of seventy-four. Dr. Wincor graduated in 1908 from Long Island College Hospital School of Medicine. He was a consultant in ophthalmology at Bronx and Fordham Hospitals and the Hebrew Home and Hospital for Chronic Sick, and an honorary assistant in surgery at New York Eye and Ear Infirmary. Dr. Wincor was a Diplomate of the American Board of Ophthalmology, a Fellow of the American College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

The love of justice is simply, in the majority of men, the fear of suffering injustice.—La Rochefoucauld

MEDICAL NEWS

Course in Cancer Chemotherapy—The Sloan-Kettering Institute for Cancer Research; the Memorial and James Ewing Hospitals; and the Sloan-Kettering Division, Graduate School of Medical Sciences, Cornell University announce a two-week course in cancer chemotherapy October 17 to 28. The course will include lectures and demonstrations of screening methods; pharmacologic technics; methods for the clinical evaluation of potential chemotherapeutic agents; and a review of the chemistry, pharmacologic effects, and clinical applications of the polyfunctional alkylating agents, the antimetabolites, steroid hormones, and miscellaneous agents in the treatment of cancer. Selected topics also will be included. The course is principally designed for physicians interested in cancer chemotherapy.

Applications, including a brief summary of the applicant's clinical training and current appointments, should be made to: Frank L. Horsfall, Jr., M.D., President and Director, Sloan-Kettering Institute, 410 East 68th Street, New York 21, New York.

Examinations for American Board of Obstetrics and Gynecology—The next scheduled written examination (part 2) of the American Board of Obstetrics and Gynecology will be held in various cities of the United States on Friday, January 13, 1961.

Candidates submitting applications in 1960 for the 1961 examinations are not required to submit case reports as previously required to complete the part 1 examinations of the Board. In lieu of this requirement, new candidates are required to keep in their files a duplicate list of hospital admissions as submitted with their application for submittal at the annual meeting in Chicago should they become eligible to take the part 2 (oral) examinations.

Scheduled part 1 candidates and candidates resubmitting case reports are required to submit case reports prior to August 1 each year.

For a current bulletin write to: Robert L. Faulkner, M.D., Executive Secretary and Treasurer, 2105 Adelbert Road, Cleveland 6, Ohio.

New Directory of Blood Facilities Published—A new directory describing 3,779 blood transfusion facilities and identifying their services has been issued by the Joint Blood Council, a nonprofit national organization with headquarters in Washington, D.C. The new directory lists almost twice the number of blood handling institutions as the 1958 edition. It shows the location of facilities, the extent of their operations, how they are organized, what specific services they offer, and other information of importance to physicians, hospitals, and any person or organization interested in blood and its derivatives.

For information on how to obtain a copy of the directory write to: Frank E. Wilson, M.D., Executive Vice-President, Joint Blood Council, Inc., 1832 M Street, N.W., Washington 6, D.C.

Postgraduate Courses at University of Buffalo—The University of Buffalo School of Medicine has announced the following postgraduate courses for the coming year: Recent Advances in Clinical Practice—September 12 through 17; Otolaryngology—September 28 and 29; Pediatrics—October 5, 12, 19, and 26, and November 2 and 9 (Wednesday evenings); The State Hospital and the Practitioner of Medicine—October 13; Medical and Surgical Aspects of Urinary Tract Disease—October 19 and 20; Clinical Dialysis—November 2 and 3; Modern Laboratory Procedures in Clinical Practice: Their Use and Interpretation—November 9 and 10; Electrocardiography—November 16, 17, and 18; Obstetrics and Gynecology—November 30 and December 1; Forensic Medicine—December 8; Minor Surgery and Office Orthopedics—December 14 and 15; Allergy—March 22, 23, and 24; Arthritis—April 5 and 6; Anesthesia—April 10 through 15.

For further information write to: Department of Postgraduate Education, University of Buffalo School of Medicine, 3435 Main Street, Buffalo 14, New York.

New York Academy of Medicine to Hold Clinical Science Course—The Committee on Medical Education of the New York Academy of Medicine has announced it will present its first annual correlated clinical science course on Tuesday evenings, 8:00 to 10:00 P.M., September 6, 1960, through May 23, 1961. The course will consist of 35 sessions. Applicants may elect to take all or any part of the course. There is no tuition.

The subjects are as follows: *Metabolism and Fluid and Electrolytes*—Oral Nutrition, September 6; Intermediary Metabolism, September 13; Differential Diagnosis of Electrolyte Abnormalities, and Practical Correction of Electrolyte Abnormalities, September 20; Diabetic Acidosis and Renal Acidosis, and Respiratory Acidosis and Alkalosis, September 27; *Cardiovascular System*—Hemodynamics of Congestive Heart Failure, October 4; Cardiac Arrhythmias, October 11; Hypertension, October 18; Disorders of the Coronary Arterial System, November 1; Thrombosis and Embolism, November 7; *Urinary System*—Anatomy and Physiology of the Kidney, November 15; Medical Diseases of the Kidney, November 22; Mechanisms of Infection and Obstruction of the Urinary Tract, November 29; *Endocrine and Reproductive System*—Adrenals, December 6; Parathyroids and Calcium Metabolism, December 13; Thyroid Function, December 20; Pituitary and Gonadal Disorders, January 10, 1961; *Respiratory System*—The Assessment of Pulmonary Function, and The Syndrome of Alveolar Hypoventilation, January 17, 1961; Alveolar-Capillary Block, and Tuberculosis, January 24, 1961; Chronic Bronchitis and Emphysema, and Physiologic Basis of Cor Pulmonale, January 31, 1961; *Infection, Inflammation, Immunity, and Hypersensitivity*—Relationship of Microbe to Antibiotic and Host, February 7, 1961; Infections with Gram-Positive Organisms, February 14, 1961; Infections with Gram-Negative Organisms, February 21, 1961; Viruses and Virus Infections, February 28, 1961; *Nervous System*—The Electroencephalogram: Patterns and Interpretation, and Convulsive Disorders, March 7, 1961; The Demyelinating Diseases, and Neuromuscular Diseases, March 14, 1961; Cerebral Vascular Disease, Infarction and Thrombosis, and Peripheral Neuropathy, March 21, 1961; Tumors of the Central Nervous System, March 28, 1961; *Digestive System*—Pancreatic Diseases, April 4, 1961; Ulcerative Colitis, April 11, 1961; Malabsorption, April 18, 1961; Jaundice, April 25, 1961; *Blood*—Transfusions and Blood Preservation, May 2, 1961; Iron Metabolism, May 9, 1961; Hemolytic States, May 16, 1961; Hemorrhagic States, May 23, 1961.

For further information write to: Executive Secretary, Committee on Medical Education, The New York Academy of Medicine, 2 East 103rd Street, New York 20, New York.

Short Course in Audiology—A short course in audiology will be offered several times each year by the Section of Audiology, Department of Otorhinology, Temple University School of Medicine, Philadelphia 40, Pennsylvania.

The course will be one week in length and will encompass theoretic and clinical aspects of audition. Hearing testing and interpretation will be stressed. Office procedures, equipment, and industrial audiometry will be discussed.

Further information may be obtained by writing to: Philip E. Rosenberg, Ph.D., Director, Section of Audiology, Temple University Medical Center, 3401 North Broad Street, Philadelphia, Pennsylvania.

Seminar on Kidney Disease in Virginia—The Southeastern Region of the College of American Pathologists and the Virginia Society of Pathologists will hold a joint meeting on kidney disease at the John Marshall Hotel in Richmond, Virginia, on November 25 and 26.

The slide sets for this seminar may be purchased from: Geoffrey T. Mann, M.D., Professor of Forensic Pathology, P.O. Box 41, Medical College of Virginia, Richmond 19, Virginia. Dr. Mann should also be contacted for further information about the seminar.

Personalities

Awarded

Howard A. Rusk, M.D., New York City, the gold medal of the Hundred Year Association for his "individual contribution to standards and traditions of New York City."

Elected

Alexander Brunschwig, M.D., New York City, as president of the medical board of the Memorial Center for Cancer and Allied Diseases.

Appointed

Joseph H. Farrow, M.D., New York City, as chief of the breast service, and Gordon McNeer, M.D., New York City, as chief of the gastric and mixed tumor services at Memorial Center for Cancer and Allied Diseases . . . Alfred A. Messer, M.D., New York City, as clinical director of the Family Mental Health Service, Clifton, New Jersey . . . Alonzo S. Yerby, M.D., as executive director of Medical Care Services, The City of New York Department of Health.

Speakers

Peter J. Di Natale, M.D., Batavia, before the thirteenth International Congress on Occupational Health, on July 25 in New York City on the subject "Duties and Responsibilities of the Physician in

Small Plants" . . . Edith Klemperer, M.D., New York City, on the subject "Hypnosis in the Control of Pain" on June 15, at a conference held by the New Jersey Section of the Society for Clinical and Experimental Hypnosis and the Department of Psychology at Rutgers University.

MEDICAL MEETINGS

Association for the Advancement of Psychoanalysis

The regular monthly meeting of the Association for the Advancement of Psychoanalysis will be held at the New York Academy of Medicine, Fifth Avenue and 103rd Street, New York City, on Wednesday evening, September 28, at 8:30 P.M. Thomas Hora, M.D., New York City, will present a paper entitled "Existential Psychiatry and Group Psychotherapy." The discussants will be Louis E. DeRosis, M.D., and Edward C. Whitemont, M.D., New York City.

Brooklyn Psychiatric Society

The Brooklyn Psychiatric Society has announced its program of dinner meetings for the year 1960–1961. All the meetings will be held on Thursday evenings at the Brooklyn State Hospital, 681 Clarkson Avenue, Brooklyn, New York.

October 20—"Brief Communications," Abbott A. Lippman, M.D., Brooklyn, moderator. November 17—"Panel Discussion: Schools of Psychoanalytical Thought and Training," Ruth Munroe, Ph.D., New York City, moderator. February 16—"Family Interview Technique: Diagnostic and Therapeutic Implications," Stephen Wells Kempster, M.D., New York City. March 16—"Male Homosexuality," Irving Bieber, M.D., New York City.

For further information contact: Morton M. Golden, M.D., Secretary-Treasurer, 7 Montague Terrace, Brooklyn 1, New York.

Bronx Pediatric Society

The Bronx Pediatric Society will meet at Morrisania City Hospital, 168th Street and Gerard Avenue, Bronx, on Wednesday evening, November 9, at 8:30 P.M. There will be a presentation of cases from various hospitals with discussion by the directors of the various services.

For further information contact: David L. Milliken, M.D., 1212 Grand Concourse, Bronx 56, New York.

American Psychosomatic Society

The American Psychosomatic Society will hold its eighteenth annual meeting at Chalfonte-Haddon Hall in Atlantic City on Friday, Saturday, and Sunday, April 28 through 30, 1961.

The program committee would like to receive titles and abstracts of papers for consideration for the program. Time allotted for presentation of each paper will be twenty minutes. The deadline for submission of abstracts is December 1, 1960. The abstracts should be not more than two typewritten pages in length. The program committee would like to receive nine copies of each abstract.

Abstracts should be submitted to: Morton F. Reiser, M.D., Chairman, Program Committee, American Psychosomatic Society, 265 Nassau Road, Roosevelt, New York.

The best reformers the world has ever seen are those who commence on themselves.—GEORGE BERNARD SHAW

Woman's Auxiliary
to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

AMEF Needs Support of Auxiliary

UNDERSTANDING of the significance of the American Medical Education Foundation is steadily growing among the membership of the Woman's Auxiliary to the Medical Society of the State of New York. This has been evidenced by a total contribution of $7,961.50 which was raised during 1959 and 1960, an amount representing a per capita donation of $1.67. However, this also indicates that one third of the counties still do not realize that AMEF is a high priority project, a fact pointed out by each of the Woman's Auxiliary presidents since the inception of AMEF in 1951.

Mrs. James L. McCartney, the immediate past president, served as district chairman of the AMEF during 1959 and 1960 and has the honor for 1960 to 1961 of serving as the national chairman—a distinction which the whole Auxiliary membership can enjoy. Mrs. McCartney's county, Nassau, has consistently given great prominence to the AMEF and has raised a large percentage of the State donation. Nassau County is to be congratulated for putting first things first.

Members have never been asked to donate to AMEF from the county budgets but rather to raise specific funds for this cause. There are 80 medical schools in the United States and 10 are in New York State. The Auxiliary is well aware of the needs of each school and the members are well informed of the schools grateful response to the unrestricted use of the funds from the AMEF. Need there be any more of an incentive?

Very special congratulations are due to the Albany County Auxiliary which was the recipient of all three awards given by the State this year for its work for the AMEF. Under the tireless leadership of Mrs. Albert Yunich and Mrs. James H. Flynn, the cochairmen, Albany raised $2,911, which was 35 per cent of the total contribution from the State. The awards were for the largest amount given by a single county, for the largest increase over 1959, and for the largest per capita donation—upwards of $10. At the national convention in Miami, Albany received an award for the largest contribution by a county with a membership of not more than 250.

With the distinction of having Mrs. McCartney serving as the national chairman, the Auxiliary is challenged to increase its efforts and locally to compete with the record set by Albany County Auxiliary—at least on a per capita basis.

MRS. HARVEY W. KAUSEL, *Chairman*
American Medical Education Foundation

Bullock Road
Slingerlands, New York

Use of Tolbutamide in Paralysis Agitans

When an amelioration of the symptoms of parkinsonism accompanied tolbutamide therapy in an elderly diabetic patient, it was decided to try the drug on an additional 14 patients with paralysis agitans. After a year and a half, the authors conclude that results are sufficiently marked and consistent to warrant further clinical study and animal experimentation with the drug in this indication.

Of the total of 15 patients studied, 11 showed significant decrease in rigidity, tremor, or both. Several showed marked improvement in the mask-like facies, with a return of a more normal smile. Speech improved in several. The improvement apparently was not related to hypoglycemia; the pharmacologic mechanism is not understood.

In their comment, the authors suggest that all patients given tolbutamide for paralysis agitans be fed six times daily, 3 meals and 3 lunches; or each lunch may be replaced with 6 ounces of orange juice. Only one patient in this series had a hypoglycemic reaction; he was undernourished and not taking food well. Most of these patients on tolbutamide needed less nursing care and could do many more daily living tasks. Discontinuing medication and resuming it had varying results; in some the effect of the drug was decreased on resumption.—*Journal of the American Medical Association, March 26, 1960, Edwin W. Gates, M.D., and Irving Hyman, M.D.*

BALANCED THERAPY FOR CHOLESTEROL-PHOSPHOLIPID IMBALANCE . . .

REDUCES CHOLESTEROL LEVELS

IN ATHEROSCLEROSIS, OTOSCLEROSIS, VITREOUS OPACITIES, LIVER DISORDERS

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Lipozyme Tablets supply correctly balanced proportions of lipotropic factors: choline, methionine, and inositol (approximately one gram total per tablet), to reduce the cholesterol levels of the blood.

BETAZYME TABLETS

Betazyme Tablets supply balanced amounts of oxytropic factors: all the B vitamins, cocarboxylase, yeast enzymatic hydrolysate, divalent minerals and amino acids, to promote cellular oxidation processes.

DOSAGE: One tablet of each t.i.d., after meals. **SUPPLIED:** Bottles of 100 tablets

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*REFERENCES

1. Eggers, H.: "Lipotropic substances for the absorption of vitreous opacities," New York St. J. Med. 51:2255, 1951.
2. Kopetzky, S. J.: "Reversal of the biochemical processes in cases of cochlear and vestibular dysfunction," J. Int. Coll. Surg. 13:139, 1950.
3. Tuttle, E.: "Methods of the early determination of atherosclerosis and preventive measures," J. Ins. Med. 5:4, 1950.

NEW YORK STATE MEDICAL LIBRARY

Education Building

Albany, New York

Editor's Note: *The following information has been provided for the information of our readers by Miss Heath Babcock, medical librarian, New York State Medical Library, Albany, New York.*

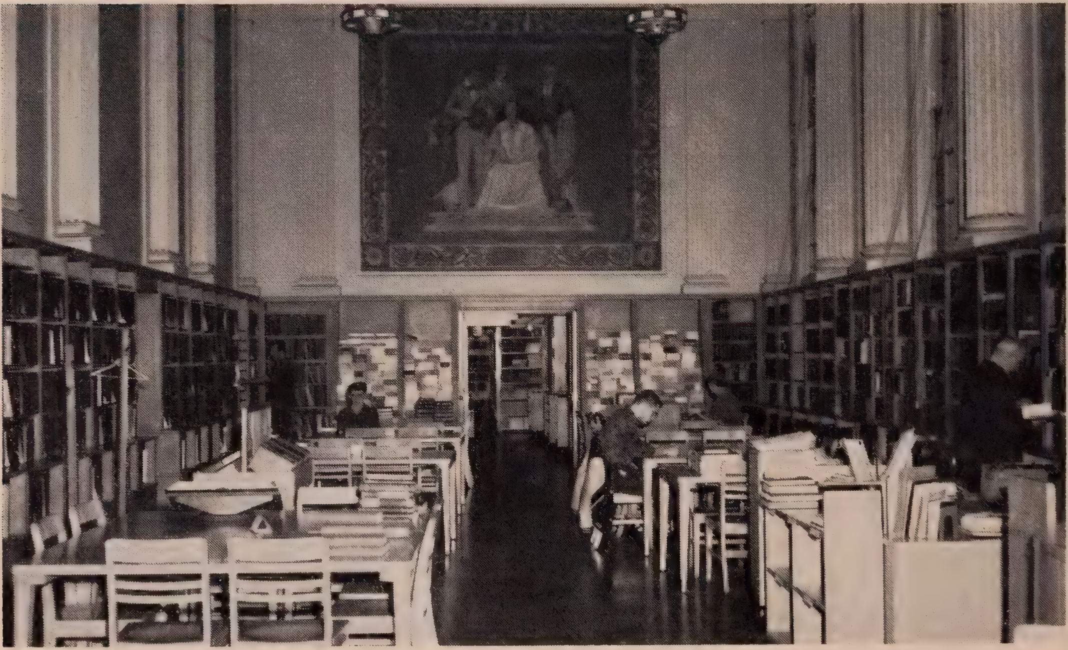


Fig. 1. Reading room of the State Medical Library, Education Building, Albany, which is part of the New York State Library and available for use by physicians of New York State.

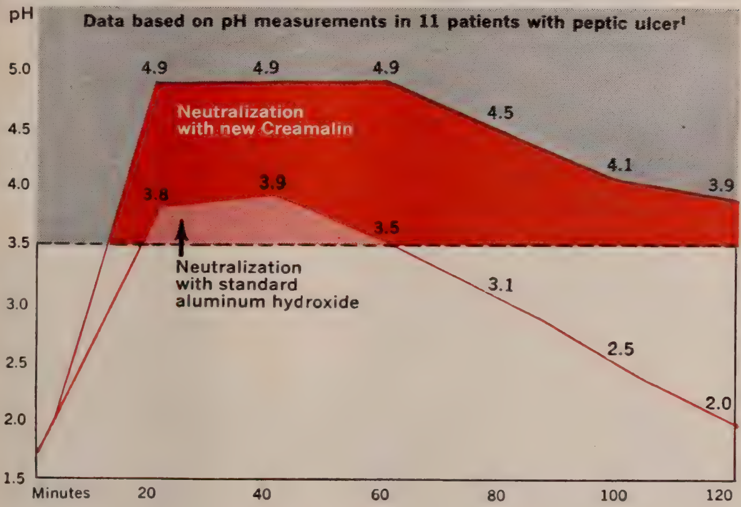
THIS is your library. It was established by Act of Legislature in 1891 for the use of the physicians registered in the State. The State Medical Library subscribes to over 600 periodicals and has over 70,000 volumes, most of which are available for loan to physicians and members of the allied professions (Fig. 1). The State Medical Library is one of several which constitute the New York State Library having a total of over 2,000,000 volumes, pamphlets, and reprints, most of which are also available for the use of the State Medical Library patrons.

This constitutes a wealth of material for the use of our borrowers throughout the State. The Library will lend texts and monographs requested by author and title; also periodicals requested by name of journal, volume, and year. Of course, the more specific the request the quicker will be the service available.

[Continued on page 2771]

At the site of peptic ulcer

Following determination of basal secretion, intragastric pH was continuously determined by means of frequent readings over a two-hour period.



neutralization is much faster and twice as long with

New CREAMALIN® ANTACID TABLETS

New proof in vivo[1] of the much greater efficacy of new Creamalin tablets over standard aluminum hydroxide has now been obtained. Results of comparative tests on patients with peptic ulcer, measured by an intragastric pH electrode, show that new Creamalin neutralizes acid from 40 to 65 per cent faster than the standard preparation. This neutralization (pH 3.5 or above) is maintained for approximately one hour longer.

New Creamalin provides virtually the same effects as a liquid antacid[2] with the convenience of a tablet.

Nonconstipating and pleasant-tasting, new Creamalin antacid tablets will not produce "acid rebound" or alkalosis.

Each new Creamalin antacid tablet contains 320 mg. of specially processed, highly reactive, short polymer dried aluminum hydroxide gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. Minute particles of the powder offer a vastly increased surface area for quicker and more complete acid neutralization.

Dosage: Gastric hyperacidity — from 2 to 4 tablets as necessary. Peptic ulcer or gastritis — from 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed whole with water or milk, or allowed to dissolve in the mouth. **How supplied:** Bottles of 50, 100, 200 and 1000.

1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

for peptic ulcer ■ gastritis ■ gastric hyperacidity

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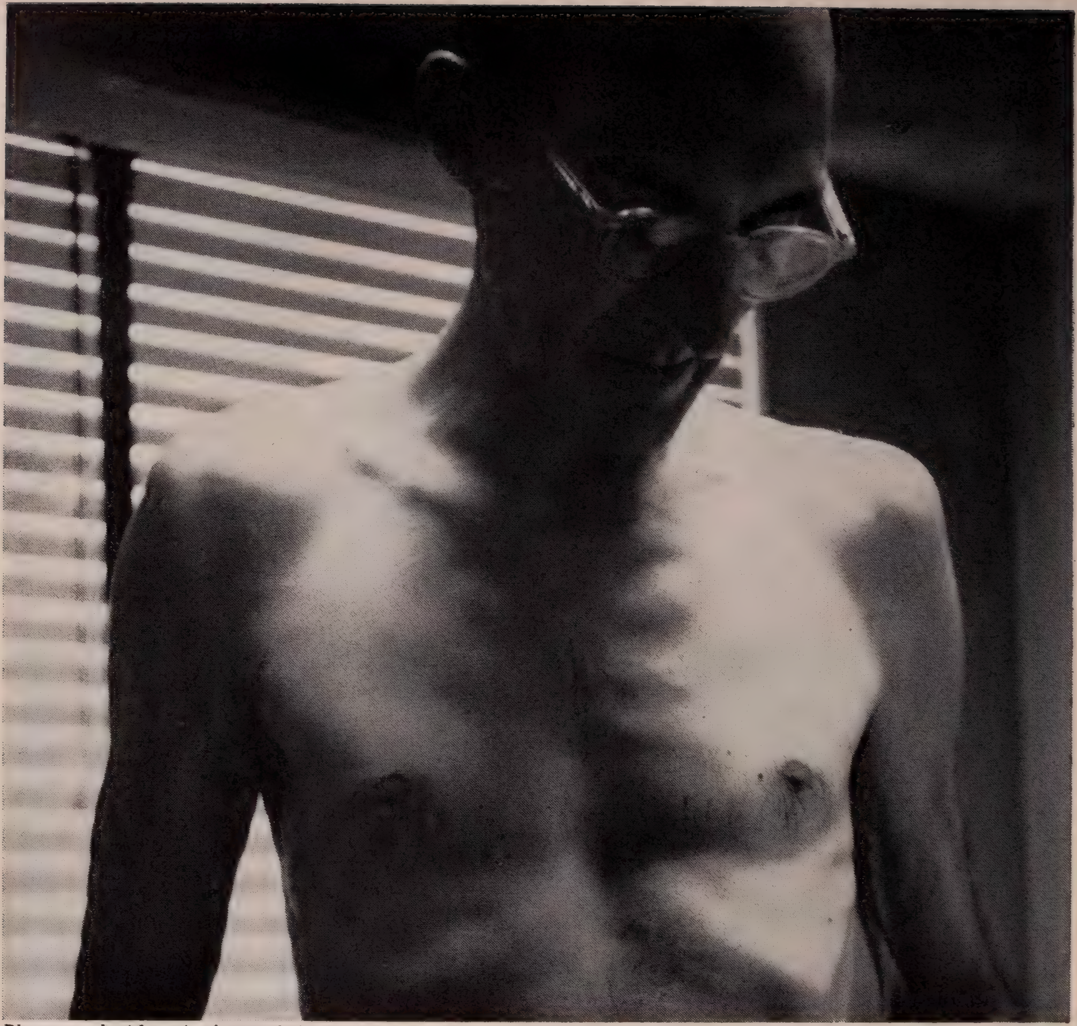
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How new Dianabol rebuilt muscle tissue in this underweight, debilitated patient

Patient was weak and emaciated before Dianabol. R. C., age 51, weighed 160 pounds following surgery to close a perforated duodenal ulcer. His convalescence was slow and stormy, complicated by pneumonia of both lower lobes. Weak and washed out, he was considered a poor risk for further necessary surgery (cholecystectomy). Because a conventional low-fat diet and multiple-vitamin therapy failed to build up R. C. sufficiently, his physician prescribed Dianabol 5 mg. b.i.d.

Patient regains strength on Dianabol. In just two weeks R. C.'s appetite increased substantially; he had gained 9½ pounds of lean weight. His muscle tone was improved, he felt much stronger. After 4 weeks, he weighed 176 pounds. Biceps measurement increased from 10″ to 11½″. For the first time since onset of postoperative pneumonia, his chest was clear. Mr. C.'s physician reports: "He tolerated cholecystectomy very well and one week postop felt better than he has in the past 2 years."

Dianabol: new, low-cost anabolic agent

By promoting protein anabolism, Dianabol builds lean tissue and restores vigor in underweight, debilitated, and dispirited patients. In patients with osteoporosis Dianabol often relieves pain and increases mobility.

As an anabolic agent, Dianabol has been proved 10 times as effective as methyltestosterone. Yet it has far less androgenicity than testosterone propionate, methyltestosterone, or norethandrolone.

Because Dianabol is an oral preparation, it spares patients the inconvenience and discomfort of parenteral drugs.

And because Dianabol is low in cost, it is particularly suitable for the aged or chronically ill patient who may require long-term anabolic therapy.

Supplied: *Tablets,* 5 mg. (pink, scored); bottles of 100.

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converts protein to working weight in wasting or debilitated patients

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STATE MEDICAL LIBRARY

[Continued from page 2768]

The State Medical Library also offers reference and bibliographic services. Again it is wise to be as specific as possible in noting the subject of the request, the years to be covered in the search, and whether or not articles in foreign languages are acceptable, or in English only. A partial limitation must be put on both reference problems and the completeness of bibliographies since the number of qualified professional librarians and the physical element of time are limited. The librarians, however, can well be trusted in their selective ability for the final choice of material for shipment.

There is no charge for these services except the payment of the return transportation charges including adequate insurance. An individual may borrow up to ten volumes at one time, an institution is entitled to twenty-five. Many of our present patrons borrow through their hospital or society library which may be more convenient for those so fortunately situated. But we feel sure that there are many physicians so located in the State that they lack the facilities of any library, and it is to them particularly that this notice is directed. These are library services available for you, very generous library services, and at only a nominal cost. We invite you to take advantage of them.

The address is New York State Medical Library, Education Building, Albany 1, New York. Again we ask you please to be as specific as possible with your requests, and again we assure you there is no charge other than the payment of the return transportation together with adequate insurance to cover the cost of the volumes in the shipment.

You can spot a bad critic when he starts by discussing the poet and not the poem.—Ezra Pound

BOOKS RECEIVED

(The following books were received during the month of July, 1960)

Oral Pathology. By Kurt H. Thoma, D.M.D., and Henry M. Goldman, D.M.D. Fifth edition. Quarto of 1,523 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $27.50.

Neoplasms of Bone and Related Conditions. By Bradley L. Coley, M.D. Second edition. Quarto of 863 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Cloth, $30.

Office Diagnosis. By Paul Williamson, M.D. Quarto of 470 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $12.50.

Current Surgical Management II. Edited by John H. Mulholland, M. D., Edwin H. Ellison, M.D., and Stanley R. Friesen, M.D. Octavo of 348 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $8.00.

Industrial Pulmonary Diseases. A Symposium held at The Postgraduate Medical School of London, 18th–20th September, 1957, and 25th–27th March, 1958. Edited by E. J. King, D.Sc., and C. M. Fletcher, M.D. Octavo of 273 pages, illustrated. Boston, Little, Brown and Company, 1960. Cloth, $8.50.

The Year Book of Endocrinology. 1959–1960 Series. Edited by Gilbert S. Gordan, M.D. Duodecimo of 384 pages, illustrated. Chicago, The Year Book Publishers, 1960. Cloth, $8.00.

Help-Bringers: Versatile Physicians of New Jersey. By Fred B. Rogers, M.D. Octavo of 125 pages, illustrated. New York, Vantage Press, 1960. Cloth, $2.95.

Essays on the First Hundred Years of Anaesthesia. Volume 1. By W. Stanley Sykes, M.B. Octavo of 171 pages, illustrated. Edinburgh, E. & S. Livingstone Ltd., (Baltimore, The Williams & Wilkins Company), 1960. Cloth, $7.00.

Practical Clinical Management of Electrolyte Disorders. By William J. Grace, M.D. Octavo of 132 pages, illustrated. New York, Appleton-Century-Crofts, Inc., 1960. Cloth, $4.95.

Handbook of Social Gerontology. Edited by Clark Tibbitts. Octavo of 770 pages, illustrated. Chicago, The University of Chicago Press, 1960. Cloth, $10.

Intra-osseous Venography. By Robert A. Schobinger, M.D. Duodecimo of 243 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $14.50.

The Heart in Industry. By Twenty-Four Authors. Edited by Leon J. Warshaw, M.D. Octavo of 675 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Cloth, $16.

The Neurochemistry of Nucleotides and Amino Acids. A Symposium of the Section on Neurochemistry, AAN. Edited by Roscoe O. Brady, M.D., and Donald B. Tower, M.D. Octavo of 292 pages, illustrated. New York, John Wiley & Sons, Inc., 1960. Cloth, $10.

Electron Microscopy of the Cardiovascular System. By Bruno Kisch, M.D. Revised and enlarged English edition. Octavo of 180 pages, illustrated. Springfield, Ill., Charles C Thomas, 1960. Cloth, $7.50.

Diseases of the Newborn. By Alexander J. Schaffer, M.D. Quarto of 878 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $16.

The Medical Clinics of North America. Mayo Clinic Number. July, 1960. Common Neurologic Problems. Volume 44–Number 4. Octavo. Philadelphia, W. B. Saunders Company, 1960. Published Bimonthly (six numbers a year). Cloth $18 net; paper, $15 net.

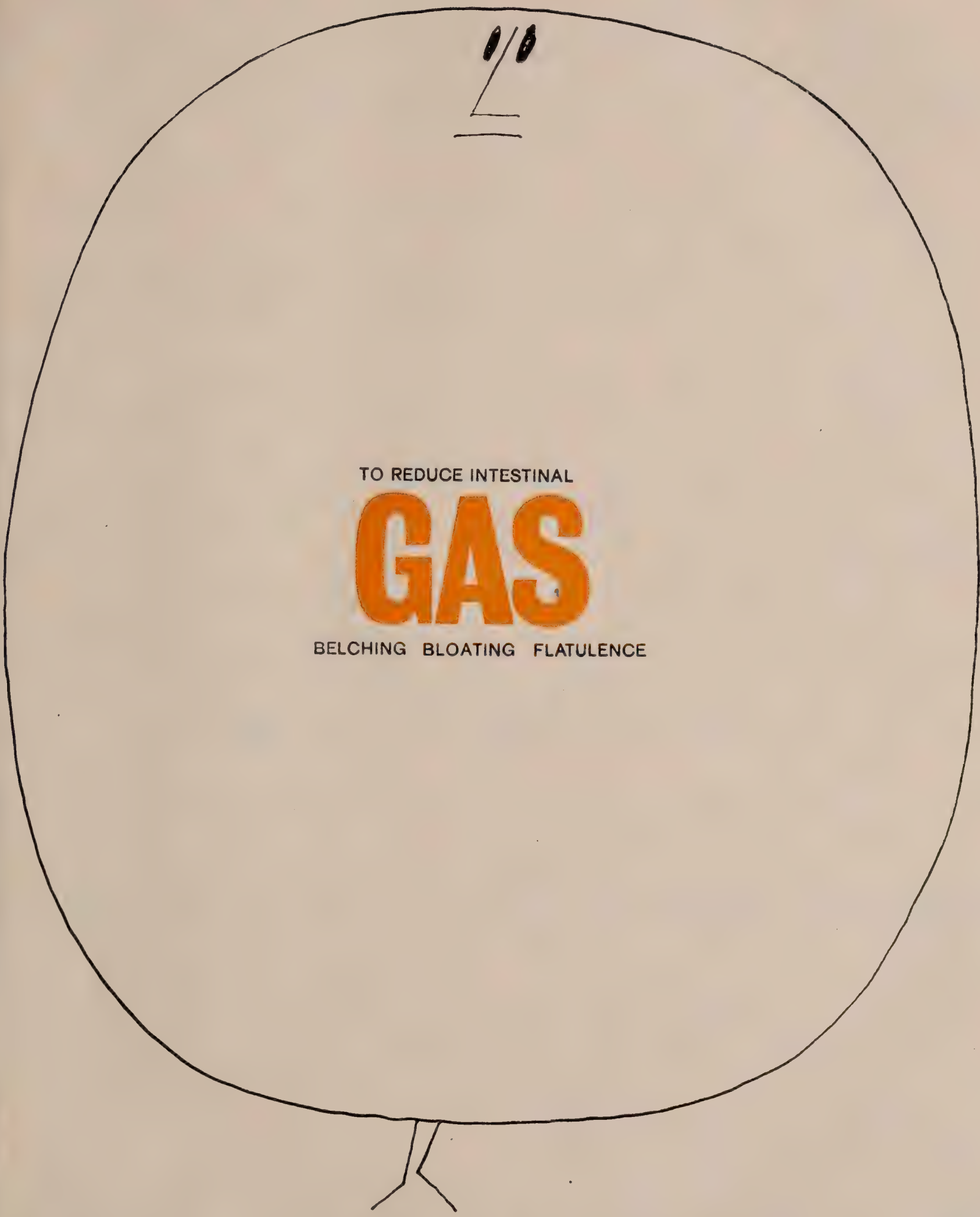
A Functional Approach to Neuroanatomy. By Earl Lawrence House, Ph.D., and Ben Pansky, Ph.D. Quarto of 494 pages, illustrated. New York, The Blakiston Division, McGraw-Hill Book Company, Inc., 1960. Cloth, $12.50.

Medical Physiology and Biophysics. Edited by Theodore C. Ruch, Ph.D., and John F. Fulton, M.D. Eighteenth edition. Quarto of 1,232 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $16.

Hysteria, Reflex, and Instinct. By Ernst Kretschmer, M.D. Octavo of 162 pages. New York, Philosophical Library, 1960. Cloth, $4.75.

Symposium on Congestive Heart Failure. Edited by Herrman L. Blumgart, M.D. Quarto of

[Continued on page 2774]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[Continued from page 2772]

121 pages, illustrated. New York, The American Heart Association, Inc., 1960. Paper, $2.00. (American Heart Association Monograph Number One)

Symposium on Salt and Water Metabolism New York City, December 11–12, 1959. Alfred P. Fishman, M.D., Guest Editor. Quarto of 1,060 pages, illustrated. New York, New York Heart Association, 1960. Paper, $2.00.

BOOKS REVIEWED

Collected Papers of the Mayo Clinic and the Mayo Foundation, Volume 50, 1958. Quarto of 791 pages, illustrated. Philadelphia, W. B. Saunders Company, 1959. Cloth, $13.

This 50th volume from the Mayo Clinic consists of almost 800 pages. It contains 109 articles and the titles of 570 more papers written by the Mayo Clinic staff which have been published in various journals. The articles have been carefully selected from the large number which have already been published or are in press for their informative value and for their importance to the general practitioner as well as to the general surgeon and other specialists.

With 13 papers on cardiac surgery and the extracorporeal circulation the Mayo Clinic shows that their surgeons are in the forefront of this rapidly-advancing branch of surgery. Equally interesting, provocative, and controversial papers appear on the alimentary tract, genitourinary diseases, ductless glands, dermatology, nervous system, radiology, anesthesia, and other systems of the body and related subjects. Various medical, surgical, diagnostic, and therapeutic aspects are covered to demonstrate the wide scope covered in this volume.

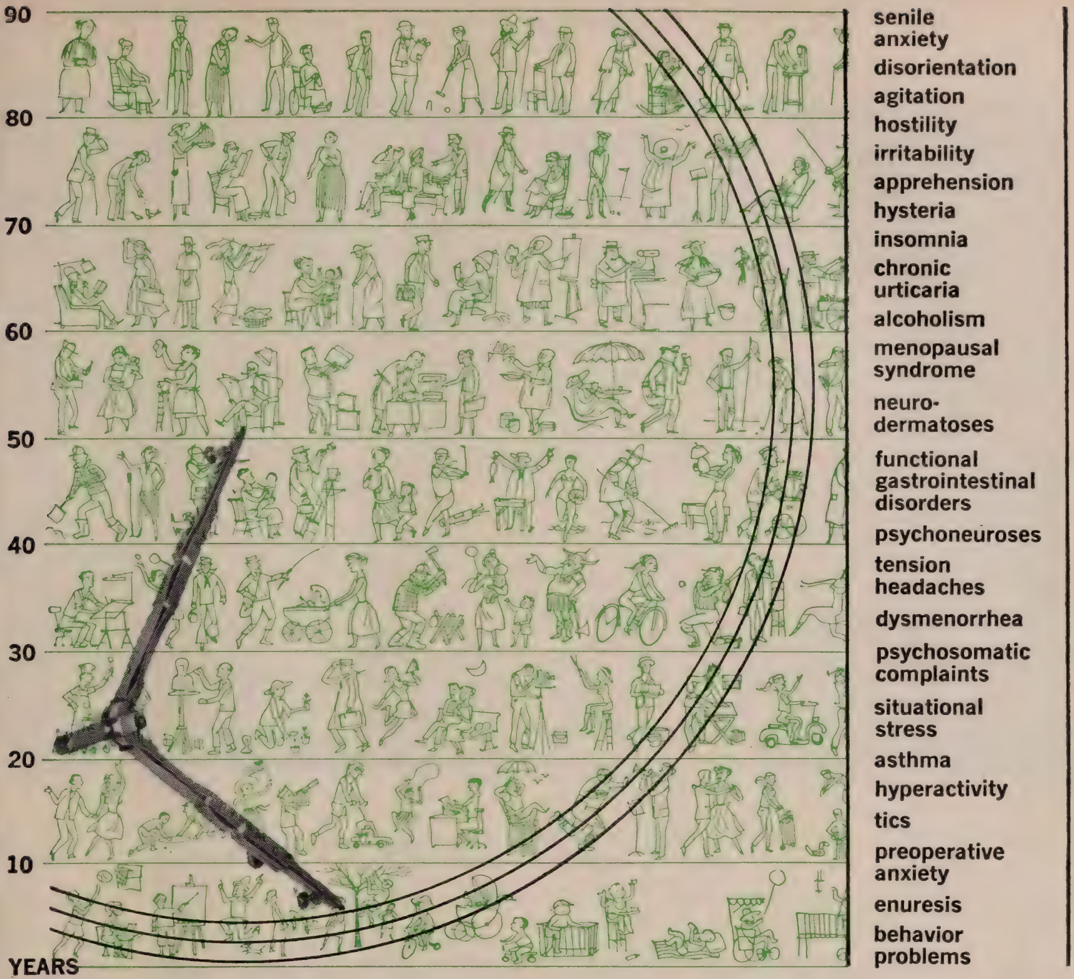
The 570 titles of papers which have already or will be published elsewhere should be of interest to those who are interested in other works which emanate from this great Clinic. The volume really represents an excellent refresher and postgraduate course and up-to-date advances in all phases of medical practice and, as such, is unreservedly recommended to all doctors regardless of what branch of medicine they practice.—Lewis E. Schottenfeld

The Care of Minor Hand Injuries. By Adrian E. Flatt, M.D. Quarto of 266 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $9.50.

Though minor from the viewpoint of life, hand injuries may be major so far as permanent disability in whole or part. Proper treatment, often taken for granted, is exceptionally important to curtail disability and maintain earning capacity.

This book is authoritative, scholarly, and practical.

[Continued on page 2776]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Supplied: Tiny 10 mg., 25 mg., and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution: 25 mg./cc. in 10 cc. multiple-dose vials; 50 mg./cc. in 2 cc. ampules. Prescription only.

Complete bibliography available on request.

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[Continued from page 2774]

Loss of skin is a common injury. Various methods of grafting are presented and appropriate use advised. For defects on dorsum and palm of hand the use of rotation and transposition flaps is shown. Injuries to the nails and nail beds and loss of pulp at the finger tip with thenar flap repair are well illustrated as well as the use of the cross flaps. Preservation of thumb length is stressed. Fractures, principles of tendon repair, baseball finger, dislocations, burns, and infections, as well as a number of other topics, are discussed in a well-disciplined and informative fashion.

The material is presented concisely, lucidly, and in pleasing sequence. The illustrations are excellent. The book should prove useful to all who are engaged in treating hand traumas.—William I. Sheinfeld

The Older Patient. By twenty-one authors. Edited by Wingate M. Johnson, M.D. Octavo of 589 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Cloth, $14.50.

The editor and 20 colleagues have written what they justifiably call a complete and practical guide to the care of the older patient. Although the emphasis in this excellent volume is largely clinical, there is a long and useful chapter on the anatomic background of geriatrics by Warren Andrew. The editing is skillfully done and Dr. Johnson has sensibly omitted considerations of topics such as allergy which present no special problems in the aging patient. In short, this may be described as the most complete and up-to-date clinical presentation of this lively topic now available. Illustrations are good but few; perhaps this is the reason this attractive volume is sold at what may be considered today a very reasonable price. The index is good.—Milton Plotz

Diagnosis and Treatment of Tumors of the Chest. Editor-in-chief, David M. Spain, M.D. (Sponsored by the American College of Chest Physicians.) Quarto of 371 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $14.75.

The author with the aid of 25 specialists in the fields of chest diseases, chest surgery, pathology, and radiology, has developed an inclusive, authoritative volume on chest tumors.

The book is well illustrated and well annotated and will serve as an excellent text. It is sufficiently complete to be a satisfactory reference book in this field and is a recommended addition to the average medical library.—Emanuel Mendelson

The Triumph of Surgery. By Jürgen Thorwald. Translated by Richard and Clara Winston. Octavo of 454 pages, illustrated. New York, Pantheon Books Inc., 1960. Cloth, $6.50.

Using a fictitious physician as the medium for the narration, Jürgen Thorwald, M.D., traces the development of surgery through the latter part of the 19th century. It is a very interesting experience. He takes you into the consulting rooms, operating theaters, and lecture halls where the giants of modern surgery have been active.

The author's descriptions are excellent. He depicts one dramatic episode after another. The narrator takes the reader through the tremendous advances which led to modern surgery. We are brought into intimate contact with Hughlings Jackson, Theodor Kocher, Marion Sims, Lawson Tait, Carl Langenbuch, Edoardo Bassini, Ferdinand Sauerbruch, and a host of others.

This book will appeal to the layman and the physician. It brings to light many interesting struggles which occurred in the profession during the development of modern surgery.

The Triumph of Surgery is written in a good readable style. It creates an atmosphere of excitement and tenseness, and is recommended for all physicians.—Alan A. Kane

Encyclopedia of Medical Syndromes. By Robert H. Durham, M.D. Octavo of 628 pages. New York, Paul B. Hoeber, Inc., 1960. Cloth, $13.50.

It is currently fashionable to decry the use of eponyms in medical literature and perhaps correctly so. However, we may have been overzealous in this direction. The vagueness of the eponym is sometimes preferable to dubious specificity, Addison's Disease being one illustration. Then again we give honor in this way to our predecessors who (usually!) deserve it for having been the first to describe or clarify a syndrome or disease. How often we have our first introduction to the fascinations of medical history in this way!

In any event, we can welcome a useful reference work in this field providing us with more information—though still concisely presented—about syndromes and eponyms than most dictionaries give. Robert H. Durham, M.D., chief of medicine at the Henry Ford Hospital, is the author of this admirable book and T.R. Harrison provides the foreword.

This is a delightful book for browsing. If you'd like to know (as did this reviewer when he read the names) about the syndromes of Hurler, Lorain, Thomson, and others here is the place to find the answers.—Milton Plotz

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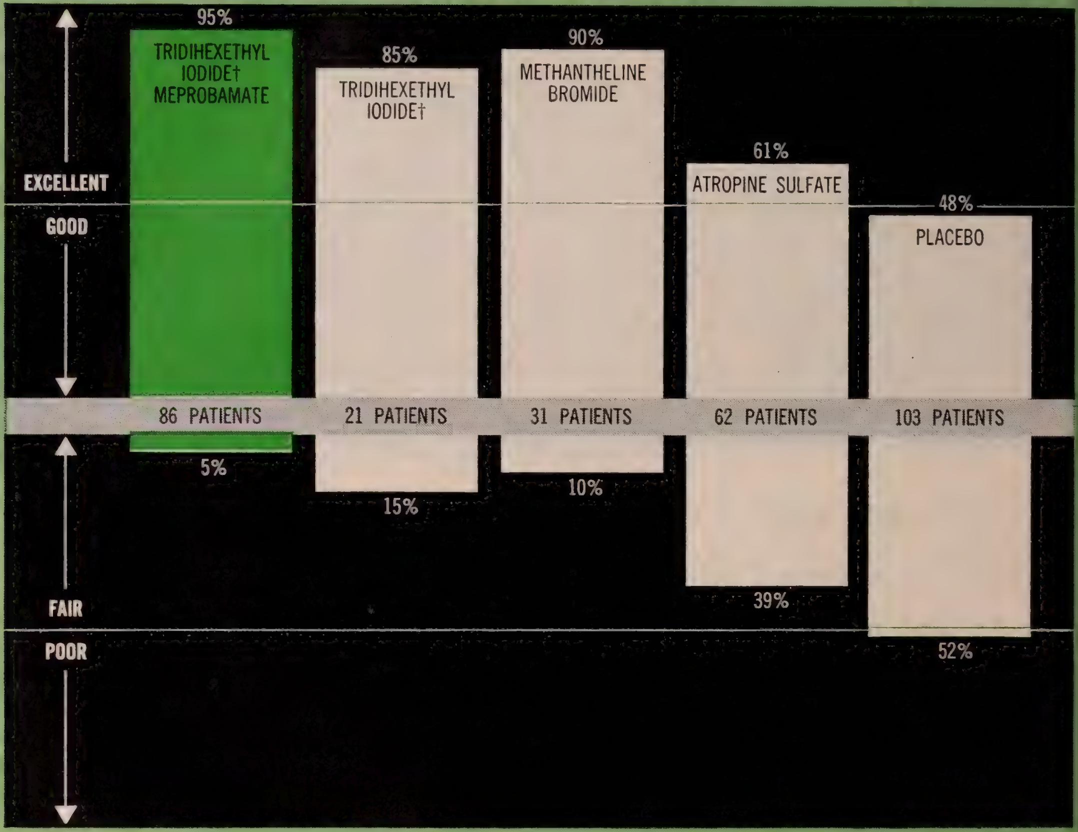

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URINARY RETENTION	0%	0%	18%	11%	1%
DROWSINESS	20%	0%	0%	0%	0%
COMPLICATIONS OR SURGERY					
HEMORRHAGE	0%	9%	3%	9%	10%
PERFORATION	0%	0%	0%	6%	0%
OPERATION	0%	5%	5%	14%	2%
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FEWER AND MILDER	67%	62%	52%	37%	24%
SAME OR MORE	5%	15%	23%	46%	50%

*Atwater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. Am. J. Digest. Dis. 4:1055 (Dec.) 1959.

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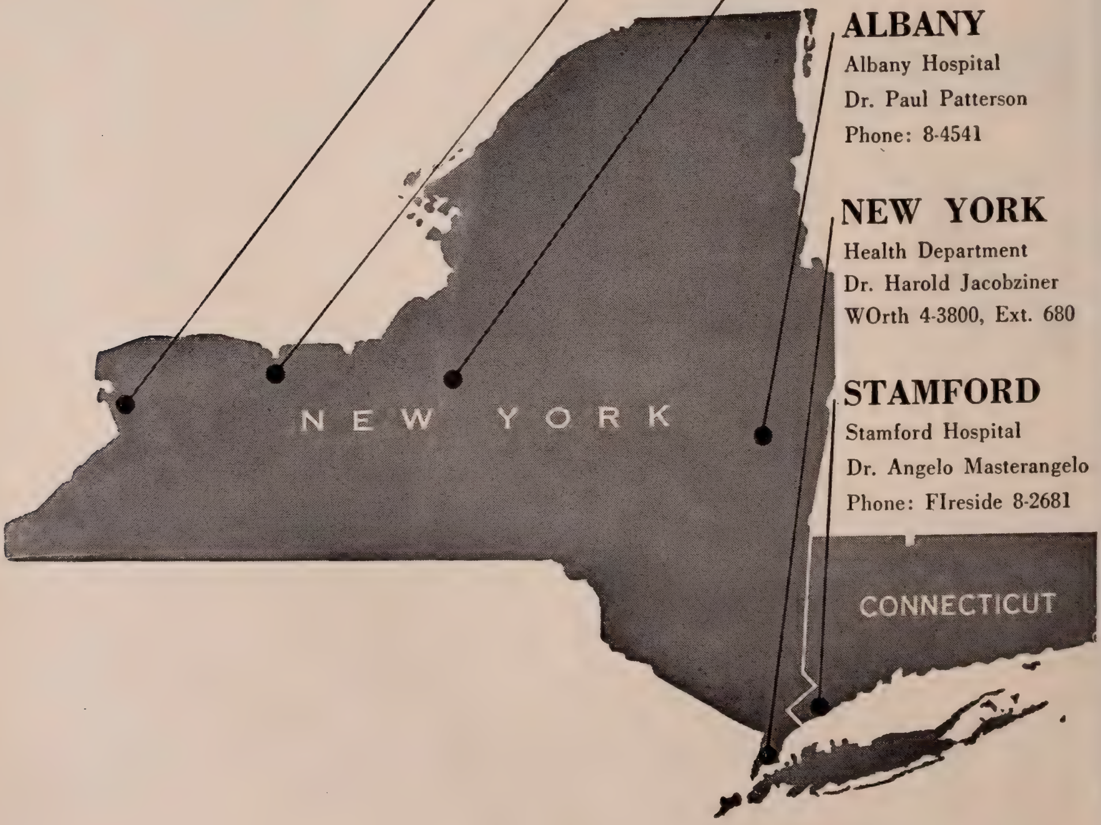

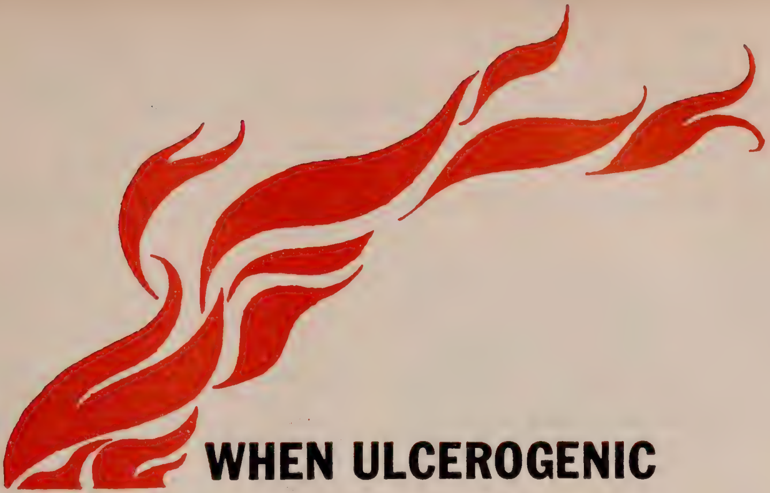

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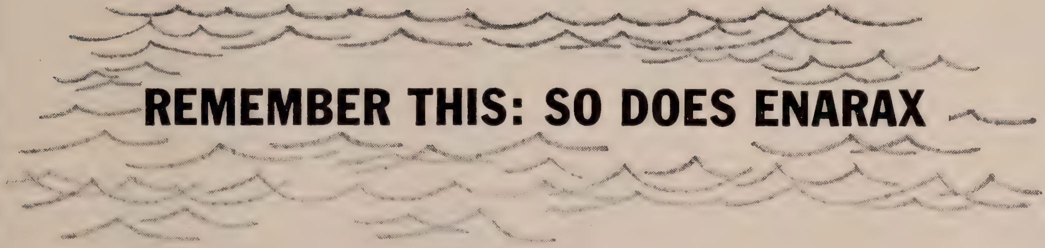

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References: 1. Steigmann, F., **et al.:** Am. J. Gastroenterol. **33:**109 (Jan.) 1960. 2. Hock, C. W.: to be published. 3. Leming, B. H., Jr.: Clin. Med. **6:**423 (Mar.) 1959. 4. Data in Roerig Medical Department Files.

† brand of hydroxyzine

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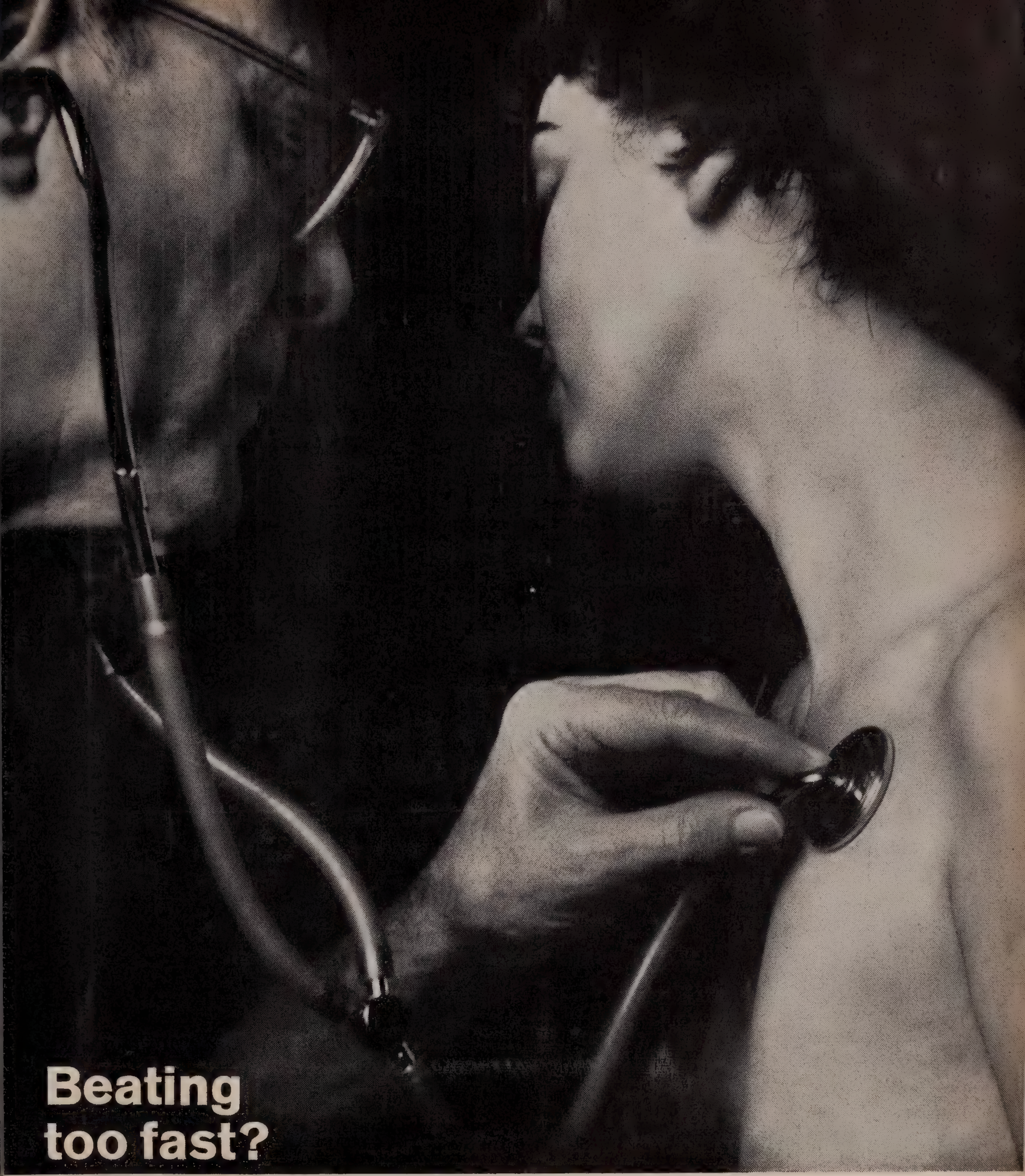

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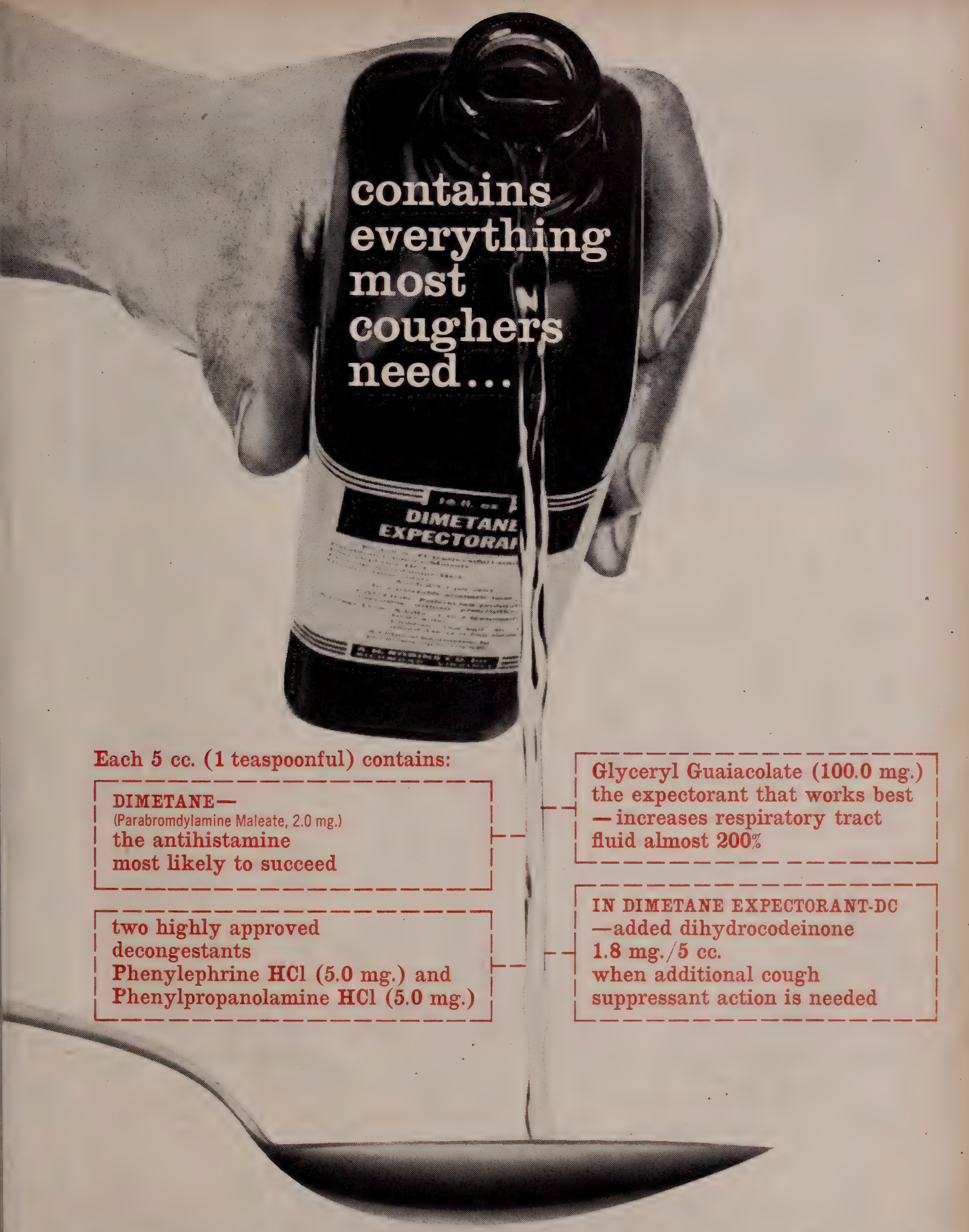
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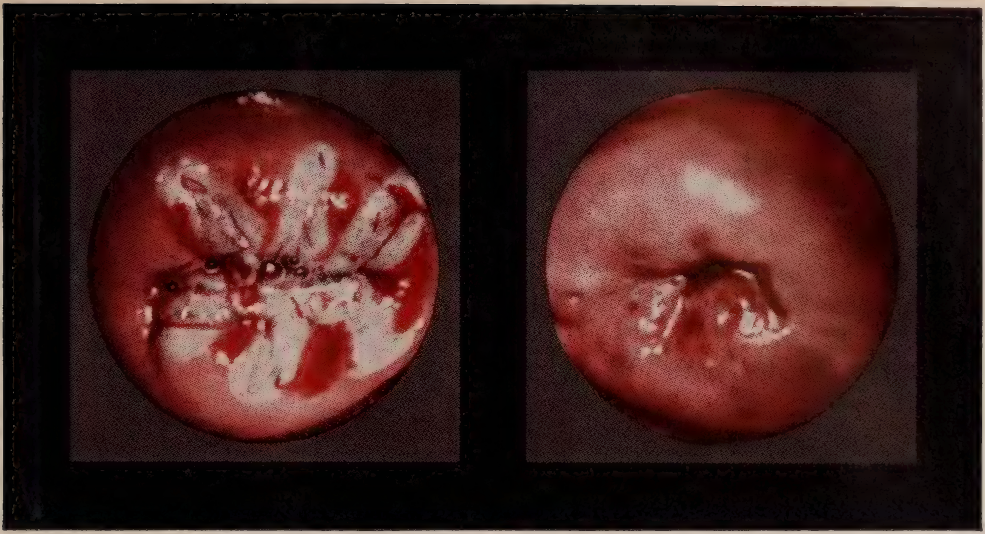

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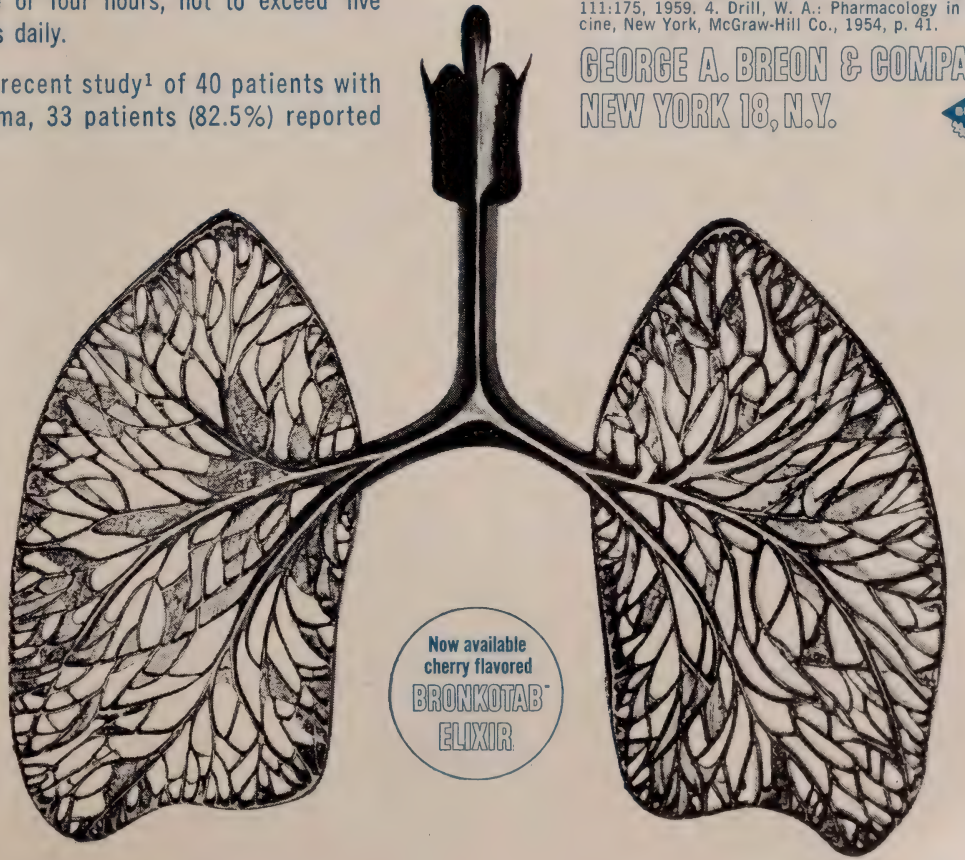

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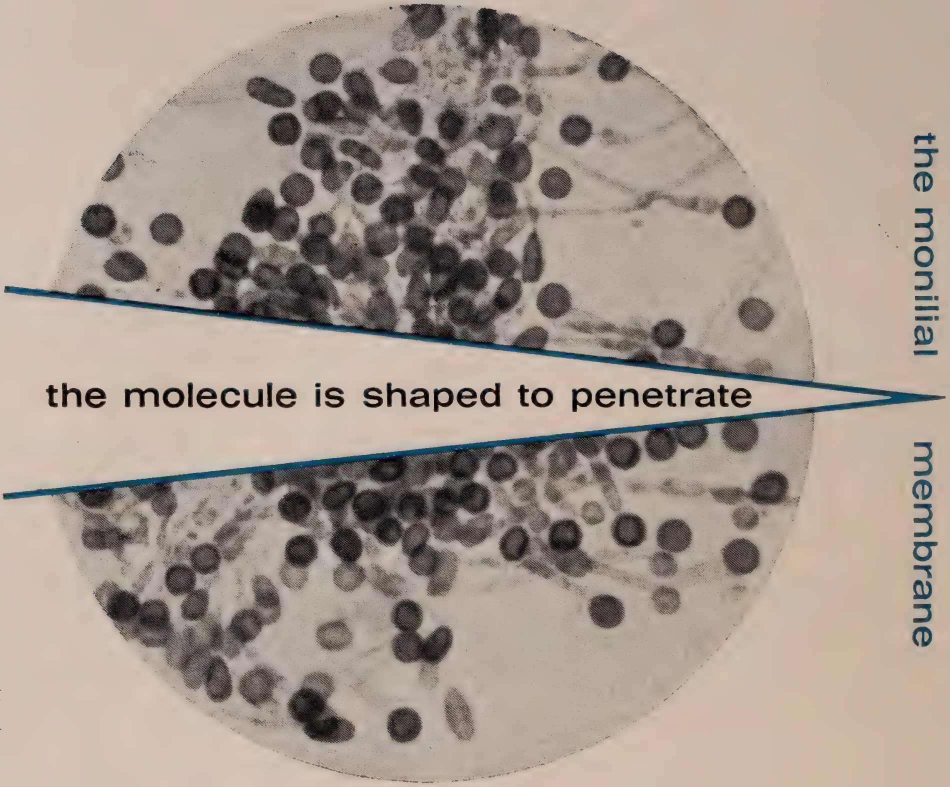
McNEIL LABORATORIES, INC • PHILADELPHIA 32, PA.

330A60

IN
WHIPLASH
INJURY


the molecule is shaped to penetrate
the monilial membrane

a new potent, non-staining, antifungal agent

FOR MONILIASIS

SPOROSTACIN® Chlordantoin Cream

TRADEMARK

soothing, odorless, white, vaginal fungicide

- Exceptional fungicidal activity
- Enthusiastic patient acceptance
- Outstanding clinical results

Lapan, B.: Am. J. Obst. & Gynec. *78*:1320, 1959.

Ortho

whenever depression complicates the picture

Tofrānil®

brand of imipramine HCl

hastens recovery

Geigy

In many seemingly mild physical disorders an element of depression plays an insidious etiologic or complicating role.

Because of its efficacy as an antidepressant, coupled with its simplicity of usage, Tofrānil is admirably adapted to use in the home or office in these milder "depression-complicated" cases.

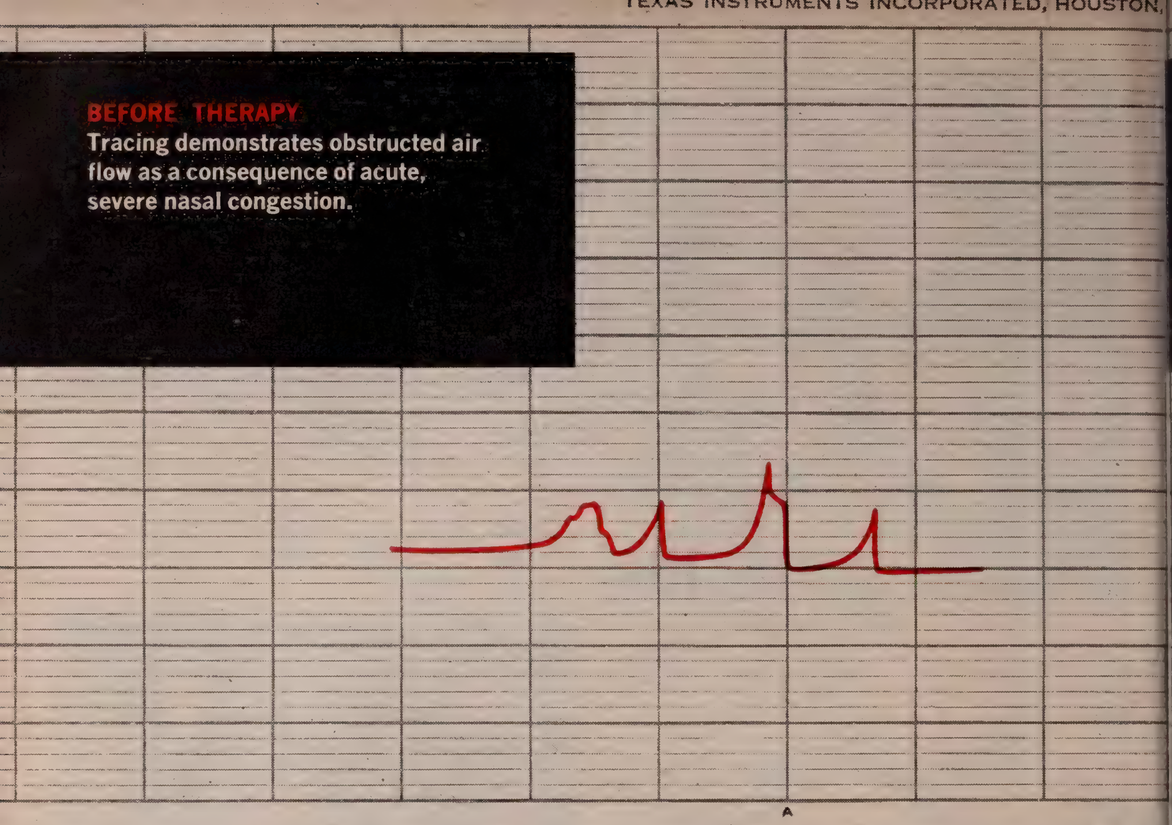
It is always wise to recognize that depression may be an underlying factor... that Tofrānil may speed recovery in "hypochondriasis"; in convalescence when recovery is inexplicably prolonged; in chronic illness with dejection; in the menopausal patient whose emotional disturbances resist hormone therapy; and in many other comparable situations in which latent depression may play a part.

Detailed Literature Available on Request.

Tofrānil®, brand of imipramine hydrochloride, tablets of 25 mg. Ampuls for intramuscular administration, 25 mg. in 2 cc. of solution.

Geigy, Ardsley, New York

160-60



BEFORE THERAPY
Tracing demonstrates obstructed air flow as a consequence of acute, severe nasal congestion.

URSINUS®

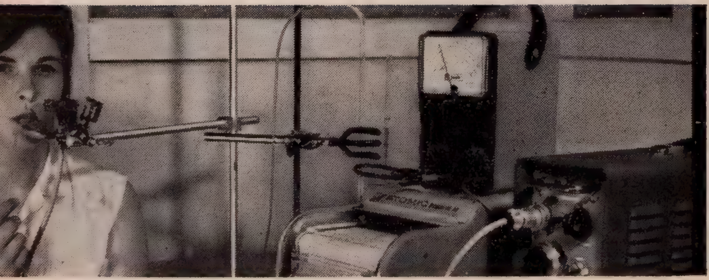
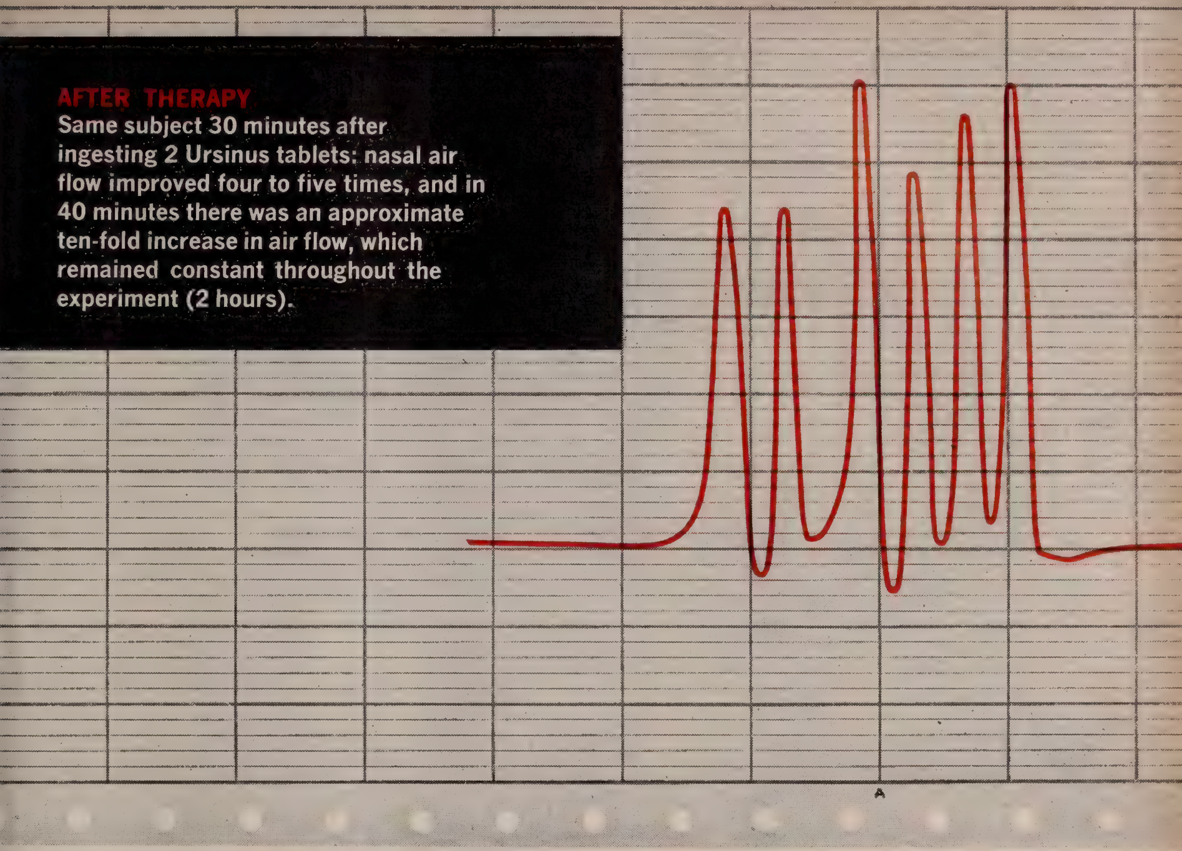


Photo shows use of electronic rhinograph, a new technique to measure air flow and response to decongestant therapy, using same subject as control.

SMITH-DORSEY — a division of **The WANDER COMPANY, LINCOLN, NEBRASKA**



AFTER THERAPY
Same subject 30 minutes after ingesting 2 Ursinus tablets: nasal air flow improved four to five times, and in 40 minutes there was an approximate ten-fold increase in air flow, which remained constant throughout the experiment (2 hours).

for SINUSITIS

DECONGESTS PARANASAL SINUSES, TREATS UNDERLYING CAUSE OF PAIN AND PRESSURE

As an oral decongestant with antiallergic and antiinflammatory action, URSINUS shrinks edematous-congested turbinates, opens obstructed ostia, re-establishes sinus drainage and nasal patency. Pain, produced by pressure from retained sinus secretions and engorged turbinates, is promptly and effectively relieved over a prolonged period of time.

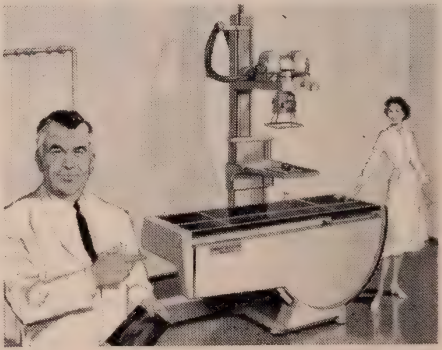
Each URSINUS Inlay-Tab contains: phenylpropanolamine HCl, 25 mg.; pheniramine maleate, 12.5 mg.; pyrilamine maleate 12.5 mg.; Calurin® (calcium acetylsalicylate carbamide, equiv. to aspirin 300 mg.) Dose: 1 or 2 tablets every 4 to 6 hours. Supplied in bottles of 100 URSINUS tablets.

Don't settle for "slow-power" x-ray

get a full 200-ma with your Patrician combination

When anatomical motion threatens to blur radiographs, the 200-ma Patrician can answer with extreme exposure speed, *twice* that of any 100-ma installation. Film images show improved diagnostic readability . . . retakes are fewer. And you'll find the G-E Patrician is like this in everything for radiography and fluoroscopy: built right, priced sensibly, *uncompromising* in assuring you all basic professional advantages. Full-size 81″ table . . . independent tubestand . . . shutter limiting device . . . automatic tube protection . . . counterbalanced fluoroscope, x-ray tube and Bucky . . . full-wave x-ray output.

You also can rent the Patrician—through G-E Maxiservice® x-ray rental plan. Gives you the complete x-ray unit, *plus* maintenance, parts, tubes, insurance, local taxes — *everything*—for one, uniform monthly fee. Get details from your local G-E x-ray representative listed below.



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a breathing spell from asthma

Quadrinal*

a rapid way to clear the airway

- **stops wheezing**
- **increases cough effectiveness**
- **relieves spasm**

In chronic disorders associated with obstructed respiration, the dependable antispasmodic and expectorant action of Quadrinal rapidly clears the bronchial tree. Patients breathe more easily and acute episodes of bronchospasm are often eliminated. Quadrinal is well tolerated, even on prolonged administration. The potassium iodide in Quadrinal provides an expectorant of time-tested effectiveness and safety.

Indications: Bronchial asthma, chronic bronchitis, pulmonary fibrosis, pulmonary emphysema.

Quadrinal Tablets, containing ephedrine HCl (24 mg.), phenobarbital (24 mg.), 'Phyllicin'* (theophylline-calcium salicylate) (130 mg.), and **potassium iodide** (0.3 Gm.).

Also available—
a new Quadrinal dosage form with taste-appeal for all age groups:
fruit-flavored QUADRINAL SUSPENSION (1 teaspoonful = 1/2 Quadrinal Tablet)

KNOLL PHARMACEUTICAL COMPANY, ORANGE, NEW JERSEY

*Quadrinal, Phyllicin®

What's she doing that's of medical interest?

She's drinking a glass of pure Florida orange juice. And that's important to her physician for several reasons.

How your patients obtain their vitamins or any of the other nutrients found in citrus fruits is of great medical interest — considering the fact there are so many wrong ways of doing it, so many substitutes and imitations for the real thing.

Actually, there's no better way for this young lady to obtain her vitamin C than by doing just what she is doing, for there's no better source than oranges and grapefruit ripened in the Florida sunshine. There's no substitute for the result of nature's own mysterious chemistry, flourishing in the warmth of this luxurious peninsula.

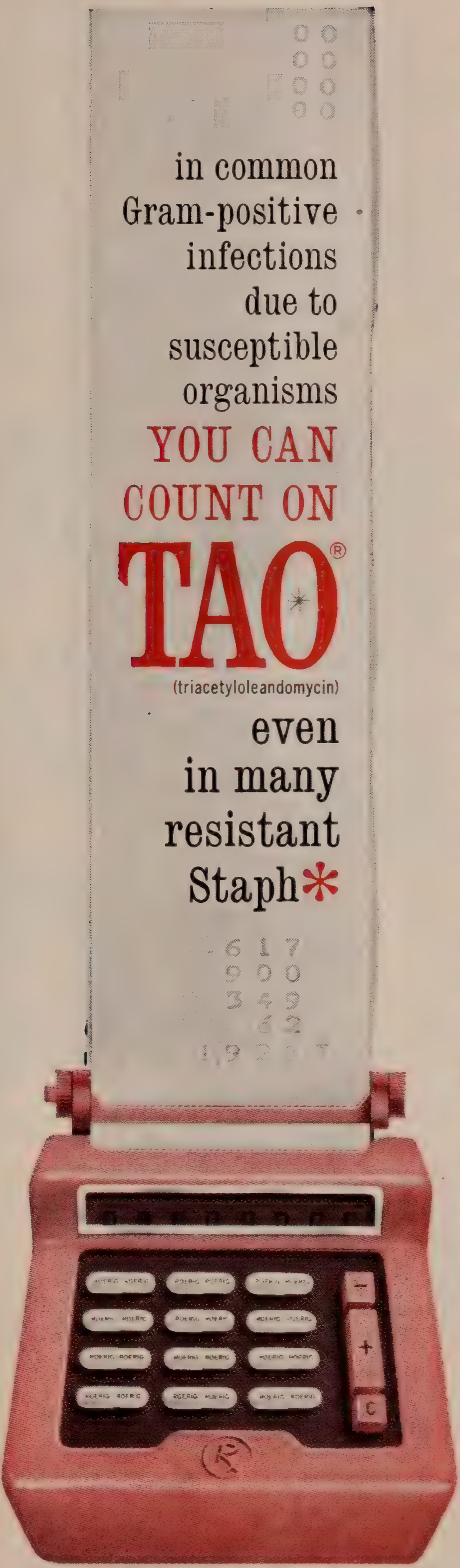
An obvious truth, you might say, but not so obviou to the parents of many teen-agers.

We know that a tall glass of orange juice is ju about the best thing they can reach for when they rai the refrigerator. We also know that if you encourag this refreshing and healthful habit, you'll be helpin patients to the finest between-meals drink there i

Nothing has ever matched the quality of Florid citrus — watched over as it is by a State Commissio that enforces the world's highest standards for qualit in fresh, frozen, canned or cartoned citrus fruits an juices.

That's why the young lady's activities are of medic interest.

© Florida Citrus Commission, Lakeland, Florida



in common Gram-positive infections due to susceptible organisms YOU CAN COUNT ON

TAO®

(triacetyloleandomycin)

even in many resistant Staph*

1,928 published cases in the two years since TAO was released for general use show:

94.3% effectiveness in respiratory infections (617 cases including tonsillitis, staphylococcal and streptococcal pharyngitis, bronchitis, infectious asthma, bronchopneumonia, lobar pneumonia, bronchiectasis, lung abscess, otitis.) **You can count on TAO.**

92% effectiveness in skin and soft tissue infections (900 cases including pyoderma, impetigo, acne, infected skin disorders, wounds, incisions and burns, furunculosis, abscess, cellulitis, chronic ulcer, adenitis.) **You can count on TAO.**

87.1% effectiveness in genitourinary infections (349 cases including urethritis, cystitis, pyelitis, pyelonephritis, orchitis, pelvic inflammation, acute gonococcal urethritis, lymphogranuloma venereum.) **You can count on TAO.**

75.8% effectiveness in diverse infections (62 cases including fever of undetermined origin, peritoneal abscess, osteitis, periarthritis, septic arthritis, staphylococcal enterocolitis, gastroenteritis, carriers of staphylococci.) **You can count on TAO.**

95.6% of 1,928 cases free of side effects—in the remaining 4.4%, reactions were chiefly mild gastrointestinal disturbances which seldom necessitated discontinuance of therapy.

*In 884 of 1,928 cases the causative organisms were mostly staphylococci. The majority of clinical isolates were found to be resistant to at least one of the commonly used antibiotics and many patients had failed to respond to previous therapy with one or more antibiotics.

TAO proved 93.4% effective in these 884 cases.

Complete bibliography available on request.

DOSAGE: varies according to severity of infection. Usual adult dose—250 to 500 mg. q.i.d. Usual pediatric dose: 3-5 mg./lb. body weight every 6 hours.

NOTE: In some children, when TAO was administered at considerably higher than therapeutic levels for extended periods, transient-jaundice and other indications of liver dysfunction have been noted. A rapid and complete return to normal occurred when TAO was withdrawn.

SUPPLY: TAO CAPSULES—250 mg. and 125 mg., bottles of 60. TAO ORAL SUSPENSION—125 mg. per 5 cc. when reconstituted, palatable cherry flavor, 60 cc. bottles. TAO PEDIATRIC DROPS—100 mg. per cc. when reconstituted, flavorful; special calibrated dropper, 10 cc. bottles. INTRAMUSCULAR or INTRAVENOUS—10 cc. vials, as oleandomycin phosphate.

OTHER TAO FORMULATIONS ALSO AVAILABLE: TAO®-AC (Tao, analgesic, antihistaminic compound) capsules, bottles of 36. TAOMID® (Tao with Triple Sulfas)—tablets, bottles of 60. Oral Suspension—60 cc. bottles.

For nutritional support VITERRA® Vitamins and Minerals
Formulated from Pfizer's line of fine pharmaceutical products.

ROERIG
New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being™

Doctors and Dentists recommend NO-CAL with confidence

AMERICA'S FIRST NON-FATTENING SOFT DRINK

She can drink and be merry when she gives her figure a NO-CAL break. NO-CAL guards her shape . . . helps safeguard her teeth. It's wonderful for sparking up dull diet meals or as a delicious snack.

Only sweetener is calcium cyclamate. NO-CAL is absolutely non-fattening . . . contains no sugar, no salt, no fats, proteins or carbohydrates with no calories to be derived therefrom. You can confidently tell your patients that NO-CAL is safe for diabetics and dieters.

8 DELICIOUS FLAVORS PLUS SALT-FREE CLUB SODA

COMMENDED PARENTS

SUGAR FREE NO-CAL BEVERAGES

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KIRSCH BEVERAGES, INC., BROOKLYN 6, N. Y.

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Each of the babies pictured on this page was borne by a mother with a *documented* previous history of true habitual abortion, who was treated with DELALUTIN during the pregnancy leading to this birth

LIVING PROOF OF FETAL SALVAGE WITH

DELALUTIN

SQUIBB HYDROXYPROGESTERONE CAPROATE

Improved Progestational Therapy

Garden City, N. Y.

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DELALUTIN offers these advantages over other progestational agents

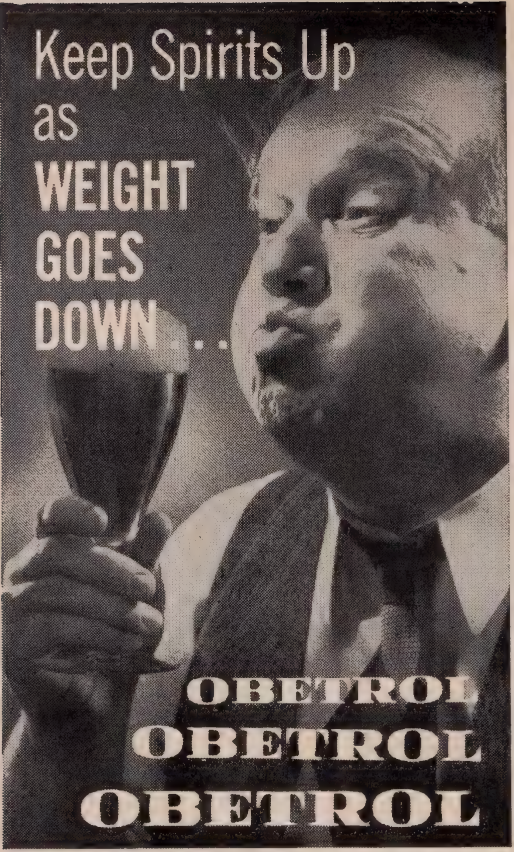
• long-acting sustained therapy • more effective in producing and maintaining a completely matured secretory endometrium • no androgenic effect • more concentrated solution requiring injection of less vehicle • unusually well-tolerated, even in large doses • fewer injections required • low viscosity makes administration easy

Complete information on administration and dosage is supplied in the package insert

Supply: Vials of 2 and 10 cc., each containing 125 mg. of hydroxyprogesterone caproate in benzyl benzoate and sesame oil.

SQUIBB *Squibb Quality—The Priceless Ingredient*

'DELALUTIN'® IS A SQUIBB TRADEMARK



OBETROL®
Patent #2748052
for medical management of obesity

The **different** amphetamine combination of choice...even in many cases of hyperthyroidism, hypertension, coronary artery and other cardiovascular diseases.

- Safer
- Allays hunger
- Fewer contraindications
- Diuretic action
- Elevates mood
- Potent and effective

OBETROL incorporates the desirous action of amphetamines without usual drawbacks.

OBETROL tablets contain Methamphetamine Saccharate, the safer, longer acting compound, with other effective amphetamine salts.

SUPPLIED: in 10 mg. and 20 mg. tablets in bottles of 100, 500, and 1,000.

Available on prescription at all leading pharmacies.
Write today for clinical samples.
REFER TO PDR Page 753

OBETROL PHARMACEUTICALS
382 Schenck Avenue, Brooklyn 7, N. Y.

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a mustache is to wear on Halloween

dogs are to kiss people

a face is something to have on the front of your head

REDISOL® is so kids have better appetites

Redisol (Cyanocobalamin, crystalline vitamin B_{12}) often stimulates children's appetites with consequent weight gain. Tiny **Redisol Tablets** (25, 50, 100, 250 mcg.) dissolve instantly in the mouth, on food or in liquids. Also available: cherry-flavored **Redisol Elixir** (5 mcg. per 5-cc. teaspoonful); **Redisol Injectable,** cyanocobalamin injection USP (30 and 100 mcg. per cc., 10-cc. vials and 1000 mcg. per cc. in 1, 5 and 10-cc. vials).

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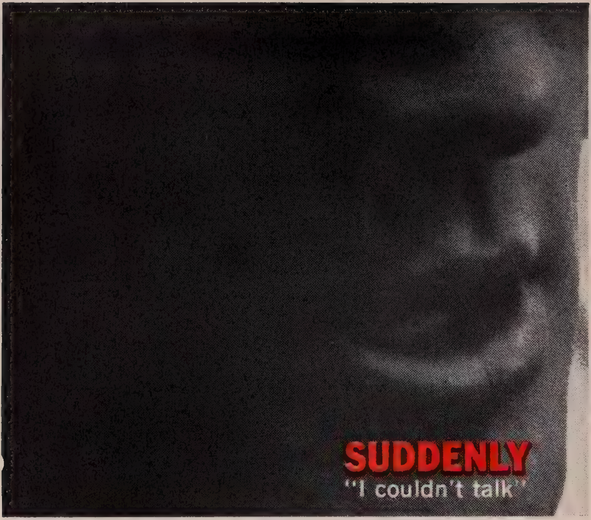
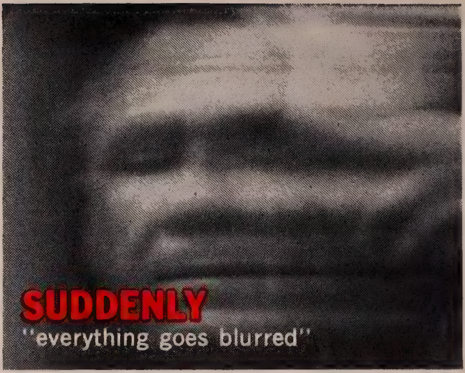
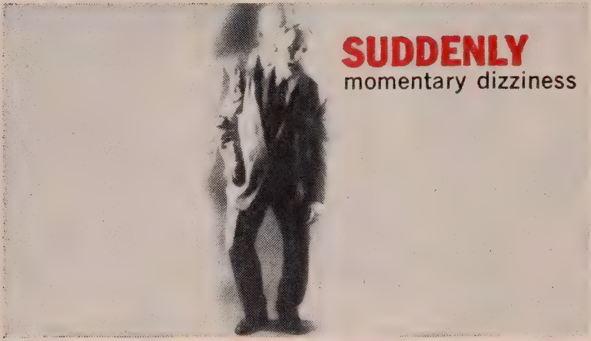

SUDDENLY
"I couldn't talk"


SUDDENLY
"everything goes blurred"


SUDDENLY
momentary dizziness

SUDDENLY
she finds herself
dropping things

Look out for the "little strokes" resulting from abnormal capillary fragility. Sudden dizzy spells, blurred vision, bizarre feelings of pain, transitory weakness of arm or leg—all are typical symptoms.[1] It has been suggested that many of these incidents (frequent in the middle years as well as in the elderly[2]) might be due to minor cerebral hemorrhages.

"Little strokes"—avoidable? Many cerebral accidents may be avoided if adequate amounts of hesperidin and ascorbic acid are provided.[3] Hesper-C, a combination of hesperidin complex and ascorbic acid, promotes capillary resistance and repair; helps reduce the damage from abnormal capillary fragility.[4]

THE CAPILLARY-PROTECTIVE FACTORS
HESPERIDIN COMPLEX PLUS ASCORBIC ACID

Hesper-C®

a vital measure of protection against the "little strokes"

References: 1. Alvarez, W. C.: The New Physician 6:42, 1957. 2. Little Strokes, Hope through Research, Publication 689, United States Department of Health, National Institute of Neurological Diseases and Blindness, 1959. 3. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953. 4. Martin, G. J. (Ed.): Hesperidin and Ascorbic Acid, New York, S. Karger, 1955.

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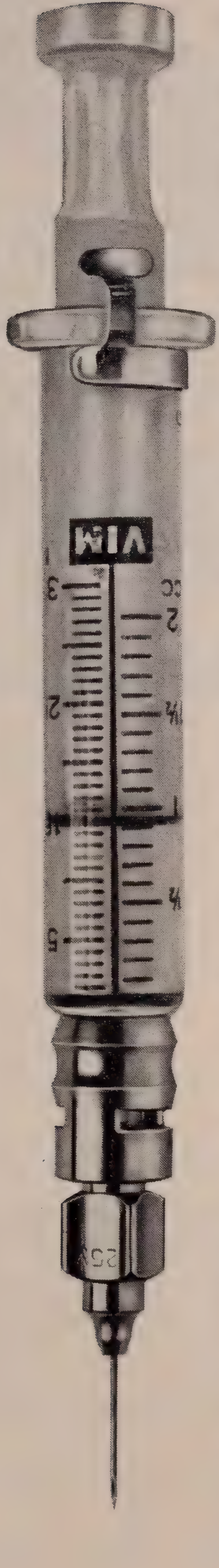
Philadelphia 44, Pa.

NC-1745/60



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A LEADER IN IMMUNOLOGIC AGENTS

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BOTULISM ANTITOXIN

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DIPHTHERIA-TETANUS TOXOIDS

GAS GANGRENE ANTITOXIN POLYVALENT

INFLUENZA VIRUS VACCINE POLYVALENT

MUMPS VACCINE

PERTUSSIS VACCINE

POLIOMYELITIS IMMUNE GLOBULIN

ROCKY MOUNTAIN SPOTTED FEVER VACCINE

SMALLPOX VACCINE, AVIANIZED* CHICK EMBRYO ORIGIN

STAPHYLOCOCCUS TOXOID

TETANUS ANTITOXIN

TETANUS-GAS GANGRENE ANTITOXIN

TETANUS TOXOIDS

TRI-IMMUNOL*
Diphtheria-Tetanus Toxoids and Pertussis Vaccine

TYPHOID-PARATYPHOID VACCINE

TYPHUS VACCINE

POLLIGENS®
(Eastern and Western)
Pollen Antigens

MIXED GRASSES & COMBINED RAGWEED
Pollen Antigens

ALLERGENIC PROTEIN EXTRACT Dust (House)

*Trademark

LEDERLE LABORATORIES
A Division of
AMERICAN CYANAMID COMPANY
Pearl River, New York

new clinical study[1] cites beneficial results in over 90% of cases in dry, itchy, scaly skin with Sardo®

in the bath

Use of **SARDO** in 118 dermatological patients to relieve dry, itchy, scaly, fissured skin achieved these excellent results:

CASES	AFTER SARDO*		
	Excellent	Good	Poor
49 Senile skin	32	13	4
26 Dry Skin in younger patients (diabetes, etc.)	14	11	1
20 Atopic dermatitis	8	10	2
13 Actinic changes	9	4	—
10 Ichthyosis	3	4	3
Skin Conditions	Benefited	No Benefit	
20 Nummular dermatitis	19	1	
10 Neurodermatitis	10	—	

Sardo
Sardo

SARDO acts[1,2] to (A) lubricate and soften skin, (B) replenish natural emollient oil, (C) prevent excessive evaporation of essential moisture.

SARDO releases millions of microfine water-miscible globules to provide a soothing suspension which enhances the efficacy of your other therapy.

SARDO is pleasant, convenient, easy to use; non-sticky, non-sensitizing. Bottles of 4, 8 and 16 oz.

for **SAMPLES** and complete reprint of Weissberg paper, please write . . .

Sardeau, Inc. 75 East 55th Street, New York 22, N. Y.

[1] Weissberg, G.: Clin. Med., June 1960.

[2] Spoor, H. J.: N. Y. St. J. Med., Oct. 15, 1958.

**patent pending*

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Proven

in over five years of clinical use and
more than 750 published clinical studies

Effective

for relief of anxiety and tension

Outstandingly Safe

- simple dosage schedule produces rapid, reliable tranquilization without unpredictable excitation
- no cumulative effects, thus no need for difficult dosage readjustments
- does not produce ataxia, change in appetite or libido
- does not produce depression, Parkinson-like symptoms, jaundice or agranulocytosis
- does not impair mental efficiency or normal behavior

Miltown®

meprobamate (Wallace)

Usual dosage: One or two 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; or as MEPROTABS*– 400 mg. *unmarked,* coated tablets.

OM-2058

® WALLACE LABORATORIES / *New Brunswick, N. J.*

*TRADE-MARK

THE CLASSICAL TREATMENT FOR VAGINAL MONILIASIS

HYVA

GENTIAN VIOLET

VAGINAL TABLETS

the only

SPECIFIC ANTIMYCOTIC
VAGINAL TABLET WITH
A GEL FORMING BASE

A vaginal therapy: Methylrosaniline chloride (gentian violet) has generally proved the most effective and specific agent for the treatment of vaginal candidiasis caused by the fungus Candida.

Hyva Gentian Violet Tablets virtually eliminate the principal disadvantages of present gentian violet preparations. They may be handled and used without staining and have psychological and aesthetic acceptance.

Hyva combines the fungicidal action of gentian violet (1.0 mgm.) with three active surface reducing agents and bactericides.* These active ingredients have been incorporated into a mildly effervescent "gel" forming base which provides for maximum and prolonged effectiveness. Shorter treatment time is required without the usual messiness normally experienced.

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12
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References: 1. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 5:60 (Feb.) 1960. 2. Friend, D. H.; Clin. Pharm. & Therap. 1:5 (Mar.-Apr.) 1960. 3. Ford, R. V.: Current Therap. Res. 2:92 (Mar.) 1960.

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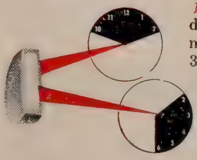
Relief is prompt and prolonged because of this special timed-release action:



first – the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then – the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides:
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Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

Each tsp. (5 ml.) of Triaminic Syrup provides:
¼ the formulation of the Triaminic Tablet.
Dosage (to be administered every 3 or 4 hours):
Adults – 1 or 2 tsp.; *Children 6 to 12* – 1 tsp.;
Children 1 to 6 – ½ tsp.; *Children under 1* – ¼ tsp.

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The judicious use of WINE can brighten the otherwise monotonous, unappealing diet in renal disease. It increases glomerular blood flow, stimulates diuresis, is nonirritating to the kidneys.

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¹ Acetyl Sulfamethoxypyridazine

DAILY DOSAGE: ADMINISTERED AFTER A MEAL.

	DROPS 125 mg. activity per 20 drops (1 cc.)		SUSPENSION 250 mg. activity per tsp. (5 cc.)	
WEIGHT	Initial Dose	Daily Maintenance	Initial Dose	Daily Maintenance
20 lbs.	40 drops	20 drops	1 tsp.	½ tsp.
40 lbs.	80 drops	40 drops	2 tsp.	1 tsp.
80 lbs. and over			4 tsp.	2 tsp.

Supplied: Drops, in 10 cc. squeeze bottle. **Suspension,** bottles of 4 and 16 fl. oz.

EDIATRIC DROPS • PEDIATRIC SUSPENSION

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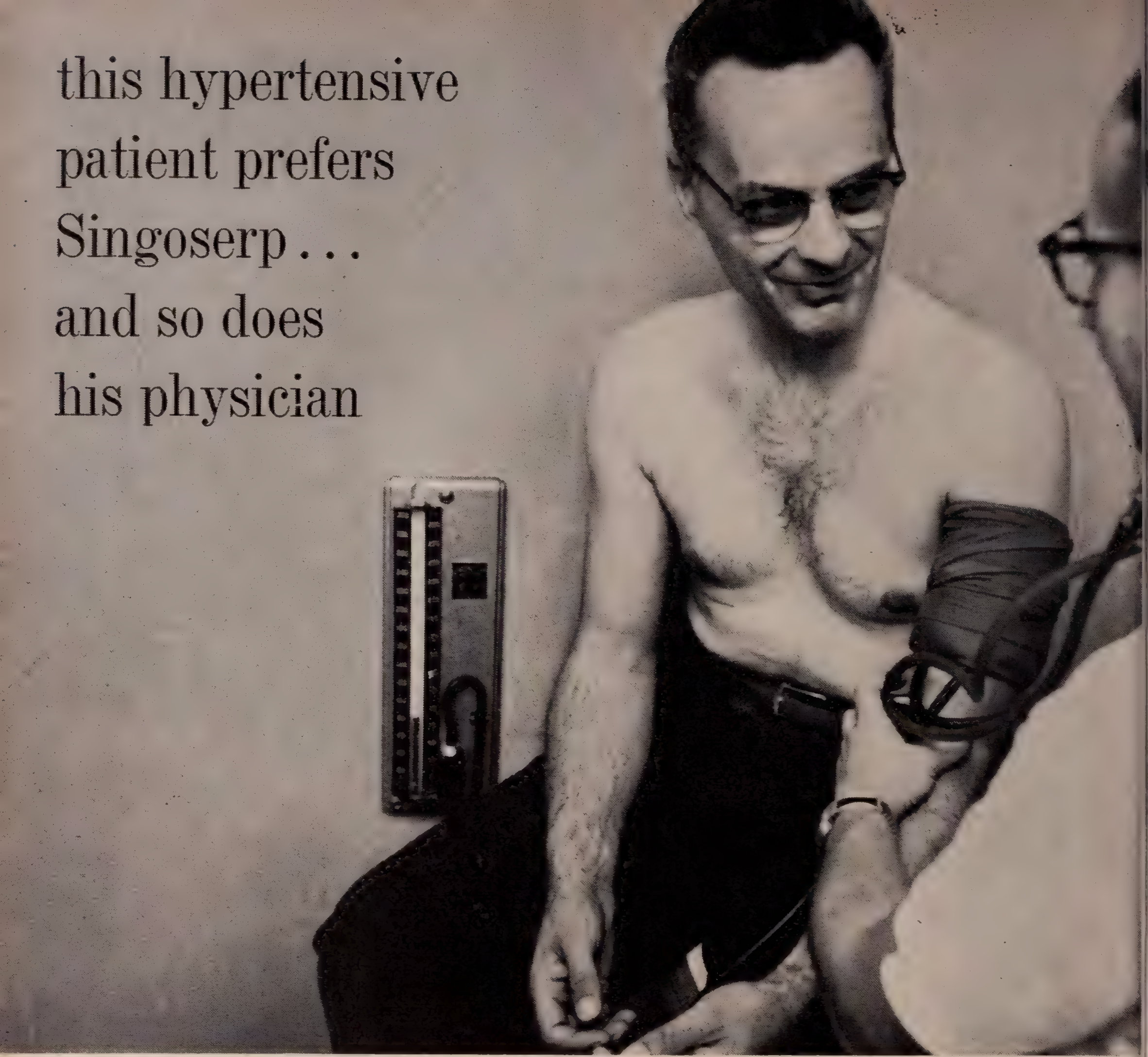

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Patient's comment: "The other drug [whole root rauwolfia] made me feel lazy. I just didn't feel in the mood to make my calls. My nose used to get stuffed up, too. This new pill [Singoserp] doesn't give me any trouble at all."

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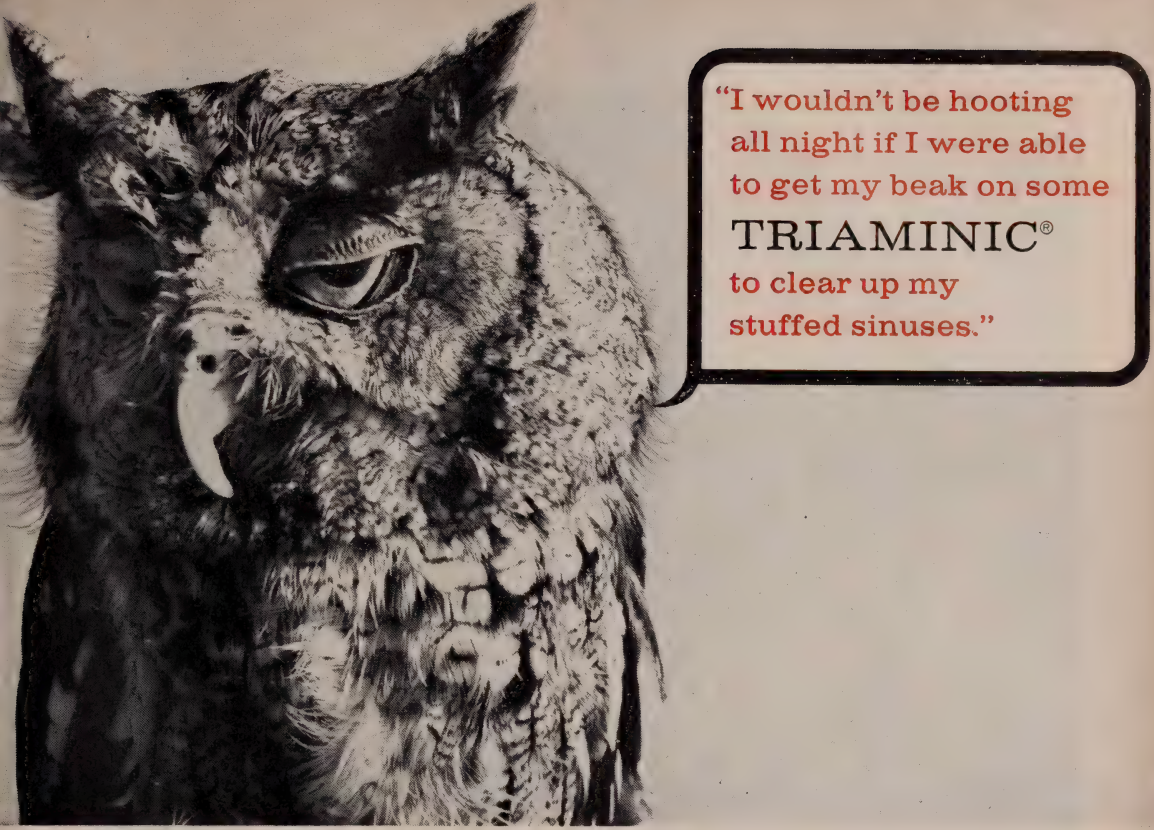
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...and for humans with STUFFED-UP SINUSES...

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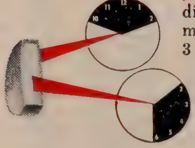
Indications: nasal and paranasal congestion, sinusitis, postnasal drip, upper respiratory allergy.

Relief is prompt and prolonged because of this special timed-release action:



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*Rock, J.; Garcia, C. R., & Pincus, G.: *Am. J. Obst. & Gynec.* 79:758, 1960.

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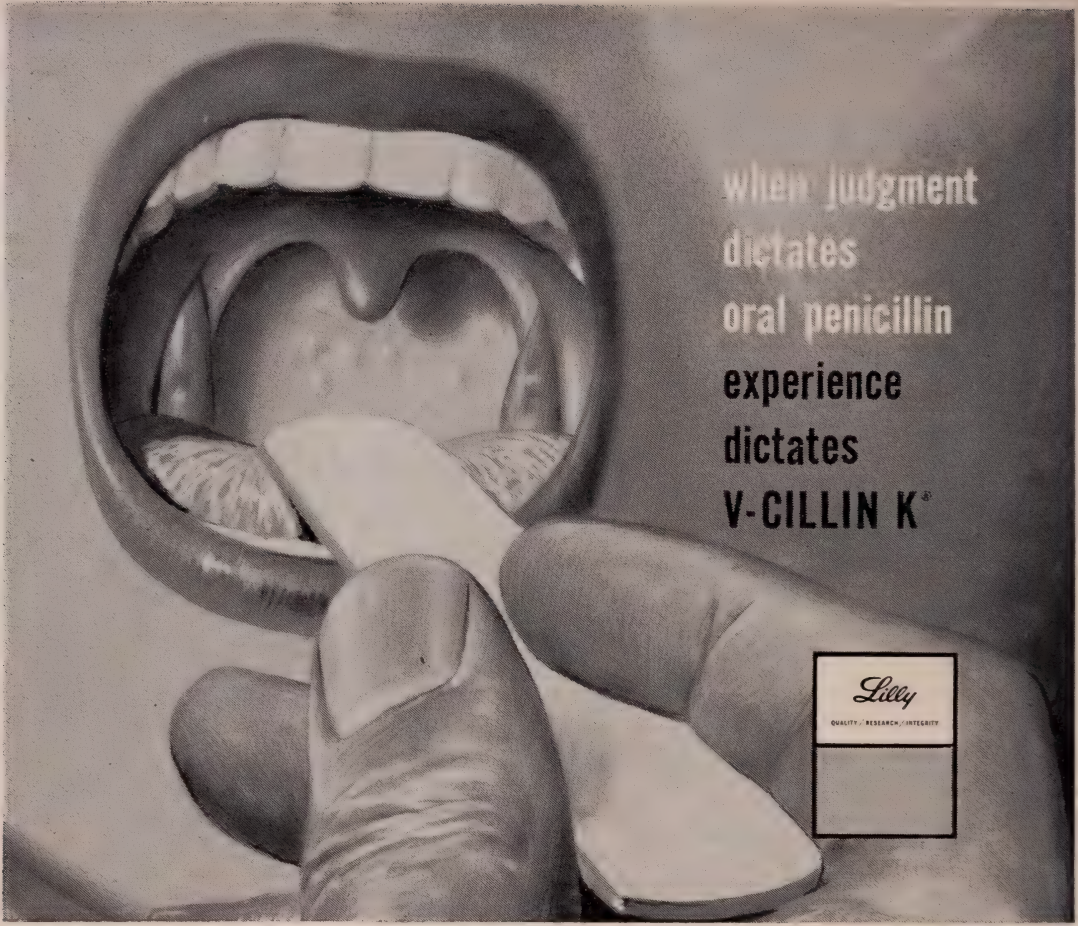

for maximum effectiveness Recently, Griffith[1] reported that V-Cillin K produces antibacterial activity in the serum against penicillin-sensitive pathogens which is unsurpassed by any other form of oral penicillin. This helps explain why physicians have consistently found that V-Cillin K gives a dependable clinical response.

for unmatched speed Peak levels of antibacterial activity are attained within fifteen to thirty minutes—faster than with any other oral penicillin.[1]

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1. Griffith, R. S.: Comparison of Antibiotic Activity in Sera Following the Administration of Three Different Penicillins, Antibiotic Med. & Clin. Therapy, *7:* No. 2 (February), 1960.

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EDITORIALS

An Authoritative Assessment of Diabetes Mellitus

Your attention is called to the announcement in this issue of an important series of teaching papers on diabetes mellitus. The series is to be known as "Current Concepts in Diabetes Mellitus" and is provided by the Clinical Society of the New York Diabetes Association.

In the past few years exciting new discoveries have been made in the field of carbohydrate metabolism and as a result concepts and therapies are changing. We are indebted to the editors and authors in this series for a thoroughly informative and comprehensive preceptorship.

This is one of those rare and pleasant opportunities for educational replenishment, and we urge our readers to take advantage of it.

Physicians Are Not Storekeepers!

On March 22, 1960, the Appellate Division, First Department of the Supreme Court of the State of New York handed down a decision of extremely great importance to the physicians of this State, particularly those in the metropolitan area.

The Court was called on to determine on appeal whether or not, under the Emergency Business Space Rent Control Law, the space occupied by a physician on the street floor of a building is to be classified as a store. If the space was found to be a store, then it would no longer be subject to "rent control" and could properly be decontrolled with subsequent substantial increases in rent. Two lower courts had ruled that such space was to be classified as a store and the affected physician appealed their decisions.

The subject matter of the appeal was of such profound interest to the physicians in New York City that legal counsel for a number of the county medical societies within the city participated in the proceedings as amici curiae.

The tenant, a doctor of medicine, occupied premises on the street floor of a Park Avenue apartment house. He had been in possession for at least thirteen years, and following expiration of a lease in 1947 continued his occupancy as a statutory tenant. The physician never resided in the premises and, although they had never been altered or modified during his tenancy for use as a physician's office, the Court found that the space was occupied or designed for professional use before he took possession. The Court also found that the tenant-physician under the terms of his lease was granted the right to occupy the premises for the practice of his profession. It ruled that there had been nothing presented to it which showed that the landlord ever treated the space as a store. It pointed out that access to the office was through the main lobby of the building and no means of direct entrance from or exit to the street was provided.

The landlord argued that the physician occupied a store because the premises were located on the street floor and he rendered services in the ordinary course of business. The Court rejected this argument, saying: "A store is generally understood to be an establishment at street level which purveys merchandise for consumption, use, or adornment, ranging from doughnuts to diamonds, or renders services which run the gamut of needs from shoe shines to automobile repairs. . . . Broadly speaking and without reference to a specific provision of statutory law, we cannot accept a general definition that classifies members of the learned profession of medicine as engaging in 'the sale of personal property or the rendition of services, in the ordinary course of business, or commerce.' Assuming the propriety of that classification when barbers were united with the company of surgeons by an act of parliament (32 Henry VIII, C.42), with the former confined to bloodletting and extraction of teeth, it became inappropriate after 1745, when parliament (18 George II, C.15) severed the craft of barbering from the profession of surgery and gave the latter the status it still enjoys."

The Court continued: "The term store, in the natural and common acceptance of the term, is not applied to space occupied by a physician. Certainly long before the enactment of the business and the commercial rent laws, one did not seek medical treatment by entering store premises. For example, it is scarcely imaginable that Mr. Sterling, the landlord, ever said that he had gone to Dr. Lapidus' store for a medical examination. In modern times doctors usually maintain offices located either in private houses in which they reside; in multifamily structures, usually but not exclusively on the ground floors; or in office buildings, some wholly devoted to medical practitioners. It must be assumed that, in enacting the rent control statutes pertaining to stores, the Legislature was fully aware of this custom."

The Court also observed that the premises occupied by the physician were in a class A multiple dwelling located in a residence use district as defined in the zoning ordinances of the City of New York, and that under the zoning laws of the City, in areas where stores are prohibited, space occupied by physicians for professional use and located on the ground floors of class A dwellings is not only authorized, but is recognized and classified as "offices."

It also pointed out that for all the years the physician occupied the premises no question ever had been raised that his office was a store maintained in violation of the zoning regulations. The Court also noted that its attention had not been directed to a single instance among the thousands of physicians' offices similarly situated, where a charge has been made or sustained that occupancy was in violation of the proscriptions against conducting a business.

The Court concluded its decision by saying: "To classify all physicians' offices as stores, merely because they are located on street level, would subvert the purpose of the rent laws and produce a harsh and unjust result never intended by the Legislature. Were we to conclude that doctors' offices on street level are subject to decontrol because they are stores, we would subject that class of tenants to unconscionable demands for exorbitant rents under penalty of eviction."

It then unanimously reversed the determination of the lower courts and directed dismissal of the landlord's action. (Sterling v. Lapidus, 10AD2d180.)

A man lives by believing something, not by debating and arguing about many things.—THOMAS CARLYLE

ANNUAL CONVENTION

Medical Society of the State of New York
War Memorial Auditorium, Rochester

SCIENTIFIC PROGRAM

May 8 to 12, 1961

Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 2638) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before October 30, 1960.

ANNUAL CONVENTION

Medical Society of the State of New York
War Memorial Auditorium, Rochester

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
340 East 72nd Street
New York 21, New York

The Annual Convention will be held May 8 to 12, 1961, at the War Memorial Auditorium, Rochester.

No applications can be considered after January 1, 1961.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

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EACH IRCON TABLET CONTAINS 200 MG. FERROUS FUMARATE. BOTTLES OF 100.
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SCIENTIFIC ARTICLES

Errors in the Diagnosis of Acute Rheumatic Fever[*]

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(From Irvington House, Irvington-On-Hudson, New York, and New York University Medical Center, New York City)

Accuracy in the diagnosis of rheumatic fever is now more important than ever before because of the widespread use of antistreptococcal agents to prevent recurrent attacks[1] after the initial episode. If the original diagnosis has been incorrect, the error is thus compounded later by subjecting the patient for an indefinite period of time to the continuous use of an unnecessary prophylactic medication which may be medically and psychologically hazardous. Despite advances in the treatment and prevention of rheumatic fever, no apparent advances have been made in procedures for its diagnosis since the establishment[2] and subsequent modification[3] of the Jones criteria. There is no single clinical sign, laboratory test, or roentgenographic or electrocardiographic feature which is pathognomonic of the disease. In these circumstances, the diagnosis of rheumatic fever remains a matter of clinical judgment in which the physician's interpretation of data and his use of diagnostic criteria are the decisive factors.

At institutions such as Irvington House, where patients are referred for acute and convalescent care of rheumatic fever, there is considerable opportunity to observe situations in which the original diagnosis seems doubtful or erroneous. The present communication is intended to review the nature and incidence of these diagnostic errors and to suggest measures for their prevention.

Clinical Material

The Irvington House hospital and convalescent home is located just outside New York City and obtains its patients by referral from public or private hospitals or from practicing physicians in this geographic area. New admissions are restricted to the age range of from four to nineteen years. The present review includes a diagnostic evaluation of 163 consecutive patients who were referred with a diagnosis of acute or recent rheumatic fever, were admitted to the hospital during a one-year period beginning July 1, 1956, and were followed thereafter for at least two years. The previous individual data were reviewed as completely as possible and were augmented by additional material and studies performed at Irvington House. The diagnosis of rheumatic fever was substantiated according to the modified Jones criteria in 144 patients. In 19 others, the occurrence of rheumatic fever was considered unlikely or highly doubtful. A brief account of the patients who were diagnosed erroneously will be given.

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Case Reports

Group A. Patients with Minor Illnesses Diagnosed Incorrectly as Rheumatic Fever

Case 1.—A seven-year-old girl had been having recurrent episodes of abdominal pain, fever, and listlessness for two months following a series of upper respiratory infections. On admission to the referring hospital she was found to have a temperature of 103 F., heart rate of 150, with a questionable systolic murmur at the apex. The erythrocyte sedimentation rate was 50 mm. per hour, white blood count 20,000, antistreptolysin O 125, and C-reactive protein 3 plus. An electrocardiogram showed sinus tachycardia and chest x-ray films showed negative findings. The urine gave evidence of pyuria and the patient was treated with chloramphenicol. Because the tachycardia persisted for several days after the pyuria had subsided and because of the possible systolic murmur, she was considered to have rheumatic fever and was given ACTH for a total of eleven days during which time the tachycardia disappeared. After a month of further observation, the patient was transferred to Irvington House where all clinical and laboratory tests showed normal findings. A physical examination showed only a physiologic systolic murmur along the left sternal border.

Comment.—It seems likely that this patient's original fever was due to a urinary tract infection. A point worth noting is that the best time to measure the pulse rate in children is while they are asleep and free from psychic stimulation which can produce factitious tachycardia. Even when the pulse rate is validated by nocturnal measurement, the finding of tachycardia in an afebrile patient cannot be considered as evidence of rheumatic activity unless other major clinical manifestations have appeared.

Case 2.—A seven-year-old boy was hospitalized for sinusitis and left otitis media but was found to have an intermittent fever. During his febrile episodes he had an elevated sedimentation rate and a soft systolic murmur at the apex. There had never been any arthralgia or arthritis and the fever had never been higher than 102 F. by mouth. A diagnosis of rheumatic fever was made. He was given bed rest for two months and was treated with aspirin. At the hospital he was found to have a Grade I systolic murmur which was loudest along the left sternal border but which also could be heard at the apex and base. All of the laboratory data, x-ray films, and electrocardiograms showed negative findings. Daily temperatures showed peaks to 100 F. (rectal) every evening. The boy was otherwise asymptomatic and healthy.

Comment.—Many so-called intermittent fevers in children will apparently vanish if the temperature is taken rectally and if an appropriate range of normal variations is permitted. In our experience, the rectal temperature in normal children can often rise as high as 100.4 F.

Case 3.—A five-and-one-half-year-old girl had had a low-grade fever, a systolic murmur, and an elevated erythrocyte sedimentation rate for one and a half months after an upper respiratory infection. There had been no joint symptoms. The C-reactive protein gave negative results and the chest x-ray film, cardiac fluoroscopy, and electrocardiogram all showed normal findings. The throat culture showed no beta hemolytic streptococci and the antistreptolysin O titer was normal. A diagnosis of rheumatic fever was made and the patient was treated with salicylates and penicillin for one month during which time the systolic murmur disappeared and the patient became afebrile. On examination at the hospital a moderately loud, high-pitched systolic murmur was loudest at the left sternal border and was transmitted to the apex. It was regarded as physiologic. The child was asymptomatic but had frequent rises of rectal temperature to 100.3 F. throughout her convalescent course. Laboratory data, x-ray films, and electrocardiograms all showed normal findings.

Comment.—Slight elevations in the sedimentation rate can often occur with various infections in children. With these illnesses, there are temporary hemodynamic changes which make functional systolic murmurs loud[4,5] enough to be heard at the apex and occasionally in the axilla. They are then regarded as pathologic. When the original illness subsides the intensity of the murmur also subsides, and the murmur may disappear. Although this change in murmur is a physiologic acoustic phenomenon, it is often mistaken for rheumatic cardiac involvement.

Case 4.—Three years previously, after a swim, a fourteen-year-old boy developed red eyes and a temperature of 101 F. A physician gave him two penicillin injections in two days. On the following day the mother consulted another physician, who found frequent premature ventricular contractions and made a diagnosis of rheumatic fever. The patient was kept in bed for the remainder of the summer. He returned to school in the autumn and resumed physical activities. Because of an occasional vague tired feeling in the afternoons, a sporadic slight elevation in temperature, and persistence of his extra systoles, it was considered that he had a recurrence of rheumatic activity and he was kept at home in bed for the next seven months. The following autumn, on a routine examination, he was found to have an elevated sedimentation rate and slight heart enlargement. The sedimentation rate, taken on four occasions in the next few weeks, varied between 18 and 26 mm. per hour (Wintrobe). The patient was taken out of school and kept in bed at home because of the persistence of premature ventricular contractions. During the entire interval he had been completely asymptomatic. After four months at home, the patient was transferred to Irvington House where he was found to be a healthy-looking young man, and a physical examination showed entirely negative findings. A soft systolic murmur was present at the left sternal border and at the apex. There were frequent premature ventricular contractions, but the electrocardiogram was otherwise normal. His Wintrobe erythrocyte sedimentation rate was 35 mm. per hour on admission but decreased subsequently, without therapy, to normal values and remained normal thereafter. The C-reactive protein and the antistreptolysin O titers and throat cultures were all unremarkable. Cardiac fluoroscopy gave normal findings. The patient remained afebrile throughout his convalescent course and tolerated increased physical activities without difficulty.

Comment.—It was considered that the patient had active rheumatic carditis, and his physical activity was restricted drastically for three years because of ventricular premature contractions and sporadic elevations of the sedimentation rate. Extra systoles may have many causes[6] and cannot per se be considered evidence of rheumatic carditis. Sporadic elevations of the sedimentation rate can be found in many patients if the readings are taken frequently enough and a narrow range of normal values is used.

Case 5.—A seven-year-old boy was admitted to another hospital because of headache, anorexia, fatigue, and pain in the left knee, without swelling, heat, or redness. The erythrocyte sedimentation rate was 60, the C-reactive protein gave negative results, and the antistreptolysin O titer was 166 units. The electrocardiogram was said to show myocardial change. A diagnosis of rheumatic fever was made and salicylates were given for eight weeks with prompt disappearance of the arthralgia and a return to normal of the erythrocyte sedimentation rate. Two weeks after his discharge the patient developed a new upper respiratory infection and was found to have an erythrocyte sedimentation rate of 37 and an antistreptolysin O titer of 333 units. Because of this rise in titer he was thought to have had a new streptococcal infection and a recurrence of rheumatic fever. At this time the electrocardiogram showed nonspecific P-wave changes and the C-reactive protein showed negative findings. After one month of additional treatment with salicylates, he was transferred to Irvington House where a soft systolic murmur was heard along the left sternal border and at the apex. There were no positive physical findings. The antistreptolysin O titer was 166 units. The remainder of the laboratory data, x-ray films, and electrocardiograms all showed normal findings. His course was uneventful.

Comment.—The rise in titer of a streptococcal antibody was here considered diagnostic of rheumatic fever. It should be noted that a rise in the antistreptolysin O titer is indicative only of a preceding streptococcal infection. In addition, a rise in titer, as will be noted, would have greater validity if it were confirmed in a simultaneous test of both sera.[7,8]

Case 6.—At a routine preschool examination a six-year-old girl was found to have a systolic precordial murmur and premature beats. These had not been noted by the family physician at sporadic examinations during the preceding two and a half years. The child was afebrile, had had no joint symptoms, and the erythrocyte sedimentation rate was normal. A diagnosis of rheumatic fever was made and the patient was given salicylate therapy for three weeks, during which time the systolic murmur and extra systoles persisted. She was transferred to Irvington House after salicylate treatment was stopped. There was a faint systolic murmur over the base, audible throughout the precordium. It did not radiate to the axilla. There were no other murmurs and the remainder of the physical examination was within normal limits. Occasional premature ventricular contractions were noted clinically and on the electrocardiogram, which otherwise showed normal findings. The laboratory data and cardiac fluoroscopy all gave negative results.

Comment.—Case 6 is another instance in which a physiologic systolic murmur and the presence of premature ventricular contractions were considered erroneously to represent rheumatic fever.

Case 7.—At the time a nine-year-old boy was hospitalized with pneumonia, a murmur was heard for the first time. Shortly afterwards he developed slight lethargy, fatigue, and sporadic slight temperature elevations. He was referred to Irvington House with a diagnosis of rheumatic fever. At the referring hospital his erythrocyte sedimentation rate had dropped from 22 on admission to 8 one month later. X-ray films were said to show evidence of subacute sinusitis of the ethmoidal and maxillary areas. At Irvington House he had a precordial systolic murmur which was loudest at the pulmonic area and along the left sternal border. It could be heard at the apex but did not radiate to the axilla. The remainder of the physical examination, laboratory findings, and other data results were all within normal limits. The rectal temperature ranged from 99 to 100.4 F. The patient was asymptomatic.

Comment.—Case 7 is another instance in which a physiologic systolic murmur was considered organic and in which sporadic elevations of temperature as found on oral readings vanished with regular rectal measurements.

Case 8.—After having had a sore throat without fever, a thirteen-year-old boy began to complain of joint aches and was found to have a sedimentation rate of 55 mm. per hour. A physical examination showed negative results, and all joints were freely movable. He was treated with salicylates and cortisone but continued to complain sporadically of joint aches. During this time his sedimentation rate became and remained normal. After his arrival at Irvington House it was noted that the patient was an emotionally disturbed child who appeared to be using his illness for various secondary gains. His complaints of joint aches were never accompanied by any positive clinical or laboratory findings and they occurred more frequently when he was most disturbed. X-ray films of the involved joints showed normal findings, and measurements of consecutive streptococcal antibody titers failed to confirm the existence of a preceding streptococcal infection.

Comment.—In the absence of objective evidence of arthritis, complaints of pain in the joints or extremities,[9] particularly in an emotionally disturbed child, should be evaluated carefully before they are used as major evidence of rheumatic fever.

Case 9.—For several months preceding her admission to another hospital, an eight-year-old girl had had a low-grade fever and attacks of pain involving the large joints, without any objective manifestations. These episodes would last for less than twenty-four hours and recur sporadically. Her throat culture and electrocardiogram showed negative findings. No antistreptolysin O or C-reactive protein determinations were done. Her sedimentation rate was slightly elevated and fluctuated between the normal range and slightly above it. After a diagnosis of rheumatic fever was made she was treated with tetracycline for ten days. On transfer to Irvington House, a physical examination gave entirely negative results. Antistreptolysin O and C-reactive protein measurements and all laboratory test results were within normal limits. The patient tolerated increased physical activity without difficulty.

Comment.—In the instance of Case 9 the patient's low-grade fever disappeared under hospital observation, and the recurrent sporadic joint aches were insufficient to warrant the diagnosis of rheumatic fever.

Case 10.—A nine-year-old girl was admitted to another hospital because of fatigability, shortness of breath, headache, lower abdominal pain, and fever occurring three months after an upper respiratory infection. The only pertinent physical finding was a short systolic murmur along the left sternal border and at the apex. The intensity of the murmur increased after exercise. The throat culture, electrocardiogram, and cardiac fluoroscopy all showed negative findings. The erythrocyte sedimentation rate was 46. A diagnosis of rheumatic fever was made. The patient was treated with penicillin and then transferred to Irvington House where a physical examination showed only a low-pitched systolic murmur that was loudest along the left sternal border and audible at the apex. The laboratory tests all gave negative results. The patient was asymptomatic and remained so after physical activity was increased.

Comment.—After exercise a change in the intensity of systolic murmurs frequently is seen in normal patients.[5] In Case 10 it was considered indicative of rheumatic carditis, and the diagnosis of rheumatic fever was made erroneously on this basis.

Case 11.—For several months, a fourteen-year-old girl had complained of weakness, joint aches, sore throat, chest and abdominal pain, and epistaxis. She was admitted to another hospital and it was found that she had inflamed tonsils, tender cervical nodes, slight pain in the movement of joints without objective findings, and a Grade I precordial systolic murmur. The admission sedimentation rate was 16 and the chest x-ray film showed negative results. The P-R interval on the first electrocardiogram was 0.16, and several weeks later it was 0.24. Subsequently it returned to 0.20. The patient was treated with bed rest, penicillin, and aspirin. Although all complaints subsided after the first hospital day and did not recur, it was considered that the diagnosis of rheumatic fever was substantiated by the changing P-R interval. The patient was transferred to Irvington House where no significant murmurs were heard, and the physical examination showed negative findings. All the routine laboratory test results were normal, and antibody measurements showed no evidence of a preceding streptococcal infection. The patient was found to be emotionally disturbed and in the midst of a difficult home situation which had been exacerbated during the few months in which her complaints appeared.

Comment.—Case 11 was another instance in which not all of the patient's complaints were of organic origin. A prolonged P-R interval is not pathognomonic of rheumatic fever and cannot be used as a major criterion in making the diagnosis.[3]

Group B. Patients with Major Organic Illnesses Diagnosed Incorrectly as Rheumatic Fever

Case 12.—A twelve-year-old boy was admitted to another hospital because of progressive dyspnea, chest pains, and fever. He was found to have moist rales at both bases and systolic and diastolic murmurs over the entire precordium. There was slight ankle edema but no impairment of joint motion. The C-reactive protein was 4 plus on admission but gave negative results shortly thereafter. The erythrocyte sedimentation rate was normal and throat cultures gave negative results. The antistreptolysin O titer was 333 units, one month later it was 166 units. An electrocardiogram reportedly showed left and right ventricular hypertrophy and premature ventricular contractions. The patient received digitalis, oxygen, and mercurial diuretics with relief of his symptoms. The diagnosis of rheumatic carditis was made and the patient was transferred to Irvington House. A physical examination revealed a systolic thrill at the apex and a Grade IV systolic murmur, loudest at the apex and audible throughout the entire precordium. Laboratory data showed negative findings and the antistreptolysin O titer was 166 units. An electrocardiogram showed left ventricular hypertrophy, and cardiac fluoroscopy showed enlargement of the left ventricle.

Additional history, taken from the parents with the aid of an interpreter, revealed that in Puerto Rico the patient had been found to have a murmur at age three years and was said to have severe heart disease at that time. The diagnosis of congenital heart disease with recent congestive failure was made and cardiac catheterization was indicative of an interventricular septal defect.

Comment.—Children with congenital heart disease may develop associated infections which lead to congestive heart failure and a concomitant reduction in sedimentation rate.[10,11] The abnormal C-reactive protein value at these times is presumably due to the associated infection and should not be considered diagnostic of rheumatic fever.[12] Whenever the patient fails to have a definite history of rheumatic fever, the family should be interrogated carefully, using an interpreter if necessary, for previous symptoms or signs which may suggest congenital heart disease.

Case 13.—A seven-year-old boy developed pain and swelling in his right ankle several days after an injury. An x-ray film of the ankle showed negative results. A throat culture was unremarkable. Because the arthritis was associated with fever and an elevated erythrocyte sedimentation rate, a diagnosis of rheumatic fever was made, and the patient was treated with penicillin and salicylate. At Irvington House he was found to have swelling of the anterior portion of the lower third of the right tibia. A physiologic systolic murmur was present at the left sternal border. The erythrocyte sedimentation rate was elevated, the C-reactive protein gave negative results, and the antistreptolysin O was 200 units. Other routine tests gave normal findings. A repeat x-ray film showed obvious osteomyelitis changes in the lower right tibia.

Comment.—Case 13 illustrates the fact that not all joint pain emanates from the joints and that initial x-ray films of osteomyelitis do not always show positive findings. When inflammation occurs near the distal portion of a long bone, it can create symptoms and signs which may be confused with arthritis.

Case 14.—A sixteen-year-old boy, who had never previously been in ill health, developed an insidious, nonproductive, persistent cough with associated dyspnea. After a month of these symptoms a chest x-ray film was taken at a city health station unit, which then referred him to a cardiac clinic. After an examination there he was sent to Irvington House with a diagnosis of rheumatic carditis. He appeared acutely ill, was coughing severely, but was not cyanotic. The lungs were clear. The heart had a pronounced precordial heave with systolic and diastolic murmurs at the apex. The liver was 6 cm. below the right costal margin and was tender. There was slight pretibial edema bilaterally. The C-reactive protein was 4 plus on admission, was 3 plus one week later, and showed negative findings thereafter. The erythrocyte sedimentation rate results on admission and thereafter were within normal limits. The initial throat culture showed a group A streptococcus, but all subsequent throat cultures gave negative results. The urinalyses showed occasional 1 plus albuminuria and intermittently the sediment contained 3 to 7 red blood cells per high-power field. The admission blood urea nitrogen of 20 rose to 28 and fell to 13 after better cardiac compensation was achieved.

Cardiac fluoroscopy showed a slight to moderate enlargement of all four chambers and left atrial expansions were noted with systole. An electrocardiogram showed abnormally wide P waves and ST-T changes consistent with a digitalis effect and/or left ventricular hypertrophy. Despite the positive throat culture, the patient was not diagnosed as having active rheumatic carditis because of the lack of a more definite history, and he was not given any antirheumatic inflammatory therapy. With digitalis and bed rest the congestive failure improved. After ambulation digitalis was stopped, but with increased physical activity the evidence of cardiac decompensation reappeared. Digitalis was resumed with good results. The patient appeared to be doing well when he was suddenly found dead in bed one morning. An autopsy disclosed subendocardial fibroelastosis.

Comment.—The presence of heart failure and positive C-reactive protein values in children is not pathognomonic of rheumatic fever. The differential diagnosis should include subendocardial fibroelastosis as well as other forms of heart disease.

Case 15.—A seventeen-year-old boy was admitted to another hospital because of fever, joint pains, and a sore throat. In the several years preceding the admission, he had had four attacks of polyarthritis and had received various forms of treatment including salicylates and penicillin. With the most recent attack, there had been high fever and warm, tender knees, wrists, and elbows, together with signs of central nervous system irritation. At previous workups, the C-reactive protein and the erythrocyte sedimentation rate were elevated markedly, but throat cultures and antibody titers gave no evidence of streptococcal infection. Muscle biopsy, lymph node biopsy, bone marrow aspiration, sheep cell agglutination test for rheumatoid arthritis, and electrocardiogram results were all within normal limits. With the present admission to the hospital a sore throat had occurred, and a red rash had been found on the trunk and the thighs. Laboratory data showed a marked elevation of the erythrocyte sedimentation rate and the C-reactive protein together with albuminuria, pyuria, and cylindruria. Febrile agglutinins, lupus erythematosus preparations, and throat cultures all gave negative findings. The patient received salicylates without response. He was changed to prednisone and became afebrile thirty hours later. At the time he was transferred to Irvington House there was only a Grade II systolic murmur at the pulmonic area. Laboratory test results were normal and the streptococcal antibody titers showed no significant change. His convalescent course was uneventful.

It was felt that the patient had a connective tissue disease of undetermined type. After his discharge from Irvington House, the patient received continuous antibiotic prophylaxis to prevent streptococcal infections. Despite adequate maintenance of the prophylaxis another episode similar to the previous one occurred, and he was again hospitalized. Despite careful testing of the sera, no evidence of a streptococcal infection could be detected.

Comment.—The absence of evidence of streptococcal infection makes it likely that the polyarthritis and febrile episodes in Case 15 were due to some cause other than rheumatic fever. A disease such as lupus erythematosus seems most likely, although this diagnosis has not yet been substantiated.

Case 16.—Two weeks after having a sore throat, a thirteen-year-old girl developed fever, lethargy, fatigue, and painful swellings of the right hand, wrist, foot, and ankle. There was no past history of joint or kidney disease. She was given penicillin and salicylate treatment. The joint pain and swelling disappeared within two days. The fever persisted and on transfer to Irvington House she was found to have a temperature of 101 F., subconjuctival hemorrhages bilaterally, and a precordial systolic murmur. The joints were normal. The erythrocyte sedimentation rate was elevated and the C-reactive protein was 5 plus. The antistreptolysin O titer was 166 units. Several throat cultures showed no group A streptococci and repeated blood cultures gave normal findings. Chest x-ray films, cardiac fluoroscopy, and electrocardiograms showed normal findings. Urinalyses showed 4 plus albumin, many red blood cells, several white blood cells, and occasional fine and coarsely granular casts per high-power field. Several lupus erythematosus preparations gave negative results. Serologic tests for syphilis gave negative results. The blood urea nitrogen varied from 17.5 to 35. An intravenous pyelogram was normal. A urea clearance test showed 15 per cent excretion in the first and 16 per cent excretion in the second specimens. Phenolsulfonphthalein excretion was 2 per cent in fifteen minutes and 8 per cent in thirty minutes. A guinea pig inoculated with the patient's urine did not show tuberculosis.

It was felt that the patient had a diffuse connective tissue disease whose precise identity could not be established. Its clinical features suggested a combination of acute rheumatic fever together with acute and probably chronic glomerulonephritis. Although the patient received antibiotic prophylaxis to prevent recurrent streptococcal infections, she had a recurrence of her acute symptoms approximately six months following discharge, was admitted to another hospital with marked azotemia, and died shortly thereafter. The results of autopsy showed acute and chronic glomerulonephritis.

Comment.—Acute glomerulonephritis, like rheumatic fever, may occur following a group A streptococcal infection. An overlapping of clinical features between these two disease entities would therefore be expected and would account for many aspects of such a patient's illness.

Case 17.—An eight-year-old boy was admitted to another hospital because of cough and poor appetite. A physical examination showed a purulent discharge from the right auditory canal, a systolic thrill at the precordium, and a Grade III harsh systolic murmur at the aortic and mitral areas, transmitted to the back. The C-reactive protein and erythrocyte sedimentation rate test results were abnormal. A diagnosis of acute rheumatic carditis was made and the patient was treated with penicillin and sulfadiazine. After she was transferred to Irvington House the patient was found to be afebrile, with a loud, harsh precordial systolic murmur and thrill. The erythrocyte sedimentation rate and C-reactive protein values were elevated. Blood cultures gave negative findings. Cardiac fluoroscopy showed moderate to marked enlargement of the heart and an electrocardiogram showed atrial hypertrophy. It was felt that the patient did not have clinical rheumatic fever and that the cardiac findings were probably due to congenital heart disease. This was confirmed when further interrogation of the patient's family revealed that angiocardiography and cardiac catheterization had been performed several years previously at another hospital, with findings which suggested subaortic stenosis.

Comment.—In Case 17 the patient's fever and cardiac findings were due, respectively, to otitis media and congenital heart disease rather than to rheumatic fever.

Case 18.—A twelve-year-old boy, who reportedly had an attack of rheumatic fever at age six years, was admitted to another hospital because of fever and arthralgia. The pertinent findings on examination were a temperature of 103 F., an injected pharynx, heart enlarged to the anterior axillary line, and systolic and diast olicmurmurs at the aortic and mitra lareas. The right ankle was tender and slightly swollen. The C-reactive protein and the erythrocyte sedimentation rate were elevated markedly. The urinalysis revealed traces of albumin. No throat cultures or antistreptolysin O titers were performed. The electrocardiogram showed a prolonged P-R interval with atrial hypertrophy and left ventricular hypertrophy. A chest x-ray film showed enlargement of the heart with a right-sided double density. The present illness was considered a recurrence of rheumatic fever. The patient was treated with a ten-day course of penicillin and was then given daily oral penicillin prophylaxis. He remained afebrile and asymptomatic in the hospital until he developed headache and fever, which were considered a rheumatic rebound.

Ten days later he was transferred to Irvington House, where he was found on arrival to have fever, a harsh apical systolic murmur, and a high-pitched blowing diastolic murmur along the left sternal border. The erythrocyte sedimentation rate was elevated. The C-reactive protein test was 8 plus and the antistreptolysin O titer was 500 units. The patient was considered initially to have recurrent rheumatic activity, and therapy with prednisone was instituted. Several days later the admission blood cultures were reported to reveal the presence of Streptococcus viridans. The diagnosis of subacute bacterial endocarditis was made. Several changes in antibiotic treatment were required before the condition was cured.[13]

Comment.—Subacute bacterial endocarditis should always be considered in the differential diagnosis of rheumatic activity in the febrile patient with rheumatic heart disease.

Case 19.—A thirteen-year-old boy had been having evening fever, swelling, and pain in both knees for three months. At another hospital he was found to have systolic and diastolic murmurs at the apex, an aortic diastolic murmur, an elevated erythrocyte sedimentation rate, and normal electrocardiogram findings. His joints were normal. One month before admission he had developed a generalized skin rash. He was treated with salicylates and steroids and transferred to Irvington House for convalescence, where only a Grade II soft apical systolic murmur was found. The erythrocyte sedimentation rate and C-reactive protein remained elevated for one month and then the findings gradually became negative. A chest x-ray film and an electrocardiogram both showed normal findings. Although no specific evidence of a preceding streptococcal infection was demonstrated, the patient was considered to have had rheumatic fever. After discharge he was followed at monthly intervals in the outpatient clinic and received oral penicillin prophylaxis, which he took daily.

One year later he developed a rash, fever, and joint aches involving the wrists and small digits of the hands. This was thought either to be a recurrence of rheumatic fever or a sensitivity reaction to penicillin. The penicillin was stopped and the patient was rehospitalized. Careful immunologic tests of consecutive serum specimens failed to show evidence of a streptococcal infection. The acute phase reactants, skin rash, and joint symptoms subsided without any specific antirheumatic therapy, and it was considered that the illness was most likely a sensitivity reaction to oral penicillin. The patient was discharged on sulfadiazine prophylaxis which he took daily thereafter for the next four months. At that time oral penicillin prophylaxis was resumed in an effort to verify the patient's sensitivity. Two months later there developed a marked exacerbation of joint symptoms and fever, and the patient was admitted to another hospital where L.E. cell preparations showed positive findings. The disease became worse and the patient died two months later, with autopsy manifestations of disseminated lupus erythematosus.

Comment.—In retrospect it is apparent that the Case 19 patient never had rheumatic fever, and that the previous initial attack of rheumatic fever and the subsequent penicillin sensitivity reaction were both recurrent episodes of lupus erythematosus. An L.E. cell preparation should be one of the routine tests in the laboratory work-up of patients who are suspected of having rheumatic fever.

Comment

The results that have been cited indicate that a diagnostic error had been made in 12 per cent (19 out of 163) of the patients who were referred to an institution for the treatment of rheumatic fever. In 7 per cent the patients had had a self-limited, probably nonrecurrent minor illness. In the remaining 5 per cent some other major organic disease was present.

The patients with other major diseases may have had congenital or acquired heart damage, a connective tissue disease, or an infectious process involving heart, bone, or joints. For these patients the treatment given for the supposed rheumatic fever could have had various consequences: For the patients with connective tissue disease, the salicylate or steroid therapy, intended as a rheumatic suppressant, could have been effective for the underlying disorder. Bed rest, oxygen, digitalis, and diuretics could have been useful for congestive heart failure, regardless of its etiology. However, when the illness was due to an infection, although steroid therapy might relieve inflammatory symptoms temporarily, it would allow the infectious process to advance and become worse.

For the patients with minor, self-limited illnesses, the incorrect diagnosis of rheumatic fever produced an unnecessary period of physical activity restriction, loss of time from school, and a fear of future heart disease.

In both groups of patients, the use of antistreptococcal prophylaxis for an indefinite period of time after an attack was both unnecessary and conceivably harmful.

Since there is no single diagnostic test for rheumatic fever, the decision that it exists must be made as a matter of clinical judgment, using established criteria. In spite of the attempts that have been made to increase the use of these criteria, they are evidently not considered reliable or are used incorrectly in a disconcertingly high percentage of patients. The errors which result are particularly unfortunate when the rheumatic label is applied to individuals who have only a minor self-limited disease and who because of this are assigned to a lifetime of prophylactic medication. The current data show that this situation existed in 7 per cent of the patients who were considered to have acute rheumatic attacks severe enough to warrant their referral for further treatment at another institution. This implies that there must be many more patients with erroneously diagnosed minor attacks who were treated exclusively at home or with brief hospitalization. Thereafter they have been receiving a prophylaxis regimen which is unjustified and whose need cannot be further evaluated since the attack is ended and no further data can be obtained. In some of the large-scale rheumatic prophylaxis clinics now being operated by private, local, and state agencies, it has been estimated roughly that the original diagnosis of rheumatic fever is dubious or incorrect in 10 to 30 per cent of the patients.[14]

It is thus apparent that errors in the diagnosis of rheumatic fever constitute a major problem whose ramifications have widespread clinical, psychologic, and economic consequences. How can some of these errors be eliminated? A first approach would be to familiarize more practicing physicians with the modified Jones criteria.[3] A consideration of some of the cases reported here indicates that this approach would help solve many existing problems. However, many other problems arise not because the physician is unaware of the Jones criteria, but because he has applied them inaccurately. Some features of the modified Jones criteria and ways in which they may be used improperly will be described.

Major Manifestations

ARTHRITIS.—Arthritis is a term that is usually used incorrectly in one of three ways. First, the term arthritis is frequently employed in the absence of objective evidence of inflammation, a situation in which the word arthralgia is more appropriate. Second, it is sometimes applied when the pain is above, under, or near the joint rather than in the joint. Thus we have seen the diagnosis of arthritis given to instances of subpatellar bursitis, suprapatellar and infrapatellar erythema nodosum, popliteal thrombophlebitis, and to myalgia or tendonitis of the distal hamstring or proximal gastrocnemius muscles. Third, occasionally physicians fail to realize that some children, like many adults, may have symptoms without an organic basis. These symptoms often may be associated with concomitant emotional disturbances and may take the form of joint pains which could then erroneously be labelled arthritis by an uncritical examiner.

CARDITIS.—Perhaps more errors are made in the diagnosis of carditis than in any other aspect of rheumatic fever. The Jones criteria describe four features in rheumatic carditis: (1) the development of diastolic or organic systolic murmurs, (2) changing cardiac size, (3) pericarditis, and (4) congestive heart failure without other causes in children and adolescents. Errors can occur in considering each of these four phenomena.

Murmurs.—Perhaps the most common diagnostic mistake in rheumatic fever arises when a physiologic systolic murmur, which occurs in 50 to 90 per cent of all normal children,[4,15,16] is considered organic because it was loud enough to be heard at the apex or in the axilla. These functional or physiologic murmurs will become louder in any situation which produces tachycardia or an increase in cardiac blood flow.[5] When the change in cardiac rate or blood flow subsides, the intensity of the murmur softens and its audibility at the axilla or apex may disappear. It is then believed that the patient has shown changing murmurs and that rheumatic carditis must have existed. In the group of patients we have cited and in numerous other patients we have seen instances of this form of diagnostic error repeatedly. Recent studies of rheumatic carditis have shown that various systolic murmurs can be heard in almost all patients who have rheumatic fever,[15,17] and that the presence of a nonspecific systolic murmur or of changes in its intensity does not correlate with the subsequent appearance of permanent heart disease. Correlations did exist with holosystolic murmurs which were transmitted to the axilla and were loudest at the apex rather than at the pulmonic area or left sternal border. A survey of the prognosis of acute carditis demonstrated that the most significant murmurs in acute rheumatic fever were diastolic murmurs and that rheumatic valvulitis is usually accompanied by a diastolic murmur which can be heard if auscultation is performed carefully and frequently.[17]

Cardiac Size.—Chest x-ray films of children and adolescents often are interpreted by physicians who are unfamiliar with the natural range of normal variation in this age group. If the child fails to inspire deeply when his first x-ray film is being taken, the diaphragm may seem high and the heart may appear artefactually enlarged. At a subsequent film, when the child may have learned to inspire more deeply, the diaphragm will descend and the heart will appear smaller. This change in heart size is thus due entirely to differences in respiration and does not represent rheumatic carditis. We have seen other instances in which: (*a*) The normal anatomic prominence of the pulmonary artery segment in children has been called a mitralized heart, (*b*) a normal globular-shaped heart has been called abnormally enlarged, (*c*) the mobile heart of a child, which can change its shape enormously from systole to diastole, underwent changes in size which simply represented different phases of the cardiac cycle, and (*d*) a normal, anatomic, slight curvature of the barium-filled esophagus has been considered as evidence of left atrial enlargement.[18]

Pericarditis.—A friction rub or unequivocal evidence of a pericardial effusion indicates pericarditis. If the electrocardiogram provides the only evidence for pericarditis, more diagnostic skepticism should be used. We have seen repeated instances in which inverted T waves in the right precordial chest leads, which are normal in children and adolescents,[19] have been interpreted as manifestations of pericarditis or myocardial damage.

Congestive Heart Failure.—In children, unlike adults, early congestive failure is often mainly right-sided and is manifested by hepatomegaly, distended neck veins, and peripheral edema.[20] Dyspnea and respiratory symptoms usually occur only in advanced stages of failure or where there is an associated pulmonary inflammation. If the clinical features of congestive failure are mainly respiratory, care should be taken to be certain that the dyspnea is accompanied by other features of decompensation. For example, the tachypnea of salicylate toxicity is sometimes confused with the dyspnea of congestive failure.

CHOREA.—Although the current series did not contain any patients with errors in the diagnosis of chorea, these problems frequently occur. This diagnosis also cannot be verified by a specific laboratory test and requires clinical judgment. Healthy overactivity or a neurogenic tic must be differentiated from true choreic movements. The latter are random, purposeless, and seldom limited to a single group of muscles. Tics are stereotyped, localized, repetitive movements while the hyperkinetic child's motions are usually purposeful. Several other features of chorea which may help in diagnosing it are: (1) a history of recent change in disposition or mood, (2) a tendency to pronate the forearms, (3) an inability to sustain muscular contraction, resulting in milking motions when the child attempts to squeeze the examiner's fingers, and (4) a sustained knee jerk (Gordon's sign).

SUBCUTANEOUS NODULES AND ERYTHEMA MARGINATUM.—Subcutaneous nodules and erythema marginatum as manifestations of rheumatic fever are relatively infrequent and are not a common source of diagnostic error. On several occasions, however, we have seen instances in which erythema nodosum alone, without any rheumatic or poststreptococcal manifestations, was considered the erythema marginatum of rheumatic fever.

Minor Manifestations

FEVER.—The problem of intermittent fever often is quickly solved when temperatures are taken rectally and it is recognized that the upper range of normal in many children may be as high as 100.4 F.

TACHYCARDIA DISPROPORTIONATE TO FEVER.—Since psychic stimuli, such as the excitement of having a doctor or nurse approach, may create a fast heart rate, the pulse should be counted while the patient is asleep. Many instances of tachycardia have disappeared when the measurement was done this way.

PROLONGED P-R INTERVAL.—Many physicians believe that a prolonged P-R interval is indicative of myocarditis and some[21] feel that it is almost pathognomonic of rheumatic carditis. Actually, it represents altered electrical conductivity rather than histopathology, is influenced by biochemical and medicinal factors as well as by fever alone,[22] occurs in diseases other than rheumatic fever, and does not appear to be a significant prognostic feature of permanent cardiac damage in patients with rheumatic fever.[17]

LABORATORY EVIDENCE OF INFLAMMA

TION.—A common error is the assumption that the presence of C-reactive protein is pathognomonic of rheumatic fever. Since many of the early clinical investigations of C-reactive protein dealt with rheumatic fever patients, many physicians have apparently concluded that C-reactive protein and rheumatic fever are uniquely related. This obviously is not so, since a rise in C-reactive protein is as much a nonspecific indication of inflammation[8,11] as is a rise in sedimentation rate. Another problem in the use of these two indicators of inflammation is that some physicians use too narrow a range of normality and consider a trace value of C-reactive protein or minor elevations of the erythrocyte sedimentation rate abnormal when actually they may both be due to technical laboratory errors and the erythrocyte sedimentation rate may be within normal limits for the individual patient.

HISTORY OF PREVIOUS ATTACKS.—A history of previous attacks should never be accepted at face value since errors may be made as easily in the diagnosis of previous attacks as they are in present attacks.

POSITIVE FAMILY HISTORY OF RHEUMATIC FEVER.—The same applies for a family history of rheumatic fever as for a history of previous attacks. Even when a positive family history can be validated, its significance is uncertain.

EVIDENCE OF PRECEDING STREPTOCOCCAL INFECTION.—It has now been shown that evidence of a group A streptococcal infection can be found at the onset of almost every attack of rheumatic fever.[7,23] Proof of this infection is therefore an important part of the rheumatic diagnosis. Nevertheless, the diagnosis is often made without an adequate attempt to find its streptococcal antecedents. The most frequently-used tests are of a throat culture and an antistreptolysin O titer. Neither of these is entirely satisfactory. The throat culture often shows negative results in acutely rheumatic patients because the infection has subsided spontaneously or has been cured or temporarily suppressed by antimicrobial drugs. Since antistreptolysin O titer elevations occur in only about 80 per cent of patients,[7] this test will fail to identify about 20 per cent of prerheumatic streptococcal infections.

These difficulties can be remedied in two ways. First, the use of additional streptococcal antibody tests, such as antihyaluronidase and antistreptokinase, may yield positive results when the antistreptolysin O titer test fails.[7,8,23] In rare instances, a fourth antibody measurement, the desoxyribonuclease B titer,[24] may be elevated when the other three are not. Second, it should be recognized that a change of successive titers in any antibody determination is more significant than a single isolated value, however high.[8] Occasional patients may have persistently high streptococcal antibody titers as a long-lasting residuum of even higher previous values caused by remotely distant streptococcal infections. Other patients, particularly those who receive antistreptococcal prophylaxis, may have quite low initial values. A streptococcal infection in the latter group might cause a significant rise in antibody titer but the maximum value might still be within normal limits. If the initial titer were not available for comparison, the infection would pass unrecognized.

Testing of Streptococcal Antibodies

For these reasons, the most effective approach to the problem is to measure the titers of three streptococcal antibodies—antistreptolysin O, antihyaluronidase, and antistreptokinase—on specimens of consecutive sera. For maximum accuracy, these sequential specimens should be tested simultaneously. A suggested approach is to store frozen serum at the time of the acute attack and again one month later. If it is desired, a third sample can be taken at the end of the second month. The other two samples are then thawed, and a complete serial run of all three antibody measurements is performed. A significant rise of one of these antibodies will indicate a very recent previous group A streptococcal infection. A significant fall will mean that the infection occurred less recently. Conversely, the absence of a significant change in any of these antibody titers will be strong evidence against a preceding streptococcal infection and will make the diagnosis of rheumatic fever unlikely.

In patients where chorea is the sole major rheumatic manifestation, an exception should be noted. Recent work has demonstrated that choreic attacks follow streptococcal infections by a much longer average latent interval than does either rheumatic polyarthritis or carditis.[25,26] On rare occasions when the latent interval has been long enough the original elevation in antibody titers may have subsided by the time the chorea begins. Sequential serologic testing will then be unable to identify a preceding streptococcal infection. Therefore, the lack of evidence of a recent streptococcal infection is not a decisive argument against the diagnosis of Sydenham's chorea.

It may be desirable to make the demonstration of a preceding group A streptococcal infection as much of a necessary diagnostic test for rheumatic fever as an appropriate serologic test has become for a diagnosis of syphilis. If a throat culture of the initial antistreptolysin O titer has not demonstrated unequivocal evidence of such infection, the complete serial run should be done. Although some of these tests may be difficult to perform and may require special technics which are not available at most laboratories, at present they offer the only available approach that can reduce the incidence of false diagnoses of rheumatic fever. For this purpose, the tests could be performed as diagnostic procedures by state or local health departments and made available to practicing physicians analogously to the serologic test for syphilis. The performance of these tests by health department units and their utilization by practicing physicians would be a major advance in reducing some of the psychologic and physiologic morbidity caused by false diagnoses of rheumatic fever.

Summary

In 12 per cent of 163 consecutive patients referred to Irvington House with a diagnosis of recent acute rheumatic fever, the modified Jones diagnostic criteria were not fulfilled. Seven per cent of the patients had had a self-limited, probably nonrecurrent, minor febrile illness. In the remaining 5 per cent, some other major organic disease was present.

Most of the diagnostic difficulties were caused either by failure to use the Jones criteria or by incorrect application of them. In the patients with minor illnesses the most frequent errors involved: (1) the assumption that loud physiologic systolic murmurs were pathologic or that changes in the intensity of systolic murmurs represented carditis, (2) the assumption that premature cardiac contractions per se were due to carditis, (3) a too-narrow range permitted for normal temperature and sedimentation rate variations, and (4) too great significance given to rapid pulse rates measured while the patient was awake. In the patients with other major organic disease, the diagnostic errors usually arose because of failure to rule out alternative causes of fever or positive laboratory test results for inflammation, arthritis, and/or heart failure.

Errors in the diagnosis of rheumatic fever are now particularly important because of the widespread use of antistreptococcal agents to prevent recurrent attacks after the initial episode. If the original diagnosis was incorrect, the effect of the error is compounded by the subsequent administration of a long-term prophylaxis regimen which is unnecessary and which can have serious physiologic and psychologic consequences.

These errors can generally be avoided by using better judgment when the modified Jones diagnostic criteria are applied. Since clinical judgment has so many subjective variations a more objective approach is desirable. This can be achieved by insisting that evidence of a preceding group A streptococcal infection be made a prerequisite to the diagnosis of rheumatic fever. The streptococcal evidence can frequently be obtained from an initial throat culture and an antistreptolysin O titer. When these results are negative, positive results can be sought by measuring additional streptococcal antibodies and by testing consecutively drawn serum specimens. In a properly performed serial run, a failure to demonstrate a significant change in the antibodies would be strong evidence against a preceding streptococcal infection and would make the rheumatic diagnosis unlikely.

The measurement of additional antibodies and the performance of sequential serologic tests is done currently only as a research procedure at a few isolated institutions. If public health authorities could provide facilities for these tests and arrange to disseminate the use of them among physicians, the effects would inevitably help reduce the incidence of errors in the diagnosis of rheumatic fever.

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A merry heart goes all the day, a sad tires in a mile.—SHAKESPEARE

VIEWS ON TREATMENT OF BREAST CARCINOMA

A Plea for Conservatism in Surgery for Breast Cancer

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THE DEVELOPMENT of breast surgery was indeed slow in the more than half a century after Halsted in 1894 introduced the procedure that bears his name.[1] During that period the thinking on surgical treatment of carcinoma of the breast crystallized into the concept that when surgery was indicated a radical operation was to be performed. Since 1941 there have been noteworthy departures from this concept, and the new philosophies have developed in completely opposite directions, with one group advocating more conservative measures while the other group has advocated varied extensions of the operation outlined by Halsted. Attention has been and continues to be directed primarily toward the technical aspects of the operation. This emphasis on technic, coupled with other advances in surgical practice, has enabled the surgeon to perform extensive surgical procedures in patients with breast cancer with acceptably low mortality and morbidity rates. However, the fact that such extensive procedures can be done with reasonable safety cannot be considered a valid reason for performing them.

Methods of Dissemination

Unfortunately our knowledge about the dissemination of breast cancer has not received the same emphasis as the technical aspects of the extended procedures in breast surgery. Incredible as it may seem there is no uniformity of opinion on the dissemination of this disease. There are some who believe that the spread of the disease to one group of nodes is quite significant while the spread to another group is of only secondary importance. As a matter of fact, one cannot consider the group of nodes about the axilla, neck, mediastinum, and internal mammary region as completely unrelated and independent. Radiographic examination of calcified tuberculous nodes may demonstrate their continuity in the supraclavicular and axillary regions.

In cancer of the thyroid the presence of nodes in the lower portion of the neck is commonly associated with involvement of the axillary nodes. Here the disease spreads downward. If it can spread downward, it is fair to assume that it can also spread upward. It is therefore understandable that once cancer has spread to its nearest chain of nodes, it can readily extend throughout the entire chain, thereby presenting a situation generally regarded as inoperable. The involvement of nodes may not be macroscopically or clinically detectable; however, the process may well be present in the microscopic state or in the pathologic cellular alteration that initiates cancer growth. Unfortunately the microscopic growing edge of the cancer is not clinically recognizable or detectable by the operating surgeon.

It can be appreciated, therefore, that unless all the possible areas for dissemination of the disease are eradicated, any procedure may be doomed to failure.

Proliferation along lymph channels is not the only method of dissemination. Even more treacherous is the spread of the disease by venous channels. This is much more common than we have realized. In 59 per cent of a series of 107 patients with operable cancers of the breast, lung, stomach, and colon, Engell[2] of Stockholm found free cancer cells in the blood of the veins that drained the cancer areas. In 35 per cent of grade II cancer patients, 78 per cent of grade III, and 100 per cent of grade IV patients, cancer cells were found in the blood. It has been stated that in perhaps 10 to 20 per cent of cases of cancer of the breast there is dissemination through the bloodstream. This method of dissemination can well explain the all too frequent finding of a patient with a small lesion, no regional adenopathy, and distant metastases.

Location of Lesion

The location of the lesion in the breast with regard to prediction of the involvement of a particular group of nodes is another point for emphasis. Handley and Thackray[3] showed that the internal mammary group of nodes is involved in a high percentage of cases of cancer of the breast. Other investigators have pointed out that the internal mammary group of nodes is more likely to be involved when the breast lesion is in the medial quadrant, and they have advised ultraradical procedures to remove all involved tissue.[4] On the other hand, Hutchinson[5] found no correlation between the location of the lesion in the breast and the incidence of mammary node involvement in his study of 81 consecutive cases. Exhaustive studies by many other qualified investigators have revealed that paths of dissemination are never predictable. The lesion can spread to the supraclavicular nodes without involving the axilla; it may spread directly into the internal mammary group and mediastinum without involving the axilla; or it can extend directly into the chest, over to the other breast and axilla, into the abdomen, and even down into the inguinal nodes.

Need to Limit Surgery

In spite of this available information on the insidious and devastating pathways of dissemination of breast cancer and the frequent futility even of early diagnosis and surgical intervention, radical and even so-called ultraradical operations are continuously being performed. This aspect of present-day surgery is alarming, and a word of warning seems justified. Again, may I repeat, the fact that these radical procedures can now be performed without undue mortality does not in itself justify the indiscriminate use of the operation when more conservative measures are equally successful in properly selected cases.

The consideration of cancer therapy must be divided into three phases:

1. The primary focus of the disease must be eradicated.
2. The regional lymph node involvement must be estimated in each case, and when there is any significant probability of involvement the nodes must be dealt with.
3. When the disease has become generalized, the problem passes beyond the possibility of complete surgical extirpation by any of the methods in use at present.

In deciding where to limit surgery, two problems arise. First is the difficulty of deciding at what stage in the extension of the procedure the possible added salvage obtained from more extensive resection of lymphatic draining area begins to be negated by increased operative mortality, morbidity, and postoperative discomfort and disability. Second, at what stage in the progression of regional lymphatic extension from cancer of the breast does the disease become generalized and beyond the scope of surgical extirpation?

Radical mastectomy was originally based on the principle that cancer of the breast generally would spread in an orderly fashion and in one direction, that is, into the axillary nodes. It is obvious from the brief description of the lymphatic spread of this disease that this is not true in most cases; by the time the patient presents herself for therapy, many of the other nodes are involved. Even the ultraradical surgical procedures do not encompass all these avenues of spread. Removal of the breast, axillary nodes, supraclavicular nodes, internal mammary nodes, and even part of the chest wall does not guarantee a cure. Halsted appreciated this soon after he became interested in this field of surgery.

Heroic attempts have been made by many honest surgeons both here and abroad to extend the scope and magnitude of radical mastectomy. The reports of Wangensteen[6] and Dahl-Iversen[7] and associates have not been encouraging. However, they have been most valuable in adding knowledge about the lymphatic spread of cancer of the breast. The results obtained have simply strengthened the belief that both radical mastectomy and the ultraradical technics cannot be considered procedures of choice because of the unpredictability of the lymphatic spread from any quadrant of the breast.

Haagensen's[8] triple biopsy has been a noteworthy contribution. It not only has provided additional valuable data about the dissemination of the disease, but it is also an indication of a trend toward less radical mastectomies in patients who ordinarily would be considered suitable candidates for the classic Halsted procedure.

Fortunately, in the past fifteen years there has been increasing evidence of the usefulness of the more conservative measures in the treatment of breast cancer. Pathologists may theorize on the rationale of eradicating cancer by extended surgery, but in the final analysis it is the survival of patients that counts. The five-year survival rates of patients treated with simple mastectomy with[9] or without radiation have been more and more encouraging. Williams, Murley, and Curwen[10] concluded that with or without radiation simple mastectomy yielded better results than radical mastectomy at St. Bartholomew's Hospital. Meyer and Smith,[11] in their report on an unselected group of cases, noted an 8 per cent higher survival rate among patients treated with the simpler procedures than among patients who had undergone radical mastectomies. Small and Dutton,[12] Byrd and Conerly,[13] Orr,[14] Garland,[15] and Deaton and Bradshaw[16] have all come to a similar conclusion. My own experience in the past fifteen years has been quite gratifying with the use of the extended simple mastectomy[17] and postoperative radiotherapy in all operable cases. Moreover, Deaton,[18] in a survey of the world literature, reported that the survival rate following simple mastectomy was 5 per cent higher than that following radical mastectomy. It may be true that while no one series is of considerable volume, the accumulated reports from the various groups are significant.

Comment

The five-year survival rate is not a reliable criterion. We are all familiar with the fact that there may be a recrudescence of the neoplastic processes almost any time after a five-year clinical arrest because of uncontrollable factors, such as host resistance or reactivation of the virulence of the offending cells, against which we have no defense either surgical, radiologic, or, as yet, chemical. These factors, about which we know so little, have caused surgeons with open minds to reconsider their form of surgical therapy.

The simple procedures obviously lack the radical character and quality of finality that must appeal to the heart of any keen surgeon. However, the role of surgery in malignant disease of the breast has yet to be outlined clearly. There is little doubt that an operation for cancer should be sufficiently radical to give the greatest possible hope of cure. When this cannot be attained and the procedure becomes so radical that it results in excessive immediate mortality or is followed by such disability and morbidity as to make life unbearable, one should assess its value carefully.

We cannot ignore our moral obligation to the victims of this dreaded disease. One should go to great lengths to relieve mental anguish and restore function and thus make whatever time remains worth living.

530 PARK AVENUE

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Medical Society of the State of New York

District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
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VII	October 13, 1960	Corning
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IX	May, 1960	. . .

The Place of Radical Mastectomy

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IT MAY be of interest to surgeons of today, who have grown up in modern surgery, to review the problem of breast cancer.

The surgical profession of the world has accepted the magnificent contribution of William Stewart Halsted, M.D., to breast cancer. At the time of his original description of the radical mastectomy in 1894,[1] few physicians had ever seen a case of breast cancer cured by any method. Halsted, in discussing his now famous article, "The Results of Operations for the Cure of Cancer of the Breast, Performed at the Johns Hopkins Hospital from June 1889 to January 1894," stated: "I sometimes ask physicians who regularly consult us why they never send us cancers of the breast. They reply, as a rule, that they see many such cases, but supposed they were incurable. We rarely meet a physician or surgeon who can testify to a single instance of positive cure of breast cancer. The conscientious physician could not, under the circumstances, advise his patient to be operated upon, and he was justified in treating her with salves and internal remedies. But now we can state positively that cancer of the breast is a curable disease if operated on properly and in time."

Halsted's very first article in which he described his radical mastectomy was a part of his report on "The Treatment of Wounds with Especial Reference to the Value of Blood Clot in the Management of Dead Spaces."[2] In this article he presented the two main contributions to the subject, namely, the meticulous cleaning out of the axilla and the removal of the pectoralis major muscle. Early in the development of the operation Halsted had only bisected the pectoralis minor muscle. He subsequently removed it. At that time Volkmann,[3] who was obtaining the best results, "recommended stripping the fascia from the pectoralis major, as for a classroom dissection." Halsted also noted in his correspondence, "Heidenhain (Küster's assistant at Marburg) proposed cutting away the superficial fibers of the muscle."[3]

Today the surgical profession the world over fully concurs with the philosophy of Halsted and considers his radical mastectomy as one of the beacons of modern medicine. Only seventy years ago it was rare to see a case of cured breast cancer. Today, with the radical mastectomy 54.4 per cent of the operable cases are cured. If the patient has a cancer confined to the breast, the cure rate is 83 per cent. If the cancer has spread to the axilla (and in an average case it takes six months for it to spread to the axilla according to statistics collected by Ewing before his death), the cures are halved to 47.2 per cent.

In other words, until better methods are found, radical mastectomy remains our most effective weapon against cancer. This effectiveness is naturally dependent on the stage and biologic type of the tumor and, of course, on the host resistance. Unfortunately, we have no accurate clinical methods of determining these factors. We do know, however, that with the exception of tumors of hematopoietic tissue which initially are generalized, cancer in its initial or formative stage is a localized disease. It is in this favorable situation that surgical intervention is most effective. I do not deny the fact that simple mastectomy can also bring about excellent results in such conditions. Still, it is only after the pathologist has studied the amputated breast carefully that we learn the extent of the disease.

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By doing a radical mastectomy, we not only get an 80 per cent five-year survival in cases where the cancer is limited to the breast, but we also salvage 40 per cent of those with limited axillary disease. Simple mastectomy unnecessarily condemns those with limited axillary disease, many of whom, our experience shows, can be salvaged. In our series the cases with involvement of the lower axillary nodes had a five-year survival rate of 66 per cent.

The chief problem is to get the patient under the surgeon's care early in the development of the disease. No one can criticize a method of cure which is so effective as to cure 80 per cent of the stage I cases (confined to the breast) of a lethal disease, not to mention the results in stage II cases which represent the disease after it has spread to the axilla.

Modes of Metastatic Spread

The progress and spread of breast cancer is, like other things in nature, determined by rules and anatomy. There are four main routes of spread by lymphatics:

1. In the great majority of cases the breast cancer moves by the lymph channels to the perilymphatic spaces of the lower chain of axillary nodes. When these perilymphatic spaces are filled, the cancer cells go to the medulla of the lymph node, traveling from one node to the next in sequence until involvement reaches the level of the falciform ligament and thence into the supraclavicular area. The progress is an orderly one, definitely not occurring as a shower involving all the axillary nodes simultaneously.

2. If the breast cancer is in the medial half of the breast, spread may be either to the internal mammary chain, or to the axillary lymph nodes, or to both basins.

3. The third avenue of spread is by way of the intercostal lymphatics, which first penetrate the pectoralis major muscle and drain the breast area by way of the intercostal lymphatic channels to the posterior mediastinum.

The axillary chain of nodes is the first and most common group involved; if this were not true, we would not obtain 80 per cent five-year survival in those cases with the breast only involved.

Next, the internal mammary chain becomes involved. It is by taking advantage of the most modern surgical practice that we are now able to extend the radical mastectomy to include the removal of the involved internal mammary chain. With the fairly recent development of modern anesthesia and modern chest surgery, we can now extend the radical mastectomy safely to include the internal mammary chain.

4. The fourth route of spread from the breast is by venous permeation. The actual incidence is hard to determine since it depends on the thoroughness of the examination of the breast, as well as on the number of sections taken. At any rate most pathologists are in agreement that this condition is not common and is a late phenomenon. The presence of tumor cells in blood vessels, although an ominous sign, is not an accurate prognostic index of survival. Tumor emboli must not be mistaken for metastases. The floating malignant cells must lodge in an organ that is favorable for their growth before they can proliferate. I am sure that there are many cases where the cells are either destroyed by the defensive mechanisms of the host or are held in abeyance in distant organs by similar forces. How else can we explain the occurrence of a metastatic lesion in cases where the primary tumor had been removed ten or fifteen years previously? The answer to this problem of late recurrences is still to come. If we can find ways and means of increasing the resistance of the host, or of making malignant cells more susceptible to destruction, or both, we will indeed have made a great step forward in our battle with cancer.

Limitations of Simple Mastectomy

When Halsted came on the scene in 1891 with his radical mastectomy, every physician and surgeon the world over was familiar with the failure of the simple mastectomy of that day to bring about cures. It is rather odd that today there are a few who, because of their discouragement with results of operations on stage II cases, are taking a step backward in again promoting the simple mastectomy. Ever since McWhirter[4] in Edinburgh suggested that breast cancer be treated by simple mastectomy followed by x-ray therapy, an occasional surgeon has accepted his philosophy in spite of the fact that irradiation fails to cure mammary cancer. It is my firm belief that those surgeons with wide experience in this field are holding fast to the viewpoint that the radical mastectomy remains the therapy of choice. Those surgeons who favor going back to the simple mastectomy are in the minority. The latter group have probably developed their new philosophy out of an unusual type of experience, such as dealing more with hospitals where elderly age groups predominate and where conservatism is of prime importance. They may not have the broad experience of dealing with this disease in women of all ages from nineteen to ninety years.

Furthermore, surgeons who have performed a simple instead of a radical mastectomy are reporting a very small number of cases unlike the reports from large institutions, such as the Mayo Clinic or the Memorial Hospital, where the cases reported are in the thousands (Table I).

TABLE I.—COMPARISON OF FIVE-YEAR SURVIVAL RATES WITH SIMPLE AND RADICAL MASTECTOMY

	Simple Mastectomy		Radical Mastectomy	
	Number of Cases	5-Year Survival (Per Cent)	Number of Cases	5-Year Survival (Per Cent)
Deaton and Bradshaw[5]	30	63.2	54	54.7
Barnett[6] (Fredericksburg)	19	. . .	74	. . .
Moore, Judd, and Moore[7]	31	45	271	55
Smith and Meyer[8]	84	61	324	53

The crux of the problem in reports of simple mastectomies versus radical mastectomies is high selectivity. Selectivity of cases vitiates all comparison of modalities of therapy. We have to compare like cases in order to arrive at a legitimate conclusion. I know of no one surgeon who has had the courage to perform simple mastectomy on 1,000 cases of breast cancer and then compare his five-year results with a similar experience of 1,000 cases of radical mastectomy.

The following instance will illustrate my point about comparing surgical modalities of treating breast cancer, as well as my point about comparing sets of figures which no professional statistician would condone. Recently a most provocative article by Smith and Meyer[8] appeared in the *American Journal of Surgery*, in which the authors came to the incredible conclusion that "neither the five-nor ten-year survival rates were affected by the type of operation, the duration of the tumor, or the skill of the surgeon." Then why operate at all? Their conclusion was reached by comparing the end results in 324 cases of breast cancer treated by radical mastectomy, 84 cases treated by simple mastectomy, and 11 cases treated by local excision only. It is obvious to any professional statistician that such numbers of cases are not comparable statistically.

It is obvious also that the 84 cases treated by simple mastectomy were highly selected cases. It should be reported in such a study exactly why each one of the 84 cases was selected for a simple mastectomy. There had to be high selection (and incidentally rather skillful selection) for 51 of the 84 cases to survive five years, a 61 per cent survival rate. This 61 per cent (over-all) five-year survival with simple mastectomy is far higher than the 51.2 per cent over-all five-year survival reported by Harrington[9] of the Mayo Clinic in 8,074 cases treated by a radical mastectomy.

In a recent study I found that 47.5 per

TABLE II.—RATE OF AXILLARY INVOLVEMENT AT RADICAL MASTECTOMY (PRESENT AUTHOR'S SERIES)

	Axilla Involved (Per Cent)	Axilla Not Involved (Per Cent)
Original report	60	40
Study of 217 cases in 1954	51	48.9
Recent study of 200 cases in 1959	47.5	52.5

cent of the operable material has axillary disease present. Twenty years ago our operable material showed 60 per cent axillary involvement.[10] To obtain 61 per cent five-year survival by simple mastectomy signifies that a much greater number of the 84 cases were free from axillary disease than the average material. In fact, even with the improving material of today, if 47.5 per cent of cases have involvement of the axilla, this would indicate that 40 of the 84 cases having a simple mastectomy would be doomed because axillary disease in these 40 cases was left behind in the undisturbed axilla.

Those who advocate the simple mastectomy have failed to prove that it is better than the radical mastectomy. Except for palliation, what good does it do to remove only the breast and leave behind an axilla containing disease?

A few authors have accepted the theory that lymphatic spread is by "showers" rather than by direct, orderly extension to the next node. This is unfortunate.

During twenty years of performing the radical mastectomy, not only I but the entire staff of the Breast Service at the Memorial Hospital have divided the axillary contents into three areas. The lowest one third of the axillary contents is marked with an aluminum tag with the number "1" stamped on it. This tag is sutured to the operative specimen. Likewise, the middle one third, the area behind the pectoralis minor muscle, is tagged with a number 2 tag, and the upper one third, the material between the medial border of the pectoralis minor muscle and the falciform ligament, is marked with the number 3 tag.

Results with Radical Mastectomy

In a study just completed, I found that of 200 radical mastectomies which I performed in 1959, there were 105 cases (52.5 per cent) free of axillary involvement, while 95 (or 47.5 per cent) of the cases had axillary involvement. This study also revealed that of the 95 with axillary involvement (out of the 200 cases) 89 or 44.5 per cent had level 1 involved; 68 or 34 per cent had level 2 involved, and 49 or 24.5 per cent had level 3 involved. These figures clearly demonstrate the fact that in most instances the disease extends to the axillary lymph nodes by progression from level 1 to level 3, and not by simultaneous "showers" to all levels as claimed by some. Table II shows the comparison of axillary involvement in cases over the past twenty years.

This study is of real encouragement because it shows much improvement of the operable material during the past twenty years from the first report of 60 per cent involvement of the axilla. This improvement also accounts for the fact that over the years there has been a gradual improvement in the results of the radical mastectomy. Halsted in 1907[11] reported his over-all five-year survivals with radical mastectomy as 30.89 per cent. From this point on, cure rates bettered. A few years ago the Mayo Clinic (Harrington[9]) reported a rate of 51.2 per cent, Memorial Hospital (Adair[12]) 54.4 per cent, and Karolinski Hospital (Sweden) as 54.4 per cent.

Since those reports there has been continued improvement. In 1957 the Mayo Clinic (Berkson, *et al.*[13]), reported 64.2 per cent, while Anglem[14] of Boston reported a 66 per cent five-year salvage.

These latter figures are better than those of McWhirter. It is true that McWhirter's technic is impressive in its results, and he is to be congratulated for developing an entirely new approach to the problem. However, I cannot comprehend leaving axillary disease behind in 47.5 per cent of the cases, to be treated with x-ray, an agent which delays but does not cure. It will be interesting to compare McWhirter's ten-year cure record with total extirpation results as with the radical mastectomy. I am sure that McWhirter's ten-year cure rate will be lower than his five-year cure rate. The ten-year cure rates will probably be the real test of the two modalities.

Comment

Any abbreviation of the radical approach to the cure of breast cancer is a step backward. Surgical mortality from the radical mastectomy today in my own cases is approximately 1 in 1,000 cases (2 operative deaths in the last 2,000 cases). Therefore, operative mortality is no longer something to be considered seriously except in the rare case. Even in the extension of the radical mastectomy to include the removal of the internal mammary chain, Urban[15] finds his operative mortality to be only 0.6 per cent. Operative mortality and morbidity are therefore of much less importance than previously.

My belief is that a greater percentage of cures will be effected by an extension of surgery rather than by its limitation. Our most difficult problem is how to get the patient with breast cancer to see her doctor earlier. The American Cancer Society is attempting to meet the problem by teaching the laity the signs of breast cancer. Over 10 million American women have viewed the movie demonstrating the procedure of self-examination of the breasts. This effort has been most rewarding, as shown by only 47.5 per cent of today's operable cases having axillary involvement in contrast to 60 per cent twenty years ago. The current emphasis on routine periodic physical examination is also bearing fruit.

We have now reached a point where we have made breast surgery safe for the patient and the patient safe for surgery. I do not believe that radical mastectomy is the answer to carcinoma of the breast, but it is the most effective method we have at the moment. Until more effective ways are discovered and proved superior to radical mastectomy, we must hold fast to this established method, which has recently been extended to include the internal mammary nodes.

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Hope is as cheap as despair.—Thomas Fuller

Treatment of Diaper Rash*

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Diaper rash, or ammonia dermatitis, is the most common dermatitis in infants and children.[1] The lesions are usually erythematous and papulovesicular. Occasionally, the lesions ulcerate, especially on surfaces of the body which are lined by mucous membranes. In the acute stage, hospitalization is often necessary.

Cooke[2–4] demonstrated that Bacillus ammoniagenes is present on the skin of the diaper area and acts on the urea of urine, producing free ammonia. The ammonia acts as an irritant, and erythema or beefy redness develops. If the condition is not attended to properly, the living epidermis is exposed, serum collects, the skin pH becomes more alkaline, and the cycle repeats itself. A superimposed pyogenic infection caused by Staphylococcus aureus often occurs which makes treatment difficult. Eczematous-like lesions develop and spread rapidly to include the entire diaper area and often extend beyond the diaper area up to and including the face.

The treatment of diaper rash depends on inhibiting the growth of B. ammoniagenes and other microorganisms and in aiding wound healing. Because it must be used repeatedly, any medication used should be nonirritating and nontoxic. An ideal medication is one containing a nonirritating, nonmercurial, nonphenolic germicide and agents to aid in healing. Many previously used substances have been poisonous[5] or not effective.

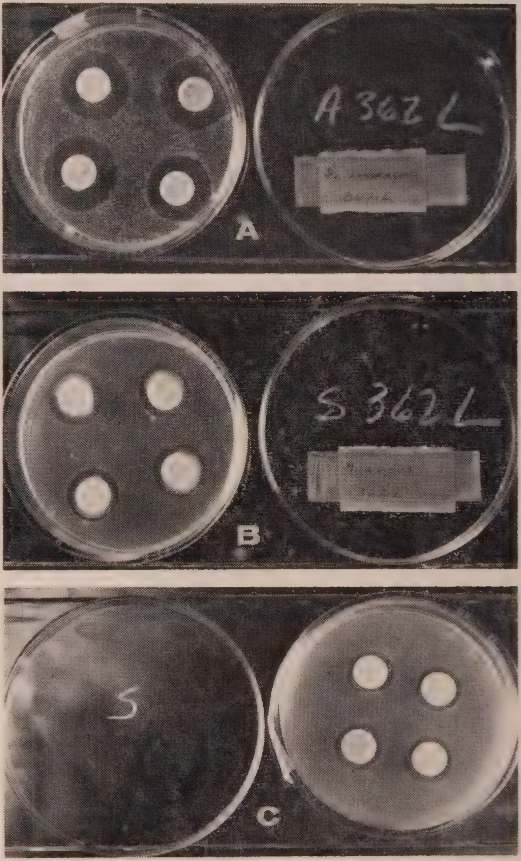

Fig. 1. (A) Dark area shows zone of inhibition of pediatric cream (1:10 dilution) on Bacillus ammoniagenes. (B) Dark area shows zone of inhibition of pediatric cream (1:10 dilution) on Staphylococcus aureus. (C) Dark area shows zone of inhibition of pediatric cream (1:10 dilution) on staphylococcus 80–81 phage type.

The purpose of this paper is to present a report of the treatment of mild and severe diaper rash with a nontoxic, nonirritating, washable dermatologic cream.

We evaluated a pediatric cream (Methakote)† which contains the germicide benzethonium chloride, a protein hydrolysate for maintenance of normal skin acidity, methionine and cysteine for wound healing, talc, and Dermabase as a vehicle.

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* The opinions expressed in this publication are not necessarily those of the Department of the Navy or Department of Defense. Any reference to a drug shall not constitute an endorsement of its efficacy or use in the treatment of any disease.

† Supplied by The Borden Company, Pharmaceutical Division, New York City.

Material and Method

The germicidal effects of the pediatric cream were tested in vitro using B. ammoniagenes, Staph. aureus, and a highly invasive strain of staphylococcus known as 80–81 phage type that had been isolated as the causative organism of a recent nursery outbreak. The disk plate method was employed.

Figure 1 shows the in vitro zones of inhibition of a 1:10 dilution of the pediatric cream on various organisms. Particular attention is directed to Figure 1A which shows the large zone that obtains with B. ammoniagenes.

Before the product was used on infants with diaper rash it was tested for its sensitizing potential. The cream was applied to various areas of the authors' skin for ten consecutive days without showing evidence of irritation. After a ten-day waiting period, this experiment was repeated for another ten days. Again no irritation occurred. The cream was then applied to the forearms and arms of 25 children and 25 infants. On 20 occasions the cream was left on the skin in thick layers for at least four hours. No irritation was evident after twenty-four or forty-eight hours. No other side-effects occurred.

Fifty-two infants and children with diaper dermatitis were treated either twice or three times daily with the product. Thirty patients were male, 22 were female; the ages of the patients ranged from six days to twenty-four months. There were 2 Negro patients.

Forty-seven children in the group had a moderate diaper rash, 2 had a mild rash, and 3 had a severe rash. Mild rashes included erythema and little or no papulovesicular lesions. Moderate rashes included conditions with marked erythema and papulovesicular lesions. Severe rashes included those which had spread and ulcerated to a great extent. Two cases were so severe the patients required hospitalization.

TABLE I.—Numbers of Infants and Children with Diaper Rash Treated with Pediatric Cream*

Age of Patient (Months)	Diaper Rash Cleared In 3 days	4 days	5 days	Total
Less than 1	5	3	14	22
1 to 3	2	4	4	10
Over 3	4	2	12	18
	11	9	30	50

* The table does not include the 2 cases for which the histories are given in this paper.

Tubes containing the product were distributed with instructions to apply thin layers of cream. In the cases of hospitalized patients who had a severe diaper rash similar directions were given to the nurses. Patients were seen daily until the healing of the diaper rash was complete.

Similar tubes of a placebo cream containing only the ointment base and no active ingredients were distributed to an equivalent group of 50 patients.

Results

Table I summarizes the results obtained with the pediatric cream for all cases except the 2 for which histories are given in this paper. After forty-eight hours of treatment the results in all cases were excellent. In all the children the diaper rash receded after two days and healed completely by the fifth day of treatment, except in the non-hospitalized patients.

Results in practically all of the 50 control cases treated with the placebo cream indicated a lack of response. A few children showed slight improvement on the placebo. When redness and pruritis persisted, the pediatric cream was substituted for the placebo.

The 2 cases reported separately are of special interest because of the severity of the rash and the dramatic response to treatment with the pediatric cream.

Case Reports

Case 1.—A three-month-old white male was admitted to the hospital on November 28, 1958, because he had a severe diaper rash. The parents claimed that they had noticed a reddening on the child's forehead when he was six weeks old. A physician had prescribed the daily use of an antiseptic soap for the child's body. When the child was eight weeks old, the reddening spread to the diaper area, and appeared to be pruritic. A physician at this time prescribed hydrocortisone cream (1 per cent) for the rash. During the following four weeks, the rash increased in severity, and further help was sought by the parents.

The child's history revealed that he had been breast fed for two and a half weeks after birth, but this procedure had been discontinued because the mother developed an irritation of the breast. Thereafter, the child was given an evaporated milk formula, vitamin drops, and the usual infant foods.

The family history was not significant for such allergic manifestations as hay fever and asthma. Another sibling however, now one and a half years old, also suffered from diaper rash.

The child's parents were interested in obtaining proper help for the infant, and stated they would cooperate.

A physical examination on admission revealed that the child was a healthy-appearing 9-pound 5-ounce male, with grossly visible diaper rash lesions. Except for a few scales on the child's scalp, surrounded by reddened, excoriated skin, the physical examination was within normal limits. The child appeared to be distressed.

Laboratory analyses, including complete blood counts, urinalyses and chest x-ray films, showed normal findings. A throat culture and a culture of scrapings from the diaper area gave negative results.

The child was started on the pediatric cream, twice daily. Thin layers of medication were applied to the scalp and to the diaper area. After the first thirty-six hours, improvement was noticeable. In addition to a lessening in erythema the child appeared to be comfortable and cried less frequently. After five days, the cream was applied three times daily, and improvement continued. During these applications the infant's body was exposed to air for ten minutes. The cream dried nicely. On the sixth hospital day the child was given a bath in the usual manner, and at this time the nurses commented on the ease with which the cream was washed from the patient's body and from their hands.

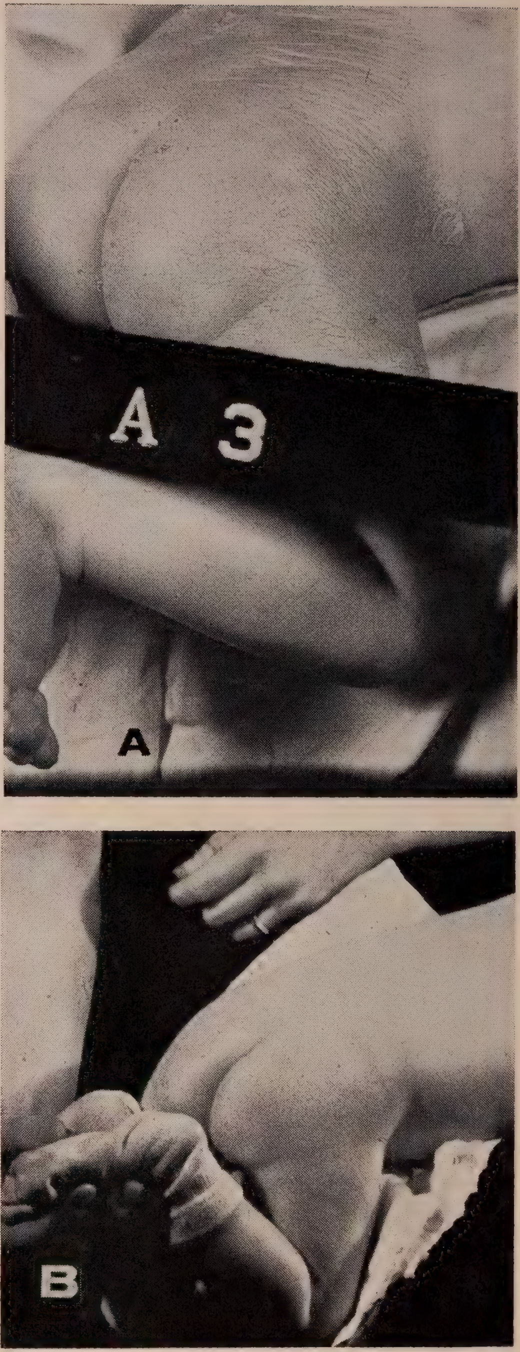

FIG. 2. Diaper areas of patient, Case 1, with most severe case of diaper rash seen by investigators, (A) before and (B) after three-week treatment with pediatric cream, applied by nurses. Patient hospitalized and observed daily.

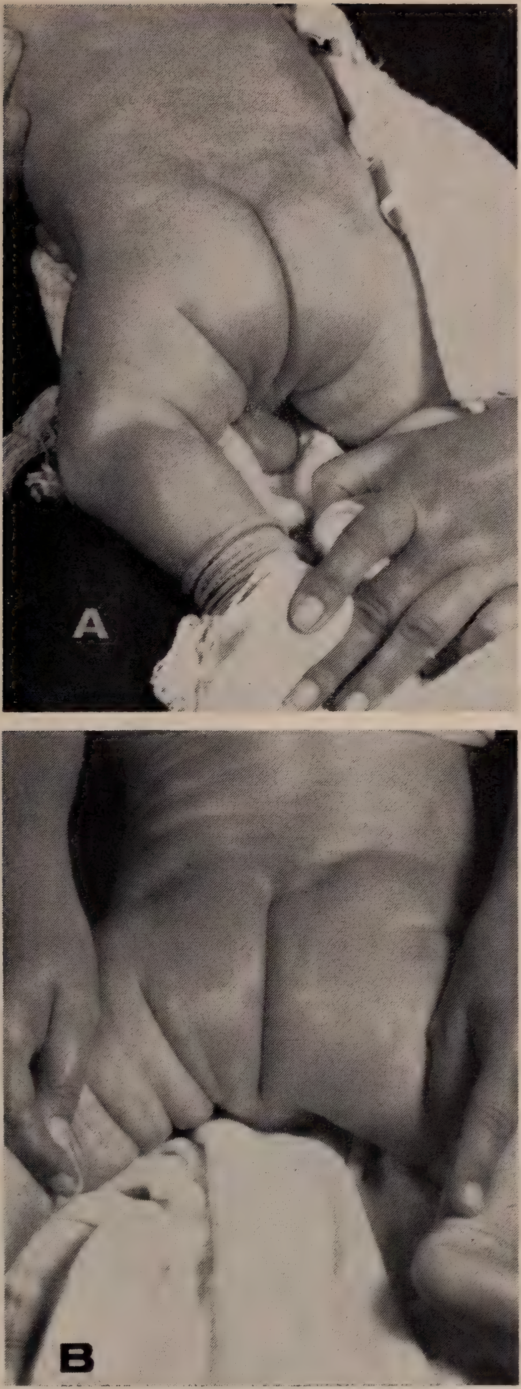

FIG. 3. Diaper areas of outpatient, Case 2, (A) before and (B) after four-week treatment with pediatric cream. Patient treated at home by parents who had received and followed instructions given for all such patients.

On December 18, 1958, the infant's diaper rash had healed completely (Fig. 2). Very appreciative parents took the child home for usual care, and the pediatric cream was to be used as needed. Follow-up at weekly intervals revealed that new skin had formed nicely in the diaper area as well as on the scalp, and the child appeared physically to be quite well. A sibling, incidentally, who was treated for a mild diaper rash at this time, responded after less than five days of treatment with the pediatric cream applied twice daily.

At no time during the prolonged use of the cream was any side-reaction or idiosyncrasy-type reaction reported or noticed.

CASE 2.—This child was born on February 17, 1959. He was well until he was three months of age (May 8) when he came to the clinic with a severe diaper rash. His mother stated that during the preceding two weeks several other physicians had used bacitracin and a coal tar sulfur ointment on the rash without improvement. The rash was pruritic. Routine laboratory analyses showed that the blood count and urine were normal. On May 8 the child was started on twice-daily applications of the pediatric cream. After one week there was considerable improvement, and after two weeks on the same dosage more than half the rash had healed. After four weeks the rash was completely healed and use of the cream was discontinued (Fig. 3).

The mother, who has three other children, stated that the medication was easy to use, never stained the bedclothing, and was easy to wash off the hands.

Comment

Williamson, McCarthy, and Fromm[6–8] and Perez-Tamayo and Ihnen[9] demonstrated the wound-healing ability of methionine and cysteine. Edwards[10] found that labeled methionine applied topically to guinea pigs was absorbed through the skin and it appeared in the liver, spleen, and heart in ratios comparable to methionine given orally or injected. Methionine was applied by Isidor[11] to atonic wounds in guinea pigs and it was found that it hastened the healing of wounds.

It is the opinion of the authors that the sulfur-bearing amino acids that are incorporated in the pediatric cream are conducive to a rapid healing of the diaper rash lesions and appeared to be a favorable factor in the formation of new clean tissue. The mechanism of these effects remains unknown.

In the authors' opinion the pediatric cream generally produced results much more rapidly than comparable creams that did not contain methionine and cysteine. The amino acids in the cream act as a buffer in maintaining the normal acidity of the skin.

The new cream used in this study appears to be an excellent adjunct because it combats mild and severe conditions effectively without irritation or sensitization. The cream is highly acceptable to patients because it is nongreasy and washable.

Summary

The efficacy of a pediatric cream (Methakote) in the treatment of diaper rash or in ammonia dermatitis was studied with 52 pediatric patients of both sexes and of different ages.

After forty-eight hours of treatment the results in all cases were excellent.

The diaper rash healed completely by the fifth day of treatment except in the 2 exceptionally severe cases cited. No side-effects occurred in any patient at any time.

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ANNUAL CONVENTION

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Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 2798) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before October 30, 1960.

External Cod Liver Oil Therapy in Infantile and Atopic Eczema[*]

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THERE is general agreement that infantile eczema of the child, flexural eczema of the youth, and disseminated neurodermatitis of the adult may be related.[1] An oversimplification of this relationship would state that infantile eczema reflects a specific food sensitivity in an allergy-prone infant, flexural eczema reflects an extension of this allergic sensitization to respiratory allergens, and disseminated neurodermatitis reflects further extension of this skin sensitivity to allergens from the individual's own chronic eczematized process so that only a minimum external insult is required to precipitate a severe exacerbation. In each instance the patient's skin has been conditioned to respond in a particular recognizable manner, making the three conditions recognizable clinical entities. Figure 1 shows pictorially classic examples of each of these eczema types. Of the three, infantile ezcema shows the most variation, often presenting itself as another entity, such as seborrhea (cradle cap), intertrigo (diaper rash), or even miliaria (heat rash). Usually the characteristic facial eczema also is present to suggest food allergy as the cause of the eruption. When one eliminates the causative allergen from the diet, the skin condition improves quickly and, even though later the offending food might be returned to the diet, the eczema may remain cured permanently. On the other hand, both flexural eczema and disseminated neurodermatitis (atopic eczema), although definitely associated with an allergy in the individual and often in his family, do not lend themselves to easy identification of the allergen, nor do the dermatoses respond as readily once the sensitizing allergen's influence is removed. Thus the atopic dermatoses are not just a simple extension of a childhood allergy into adult life but are diseases developed in individuals who, for some reason, respond in this characteristic

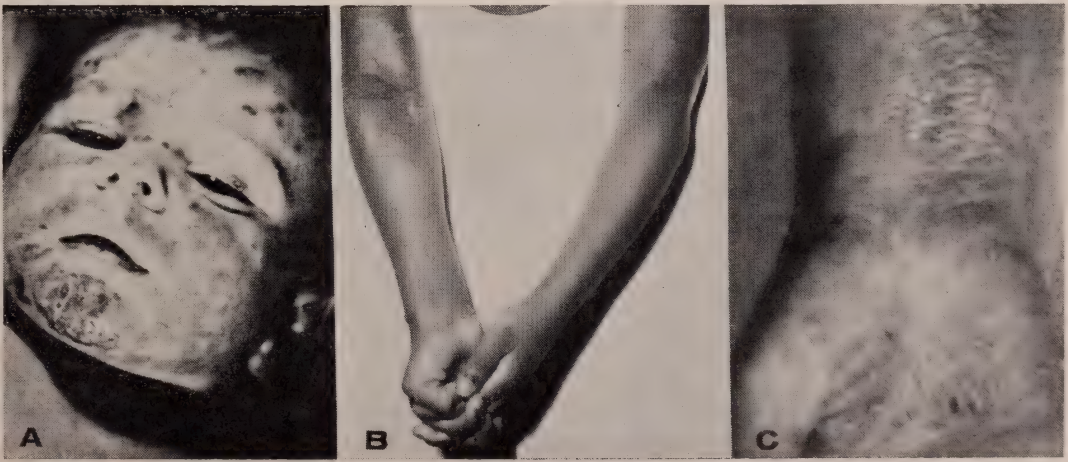

FIG. 1. Examples of (*A*) infantile eczema, (*B*) flexural eczema, and (*C*) atopic eczema.

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[*] This study was supported in part by a grant from the Desitin Chemical Company, Providence, Rhode Island.

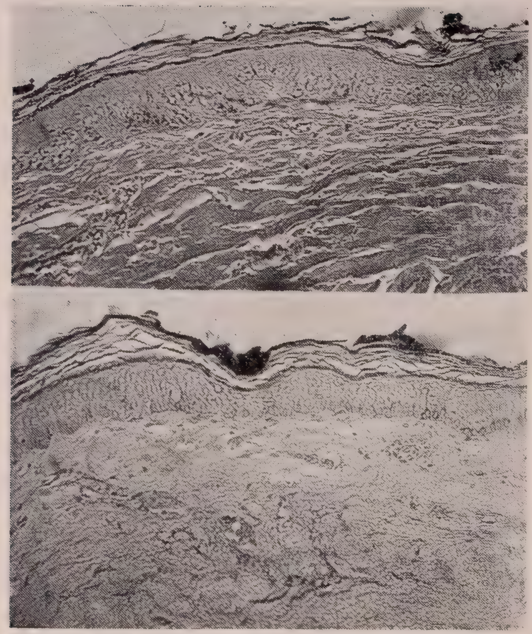

FIG. 2. Photomicrographs of biopsy specimens of an adult patient after application for one week of ointment (*above*) containing no unsaturates and (*below*) containing unsaturates (osmic acid in vivo stain).

pattern to ordinary living stress plus an allergic insult. Accordingly, further exploration of any similarities in skin type or behavior common to babies with infantile eczema and adults with atopic eczema might offer some help in the treatment of the latter group.

A factor other than allergy proneness common to individuals with these eczemas is that all of them show a relative deficiency of unsaturated natural oils containing fatty acids in their skin emollients. It has been observed clinically that an increase in the natural emolliency of individuals with such dry skin dermatoses improved their condition.[2] In this study the premise has been made that restoration of skin oil need not be from within but may be added topically, provided that the oil added resembles that oil which is present naturally, particularly in terms of its unsaturation and its fatty acids.

Cod liver oil has been a classic beneficial additive to ointment preparations.[3] Chemically, as determined by osmic acid staining, these preparations contain unsaturates similar to those naturally present on the skin. The photomicrographs shown in Figure 2 show this staining quite clearly. This individual had had one cream containing no unsaturates and one cream containing unsaturates applied daily for one week. This fact led us to study the benefits obtained by the use of a cod liver oil preparation on the eczematized and atopic skins of infants and adults. Because of its very favorable experience in the treatment of infantile eczema,[4] the cod liver oil ointment (Desitin) was used as the specific source of unsaturates for topical application.

Our initial study determined that measurable unsaturation of the oil on the skin of babies with infantile eczema and adults with atopic eczema could be increased through daily application of an ointment containing unsaturates. Table I shows a series of samples taken from an infant and an adult patient. The oil stain areas were measured from lens paper smears in the manner previously reported.[5] The areas selected for sampling were the neck, the antecubital fossa, the popliteal fossa, and the groin. They represented the intertriginous and flexural areas involved most

TABLE I.—COMPARATIVE INCREASE IN MEASURED OIL REMOVED FROM FLEXURAL AREAS DURING TREATMENT OF ECZEMA WITH COD LIVER OIL OINTMENT

Types of Eczema	Patients	Date	—Flexural Area (Millimeter Squared)—			
			Neck	Antecubital	Popliteal	Groin
Infantile	Fifteen-month male	January 5, 1959	192	63	89	83
		January 12, 1959	203	114	150	112
		January 26, 1959	288	217	382	167
		February 16, 1959	328	543	828	455
Atopic	Thirty-two-year-old male	November 7, 1958	724	687	645	399
		December 19, 1958	775	549	615	770
		January 9, 1959	808	1,016	969	1,036

TABLE II.—Case Histories of Ten Children with Infantile Eczema

Identity	Presenting Lesions	Established Allergies	Therapy	Current Status
Female (4 months)	Facial eczema Miliaria on abdomen and trunk	Tomato	Cod liver oil ointment Elimination diet	Cured, 2 weeks
Female (1 month)	Eczema on cheek Diaper rash (Candida albicans)	Not elicited	Cod liver oil ointment Diphenhydramine hydrochloride (Elixir of Benadryl)	Cured, 1 week
Female (18 months)	Eczema on cheeks Diaper rash	Hematinic (?) (Troph-Iron)	Stop tonic Cort-Dome creme on the face good, caused pustules on the groin Cod liver oil ointment on the groin	Cured, 2 weeks Cured, 1 week
Female (4 months)	Asthma Seborrhea on face, neck, and eyelids Diaper rash	Cow's milk Rice cereal	Diet change Diphenhydramine hydrochloride Neo-Cortef ointment on the eyelids Cod liver oil ointment on all other areas	Cured, 1 month
Male (9 months)	Seborrhea on cheeks and ears Intertrigo of the neck and chin Diaper rash (Candida albicans)	Apple sauce	Diet control Diphenhydramine hydrochloride Cod liver oil ointment on diaper area Sulphur, liquor carbonis detergens, Nivea oil on the face and neck	Cured, 3 weeks
Female (19 months)	Eczema on cheeks, antecubital fossae, and the pubes (Candida albicans) Diarrhea	Wheat and rye Father had hay fever, mother had migraine, and brother had infantile eczema	Diet control Mycostatin suspension by mouth Cod liver oil ointment Neo-Cortef lotion on cheeks	Improved, 2 weeks Cured, 1 month
Male (3 months)	Seborrhea (cradle cap) Eczema on upper inner arms, shoulders, and legs Diaper rash	Unboiled milk	Diet change Elixir of Pyribenzamine Cod liver oil ointment Oil on scalp, no soap	Well, 1 week
Male (1 month)	Cradle cap Facial eczema Diaper rash	Not elicited	Mineral oil cleansing Diphenhydramine hydrochloride Cod liver oil ointment on groin	Improved, 1 week
Female $1^1/_2$ months	Seborrhea on scalp, ears, and forehead Papules, antecubital fossae Diaper rash	Not elicited Irritation from soap(?)	Neo-Cort-Dome cream on face Cod liver oil ointment on other areas pHisoHex for shampoo and bath	Apparently cured, one visit
Male (15 months)	Seborrhea on scalp Eczema on the cheeks and neck Antecubital fossae and the groin	Orange juice Chocolate (Pineapple)	Diet control Diphenhydramine hydrochloride Petrophilic soap Cod liver oil ointment on all areas except scalp	Cured, 5 weeks Recurrence, 8 weeks (Pineapple allergy)

TABLE III.—CASE HISTORIES OF SEVEN ADULTS WITH ATOPIC ECZEMA

Identity	Presenting Lesions	Established Allergies	Therapy	Current State
Male (27 years)	Lichenified eczema on antecubital and popliteal fossae, and sides of neck (duration, 4 years)	Flour dust (the patient was a baker)	Liquor Carbonis Detergens in Noxzema Tar-steroid ointments Cod liver oil ointments in combination with steroid ointments Chlor-Trimeton antihistaminic Perazil	Improved, cannot eliminate Respiratory allergen
Male (36 years)	Lichenified eczema on facial folds, neck, and antecubital and popliteal fossae Moist eczema on the groin (duration, 15 years) Undergoing poststeroid exacerbation	Silk House dust, equivocal	Topical steroids not effective Cod liver oil ointment too drying in intertriginous areas Silicone cream is the most satisfactory protective Menthol and phenol ointments give best itch relief Heavy dosage antihistaminic not equivalent to steroid Eventual improvement after immunization to silk and dust	Discharged, improved after 5 months therapy
Male (39 years)	Desquamating eczema on the abdomen, groin, and extremities relatively nonpruritic (duration, 16 years)	Oil and wax fumes	Cod liver oil ointment too drying, especially in groin Best results from topical hormone creams and testosterone injections Cortisone creams do not stop scaling	Improving slowly after $1^1/_2$ years care
Male (30 years)	Seborrhea on the scalp, eyelids, and ears Lichenified eczema on the neck, groin, and thighs (Duration, 10 years)	House dust Soot	Cod liver oil ointment too drying Cor-Tar-Quin ointment preferable to other steroid ointments Estrogen-silicone lotion most satisfactory Liver injections intramuscularly and vitamin B complex	Discharged, improved after 7 months
Male (32 years)	Atopic eczema (exacerbation after withdrawal of cortisone therapy) on the entire body (pruritic, lichenified, and excoriated) (Duration 12 years)	None determined; emotional stress dominant factor	Hydrocortisone ointment only satisfactory topical Thorazine by mouth Adrenocorticotrophic hormone intramuscularly	Recovered from exacerbation and improved after 1 month

[Continued on page 2867]

[Continued from page 2866]

TABLE III.—Case Histories of Seven Adults with Atopic Eczema

Identity	Presenting Lesions	Established Allergies	Therapy	Current State
Female (50 years)	Intertrigo (with furunculosis), inframammary, axillae, and on the groin Lichenification of the antecubital and popliteal fossae (Duration, 2 years)	Nasal culture: Staphylococcus Proteus	Cod liver oil ointment good on intertriginous areas Burow's emulsion with cottonseed oil most soothing Immunization Proteus vaccine Staphylococcal toxoid	Discharged; virtually cured after 8 months Returns for booster immunization
Female (48 years)	Excoriated lichenified lesions on the neck, fossae, arms, and flanks Erythematous exfoliating areas on forehead and cheeks Exacerbation after withdrawal of cortisone (Duration undetermined, severe, 3 years)	House dust Strong psychic component Premenopausal tension	Maintenance: heavy on antihistamine, light on hydrocortisone Estrogenic hormone intramuscularly Topical steroids not tolerated Hormone creams aggravate itch Cod liver oil ointment too drying Immunization(dust)	Under care, slowly improving

frequently secondarily in infantile eczema and involved most frequently primarily in atopic eczema. The data show that there was a steady increase in stainable oil as long as the ointment was applied.

Clinically the infant responded very well and appeared to suffer no discomfort from the use of the ointment. The adult patient complained of both heating and drying sensations and little or no relief from pruritus following the use of the unsaturate-rich ointment.

The apparent difference in clinical response shown in the 2 test subjects, despite the fact that the oil pictures were comparable, led us to expand our series of both infants and adults to determine what factors in addition to skin oil unsaturation required control for optimum therapeutic benefit. Case histories of 10 children and 7 adults are given in Table II and Table III. These clinical studies confirmed the preliminary observation that unsaturated oil replacement on the involved skin, when combined with the elimination of known allergens or compensation for unknown allergens through internal antihistaminic therapy, was rapidly curative almost universally in the babies with infantile eczema including diaper rash, yet in the adults with neurodermatitis the unsaturated oil-replacement therapy seemed to give relief in only 2 cases. The product used, in addition to oils, contained zinc oxide, lanolin, petrolatum, and talcum as therapeutic agents; therefore it may have been too drying. Against this rationalization is the fact that no ointment preparation used was entirely satisfactory. In many instances even the corticosteroid ointments failed to control these problem cases. The best results in the adults were obtained where a specific immunization against a known allergen was accomplished in conjunction with the topical therapy. From an analysis of these adult case histories one must conclude that individualized therapy was required in each instance. Progression of the disease had so complicated the clinical syndrome that, even when an apparently very likely allergen was identified, adequate antiallergic measures were often only moderately effective in improving the skin condition.

Summary

1. Infantile, flexural, and atopic eczemas

have certain allergic characteristics in common.

2. The three disease states also are related in that in each one there is a relative deficiency of unsaturated oil and fatty acids on the skin surface.

3. Replacement of unsaturated oils on the skin can be obtained by topical application of an ointment containing unsaturated lipids.

4. In the treatment of infantile eczema including diaper rash this skin oil-replacement therapy alone is of real value.

5. In the treatment of the adult patient with atopic eczema, replacement of the unsaturated skin oils by topical application is apparently of minimal therapeutic value.

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ANNUAL CONVENTION

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Determination of Immunization Status of School Children in New York State

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(From the District Health Office, State of New York Department of Health)

ROUTINE immunization of children against diphtheria, pertussis, tetanus, and smallpox has long been recommended universally by the medical profession. Recently, poliomyelitis has been added to this list. There has been a tendency for these immunizations to be given at progressively earlier age levels; the most recent recommendation is to start at two months of age.

Traditionally, these immunization procedures have been obtained from two sources: private medical practice and public health clinics. However, despite the utmost efforts of these two groups for a period of more than thirty years (except for poliomyelitis), it is well known that there are still large numbers of children, even of school age, who have not received this protection. Not only have the combined forces of private medicine and public health failed to achieve universal immunization of our childhood population, but also in many areas we have failed even to achieve the percentages thought necessary to prevent epidemics.

The goal of 70 per cent immunization of the preschool and school age population against diphtheria, pertussis, tetanus, and smallpox has become a magic number, and a figure of 80 per cent for poliomyelitis is apparently becoming just as well entrenched. Whether or not these are the proper percentages needed to control the disease under consideration has never been completely proved. However, they are the levels generally accepted, and for lack of any other we must perforce accept them until some future controlled study gives us a definite answer.

The fact that our childhood population is only partially immunized against these five serious diseases makes the actual percentage of immunization a matter of great importance to at least three groups: (1) the community, for it is the general public who suffers most when protection is inadequate to prevent epidemics; (2) the medical profession, which has assumed responsibility for the individual health of the American public; and (3) the public health authorities, who have assumed specific responsibility for community well-being.

A knowledge of the degree of immunization is of value in four major ways: (1) It indicates which communities are inadequately protected and are therefore susceptible to epidemic outbreaks, (2) it acts as a rough measure of the extent and quality of medical services actually available, (3) it is a rough measure of the amount of preventive medicine practiced in the community, and (4) it indicates where extra effort should be concentrated. In other words, such knowledge reveals the danger, points to the area in which the danger is greatest, and suggests the answer.

Lack of Information in New York State

It seems almost inconceivable that within recent times in New York State, one of the acknowledged leaders in both private medical care and in public health practice, Statewide statistics on this very important point have been available for only one year. This absence of information is not due to any lack of appreciation of its value, but to the fact

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Immunization Report, ——— School
For School Year Starting Sept. 19—
Name and Title of Person Reporting ———

Item	Kindergarten	First Grade
1. Total enrollment.		
2. Number who did not have complete primary diphtheria, pertussis, tetanus (or diphtheria, tetanus) series at start of school year.		
3. Number who did not have primary smallpox vaccination at start of school year.		
4. Number who did not have complete (3) polio vaccination at start of school year.		
5. Number who completed primary diphtheria, tetanus (or diphtheria, pertussis, tetanus) series during school year.		
6. Number who received primary smallpox vaccination during school year. .		
7. Number who completed polio vaccination (3) during school year.		

INSTRUCTIONS: This form should be started as early in the school year as the information on lines 1, 2, 3, and 4 is available. Sometime toward the end of the school year, after all immunization clinics have been completed, lines 5, 6, and 7 can be filled in. Please transmit completed form to the Glens Falls District Office, 11 South Street.

All information transferred to this form should be obtained from the permanent school health records. Do not include information from any other sources.

Fig. 1. Immunization report Form. I.

that it has never been possible to establish the continuing, cooperative effort necessary to gather the facts.

In this State the raw data for such statistics lie scattered in many places. Immunization procedures are performed and recorded by three major sources: the private offices of physicians, various types of public health clinics, and for in-migrants by the same two general sources from areas outside the State. At first glance, one might assume that bringing this data together would pose no great difficulty. However, such is not the case, as a study done by Freckleton[1] in 1949 brings out.

At the time of Freckleton's study, immunizations were reported to the State Health Department by health officers and some private physicians, but the degree of under-reporting was so great that the practice was abandoned. Freckleton found that for the city of Rensselaer, based on physician reporting, the figures for the period June, 1944, to December, 1948, indicated that only from 5 to 13 per cent of the preschool population had been immunized, whereas a house-to-house canvass conducted in April, 1949, revealed that, actually, the correct figure was 68.6 per cent.

This study emphasized the well-known fact that, with rare exceptions, physician reporting is too incomplete to be used as a basis for statistical purposes. Practicing physicians are just too busy, and the paperwork incident to present-day medical practice is just too overwhelming, to expect consistent reporting when it does not contribute directly to the well-being of the individual patients involved.

Another possible source of data for this information in New York State is school records. All children entering the public and parochial school systems in this State are required to furnish certain information on registration. Previous immunization history is part of this information. However, except for a few of the largest cities in the State,* public school health services are a function of the local and State education authorities, which means that the use of their records involves an interagency approach.

In 1950 the State Education Department, through the solicitation of the Bureau of Communicable Diseases and Epidemiology of the State Health Department, furnished information to the Bureau on the immunization status of children in the beginning grades of school. This study was done in 1950 only and was never repeated.[2]

Method and Results

The present project was undertaken for a dual purpose: to determine the immuniza-

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* Albany, Buffalo, New York City, Rochester, Syracuse, and Yonkers. In certain other areas of the State health departments are responsible for health services in nonpublic schools.

TABLE I.—Summary of Immunization Records, School Year Starting September, 1958, County A*

SCHOOL	Enroll-ment	Kindergarden						Enroll-ment	First Grade					
		None or Incomplete (%)							None or Incomplete (%)					
		Start of Year			End of Year				Start of Year			End of Year		
		DPT	SmP	Polio	DPT	SmP	Polio		DPT	SmP	Polio	DPT	SmP	Polio
District 1	417	14	30	26	9	16	23	333	15	22	28	10	17	1
District 2	124	36	60	47	13	20	47	146	9	17	47	3	4	47
District 3	13	85	85	85	39	24	85	21	57	67	67	28	34	48
District 4					U	N A	V A	I L	A	B L	E			
District 5	12	58	42	58	25	42	58	43	30	30	19	16	16	19
District 6	183	23	32	45	20	26	44	212	17	26	58	14	22	54
District 7	12	17	17	17	17	17	17	11	18	4	9	18	4	9
District 8	305	25	34	37	25	34	37	358	21	29	42	21	29	42
District 9	106	28	34	37	11	8	17	115	22	25	50	20	22	28
District 10	164	36	44	53	9	5	12	191	13	29	31	13	28	29
District 11	246	8	13	25	5	7	15	225	11	13	42	10	12	39
District 12	94	16	21	52	3	2	52	97	8	10	32	2	4	32
District 13	126	32	34	36	31	28	30	97	14	25	24	12	36	21
District 14	21	14	14	28	0	14	28	23	17	30	26	13	13	26
GRAND TOTAL	1823	22	32	36	14	18	29	1870	16	24	39	13	20	36

***Minimum Standard of Immunization**
70% DPT
80% Polio

tion status of the preschool and school age population in an upstate district of the State of New York Department of Health and to devise a system for obtaining this information that could be applied throughout the State on a continuing basis. The district involved consists of three rural counties, including three small cities within them.

In the spring of 1958 a letter was sent to all school principals explaining the procedure we had adopted and its purpose, and asking their cooperation. A form, Form I (Fig. 1), was enclosed which was to be turned over to the school nurse for completion. This form and a similar letter was also sent to all school superintendents, local health officers, and school physicians. The letters stated that the form ordinarily would be forwarded to each school in September and that the instructions at its bottom applied to subsequent years, but not to this first reporting year. For the present the complete information was desired before the end of the school term.

After a certain amount of confusion and justifiable grumbling by the local school authorities at this sudden request just when they were burdened with all the extra work of closing out the school year, practically all schools cooperated. They received letters of thanks for their cooperation, and an apology was made for the suddenness and obviously bad timing of the request.

The data obtained were checked for internal consistency and compiled. It was realized that some inaccuracy would be present because of the rapidity with which the data had to be assembled. However, this first request was considered a "trial balloon" against which we could check our suspicion of low immunization percentages, and so the prospect of some small error was not disturbing.

The results (Table I) more than bore out our suspicions. In fact, it immediately became obvious that, with respect to several communities in the district, we had been living in a fool's paradise. From casual conversation with some of the local practicing physicians it was evident that they were also unaware of the dangerously low levels of immunization that existed. The marked variations in immunization levels from community to community also surprised us.

In September, 1958, the same forms were again sent out to the school authorities with appropriate letters. This time the authorities were asked to follow the instructions at the bottom of the form. The purpose of these instructions was to make the job of filling out the forms as simple as possible for the school nurses. It was felt that, if they entered the early information directly from their registration data at the beginning of school, practically no extra work would be required. At the same time, the county public health nurses were requested to obtain separately from the school nurses the total enrollment for each class. These data were compiled in the district office on a master sheet for each county.

In April, 1959, the public health nurses were instructed to contact the school nurses with a reminder to return Form I (Fig. 1) as soon as all immunization clinics were completed at each school.

Meanwhile, the immunization procedures which were performed at all public health clinics during the year were reported by the public health nurses on a form devised for this purpose. This form reports by age whereas Form I reports by grade. This was found to be necessary because of the difference in record-keeping.

All reports were in the district office by July 1 and the process of compiling the data began. This information was summarized, and a separate cumulative annual record sheet was started for each school. The record sheets will be added to year after year and will act as "cohort" records for each grade. It is recognized that the data for each cohort will become more and more inaccurate with each year, owing to the migration of children in and out of the schools and to primary immunization at older ages by private physicians. However, it is felt that, for the population studied, the effect of these two factors will be minimal. The population is fairly stable and data from other sources indicate that very little primary immunization occurs after age six. If it is felt to be desirable, a survey of each cohort can be done as it leaves the elementary schools (sixth grade), and a correction factor can be computed.

The wisdom of recording these figures on a school district basis is obvious when the summary figures for each county are compared with those from the individual school districts (Table I). It is only by breaking the data down into small geographic areas that dangerously low local immunization rates are revealed.

Accuracy of Data

There are several possible sources of error in the data obtained. The most obvious are: (1) inaccurate reporting by parents to school authorities at the time of enrollment, (2) inaccurate reporting by school nurses on Form I, (3) inaccurate reporting from public health clinics, and (4) errors attendant on converting age reporting from clinics to grade reporting, to conform with the remainder of the data.

The fourth item is a known error introduced deliberately. Under the present systems of record-keeping it is unavoidable. It is estimated that it introduces no more than a 1 to 2 per cent error.

It was decided to check on the degree of error caused by the first three items, especially the first, since there seems to be a generally held opinion that most parents are ignorant of exactly what "shots" their children have received. A group of 25 kindergarten pupils in each of two schools were selected, and the public health nurses for each area were instructed to ascertain the exact immunization status of each child. By consulting the parents, private physicians, and clinic records for previous years, the actual injections received by the child were established definitely. In no one of the children for whom records were available did the record of actual injections received differ from what was reported, although in a few instances the given date of injection was inaccurate.

Comment

The factual record of immunization status obtained is proving to be of great value to the district health office. Instead of guesswork, data with a probable error of less than 5 per cent are now available. Not only do we know the actual level of immunization in this younger age group, but also we have objective proof of the less than ideal results of thirty years of effort to immunize the public. Perhaps most important of all is the fact that, within the health district studied, we know for the first time where greater effort is needed in our program. By comparing each area with the generally accepted desirable level of 70 per cent immunizations for diphtheria, pertussis, tetanus, and smallpox, and 80 per cent for poliomyelitis, we have ammunition in our fight against public apathy and lethargy. Conversely, by knowing those communities which are immunized adequately, we can devote to them maintenance effort only and thus concentrate the major part of available personnel time for our immunization program where it is needed most. This is an important achievement in itself, because of the extremely limited amount of existing public health personnel.

It will be interesting to note any changes in immunization levels in individual communities from year to year. Such changes will be objective measures of the effectiveness of our pinpointed activity and conceivably may lead to the discovery of more efficient ways of inducing the public to accept immunization.

Copies of the compiled data are being sent to all physicians in the district for their information and action.

Summary

A method of obtaining detailed, accurate statistics on the immunization status of school children in New York State has been described. The obvious importance of such information to the community, to the practicing physician, and to the public health authorities has been emphasized.

The far from adequate level of immunization against diphtheria, pertussis, tetanus, smallpox, and poliomyelitis that exists in one upstate tricounty health district is delineated. It is felt that this experience is typical for the State in general.

The study also brings out the lesson that cooperation is easiest to obtain between agencies at the local level, and that personal relationships between those involved frequently prevent misunderstandings.

It is suggested that the method described is suitable for application throughout the State, and that the information derived is extremely important in sharpening our efforts to obtain the commonly accepted safe levels of immunization.

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Opportunities always look bigger going than coming.—Anon

Clues Suggesting Emotional Disturbances in Certain Dermatoses

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THERE are many signs and symptoms which may attune the physician to suspect emotional factors in skin diseases. Some of the expressions of psychic disturbance, such as certain personality and skin manifestations, will be self-evident. However, there are numerous other personality manifestations, not quite so obvious, which should be looked for when psychic disturbance is suspected in skin disease.

Personality Manifestations

THE APPOINTMENT.—The manner in which the appointment is made is significant at times. It may take the form of undue questioning, demand for immediate attention, demand for special appointment time, frequent change of appointments, hesitancy, anxiety, or flippancy over the phone. Almost invariably patients with neurodermatitis have their appointments made for them by a parental figure, be it a parent, spouse, or even a child. They are usually brought in, not merely accompanied, by the parental figure who will give the history of the patient's condition. This supervisory individual will try to control, either directly or indirectly, the treatment and the patient-doctor relationship.

APPEARANCE AND MANNER.—The appearance and manner of the patient may take on one or a combination of several forms. The individual may be overanxious or indifferent; disheveled or inordinately tidy; overly talkative or unduly reticent; or preoccupied, apathetic, or even inappropriately euphoric. Inappropriate behavior is always a serious sign because it is a manifestation of either a severe neurotic need to cover up anxiety or a sign of schizophrenia.

PSYCHIATRIC HISTORY.—A history of the following symptoms or diagnoses both in the past and the present should be warning signs of personality problems: emotional or mental disturbances such as premenstrual tension, "nervous breakdown," extreme mood swings, schizophrenic episodes, peptic ulcer, colitis, chronic constipation, chronic "indigestion," migraine, bed wetting, or nail biting. Also, a number of different diagnoses of one condition should cause the physician to consider an emotional basis for the disorder. An example of this is an eruption whose lesions vary and look like seborrhea at one time, psoriasis at another time, and neurodermatitis or lichen planus at still another time.

REACTION TO THE DISEASE.—The patient's reaction to the disease can be an important clue to emotional disturbance. Since skin diseases are visible not only to the patient but also to the patient's relatives and others, the adverse psychologic effect on the patient can be serious, variable, and may be used for secondary gains, that is, to avoid open conflict or responsibility, to prevent anxiety, or to gain sympathy or compensation. The physician who is alert to the psychic role in skin diseases can obtain a great deal of information about the patient by evaluating his reactions to the disease and its symptoms. Frequently, in overtly disturbed patients, there is an exaggeration, distortion, and over-reaction to the appearance of the skin disorder and to the amount of itching and pain suffered; so much so, that suicide is threatened occasionally.

In cases of dermatologic hypochondriasis (concern about hair loss, complexion, en-enlarged pores, and so forth) the tremendous anxieties felt by the patients can cause them to withdraw from schools, employment, and careers. Another striking example of a severe reaction to a skin condition is that of a patient who complains bitterly of itching, burning sensations, or pain but who does not have any lesions, not even secondary scratch or rub marks. On the other hand, one also sees occasionally an intelligent patient who has obviously destructive or disfiguring lesions on the face or breast but who seems to be unaware of the amount of tissue destruction which has taken place, the disfigurement, and the potential danger to life. I cite three instances of patients whose fears were so great that they did not seek medical attention, much to their serious detriment.

A young, beautiful woman who was having marital problems allowed a seborrheic scaly incrustation to remain on her nose for two years before she could be persuaded by a brother to be taken to a dermatologist. Another patient, an elderly woman, neglected a growing butterfly-shaped destructive cancer of the nose for four years before she could be persuaded by a sibling to be examined by a physician. The third instance occurred in a friend. She developed cancer of the breast but she avoided telling me about it until it became an inoperable peau d'orange mass.

There is an unconscious desire on the part of emotionally disturbed patients to deny the existence of serious or sometimes fatal diseases such as cancer. This is the patients' way of warding off anxiety, but because of their inability to face painful facts frequently they tend to neglect diseases that are easily amenable to treatment.

The qualitative and quantitative degree of emotional reaction to disease is variable. It is dependent on the personality of the patient. It is interesting to note the wide variations and the tremendous contrasts that can be found in the patients' attitudes, from the blandest acceptance of an obviously destructive cancer to the bitterest complaints and anxiety about a simple blackhead.

REACTION TO TREATMENT.—The reaction to treatment can be the most variable reaction of all. It may depend on the personality of the patient, on the doctor, and frequently on the doctor's reputation. Patients who are emotionally healthy accept the treatment, trust the physician, and are grateful and gracious. Emotionally disturbed individuals do not follow advice and treatment; are dependent and overanxious; are constantly seeking reassurance and care; and are nonaccepting, unduly questioning, distrustful, suspicious, and complaining of any and all types of treatment. The type of reaction to treatment is frequently a quick and good clue to the patient's personality.

REACTION TO PREVIOUS PHYSICIANS.—Patients who present a history of past treatments with a derogatory or deprecating account of each physician visited bear watching. They are evidently disturbed and require special care and treatment.

Lesions

Many skin disorders have typical histories, typical lesions, and typical locations. Also they usually respond well to the indicated dermatologic treatment. A history of persistent lesions, bizarre or mixed lesions in the same eruptions and atypical locations, recalcitrance to the usual forms of treatment, and recurrences in spite of competent care should alert the physician to the emotional origin of the skin disease. Examples are recalcitrant acne, persistent furunculosis, seborrhea, psoriasis, lichen planus, alopecia areata, neurodermatitis, and pruritides.

Secondary lesions such as undue scratch marks; excoriations; chemical or physical burns; or marks caused by pulling, biting, tearing, or cutting of the skin, hair or nails, which are consciously or unconsciously produced by the patient, are self-evident marks of emotional problems whereby the skin is used to manifest or act out the psychiatric disturbance. This acting out on the skin may represent unconsciously repressed anger, hostility, resentment, frustration, impotent rage, or disappointment.

Summary

In many skin diseases a careful study of the patient's personality as well as of the skin disorder may show evidence of an emotional disturbance. An evaluation of the patient's emotional reactions to therapy is important to the treatment. Some of the signs and symptoms a physician should look for are: reticence or difficulty on the part of the patient in making an appointment; an unusual history; atypical eruptions; undue or unrelated symptoms; and the erratic behavior, bizarre appearance, and antagonistic or ambivalent reaction to therapy and to the physician on the part of the patient.

333 West 56th Street, New York 19

ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Isolation-Perfusion in Cancer Chemotherapy

Current Status and Preliminary Experiences

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THE potential role of chemotherapy in the treatment of cancer first became a reality after World War II with the introduction of the nitrogen mustard derivatives.[1] However, it soon became evident that the clinical application of these and subsequently developed chemical agents was limited by their toxic side-effects, which occurred mainly in the hematopoietic and gastrointestinal systems. These marked toxic effects occurred in man at much smaller dose-body weight ratios than they did in other tumor-bearing animals.

Background

In an attempt to obtain a higher concentration of the chemotherapeutic agent in the local areas of the tumor growth, Klopp *et al.*[2,3] developed a method for the intra-arterial route of administration. In a further effort to keep the agent in longer contact with the tumor and to confine the agent to the involved area, Klopp also studied the combined effect of venous occlusion of the tumor area and fractionated intra-arterial dosage. This procedure appeared to lessen the systemic side-effects of such alkylative agents as nitrogen mustard.

In a more definitive attempt to reduce the systemic side-effects of chemotherapeutic agents used in the treatment of cancer and to administer a higher dose of such agents, Creech *et al.*[4,5] developed the isolation-perfusion technic. The procedure which was employed entailed isolating the major blood supply to and from the tumor-bearing region, cannulating the vessels, and attaching the cannulas to an extracorporeal pump oxygenator. The pump oxygenator was utilized because high oxygen tensions, at least in tumor-bearing animals, may potentiate the radiomimetic effects of alkylating agents.[6,7]

Since June of 1957 Creech has performed more than 150 perfusions, and other cancer investigators interested in the technic have adopted it and have reported on its use. Perfusion technics have been utilized in the treatment of carcinomas, sarcomas, malig-

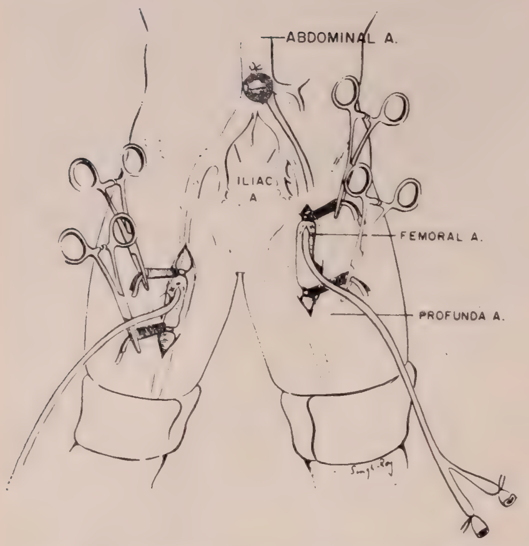

FIG. 1. Balloon-tipped catheter occlusion of aorta utilized in pelvic perfusion (inferior vena cava not shown).

nant melanomas, lymphomas, and brain tumors as well as in chronic osteomyelitis. In an attempt to employ even larger doses of oncolytic agents for generalized malignant conditions, total body perfusion has been employed in conjunction with autogenous bone marrow transplantation.[8,9]

Technic

The technic of performing isolation-perfusion has been described previously.[4, 5, 8–18] Briefly, it consists of the following steps: The patient is weighed on a metabolic scale prior to surgery. A monitoring electrocardiograph is attached, and in cases of brain perfusion an electroencephalograph also is attached. The indicated incisions are performed, and the major blood supply to and from the tumor-bearing area is isolated. The patient is heparinized in proportion to his body weight (2 mg. per kilogram). The vessels are cannulated with catheters and are held in place with a purse-string silk suture and with umbilical tapes, as shown in Figure 1 and Figure 2. Proximal occlusion of the vessels is accomplished by the use of vascular clamps, umbilical tapes, or balloon-tipped catheters. The catheters are attached to

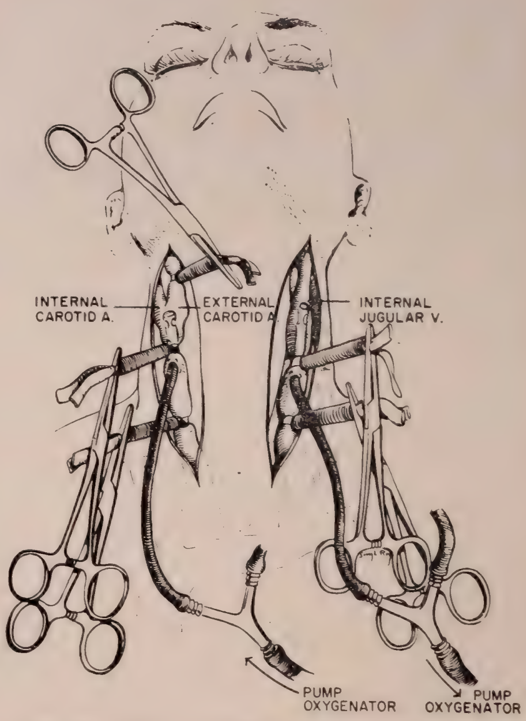

FIG. 2. Brain perfusion utilizing bilateral cannulation of common carotid arteries and internal jugular veins.

Sigmamotor pumps and to an oxygenator. In certain cases the heat exchanger is interposed in the arterial line between the Sigmamotor pump and the patient.[19] We utilize a gravity venous return system and a second Sigmamotor pump to assist the transportation of the blood to the oxygenator.

After the establishment of the extracorporeal circuit, the first of the fractionated doses of the selected agent is administered into the arterial line together with a tracer element, such as Evans blue dye (T-1824), radioactive iodinated serum albumin, or red cells tagged with radioactive chromium. The perfusion is carried out with the flow rates not in excess of the venous return. To avoid excessive leakage the pressure is kept below the systemic systolic pressure.[9] Blood samples are drawn from the peripheral circulation to determine the degree of leakage.

If slowly binding, long-acting drugs have been used, at the conclusion of the procedure it is desirable to remove any residual drug present in the tumor-bearing area. The venous system can be drained and the area can be irrigated with Dextran administered through the arterial line and drained through the venous line.[8] Protamine sulfate is administered intravenously in proportion to body weight (4 mg. per kilogram). Polybrene also can be used for heparin neutralization.[20] The venotomy and the arteriotomy are repaired with 5–0 arterial silk sutures.

Since the first clinical use of this procedure in June of 1957 many modifications have been introduced. For example, pelvic perfusion may be performed in numerous ways: (1) cannulating the aorta and inferior vena cava by means of the transabdominal approach,[4] (2) occluding the aorta and inferior vena cava just proximal to the bifurcations by means of the retroperitoneal approach and perfusing via the femoral vessels,[11] (3) inserting balloon-tipped catheters into the aorta and inferior vena cava for proximal control of the vessels and perfusing via the femoral vessels (Fig. 2), and (4) inserting catheters into the aorta and inferior vena cava and perfusing with a lower pressure than the systolic pressure.[11]

Evaluation of Procedure

The isolation-perfusion procedure as an adjunct in cancer chemotherapy is being evaluated in many institutions equipped with the necessary trained personnel, proper equipment, and interest in cancer investigation. It should be acknowledged that the procedure appears to have some clinical merit as an additional modality in the treatment of selected patients with cancer, at least for those with tumors of the extremities.

ADVANTAGES AND DISADVANTAGES.—According to Creech *et al.*,[13] the presumptive advantages of this procedure over other modalities of administration of chemotherapeutic agents are: (1) There is an increase of dosage of the agent to the tumor-bearing area, and this may result in a better effect; (2) The high oxygen tension which is created in an isolated part may potentiate the radiomimetic action of the oncolytic agents; (3) the intra-arterial administration of the agent yields a more favorable result; (4) systemic toxicity is reduced; and (5) the resistance of the host is unimpaired.

The technical limitations of the isolation-perfusion procedure are related chiefly to: (1) leakage, (2) local tissue tolerance, and (3) the effect of a too-rapid induction of necrosis in large tumors.[9,21] The amount of leakage assumes greater importance as one proceeds proximally to the aorta, as in Case 5 (see following). There are reports of practically no leakage at the level of the popliteal areas,[14,22] 15 to 20 per cent leakage at the level of the femoral artery,[14,23] 12.5 to 45 per cent leakage in perfusion of the brain even if the vertebral arteries are temporarily occluded,[18] and 10 to 52 per cent leakage in pelvic perfusions.[11,23] If the local tissue tolerance should be exceeded inadvertently, severe damage may occur to the soft tissues of the perfused region. The absorption of toxic products from the sudden massive destruction of a tumor also is an important factor that must be considered.[9]

EXTENSIONS OF TECHNIC.—Total body perfusion has been employed in selected patients with disseminated cancer. Prior to the perfusion a portion of bone marrow is removed from the patient and is refrigerated. After the completion of the perfusion it is reinfused. This autogenous bone marrow transplantation technic has been employed in over 33 cases, but reported results are too fragmentary for clinical evaluation.[8,9]

Profound hypothermia has been used in isolation-perfusion of the brain.[18] It is feasible to occlude temporarily the vertebral vessels with a high degree of hypothermia. Angiography of tumor-bearing regions has demonstrated that with hypothermia there is a decrease in the vascularity of the area and in local metabolism. This may alter the cytotoxic effects of chemotherapeutic agents. Investigations are in progress to determine the effects of hyperthermia of the tumor-bearing area on the action of the chemotherapeutic agents.[9,18]

The introduction of balloon-tipped catheters has been of value in the performance of certain perfusion technics, notably in the pelvis.

TUMORS TREATED.—The tumors which have been subjected to the isolation-perfusion procedure are:

1. Malignant melanomas.
2. Sarcomas: rhabdomyosarcoma, osteogenic sarcoma, chondrosarcoma, synovioma, alveolar cell sarcoma, lyosarcoma, fibrosarcoma, Kaposi's sarcoma, and angiosarcoma.
3. Carcinomas: adenocarcinoma, epidermoid carcinoma, undifferentiated carcinoma, and squamous cell carcinoma.
4. Gliomas: glioblastoma multiforme, ependymoblastoma, and metastatic brain tumors.

INDICATIONS.—Creech *et al.*[13] has summarized the indications for the utilization of the isolation-perfusion procedure: (1) as an adjunct to standard therapy, (2) in the treatment of regionally confined but nonresectable tumors, (3) for the conversion of nonresectable to resectable tumors, (4) for palliation of far-advanced cancer, and (5) as a primary therapeutic measure if suitable agents are available.

CHEMOTHERAPEUTIC AGENTS AND DOSAGES.—Agents which have been administered by the perfusion procedure are:

1. Nitrogen mustard
2. Triethylene thiophosphoramide (TSPA, Thio-TEPA)
3. Triethylene melamine (TEM)
4. Phenylalanine mustard (PAM)
5. 5-fluorouracil (5-FU)
6. A-methopterin (methotrexate)
7. Uracil nitrogen mustard (U-8344)
8. Bis (ethylenimido) phosphorourethan (AB-100)
9. 2,5-bis-methoxyethoxy-3,6-bisethylaminobenzoquinone (A-139)
10. Methionine sulfoxide
11. Beta-peltatin (derivative of podophyllin)[10]
12. Actinomycin D
13. Streptovitacin A
14. Bacitracin
15. Chloramphenicol

The originally recommended dosages for the isolation-perfusion program have been modified considerably as experience with the technic has been gathered.[8,13] Combinations of agents have been employed in an attempt to obtain synergistic action of the drugs on the tumor. The use of short-acting, quickly binding drugs, such as nitrogen mustard, is limited mainly by the local tissue tolerance in regions in which the leakage factor is small. When such rapidly binding drugs are used in perfusion with a large percentage of leakage resulting, the danger of serious systemic toxicity is the major limiting factor. The dosage of the slowly binding, long-acting drugs, such as PAM or TSPA, is limited by the leakage factor and by the feasible duration of the perfusion. Nevertheless, doses as high as 15 to 20 times the recommended dose for the systemic administration of the long-acting alkylating agents have been employed without deleterious effect.[8,9] The amount of these long-acting drugs that passes out in the efferent perfusate has not yet been established. The future of the perfusion procedure depends on the discovery of more selective chemotherapeutic agents in which the relationship of tumor-inhibitory action, binding to tumor tissue, and systemic toxicity from leakage are in better balance.

RESULTS.—Since initiating this investigation in 1957, Creech and his coworkers have assessed the experience with 145 patients treated by means of isolation-perfusions with a variety of chemotherapeutic agents. The follow-up period of these patients is too short to allow for any valid statistical conclusions. However, reports from the various investigation centers indicate that a regionally confined metastatic malignant melanoma may respond significantly to the administration of cancerocidal drugs by this modality.[9,12] Occasional promising results have also been observed in the treatment of individual cases of breast, rectum, gynecologic, lung, and genitourinary tract cancer.[9,15] Favorable responses in Kaposi's sarcoma and, as in Case 1 (see following), in angiosarcoma have also been reported.[14] The technic may offer an opportunity to alter favorably the results of treatment in cases of primary malignant or metastatic brain tumors.

Work in this field has demonstrated that it is technically feasible and safe to perform this technic as an adjunct to neurosurgery.[13,18] Our experience with isolation-perfusion in 2 instances of glioblastoma multiforme supports this view. More conservative excisions or amputations, especially in the treatment of tumors of the extremities, may be a possibility with this procedure, and there is the possibility that the procedure may replace amputation in certain clinical situations.[21,22]

At The Mount Sinai Hospital the isolation-perfusion technic as an adjunct to cancer chemotherapy has been studied since March, 1959. The tumors which have been treated include angiosarcoma, malignant melanoma, squamous cell carcinoma, colloid adenocarcinoma, and glioblastoma. The following cases are illustrative of extremity, pelvic, pharyngeal, and brain perfusions.

Case Reports

CASE 1.—A sixty-six-year-old Negro female was admitted to the hospital on March 25, 1959, complaining of a 7 by 10 cm. mass in the left thigh of three months duration. An aspiration biopsy revealed an angiosarcoma. On April 10, 1959, isolation-perfusion of the left thigh was performed. After the patient was heparinized, the femoral vessels were cannulated. Pneumatic tourniquets were inflated below the left knee and at the right groin. The perfusion was performed with the use of the Kay-Cross rotating-disk oxygenator and the Sigmamotor pump. Beta-peltatin 24 mg. was administered in fractionated doses of 8 mg. every five minutes. The perfusion rate was 350 cc. per minute, and the total time of the perfusion was thirty-five minutes. The arteriotomy and venotomy were closed with 5–0 arterial silk. Protamine sulfate was administered intravenously, and the wound was closed in anatomic layers.

The patient's postoperative course was complicated by transient tachycardia and moderate edema of the left leg which subsided over a three-week period. She also developed a transient peripheral neuropathy. Within forty-eight hours the tumor mass flattened and became tender; about a 30 per cent reduction in the size of the tumor was observed. There was no depression of hematopoiesis, nor were there any gastrointestinal disturbances.

A modified left hemipelvectomy was performed on May 18, 1959. The examination of the specimen revealed a large mass which was almost completely necrotic with over 1,500 cc. of necrotic slough within it. A small rim of viable tumor tissue remained on the periphery. The patient has since been discharged and presently is under rehabilitation therapy.

CASE 2.—A fifty-seven-year-old Negro male was admitted to the hospital for the first time in June, 1954. A biopsy of large, matted right-sided inguinal lymph nodes, which gradually had been enlarging during the preceding two years, was performed. The pathologic report specified metastatic squamous cell carcinoma. An exhaustive examination failed to reveal the primary source.

In December, 1954, radium implants were inserted into the right groin. The patient also received 3,650 r to the area. At another admission, in December, 1956, aspiration of the left inguinal lymph nodes revealed the presence of a similar tumor. In the next few years slowly progressive cachexia developed.

On March 30, 1959, a pelvic perfusion was carried out in an effort at palliation of the bilateral fungating ulcerative inguinal masses. The abdomen was entered by means of a long left rectus incision. The deep epigastric vessels were ligated bilaterally. The aorta and the inferior vena cava were isolated, and proximal control of the vessels was secured. The patient was heparinized, and the aorta and inferior vena cava were cannulated just proximal to their bifurcations. A vascular clamp was placed on the inferior mesenteric artery. Pneumatic tourniquets were inflated above both knees. The catheters were attached to the Kay-Cross rotating-disk oxygenator utilizing two Sigmamotor pumps with a gravity venous return. Nitrogen mustard 20 mg. was introduced into the arterial line in fractionated doses of 5 mg. every six minutes. Simultaneously with the first dose of nitrogen mustard Evans blue dye was injected into the arterial line to observe the mixing effect. The perfusion time was forty-five minutes at a flow rate of 500 cc. per minute. At the completion of the procedure the vessels were reconstituted with 5–0 arterial silk. Protamine sulfate was administered, the posterior peritoneum was approximated, and the abdomen was closed.

The patient's postoperative course was uneventful. No signs of systemic toxicity or pancytopenia developed. Biopsies of the tumor failed to reveal any significant change.

The patient was readmitted and operated on in August, 1959. A similar approach was utilized, and the vessels were cannulated as in the previous procedure. Beta-peltatin was administered in fractionated doses of 10 mg. every five minutes for a total dose of 30 mg.

On the first postoperative day gross evidence of marked necrosis of the tumor was noted. The patient's course was complicated by neurologic abnormalities. On the third postoperative day he suffered a sudden generalized convulsion, lapsed into coma, and expired. No postmortem examination could be obtained.

Case 3.—A sixty-two-year-old white male was admitted to the hospital on April 13, 1959, with a large mass located under his jaw and associated with hoarseness. In October, 1958, a biopsy of the pharyngeal mass had revealed squamous cell carcinoma, and the patient was given radiation therapy. He was well until two months prior to the second admission, at which time he developed dysphagia.

An examination revealed a mass in the posterior pharyngeal wall which extended from the level of the soft palate to the arytenoids. He was scheduled for perfusion, but on May 5 he developed marked respiratory distress and an emergency tracheostomy was performed. One week later a feeding tube gastrostomy was performed since he could not swallow liquids satisfactorily.

A perfusion was performed on May 18, 1959. After the patient was heparinized, the right common carotid artery and the right internal jugular vein were cannulated. The internal carotid artery was temporarily occluded without any evidence of abnormal changes on the monitoring electroencephalogram. A perfusion was performed with the administration of 20 mg. of nitrogen mustard and 30 mg. of TSPA in fractionated doses, 5 mg. nitrogen mustard at four-minute intervals, and 15 mg. TSPA every ten minutes. The flow rates were 120 to 200 cc. per minute. Evans blue dye was used to determine the amount of leakage. The perfusion time was forty minutes. There was complete mixing at fifteen minutes, as revealed by dilution study.

The patient's postoperative course was essentially uneventful. No depression of hematopoiesis developed in spite of the marked mixing. A biopsy revealed the presence of squamous cell carcinoma with extensive necrosis. Grossly the tumor remained unchanged, and the patient's symptoms continued unabated.

On July 15, 1959, a perfusion was performed on the left side in identical fashion to the previous one. TSPA 75 mg. was administered in fractionated doses of 15 mg. every four minutes. The flow rate was 200 cc. per minute, and the perfusion time was one hour. A dye study revealed complete mixing at fifteen minutes. No signs of toxicity developed, and the patient's course was uneventful.

No gross or microscopic evidence of tumor response was observed.

At present the patient is being followed in the Tumor Clinic for further evaluation.

Case 4.—A sixty-three-year-old white male was admitted to the hospital on February 8, 1959, complaining of rectal pain and a 30-pound weight loss. An examination revealed a markedly cachectic patient with an infiltrating colloid adenocarcinoma involving the entire pelvis. On barium enema the primary site was visualized in the sigmoid colon.

A pelvic perfusion was performed on June 10, 1959. The inferior epigastric vessels were ligated. The femoral vessels were isolated bilaterally by means of groin incisions (Fig. 1). After the patient was heparinized, balloon catheters were passed cephaladly through the femoral artery and vein and were positioned just above the bifurcation of the aorta and the inferior vena cava. Catheters were placed into the femoral vessels on the opposite side and advanced into the common iliac vessels. Pneumatic tourniquets were inflated above each knee. Perfusion was carried out with the administration of 30 mg. of beta-peltatin in fractionated doses of 10 mg. every five minutes. The perfusion time was forty-five minutes.

The patient's postoperative course was complicated by rectal incontinence and neurologic symptoms of transverse myelopathy. A rectal examination revealed slight shrinkage and softening of the pelvic mass. His clinical condition appeared to improve, but on the ninth postoperative day he experienced hallucinations and personality changes. He expired on the thirteenth postoperative day. No postmortem examination could be obtained.

Case 5.—A forty-eight-year-old white female was admitted to the hospital on June 21, 1959, with anemia, weight loss, generalized weakness, and pain radiating down the left flank. In July of 1955 she had first noted a pigmented area over the left pretibial area. On October 1, 1955, an excisional biopsy had been performed. A pathologic examination at that time revealed a malignant melanoma. Three weeks after this disclosure the patient underwent a wide local excision of the involved area. She was in good health until the present admission.

An examination revealed a hard mass arising from the left lateral pelvic wall. The mass did not appear to be attached to the pelvic organs. A perfusion was performed on June 29, 1959, by means of the transabdominal approach. The inferior epigastric vessels were ligated. A large, stony hard mass was seen to be fixed to the left pelvic wall. After the patient was heparinized, the left common iliac artery and vein were cannulated. A pneumatic tourniquet was inflated at the midthigh of the right leg. The perfusion time was thirty-five minutes. TSPA 75 mg. was administered in fractionated doses of 15 mg. every five minutes. The flow rate was 440 cc. per minute. There was complete mixing at thirty minutes.

The patient's postoperative course was complicated by a leukopenia to a level of 1,200 white blood cells per cubic millimeter. She was treated with antibiotics, and her white cell count returned to its preoperative level. A rectal examination revealed marked softening and shrinkage of the tumor mass. The patient was discharged to the care of her private physician. For two months after the perfusion a remission in the pain symptoms was evident. Thereafter the patient's disease progressed, and she died five months after the perfusion.

Case 6.—A forty-six-year-old white male was admitted to the hospital's Neurology Service with symptoms of personality changes, severe progressive headaches, and recent motor weakness. On admission the patient had a dull sensorium, left facial weakness, weakness of both arms, and hyperactive left knee and left ankle reflexes. Pneumoencephalography and angiography revealed a frontal mass.

He was explored surgically on August 10, 1959, through a right transfrontal flap. In the frontal lobe there was a massive glioblastoma multiforme. A frontal lobectomy was performed, but complete excision was not feasible.

On September 2, 1959, a perfusion of the brain tumor was performed. After the patient was heparinized, the vessels were cannulated, first the right common carotid artery and the right internal jugular vein and then the left internal jugular vein. The catheters were attached to the Kay-Cross rotating-disk oxygenator, and the extracorporeal circulation was started. The left common carotid artery then was cannulated and was attached by a Y connector to the system (Fig. 2). The flow rates were 500 to 600 cc. per minute. TSPA 75 mg. was administered in fractionated doses of 15 mg. every five minutes. During the procedure the external carotid arteries were occluded. No attempt was made to occlude the vertebral vessels under the normal thermic perfusion conditions. The perfusion time was thirty-five minutes. At the conclusion of the procedure protamine sulfate and 30 per cent urea were administered intravenously.

Throughout his postoperative course the patient remained in a stuporous condition. No signs of systemic toxicity developed. In spite of continued supportive measures he never showed any signs of recovery. He expired on the third postoperative day. A postmortem examination was obtained, which revealed areas of softening and recent changes characteristic of encephalomalacia.

Summary

1. The isolation-perfusion technic is a technically feasible modality of investigation for selected patients. The procedure is relatively safe but requires specially trained personnel and proper equipment.

2. Satisfactory isolation may be easily attained with perfusion of an extremity. Leakage factors become more significant in perfusion of the pelvis, liver, head and neck, and brain.

3. The indications, advantages, and limiting factors of the isolation-perfusion

procedure are presented. A summary is included of various agents reported to have been administered with the procedure.

4. Although the follow-up period is too short for clinical evaluation, promising results from various sources have been observed with the treatment by this means of malignant melanomas and angiosarcomas and Kaposi's sarcoma of the lower extremity. Regression has been attained in individual instances of cancer of the breast, rectum, gynecologic organs, lung, and the genitourinary tract.

5. The technics utilized at The Mount Sinai Hospital are presented with illustrative cases. Beta-peltatin, a tumor-inhibitory derivative of podophyllin, was employed in 3 cases. Although marked tumor necrosis was induced, peripheral neuropathy at dosages not significantly greater than those used by the intravenous route was a limiting toxic side-effect. A perfusion of triethylene thiophosphoramide (TSPA) in a patient with malignant melanoma resulted in short-term clinical palliation.

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(*Number eighty-six in a series on Recent Advances in Medicine and Surgery*)

Wisdom is a good purchase though we pay dear for it.—THOMAS FULLER

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

JANUARY 27, 1960

Discussed by BENJAMIN E. KRENTZ, M.D.

Hyperglycemia and Hyperpyrexia

Case History

FURMAN M. JONES, JR., M.D.: A twenty-nine-year-old Negro male of Haitian origin was admitted to Knickerbocker Hospital in coma and with a high fever. His present illness apparently began two days prior to admission, when he complained of weakness. The following day he went to work as usual, but he felt so weak that he had to return home. On the day of admission he stated that he felt as if he were going to die. A physician was summoned, and he gave him an injection of penicillin and left a vitamin prescription. At this examination the patient's temperature was not elevated. Shortly afterward he lapsed into a coma and was brought to the hospital by ambulance.

The patient's history was obtained from family and friends. He was employed regularly as a baker. There was no known history of exposure to toxic substances. He was known to be of sober and temperate habits; he did not drink or smoke, nor was he ever addicted to drugs. He never had had any previous serious illness. He had emigrated from Haiti at the age of thirteen, and had never returned there.

On admission his physical examination revealed a comatose young Negro male of robust habitus who was suffering from respiratory distress. His temperature was over 108 F., pulse 130 and regular, respirations 45 and labored, and blood pressure 90/60. The examination of the head and neck was unrevealing. The right optic disk was hyperemic, but there was no papilledema. The eyes deviated somewhat to the left, but the pupils were round, regular, and equal. The trachea was in the midline. The thyroid gland was of normal size and without bruit. The lungs were resonant to percussion, but the breath sounds were vesicular and distant, and a few moist rales were heard at the right lung base. The heart was not enlarged to percussion. There was sinus tachycardia, but no murmurs were heard. The aortic second sound was louder than the pulmonic second sound. The abdomen was soft, and there was no evidence of intra-abdominal fluid. The liver and spleen were not palpable, nor were any abnormal masses felt. The extremities were normal except for cyanosis of the fingernail beds; there was no clubbing or edema. The neurologic examination revealed complete flaccidity with absent reflexes.

The urine was acid and had a specific

gravity of 1.027, 1 plus albumin, 4 plus sugar, no acetone, and a rare white blood cell in the sediment but no casts. The hemoglobin was 18.3 Gm. per 100 ml. The white cell count was 13,600 with 71 per cent polymorphonuclear leukocytes, 24 per cent lymphocytes, and 5 per cent eosinophils. The blood sugar was 651 mg. per 100 ml., and the carbon dioxide was 17 millimols per L. The plasma contained no acetone. A serologic test for lues gave a negative result. A lumbar puncture was performed. The spinal fluid was under an initial pressure of 190 mm., and it was clear and free of cells. It contained protein 38 mg. per 100 ml. and sugar 466 mg. per 100 ml. A blood culture gave a negative result, as did urine and spinal fluid cultures.

On admission the patient was treated with ice packs, ice water enemas, and sodium salicylate intravenously, but these measures did not lower the temperature. The ice melted rapidly, and "steam" rose from the patient as he lay in pools of cool water. Following an infusion of 1,000 ml. of normal saline, the blood pressure rose to 138/78. However, the respiratory difficulty persisted, and the patient expired two hours after his admission.

Discussion

Benjamin E. Krentz, M.D.: This case promises to be mysterious. It deals with a twenty-nine-year-old man who previously was in excellent health but became ill and died within two days. About two hours after being admitted to the hospital in coma, he expired with a hyperpyrexia of over 108 F. and a hyperglycemia of 651 mg. per 100 ml. There are very few lesions that will produce this sequence of events so rapidly, and I think that we can dismiss most of them as we recapitulate the data at hand.

On the first day of his illness the patient complained of weakness. He was weak the next day and had to return from work. A physician was called, who gave him an injection of penicillin. This is the first item that I think we can exclude from consideration. I have never heard of a penicillin reaction producing hyperglycemia or a fever of this magnitude, and a survey of the literature discloses no such case. Shortly after the injection coma supervened, and the patient was brought to the hospital. His past history was obtained from friends and relatives. The only feature of interest is that he was born in Haiti, emigrated as a child, and never returned. I shall return to this point later.

When the patient was seen in the hospital, the most obvious findings were that he was in coma and that he had a temperature which was so high that it caused the mercury in the thermometer to go over the 108 F. mark. Shortly thereafter it was found that he had glycosuria, and a little later hyperglycemia was reported. Diabetic coma can be excluded immediately because of the absence of ketones in the urine and in the plasma and because of only a moderate degree of acidosis. One of the possibilities that occurred to me was that this state might have represented a fulminating attack of Plasmodium falciparum malaria, which in cases that terminate fatally often gives rise to severe cerebral signs. Haiti is an area in which P. falciparum is endemic, but the patient had not been there for over fifteen years. Recurrent attacks of this type of malaria may occur within a year or so after the last exposure, and the parasite may be demonstrable in a host for a few years, but a recurrence after fifteen years is unheard of.

Having excluded these three obvious diagnoses, we now have to account for hyperglycemia, hyperthermia, coma, and death. Actually, the last three items in the equation are interdependent, for how long can a temperature of over 108 F. exist before coma is ushered in as death's herald? In short, we have to explain sudden hyperglycemia and hyperpyrexia.

Hyperglycemia may be diabetic or nondiabetic in origin. If nondiabetic, it usually is mild and transitory. Nondiabetic hyperglycemia may be seen in pancreatic diseases, such as acute pancreatitis or carcinoma of the pancreas. There is no evidence to support these diagnoses. It may be present in severe, long-standing liver diseases. There is nothing in the history or in the physical findings to suggest this; in fact, alcoholism, exposure to known industrial toxins, and drug intake are denied in the protocol. Hyperglycemia may be found in certain endocrine disorders, such as hyperthyroidism, acromegaly, Cushing's syndrome, adrenocortical tumors, and pheochromocytoma. None of these entities fits the picture of the patient under discussion. It is also well known that an elevated blood sugar can be found in certain instances of great stress, emotional as well as physical. This may account for its appearance in psychotic individuals, especially agitated ones; in severe infections, especially of the central nervous system; in cerebrovascular accidents; and even in myocardial infarctions. Hyperglycemia in response to stress is possibly acceptable as a contributing factor in a case such as this but scarcely as a primary aspect of the underlying disease.

The last of the nondiabetic causes for hyperglycemia to be considered is a lesion in the hypothalamus. Ever since Claude Bernard punctured the floor of a dog's fourth ventricle in 1849 and evoked a hyperglycemic response, numerous reports of disturbed carbohydrate metabolism in both animals and man have appeared in which both clinical and experimental instances of lesions in the hypothalamus and brain stem have been cited. More recently the supraoptic nuclei of the hypothalamus have been identified as the center that controls carbohydrate metabolism. However, in none of the instances of nondiabetic hyperglycemia that I have witnessed nor in any of the reports of it that I have read, including neurosurgical ones, has the degree of transient hyperglycemia manifested by this patient been present.

Although diabetic coma has been excluded as the cause of death, there is the possibility that this young man had mild early diabetes or was in a prediabetic state. If so, could the as yet undetermined cause of his final illness have potentiated or activated a latent, smoldering diabetic state? Such a modus operandi might well be responsible for the development of permanent hyperglycemia as a result of such stressful conditions as emotional upheavals, severe injuries, and infections. I hope that the pancreatic histologic study will support this hypothesis, tenuous as it is.

Let us consider the hyperpyrexia. The first possible cause that comes to mind is an overwhelming infection, possibly of the lungs or of the central nervous system. The lungs were clear. The spinal fluid was clear and sterile. Blood cultures and urine cultures were normal. If this was a bacterial infection, I cannot localize it or guess at a possible organism. We are told that the patient was not a drug addict; if true, this would exclude the possibility of acute right-sided bacterial endocarditis in a "main-line shooter."

There also are parasitic infections. We already have excluded P. falciparum malaria, which is the most likely parasitic infection to cause high fever and death. I would like to mention cysticercosis as another parasite that involves the central nervous system, although to my knowledge not with so fulminating a clinical picture. I suppose that I should mention a viral infection. However, I cannot consider viral encephalitis as a possibility without some positive findings in the cerebrospinal fluid, and other viruses do not seem to fit the picture. In fact, apart from a few rales in the right lung base and a modest degree of leukocytosis (which should be discounted by 25 per cent because the patient was dehydrated), there is no tangible evidence for infection. Reluctantly, I turn from infections to toxins. There is no reason to suspect suicide, although arsenic and ergot poisoning may give clinical pictures partly resembling that of the case on hand. Accidental or industrial intoxication appears equally remote; I know of no deadly "baker's disease." There is nothing to support endogenous intoxication, such as uremia or porphyria.

In considering the causes of hyperthermia of such startling suddenness and high degree, one must include cerebral causes. Several of the earliest investigations involving localization of cerebral function were concerned with the site of thermal homeostasis. It soon became apparent that the preoptic nuclei in the hypothalamus mediate the conservation and dissipation of caloric energy and that lesions in this area may give rise to severe hyperpyrexia.

Having placed the center for carbohydrate metabolism in the supraoptic nuclei and the center for temperature regulation in the preoptic nuclei, I must conjure some acute lesion in this young man's hypothalamus. Sudden cerebral catastrophes result from emboli, thrombi, and hemorrhages; others result from the sudden expansion of cysts or tumors, a process that often is due to hemorrhage. Ball valve tumors of the third ventricle fall into the latter category. Space-occupying lesions rarely produce so sudden a death with so few premonitory symptoms and so few localizing signs. In the absence of positive evidence I prefer to consider vascular accidents.

I can find no evidence of embolism originating from a distant infection, tumor, or pre-existing clot. I would discount the possibility of sudden massive embolization by a multitude of parasites, such as cysticerci, Taenia solium, or Trichinella spiralis. All of these may involve the central nervous system but not with so fulminating a course. The patient was much too young for the usual type of arteriosclerotic thrombosis. Cerebral thromboses may occur in sickle cell anemia or related diseases of the hemoglobin molecule, but we have no evidence that the patient was prone to sickling. I should mention that the cerebral lesion of P. falciparum malaria consists of multiple thromboses of cerebral capillaries by parasitized red blood cells, but at the onset of the discussion I discounted this type of malaria. In reconsidering another diagnosis already excluded I must mention that had the patient had diabetes of long standing, thrombosis secondary to arteriosclerosis in a twenty-nine-year-old individual should be considered, but I cannot renege at this point.

The most frequent cause of sudden cerebral hemorrhage in a young adult is the rupture of a congenital, so-called "berry" aneurysm. Most of these aneurysms are located on the vessels of the circle of Willis and rupture into the subarachnoid space. The spinal fluid is almost invariably grossly bloody. In this case the spinal fluid was clear; therefore I have to locate the aneurysm in the substance of the hypothalamus and postulate that at the time the lumbar puncture was done the aneurysm had not ruptured into the subarachnoid space. The hypothalamus is supplied by branches of the anterior cerebral arteries. I will locate the aneurysm on one of these branches and guess that it was on the right side because the right optic disk was injected. It is true that the eyes usually deviate to the side of the lesion, and in this instance they deviated to the left. Prudence dictates that I forego attempting to reconcile this discrepancy. Having arrived at my diagnosis of a small intracranial aneurysm of a branch of the right anterior cerebral artery purely by deductive reasoning, I have the uneasy feeling that I am standing on quicksand which gives at all points without yielding an inch.

Mardoqueo I. Salomon, M.D.: I certainly agree that cysticercosis would be unlikely to produce a picture so fulminating as this. I think that such a dramatic and profound disturbance suggests a more diffuse lesion than one localized in the hypothalamus. Had the patient had established diabetes, P. falciparum malaria possibly could have induced diffuse acute endarteritis. I am not so sure that a penicillin reaction

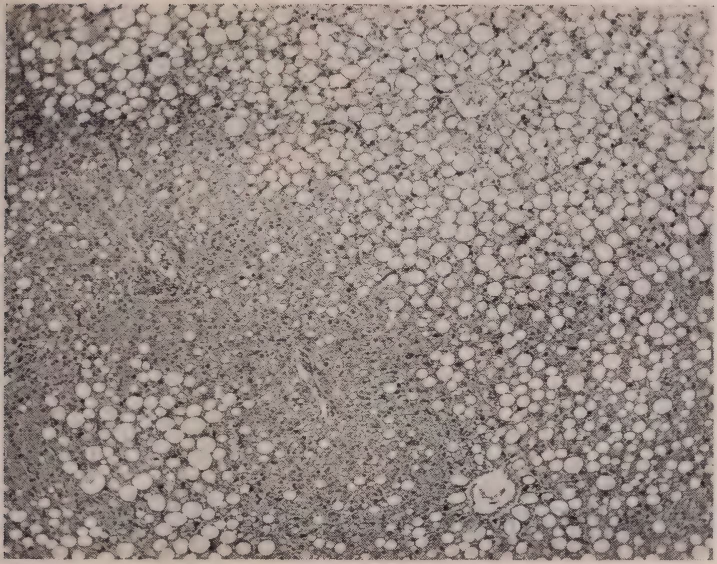

FIG. 1. Low-power view of section of liver showing diffuse fatty vacuolation which occupied central two thirds of each lobule.

can be completely eliminated as a possibility, although I must agree that I have never seen one like this. I would think that the underlying condition was in the nature of a widespread process involving the cortex of the left cerebral hemisphere.

MICHAEL S. BRUNO, M.D.: What sort of fundamental lesion do you think might produce such a diffuse lesion?

DR. SALOMON: I am very carefully not specifying this.

PERRY BERG, M.D.: I have seen an occasional case in which profound coma with no localizing signs developed in patients who had a spontaneous hemorrhage in a pre-existing chromophobe adenoma of the pituitary. These patients had negative spinal fluid findings, and one of them died in two days. As I recall, however, none of them had hyperglycemia, certainly not to this degree.

MARCEL TUCHMAN, M.D.: I agree with Dr. Salomon that a diffuse process seems more likely, and my first impression would be that it was some form of viral encephalitis. I have seen cases of viral encephalitis with a fulminating course accompanied by hyperpyrexia and hypertension. However, hyperglycemia was not present, and there were positive findings in the spinal fluid, such as pleocytosis, an increased amount of protein, and increased pressure, which were consistent with a severe intracranial infection. Without such findings in the case under discussion I would be reluctant to make the diagnosis.

Diagnoses

Clinical.—*Hypothalamic lesion, nature and type unspecified.*

Dr. Krentz.—*Congenital aneurysm in hypothalamus, branch of right anterior cerebral artery, ruptured.*

Anatomic.—(*1*) *Acute fatty metamorphosis of the liver and* (*2*) *pulmonary congestion.*

Pathologic Report

WILLIAM B. OBER, M.D.: Because the patient was admitted in coma and died without an adequate explanation being advanced of the circumstances leading to his death, the postmortem examination was conducted under the jurisdiction of the Office of the Chief Medical Examiner of New York City. The autopsy was performed by Sidney B. Weinberg, M.D.,* who graciously invited me to attend the proceedings and through whose courtesy

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* At present, Chief Medical Examiner of Suffolk County, New York.

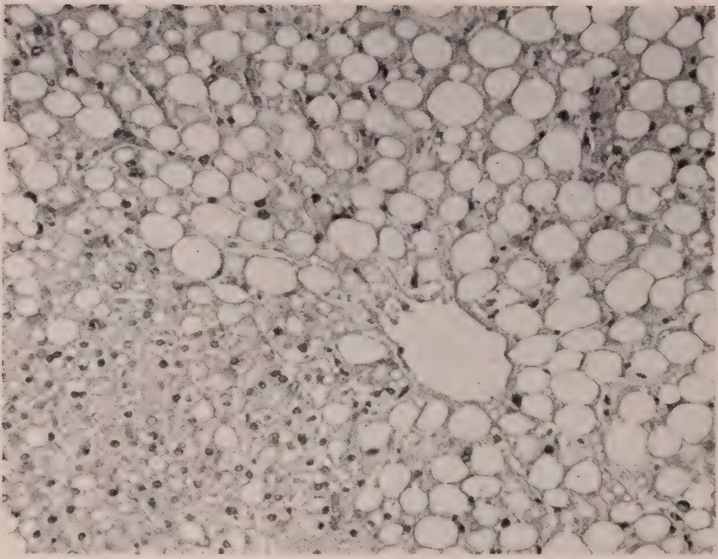

FIG. 2. High-power view of section of liver showing absence of necrosis and predominance of univacuolar intracytoplasmic fatty metamorphosis with a few cells containing multiple small lipid vacuoles.

material has been furnished for this report. The clinical history directed our attention primarily to the brain, particularly the region of the third ventricle and hypothalamus and the fourth ventricle and pons. To our dismay, no gross lesions were found in these areas, and detailed gross and microscopic examinations by a group of neuropathologists failed to disclose any alterations whatsoever in the brain, meninges, and upper spinal cord. Likewise, toxicologic, bacteriologic, and virologic studies conducted at the Office of the Chief Medical Examiner were entirely unrevealing. With one exception, the entire gross prosection and microscopic studies also were unrevealing. Were it not for the changes in one organ, I would have been strongly tempted to take into account the fact that the patient originally came from Haiti and to consider his dramatic illness and death an example of voodooism.

The one exception was the liver, which weighed 2,350 Gm.; it was soft, somewhat friable, and distinctly yellow. Microscopic examination showed an extensive degree of fatty metamorphosis occupying the central two thirds to three fourths of each lobule, leaving a narrow rim of spared parenchyma at the periphery (Fig. 1). There was no necrosis of liver cells and no fibrosis or inflammatory exudate. The fatty vacuolation was mostly of the single vacuole type and was entirely intracytoplasmic (Fig. 2). Near the spared rim and scattered among parenchymal cells with single vacuoles were a moderate number of cells with multiple small vacuoles, some in stages of coalescing to form larger ones. There were no fatty cysts in the liver, and fat stains on lung tissue from each lobe failed to disclose fat emboli.

We usually do not think of a fatty liver as a cause of sudden death, although we are not unaccustomed to see patients with known liver disease decompensate rapidly and die unexpectedly. However, it is not common to see a young, vigorous man proceed from ostensible good health to death in a period of less than two days as a result of liver failure. This sequence of events is rare, and the relevant literature is small. LeCount and Singer[1] reported 10 cases of sudden death in association with fatty liver and gave abstracts of 2 cases. All these were chronic alcoholic patients. Unfortunately for our purposes, autopsy findings consistent with cardiac failure were present in both abstracted cases. Bronchopneumonia was present in a high proportion of the other cases, and jaundice was evident in 6 cases. The authors suggested that the deaths were due to hypoglycemia. Only 1 of their patients was submitted to a blood sugar determination, which revealed a level of 67 mg. per 100 ml. The authors based their hypothesis on the assumption that a liver which is completely infiltrated with fat would be unable to store a sufficient amount of glycogen. Graham[2] reported 5 similar cases, emphasizing that although these patients were alcoholic they had not been drinking alcoholic beverages during the period immediately prior to their terminal illness. Only 1 of his patients had a blood sugar determination; blood taken four hours postmortem from the left auricle showed a level of 154 mg. per 100 ml. and from the right auricle showed a level of 148 mg. per 100 ml. Graham felt that the lesion was due to a vitamin deficiency, although he could offer no supporting evidence. Durlacher *et al.*[3] demonstrated extensive fat embolism to the lungs in 7 of 25 chronic alcoholic patients dying of a fatty liver. Minor degrees of fat embolism were seen in 3 patients, but in 15 patients there was no evidence of fat embolism. The authors ascribed the fat embolism to rupture of fatty "cysts" within the liver, a process conforming to the mechanism described by Hartroft and Ridout[4] in choline-deficient rats.

In the case under discussion we are able to exclude alcoholism. The patient was a well-built, well-nourished Negro male who even in death was a handsome specimen of the Carib type. We were able to establish his good reputation for sobriety and regular habits of life and work, but unfortunately we were not able to determine whether or not he had idiosyncratic dietary habits of recent origin which might have led to an acute deficiency state. Multiple sections from various parts of his liver did not disclose fatty "cysts," and there was no pulmonary fat embolization. We have no clear idea of how such an extensive degree of fatty replacement of his liver could have occurred. Parenthetically, the lesion in his liver is quite readily distinguishable from the acute fatty metamorphosis of the liver seen in pregnancy, originally described by Sheehan[5] and more fully documented by Ober and LeCompte[6] and Dyson.[7] In this entity the illness usually is of a week or more in duration, although death follows delivery quite shortly. In common with the lesion seen in the present case, the lesion in pregnancy is confined to the central half to three fourths of the lobule, and there is the typical spared rim at the periphery. However, the liver cells show fine multiple intracytoplasmic vacuolation and a central nucleus, a picture which is quite different from the single large vacuole and eccentric displacement of the nucleus seen in the usual fatty liver. Jaundice usually is evident, and hypoglycemia is a frequent feature of the deranged metabolism. For example, in the case reported by Whitacre and Fang[8] it was extremely difficult to keep the blood sugar at normal levels in spite of intensive intravenous therapy with glucose solutions. There probably are important differences between the biochemical lesion in pregnant women and that seen in alcoholic or nonalcoholic individuals with nutritional fatty liver. Leevy *et al.*[9] found hyperglycemia to be common in patients with fatty livers ascribed to a diet deficient in lipotropic factors. Only rarely did they find hypoglycemia, and these few patients either were in coma or displayed signs of severe neurologic disturbance.

I should like to give my own partial explanation for the hyperglycemia in this patient in the form of a question. Is it possible that the rate of fatty replacement of liver parenchyma is significant in determining how high or low the blood sugar level will be? It is plausible to believe that a liver which has been extensively replaced by fat cannot store glycogen, as LeCount and Singer[1] postulated. However, if this process takes place very rapidly and fat is displacing glycogen at a rapid rate, is it not possible that glycogenolysis is accelerated for a short period of time only to diminish sharply when the supply of hepatic glycogen is exhausted? If so, this might explain why the acutely ill alcoholic individuals described by Leevy[9] so often had elevated blood sugar levels, whereas the patients with fatty metamorphosis of the liver in pregnancy who had been developing the lesion insidiously for a more extended period of time had low blood sugar levels by the time this determination was made. Also, if my hypothesis is correct, progressive blood sugar determinations in a patient such as ours might show initial hyperglycemia falling over a period of a few hours to hypoglycemia if no treatment was given. Unfortunately for this hypothesis, we are not likely to let a patient so ill go untreated, nor do we see such patients with only a solitary metabolic derangement such as carbohydrate metabolism. In fact, our patient expired so rapidly because of his extreme degree of hyperpyrexia. Although high temperature is common in acute liver failure, I do not believe that anyone has come up with a satisfactory explanation for it. In any event, I believe that our patient died of his fever before his blood sugar had a chance to fall.

Thomas N. Silverberg, M.D.: As one of the few members of the Knickerbocker Hospital staff who was fortunate or unfortunate enough to see this extraordinary patient, I can recall very vividly the sense of bewildered frustration and amazement that we experienced during the two short hours he survived in our hospital. Of course, the most striking immediate finding was the patient's extremely high temperature. The temperature was measured with several rectal thermometers, and in each case it was found to be above the highest indicated mark of 108 F. Naturally, we looked for some explanation. Since the admission took place on a cool day in April, the possibility of heat stroke could not be considered. There was no history of exposure to any unusually high environmental temperature at work or at home. Likewise, as the protocol mentions, there was no clue of any sort of toxic ingestion. When no evident focus of infection could be found, we were inclined to feel that the hyperpyrexia was central in origin and that we were dealing with a hypothalamic lesion of some sort. The essentially negative spinal fluid findings left us with the unpleasant sensation of standing on thin air.

When we learned of the patient's profound hyperglycemia and glycosuria without ketosis we were still more attracted to the diagnosis of a central nervous system disturbance, and I must admit that we did not even consider the possibility that this might represent an incipient diabetes mellitus. We wondered, in fact I still wonder, about the true sequence of events and their relationship. As Dr. Krentz has suggested, were not the hyperpyrexia and hyperglycemia the concomitant results of a physiologic hypothalamic lesion? And is it possible that the changes in the patient's liver were caused by rather than the causes of the extremely high temperature?

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Current Concepts in

DIABETES MELLITUS

Sponsored by the Clinical Society of the New York Diabetes Association

Editors

MAX ELLENBERG, M.D.
HAROLD RIFKIN, M.D.

Introduction

MAX ELLENBERG, M.D., AND HAROLD RIFKIN, M.D., NEW YORK CITY

THE Clinical Society of the New York Diabetes Association will sponsor a series of articles in the NEW YORK STATE JOURNAL OF MEDICINE entitled Current Concepts in Diabetes Mellitus. The papers will appear in seriatim in consecutive issues of the JOURNAL and will encompass the latest developments in the fields of basic research, clinical concepts, therapy, and the known complications.

The prevalence of diabetes and the widespread visceral involvement of its complications give this condition a universal appeal and interest. Many exciting and stimulating contributions have been made in this field since the previous series was published in the JOURNAL in 1953 and 1954. Newer approaches to carbohydrate metabolism have been developed including the recently delineated metabolic pathways which are so vital to a more fundamental understanding of diabetes. The detailed knowledge of pathology has been spurred on by the availability of renal and hepatic tissue via the needle biopsy technic and the increasingly important and revealing electron microscope. Research in the related field of endocrinology has shed further light on the various hormonal interrelationships in diabetes. In the area of insulin physiology new technics have been introduced. Of fundamental importance are the recent investigations into the chemistry of insulin as well as studies on its secretion, its action on the liver and peripheral tissues, and its ultimate physiologic disposition. The concept of insulin resistance, brittle diabetes, and insulin allergy have been illuminated by investigations of insulin antibodies, antagonists, and inhibitors. A new hormone, glucagon, has been further observed and isolated. The diagnostic laboratory evaluation for the diabetic state has achieved new importance in possibly predicting the eventual occurrence of diabetes. A comprehensive survey of the statistical impact of diabetes has shed much light on its frequency, distribution, and variations and has called attention to the increasing mortality rate.

Is diabetes a single entity? Is it a composite of several different diseases albeit interrelated by the common denominator of a metabolic deficit? These often repeated questions point up the importance of a projected classification of diabetes. Along with this thought has been the vital development of the concept of prediabetes—the recognition of symptoms and signs that portend the eventual onset of the disease. This concept implies the hope of a lead to the possible prevention of diabetes.

Perhaps the most dramatic and certainly the most popularly discussed of the newer developments have been in the field of therapy. In the area of nutrition much new knowledge and a clearer understanding have been gained. A firmer knowledge of the use and indications for the available insulins and the introduction of the variants of the lente insulins have greatly aided the management of the disease, especially in the more difficult situations. The introduction of the oral hypoglycemic agents has had a great impact on the therapy of the disease as well as having been a stimulus to certain types of investigation. However, the limitations, the failures, and the many unanswered questions as to future complications continue to make this an exciting field for future research. Much newer knowledge has accumulated regarding the physiology and therapy of diabetic ketoacidosis and coma. The successful management of this condition represents a high watermark for insulin and the increasing knowledge of fluid and electrolyte balance.

Pregnancy in diabetes is a special situation characterized by several factors which are readily recognizable and at the same time baffling. Whereas maternal mortality attributable to diabetes has almost been eradicated, fetal complications and fatalities are still all too common. The contributions in the fields of management, modes and timing of delivery, and the special management of the offspring represent a remarkable achievement and are a tribute to the conjoined efforts of the research scientist, the obstetrician, the pediatrician, and the internist. Childhood diabetes requires special skill, knowledge, and understanding which later should extend into the problems of adolescence, job hunting, choice of career, and marriage.

The problem of the complications so clearly associated with and virtually a part of diabetes is overwhelming. Degenerative changes in the eyes, kidneys, nervous system, and peripheral vascular system are involved in diabetes in a relatively highly specific manner. In fact, modern thought and concept have raised the question as to whether these are actually complications or whether they are all concomitants of a basic disease process. This in turn highlights the controversial issue as to the importance of control in influencing the onset, severity, and progress of these degenerative changes.

Surgery in the diabetic patient poses special problems related to the effects of anesthesia, trauma, interference with the feeding routine, and fluid balance, plus the often depleted nutritional state of the tissues of the often associated damaged blood vessels.

The dermatologic manifestations of diabetes have not been sufficiently appreciated. The various meliturias, other than the form that is due to glycosuria, have always been a diagnostic challenge and have frequently led to error. Newer knowledge of these aspects of diabetes and those in the preceding paragraphs will be presented in this series. It is hoped that these new findings and the re-evaluation of former findings will serve as a strong stimulus for further clinical research.

As a result of the many therapeutic achievements, and a better understanding and appreciation of diabetes through education, the diabetic patient is achieving a new place in industry. Many more positions are now open to him. The New York Diabetes Association is justly proud of its role in furthering opportunities for the diabetic patient locally, in industry in general, in the teaching profession, and in the municipal civil service.

As the editors of this series we are indeed grateful for the generous cooperation and encouragement of our colleagues who constitute the Council of the Clinical Society of the New York Diabetes Association. We are equally indebted to the efforts of the contributors of the articles and take special pride in pointing out that each author, who was carefully selected for his talent in a specific area, is a member of the New York Diabetes Association. It is the intention of the Association eventually to bind the articles in monograph form, which then will be available for both local and national distribution.

The forthcoming articles and their authors include:

Carbohydrate Metabolism and Its Interrelations
Paul A. Marks, M.D., New York City, and Aaron D. Freedman, M.D., Glen Oaks

The Pathology of Diabetes Mellitus
James A. Berkman, M.D., Great Neck

Endocrine Relationships in Diabetes
Abbie I. Knowlton, M.D., New York City

Insulin Inhibitors and Insulin Resistance
Solomon A. Berson, M.D., Roslyn Heights, and Rosalyn S. Yalow, Ph.D., New York City

Laboratory Aids in the Diagnosis of Diabetes
Maximilian Fabrykant, M.D., New York City

The Glucagon Problem
Theodore Van Itallie, M.D., and Stanley Bergen, Jr., M.D., New York City

A Classification of Diabetes
Irving Graef, M.D., New York City

The Prediabetic State
Harold Zarowitz, M.D., Brooklyn

Nutrition in Diabetes
Milton Handelsman, M.D., Brooklyn

The Available Insulins
Gerald Friedman, M.D., New York City

The Present States of Oral Hypoglycemic Agents
Martin Goldner, M.D., Brooklyn

Diabetic Keto-Acidosis
Kermit L. Pines, M.D., New York City

Clinical Management of Insulin Resistance
Henry Dolger, M.D., New York City

Pregnancy in Diabetes
Edmund L. Shelvin, M.D., and Paul Pedowitz, M.D., Brooklyn

Management of the Infant of the Diabetic Mother
Alfred E. Fischer, M.D., New York City

Diabetes in Childhood
Abraham Kantrow, M.D., Flushing

Microangiopathy in Diabetes
Harold Rifkin, M.D., New York City

Diabetic Neuropathy
Max Ellenberg, M.D., New York City

The Eye in Diabetes
Isadore Givner, M.D., New York City

Surgery in the Diabetic Patient
George Anderson, M.D., Brooklyn

The Benign Meliturias
Elmer Gais, M.D., New York City

Dermatologic Manifestations in Diabetes
Leon Levitt, M.D., Brooklyn

Peripheral Vascular Disease in Diabetes
Henry Haimovici, M.D., New York City

Employability of the Diabetic Patient
Harold Brandaleone, M.D., New York City

Vital Statistics in Diabetes
Herbert Marks, M.D., New York City

(*The first article in the Current Concepts of Diabetes Mellitus series will appear in the October 1, 1960, issue of the* Journal.)

Newborn Babies May Be Drug Addicts

The tiny, two-day-old baby squirms violently in his crib, creating ugly red areas where skin's been rubbed raw. He has trouble breathing, seems hungry, but often ignores a bottle. He screams, cries and is nauseated, restless, and irritable. His problem? His mother was a drug addict and he's suffering the tortures of withdrawal.

The problem of narcotic addiction among newborn infants is not new but it has become more and more of a problem in recent years, two New York University pediatricians claim. Writing in the August issue of *GP* magazine, published monthly by the American Academy of General Practice, Annabelle Vincow, M.D., and Alvin Hackel, M.D., point out that 12 drug-addicted infants were born at Bellevue Hospital during a recent nine-month period.

One study, on a series of untreated cases, showed a mortality rate of 93 per cent.

A newborn baby's addiction to morphine or one of its derivatives (usually heroin) may begin many months before it's born. Opiates have no trouble penetrating the placental barrier. Then, when the baby is born and no longer gets the drug, withdrawal symptoms start. The nervous system becomes suddenly and violently overactive. In severe cases, the baby may go into convulsions and die.

As with many adult addicts, drug substitutes must be used and then slowly withdrawn. The two doctors also urge that the baby remain hospitalized, allowed to breathe moist oxygen, and be fed through a nasal tube or intravenously.

The authors also urged doctors to check the mothers for signs of addiction before the baby is born. These include constricted pupils, needle scars, and ulcerations over hand and forearm veins. Early detection may help save the baby's life.

If the mother can stay away from "the needle" for a week or ten days prior to delivery, the baby usually will not suffer withdrawal symptoms. This, however, is difficult for the true addict who usually needs three or four capsules of 5 per cent heroin a day.

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D., Secretary, Medical Education for National Defense (MEND) Committee, Albany Medical College

Survival in a Thermonuclear War

IV. Basic Principles of Protection from Hydrogen Bombs

SOLOMON GARB, M.D.,* ALBANY, NEW YORK

At one time it was thought that evacuation from cities could save people from the effects of hydrogen bombs. However, we now know that an aggressor could cover virtually the entire United States with a lethal level of radioactive fallout. Therefore, evacuation alone would be of no value.

The most effective measure for protection against hydrogen bombs is the use of shelters. It is advisable to plan on attenuation of fallout radiation to one thousandth its outside value. This would give adequate protection against virtually any degree of fallout now known to be possible. To accomplish this thick walls and roofs are needed.

Materials

In theory, it makes little difference what sort of material is used. If the thickness of the material is sufficient to bring the weight up to 300 pounds per square foot, it will provide excellent protection against radioactive fallout. However, there are only two materials which are practical for use as a shielding mass—earth and concrete.

Concrete.—Concrete weighs about 150 pounds per cubic foot; therefore a layer 2 feet thick is required to provide the 300 pounds per square foot needed for protection against fallout radiation. However, it would be extremely difficult and expensive to make shelters of such thick concrete. Instead, the concrete thickness usually ranges from 6 to 12 inches and earth is packed over it to make up the needed protection.

Earth.—Earth weighs about 100 pounds per cubic foot; therefore a layer 3 feet thick is needed for protection against fallout radiation. Obviously, this weight of earth must be supported and only two materials, reinforced concrete and steel, are suitable. Wood is not usually a recommended supporting material since it will decay and rot under the ground, with eventual collapse of the shelter. However, in special circumstances wood might be used.

Another hazard against which shelters might protect is direct radiation from the fireball. This radiation, consisting of high-energy gamma rays and neutrons, is much more penetrating than the radiation from

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* United States Public Health Service Senior Research Fellow, SF-11.

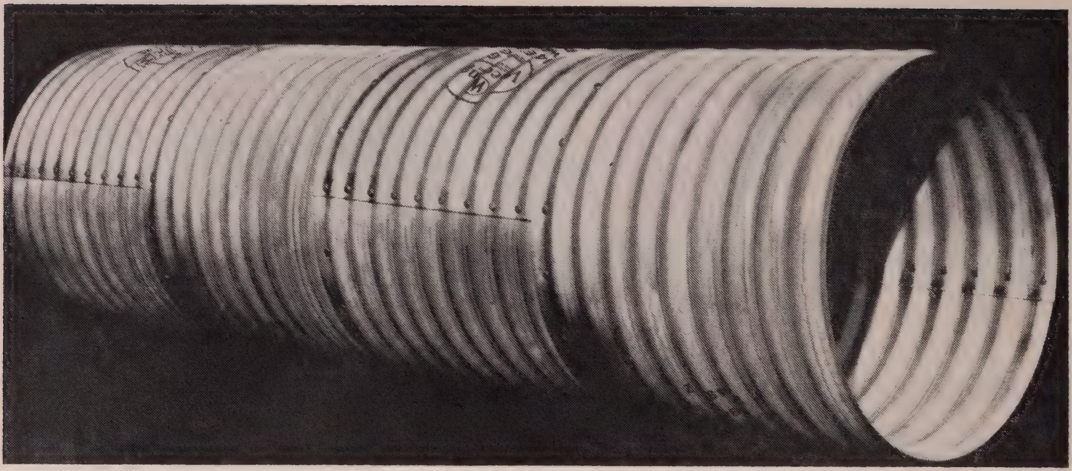

FIG. 1. Corrugated steel pipe.

fallout. At least half the persons in an ordinary fallout shelter will die of radiation if the fireball is within a few miles. Protection against this type of radiation requires a mass of about 500 pounds per square foot in each wall and ceiling. This is the equivalent of just over 3 feet of concrete or 5 feet of earth. Since direct radiation from the fireball is only a serious problem within a few miles from the fireball, many shelters do not incorporate the extra protection in their design. However, wherever feasible this additional security should be provided.

Protection from the blast effect of a large bomb depends primarily on the materials comprising the shelter. Reinforced concrete 6 inches thick will support a weight of 3 feet of earth but will probably collapse under any appreciable blast pressure. The earth cover of a basic civil defense shelter, 9 by 12 feet, weighs about 35,000 pounds. A blast overpressure of only 5 pounds per square inch would add a force equivalent to an additional 76,000 pounds and would probably collapse the shelter, burying the occupants. Thicker concrete gives more protection but is also much more expensive.

STEEL.—Steel, on the other hand, is much more resistant to blast pressures. Corrugated steel pipe (Fig. 1) is designed for such peacetime use as culverts and so forth and carries loads far greater than does concrete. A properly buried corrugated steel pipe of the right diameter should give protection against blast overpressures in the range of 50 to 100 pounds per square inch. Roughly speaking, it can be considered at least ten times as strong as the reinforced concrete.

It should be noted that if corrugated steel pipe is used as a shelter, its role is that of holding up the weight of earth above, and, additionally, that of resisting blast overpressures. It is the earth cover that attenuates the radiation. The steel of the pipe is not thick enough to block out much radiation. Indeed, steel would have to be over 7 inches thick to make an adequate shelter unless it were covered by earth.

Corrugated steel pipe has certain advantages and disadvantages for use as a shelter. It is much cheaper than concrete, easier to handle, and much stronger. The major disadvantage is that it must be used in relatively narrow diameters; hence, it is less comfortable than a concrete shelter.

The maximum practical diameter for a steel pipe home shelter is 7 feet. As this diameter is exceeded, strength falls rapidly. It may also help to avoid confusion if one is told that government tests on corrugated steel pipe revealed failure at a relatively low blast overpressure, to note that those tests were done on corrugated steel pipes 20 to 50 feet in diameter. Such pipes are quite weak. On the other hand, tests on pipes 5 or 6 feet in diameter show them to be very strong and capable of withstanding very high blast overpressures.

If reinforced concrete is used to hold up the weight of earth, the minimum thickness should be 6 inches for the ceiling slab and 8 inches for the walls. It must be noted that these minimum thicknesses are for concrete which is heavily reinforced with steel and is perfectly mixed, poured, vibrated, and cured. If any one of these aspects is substandard, the roof may collapse under the weight of the earth. Even if all aspects are perfect, this construction is designed only as a defense against fallout radiation. It probably cannot resist the additional force of a blast wave, even of the relatively low order of 5 pounds per square inch (720 pounds per square foot).

If a more adequate concrete shelter is desired, it would be well to double the thickness of the reinforced concrete making it 16 inches for walls and 12 inches for ceiling slab. This becomes very difficult and expensive because of the forms and braces needed to hold up such a weight of concrete before it sets properly.

For very large shelters, designed as military headquarters, and so forth, reinforced concrete covered with earth is the most practical material since by bracing it with weight-bearing interior partitions and steel beams it can be made quite large without losing much strength. Furthermore, with this type of shelter building costs per cubic foot tend to become lower as the size increases. Although the reinforced concrete shelter has a number of disadvantages for the average family, it has one advantage. It can be built large enough to provide real comfort for the occupants. Thus, someone to whom comfort is very important, and who is willing and able to pay for it, might do well to have a reinforced concrete shelter constructed.

Comfort

The question of comfort in a shelter requires some consideration. If shelter dimensions are compared to house dimensions, they will seem cramped indeed. However, it must be remembered that a shelter is an emergency, lifesaving device. Its dimensions should be compared to those of a foxhole which is also an emergency lifesaver. Even the smallest shelter provides much more room per person than a foxhole or, for that matter, a station wagon. In some corrugated pipe shelters it may not be possible to stand erect. However, one can always stretch lying down.

For those who are willing to sacrifice a little comfort for greater safety and much lower cost, a corrugated pipe shelter covered with earth is a good choice.

Warning Time

Another aspect to be considered in discussing shelters is the amount of warning time. If the warning time is short or absent before the bombs burst, most people would not be in the shelters, and, therefore, could not be protected against blast, heat radiation, flying objects, or the initial neutron and gamma radiation from the fireball.

On the other hand, there will always be some warning before fallout begins. The bomb flash will be visible for at least 100 miles, and the fallout will not begin for at least thirty minutes, leaving adequate time to reach shelter in most cases.

Even without any warning of an attack, a shelter, by protecting against fallout, will give one about 960 out of 1,000 chances of survival.

Components of a Hydrogen Bomb Shelter

The following is a list of the components of a hydrogen bomb shelter.

Dimensions.—The dimensions of a shelter should provide at least 80 cubic feet of volume for each occupant. Since some of this space will be needed for food and water storage any extra space will be quite helpful, although not essential. In an emergency, a lesser volume can be tolerated readily. It is worthy of note that the minimum volume, 80 cubic feet per person, is far greater than that provided in an automobile or bus. In the usual sedan the total available space is about 17 cubic feet per person, and of that, a substantial portion is taken up by the seat, leaving less than 15 cubic feet per person of free space. The average human body takes up between 2 and 3 cubic feet.

LOCATION.—It is usually better to locate a shelter outside a house, in a yard. All houses are inflammable, and in a hydrogen bomb explosion houses as far as 15 miles from the fireball may catch fire. The risk of fire is less with houses whose exteriors are brick, stone, or asbestos. A shelter within a house provides a slightly smaller chance of survival than one outside.

In many areas, the water level is within 4 feet of the surface; therefore excavation for a shelter is impractical. In those areas, an above-ground shelter covered with a mound of earth will be needed. It will be almost as safe as a shelter beneath the surface.

It may be possible to locate a shelter near several homes. This can be a great advantage in respect to cost. A shelter for two families would not cost much more than a shelter for one family.

ENTRANCE.—The entrance to the shelter should be so arranged that there are two right-angle turns before the shelter proper is reached. This is advisable because some scattering of radiation around corners occurs. If the two right-angle turns are not practical in a particular location, there is an alternative way of protecting the entrance. Sandbags are stored within the shelter, and when the occupants are inside and the door is closed the sandbags are piled against the door to a 3 foot depth to block out radiation coming through the door.

EMERGENCY EXIT.—An emergency exit is helpful but not essential. Its major effect is a psychologic one, preventing a feeling of being trapped. In theory, the emergency exit would be used if the main entrance were blocked by debris from the explosion. However, debris can be expected only within about 10 miles of the explosion. If an emergency exit is provided, it should be tightly closed, and a 3-foot thickness of sandbags should be piled against the inside of the emergency exit to protect against the radioactivity outside. Alternatively, the emergency exit can be a pipe 36 inches in diameter, filled with loose dry sand, and with a sliding door at the bottom. To use it, the door is opened allowing the sand to pour into the shelter proper.

DOORS.—The doors to the shelter should fit snugly, and provisions must be made to seal them completely on entering the shelter. Air circulation takes place through forcing air into the shelter by the blower or ventilator. It is essential that all the entering air pass through the filters for removal of radioactive contamination. Therefore, it is recommended that all cracks around doors be sealed with tape. The doors should be checked at intervals to be sure that they are still sealed.

ELECTRICITY.—If possible, a 15 or 20 ampere capacity electric wire should be run into the shelter. During periods when attack seems imminent, it will be prudent to spend as much time as possible in the shelter, and it will be easier to persuade a family to stay there if electricity is available to run the ventilation system, heat food, and provide light.

AERIAL.—Each shelter should be provided with an outside aerial for a transistor radio.

PAINT.—The inside of all shelters should be painted white or a light color to obtain the greatest efficiency from flashlights.

OTHER REQUIREMENTS.—Each shelter should possess an adequate ventilating system, sanitary system, and stored food and water. These items will be considered in detail in subsequent articles.

(*Number four in a series on the Physician in Civil Defense*)

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

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Hypotension Following a Transurethral Procedure

TRANSURETHRAL prostatic procedures may be followed by certain complications. In the immediate postoperative period manifestations of arterial hypotension may be due to a number of causes. The following case is presented because it illustrates such an eventuality. The occurrence is not too common, but its possibility and the possible causes should be borne in mind so that it can be treated immediately and correctly.

Case Report

A sixty-six-year-old male required a transurethral resection of his prostate. Physical examination revealed an obese man, 65 inches tall and weighing 200 pounds. His arterial blood pressure was 140 mm. Hg systolic and 90 diastolic, and his pulse rate was 80 beats per minute. His electrocardiogram showed relatively normal tracings with unspecific changes. A roentgenogram of his chest showed his heart to be enlarged to the upper limits of normal. The hemoglobin content of his blood was 14.8 Gm. per 100 ml.; the blood urea nitrogen was 14 mg. per 100 ml. Urinalysis showed a 3 plus content of albumin. There was no sugar in the urine although the patient had known diabetes, which was controlled by diet alone.

A month prior to the proposed procedure a dilatation of the urethra with spinal analgesia was performed uneventfully. Two weeks subsequently the patient underwent a transurethral resection of the urethral strictures with nitrous oxide-oxygen and halothane anesthesia. This too was uneventful. However, urinary difficulties persisted, and it was decided to perform a transurethral resection of the prostate.

For preanesthetic medication the patient was given Nembutal 100 mg. and atropine sulfate 0.4 mg. by intramuscular injection. Ninety min-

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Discussed at a conference held at Bellevue Hospital, New York City, May 2, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

utes later spinal analgesia was induced with 8 mg. of Pontocaine combined with 80 mg. of dextrose and 1 mg. of epinephrine. The cephalic limit of sensory anesthesia occurred at the ninth thoracic dermatome level. Throughout the procedure, which lasted eighty-five minutes, the patient's vital signs remained stable. No vasopressor was required since the blood pressure was maintained at the preoperative level of 110/60. The blood loss was estimated at 300 ml., and no blood transfusion was given.

The patient was brought to the recovery room in good condition. His arterial blood pressure was 120/70, pulse rate 78 beats per minute, and respiratory rate 18 respirations per minute. One-half hour after his arrival in the recovery room it was noted that the patient's blood pressure had diminished to 80/40 and that his pulse rate had diminished to 64 beats per minute. Although he had experienced no discomfort until this time, he now complained of chest pain. He was pale, cold, and clammy. A blood transfusion was started immediately, and oxygen was administered by inhalation. During the following eight hours a total of 1,000 ml. of whole blood was infused. However, the arterial hypotension of 80/40 persisted, and finally an intravenous drip of metaraminol (Aramine) was begun. This resulted in a return of the arterial blood pressure to a normal level.

Following this episode the patient had to be maintained on the metaraminol drip for two weeks; any attempt to discontinue the intravenous drip of this vasopressor resulted invariably in severe hypotension and vascular collapse. During this time the heart rate remained at between 60 and 68 beats per minute. The patient was febrile, his temperature spiking daily up to 104 F.

One blood culture revealed the presence of Bacillus subtilis. Urine cultures revealed the presence of Bacillus aerogenes, Escherichia coli, and enterococcus. The electrocardiogram showed no change from the preoperative tracing, and the roentgenographic picture of the chest also remained unchanged. Perforation of the urinary bladder was ruled out by a cystogram. The serum transaminase values were not diagnostic. A diagnosis of gram-negative bacteremia was made. When the sepsis was controlled, the patient withstood the weaning off of the metaraminol drip.

Comment

Arterial hypotension following transurethral prostatic resection may be due to a number of causes, including shock from blood loss, hemolysis due to absorption of water from urethral irrigation, congestive heart failure, myocardial or coronary insufficiency, and extension of the spinal analgesia level with lack of compensatory vasoconstriction in the unanesthetized area. The possibility of inadvertent damage with the resectoscope, such as perforation of the bladder or laceration of a large blood vessel, also should be considered. Although not so common an occurrence, the possibility of bacteremia due to gram-negative bacilli, as occurred in this case, should be borne in mind and, if suspected, tested for by blood culture.* The signs, as in this case, consist of arterial hypotension with relative bradycardia and fever. The organism may be introduced during transurethral urologic manipulation.

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* Schirger, A., Martin, W. J., and Nichols, D. R.: Streptococcal bacteremia without endocarditis; clinical observations, Ann. Int. Med. **45**: 1001 (Dec.) 1956.

(*Number ninety-five in a series of Clinical Anesthesia Conferences*)

Human beings seldom learn from the experience of others, but only from their own.—Quincy Howe

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Boric Acid Poisonings

SINCE the establishment of the New York City Poison Control Center, in 1955, 185 ingestions of boric acid have been reported to it. Of these ingestions, 12 were reported in 1955, 21 in 1956, 30 in 1957, 41 in 1958, and 63 in 1959; 18 already have been reported this year. The patients ranged in age from three months to seventy-three years, and the amounts ingested ranged to 1 tablespoonful of the dry powder and from 1 teaspoonful to a jarful of the solution. No sex or color preponderance has been noted.

It is of interest that in the entire series no fatalities occurred, although some of the incidents were fairly severe. Generally the occurrence was attributed to the mistaken identity of the dry powder or a solution prepared as an eyewash. The following are examples of the modes of occurrence:

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Boric Acid	14 years	Male

A typical case of boric acid poisoning involved a fourteen-year-old boy who hurriedly prepared tea in the morning before going to school and used the boric acid solution left by his mother in a saucepan the previous night. Spontaneous vomiting occurred within twenty minutes of the ingestion, and the child proceeded to school. It is hoped that no sequelae will occur.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Boric Acid	19 months	Male

The visiting public health nurse relates that the mother had an infection in her eye and that she prepared a boric acid solution to care for the infection. The mother was aware of the possibility of accidental ingestions and consequently locked the solution in the bathroom medicine cabinet to keep it away from the child's reach. While she was using it one morning, the telephone rang, and the mother, forgetting to lock the cabinet, went to answer it. The child obtained the solution and drank a jarful of it.

The patient was taken immediately to a hospital emergency room, where his stomach was lavaged with sodium bicarbonate and vomiting was induced. The only pathologic finding was acetone in the urine. After one day of hospitalization the child was discharged as improved.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Boric Acid	20 years	Female

A young adult female awoke in the morning after a New Year's Eve party not feeling well. Her mother advised her to take some sodium bicarbonate, but instead she ingested boric acid accidentally, which was packed, as it usually is, in a similar type of container.

In answer to the question on how this poisoning could have been prevented, the nurse stated that packages of sodium bicarbonate and boric acid were placed next to each other in a kitchen cabinet. Since both products are manufactured by the same company and are packed in the same type of container, the nurse advised the mother to separate these substances by keeping the boric acid in a medicine cabinet and the sodium bicarbonate in a kitchen cabinet.

Comment

In the April 21, 1960 issue of *The New England Journal of Medicine* William E. Segar, M.D., reported on "Peritoneal Dialysis in the Treatment of Boric Acid Poisoning" and included 3 case reports. One of the incidents terminated fatally. The 3 cases involved a three-day-old female infant, a five-day-old male infant, and a six-day-old male infant. These boric acid ingestions occurred in the usual manner—the milk formula was mistakenly prepared with a solution of boric acid. The 3 infants became severely ill and were brought to the hospital for treatment.

Since there is no specific antidote for boric acid, the aim in the treatment of boric acid poisoning is the rapid elimination of the toxic substance. However, kidney damage is common in such cases, and therefore the elimination of the toxic substance is impaired. For this reason exchange transfusions have been recommended, and they have been used successfully. According to Segar, however, an exchange transfusion has certain disadvantages. It is a hazardous procedure, and there is the possibility of transfusion reactions. In some instances the procedure may not be able to remove adequate amounts of the toxic substance.

Segar used peritoneal dialysis in the 3 cases because of its simplicity of administration and relative safety. According to him, four hours of peritoneal dialysis removes approximately the same amount of boric acid and all other water-soluble toxins as can be removed by an exchange transfusion; he claims that continuous dialysis for twenty-four to forty-eight hours is much more efficient in eliminating the toxic substance than is an exchange transfusion. On the basis of his experience he feels that peritoneal dialysis is the treatment of choice for infants seriously ill with boric acid poisoning.

Of the 3 patients reported by Segar, 2 were severely oliguric and jaundiced and had evidence of central nervous system damage. In addition, the 3 had exfoliation of large areas of the skin. On the fourth hospital day the five-day-old male infant died in spite of all heroic therapy. The death was thought to have been due to the central nervous system damage. However, the postmortem chemical analysis disclosed residual boric acid: blood 62 mg., liver 73.5 mg., brain 51.5 mg., and kidneys 45.3 mg. (per 100 Gm. of tissue).

During recent years the fatalities from boric acid have been largely limited to newborn infants with most of the cases occurring on the newborn services. It is reported that fatal doses of boric acid, sodium borate, or sodium perborate for an

TABLE I—Poisonings About Which Information Was Requested Over a Recent Weekend*

	Patient	
Product†	**Age****	**Sex**
Carbona (carbon tetrachloride)	2	M
Diaperine lotion (quaternary)	10 months	F
Silly Putty (silicone play material)	$2^1/_2$	M
Candle	2	F
Mouse-Nott seed (strychnine)	$1^1/_2$	M
Diaper pail deodorant (paradichlorobenzene)	$2^1/_2$	M
Mercury	4	F
Breath of Pine (detergent)	3	F
Handy Andy detergent	5	M
Elixir of diphenhydramine	2	F
Bobby waving lotion	2	M
Chloroform; inhaled	9	M
Liquid mercury	5	F
Camphor	3	F
Styroweld plastic cement	16 months	M
Easy-Off (oven cleaner)	25	F
Kelly green Rit dye	8	M
Sodium acid sulfate	$3^1/_2$	M
Sure-Fighter lighter (barbecue lighter)	2	M
Lestare (perborate bleach)	3	F
Mennen spray deodorant	2	F
Sinclair household oil	$2^1/_2$	F
Perfume, $^1/_2$ ounce	$3^1/_2$	M
Pine oil	$1^1/_2$	M
Cigaret butts	15 months	M
Dieldrin (insecticide)	2	M
Griffin shoe polish	4	M
Proclorperazine suppository	19 months	F
Glamorene rug cleaner	15 months	M
Phenobarbital	21	F
Rubbing alcohol	$3^1/_2$	M
Peroxide	2	M
Lipstick remover	2	M
Salicylamide	3	M
Prince Matchabelli perfume, $^1/_2$ ounce	$2^1/_2$	F
Paradichlorobenzene	5	M
Bubble solution	4	M
Methylphenidate hydrochloride	2	M
Diethylpropion, 100 mg.	2	M
Wisk (detergent)	8 months	F
Scotch turf builder (fertilizer)	3	M
Chalk	1	F
Calgonite and Comet (alkaline detergent and scouring powder)	$2^1/_2$	M
Drano (caustic soda); burn on finger	40	M
Rock salt (sodium chloride)	7	M
Perfume	2	F
Barberries	4	M
Noxon (metal polish); splash in eye	12	M
Chloprophenpyridamine maleate preparation	$2^1/_2$	F
Mum (underarm deodorant)	$1^1/_2$	F
Mr. Clean (detergent)	2	M
Antihistamine compound	3	M
Mennen's Baby Magic (cosmetic)	15 months	F
Dexbrompheniramine maleate	8 months	M
Amtico floor cleaner	2	M
Air Wick (room deodorant)	4	M
Boric acid	2	M
Sleeping pills (methapyrilene)	35	M
Glamorene liquid rug cleaner	$2^1/_2$	F
Aspirin	2, 3	F
Fluorescent tube	35	F
Ajax (scouring powder)	2	F
Windex (glass cleaner)	$1^1/_2$	F
Calgonite (alkaline detergent)	2	F
Paint thinner	19 months	M
Carisoprodol	25	F
Nestle's color rinse (black)	Child	F
Chlorothiazide	50	F
Vigoro (fertilizer)	$2^1/_2$	M
Griffin shoe polish	1	F
Skin antiseptic cream	Adult	F
Skotch ice (refrigerant can)	4	M
Moth ball	$1^1/_2$	F
Diphenhydramine ointment	Child	M
Mouse-Nott seeds (strychnine)	1	F
Silent Night (perfume)	2	M
Iodine	26	M
Tintex (household coal tar dye)	2	F
Paregoric	$2^1/_2$	M
KnoMark furniture polish	Child	F
Arrid (underarm deodorant)	2	M
Turpentine	2	M
Clorox (sodium hypochlorite)	39	F
Liniment	$2^1/_2$	F
Blue chalk	11 months	F
Para crystals (paradichlorobenzene)	30 months	M

* Minor events on which complete information is unavailable not included.

† Ingestion unless other mode of occurrence is indicated.

** In years unless months is indicated.

adult range from 5 to 15 Gm. and for an infant are proportionately much lower.

The children involved in boric acid ingestions reported to this Center have been classified as of average intelligence and physical ability. Since boric acid is such a widely used product, the favorable outcomes in this Center's series should be particularly comforting to the pediatrician and general practitioner. It is possible that the relatively mild symptoms and absence of sequelae in our series were due to the prompt removal of this substance by means of induced vomiting and lavage.

Table I lists the poisonings about which information was requested recently.

(*Number sixty-one in a series of Briefs on Accidental Chemical Poisonings*)

CASE REPORTS

The Use of Phenylbutazone in the Presence of Duodenal Ulcer or Duodenitis

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CONTRARY to common belief, duodenal ulcer or duodenitis is not necessarily a contraindication to the use of phenylbutazone in rheumatic disease. For a long time various workers in the field have felt that there is an increased incidence of peptic ulcer in patients with arthritis,[1,2] and it has been common practice, as in the case of corticosteroids, to withdraw phenylbutazone if peptic ulcer developed. Simple ulcer therapy results in prompt healing in the majority of such cases. However, because corticosteroid therapy can often be continued successfully in conjunction with an ulcer regimen,[2-4] we were prompted similarly to continue phenylbutazone together with simple ulcer therapy consisting of a bland diet, antispasmodic medication, and an antacid medication.

Case Reports

CASE 1.—This patient had exhibited signs of psoriasis at thirty-one years of age. Four years later he developed a painful arthritis of the left great toe which was first diagnosed mistakenly as gout and was treated unsuccessfully with three courses of colchicine. By 1953, when he was forty years of age, he showed a "mallet" formation and bulbous swellings of the left third, fourth, and fifth, and the right third and fifth terminal interphalangeal joints, with psoriasis of the nails of the involved fingers and parallel involvement of the right first and second and left first, second, and third toes. An x-ray examination showed lysis of the bone structure of the tip of the second left toe. The patient experienced much pain on motion and was having difficulty in his job which required some manipulation of the fingers.

Early in 1954 he was placed on phenylbutazone therapy with much relief from stiffness and a marked reduction in pain, so that he could use his fingers freely. In June, 1955, he began to observe recurrent moderate pain in the epigastrium which was usually, but not always, relieved by eating. There was no nausea or vomiting. He remembered that he had had gaseousness with belching and epigastric discomfort after meals at odd intervals for many years. An x-ray examination revealed a characteristic cloverleaf deformity of the duodenal bulb with convergence of rugal folds and irregularity of the contours. No niche was identified and the interpretation of the x-ray film was chronic duodenal ulcer.

He feared a recurrence of joint stiffness if the medication were stopped, since this had happened twice previously when reductions in dosage had been attempted. We therefore continued the phenylbutazone but placed the patient on an ulcer regimen with a bland diet, antacids, and antispasmodic medication. There was a good response to therapy and a subsidence of symptoms within a month, permitting the discontinuance of the ulcer regimen. Since that time, once or twice a year and while on phenylbutazone, similar episodes have responded to the same therapy.

CASE 2.—This patient developed pain and stiffness of the lower back in 1944 at the age of thirty years. By 1954 the process had spread gradually up the spine, and examination at that time revealed moderate kyphosis, a poker spine, and x-ray findings of extensive calcification of the paraspinal ligaments, most marked in the dorsolumbar area where there was a squaring of the vertebral bodies. The sacroiliacs were completely fused.

Since late 1952, phenylbutazone had been given to the patient by another physician with great relief, but it was discontinued several times on account of a gastrointestinal upset. In October, 1954, when the patient had been without medication for about six months, he experienced a recurrence of some dyspeptic symptoms. An x-ray examination showed what was interpreted as a postbulbar duodenitis. On account of his severe back pain, phenylbutazone therapy was begun together with an ulcer regimen. He obtained excellent relief of joint symptoms with the disappearance of gastrointestinal distress. He has remained on phenylbutazone therapy steadily since that time with recurrences of dyspeptic manifestations about twice a year. Each episode lasts a few weeks and responds to the combined therapy. Repeated x-ray examinations have continued to show evidence of postbulbar duodenitis.

Case 3.—This patient has severe spondylitis which began in 1943 at the age of twenty-seven years. Gradually he developed a poker spine with a marked dorsum rotundum. A course of x-ray treatments in 1947 had no effect. In September, 1954, he gave a history of intermittent heartburn and epigastric pain during the previous ten years, and an x-ray examination showed a scarred duodenal bulb with antral gastritis and duodenitis. The patient suffered so severely from back pains and girdling chest pains that it was decided to institute phenylbutazone therapy combined with an ulcer regimen. He had marked relief from symptoms but decided to stop taking phenylbutazone in September, 1955, when he read in a newspaper about serious complications from the drug. He took large amounts of salicylates and codeine until February, 1956, when his stiffness and pain became so severe that he pleaded for phenylbutazone in spite of a recurrence of gastrointestinal symptoms. He obtained much relief on the combined regimen and has continued taking phenylbutazone since that time, resorting to this combined regimen once or twice a year on the recurrence of gastrointestinal symptoms.

Case 4.—Spondylitis in this patient had its onset in 1945 when he was twenty-one years of age. It has involved progressively the entire spine, both shoulders, the symphysis pubis, and both temporomandibular joints. In 1949 a course of x-ray therapy gave no relief. In 1950 cortisone was tried with some relief on 100 mg. daily, but this did not last. In 1950 he had what was diagnosed as cholecystitis, but no x-ray films were taken. In September, 1952, he was suffering from widespread pain and exhibited a stiff and unbending spine with neck involvement, marked restriction of motion in both hips and both shoulders, and an inability to open his mouth well or to chew adequately. Phenylbutazone gave progressive relief of pain and increased the mobility of his neck, shoulders, hips, and jaws. Therapy was continuous since attempts at reducing or eliminating the medication resulted in severe stiffness and pain. In January, 1957, after three weeks of epigastric symptoms, an x-ray examination revealed a moderately-deformed duodenal bulb with convergent folds but with no niche or tenderness and with evidence of duodenitis. He responded well to a bland diet, antispasmodic medication, and antacids together with phenylbutazone. There has been only one slight recurrence of symptoms necessitating the combined regimen again, but he has been on continuous phenylbutazone therapy now for over seven years.

Case 5.—This patient had a history of low-back pain beginning in 1943 at the age of thirty-nine, increasing in severity over a ten-year period, resulting in marked limitation of motion of the lower back, and accompanied by pain and stiffness which often disabled him. X-ray films showed a squaring of the vertebrae in the lumbodorsal segment with osteoporosis of the involved areas.

Phenylbutazone medication was begun with a moderate relief of symptoms, so that the pain became bearable and the stiffness became much less marked. When he ran short of medication his symptoms returned with marked severity. After two years of this medication he developed a burning discomfort in the epigastrium. An x-ray examination showed coarsening and thickening of the postbulbar duodenum which was interpreted as duodenitis. Symptoms subsided when phenylbutazone was continued with the typical ulcer regimen. During the subsequent two years he tolerated phenylbutazone well with no recurrence of gastrointestinal disturbance. On remission of his back symptoms, medication was discontinued.

CASE 6.—This patient had a history of progressive involvement of the entire spine over a ten-year period beginning in 1943 at thirty-six years of age. He had received two full courses of x-ray treatment with relatively little effect and had had a persistently recurring vague dyspepsia for many years. Phenylbutazone was used intermittently for about a third of each year over a three-year period during intervals when his symptoms were severe. He then developed epigastric pain which was relieved with rhubarb and soda. An x-ray examination revealed the characteristic cloverleaf of a chronic duodenal ulcer. The symptoms were relieved by standard ulcer therapy and phenylbutazone was continued for almost a year until a remission of the disease process occurred. Subsequent symptoms have not been severe enough to warrant anything stronger than salicylates.

CASE 7.—This patient, at twenty-seven years of age, gave a history of a left sciatica in 1944 which disabled him for two months. The radiating symptoms subsided, but low-back pain persisted and by 1949 x-ray films revealed localized involvement of the sacroiliacs only. He was given a course of x-ray therapy which relieved him until 1952. He had always been subject to occasional episodes of epigastric pressure and "gasiness." In September, 1955, after two months of phenylbutazone therapy, he developed a few mild epigastric pains which subsided quickly. In October, 1956, on recurrence and persistence of epigastric symptoms, an x-ray examination revealed a duodenitis. Abdominal symptoms subsided on discontinuance of the medication. The low-back pain did not recur and remained in remission until September, 1957, when salicylate therapy was tried without effect. Since his abdominal complaints had recurred, phenylbutazone combined with an ulcer regimen was given with relief. Six weeks later ulcer therapy was stopped; with the remission of back pain after a few months, all medication was discontinued.

Comment

This series of cases has been presented not to advocate the indiscriminate prescribing of phenylbutazone in the presence of duodenal disease but to show that in selected cases it is possible to use the drug judiciously. It has been our policy to check the blood count regularly and to watch for evidence of toxicity in all our patients. We would not hesitate to stop the medication if ulcer symptoms were intensified by it. However, it has been our experience that when these patients develop their duodenal symptoms, usually they will show the typical response to conventional therapy without the discontinuance of phenylbutazone.

Summary

We have presented 7 cases of rheumatic disease that were treated successfully with phenylbutazone in spite of the presence of duodenal ulcer or duodenitis. Patients are selected for such therapy only when simpler antirheumatic medication has failed. The use of phenylbutazone under these conditions requires close supervision similar to the care involved in using corticosteroids in similar circumstances.

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True love is like ghosts, which everybody talks about and few have seen.—LA ROCHEFOUCAULD

Relapsing Febrile Nodular Nonsuppurative Panniculitis (Weber-Christian Disease)

Specific Criteria for Diagnosis

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IN REVIEWING the literature on Weber-Christian disease, we found that many authors were not aware of the existence of a workable classification concerning nonsuppurative panniculitis, such as we will present here. Obviously this has caused many cases to be reported as Weber-Christian disease which actually were not.

Weber in 1925[1] presented a case of relapsing nonsuppurative nodular panniculitis. In 1928 Christian[2] described another case and added the word "febrile" to the title. Weber in 1935[3] stated that Christian had rightly added "febrile" to the title of the disease, and, since then, it has been known as relapsing febrile nodular nonsuppurative panniculitis or Weber-Christian disease.

Case Reports

CASE 1.—A fifty-three-year-old Italian-born male was admitted on August 4, 1949, to Meadowbrook Hospital because of intermittent chills and fever of several weeks duration. He gave a history of having been treated for malaria in 1918. During the following thirty years he had experienced many episodes of shaking chills and high fever lasting from one to several weeks at intervals varying from three months to two and a half years. Each episode was accompanied by vague leg pains. There had been no previous hospital admission. Studies by his various physicians for tuberculosis, brucellosis, and malaria had given negative results. There was no history of allergy. However, he did recall that during a bout of chills and fever in 1943 he had had a flat, slightly itchy, slightly tender lesion the size of a half dollar in his epigastrium. It disappeared in about one week, leaving the skin in an entirely normal condition. The family history was noncontributory.

A physical examination revealed a well-developed, well-nourished white male appearing his stated age of fifty-three years and in no apparent distress. His blood pressure was 105/80 and his oral temperature was 101.8 F.

Several urine examinations and blood counts showed results within normal limits. Numerous blood cultures indicated negative findings. Tests for nonprotein nitrogen, sugar, uric acid, total protein, and albumin/globulin ratio also showed results within normal limits. Agglutination studies for typhoid, paratyphoid, undulant fever, tularemia, and infectious mononucleosis showed negative results. His Wassermann test also indicated negative findings. Stool examinations for blood, ova, parasites, and pathogenic bacteria also disclosed negative findings. The Wintrobe erythrocyte sedimentation rate was 21 mm. per hour on admission and 28 mm. per hour on discharge. Chest x-ray films and electrocardiograms showed physiologic results.

Although the patient appeared to be comfortable, his temperature spiked to 103 F. daily for the first two weeks, at which time it became evident that he had several slightly tender, flattened nodules measuring 1.5 to 2.5 cm. in diameter over the anterior aspect of both legs. His temperature defervesced gradually during the ensuing three weeks and he was discharged during the fifth week feeling quite well. A biopsy (Fig. 1) of a nodule was reported as chronic panniculitis compatible with Weber-Christian disease.

His second admission to the hospital was three and one-half months after discharge. He stated that he had been asymptomatic for three weeks and then experienced intermittent recurrent bouts of chills and fever up to the time of this admission. In addition, during the previous week his family physician had noticed that he had jaundice.

A physical examination at this time showed essentially negative results except for an icteric tinge; a nontender, smooth, 4 cm. liver; and a nontender 2 cm. palpable spleen. No nodules

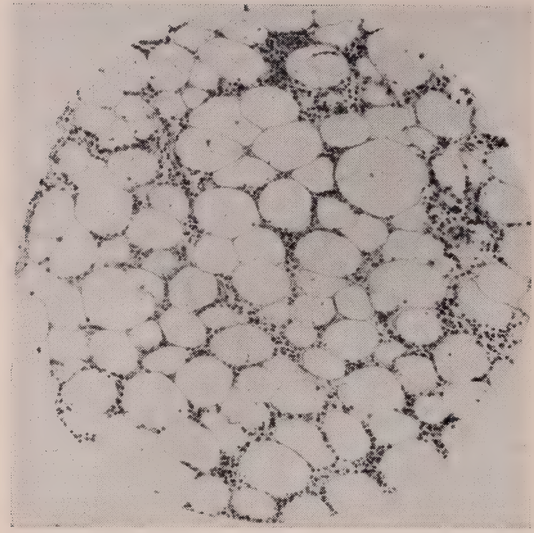

FIG. 1. *Case 1.*—Low-power view showing adipose tissue with chronic inflammation (× 100).

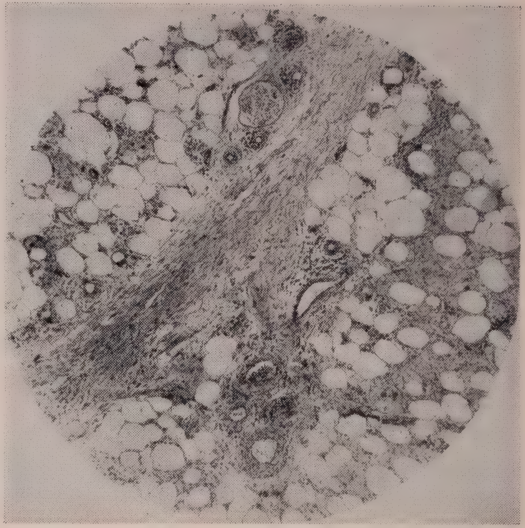

FIG. 2. *Case 1.*—High-power view showing chronic panniculitis and a strand of connective tissue (× 400).

were found at this time and no evidence of those nodules which were present on the previous admission was seen.

All the previous laboratory studies were repeated. The admission and discharge liver tests were as follows: cephalin flocculation, 3 plus and 1 plus; icteric index, 19.5 and 8.5 units; alkaline phosphatase, 18.2 and 17.2 King-Armstrong units; and urine urobilinogen, 1:10 and 1:20. The bone marrow study indicated essentially normal results, and no malarial parasites were found.

For the first five weeks of this admission he continued having daily chills and at times he had a temperature of 105 F., unaffected by a course of treatment with quinine and another course of treatment with salicylates. It was at this time that one of us found, on reviewing the old chart, that Weber-Christian disease had been suggested by the pathologist on the study of the first biopsy. Toward the end of the fifth week several slightly raised, slightly tender nodules appeared on both lower extremities, varying in size from 2.5 to 4.5 cm. in diameter. At this time the liver and spleen were no longer palpable and his temperature fell gradually to normal limits. A repeat biopsy (Fig. 2) was reported as chronic panniculitis compatible with Weber-Christian disease. He was discharged much improved on the forty-fourth hospital day.

Microscopically both specimens show a normal stratified squamous epithelium. Figure 1, first biopsy, and Figure 2, second biopsy, both show relatively the same pattern of adipose tissue with moderate numbers of lymphocytes, plasma cells, histiocytes, and embryonal fat cells. The second biopsy differs from the first in that there is, in addition, an area of dense connective tissue made up of fibroblasts with collagenous fibers.

The patient was re-examined three months after discharge and found to be in good health. His physical examination indicated negative results, no new nodules were present, and no skin depressions were found. A repeat study of his liver profile and pertinent blood studies including the agglutination test for Weil's disease showed negative findings.

On January, 1959, his family physician disclosed that the patient had lost little time from work. About twice per year he has had mild bouts of fever with an occasional nodule on his lower extremities which seem to respond to moderate doses of prednisone.

CASE 2.—A thirty-two-year-old female was sent to us on June 8, 1954, for consultation regarding recurrent "lumps" on her "shins" with fever. The history disclosed that she had had similar areas on her legs for four years, two years, and one year previously with a low-grade temperature. The areas were said to be slightly raised, hard, and slightly tender. They would disappear gradually, leaving depressed areas. In 1950 she had a benign thyroid nodule removed. The family history was noncontributory.

A physical examination revealed a well-

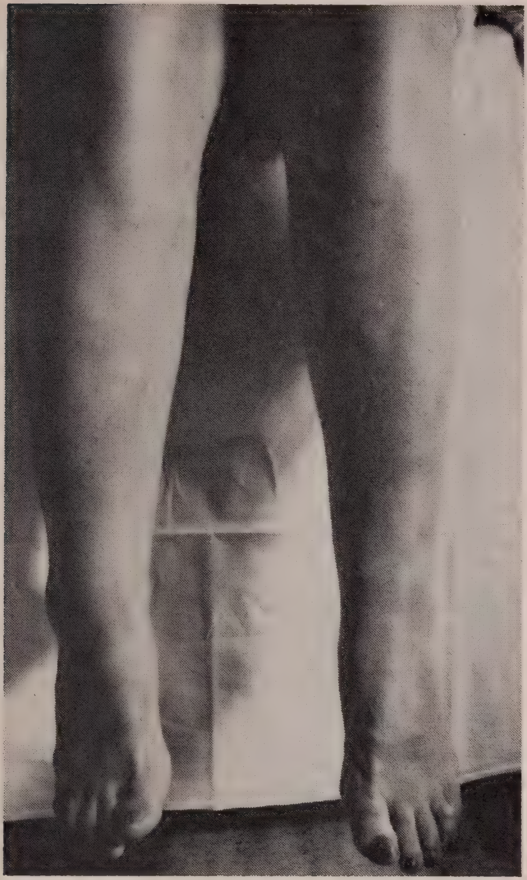

FIG. 3. *Case 2.*—Depressed areas and nodules on the lower extremities.

developed female appearing her stated age and in no acute distress. Her oral temperature was 100 F. and the remaining vital signs showed normal findings. The only noteworthy signs, besides a well-healed thyroidectomy scar and a chronic cervicitis, were confined to the legs which disclosed mild varicosities, good pedal pulsations, and numerous nodules and depressed areas. The nodules measured up to 5 cm. in diameter and were interspersed with varying-sized shallow depressions (Fig. 3). Her urine, blood count, electrocardiogram, and chest x-ray films showed negative results. A clinical diagnosis of Weber-Christian disease was confirmed by a biopsy of a nodule that showed chronic nonsuppurative panniculitis.

The low-grade temperature and nodules subsided in the ensuing three weeks. In a communication on January, 1959, the patient stated: "My ankles swell at times and occasionally I see a new lump, but I don't worry now that I know what it is."

Comment

All the criteria for Weber-Christian disease are in the descriptive title, namely, a relapsing febrile nodular nonsuppurative panniculitis.

In our review of the literature we felt that Shaffer[4] described his case in a most objective manner. In the title of his paper he states critically that his case is not Weber-Christian disease.

However, many other authors have presented cases of Weber-Christian disease which do not fulfill all the required criteria. Numerous cases have been reported as either Weber-Christian disease or Weber-Christian syndrome. For instance, along with the descriptive title of relapsing febrile nodular panniculitis, in which one or more of the criteria were absent, Blumenfeld[5] reports 2 cases: the first without relapse and the second with a suppurating sinus. Slepian and Walter[6] present a case with suppuration and admit that they do not include the term nonsuppurative in their title because they feel that nonsuppuration is not a constant feature of this syndrome.

Netherton[7] and Schwartz *et al.*[8] each admit the absence of one or more criteria for the diagnosis of Weber-Christian disease. Again, Eisaman and Schneider[9] described a case of nodular nonsuppurative panniculitis and state that their case was neither febrile nor relapsing.

In the previously-mentioned papers the diagnosis was based largely on the pathologic report of nonsuppurative panniculitis and in most instances it was qualified by the term Weber-Christian disease. It is impossible to diagnose Weber-Christian disease by microscopic study alone.

The diagnosis rests on the knowledge that microscopic evidence of nonsuppurative panniculitis exists together with the clinical features of relapse, fever, and nodules which do not suppurate.

We have found a good working classification of nonsuppurative panniculitis by Beerman[10] who quotes Baumgartner and Riva.[11] We include this with some practical modifications:

1. Secondary panniculitis as seen in association with inflammatory or malignant disease.
2. Traumatic panniculitis where due to subcutaneous infections or direct trauma.
3. "Spontaneous" circumscribed nonsuppura-

> tive panniculitis: a group in which two entities may be distinguished: Weber-Christian disease and Rothmann spontaneous panniculitis.[12]

The Rothmann group is heterogeneous and includes cases of nodular panniculitis that are not Weber-Christian disease, lacking one or more diagnostic criteria. They are identical histologically to Weber-Christian disease. Adherence to this classification would facilitate the appreciation of the various types of panniculitis and hence depict accurately the true cases of Weber-Christian disease.

Summary

1. Two cases of relapsing febrile nodular nonsuppurative panniculitis (Weber-Christian disease) are presented. One case has been followed for nine years.

2. A review of the literature disclosed a number of cases which do not present all the criteria for Weber-Christian disease probably due to the unawareness of the existence of a suitable classification.

3. A practical working classification of nonsuppurative panniculitis is submitted.

ACKNOWLEDGMENT.—We wish to thank M. A. Cavouti, M.D., of Glen Cove, New York, and A. G. Stola, M.D., of Merrick, New York, for their cooperation in the follow-up of these cases.

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Use of Prophylactic Antibiotics Questionable in the Prevention of Wound Infection

That the prophylactic use of antibiotics in clean surgical cases to prevent possible wound infection is of questionable value has been suggested by numerous investigators. A study carried out over a one-year period of surgical complications in all patients who were hospitalized for longer than two weeks confirms these findings.

Of 60 cases of postoperative wound infection that occurred in clean cases, 31 received prophylactic antibiotics. Of these 19 developed mild infections and 11 severe infections. In 25 such cases (that is infections occurring after procedures) not given antibiotics prophylactically, 18 had mild infections and 6 developed severe infections. (The apparent statistical discrepancy is due to the fact that 4 cases were excluded, 3 because antibiotics had been given not prophylactically but for associated infections, and 1 patient who had pulled out his drainage tube.)

The author concludes that in view of the findings in this hospital and elsewhere it appears that the "antibiotic umbrella" which was intended to protect patients undergoing surgery can hardly be effective. Rather than risk the danger of side reactions and the nurturing of resistant strains of organisms, he says, the surgeon had better depend on time-tested aseptic technics rather than the uncertainties of the antibiotic umbrella.—*Harper Hospital Bulletin, January-February, 1960, Daniel Schecter, M.D.*

SECOND REGIONAL CONFERENCE ON MEDICAL SERVICES

Arranged by the Special Committee on Resolution 58–49,
"Medical Care, the Job of the Medical Profession,"
Medical Society of the State of New York

GEORGE J. LAWRENCE, JR., M.D., *Chairman*

Health Insurance—Professional Controls

PAUL I. ROBINSON, M.D., NEW YORK CITY
(*Medical Director, Metropolitan Life Insurance Company*)

THERE is real interest in health problems among our people today as a result of the rapid strides in medical research and the public's realization that many maladies can be alleviated by high-quality professional care. These developments have been emphasized by the fine performance of our profession during World War II and the Korean conflict, when many of our young people came face to face with injury or illness which required the best of medical skills, and by the rapid dissemination of information on new and dramatic health advances by our newspapers and popular periodicals, as well as in our professional literature. This interest has been taken up by our labor unions who represent large groups of people and thus influence to a great extent health plan ideas for all of our people. Industry, having a humane interest in people and an intense interest in uninterrupted production, also is a champion of skillful, prompt, and efficient medical care. The medical profession through its associations and agencies is endeavoring to solve the educational problems so necessary to the maintenance of high standards of medical care. Hospital administrators and professional staffs of hospitals devote much thought and effort to establish procedures, routines, and methods which will improve the quality and efficiency of performance within the hospital.

Pervading all this interest on the part of physicians, hospital administrators, industry, and labor leaders is the matter of cost. Because of public demand, the insurance industry and Blue Cross and Blue Shield and other prepayment plans are endeavoring to meet the costs of rendering medical care from premiums which are having to be raised periodically and proportionately because of the rising costs of medical care. Thus, the insurance industry, the State insurance commissioners, the Blue Cross and Blue Shield Commissions, and associations representing the group practice plans are all

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Presented at the joint annual meeting of the Fifth and Sixth District Branches of the Medical Society of the State of New York, Syracuse, New York, March 12, 1960.

concerned with costs and cost control mechanisms. It is correct to say that all favor just and fair charges but oppose any unnecessary costs.

The immediate problem of the medical profession, the hospital administrators, and the professional staffs of hospitals is to equip themselves in such a way that they can assure the people that there are no unnecessary costs, that charges are reasonable, and that medical care is being dispensed in a thoroughly efficient manner. All this has been said in many ways, and we all recognize, to a greater or lesser degree, its truth. Many have said that the alternative to a solution of the problem by the profession is government medicine. This would mean of course that some government agency would inherit the whole problem and go about trying to solve it, resorting when necessary and appropriate to legislation. We in the profession and we in the insurance industry do not feel that the latter step is good or that it is necessary. We firmly believe that mutually we can solve this problem.

If we could look ahead for twenty years, we would want to see and probably will see the following:

1. Solo practice continuing but diminishing and group practice providing more of the medical service. Group practice has the potential of ministering to more of the patient's needs at a more reasonable cost in one location. Good transportation and the location of clinics and hospitals in suburban and smaller communities contribute to this trend.

2. Many more of our people will have made provision for their medical care by insurance or prepayment methods, either through group or individual coverage. They will demand that the health coverage they purchase or receive as a fringe benefit pay a substantial part of the cost of their medical care.

3. Health insurance will have developed and improved. It will be more flexible. It will be more comprehensive in nature. It will extend to office and home care and will provide for diagnostic procedures outside the hospital. There will be fewer inadequate accident and sickness coverages.

4. Medical knowledge will have increased enormously, and new technics will have been developed. Shorter periods of hospitalization and realistic periods of convalescence will be in vogue.

5. Physicians will have developed criteria for their charges and mechanisms for control.

6. Hospitals will have developed methods for elimination of inefficient practices.

7. The medical profession, hospital administrators, and those paying for medical care will be continuing their efforts to perfect and administer controls to eliminate unnecessary hospitalization, unwarranted surgical procedures, inapplicable diagnostic tests, unrealistic hospitalization periods, prolonged unneeded convalescence periods, and other practices which obviously are of no benefit to the patient but which contribute to excessive costs.

At present in almost every group there are differences of opinion about the importance of the trends in medical economics which the picture just described indicates for the future. To many people the changes needed to guide medical practice into such a pattern are distasteful. Leadership within the profession may be hard to find because of the radical changes required to bring this situation to the fore of our thoughts. Yet it seems to be inevitable that these changes must take place in order to avoid a far more distasteful eventuality.

"Controls" is a harsh word. It connotes a superior, with everyone being forcibly required to follow a dictum. But it seems that there must be some control mechanism if the public is to be convinced of the fairness, justness, integrity, and ability of our profession in its rendering of medical care. It is hoped that the profession itself will establish this mechanism.

The question is often asked, "What is the matter with the system of charging whatever the physician feels the patient can afford to pay?" Nothing is the matter with this system, except that when patients are insured, there is too great a tendency for many charges to be more than the patient is able to pay. This fact has of course been documented and published many times.

Fixed schedules of allowances have been used by insurance companies as limits or statements of allowable benefits. They make a convenient mechanism but have not been without faults. In many cases they are inadequate and do not provide the patient sufficient coverage to enable him to pay for his medical service. In other cases they are too liberal, permitting the physician to charge more than his regular fee or allowing the patient actually to pocket money as a result of his illness.

Relative value studies have accomplished a great deal in relating the value of one surgical procedure to another. They have also been useful in the fields of general medicine, psychiatry, x-ray, laboratory procedures, and anesthesia.

Maximum schedules were negotiated for Medicare. The use of these schedules, however, depended on the interest and actions of the Medicare committees of the state medical associations and the backing they received from the government administrators of the program. Here, schedules of allowances and adjudication and control committees were combined to formulate a program which is universally accepted as successful. Even with strong committees, however, experience revealed that the cost of the program was less in states where the schedule was not published and physicians charged their normal amounts without being influenced by a maximum schedule.

Usual, reasonable, and customary charges with no schedule of allowances are now being used by insurance companies on their major medical and comprehensive policies which incorporate deductible as well as coinsurance features. The theory behind such policies is that if an individual has a financial interest in his medical care costs, he will make an effort to determine whether the physician's charge is usual, reasonable and customary. Still in a sufficiently large number of claims the charges so far exceed those ordinarily received by the insurance companies writing this type of coverage that there is concern over whether or not the charge is actually usual, reasonable, and customary. And this leads us back to the medical profession as a source of information.

Grievance committees, which have been in existence for a number of years, serve as a panel to which individuals may take their complaints about charges and service. Insurance companies have had difficulty in presenting their cases to these committees because the individual patient many times is perfectly happy and has little or no pecuniary responsibility for his medical care. Furthermore, there is fear of libel action, and this deters the companies from submitting cases.

Review committees are being established in a few areas, and insurance companies may submit cases to these committees with identification of patient, physician, hospital, or insurance carrier for advice on the usual, reasonable, and customary charge in individual cases. The physician may choose not to accept the named amount, but the insurance carrier can settle on the basis of the amount indicated by the committee as the usual, reasonable, and customary charge. It is true that this leaves the patient in a bewildered state, but he still has recourse to the grievance committee. This new development is one to watch carefully. It certainly has the potential of solving many of the problems of physicians' charges.

In discussing medical economics one always devotes more time than warranted to physicians' fees. Actually, serious overcharging by physicians is not too frequent. It is most difficult to deal with and causes great administrative expense which insurance companies wish to keep to a minimum. The factors in medical care which probably contribute to greater expenditure include such items as (1) two, three, or four days in the hospital prior to ordinary surgery (many times these days are Saturday and Sunday); (2) unusually long stays in the hospital; (3) hospitalization for minor complaints; (4) large sums for x-ray, laboratory, and incidental hospital service in hospital stays of one or two days duration; (5) laboratory procedures which appear to have no relationship to diagnosis; (6) apparently unnecessary surgical procedures; (7) long periods of convalescence for patients receiving benefits because of inability to work for sickness and injury reasons.

Much has been done by the medical auditing committees, the medical records committees, and the tissue committees to raise standards in hospitals accredited by the Joint Commission for Accreditation of Hospitals. Some have admissions committees which study the daily admissions to check the judgment of the admitting physician. Thus, steps have been taken in many hospitals to minimize unnecessary costs. Nevertheless, an enormous task still lies ahead, and it can probably best be performed by the actions of the professional staffs of the hospitals. It is possible that insurance companies and other prepayment agencies will have to furnish information to individual hospital staffs to expedite and further their studies. It is hoped that mutual experimental projects will be inaugurated and pursued.

One group of medical societies in this area has organized to meet the problems by forming (1) a censor committee to determine whether or not hospital audit, tissue, and utilization committees are functioning adequately; (2) a physicians' qualifications committee to determine which physicians have special qualifications; (3) a liaison committee to represent the county medical societies in problems and policies relating to insurance and prepayment plans and to act as an appeal group for the review committees which I have already described. The activities of this group deserve careful evaluation and trial in other areas.

We are not unaware of the fact that the insurance industry can learn from physicians and hospital administrators. To this end the Health Insurance Council has established national and local hospital and professional relations committees which can gather information and work on mutual problems. As a member of the New York State Professional Relations Committee, I am cognizant of the work being accomplished by meetings with the Committee on Economics of the Medical Society of the State of New York. Information on health insurance subjects has been presented in your official publications. Standard forms are in much wider use by the insurance industry throughout the State. Local activities of hospitals have been given support. Health Insurance Council members and representatives of individual insurance companies have participated in meetings and forums on medical economic subjects. In truth the insurance industry is anxious to work with the medical profession in an effort to solve our mutual problems and to avert actions which we both believe would not be in the best interests of all people.

Summary

1. Medical care plans show a definite trend toward a more complete and comprehensive coverage of the patient's actual financial needs.
2. Progress is being made by the medical profession in providing substantial information on customary and reasonable physicians' fees.
3. To avoid premium increases which are due to waste and inefficiency, positive action is required to prevent unnecessary hospitalization, unwarranted procedures, and prolonged convalescence, and this may require action by the professional staffs of hospitals over and beyond their customary activities.
4. Close cooperation between those who render medical service and those who administer the financial programs for medical care will bring about an earlier and more satisfactory solution of the problems at hand and provide a sound, permanent pattern for the future.

Organization for Professional Relations

JOHN CLANCY, SYRACUSE, NEW YORK

(*Director of Physician Relations, Central New York Medical Plan, Inc.*)

PHYSICIAN relations are the key to our whole performance in Blue Shield. The statement of our basic principles must be made clearly and precisely and must be repeated over and over again.

It has been proved that the public is interested in the product which you have to offer. The rapid growth of Blue Shield in the last decade has reached the point where nationally your plans offer some degree of protection to 44 million people. This testifies to the fact that the program is not only acceptable to the public but is looked on as a very desirable medium for prepayment for medical care.

We in the professional relations field try to keep alive the idea that the doctor-sponsored Blue Shield plans must be continued and courageously supported if the stranglehold of government red tape and interference is to be excluded from the private practice of medicine.

Blue Shield, therefore, has to be accepted and recognized as an economic compromise by means of which the profession, through its control of these plans, can protect and preserve the freedoms it enjoys in practicing medicine the way it chooses and by means of which major segments of our population can still continue to buy, through a voluntary prepayment system, the services they need to enjoy good health and a productive life without sacrificing their freedom to choose whatever physician they want to render these health services.

I am no authority in the field of economics, but I cannot help but feel that the profession will lose its time-honored prerogatives unless it can be prevailed upon to accept the Blue Shield plan as the only medium of compromise. In our area and I think in many areas throughout the country, most physicians in active practice are ready to accept Blue Shield on this basis.

I do not claim to be an expert in the field of professional relations. I would like to tell you about some of our troubles, however, and what we have done to correct them.

Here in central New York—and please keep in mind that my remarks are based on experience gained from developing and operating our own professional relations program—we have service benefit contracts and participating physicians. From the very inception of our plan we have enjoyed a high percentage of physician participation. This statement is supported by the fact that today 95 per cent of all practicing physicians in our ten-county area are participating. We soon learned, however, that participation and cooperation are not necessarily synonymous, and for years we were plagued by the same problems common to all Blue Shield plans.

About eight years ago it became apparent that some definitive action was absolutely necessary. Frankly, we did not know what to do or how to go about doing it, so we decided to initiate some diagnostic work. First we talked with hundreds of individual physicians and analyzed hundreds of letters of complaint. We examined our own procedures and policies including form letters and the processing of claims. In short, we attempted to do a thorough job of self-analysis. In time this diagnostic process made it very clear that the criticisms directed against Blue Shield in many instances were justified and were coming almost entirely from physicians who had never had an opportunity really to get acquainted with the plan into which they had breathed life.

Let me cite just one example. A physician was either asked or volunteered to enroll as a participating physician, following which a legal-looking form in duplicate was sent to him with a form letter, in which he was asked to sign the forms and return them to the Blue Shield office with a $25 enrollment fee. When these forms had been returned, he was mailed a large bulky envelope containing various and sundry pieces of literature and another form letter which said, "Thank you, Doctor, for your cooperation." In that letter we were expressing our thanks for cooperation which we had not received and which under the circumstances the physician could hardly be expected to give. Also included was a neat little brochure describing our claims procedure. I shall not attempt to explain that procedure because, frankly, I never quite understood it myself. Foolishly, we believed our responsibility ended withthe mailing of that envelope to the physician.

Please remember that up to this point the only thing this physician knew about Blue Shield was that it was some kind of plan for paying for some of the services which he might render to one of his patients. Maybe he had overheard another physician in the scrub room say that it must be all right because it was being sponsored by the medical society.

If and when this physician found time to read the voluminous literature which had been sent to him, he usually found it necessary to write a letter requesting clarification of several points which were not clear to him. Either one of two things could and did happen to his letter. In all probability the letter eventually found its way to the desk of a junior clerk, third class, who immediately decided after reading the first paragraph that it was not important enough to require an answer. If a reply was forthcoming, it was probably written six weeks later. The physician was irked by the long delay. Furthermore, he did not like the tone of the letter, and he never hesitated to tell other physicians what he thought of Blue Shield. This illustration is not farfetched or exaggerated. I could go on for hours relating similar situations.

Our diagnosis also revealed that the fault was not entirely on the side of Blue Shield. Frequently physicians were unnecessarily critical. Our letters requesting additional information often went unanswered. Medical service reports were submitted with incomplete and inaccurate information. We were told that we were enrolling too many people or that we were enrolling too few people. We were told that the fee schedule was too high or too low. From the surgeon we would hear that Blue Shield was being operated for the benefit of the medical men. From the internist we would hear that Blue Shield was being operated for the benefit of the surgeon. The anesthesiologists were convinced that Blue Shield was being operated for the benefit of everyone except the anesthesiologist. You know and I know that many of these complaints were unjustified, but they persisted nevertheless.

We had made our diagnosis, and as a result we knew we had to have more and better physician cooperation. Now we only had to write the prescription and take according to directions. But we asked ourselves, "How do you get physician cooperation?" The answer seemed very simple. By cooperating more with physicians? That to me was the magic elixir.

Now, you may ask yourself why should it be necessary to spend time and money educating physicians about a program which they themselves are sponsoring and over which they have control. I have only one answer to that question: "It's just good business, and the benefits which accrue to everyone concerned far outweigh the cost and time."

Proceeding on the basis that more cooperation with physicians meant more cooperation from physicians, we decided to launch a two-point program which can be briefly stated as follows:

1. Clean up our own back yard, and as far as possible remove all causes for criticisms and complaints.

2. Implement a campaign directed to the physicians and their secretaries by going to them and acquainting them with all aspects of the Blue Shield program; by seeking their advice and counsel; by meeting criticisms with frank and honest answers—and by frankly admitting it if we didn't have a good answer. In other words, we wanted physicians, not just the few chosen to be on committees, but all physicians to know what we were doing and why. They were entitled to know, and we believed it was our responsibility to take the initiative. After all we had no secrets.

At this time I would like to pay tribute to our plan's president, Dwight V. Needham, M.D., and its chief administrator, Mr. J. Campbell Butler, by telling you that my task in getting this program underway was lightened considerably by the fact that they were in complete agreement with the proposed program and gave me their blessing. I often took comfort in the knowledge that they were always close by for consultation and advice when the going became a little rugged.

Our first step in carrying out the two-point program required major changes in the claim operations. We staffed our department with conscientious, intelligent people, and a doctor was added to the staff. It is to his credit that our claims personnel at last understand the meaning and purpose of our objectives.

We revised form letters. The new letters were designed to avoid all extraneous and redundant matters, and above all they were courteous. Phone calls were channeled to someone who knew how to act in a tactful and courteous manner.

Our claim procedure was simplified. I would like to emphasize that our claim procedure was the source and cause of much imitation. The original system was made cumbersome by the fact that two forms had to be handled at two different times in the doctor's office before he could get payment. After several months of study we were able to produce a payment to the doctor on receipt of a single form. Each physician today has his own personalized claim forms with his name, address, and code number printed right on them.

So much for internal affairs. They now appeared to be in order.

The next step was predicated on the fact that most physicians did not understand Blue Shield. I was confident that many physicians thought that those charged with Blue Shield administration were little gods cloistered in ivory towers, devising rules and regulations, fee schedules changes, and four-part forms especially to make life miserable for physicians.

You know and I know that you cannot carry out successfully an undertaking such as that in which we are engaged unless there is mutual confidence and respect. We believed this confidence could be attained by better understanding of Blue Shield by physicians and by a better understanding on our part of the problems which Blue Shield imposed on physicians.

To accomplish this, Dr. Needham, Mr. Butler, Dr. Raymond E. Fenner, and myself have met with the county societies. Every aspect of the Blue Shield program was discussed, problems were explained, advice was sought, and objections and criticisms were answered. In fact, just in the last year this program was broadened. Two meetings were convened here in Syracuse attended by the plans' physician directors and the presidents and chairmen of the economics committees of each county medical society in our area. Primarily our purpose was to review the health care needs of the aged and to take preliminary steps to implement the recommendations of the American Medical Association and the Medical Society of the State of New York in this regard. These special meetings were acclaimed as very worth-while. Far more important, however, these meetings won the confidence of the physicians, and in my opinion confidence is the basis of good physician relations.

There was still another major problem which had to be solved. We all are aware of the fact that a physician's secretary can win or lose friends for Blue Shield. When a friend is lost, it is usually because the secretary does not understand Blue Shield and as a consequence she cannot give intelligent answers to questions from patients. In an attempt to correct this situation, we established an education program for medical secretaries.

The meetings are conducted in cooperation with county societies. The medical secretaries are given intensive training in Blue Shield technics, contract benefits, rules and regulations, fee schedules, proper use of the claim form, and every other phase of the program in which we believe the secretary should have a working knowledge. I cannot overemphasize the value of this program.

Earlier, I mentioned the very unbusinesslike method we formerly employed in enenrolling a participating physician. Those methods have been discarded. Today we accomplish this with a simple letter and card, and no longer do we require a $25 enrollment fee. We do try to make a personal visit to each new participating physician's office at which time he is given a thorough orientation in the "hows, whys, and wherefores of Blue Shield."

Another important part of our program is directed toward the hospital. It is here that we have enjoyed great success in contacting numerous physicians. We have merely duplicated the approach used by the pharmaceutical detail man. We set up a Blue Shield display and are available just to listen to criticism and answer questions about the product.

The program we offer the public in this area is representative of sound thinking on the part of our doctors. Here in Central New York, 95 per cent of our membership is covered by a service contract. Ninety-three per cent is covered by the following wide scope of benefits: surgical care, anesthesia, x-ray therapy, one hundred and twenty days of in-hospital medical care with a $50 additional allowance available for repeated or prolonged attendance of the attending physician, and diagnostic x-rays which are coinsured on a fixed fee schedule and can be rendered in the home, office, or hospital.

The fact that so many enjoy this wide comprehensive coverage naturally produces sound professional relations.

I would like to conclude by quoting from the paper given by Dr. Ira Layton at the Annual Conference of Professional Relations which was held in Chicago last February: "It is to the everlasting credit of the medical profession that Blue Shield was created. The scientific senses of medicine have become so acute and so constantly used that little time is left for the development of economic acumen. Blue Shield must serve as eyes to see the danger arising from a vocal minority of the profession who would maintain the status quo in the face of economic changes. It must be the ears to hear the rumors of the public before they become a roar. It must be the tongue to savor the sweet and sour of economic changes before the bite is swallowed. It must be the nose to detect the aroma of the social planners and bureaucrats, who would for selfish interests deposit their offensive socialistic excrement on the public and profession alike.

Blue Shield must be the touch kept gently and reassuringly at the public wrist, alerting the profession through the axones of communications to impending needs."

Physicians' Responsibility to Blue Shield[*]

CARL R. ACKERMAN, M.D., NEW YORK CITY

(*Chairman, Council Committee on Medical Care Insurance, Medical Society of the State of New York*)

THROUGH physician control of Blue Shield policy, the medical profession's expression of the best form of medical care under a voluntary health insurance system is presented to the public.

The traditional responsibility of medicine for the care of all the people is implemented by the broad community coverage policy of Blue Shield. The existence of Blue Shield with its principle of community coverage and its progressive attitude toward more comprehensive coverage sets a standard and encourages or influences others in the health insurance field to establish higher standards.

Blue Shield is the strongest bulwark protecting private practice, the principle of fee for service, and the right of the patient to select his own doctor. Without the existence of Blue Cross and Blue Shield and other types of health insurance coverage, state medicine would be imposed on the American public.

How then can the medical profession help Blue Shield keep strong and progressive and, above all, keep it the accepted choice of the public? There is a need, first of all, for continual efficiency and economy in the expenditure of funds. Of course, the occasional fraudulent practice must be attacked vigorously by both Blue Shield and the medical profession in order to protect the profession and to conserve the public's funds. Over and beyond such problems but within the scope of the high ethical standards of the medical profession, there is a need for the practicing physician to be cost conscious. Efficient medical care must include economic considerations.

Recommendations include (1) education of the physician, starting in medical school, regarding the economic aspects of medicine and (2) the establishment of county medical society "utilization committees." The function of such committees would be to review and correct instances of high cost and waste but without becoming involved in any implication of unethical practice.

Another area of physician help can best be identified by the statement of a principle: that medical policy as it relates to that part of a physician's practice which is affected by health insurance should be established by organized medicine—not by Blue Shield. Blue Shield should serve only as the instrument to carry out these policies.

At the present time, when special medical groups are making conflicting demands on Blue Shield, there is an urgent need to resolve these problems within the established framework of organized medicine. If this is not done, the profession will suffer the unfortunate consequences of fragmentation and disunity. Such a condition would invite outside control, to the detriment of the profession.

Every physician who agrees with the ideas expressed above can best help to promulgate these ideas by sponsoring Blue Shield and by actively recommending Blue Shield's community service program to their patients.

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[*] This presentation is a short summary of the talk given by Dr. Ackerman at the conference.

Medical Economics Applied to the Practice of Medicine

WARING WILLIS, M.D., BRONXVILLE, NEW YORK

(*Chairman, Council Committee on Economics, Medical Society of the State of New York*)

The discussion of medical economics applied to the practice of medicine must of necessity be limited to various trends of immediate importance to us today. The area is otherwise too vast, and our time this afternoon is limited. I would like at the outset to say that the members of the Committee on Medical Economics of the Medical Society of the State of New York are in need of closer communication with the county medical societies. I earnestly request that county society committees send us reports from time to time on their activities in this field. Because the Medical Society is a democratic organization, our actions on pertinent subjects is more often too late than too early. Whatever we can do to crystallize our thinking on the important topics affecting medicine today and to spur action will be to the advantage of the public and to ourselves.

The area of the practice of medicine encompassed by the term "medical economics" may be defined as that part which is concerned with the cost of medical care to the patient and the security which the delivery of that care earns for the physician. If we accept this definition, then it would seem that a study of the factors involved should bring out the aspirations of both the patient and the physician in the area of medical care. Future analysis should produce an achievement report to date and should highlight the areas to receive attention in the future. Similarly, differences between the dispenser of the services and the consumer should be defined and recognized for early resolution.

As I interpret resolution 58–49, it means that we in medicine should first agree on our aims for the more efficient delivery of good medical care to the public and then become leaders in the drive to attain these objectives.

We physicians consider ourselves best suited by experience and training to advise the American public on the standards of medical care they should accept, and we are quite willing to concede to business, labor, and the government on how best these aims can be attained. There are certain basic principles for judging any system of medical care: (1) the fee for service; (2) freedom of choice by the patient of his physician, dentist, and hospital; (3) freedom of the physician to choose to practice singly or in groups. Our first concern is with the cost of the physicians' services. The ancillary services, such as hospital and sanitarium care, rehabilitation services, pharmaceuticals, and appliances, are intimately related to medical care, but their economics are totally different and our control over them tenuous and divided. Separation of these two entities in the minds of the public, insurance carriers, governmental agencies, etc., is essential if we are to arrive at a satisfactory understanding of the cost of physicians' services.

At the risk of boring you, allow me to elaborate this point more graphically by quoting some significant figures: The bulletin of the Social Security Administration, dated December, 1959, as part of a series analyzing benefits under the health insurance plans, contains the following: "The Nation's private health bill climbed to a total of $16,400,000,000 last year or $95.65 for each person. The total was an increase of $1,000,000,000 over 1958. Hospital bills amounted to $5,400,000,000, and of this more than half $2,600,000,000 was covered by insurance. The public paid $4,362,000,000 for drugs, eyeglasses, and braces. In the same period, physicians collected for their services $4,300,000,000." This total does not include health expenditures of Federal, State, and local governments. These have been estimated at nearly five billion dollars a year.

Do we need more convincing evidence that the cost of medical services must be separated from the total cost of medical care? Today the physician and the patient are assailed by increasing economic pressure which threatens to interfere with the standards of good medical care. Food, hospital, and sanitarium care can be organized and regulated for more efficient performance. However, no amount of group effort has ever replaced the importance of the individual physician in the establishment of a diagnosis in any particular case and in supervising successfully the therapy. Group effort often stimulates the individual and improves his efficiency, but the group effort will never successfully manage the individual patient. Accordingly, the basic consideration and understanding in the cost of medical care is always the individual physician's services.

The cost of maintaining medical schools has kept many colleges and universities from adding medical faculties and has deterred those schools already functioning from expanding in keeping with the demands of the increasing population. The National Advisory Committee to the United States Public Health Service (the so-called Bane Committee) estimated that to maintain even the present "minimum" physician-population ratio, medical and osteopathic schools will have to turn out 11,000 graduates a year by 1975 or a 50 per cent increase over the current rate. This would call for major expansion of existing facilities and construction of from 20 to 24 new schools. The committee estimated one billion dollars will be needed for a ten-year effort and suggested that the Federal government put up half the money to finance the vast construction program with the states and private sources funding the rest. Some medical schools are now severely underfinanced, and a continuation of the situation will lead to "further deviation from the desirable standards of medical education." The committee warned, however, it could offer no "satisfactory way" in which the government could provide aid, insisting that the urgently needed increase in operating funds must come from the state, local, and private sources.

The rising cost of medical education is exacting a serious toll by excluding too many qualified students from lower income families. To meet the medical student's financial problem, the Bane Committee has recommended that the Federal government establish a program of grants-in-aid, "similar in value and proportionate in number to the grants now made to graduate students in other fields." It also called for (1) the government's "special consideration" of medical schools, so that the students can receive their fair share of loans under the Defense Education Act; (2) establishment of scholarship programs by the states, and (3) more assistance from foundations and industry.

The graduating class of 1958–1959 numbered 6,860. The total enrollment in first year medical school classes for the 1958–1959 academic year was 8,128, the largest to date in the United States. At least two thirds of the entering classes were "B" average students, about one sixth had college grades averaging "A," and about one sixth to one seventh had "C" averages.

To accomplish the needed expansion and at the same time maintain high standards of medical education represents a challenge at least as important as any problem facing medicine today.

The physician today is beset by economic vicissitudes from the outset of his medical education. Not only has his education become increasingly expensive, but the years of study required for qualification have steadily increased. Today few medical men feel adequately prepared for practice before age thirty. It has been estimated that it takes $47,000 to educate and qualify a general practitioner and somewhere near $67,000 for the specialist. (This includes tuition, books, internship, residency, loss of potential earn-

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The graduating class of 1958–1959 numbered 6,860. The total enrollment in first year medical school classes for the 1958–1959 academic year was 8,128, the largest to date in the United States. At least two thirds of the entering classes were "B" average students, about one sixth had college grades averaging "A," and about one sixth to one seventh had "C" averages.

To accomplish the needed expansion and at the same time maintain high standards of medical education represents a challenge at least as important as any problem facing medicine today.

The physician today is beset by economic vicissitudes from the outset of his medical education. Not only has his education become increasingly expensive, but the years of study required for qualification have steadily increased. Today few medical men feel adequately prepared for practice before age thirty. It has been estimated that it takes $47,000 to educate and qualify a general practitioner and somewhere near $67,000 for the specialist. (This includes tuition, books, internship, residency, loss of potential earnings, but not living expenses.)

The responsibility for the medical welfare of his patient is the constant concern of the doctor, and the hours expended by the physician exceed those of any comparable group in the community. The physician, because of the economic pressure today, finds himself without the security in the retirement years which is obtained by his neighbors and friends employed in other fields. Despite the cooperation of small businessmen and other professional groups, we have been unable to secure passage of enabling legislation permitting the deduction from income of small amounts each year to be invested for retirement. However, the more favorable consideration of the Simpson-Keogh Bill by the last session of the Federal Congress leads us to feel that passage may be possible in a future session of the Congress.

Your Medical Society of the State of New York House of Delegates has now for two consecutive years voted in favor of the request for inclusion of physicians in the social security system. To have any prospects of favorable consideration, this request must be advanced by the A.M.A. on behalf of doctors throughout the entire country. As recently as June, 1959, your delegates to the A.M.A. were unable to convince their confreres from other states of the desirability of this action. Your delegates are still charged with this responsibility and will wait for a suitable time to reintroduce this matter.

The House of Delegates further directed that your Society support a bill permitting the issuance of group life insurance policies to members of societies not group-employed on a true group basis with all the inherent advantages. Again this proposal was defeated at the last session of the Legislature.

We have been greatly handicapped in the past in our negotiations with insurance plans, government departments, compensation boards, etc., by the lack of unanimity among ourselves concerning the relative value of one medical procedure or service as compared with another. Consequently, we have many fee schedules in force in this State with only recognizable relationships to one another. In 1954 the Medical Society of the State of California, after much study and expense, arrived at a relative value schedule which has since been adopted almost entirely by Kansas, Iowa, Montana, Nebraska, and the District of Columbia. To set up a relative value schedule, doctors were divided into four categories according to specialties—medicine, surgery, pathologic procedures, and roentgenology. Questionnaires were sent out to physicians who were asked to place their average fee opposite the various procedures submitted. When the returns were in, the top and bottom 10 per cent of the fees quoted were discarded as not realistic and possibly expressing unusual attitudes. The mean and the mode of the remainder were then calculated. Thus dollar values were established for all procedures.

The typical fee for a basic unit of service, such as a routine office visit, was calculated, and this was accepted as one point or one unit in the relative value scale. If a typical fee for an office visit was five dollars, then the division of other fees by five would obtain the relative value of the service. The procedures were assigned a standard code number, and a definite nomenclature was adopted which detailed, in addition to the procedure, how much pre- and post-treatment attention was included in the fee. The California schedule has four categories. The value in any one category does not relate to the values in another. The reason for this is to protect the pathologists and radiologists who have higher overhead expense.

Relative value schedules are not static and must be revised from time to time. Only by use and constant revision can any inequalities and shortcomings be corrected. Furthermore, highly specialized services done by few physicians tend to become more frequently performed as time goes on, and accordingly their relative value drops. Relative values can be set up by a state society and apply equally to both metropolitan and rural areas. In each case the relative value is the same, but the dollar value of the unit varies. Relative value schedules are not fee schedules and only become such when a dollar value is applied to the unit.

The Committee on Medical Practices of the A.M.A. has stated that it is up to us as doctors to provide realistic guides to health insurance plans. Either we do this ourselves, or it will be done for us by agencies less qualified. At present health plan payments often bear an unrealistic relationship to the physician's actual charges. This results in economic injustice for the physician and the insured. The public is able by a relative value schedule to understand the basis of physicians' charges, and therefore, dissatisfaction and misunderstandings are avoided. Unless we provide standards for health insurance plans, medicine runs a risk of alienating public opinion and losing its bargaining power with other agencies, private and governmental, which are engaged in financing the costs of medical care to the public. The relative value schedules have in some instances discouraged unions from setting up their own closed panel systems. The Council of the Medical Society of the State of New York is in the process of considering such a study in the State of New York and of estimating the costs and mechanisms involved.

I have already stated that we must emphasize the difference between medical fees and the cost of medical care. It would seem to be pertinent here to mention a problem that is outstanding between hospitals and the practicing physician. The American Hospital Association at its last annual meeting in New York reaffirmed the hospitals' right to employ physicians, and it set up a firm national front against assaults on the salaried practice by the College of American Pathologists and the American College of Radiology. The A.M.A. at its House of Delegates meeting on December 4, 1959, also reaffirmed the 1951 "Guides to Relationships Between Physicians and Hospitals." Key points of these guidance rules are as follows:

1. "A physician shall not dispose of his professional attainments or services to any hospital, corporation or lay body by whatever name called or however organized, under terms or conditions which permit the sale of the services of that physician by such agency for a fee."

2. "Where a hospital is not selling the services of a physician, the financial arrangement if any, between hospital and the physician properly may be placed on a mutually satisfactory basis. This refers to the remuneration of a physician for teaching or research or charitable services or the like. Corporations or other lay bodies properly may provide such services and employ or otherwise engage doctors for those purposes."

3. "The practice of anesthesiology, pathology, radiology, and physical medicine are an integral part of the practice of medicine, in the same category as the practice of surgery, internal medicine, or any other designated field of medicine."

It is entirely in keeping then that the radiologist and the pathologist request that their services be transferred from Blue Cross to Blue Shield. If this was accomplished and if diagnostic procedures were covered in doctor's offices by Blue Cross and Blue Shield, many unnecessary hospital admissions would be cut drastically to the benefit of the cost-ridden Blue Shield plans. The cost to the subscriber would also be reduced since skyrocketing, uncontrollable hospital expenses would be curtailed.

While not the sole responsibility of the physician, the adequacy of the Blue Cross program to meet the needs of the public and the profession is of vital importance. Like all medical cost plans, progress in this field has only been as fast as experience could be gained. However, it would seem now that accelerated progress is of great importance. There are advance notices that government may step into the picture. This has already taken place in the hospital field in Canada. Keeping in mind the possible necessity for division of Blue Cross and Blue Shield plans, it would seem that there could be little objection to the consolidation of the nation's

80 Blue Cross plans and 70 Blue Shield plans. The vice-president of Blue Shield of Northeastern Ohio, addressing the A.H.A., suggested that the two plans be consolidated. The purpose of the new organization would be to offer comprehensive benefits to all ages and groups, including unemployed and retired persons on a community-related basis. Moreover, he suggested that provision be made for the indigent through contractual arrangements with local governments. The hospital benefits he proposed included the following:

1. Hospital services to outpatients.
2. No limitation on inpatient care.
3. Unlimited x-ray and laboratory service and no restriction on drugs.
4. Extension of coverage to cases involving communicable diseases, such as tuberculosis, as well as nervous and mental conditions.
5. No limitation on the number of hospital days, length of stay to be at the discretion of the attending physician.
6. Provision for home-care programs including visiting nurses services.

The statement by Arthur M. Browning, vice-president in charge of group insurance for the New York Life Insurance Company, that "the public is not so much concerned with the costs as it is with the benefits it is getting from its health insurance dollar," is worthy of careful examination and might help us in our thinking on this subject. Jerome Pollack, Veteran Health and Welfare Negotiator for the United Auto Workers, AFL-CIO, said there are three pressing needs in the insurance field: (1) more comprehensive coverage, (2) more lay representation on prepayment boards, and (3) more economic control by the doctor.

The public is asking to buy adequate medical services. We are in the field to sell them. Surely we can reach a bargain satisfactory to all.

The State Medical Society's House of Delegates has declared its opposition to the payment of fees to residents by health insurance plans. The Association of American Colleges at its annual meeting in Chicago in the summer of 1959 adopted a statement of their views on this matter, which should be known to each of us. The association maintains that the collection of fees for services rendered to patients by residents is proper, provided:

1. The volume of such medical services is related and limited by the primary objectives of the program—education and training.
2. The residents, in the judgment of the physicians directing their education and training, have reached a stage of competency adequate for assumption of appropriate responsibility.
3. The patients served have given their consent to care by residents.
4. The residents are licensed to practice medicine in the state in which the hospitals are located.
5. The fees paid by the patient, or on their behalf by third parties, for care rendered by residents were deposited in a separate fund or funds administered by the physicians in charge of the residency training programs and do not accrue to the general operating income of a hospital, medical school, or university.
6. The deposit of such fees in such a fund or funds is specifically authorized by the residents as part of their contract with the institution in which they serve.
7. They are expended only for the benefit of the residents and are not utilized as a device to reduce commitments normally made to residents by institutions with approved residency training programs.

This statement will go to the Association of American Medical Colleges-A.M.A. liaison committee. This controversy between physicians must be resolved for the good of medicine and the public.

You have already been informed through the *Newsletter* that as of January 1, 1960, the Department of Defense has restored many benefits to Medicare which were withdrawn on October 1, 1958. The program was expanded because Congress last summer voted the full 88.8 million dollars sought to run Medicare. Under the new system dependents living with sponsors must use medical facilities unless they are certified to be unavailable. Spouses and children residing apart from the sponsors will continue to be allowed selection of either uniform services, medical facilities, or civilian medical sources for care authorized under the program. Recently, your administration of Medicare, which is under Mr. George P. Farrell, Administration Officer, was audited and reviewed by three United States governmental agencies and was commended as being one of the outstandingly administered units in the country. As one of your officers for adjudication claims, I must say that your cooperation and moderation has made our work extremely easy.

One of the most upsetting problems facing the practicing physician today is the frequency of malpractice actions and the astronomic rise in the awards made by the courts and juries. Many reasons have been given for this rising problem in medicine, but generally the index has followed in public liability insurance. The public has become suit-conscious, and possibly the final solution will be for bodily injury suits to be indemnified by some such mechanism as is used in workmen's compensation without regard to negligence. Adequate malpractice insurance coverage is essential for the practice of medicine today, the limits depending on the type of practice, specialty, and location of the practice in the State. Coverage by all members of a community or hospital by one insurance carrier is advisable for more efficient defense since most suits involve more than one physician in an area. The participation of several physicians with their individual legal counsel in one suit has been considered in some quarters as the reason for loss of the suit or for the excessive judgment awarded. Because of the loss experience many insurance carriers have given up medical liability insurance, narrowing the field and increasing the rates to almost prohibitive levels.

Some years ago there was an exodus of members from the Medical Society-sponsored group to plans offering coverage at much reduced rates. Their experience has been sad! Not only has at least one company in this field passed into receivership, leaving the insured saddled with litigation without protection, but others have refused to insure clients after one bad experience. Others have been forced to raise the premium beyond reasonable rates. The number of applications being received by your Society-sponsored plan today is greater than ever before. However, by action of your House of Delegates all reapplications must be investigated for loss experience while out of the plan and approved by your Malpractice Insurance and Defense Board before reinstatement.

The following points about your Society-sponsored malpractice insurance plan deserve emphasis at this time:

1. The Group Plan master policy has been revised to provide broader protection than ever before.

2. The revised classification system will result in a more equitable distribution of premium costs among the different specialties and types of practice.

3. Group Plan rates are no higher than necessary to provide the quality of protection by Society members. They are approved by your Society on the recommendation of the Society's actuary following his annual audit of our loss experience.

4. The cooperative effort of our insurance carrier, our legal counsel, and the county society malpractice and defense committees results in the strongest possible defense of malpractice actions.

5. The Group Plan is the only insurance plan that guarantees an insured member will be defended by the Society's legal counsel.

These are some of the factors that make the Group Plan one of the valuable privileges of membership in the Medical Society of the State of New York.

We have, by virtue of our trust, closer relations with the individual and the family than any other group in this country. It is our one aim to merit their confidence.

What is Labor's Attitude Toward Health Insurance?

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In this paper I shall try to present organized labor's attitude toward health insurance by direct quotes from a number of the leaders of organized labor. Second, I shall attempt to show the vast number of our citizens who come under the control of labor policies in New York City alone, and third, I shall say a few words on what we as physicians may do to alleviate a situation which is constantly worsening.

Jerome Pollock of the Automobile Workers Union says: "Many hospitals and physicians regard their respective plans as their own property . . . presenting the plans on a take-it-or-leave-it basis. Medicine should do for health insurance what it has done for medical education and high standards of practice. The economic fate of the medical profession is irretrievably tied to health insurance."

Martin Rarback, Painters District Council Number 9, said: "When a worker has insurance, it is an invitation to the doctor to charge more. The idea that people will run en masse to doctors is ridiculous. The reverse is true. We have to force our people by various means to go to medical centers or doctors to get preventive examinations and even be treated for ailments that were obvious even to a layman."

Louis Rolnick of the ILGWU, said: "We are, in effect, asking the medical profession to sit down . . . and bargain with us in good faith. Do not tell us that you will approve this and not approve that. We have enough facilities today to provide for ourselves and tell the medical people, '*You* take it or leave it,' and we can find enough doctors with enough social interest to participate in it. . . . We are asking the medical profession to participate with us in a program which will provide good quality medical care on a comprehensive basis at a cost which could be met by the average consumer and to stick by the agreements they make."

W. F. Schnitzler, of the AFL-CIO, said: "American labor presumes to speak for more than its membership . . . we represent at least 50,000,000 (members and their families). Labor is not bargaining for higher welfare contributions in order to insure doctors and hospitals for payment. . . . We seek the elimination of any and all economic barriers to needed medical care. Facilities and personnel must be organized. . . to encourage the provision of high quality care and to make the costs . . . reasonable. The role of the hospital as a potential medical center for the community is receiving a great deal of attention . . . and we greet this development too."

Al Hayes of the IAM, asserted: ". . . it is about time to change the emphasis from what the doctor wants us, the consumers, to have in prepaid health care, to the kind of care we want and sorely need."

Leonard Woodcock, of the UAW, has said: "Labor . . . is participating in medical affairs to fill a vacuum in present day medical policy. When labor finds it necessary to organize programs of its own, it is accused of trying to dictate to the medical profession and to the hospitals."

Nelson Cruikshank, of the AFL-CIO, has stated: "The present dismal state of health care for senior citizens can be improved only through a program that will make broad benefits available to virtually all the aged in our country, with costs shared by employer and employe, and fully paid at the time of retirement." In one word "Forand."

David J. McDonald, of the U.S. Steel Workers, has said: "The present costs of Blue Shield and Blue Cross have reached the point where any further increases will be strenuously resisted by subscribers.

"For years our organization has tried without success to obtain the cooperation of the leaders of organized medicine for the establishment of a fully prepaid system of meeting the costs of medical bills. So far my pleas have fallen on deaf ears.

"I believe the cost of medical care and of hospital costs . . . must necessarily increase. At the same time the future will bring increased medical care needs and standards, and we may expect a tremendous growth in the number of retired, a group which can afford little or nothing by way of medical care payments.

"Hospitals and medical practitioners face an ever-mounting burden of free care unless prepayment insurance is extended universally to all unemployed and aged persons. This can only lead to eventual bankruptcy. Industry must assume its proper responsibility by developing prepayment medical care programs for their laid-off and retired employes.

"Our present system of medical care cannot continue if it cannot support itself. If we wish to preserve that area of medical care which can operate by private financing we must recognize . . . government responsibility in (*a*) new hospital construction, (*b*) prepaid insurance for social security beneficiaries, (*c*) education of medical personnel, and (*d*) care of the indigent.

". . . The question is . . . whether the men of medical science can meet the organizational and financial problems of their profession with that detached and scholarly view which is so necessary for sound solutions."

From the VAW, General Motors Council: "Many doctors are unwilling to accept the simple fact that a dollar paid through insurance should have the same value as a dollar paid directly out of the worker's pocket.

From the summary of Ben Goodkin of U.M.S.: "Unions are looking with favor upon group practice programs.

"Labor looks with favor upon dual choice of plans, i.e., open and closed panels.

"Voluntary (medical care insurance) medicine has been a middle class movement. When its service features are geared to the level of poverty, it fails to serve the majority of subscribers. Union medical centers are multiplying; they should be consolidated to eliminate duplication of facilities and services."

More than one-half million workers and their dependents are now eligible for services by union and management health centers in New York City. Another half million dependents will be eligible in the near future if only five of these union health centers open their doors to dependents of members.

For example, the union medical center of Local 32B has 37,000 eligible members for service. Each member averages three dependents; this will raise the number of eligible individuals to 111,000. The Hotel Trades Union has 38,800 members. Each member averages three dependents, which will raise the number of eligible individuals to 116,400. The ILA in New York has 69,000 members; times three will raise the eligible individuals to 207,000. The United Wire Workers Union has 5,000 members; three times this number will raise the eligible individuals to 15,000. The Sidney Hillman Health Center has 34,000 members; three times this number will raise the eligible individuals to 102,000. The total comes to 550,400.

The New York Shipping Association broke ground for a three-story medical center in December, 1959, for the provision of free medical care to longshoremen and their dependents. This group represents 170 steamship and stevedore companies, some 69,000 members.

All these figures are based on a survey conducted by the Bureau of Industrial Health and Workmen's Compensation of the Medical Society of the State of New York in 1958.

There is also evidence that a number of union health headquarters give some sort of medical advice or service. Some unions have contracts with individual physicians or groups of physicians which are now coming under the scrutiny of the State Insurance

Law. Of course, the Health Insurance Plan also participates in a closed panel practice of medicine for union members.

Your attention is called to the Humphrey Bills (S. 2009) which is intended to provide long-term, interest-bearing loans for the building and equipping of health centers financed by prepaid plans. Loans would finance 90 per cent of the cost of building and equipping centers for group practice. This bill provides for the administration of this loan service by the Surgeon General. S. 2009 lays down these requirements:

1. Evidence of local interest and financial support for a prepaid health service plan.
2. Organization which gives control over professional services solely to professional personnel.
3. Administration by a governing board with a majority of lay representatives.
4. Methods of compensation on a basis mutually satisfactory to the professional personnel and to the governing board of the plan.
5. In emergencies the plan's services to be available to any community resident for fair compensation.

Considerable interest has been shown in the recent announcement by the New York City Central Labor Council of the formation of a Hospital and Medical Care Committee to study the possibilities of building union-owned hospitals and medical schools in an effort to combat the "runaway costs of hospitalization, medical services and drugs."

On December 4, 1959, this group presented this "critical situation" to Senator George Metcalf, chairman of the New York State Senate Committee on Public Health, and the proceedings were recorded in the December 14, 1959, issue of "Hotel," the weekly newspaper of the Hotel Workers of New York. It was emphasized by several prominent labor spokesmen that the unions' concern over rising costs was "not limited to possible disastrous effects on their own welfare funds, but extended to the entire community . . . . Particularly alarming is the situation of retired workers and the unemployed."

Indemnification of hospitals to prevent further increases in hospital charges was urged; otherwise long-established (union) welfare programs may be curtailed which would force many people to apply to public agencies for the hospitalization and medical care they cannot afford.

Jay Rubin said: "An increase in the costs of welfare plans of 10 per cent a year is predicted for the next five years on top of the huge increases that have taken place." As an example he cited the Blue Cross hospitalization features of the program under the hotel industry agreement. In 1945 the average monthly cost for hospitalization was a dollar for each individual and two dollars for a family. In 1959 the cost was $2.61 per individual and $6.60 per family.

He pointed out: "The over-all increase in the health program through this period has been 150 per cent . . . In addition to hospital room prices, which have risen spectacularly, there are enormous increases in the prices of drugs, the doubled and tripled fees of physicians, the practice of adding anesthesia to hospital costs as a separate item. Many workers feel they have to go into wards because they can't afford to pay the charges of the anesthetist.

"It is clear that the problem of providing adequate health care for people, at a cost within their reach, is too big to be handled privately—that it must become the concern of Government at every level.

Rubin summed up the four areas where the State should become seriously concerned: (1) retired workers, (2) unemployed workers, (3) welfare funds (State aid to hospitals), and (4) comprehensive programs to cover six million workers in one health insurance plan.

Another member of the Hospital and Medical Care Committee of the Central Trades Council, Louis Hollander of the Amalgamated Clothing Workers Union, said that the Rockefeller administration had "a golden opportunity" to do something constructive on health insurance and restore the State's leadership in social legislation. He reported that Amalgamated has its own program now; self-insured health insurance, plus health centers. "But in Syracuse and Rochester the union has not been able to establish health centers because of the opposition of medical societies," he added.

It was reported that the ILGWU in New York has been faced with increases for Blue Cross and Blue Shield amounting to nearly $1,000,000 a year for coverage for 55,000 members. "Such fantastic cost increases demonstrate that however hard an organization tries to make health insurance work on the basis of voluntarism—without help from the State—it doesn't and can't work."

Morris Iushewitz, secretary of the Central Labor Council, told Senator Metcalf, "The voluntary system of health insurance is on the verge of bankruptcy because of rising costs." He asked of employers' representatives: "How can you go on paying lip service to an empty slogan of voluntarism and free enterprise?"

Now for a suggestion or two. The medical profession must "stick together" as individuals, as groups, as organized representatives. Once a policy is set by a representative medical society, the members *must* back it up since it is the will of the majority. Petty squabbles between specialist and specialty, general practitioners and specialists, must be settled within the family. The recommendations of the medical society should be strengthened. The administration of an organization representing the practicing physician is no game for amateurs and should be put in the hands of real "pros." Unions do not use amateurs in any negotiations they enter. Consideration should be given to strengthening the actual constitutional structure of the medical organizations since monthly stated meetings are not attended by a representative group of the practicing physicians, and in many instances a quorum is not available. It is possible that the county medical society should have an active executive body with an annual meeting of the entire society.

Labor unions are here to stay, and so is organized medicine. Can they be immovable bodies? To be able to work together these two organizations must understand each other. There must be a free flow of communication between labor and medicine, as well as between management and medicine.

The medical society's power to discipline its membership is extremely limited, and this power is being challenged repeatedly. For example, the Medical Practice Committee of the Workmen's Compensation Board has taken on the duties of the medical societies in workmen's compensation matters in counties where the population is over one million. The threat of lawsuits by ousted members stay the strong hand of medical organizations. The challenges by organized groups that provide medical services further embarrass the authority of the medical society. Authority should be vested in the county medical society similar to that now vested in the Bar Association. Societies must use this power wisely and justly. They cannot engage in "whitewashing" or impose capricious punishment.

In conclusion I should like to quote Governor Orville Freeman of Minnesota when he addressed an A.M.A. mid-winter meeting. The Governor said, "Government and the medical profession have similar though not identical interests for they exist because of the concern for the people.

"We want to insure the availability to all Americans of medical care of the best quality and in sufficient quantity to meet their needs.

"We must cooperate to achieve this goal . . . . We need this help and cooperation urgently . . . . The people feel this need, and when they feel badly enough, they demand that it be met. The people then say, '*There ought to be a law.*' "

Third Party in Medicine

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THERE are many developments which are changing the atmosphere of medicine, and there are tremendous problems which are affecting and which will continue to affect the practice of medicine. Research and science have paved the way for better medicine all along its glorious and historical road. It is due to this influence of science on medicine that the prolongation of the life expectancy has lengthened from an average of eighteen years in the early bronze and iron era to 69.9 years in 1958 in our country. Discoveries in the fields of biochemistry, physics, genetics, endocrinology, radiation, antibiotics, and many other basic sciences have affected medicine, and we are slowly gnawing away at the secrets of life and disease.

While we have been conscious of these tremendous strides in the science of medicine, another process has been developing which has and no doubt will have an even more far-reaching effect. I refer to a form of financial negotiation which has been interjected between the doctor and his patients. This we designate as the "third party." This little fellow has been sitting in the corner playing his zither while plans have been slowly, yet insidiously, developing in our midst. The strange yet unfortunate part of it is that while this has been going on, most of the medical profession has paid little if any attention to this development. The "third party" is firmly established in our midst. It is here to stay, and it is growing beyond comprehension.

Actually, the "third party" started as early as the nineteenth century and the first part of the twentieth century when individual employers and employe groups established medical care programs. Year by year the numbers of these plans have increased and the enrollments of these various organizational programs have extended tremendously. The purpose of the third party is to pay for the increasing cost of medical care, a subject which has been a constant target for criticism expressed dramatically in many of the lay magazines throughout our land. Many fail to realize that the high cost of medical care has been created by the inflationary status of the whole world. Although the cost of this total medical care, such as hospitalization, drugs, and all other sorts of things, has increased 50 per cent in the past decade according to the U.S. Department of Labor, more critical analysis has shown that the actual fees of physicians have increased 40 per cent. It was estimated that the average urban dweller spends about 5 per cent of his net income on medical care as against about 4 per cent ten years ago. The other day I had the opportunity to read an antique fee schedule which was set up in Lancaster County, Pennsylvania, in 1821. I was surprised to observe that fees at that time were only slightly lower than today. For instance, herniorrhaphy ranged from $100 to $200, smallpox vaccination from $1.00 to $5.00, thoracentesis from $100 to $200, trephining from $200 to $500. The only radical change has occurred in obstetrics where the delivery fee averaged from $10 to $15. However, at this time delivery was generally conducted by a midwife. Today the average obstetric case including prenatal care ranges from $78 to $175.

So as the cost of living and the cost of medical care has increased hand in hand, it seems as though practically everybody except the physician has had a part in the formation of the third party. Let us study what has happened to the third party in the last few years. As we sit and let the world roll by, let us see how it will affect the practice of medicine in the years to come.

More and more is paid out for medical services in private and public health insurance programs, and at the same time less and less is being paid directly to the doctor by the consumer. Research, construction, and personal medical services have been growing rapidly until now they are slightly more than 5 per cent of the gross national product as compared with 3.5 per cent thirty years ago. In the fiscal year ending June 30, 1958, the American people in one way or another spent $23 billion for health and medical services. Twenty-five per cent of this came from public funds, Federal, State and local, while 18 per cent of the total spent came from private insurance companies. In 1929 only 4 per cent came from public funds, while less than 1 per cent came from private insurance companies. In spite of this, however, the patient is still paying to the physician and hospital two and one-half times as much as paid through private health insurance and over twice as much as was paid by his tax-supported programs.

The third party is made up of both private and governmental services.

Nearly all Federal medical programs and Federal facilities provide third party care. In 1958 the Federal government provided medical care almost completely for 31 million people. This is nearly 19 per cent of the total population. They were the members of the military service and dependents, veterans of all wars, American Indians, natives of Alaska, Federal prisoners, American merchant seamen, and a small number of other special groups. For these people the Federal government spent one and a half billion dollars for medical services in Federal facilities and 125 million dollars in non-Federal facilities. There are several varieties of plans provided by the government.

The dependents medical care program represents the largest outlay of money for the third party payments in any Federal program. Medicare, as this is better known, was designated to provide medical care at government expense by private physicians and community hospitals for dependents of personnel serving in active duty in all branches of the service. Congress chose the third party system for providing these individuals with medical care rather than spend the money for new facilities. The Medicare program became effective December 7, 1956. Last year Medicare paid out 86.5 million dollars to private physicians and community hospitals. The average daily patient load was nearly 5,500. Another three million dollars were spent last year for emergency care of military personnel in non-Federal hospitals by the Defense Department so that over a total of 90 million dollars was spent last year for the care of these individuals.

The Veterans Administration home care program was the second largest outlay of third party payments in the Federal government program, although it was only about one fifth of the outlay for Medicare. These services are on a fee basis, and the fees are either agreed to under contract to the Veterans Administration, or the medical associations, or some intermediary such as Blue Cross or Blue Shield. Last year, 17 million dollars were spent, nine and a half going to private physicians and dentists while seven and a half went for hospital service.

The Federal employes compensation program is another third party payment which has more or less just come into being. It provides civilian employes of the government with compensation insurance if they suffer personal injury while on the job. The program also provides that the Federal government pay, in addition to the compensation, the salary loss, the cost of medical services, appliances, and supplies. The law concerning Federal employes does not permit free choice of physician by the employe. The choice is made from a list which contains the names of about 3,000 physicians. Although there are some three and a half million workers covered by this program, including some private employes in certain areas of Federal jurisdiction, in 1958 98,000 individuals reported work accidents. A total of $5,700,000 was paid to private physicians and community hospitals for this service.

The Federal employes health insurance program is still another third party system, and in July about five million civilians who are Federal employes and dependents became eligible for coverage for voluntary health insurance under this program. The first-year cost to the government has been estimated by the Civil Service Commission at a minimum of 115 million dollars. This will be the largest voluntary prepaid health insurance program in the United States.

Other Federal programs, such as the Public Health Service, Hospital Division, and the Indian Health Division, paid out 10 million dollars to physicians and hospitals outside Federally-owned facilities.

The Federally-aided state programs, such as the Children's Bureau and Bureau of Public Assistance of the Office of Vocation Rehabilitation, are other third party programs. The expenditures of these services in the fiscal year of 1958 totaled $2,700,000,000. The Maternal and Child Health Service, a Federally-aided state program, which relates to child health services under the crippled children's program, spent nearly 123 million dollars in 1958. The Office of Vocation Rehabilitation, with Federal and state programs concerned in rehabilitating disabled civilians to employable status, is another third party program. It spent for these medical services about 15 million dollars in 1958. All of these people are covered by the third party which is already well established in the Federal and state governments. It is impossible to say how far these trends will go. As you know, the basic policy decisions in these fields are made by the Congress representing the expressed will of the American people.

Although Federally-sponsored programs involve a large segment of our population, privately sponsored programs with numerous types of plans have been growing rapidly and are more extensive now than ever before. The miscellaneous and unclassified plans such as the mutual benefit associations, fraternal organizations, trade union groups, employer-employe sponsorship programs have enrolled approximately 5,133,094 families. The medical society-approved plans such as the private group practice clinics, community hospital cooperatives, community health associations, Blue Shield, and Blue Cross already have an enrollment of approximately 40 million people. Other groups, such as group insurance plans, nongroup insurance plans, and nonoccupational medical care programs, have enrolled approximately 86 million individuals. The Old Age and Survivor Insurance programs have enlisted 39.5 million in their associations. Of course, there is considerable overlapping in the enrollment of these plans so that in many instances the patient is covered by several policies and will collect on several policies for the medical care. Because of this overlapping, statistics reveal that approximately 108 million contracts have been written. Furthermore, we cannot forget workmen's compensation, which in 1953 paid out 846 million dollars in New York State alone to doctors and hospitals for their services. In this system the doctors' fees are set by workmens' compensation committees in the State under the control of the insurance laws and are set at a definite level.

Thus, the silent third party is in control of a large segment of the medical practice today, and there is no doubt it will increase in the future. These systems, either using a closed panel or allowing free choice of physician, are setting the fees, spacing the medical care to meet their facilities, and injecting administrative expenses into the cost of medical care. However, if the cost of living continues at its present level or rises even more in the future, it is very probable that these plans will answer the financial problem of the doctor. It is unfortunate, however, that the doctors have not had an active part in the planning of these systems. Many doctors object to these organizations setting the level of fees of physicians. Many physicians do not seem to pay much attention to the third party. A few realize that the precedent has been set and probably will never be changed. Some physicians misuse these plans by overcharging and overhospitalizing their patients and thereby jeopardize the future of the plans. Some feel that the time will come soon when negotiations on fee schedule between doctor and patient will entirely disappear. Fees will be set entirely by the third party.

Doctors in California have taken things into their own hands. The San Joaquin Foundation for Medical Care was formed in California under the sponsorship of the county medical society. They have established their own prepayment plan. Medical care is provided for all regardless of their ability to pay. The fee schedules are equated to income levels determined by the physicians in that particular community. The physicians in this area are doing something about their future.

It is time now that the medical profession became interested in these plans. It is not the time to resist or attempt to fight their future organization. It is proper that we make ourselves familiar with these third parties and attempt to have some voice in their proper operation. State medical societies particularly should appoint commissions to study a relative fee value scale for all branches of medicine throughout each state, and county medical societies cooperating with their parent state society should help to formulate a local relative fee value scale in keeping with the average fee values of their communities. We must become realistic about the third party; we must be honest about it, and we must work together. The medical profession must take the leadership in these plans, or the practice of medicine will change considerably, and the quality will suffer dramatically.

Besides having economic influence on the practice of medicine, the third party is and will have marked effects on the amount of undergraduate and postgraduate teaching in every medical school and center in this country, and every student will be affected by it.

With these third party insurance plans available to practically everybody in the country, the out-and-out ward case will be a rarity. The question which arises today is, "How are we going to get material for the teaching effort?" Specialty boards have been organized in all specialties to dictate and insist on a certain amount of training for their respective specialty in order to prepare individuals for practice. None of us will argue that the establishment of such boards has not been an excellent thing; it has improved the science and art of medicine as a whole. But it is also becoming apparent that it is going to be more difficult each year under the third party system to have enough material for proper instruction. In the fields of internal medicine, psychiatry, pediatrics, and other nonsurgical specialties, such problems are not so pressing. It is evident that one well worked-up medical case can be used just as effectively for 20 students or one. Less teaching material is needed to complete the proper education in these specialties.

However, the surgical specialties, where the actual performance of the operation under instruction is necessary to prepare young men, are suffering badly for lack of material. It will become necessary, therefore, that all patients, either ward or private, must be used for the actual teaching of the surgical specialties. This places tremendous responsibility on the physician who is in charge of the case and who is legally responsible.

Such circumstances put this teaching into the preceptorship category. The question may arise, "Are we prepared as teachers to assume these responsibilities in order that young men may be qualified to carry out our specialty?" This is a particular hardship in medical centers where the teacher on full-time basis is not allowed to have an appreciable practice and where he must rely on the practitioners associated with him in his department, generally on a part-time or voluntary basis, to turn over private cases for teaching. We as teachers must give some serious thought to this worrisome problem. In doing so we must emphasize that the third party is a tremendous force. We must recognize its potentialities.

Importance of Media of Information

GEORGE A. BURGIN, M.D., LITTLE FALLS, NEW YORK

(*Chairman, Subcommittee on Cooperation with Media of Information, Medical Society of the State of New York*)

THE POWER of the press. This is a phrase we've heard for years. It might be modified to read "the power and influence of the press." In the past twenty to thirty years we have seen this medium of information expanded to include radio, television, magazine writers, authors of scientific articles, photographers' groups, and allied news agencies. These groups are trying to satisfy the curiosity and demand of a public which wants to know more and more about medical matters.

This desire of the public for such information ranges from the demand for details of an accident involving personal injuries to the desire for information regarding the latest progress in the treatment of cancer, heart disease, and numerous other fields where research is being pursued.

For years these media of information have felt frustrated at times in trying to get prompt, authentic information from members of the medical profession. This was particularly true of accidental injury involving auto accidents, aircraft disasters, train wrecks, and many other catastrophes. In failing to give information, evading the issue, and not realizing the responsibility of the press in getting facts for the public, many physicians responded in a way which they considered correct. They considered the ethics involved, the danger of lawsuits, and the responsibility to their patients. This is right, but many of us bent over backwards. The result was, I believe, a big factor in the so-called "poor press" the medical profession was getting, and all the media of information felt free to criticize us in political and economic fields.

This situation became evident to the Medical Society of the State of New York, and in 1953 the House of Delegates passed a resolution creating a Subcommittee on Cooperation with Media of Information. This was a subcommittee of the Public Relations Committee. The same resolution mandated that a "Code of Press Cooperation" be established in cooperation and consultation with the authorized branches of dissemination of public information, namely, the press (newspapers, syndicates, and magazines), press photographers, newsreel photographers, wire services, radio and television news services, and any other authorized branch of dissemination of information.

Early in 1954 a joint meeting of all interested parties was held to learn the views of those affected by the code. Hospital associations also submitted their ideas.

Finally, the code was submitted to the 1954 House of Delegates which approved it with the title "A Guide for Cooperation."

You are all familiar with this Guide, but I would like to refresh your memories by reading the opening remarks: "The purpose of this Guide is to promote a greater and smoother flow of accurate medical news from the medical profession and hospital associations to those who collect and disseminate such news. It is mutually agreed that the primary responsibility of the doctor and the hospital is the welfare of the patient. It also is agreed that the media of public information exist for the common good and function to bring matters of general interest to the public quickly and correctly."

The closing phrase on the last page of this Guide for Cooperation reads: "This Guide will be reviewed and renewed annually or more often if necessary." This review has been accomplished annually by your subcommittee with the advice and consultation of all interested parties, and the third edition of "The Guide for Cooperation" was published this past fall. It has been sent to every member of the State Society.

So much for the history and background of this attempt to foster and improve our relations with all media of information.

Under the present administration I was appointed chairman of this subcommittee which includes C. Stewart Wallace, M.D., of Ithaca and John D. Naples, M.D., of Buffalo. I want to bring you up to date on our activities this year.

The annual meeting of the subcommittee was held on January 29, 1960, at the Medical Society's headquarters in New York City. Some 35 persons were present. This is the largest group to attend a meeting since the Guide was initiated back in 1954.

Among those representing the State Society were the president, Henry I. Fineberg, M.D.; John C. McClintock, M.D., chairman, Council Committee on Public Relations; Herbert T. Wagner, M.D., executive director; Miss Alvina Rich Lewis, executive editor of the NEW YORK STATE JOURNAL OF MEDICINE, and members of the Department of Communications.

Organizations in the field of information media represented at the meeting included hospitals, hospital associations, newspapers, magazines, broadcasting networks, associations of magazine writers, newspaper reporters, press photographers, the radio-newsreel-television working press, and newspaper editors. The A.M.A. also was represented at the meeting.

A fine spirit of friendliness and cooperation pervaded the meeting. It was agreed that on the whole the Guide was working well for all parties and that no basic change was necessary at this time. One pertinent comment made was that the Guide itself need not be tampered with but that more should be done in regard to individual doctors to see to it that they are aware of the Guide and live up to its basic principles.

Although the program was informal, there were two persons who gave presentations which had been arranged beforehand. Phillip Allen, M.D., former president of the New York County Medical Society, discussed the case of the Indian doctor and the amputation of an actor's leg which was very prominent in the press some months ago. The doctor had been directly involved in the case. Mr. Allen Fletcher, director of Public Relations, Maimonides Hospital, Brooklyn, reported on the actual handling of an emergency situation by the press, especially photographers.

Attention was called to the fact that the subcommittee planned to add another section to the Guide when it is reprinted. This section is in keeping with the action of the Council that a campaign be conducted to encourage physicians to use the letters "M.D." rather than doctor. This will be phrased as follows: "It is recommended that all media use the initials 'M.D.' after the name of a Doctor of Medicine when making the first reference to him, in order to distinguish him from others who may use the designation 'Dr.' "

As a result of a lengthy discussion on

coverage of emergency situations, such as crashes at airports, another meeting was held on February 24 to discuss ways and means by which procedures for securing medical information in "spot news" coverage might be streamlined.

The influence of all media of information is powerful. Thus, it is essential that we cooperate in helping them do their job of getting information promptly and accurately to satisfy their public. We must realize that we have this responsibility, and by this cooperation we can enlist the sympathetic understanding of these media in presenting the medical profession to the public in a favorable light.

Summary

JAMES GREENOUGH, M.D., ONEONTA, NEW YORK

(*President, Sixth District Branch; Past President, Medical Society of the State of New York*)

To summarize eight hours of prepared papers and discussion is beyond my power. After these sessions, I question whether you want another didactic talk. You all have the summaries of the prepared papers, and undoubtedly they are amplified by personal notes. I would like to stress every point that has been made and congratulate each speaker, but there just isn't time.

Let us agree that our ambition is to provide the best medical care possible to our patients, the people of this State. We are the only source of this care. No government, labor union, or other agency can provide this care—only the physicians.

Most of us believe that this care should be provided at a reasonable cost. The public has decided overwhelmingly that it should be paid for by insurance. We have gone along with the prevailing opinion by originating Blue Cross and Blue Shield to manage the distribution and management of this care. Other forms of insurance have also offered management of health care services.

We as physicians believe that we can share in the management as well as the purveying of care through our own plans and do it well. But if we ask for a share in the management, we must show that we deserve it. We can only deserve this privilege if we earn it. I will return to this point later.

Third parties, as described so well by one of your speakers, have taken over the control and management of an increasing share of medical care. There must be a reason for this. To my mind, the reason is our failure to provide the best management of this care. No one questions the excellence of health service which we can provide. But the actions of some—I hope only a few—of our profession have made the public suspicious of our management. You all know that one unfortunate experience by a patient overshadows the great majority of excellent and satisfactory patient-physician relationships. Lack of devotion to duty, overcharging, attempts to undertake procedures for which we are not fully qualified have damaged the reputation of the care we provide in the minds of many who are receiving that care. The public reaction to put the management of health services in the hands of a third party is natural. It is similar to the often-expressed thought, "There ought to be a law."

Let us be truthful—we all make errors, but when these errors occur in spite of our best efforts, they may be forgiven. But not so errors of willful omission or commission. When any of us deliberately sacrifice the good will of our patients by mistreating them medically or economically, we do not deserve their confidence.

As a profession, we bicker about what appears to me to be unimportant details: private practice as opposed to full-time practice, individuals versus groups, relations between hospitals and physicians, rivalry between special groups. The quality of health services may be good or may be poor. The method by which this care is provided does not make it good or bad. Its quality is really dependent on whether or not each of us conscientiously strives to offer the best that is in us.

Let us now return to the question of how we may retain or regain the right to control the management of medical care as well as providing it. We can only hope to attain this end if each of us thinks primarily of the patient and how he or she may be best served. Not only must we rededicate ourselves to this purpose, but we must assume certain responsibilities if we are to succeed.

We must write. The place to write is in the county medical society. By writing I mean that we must join together in our county medical societies to police ourselves. All of you are aware of practices in your own community on which the great majority frown because they are not producing the best medical care which can be offered. But how often do we do anything about it? It is a serious matter to accuse a fellow physician of actions which we all believe are detrimental to good medical care, but we must see to it that our county medical societies correct abuses and correct them impartially and justly.

Part and parcel of this local effort to provide better health services is wholehearted support of our own insurance plans, and this implies discovery and correction of any abuses so that the plans' services may steadily improve.

The public has decided for us and, I might say, originally at our suggestion that present-day medicine requires insurance to finance it except among the very well-to-do and the indigent. Don't forget those two groups; work with and through your county organization to see that they receive the best care possible. But it is also most important that you work with your own insurance plans to provide not only the best health service possible, but also the best-managed care from an economic viewpoint.

In this way, and in this way only, can we prevent other agencies—government, labor, or what have you—from taking the control of medicine away from the doctors. I don't believe, nor do you, that any other agency can do as well as we can in establishing a standard of health care which our people deserve. We must all join together, forget our minor differences, and strive to realize our ambition to take care of all our patients to the best of our ability in every way.

fifty-fourth annual

DISTRICT BRANCH MEETINGS

Medical Society of the State of New York

SIXTH DISTRICT BRANCH

Wednesday, September 28, 1960

Statler Inn, Ithaca, New York

Afternoon

2:30 P.M.—Registration

3:00 P.M.—Panel Discussion: "Miracle Drugs"
JAY TEPPERMAN, M.D., Professor of Experimental Medicine, State University of New York, College of Medicine at Syracuse, *Moderator*

1. "Antibiotics"
   PAUL A. BUNN, M.D., Professor of Medicine, State University of New York College of Medicine at Syracuse
2. "Adrenal Steroids"
   DAVID H. P. STREETEN, M.D., Associate Professor of Medicine, State University of New York College of Medicine at Syracuse
3. "Tranquilizers"
   OTTO F. THALER, M.D., Senior Instructor in Psychiatry, University of Rochester School of Medicine and Dentistry
4. "Antihypertensive Agents"
   FRANCIS S. CALIVA, M.D., Assistant Professor of Medicine, State University of New York College of Medicine at Syracuse

5:00 P.M.—Business Meeting

5:15 P.M.—Social Hour

Evening

6:30 P.M.—Dinner (Ballroom)

Introduction of Officers and Guests

Address: NORMAN S. MOORE, M.D., Ithaca, President, Medical Society of the State of New York

Remarks: MRS. MILTON W. KOGAN, Oswego, President, Woman's Auxiliary to the Medical Society of the State of New York

Address: "Oblique Trends in Medicine"
ORREN D. CHAPMAN, M.D., Director, Red Cross Regional Blood Bank, Syracuse, New York

Officers—Sixth District Branch

President	C. Stewart Wallace, M.D., Ithaca
First Vice-President	George F. Nevin, M.D., Cortland
Second Vice-President	George G. McCauley, M.D., Ithaca
Secretary	Hugh D. Black, M.D., Oxford
Treasurer	Charles L. Shute, Jr., M.D., Binghamton
Delegate	Norman C. Lyster, M.D., Norwich

Presidents—Component County Societies

Broome	Herbert Bandell, M.D., Binghamton
Chemung	Robert E. Good, M.D., Elmira
Chenango	Primitivo T. Cruz, M.D., Norwich
Cortland	Nicholas J. Gabriel, M.D., Cortland
Delaware	Harold W. Jayne, M.D., Sidney
Otsego	Mahlon C. Halleck, M.D., Worcester
Schuyler	Fritz Landsberg, M.D., Watkins Glen
Tioga	Henry Kaine, M.D., Spencer
Tompkins	Noah J. Kassman, M.D., Ithaca

SEVENTH DISTRICT BRANCH

Thursday, October 13, 1960
Corning Glass Center, Corning, New York

Afternoon

12:30 P.M.—Registration

1:00 P.M.—Tours of Corning Glass Center

2:30 P.M.—Medicolegal Film—"The Man Who Did Not Walk"

3:00 P.M.—Panel Discussion: "Health Care for Everyone"

PHILIP M. STANDISH, M.D., Canandaigua, *Moderator*
Medicine: WARING WILLIS, M.D., Bronxville; Chairman, Economics Committee, Medical Society of the State of New York

Labor: MR. JOHN F. TOMAYKO, Pittsburgh, Pennsylvania; Director, Insurance Benefits Department, United Steel Workers of America

Management: MR. DONALD E. MCCONVILLE, Rochester; Assistant Industrial Relations Director, Eastman Kodak Company

5:00 P.M.—Business Meeting

Evening

6:00 P.M.—Social Hour (courtesy Corning Glass Center)

7:00 P.M.—Dinner (informal, for members, Auxiliary, and guests)

Introduction of Officers
Address: NORMAN S. MOORE, M.D., Ithaca, President, Medical Society of the State of New York

Remarks: MRS. MILTON W. KOGAN, Oswego, President, Woman's Auxiliary to the Medical Society of the State of New York
Address: "Recent Observations in the Far East"
ELMER HESS, M.D., Past-President, American Medical Association

Officers—Seventh District Branch

President	James H. Arsenau, M.D., Lyons
Past-President	Joseph A. Lane, M.D., Rochester
First Vice-President	Phillip M. Standish, Canadaigua
Second Vice-President	Charles M. Smith, M.D., Waterloo
Treasurer	John L. Shultz, M.D., Penn Yan
Secretary	Vincent I. Bonafede, M.D., Sonyea
Delegate	Eldred J. Stevens, M.D., Hammondsport

Presidents—Component County Medical Societies

Livingston	James M. Judd, M.D., Mount Morris
Monroe	Hobart L. Boyd, M.D., Rochester
Ontario	E. Collinson Merrill, M.D., Canandaigua
Seneca	Paul R. Foote, M.D., Seneca Falls
Steuben	William O. Jackson, M.D., Avoca
Wayne	Jacob Sirkin, M.D., Newark
Yates	Richard J. Harpending, M.D., Penn Yan

Impact of Custom on Nutrition Shown in Israel

In receiving immigrants from all parts of the world—including India, Kurdistan, Yemen, Iraq, North Africa, South America, and all parts of Europe—the new nation of Israel has faced many problems in trying to reconcile divergent customs. Malnutrition has, in some cases, been the result of the newcomers' inability to accustom themselves to locally available foods. Pining for the sort of food they knew in their homelands, some immigrants have strained slender food budgets for imported foods and, thereby, neglected locally plentiful staple foods. Israeli health officials came upon one case, for example, where an oriental family was consuming more than half a pound of pepper each week, at a cost that denied them nutrition essentials.—*Nutrition Foundation*

MEDICAL NEWS

New Gynecological Society Formed in New York City—A new society known as the New York Gynecological Society has been formed in New York City. The Society was incorporated under the laws of the State of New York by a committee of physicians, Carl Javert, M.D., Joshua Davies, M.D., and Alexander Brunschwig, M.D., who also are the directors.

The purpose of the Society is to promote research and to create a forum for the discussion of problems and advances in the field of gynecology and obstetrics. The membership is composed of specialists certified in gynecology and obstetrics and other specialists interested and active in these subjects. There will be four scientific meetings a year which will be open to the medical profession. It is anticipated that outstanding personalities in the field of gynecology and obstetrics from this country and from abroad will be invited to present papers embodying their recent contributions.

The officers for the present year are: William Thomson Kennedy, M.D., president; Morris A. Goldberger, M.D., vice-president; M. Leo Bobrow, M.D., secretary; and Joseph E. Corr, M.D., treasurer. Members of the council are the directors, officers of the Society, and: Isabel Knowlton, M.D., Peter Marshall Murray, M.D., Bernard J. Pisani, M.D., and Howard C. Taylor, Jr., M.D.

For further information write to: M. Leo Bobrow, M.D., Secretary, New York Gynecological Society, 590 West End Avenue, New York City.

Survey of Natural Radiation—A survey of natural or background radiation in 41 communities has been started in New York State. The survey is being conducted by the State Health Department in cooperation with the Atomic Energy Commission.

It is estimated that the program, which was started in Port Jervis, will take two months to complete. Ionization chambers and scintillation counters will be used to measure external penetrating radiation. The primary purpose of the survey is to determine the levels of radioactivity in the environment in communities in New York State.

The following are the communities to be surveyed: Amsterdam, Auburn, Bath, Beacon, Carthage, Corning, Cortland, Dansville, Elmira, Fredonia, Fulton, Geneva, Glens Falls, Gouverneur, Hermon, Hornell, Hudson Falls, Ithaca, Jamestown, Johnstown, Malone, Medina, Middletown, Norwich, Ogdensburg, Olean, Oneonta, Oneida, Penn Yan, Philadelphia, Plattsburgh, Port Jervis, Poughkeepsie, Salamanca, Saranac Lake, Saratoga Springs, Seneca Falls, Theresa, Tupper Lake, Waverly, and Wellsville.

American Thoracic Society Offers Grants—Applications for grants for medical and social research in tuberculosis and other respiratory diseases are now being accepted by the National Tuberculosis Association, through its medical section, the American Thoracic Society (formerly the American Trudeau Society).

December 15, 1960, is the deadline for submission of applications for the grant year July 1, 1961, through June 30, 1962.

For further information and application forms write to: Division of Research and Statistics, American Thoracic Society, 1790 Broadway, New York 19, New York.

Course in Corneal Surgery to be Given in Brooklyn—A two-and-a-half day course in corneal surgery will be given under the direction of A. Benedict Rizzuti, M.D., at the Brooklyn Eye and Ear Hospital, Thursday through Saturday, December 8 through 10.

Present surgical concepts of kerectomies and keratoplasties will be stressed. Allied subjects such as beta radiation, contact lenses, operating room photography, and instrumentation will be discussed by staff members. Surgical procedures in the operating room will be demonstrated according to the availability of donor material. Participants will be offered an opportunity to apply surgical principles on animal eyes.

The course is limited to six ophthalmologists. For information concerning tuition and registration contact: Mr. Henry Williams, Superintendent, Brooklyn Eye and Ear Hospital, 29 Greene Avenue, Brooklyn 38, New York.

New Study for Minimizing Effects of Burns—A three-year study aimed at developing methods for minimizing the lethal and deforming effects of burns will be undertaken at a new center for research in burn therapy to be established at the University Hospital of the New York University Medical Center. The center will be financed by a grant of $332,571 from the John A. Hartford Foundation, Inc.

John Marquis Converse, M.D., director of the Institute of Reconstructive Plastic Surgery, together with H. Sherwood Lawrence, M.D., associate professor of medicine, Ernest S. Breed, M.D., assistant professor of surgery, and Felix T. Rapaport, M.D., assistant in medicine, all of the New York University School of Medicine, will conduct a multipronged attack on the medical and surgical aspects of burn therapy, utilizing a team approach to the problem. Three New York University School of Medicine department chairmen will act as consultants to the center: John H. Mulholland, M.D., surgery, Lewis Thomas, M.D., medicine, and Robert S. Hotchkiss, M.D., urology.

Three major functions have been established for the research center: to study methods of reducing the number of deaths and crippling deformities resulting from severe burns; to perform research in shock treatment, infection control, nutrition, tissue transplantation, and wound healing; and to train specialists, medical students, and surgical residents in burn treatment and long-term reconstructive surgical care.

Institute for Crippled and Disabled to Erect New Building—The Institute for the Crippled and Disabled will erect a three-million-dollar building on the south side of East 24th Street between First and Second Avenues to house a major expansion of its research, treatment, and training programs for the handicapped. The new building will augment the Institute's present structure on the northeast corner of 23rd Street and First Avenue. It will provide a wide range of additional facilities for serving the disabled and for teaching professional people the most advanced technics of rehabilitation.

Funds for the new building were given by Jeremiah Milbank and his brother, the late Dunlevy Milbank, as a memorial to their parents, Joseph and Ella Dunlevy Milbank.

The six-story structure will be ready for occupancy in 1962.

Personalities

Speaker

Frederick Reiss, M.D., New York City, on the topic "Recent Advances in Dermatotherapy in the United States of America" by invitation of the Greek Dermatological Society.

Resigns

Dudley W. Hargrave, M.D., Kingston, as Ulster County Health Commissioner.

Honored

Francis P. Corrigan, M.D., New York City, president of the Latin American Foundation, with a luncheon given by Chas. Murray Gratz, M.D., New York City, at the Hotel Delmonico, July 25.

Retired

Edward M. Jones, M.D., Endicott, after forty-five years of medical practice. . .Tracy C. Swan, M.D., Livonia, after thirty-nine years of medical practice.

New Offices

David M. Bernstein, M.D., in Putnam Valley, for the practice of general medicine. . .Abraham I. Feldman, M.D., and William C. Feldman, M.D., an additional office in Saugerties for the practice of obstetrics and gynecology. . .Robert M. George, M.D., in Utica, for the practice of pediatrics, in association with John W. Wood, M.D. . . .Leonard Kreisler, M.D., in Highland Falls, for the practice of general medicine, in association with Abraham H. Margolis, M.D.

They never taste who always drink; they always talk who never think.—MATTHEW PRIOR

MONTH IN WASHINGTON

Democrats and Republicans are campaigning on opposing planks on the issue of health care for the aged. The Democratic party advocates the Social Security approach; the Republican party favors Federal aid in the field, but outside the Social Security system.

The GOP plank pledged: "Development of a health program that will provide the aged needing it, on a sound fiscal basis and through a contributory system, protection against burdensome costs of health care. Such a program should:

"—Provide the beneficiaries with the option of purchasing private health insurance—a vital distinction between our approach and Democratic proposals in that it would encourage commercial carriers and voluntary insurance organizations to continue their efforts to develop sound coverage plans for the senior population.

"—Protect the personal relationship of patient and physician.

"—Include state participation."

The key paragraph of the Democratic plank stated: "The most practicable way to provide health protection for older people is to use the contributory machinery of the Social Security system for insurance covering hospital bills and other high cost medical services. For those relatively few of our older people who have never been eligible for Social Security coverage, we shall provide corresponding benefits by appropriations from the general revenue."

Charles H. Percy, chairman of the GOP platform committee, stated that the reference to a "contributory system" in the Republican plank did not mean a Social Security tax.

Presidential and vice-presidential candidates of both parties went into the election campaigns pledged to support the health-care-for-the-aged planks adopted by their respective conventions. Vice-President Richard M. Nixon, the GOP presidential nominee, already was on record as unalterably opposed to any program of national compulsory health insurance. The long-established position of Senator John F. Kennedy of Massachusetts, the Democratic presidential candidate, has been "that only by use of the Social Security system can we have true health insurance."

Speaking for the American Medical Association, Edward R. Annis, M.D., of Miami, Florida, appeared before the platform-drafting committee of the Democratic convention at Los Angeles, and Leonard W. Larson, M.D., A.M.A. president-elect, before the Republican policy group at Chicago.

The A.M.A. spokesmen warned both parties that a program following the Social Security approach "would be unpredictably costly; it would unnecessarily cover millions of people; it would substitute service benefits for cash benefits; it would lead to poorer—not better—quality of medical care; it would overcrowd our hospitals; it would lead to the decline, if not the demise, of private health insurance; and it would interfere dangerously with the doctor-patient relationship, which is the solid foundation upon which effective medicine must be based."

Dr. Annis also urged support of the House-approved Mills plan to provide health care for the needy aged who need help with the Federal government and the states sharing the costs outside the Social Security mechanism.

In an advertisement run in some large daily newspapers in mid-August, the A.M.A. outlined its reasons for supporting the Mills plan, the ad said, in part: "The A.M.A. believes our nation, as well as its senior citizens, will best be served by a locally administered health aid program designed to help those who need help . . . We are equally sincere in our opposition to legislative measures that approach the problem on a shotgun basis with the idea of increasing repeatedly the Social Security tax in order to finance health benefits for everyone who is covered by the Old Age, Survivors and Disability Insurance program, regardless of their need.

"There are many serious hazards in using the Social Security approach to finance medical and hospital care for our older citizens. When government starts telling the doctor how to practice medicine; telling the nurses how to nurse; telling the hospital how to handle its patients, the quality of medical care is sure to decline. The cost of such a program eventually would be staggering, and would make a serious dent in the pay envelopes of millions of Americans covered by Social Security. Private, voluntary health insurance, which has been doing such a magnificent job, would be undermined and, in time, destroyed.

[Continued on page 2946]

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

Now...the only Nystatin combination with extra-active DECLOMYCIN®

Demethylchlortetracycline

with extra broad-spectrum benefits:—action at lower milligram intake... broad-range action... sustained peak activity... extra-day security against resurgence of primary infection or secondary invasion.

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CAPSULES, *150 mg. DECLOMYCIN Demethylchlortetracycline HCl and 250,000 units Nystatin.*

DOSAGE: *average adult, 1 capsule four times daily.*

LEDERLE LABORATORIES, A Division of AMERICAN CYANAMID COMPANY,
Pearl River, New York

Lederle

[Continued from page 2944]

"Most important, perhaps, is the fact that such an approach would just be the beginning of compulsory, government-run medical care for every man, woman, and child in the United States. For it wouldn't be long before the Federal Government would be lowering the age at which people would be eligible, and adding one costly service after another to a program that would place your health care under the Federal Government's thumb. And let's not forget that our present health care is recognized to be the world's finest."

MEDICAL MEETINGS

Nassau Neuropsychiatric Society

The Nassau Neuropsychiatric Society and the Section of Psychiatry and Neurology of the Nassau Academy of Medicine will meet on September 20, at 8:30 P.M., at the Nassau Academy of Medicine, 1200 Stewart Avenue, Garden City, Long Island.

Dr. Marvin K. Opler, professor of social psychiatry at the University of Buffalo School of Medicine, will speak on the subject "Epidemiology of Mental Illness."

Ninth Annual Conference of United States Civil Defense Council

The United States Civil Defense Council will hold its ninth annual conference on September 21 and 22, at the Leamington Hotel in Minneapolis, Minnesota. The purpose of the conference is to study and discuss the problems of the national, state, and local civil defense.

For further information contact: Walter P. Halstead, General Chairman, Ninth Annual United States Civil Defense Council Conference, 3524 Hennepin Avenue South, Minneapolis 8, Minnesota.

New York State Society of Industrial Medicine

The New York State Society of Industrial Medicine will hold a joint meeting of physicians, industrial hygienists, and nurses on September 28, at the New York University Club, 123 West 43rd Street, New York City. The schedule for the meeting is as follows: scientific session, 5:30 to 7:30 P.M.; intermission, 7:30 to 8:00 P.M.; dinner, 8:00 P.M.

The scientific session is open to all, without cost. Leon J. Warshaw, M.D., New York City, will give the introductory speech.

For further information contact: Mr. Frank M. Dua, Executive Secretary, New York State Society of Industrial Medicine, Inc., 30 Rockefeller Plaza, Room 2400, New York 20, New York.

Annual Program Conference of Blue Shield Plans

Arthur S. Flemming, Secretary of Health, Education, and Welfare, will be the keynote speaker at the annual program conference of Blue Shield Plans

[Continued on page 2948]

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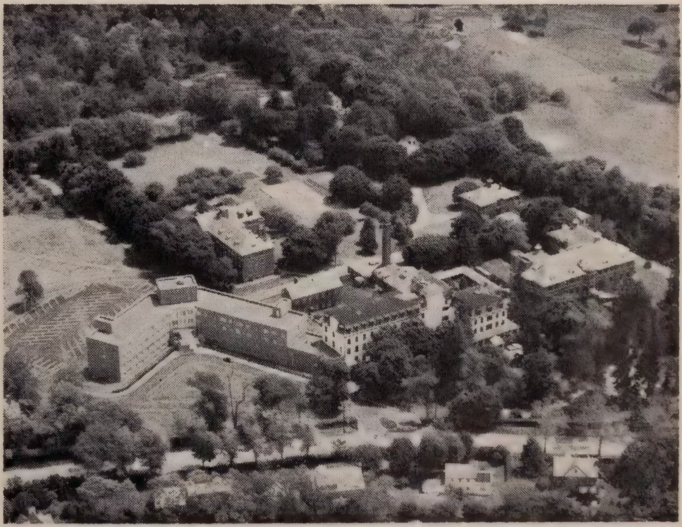
A voluntary non-profit institution providing all modern therapies for mental and emotional disorders including individual and group psychotherapy, pharmacotherapy, insulin coma and electro therapies and extensive activity programs. All facilities expanded for in- and out-patients, day care and clinic service for children. Acutely ill and continued therapy patients admitted.



RICHARD D'ISERNIA, M.D.
Medical Director

[Continued from page 2946]

to be held October 10 and 11, at the Drake Hotel in Chicago.

The two-day conference has as its theme "The Essentials of Leadership," and will consider such subjects as "Blue Shield and American Medicine—A Partnership for Progress," "Identifying the Needs and Objectives Essential to Progress in Blue Shield," "Developing Executive Talent to Meet Future Management Needs," and "Government as a Purchaser of Health Care Benefits."

For further information contact: National Association of Blue Shield Plans, 425 North Michigan, Chicago 11, Illinois.

American College of Cardiology

The American College of Cardiology will hold its ninth interim meeting concurrently with the thirty-third annual meeting of the American Heart Association at Kiel Auditorium, St. Louis, Missouri, October 21 through 23.

The two organizations will feature jointly a presentation of the latest methods in diagnosis: ear oximetry, objective evidence of cardiac impairment, functional tests, mechanisms, and biochemical tests. There will be a symposium on atrial arrhythmias. The College will also present jointly with the American Heart Association its annual fireside conferences. There will also be panel discussions on technics of major vessel replacement, cardiac function tests, evaluation of radiographic technics for measuring cardiac output, cardiac resuscitation, the effect of environment and stress, changes in myocardial metabolism, management of cor pulmonale, refractory cardiac failure, rheumatic heart disease, hyperlipemia, congestive failure, cardiogenic shock, fibrinolysis, hypertension, and surgery for insufficient valves and for stenotic valves.

Among the New York physicians who will participate are the following: William Dock, M.D., Brooklyn; and Louis F. Bishop. M.D., and John S. LaDue, M.D., New York City.

For further information contact: Philip Reichert, M.D., Executive Director, American College of Cardiology, Empire State Building, 350 Fifth Avenue, New York 1, New York.

Sixty-Seventh Annual Convention of Association of Military Surgeons

The sixty-seventh annual convention of the Association of Military Surgeons will be held October 31 through November 2, at the Mayflower Hotel, Washington, D.C. The theme of the three-day convention is "The Military Role in Medical Progress."

For further information contact the Association headquarters at 1726 Eye Street, N.W., Washington 6, D.C.

Association for the Advancement of Psychoanalysis

The Association for the Advancement of Psychoanalysis is sponsoring a two-day symposium on "Alienation and the Search for Identity" in commemoration of the seventy-fifth anniversary of the birth of Karen Horney. The symposium will be held on Saturday and Sunday, November 5 and 6, in the Carnegie Endowment International Center in New York City.

Among the topics to be discussed are: "Alienation and the Self," "Alienation and Culture," and "Alienation and Therapy." Among the speakers will be: Drs. Kurt Goldstein, Ernest G. Schachtel, Jack L. Rubins, Joseph W. Vollmerhausen, Alexander Reid Martin, Harold Kelman, Helen M. Lynd, Charles R. Hulbeck, Bella S. Van Bark, Abraham Maslow, Frederick A. Weiss, Antonia Wenkart, Marianne H. Eckardt, Sara Sheiner, Louis E. DeRosis, and Benjamin J. Becker. Among the named discussants are: Drs. Doris V. Falk, Walter Bonime, and Silvano Arieti.

American Medical Writers' Association Changes Dates of Annual Meeting

Because of a conflict with observance of Yom Kippur on October 1, the American Medical Writers' Association has changed the dates of its seventeenth annual meeting to November 18 and 19. The meeting will be held in Chicago at the Morrison Hotel.

Departing from the traditional scientific program of individual presentations, the Association has scheduled two unrehearsed panels devoted to the basic problems in the field of medical communication. One panel, "Information: What It Is and How It's Used," will bring together noted participants from both the lay and medical mass news media. Another panel, composed of medical editor, author, publisher, and documentarian, and guided by a skilled moderator, will discuss all aspects of "Modern Aids to Medical Communication." A workshop in writing will also be presented at the meeting.

For further information write to: Harold Swanberg, M.D., Secretary-Treasurer, 209–224 W.C.U. Building, Quincy, Illinois.

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GER-O-FOAM

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relieves pain, spasm; improves function increases tolerance to exercise

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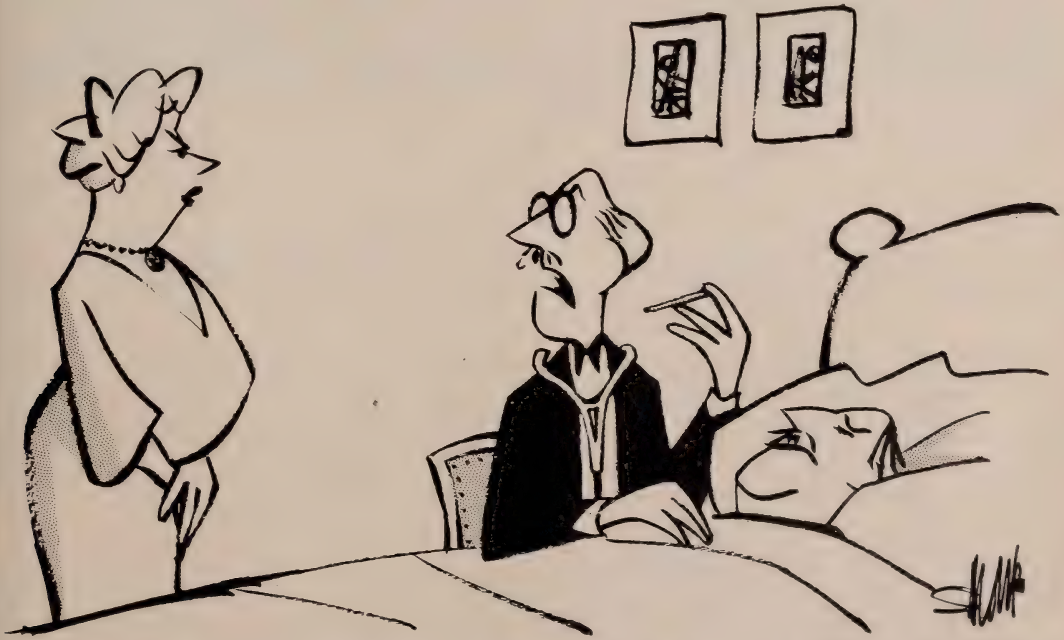
1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.



"It's just as well that you couldn't diagnose your husband's condition—you might also have prescribed for it!"

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Research Grant—The National Heart Institute granted $147,360 for a five-year study aimed at finding whether an interrelationship exists between various fat factors and the formation and break-up of blood clots. Administering the project are four members of the pathology department: R. Foster Scott, M.D., assistant professor; Ethel S. Morrison, research associate; Wilbur A. Thomas, professor and chairman, Department of Pathology; and Assaad S. Daoud, M.D., assistant professor.

Appointment—Robert I. Cranny, M.D., until recently a medical associate at Brookhaven National Laboratories, Long Island, as associate professor of pediatrics. Fairfield Goodale, Jr., M.D., formerly of the Dartmouth Medical School, has been named an associate professor in the Department of Pathology. For the last two years Dr. Goodale has served as assistant professor of pathology at Dartmouth Medical School and director of laboratories at Mary Hitchcock Memorial Hospital and Clinic in Hanover, New Hampshire.

Promoted—John F. Filippone, M.D., formerly an associate professor of medicine, to rank of clinical professor, Department of Medicine. Dr. Filippone will also take over the newly-created post of head of the cardiac clinics in the Albany Medical Center.

Columbia University College of Physicians and Surgeons

Grant—Harry M. Rose, M.D., John E. Brone professor of medical and surgical research and chairman, Department of Microbiology, and associates, Councilman Morgan, M.D., Peter M. Breitenfield, Gabriel C. Godman, M.D., and Calderon Howe, M.D., have received a grant of $41,407 from the National Foundation to study virus-infected cells. Dr. Rose and research team have been making a detailed investigation of the growth and development of virus particles within infected cells and they eventually hope that the work may lead to the development of effective antivirus drugs and possibly reveal knowledge about the virus causes of cancer.

New York University Post-Graduate Medical School

Presidential Citation—Anthony J. Lanza, M.D., pioneer in industrial medicine, received the New York University Presidential Citation for his leadership in the field of industrial medicine and his service to the University. The recommendation stated in part ". . . he was assistant, and then associate medical director of the Metropolitan Life Insurance Company, developing one of the early insurance company programs in occupational health. . . . As a colonel in the U.S. Army Medical Corps he organized the wartime program in occupational health in the Army and received the Legion of Merit. He also received the William S. Knudsen Award of the American Association of Industrial Physicians and Surgeons for his contribution to the field of industrial medicine in the United States Army. . . ." Dr. Lanza was the first director of the New York University Medical Center's Institute of Industrial Medicine in 1947 and in 1949 he became the first chairman of the newly-organized Department of Industrial Medicine in the Post-Graduate Medical School.

State University of New York College of Medicine at Syracuse

Appointments—Ernest Becker, M.D., Robert E. Edwalds, M.D., Frederick Remington, M.D., and Shirley Rubert, M.D., instructors, Department of Psychiatry; Ronald A. Miller, M.D., instructor, Department of Medicine; and Bernard Portnoy, M.D., instructor, Department of Pediatrics.

Promotions—Paul B. Bedrossian, M.D., from instructor to assistant professor, Department of Ophthalmology; Dorothy A. Cole, M.D., from instructor to assistant professor, Department of Obstetrics; Robert H. Drachman, M.D., as commonwealth fellow, Department of Pediatrics; Philip E. Duffy, M.D., and William R. Ruegammer, M.D., from assistant professors to associate professors, Department of Medicine; and Philip P. Steckler, M.D., from clinical assistant professor to assistant professor, Department of Psychiatry.

Awarded—The United States Public Health Service has approved an allocation of $1,836,105 to assist in construction of research laboratories and $104,926 towards the purchase of scientific equipment in these laboratories. The grants are specifically designed for research facilities only.

when pressure is a problem

Reduce pressure through bradycardic, tranquillizing action....

'Rauwistan'

the MRT-standardized Rauwolfia

BECAUSE its unique chemical and biological standardization assures uniformity and consistency of effect time after time with high activity and minimal incidence of side effects.

SUPPLIED: Tablets of 50 and 100 mg., in bottles of 100.

DOSAGE: 100 to 300 mg. daily, in divided doses.

Reduce pressure through bradycardic, tranquillizing plus direct hypotensive action....

'Verwolfia'

the MRT-standardized Rauwolfia-Veratrum

BECAUSE it adds to Rauwistan the specific hypotensive effect of uniquely standardized Veratrum and assures uniformity and consistency of effect time after time with high activity and minimal incidence of side effects.

SUPPLIED: 50 mg. of Rauwolfia serpentina and of Veratrum viride (standardized whole root) in each tablet; in bottles of 50 and 100.

DOSAGE: 1 to 3 tablets daily for the first 2 or 3 days; then 1 or 2 tablets daily, as required.

MRT *M. R. Thompson, Inc.* Cranford, N. J.

NECROLOGY

Floyd Robert Bates, M.D., of Walton, died on May 20 in Homer Folks Hospital, Oneonta, at the age of sixty-four. Dr. Bates graduated in 1930 from Syracuse University College of Medicine. He was an attending in medicine at the Delaware Valley Hospital. Dr. Bates was a member of the Delaware County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Aaron Berger, M.D., of the Bronx, died on August 10 at the Aldecress Country Club in Alpine, New Jersey, at the age of fifty-two. Dr. Berger graduated in 1933 from the University of Texas School of Medicine. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Barron Clancy, M.D., of Albany, died on June 26 in Albany Hospital at the age of forty-one. Dr. Clancy graduated in 1943 from Georgetown University School of Medicine. He was Albany County coroner's physician and an assistant attending physician at St. Peter's Hospital and an attending physician at St. Peter's Hospital Outpatient Department. Dr. Clancy, who was appointed in 1947 by the Albany Baseball Club to serve at Hawkins Stadium in the event of an accident or sudden illness, was a member of the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Spaulding Fish, M.D., of Waverly, died on July 31 at his home at the age of eighty. Retired, Dr. Fish graduated in 1903 from the University of Pennsylvania School of Medicine. He was honorary chief of surgery emeritus at Tioga County General Hospital. Dr. Fish was a Fellow of the American College of Surgeons, a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the Tioga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Omar Wood Gilmour, M.D., of Wassaic, died on June 27 at Sharon Hospital, Sharon, Connecticut, at the age of sixty-two. Dr. Gilmour graduated in 1929 from Queens University Faculty of Medicine, Ontario, Canada, and interned at Nassau Hospital, Mineola. He was supervising psychiatrist at Wassaic State School. Dr. Gilmour was a member of the American Association on Mental Deficiency, the Dutchess County Medical Society, and the Medical Society of the State of New York.

Joseph Hughes Green, M.D., of Rochester, died on May 21 at the age of seventy. Dr. Green graduated in 1916 from the University of Virginia Department of Medicine. He was an assistant in radiology at Strong Memorial Hospital, a consultant in radiology at Rochester State Hospital and Highland Hospital of Rochester, and an attending in radiology at Park Avenue Hospital. One of the earliest to specialize in radiology, Dr. Green was a Diplomate of the American Board of Radiology (Roentgenology), a Fellow of the American College of Radiology, and a member of the American Roentgen Ray Society, the Radiological Society of North America, Inc., the Industrial Medical Association, the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Fred S. Haber, M.D., of Yonkers, died on July 8 at the age of sixty-three. Dr. Haber received his medical degree from the University of Berlin in 1923. He was an attending in proctology and gastroenterology at St. John's Riverside Hospital Outpatient Hospital. Dr. Haber was a member of the Yonkers Academy of Medicine, the Westchester County Medical Society, and the Medical Society of the State of New York.

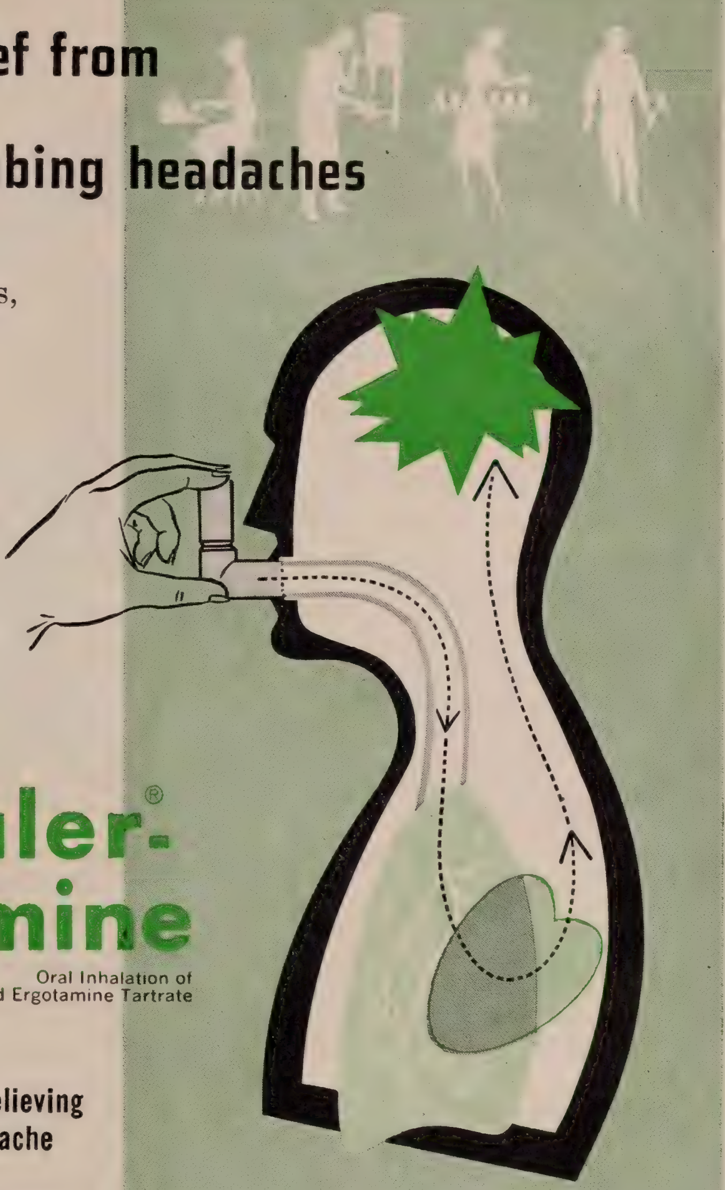
Hans Harris, M.D., of New York City, died on July 31 in Old Forge at the age of eighty-two. Dr. Harris graduated in 1902 from Eclectic Medical Institute of New York. He was a member of the New York Eclectic Society.

William Stephen Hartigan, M.D., of Rochester, died on June 25 in St. Mary's Hospital at the age of seventy-three. Dr. Hartigan graduated in 1910 from the University of Buffalo School of Medicine. He was a consultant in surgery at St. Mary's Hospi-

[Continued on page 2954]

on-the-go relief from recurrent throbbing headaches

vascular headaches,
histaminic
cephalalgia,
migraine
syndromes,
and occipital
neuralgia



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Fastest overall method for relieving recurrent throbbing headache

Approximates speed and predictability of relief following ergotamine injection.

Eliminates delay in treatment...Medihaler travels *with* the patient...ready and in use in 5 seconds!

"In a series of over 300 episodes of vascular headache in 41 patients 'Medihaler'-Ergotamine was effective in about 70%."

Graham, J.R., Faulkner Hospital,
Jamaica Plains, Boston:
Personal Communication.

Dosage: A single inhalation at onset of headache. Additional inhalations should be spaced not less than 5 minutes apart. Not more than 6 inhalations in any 24-hour period.

In 2.5 cc. stainless steel vial (50 doses) with plastic oral adapter. Each depression of metering valve delivers 0.36 mg. ergotamine tartrate self-propelled from the oral adapter.

Riker Northridge, California

[Continued from page 2952]

tal where he had served as president of the staff in 1938 and on the medical board from 1932 to 1952. Dr. Hartigan was a member of the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edmund Frank Kohl, M.D., of New York City, died on May 30 at Cupsaw Lake at the age of sixty-five. Dr. Kohl received his medical degree from the University of Breslau in 1922. He was a member of the Pan-American Medical Association, the American Academy of General Practice, the American Geriatrics Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John George Krauss, M.D., of Flushing, died on June 28 at the age of seventy. Dr. Krauss graduated in 1912 from Long Island College Hospital School of Medicine. He was an honorary senior surgeon at Wyckoff Heights Hospital. Dr. Krauss was a Fellow of the American College of Surgeons and a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Morris Leff, M.D., of the Bronx, died on June 29 at the age of seventy-one. Dr. Leff graduated in 1915 from New York University and Bellevue Hospital Medical College. He was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Randolph Page, M.D., of New York City, died on July 28 at his home at the age of eighty-three. Dr. Page graduated in 1899 from the University of Virginia Department of Medicine and interned at New York Hospital and New York Eye and Ear Infirmary. He was a consulting surgeon in otolaryngology at Manhattan Eye, Ear and Throat Hospital and a consultant in otology at St. Luke's Hospital, Newburgh. From 1924 until his death he was a member and from 1941 to 1951 a vice-president of the board of directors of the Manhattan Eye, Ear and Throat Hospital as well as a former assistant professor of clinical otology at New York Polyclinic Hospital. Dr. Page, who retired in 1954, was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Otological Society, Inc. (and a former president), the American Laryngological, Rhinological and Otological Society, the New York Academy of Medicine, the New York Otological Society, the New York Otolaryngological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Dunlap Pearce Penhallow, M.D., of Philadelphia, died on August 7 at his home at the age of seventy-nine. Dr. Penhallow graduated in 1906 from Harvard University Medical School. He was an associate member of the staff of the Good Samaritan Hospital and a member of the staff of Mercy Hospital, Watertown. Until 1956 he had served as health officer and school physician in Philadelphia and as medical director of the Jefferson County Welfare Department for three years. Dr. Penhallow was a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the Association of Military Surgeons of the United States, the Jefferson County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Woodruff Smith, M.D., of Rochester, died on July 18 in Strong Memorial Hospital at the age of sixty-five. Dr. Smith graduated in 1918 from Johns Hopkins University School of Medicine. He was a member of the American Public Health Association, the Industrial Medical Association, the Monroe County Medical Society, and the Medical Society of the State of New York.

Elisha Blackmar Van Deusen, M.D., of Catskill, died on July 1 in Memorial Hospital at the age of fifty-five. Dr. Van Deusen graduated in 1931 from Cornell University Medical College. He was an attending physician at Memorial Hospital. Dr. Van Deusen was a member of the American Academy of General Practice, the Greene County Medical Society, and the Medical Society of the State of New York.

Martin Spencer Wetchler, M.D., of New York City, died on July 8 at the age of thirty-six. Dr. Wetchler graduated in 1948 from New York Medical College.

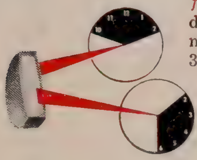
"Sometimes,
when I have
a running nose,
I'd like to
clear it with
TRIAMINIC®
just to check out
that systemic
absorption business.
Reaches all nasal
and paranasal
membranes. huh?"

...and for humans
with
UNNING NOSES...

You can't reach the entire nasal and paranasal mucosa by putting medication in a man's nostrils – any more than you could by trying to pour it down an elephant's trunk. TRIAMINIC, by contrast, reaches *all* respiratory membranes *systemically* to provide more effective, longer-lasting relief. And TRIAMINIC avoids topical medication hazards such as ciliary inhibition, rebound congestion, and "nose drop addiction."

Indications: nasal and paranasal congestion, sinusitis, postnasal drip, upper respiratory allergy.

lief is prompt and prolonged
cause of this special timed-release action:



first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then—the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides:
½ the formulation of the Triaminic Tablet.
Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

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¼ the formulation of the Triaminic Tablet.
Dosage (to be administered every 3 or 4 hours):
Adults – 1 or 2 tsp.; *Children 6 to 12* – 1 tsp.;
Children 1 to 6 – ½ tsp.; *Children under 1* – ¼ tsp.

RIAMINIC® *timed-release tablets, juvelets, and syrup*

STOP *running noses* *and open stuffed noses orally*

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NEW YORK STATE MEDICAL LIBRARY

Education Building

Albany, New York

EDITOR'S NOTE: *The following information has been provided for the information of our readers by Miss Heath Babcock, medical librarian, New York State Medical Library, Albany, New York.*

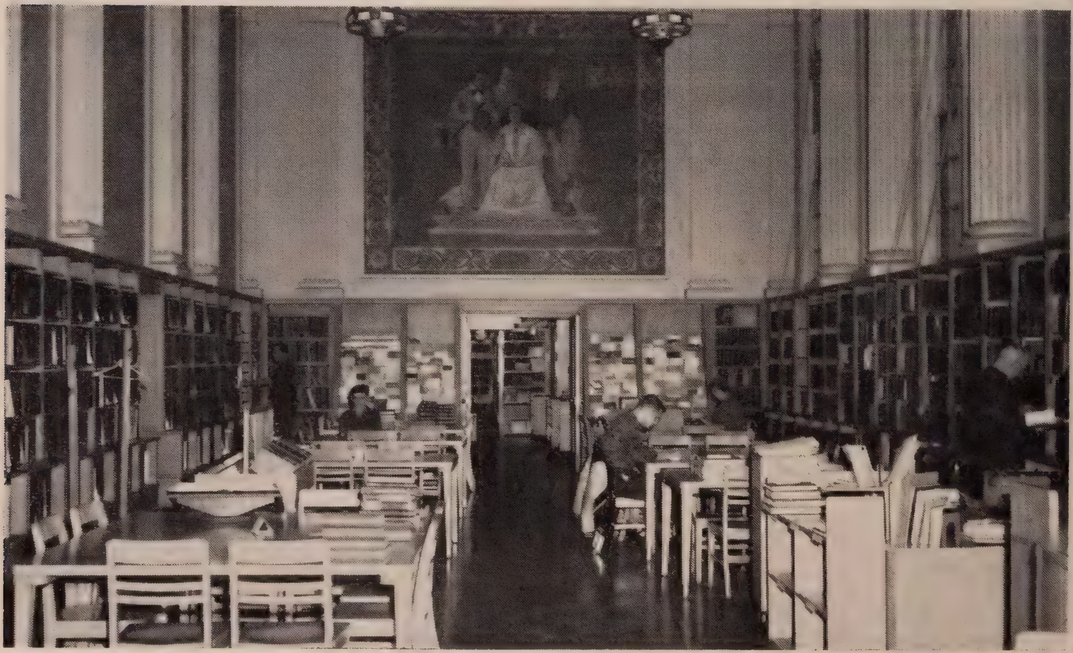

FIG. 1. Reading room of the State Medical Library, Education Building, Albany, which is part of the New York State Library and available for use by physicians of New York State.

THIS is your library. It was established by Act of Legislature in 1891 for the use of the physicians registered in the State. The State Medical Library subscribes to over 600 periodicals and has over 70,000 volumes, most of which are available for loan to physicians and members of the allied professions (Fig. 1). The State Medical Library is one of several which constitute the New York State Library having a total of over 2,000,000 volumes, pamphlets, and reprints, most of which are also available for the use of the State Medical Library patrons.

This constitutes a wealth of material for the use of our borrowers throughout the State. The Library will lend texts and monographs requested by author and title; also periodicals requested by name of journal, volume, and year. Of course, the more specific the request the quicker will be the service available.

[Continued on page 2958]

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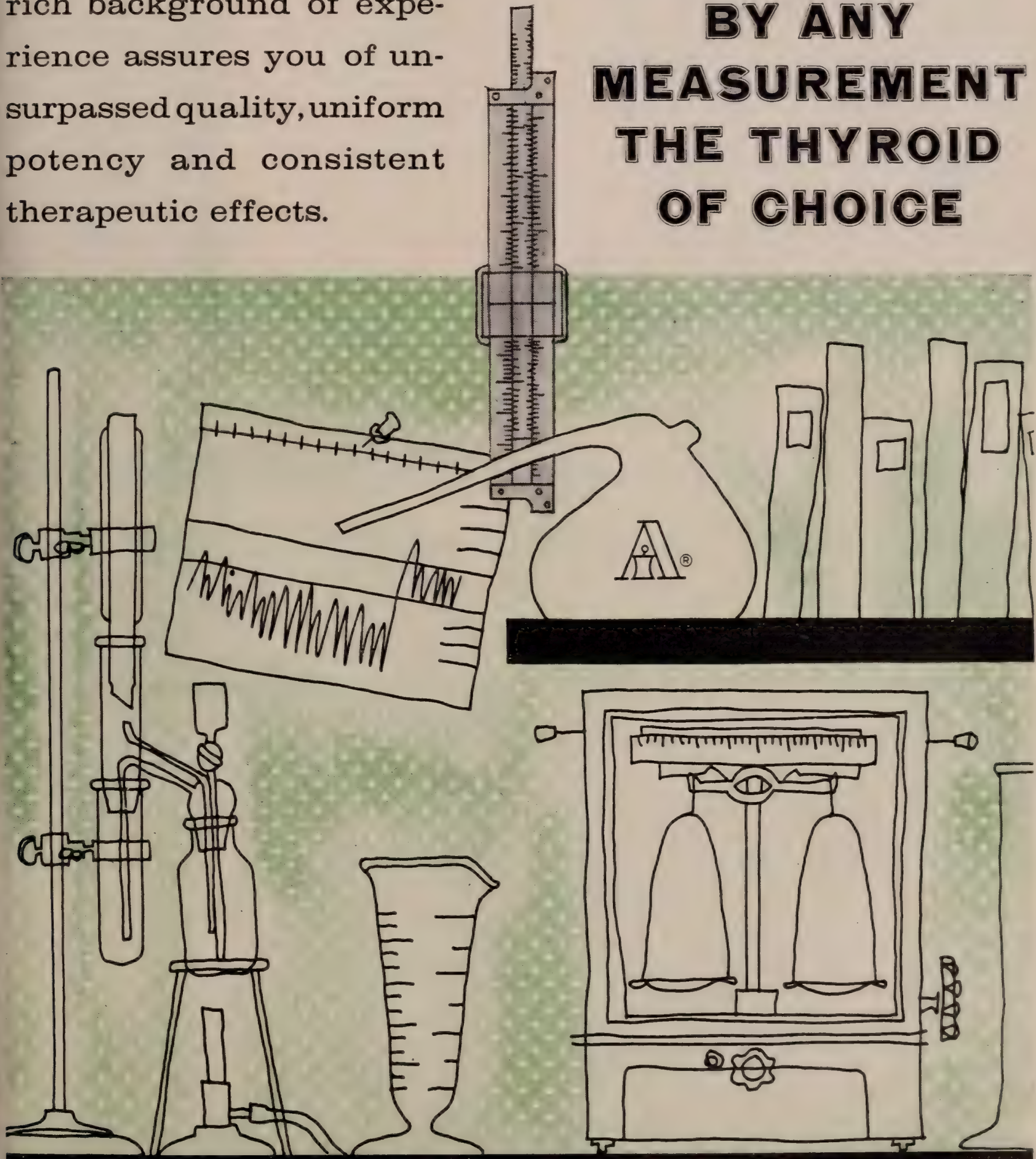
ARMOUR
THYROID

ARMOUR THYROID for over half a century has been more widely prescribed...more widely dispensed than any other thyroid product. Pioneer in thyroid standardization, Armour's rich background of experience assures you of unsurpassed quality, uniform potency and consistent therapeutic effects.

BY ANY MEASUREMENT THE THYROID OF CHOICE



ARMOUR PHARMACEUTICAL COMPANY KANKAKEE, ILLINOIS *Armour Means Protection*
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[Continued from page 2956]

The State Medical Library also offers reference and bibliographic services. Again it is wise to be as specific as possible in noting the subject of the request, the years to be covered in the search, and whether or not articles in foreign languages are acceptable, or in English only. A partial limitation must be put on both reference problems and the completeness of bibliographies since the number of qualified professional librarians and the physical element of time are limited. The librarians, however, can well be trusted in their selective ability for the final choice of material for shipment.

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Ideal Drug for Reducing Not Yet Discovered

Will power is still more potent than any drug to curb overeating and probably will remain so until the appetite mechanism of man is better understood.

This is the conclusion drawn by Dr. Walter Modell, director of clinical pharmacology, Cornell University Medical College, New York, in a report on the "Status and Prospect of Drugs for Overeating" to the Council on Drugs of the American Medical Association.

"Drugs which give assistance along the lines now available provide short-lived symptomatic relief only," according to Dr. Modell's report published in the July 9 issue of the *Journal of the American Medical Association*.

"These seem to be useful only as adjuvants to a carefully controlled diet, and, in many cases, some sort of psychotherapy. Total therapy must consider the psychosocial aspects of eating patterns and the desire to lose weight, as well as the specific psychologic or physiologic disturbance which has brought on the hyperphagia.

"In virtually every instance, motivation for losing weight as well as the psychologic reasons for overeating are important considerations in determining the therapeutic regimens which are likely to be effective and to lead to sustained benefits.

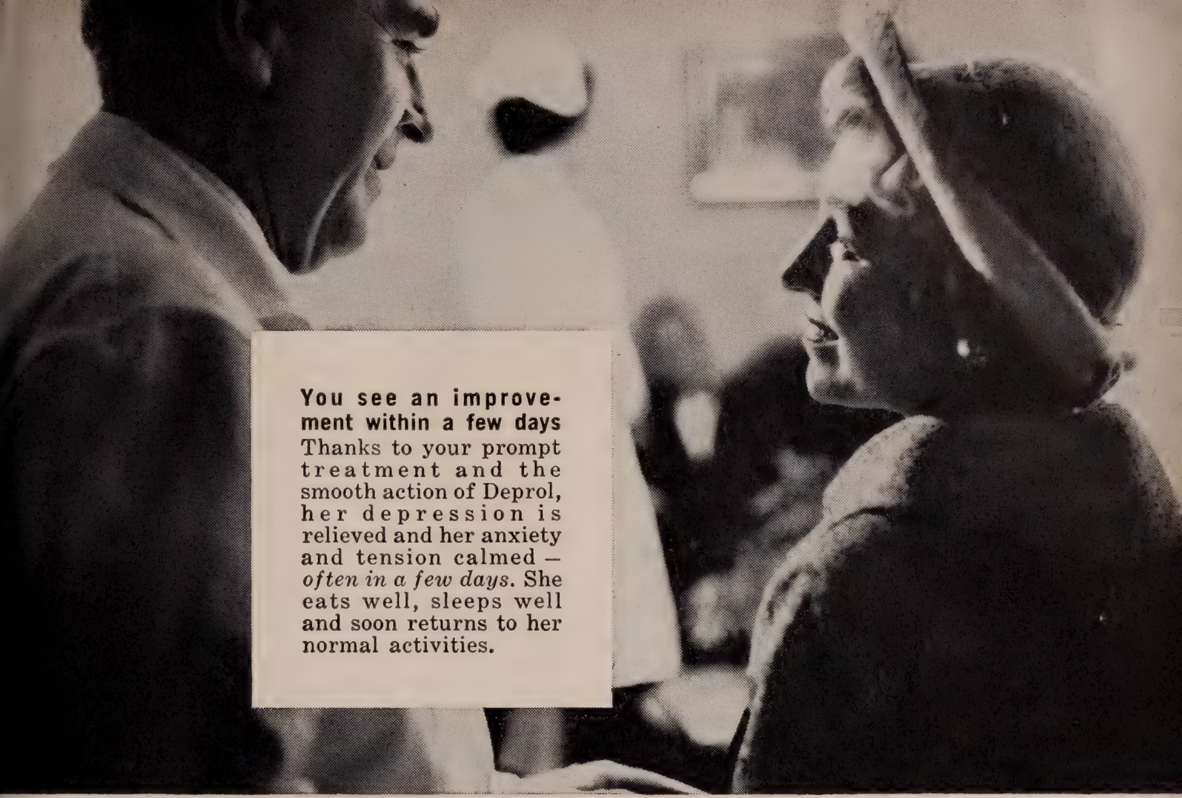
"If more were known about the normal appetite mechanism, perhaps something more rational and lasting could be done about it pharmacologically. However, although we have many hypotheses, neither the central site nor the precise mechanisms of normal appetite control are yet definitely established."

Dr. Modell said studies indicate that man has a natural tendency to maintain a balance between caloric intake and energy output, adding: "The eating patterns of most modern human adults, however, are so distorted that appetite drive and specific food selection appear to have little to do with energy and metabolic requirements."

The culture one lives in has a strong effect on eating habits, he said, and in our present society "social protocol also complicates matters. The business luncheon with cocktail, the before-meal highball or two or three, the with-highball canapes, all are part of the mores which consider the slim figure desirable but provides eating customs which make it hard to achieve," he said.

"Although hereditary predisposition appears to be important in some persons, this is often difficult to distinguish from culturally based obesity. Genetic, glandular, and other physical and physiologic causes play a statistically small role in obesity, probably in less than 10 per cent of all cases."

Whereas obesity is a consequence of a variety of nonrelated causal factors, Dr. Modell said, there are no drugs to produce loss of appetite "to fit specific disturbances in eating patterns, and there are no useful depressants of the appetite center, wherever it may be."



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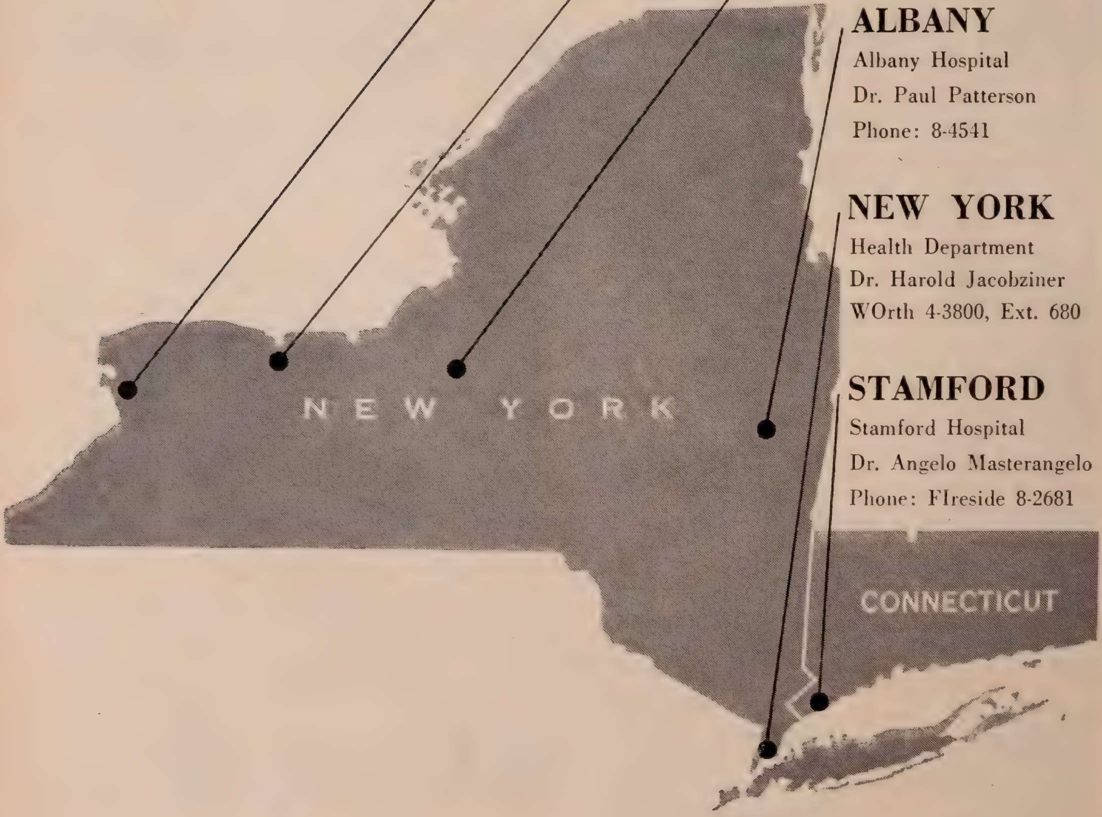

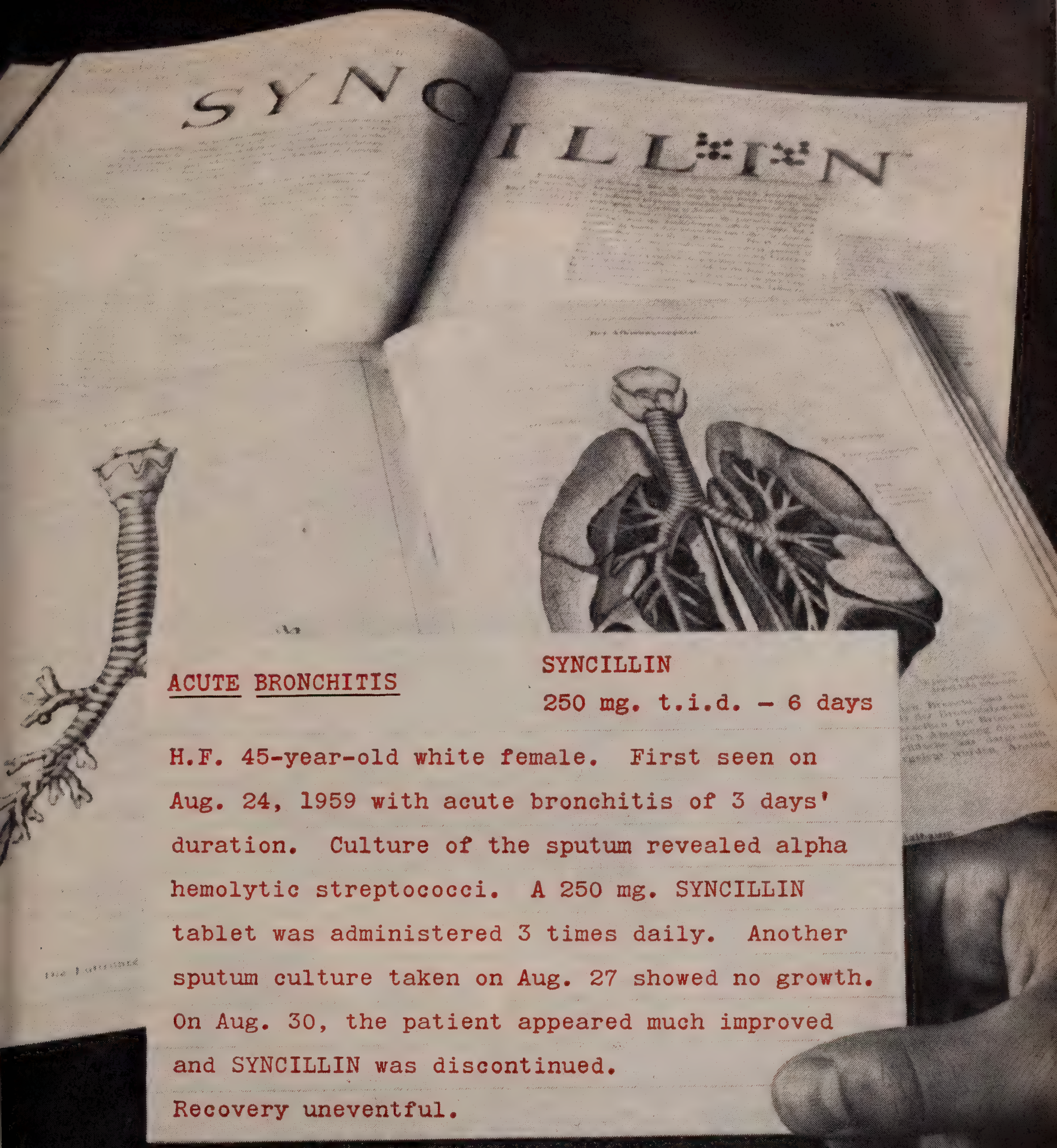

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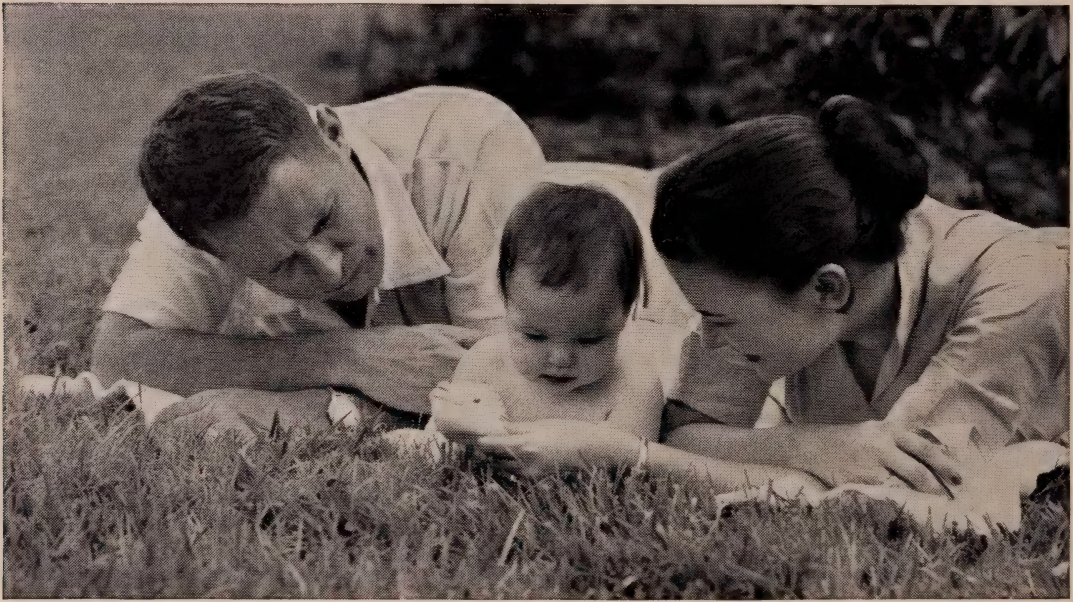

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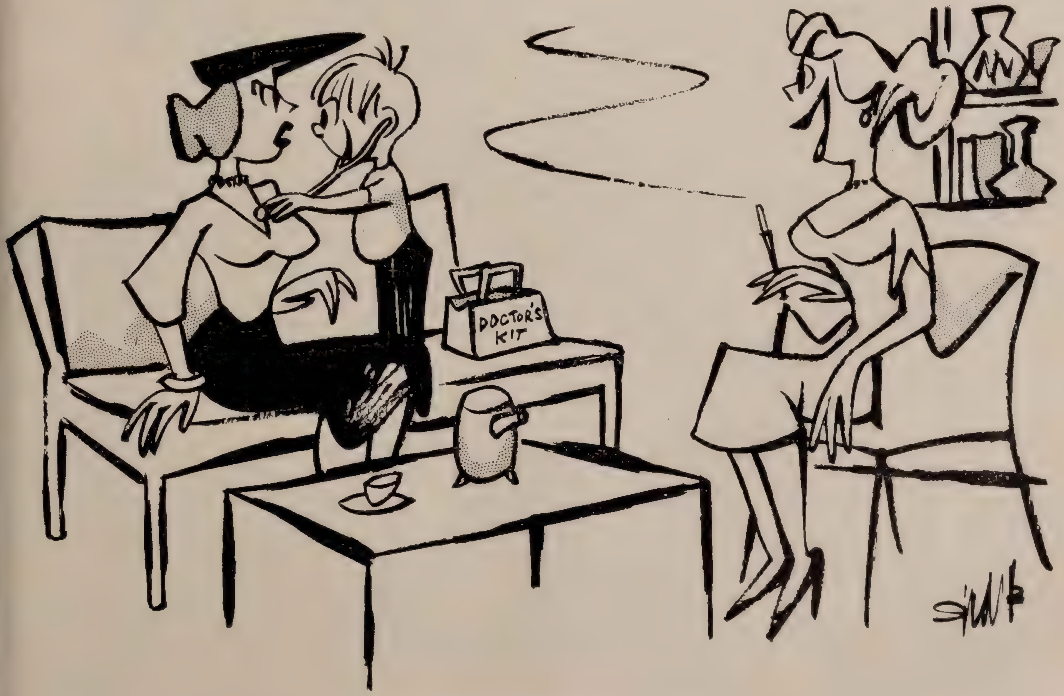

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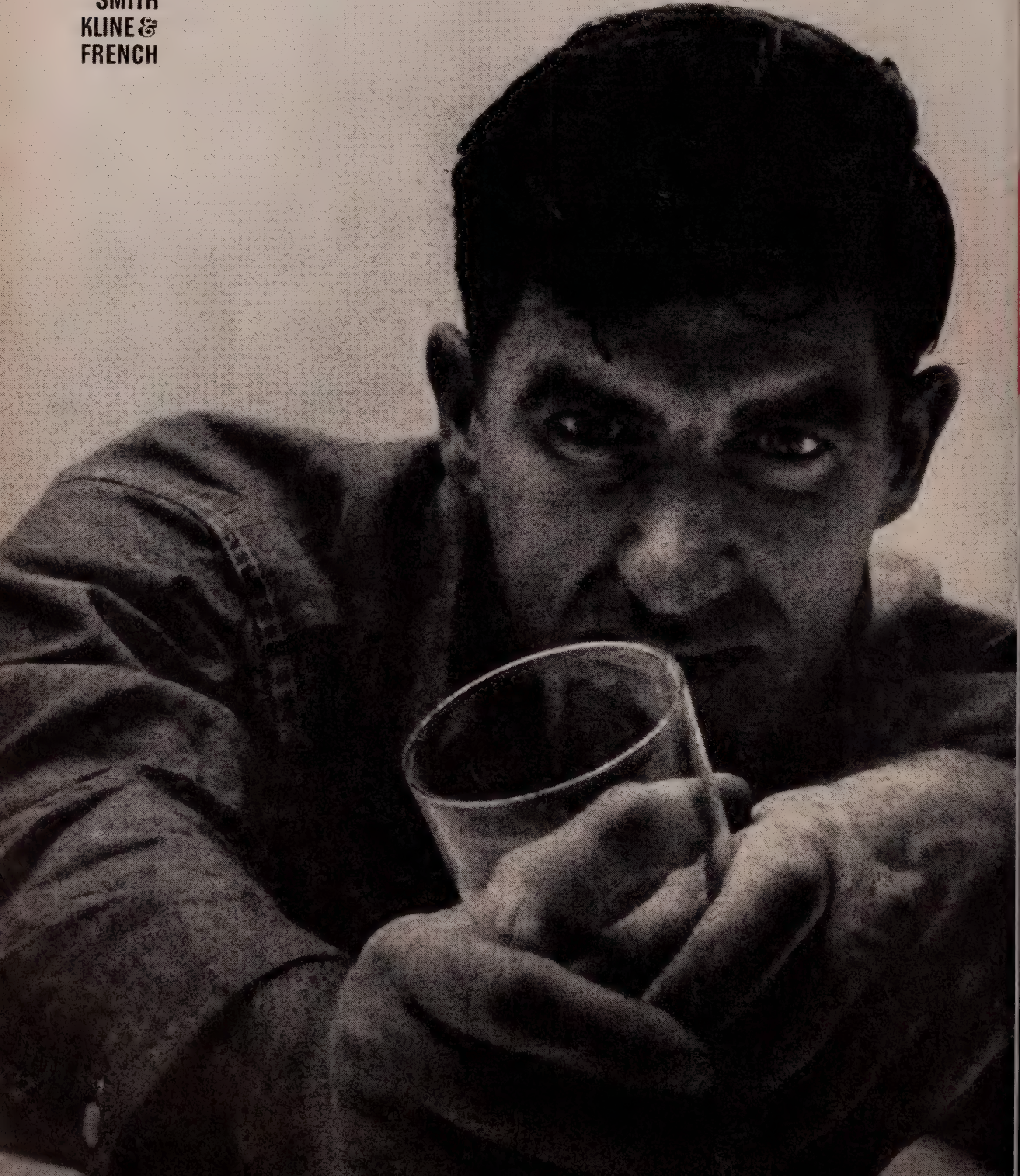

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September 1, 1960

Proceedings of the House of Delegates

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154th Annual Meeting, May 7 to 9, 1960

New York City

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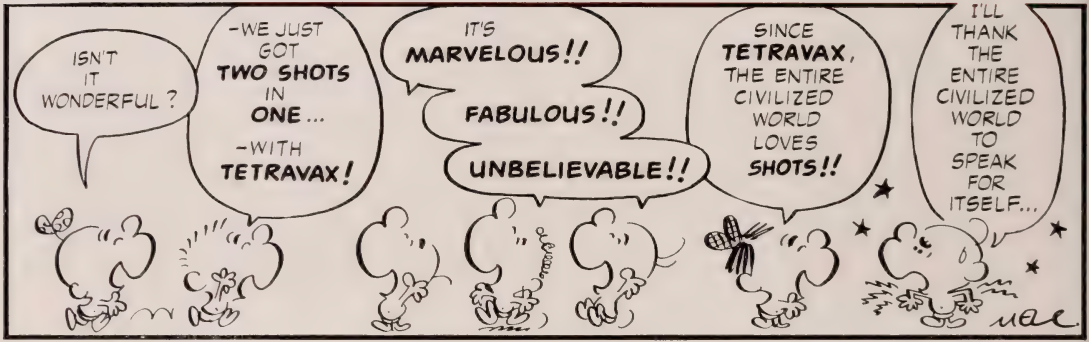
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May 7 to 9, 1960

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Meeting of the House of Delegates, 1960

Once again it is the privilege of the Publication Committee and the editors of the JOURNAL to bring to the membership the complete minutes of the House of Delegates at its 154th Meeting at the Statler Hilton Hotel in New York City, May 7 to 9, 1960, contained in this Part II of the September 1 issue of the NEW YORK STATE JOURNAL OF MEDICINE.

Under the able leadership of Joseph A. Lane, M.D., Speaker of the House, and Frederick A. Wurzbach, Jr., M.D., Vice-Speaker, several improvements in streamlining the work of the House were put into effect this year. The reference committees were reduced in number from 19 to 11 by a more logical grouping of matters for reference. More time was allotted for deliberation of the reference committees. Also the reports of the reference committees were mimeographed and distributed to the delegates for study before they were presented to the House by the various chairmen. With this information at hand the delegates were enabled to take more knowledgeable action.

Among the positive actions taken by the House of Delegates this year was the approval of a petition to the responsible leaders of the Congress asking that no legislative action be taken in respect to methods of financing the health care of the aged until after a complete study has been made of the problem. This resolution was in keeping with the remarks of Louis M. Orr, M.D., president of the American Medical Association, who addressed the House of Delegates on May 9. Dr. Orr recommended that legislation in the matter of health care for the aged be deferred by Congress until after the White House Conference on the Aging in January, 1961.

Another important positive action was approval of an increase in the State Society dues of $10 per year effective January 1, 1961. The House also reaffirmed its support for the inclusion of physicians in the social security system. Final dissolution of the State Medical Society's financial responsibility for the blood banks program was also enacted.

Included in this Part II are the addresses of your outgoing president, Henry I. Fineberg, M.D., and your incoming president, Norman S. Moore, M.D. These addresses are important reading because they tell succinctly and candidly what your Society has done and what it proposes to do under their leadership. The membership is faced with numerous problems, some old and many new. These have been admirably presented by your executives.

It is to be hoped that the members will preserve this issue. It is a record of what has been accomplished by you and for you by your elected representatives in the constant evolution of better medicine.

Medical Society of the State of New York

HOUSE OF DELEGATES

MINUTES OF THE ANNUAL MEETING

May 7 to 9, 1960

THE 154th Annual Meeting of the House of Delegates of the Medical Society of the State of New York convened at the Hotel Statler, New York City, on Saturday, May 7, 1960, at 10:15 A.M., Joseph A. Lane, M.D., Speaker; Frederick A. Wurzbach, Jr., M.D., Vice-Speaker; William L. Wheeler, Jr., M.D., Secretary; Ezra A. Wolff, M.D., Assistant Secretary.

SPEAKER LANE: The meeting will please come to order. I will ask the secretary for a report from the Reference Committee on Credentials.

Section 1 (See 4)

Report of the Reference Committee on Credentials

SECRETARY WHEELER: Mr. Speaker and members of the House, there are no disputed delegations, and all on the rolls are entitled to vote.

SPEAKER LANE: Thank you, Dr. Wheeler.

I hereby declare the 154th Session of the House of Delegates open for the transaction of business.

Section 2

Memorial Tribute

SPEAKER LANE: The first item of business I regret to say is the names of deceased members. They are Henry E. McGarvey, M.D., of Westchester, county delegate 1953–1957; Philip J. Rafle, M.D., of Suffolk, county delegate, 1955; and J. Lewis Amster, M.D., of the Bronx, a delegate for twenty-five years. I ask you to stand for one minute in respect to their memory.

. . . The delegates arose and stood for one minute in silence in memory of their departed confreres . . .

Section 3

Invocation and National Anthem

SPEAKER LANE: We will now have the invocation by the Right Reverend Monsignor Patrick J. Frawley, Director of Health and Hospitals, Catholic Charities.

RT. REV. MONSIG. PATRICK J. FRAWLEY: At the outset of these deliberations of the House of Delegates, convened here today, we pray:

For a continual sense of Thine abiding presence and Thine overruling guidance in our lives, O Lord, hear our prayer.

For spiritual insight to realize fully our influence on others and the grace to use it only and always for Thee, O Lord, hear our prayer.

For wisdom to understand the needs of others—spiritual, medical, and social—and the grace to help by cooperation and sympathy, O Lord, hear our prayer.

For steadfast hearts to meet with courage and cheerfulness the trials and anxieties of life as Thy way of sanctification, O Lord, hear our prayer.

For a right judgment in giving each duty its due place and proportion that our days may be ordered in accordance with Thy Divine Will so as to worship and to serve Thee better, O Lord, hear our prayer.

For grace to make the spirit in which each member participates in these discussions and decisions one with Thy spirit and that of their colleagues so that all may go forward toward the fullness of that perfection which Thou has purposed for us, O Lord, hear our prayer. Amen!

SPEAKER LANE: Thank you, Monsignor.

If you will please remain standing, we will now have the National Anthem.

. . . National Anthem . . .

Section 4 (See 1)

Report of Reference Committee on Credentials

SPEAKER LANE: I would like to ask the chairman of the Credentials Committee, Dr. Kinzly, for the report on the number of delegates registered.

JOHN KINZLY, M.D., *Niagara:* There is a quorum present for the meeting.

There are over 200 at the present minute. I do not have the exact number.

Section 5

Approval of Minutes of 1959 Meeting

SPEAKER LANE: The next order of business is the approval of the minutes of the 1959 session. These minutes appeared in Part II of the September 1, 1959, issue of the NEW YORK STATE JOURNAL OF MEDICINE. Is there a motion for their approval as thus distributed?

FREDERIC W. HOLCOMB, M.D., *Trustee:* I move their approval as distributed.

J. STANLEY KENNEY, M.D., *Trustee:* I second the motion.

SPEAKER LANE: Are there any corrections?

. . . The question was called, and the motion was put to a vote and was unanimously carried . . .

Section 6

Reference Committees

SPEAKER LANE: The appointments to reference committees were published in the April 1 issue of the JOURNAL. There have been several changes, and I wish at this moment to state my appreciation to Drs. Kinzly and Heimoff for stepping in on short notice to take over the chairmanships on assignment.

I regret to announce that Dr. Dean Babbage's father died very suddenly during the night. He had to leave. Dr. John F. Kelley, of Herkimer, has agreed to take that assignment; in fact, I forced him into it.

. . . The list of reference committees as thus corrected is as follows:

Credentials

John Kinzly, Niagara, *Chairman*
Bernard J. Hartnett, Cayuga
Carl Goldmark, Jr., New York
Michael Kizun, Montgomery
James A. Moore, Albany
Charles F. McCarty, Kings, *Adviser*

Reports of Officers

PRESIDENT
PRESIDENT-ELECT
SECRETARY
TREASURER
BOARD OF TRUSTEES
WAR MEMORIAL
BUDGET
BELATED BILLS
EXECUTIVE DIRECTOR

Paul H. Sullivan, Nassau, *Chairman*
Thomas F. McCarthy, Bronx
Thomas M. Flanagan, Chenango
Irwin Felsen, Allegany
Carl G. Whitbeck, Columbia

Commission on Medical Services—A

ECONOMICS
LIAISON WITH U.S. VETERANS ADMINISTRATION
PUBLIC MEDICAL CARE
MEDICAL CARE INSURANCE
RURAL MEDICAL SERVICE
MEDICARE

Irving L. Ershler, Onondaga, *Chairman*
Alfred L. George, Genesee
Harold J. Dunlap, Westchester
Vincent J. Collins, New York, Section Delegate
William T. Boland, Chemung

Commission on Medical Services—B

WORKMEN'S COMPENSATION
INDUSTRIAL HEALTH
HOSPITAL AND PROFESSIONAL RELATIONS
QUESTIONS OF ETHICS

Henry T. Randall, New York, *Chairman*
Henry Vinicor, St. Lawrence
Arthur H. Diedrick, Westchester
Alfred A. Hartmann, Franklin
Michael J. Crino, Monroe

Public Health and Education

PUBLIC HEALTH AND EDUCATION
ACCIDENT PREVENTION
ADDICTION TO ALCOHOL AND NARCOTICS
AGING AND NURSING HOMES
CANCER
CHILD ACCIDENTS
DIABETES
GENERAL PRACTICE
GLAUCOMA
HARD OF HEARING AND DEAF
HEART DISEASE
MATERNAL AND CHILD WELFARE
MEDICAL FILM REVIEW
MENTAL HYGIENE
OPERATING ROOM DEATHS
PHYSICAL MEDICINE AND REHABILITATION
SCHOOL HEALTH
STATE REHABILITATIVE SERVICES

Leonard L. Heimoff, Bronx, *Chairman*
Thomas Bumbalo, Erie
Royal S. Davis, Westchester, Section Delegate
G. Gordon Knight, Rockland
C. Joseph Delaney, New York

Legislation and Legal Matters

MALPRACTICE INSURANCE AND DEFENSE BOARD
LEGAL COUNSEL
LEGISLATION
LICENSURE OF CLINICAL LABORATORIES
FEDERAL LEGISLATION
AUTOPSY AND THE DEAD HUMAN BODY
CULTS
JUDICIAL COUNCIL

Charles R. Mathews, Monroe, *Chairman*
Irwin Alper, Oneida
Herbert A. Laughlin, Chautauqua
Irving M. Pallin, Kings
E. Kenneth Horton, Nassau

Medical Communication

PUBLICATION
PUBLIC RELATIONS
COOPERATION WITH MEDIA OF INFORMATION
AMERICAN MEDICAL EDUCATION FOUNDATION
CONVENTION

John F. Kelley, Herkimer, *Chairman*
C. Stewart Wallace, Tompkins
Monroe M. Broad, Queens

Robert F. McMahon, Onondaga
Theodore R. Proper, Orange

Organization and Policies

PLANNING
DISTRICT BRANCHES
OFFICE ADMINISTRATION AND POLICIES
1958 MANAGEMENT SURVEY REPORT
CONSTITUTION AND BYLAWS

Samuel Wagreich, Bronx, *Chairman*
Solomon Schussheim, Kings
George W. Fish, New York
Philip M. Standish, Ontario
Edward F. Shea, Ulster

Medical Care

CIVIL DEFENSE AND CATASTROPHE
DISABILITY DETERMINATIONS, ADVISORY
RESOLUTION 58–49
COLUMBIA UNIVERSITY STUDY, ADVISORY
STAPHYLOCOCCAL INFECTIONS

Warren A. Lapp, Kings, *Chairman*
Francis A. Stephens, Albany
John. L. Finnegan, Queens
Thomas S. Cotten, Steuben
Robert S. Cleaver, Putnam

Ancillary Groups

WOMAN'S AUXILIARY, ADVISORY
NURSING EDUCATION
DENTAL HEALTH
PHARMACEUTICAL ASSOCIATION
BLOOD BANKS COMMISSION
INTERPROFESSIONAL ASSOCIATION

Sol Axelrad, Queens, *Chairman*
James L. Palmer, Broome
Julia Lichtenstein, New York
Philip J. Hust, Delaware
John W. Latcher, Otsego

Miscellaneous Business

AMERICAN MEDICAL ASSOCIATION

Raymond J. Byron, Schenectady, *Chairman*
Earl W. Douglas, Suffolk
Gilbert A. Clark, Rensselaer
Michael C. Armao, New York
Walter T. Heldmann, Richmond

SPEAKER LANE: At the end of the session we will tell you where the reference committees will meet in the back of the room, as most of you know who have been here before. For the information of those of you who are new, Miss Lewis will edit resolutions and reports and will act as clearinghouse for returning resolutions to committees and for the signing of reports by committee members. Please don't overlook signing the reports when ready. We have had two meetings with the chairmen of reference committees in an effort to boil down without eliminating any important material in the reports of reference committees.

You will probably also have noted that there is a diminution in number of reference committees in an effort to spread the work out more evenly and also to expedite the business of the House. We hope that this will be successful.

Section 7

Reference of Reports and Supplementary Reports

SPEAKER LANE: I will now call on the secretary.

SECRETARY WHEELER: Mr. Speaker, I would like to move that reports and supplementary reports of Officers, Council, Trustees, Legal Counsel, and District Branches that have been published and distributed to the members of the House be referred to the appropriate reference committees without reading.

ASSISTANT SECRETARY WOLFF: I second that.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

SPEAKER LANE: These resolutions and reports are included in your Handbook as well as in your loose-leaf file. They have all been referred to the proper committees, as we interpreted them.

The reference committee locations will be announced before the close of the meeting, but specifically they will be in this room and in the room at the north end there.

This year all reference committee reports are to be mimeographed and distributed to all of the delegates so that you will have a report of the reference committee before you when it is presented to the House, and you can follow it. We hope that this will make the business of the House more understandable and less confusing.

In your loose-leaf folders you will note, first, that you have a page on parliamentary procedure, which we all hope to follow. One particular comment that I would like to make about that—I perhaps don't need to make it—but if there is any thought that there should be personal feelings injected into the proceedings, please don't do that. I will have to call you out of order the instant anything of that type occurs. I am sure you will observe that rule.

We have also included in there for you a district branch map so that those of us from the different parts of the State will know where some of the locations are that we don't know very well geographically.

Anyone who has reason to address the House will please go to the nearest microphone and announce his name and county—not his city or town but his name and county.

You will also note that your resolutions are arranged according to the reference committees to which they are referred and not in numerical order as they have been before, but you have in the front of that an index of those resolutions and the reference committees to which they have been assigned.

When you receive your reference committee reports, they are to be filed also according to the reference committee by whom they were reported.

You will also have in your loose-leaf folder the delegates information sheet. Over the years there has been a report kept of the activities of different people on reference committees. We have a file card on everyone who has been on a reference committee. Looking at the file cards we sometimes find it difficult to make what would be in our opinion proper assignments, and sometimes I am sure in your opinion much less satisfactory assignments. We ask you to go over these delegates information sheets, fill them out conscientiously, and leave them with Miss Lewis at the back of the hall. I would prefer that you do that not later than the afternoon session tomorrow. Particularly, if you will indicate on that sheet if you have any particular preferences, we will try to assign you accordingly.

One thing I might comment on in reference to that is the fact that in decreasing the number of reference committees from 19 down to 11, it does of course decrease the number of delegates that we can use. However, a great deal of consideration has been given to this move, and we hope you will find it successful.

Section 8

Introduction of New Delegates

Speaker Lane: We will now have the introduction of new delegates. As your name is called, will you kindly stand, but the House will please refrain from any applause until they are all called and are all standing:

District Delegates

George W. McCormick, Richmond—First District
Wilfrid M. Anna, Niagara—Eighth District

Section Delegates

Hyman Sherman, Kings—Allergy
Herbert L. Traenkle, Erie—Dermatology and Syphilology
M. Luther Musselman, Erie—Gastroenterology and Proctology
Isaac Shapiro, Schenectady—Neurology and Psychiatry
Michael J. Jordan, New York—Obstetrics and Gynecology
Alfred W. Doust, Onondaga—Otolaryngology
John A. Monfort, Kings—Pediatrics
Ralph M. Vincent, Albany—Preventive Medicine and Public Health
Edmund N. Goodman, New York—Surgery

County Delegates

John F. Roach, Albany
Walter Einhorn, Bronx
Maurice G. Sheldon, Cattaraugus
Wallace C. Bedell, Dutchess
Lawrence Sweeney, Dutchess
Harold T. Golden, Herkimer
Leslie H. Tisdall, Kings
Maurice M. Maltinsky, Monroe
Michael Kizun, Montgomery
Ralph S. Emerson, Nassau
Ira A. McCown, New York
George W. Melcher, Jr., New York
Albert M. Schwartz, New York
H. Braden Fitz-Gerald, Niagara
A. Carl Hofmann, Onondaga
Allen G. Gifford, Rensselaer
Philip Parillo, Schenectady
L. Barrett Davis, Suffolk
David Evancie, Suffolk
Charles M. Brane, Westchester
James Q. Haralambie, Westchester
Wallace M. Sheridan, Westchester

Mark a round of applause for these gentlemen, please. (*Applause*)

ANNUAL AND SUPPLEMENTARY REPORTS

Section 9 (See 164) Report 60–A

Annual Report of Committee on Economics, Subcommittee on Public Medical Care

To the House of Delegates, Gentlemen:

The Public Medical Care Subcommittee of the Economics Committee is composed of the following:

Earl C. Waterbury, M.D., *Chairman*	Orange
Marcelle T. Bernard, M.D.	Bronx
Lyman C. Boynton, M.D.	Monroe
Robert J. Collins, M.D.	Onondaga
Karl N. Wechtel, M.D.	Nassau
Peter Birkel, M.D., New York State Department of Social Welfare, *Adviser*	Albany

The Subcommittee on Public Medical Care held a meeting on December 17, 1959. Because of inability to secure a quorum, a telephone conference was held, with Drs. Bernard, Boynton, Collins, and the chairman participating.

The question of the new fee schedule was discussed. The chairman reported that the State Department of Social Welfare has prepared a new fee schedule conforming to the established basis, which is two thirds of the Workmen's Compensation Fee Schedule. This schedule has been submitted to the local commissioners of public welfare and to this subcommittee. Inasmuch as it conforms to the accepted two thirds of the Workmen's Compensation Fee Schedule and with the understanding that any county medical society may negotiate a higher schedule with its local welfare commissioners, your subcommittee recommended that this schedule be put into effect not later than March 1, 1960, and the Council approved this recommendation.

The reporting of the first visit by a physician on a recipient of public assistance has been on a five-day basis with Saturdays, Sundays, and legal holidays excepted. It has been brought to the attention of this subcommittee that several county medical societies desire this time extended to fifteen days. This was discussed by each member of the subcommittee, and the subcommittee recommends that the present rule of the State Department of Social Welfare be continued.

The chairman discussed a proposal that had been made relative to a means of reducing high medical costs. This proposal is that a panel system of physicians be set up in the medical care program in welfare districts to render medical care to those in receipt of public assistance. Each member of the subcommittee expressed his views on this subject. It was the consensus that in areas where the panel system now is being used, it should be continued. It was further agreed that this subcommittee recommend that a panel system would be acceptable in cities with a population over 50,000 but that the present fee-for-service principle, promulgated by the Public Medical Care Subcommittee in 1938, accepted by the House of Delegates in 1946, and reaffirmed by the House of Delegates in 1958, be continued.

Your subcommittee feels that closer cooperation of the welfare committee of each county society with the commissioners of public welfare would aid in reducing the high cost of medical care in welfare districts.

Respectfully submitted,
E. C. Waterbury, M.D., *Chairman*

Section 10 (See 140, 158) Report 60–B

Supplementary Report of the Committee on Public Health and Education

To the House of Delegates, Gentlemen:

A joint meeting of the Council Committee on Public Health and Education was held with representatives of the State and City Health Departments on Wednesday, April 20, 1960. The following subjects were discussed:

I. *Amendment to Chapter XII of the Sanitary Code.*—For the information of the committee Dr. Larimore reported that an amendment to the New York State Sanitary Code, to become effective July 1, 1960, would provide for the footprinting of newborn infants. Dr. Larimore noted that a similar provision had also been incorporated into New York City's Sanitary Code.

The committee approved of this amendment.

II. *Revision of "Control of Staphylococcal Infections in Hospitals."*—Dr. Larimore reported that the manual prepared in 1958 by the Joint Committee to Combat Staphylococcal Infections had been revised. The new edition will be off the press on or about May 16. Between that date and July 1, when the section of the Sanitary Code requiring the reporting of staph infections will go into effect, it is planned that a program of education for the doctors and hospitals will be worked out.

It was agreed that a joint letter signed by the president of the State Society and the Commissioner of Health should be sent to all physicians upstate informing them of the new provision of the Code, prior to July 1. In the letter it should be stated that a copy of the manual will be sent to all hospital directors and chiefs of staff and that a copy will be made available to any physician on request.

III. *Tetanus Toxoid Immunizations.*—Dr. Moore read a resolution adopted by the House of Delegates of the American Medical Association in December, 1959, concerning the importance of tetanus toxoid immunizations as related to civil defense.

The resolution was discussed in executive session of the A.M.A.'s Committee on Disaster Medical Care on January 24. They were in favor of the immunization but questioned the feasibility of identifying in an unconscious person the past medical history and possible allergy.

Discussion by the joint group brought out the fact that sensitivity to the toxoid was extremely rare; that allergy applies to the tetanus antitoxin rather than the toxoid. Dr. Larimore pointed out that the State Health Department had been strongly advocating tetanus toxoid immunization for several years as part of its civil defense activities but had not gone into the question of identification. It was also brought out that any immunization procedure of this sort does not get far among the adult population; it is more practical to push vaccinations among school children, and then a booster shot can be given them at a later date.

It was finally agreed to endorse the immunization by tetanus toxoid of all persons possible, especially children, for civil defense purposes, encouraging immunization by physicians in their office practices, among persons traveling abroad, and in industrial use.

It was agreed that Dr. Hilleboe would present a draft of such a suggested program to the Council at its meeting in June.

IV. *The Medical Use of Hypnosis.*—The group discussed the use of hypnosis in medical practice, which had already been considered by the Council in March. A letter from Dr. Richard J. Plunkett, secretary of the Council on Mental Health of the A.M.A., outlined the criteria of the A.M.A. for the teaching of hypnosis. After discussion it was agreed to abide by the regulations set forth by the Council of the Medical Society in March, i.e., a doctor, dentist, or certified clinical psychologist may teach the use of hypnosis in medical practice.

teaching technics must include indications and contraindications. Also members of the medical profession using hypnosis should not participate in the use of hypnosis for entertainment purposes.

It was agreed that when the A.M.A.'s detailed principles were received from Dr. Plunkett, they would be summarized and referred to the Subcommittee on Mental Health.

V. *Postgraduate Education Program.*—For the benefit of the incoming chairman of the Council Committee, the policies regarding the joint postgraduate education program with the State Health Department were reviewed. Because the 1960–1961 State budget has already been adopted, it is impossible at present to increase the $25 honorarium now accorded to speakers on the program.

It was agreed to continue under the present arrangements, particularly in view of the fact that if the new panel approach proves popular and is put into effect throughout the State, there will be a greatly increased number of individual participants for whom to provide the honoraria. Also the pending establishment of a scientific and educational foundation by the Medical Society would make it appear desirable to hold in abeyance any change in policies.

Dr. Moore presented an inquiry from the Blood Banks Association of New York State as to whether or not the committee would be willing to include its scientific presentations, both at the annual meeting in May and at proposed seminars in midwinter, under the committee's postgraduate education program. This request applies to meetings scheduled after the annual meeting on May 6, 1960, which is already covered in the association's budget. It was agreed to inform Dr. Nathanael Fedde, secretary of the association, that the committee would postpone its decision until after final financial arrangements have been settled between that organization and the American Association of Blood Banks with regard to the transferral of operation of the North East District Clearing House.

VI. *Oral Poliomyelitis Vaccine.*—Dr. Hilleboe gave a complete outline of the development, commencing in 1951, of this type of immunization by Drs. Koprowski, Cox, and Sabin and the experiments carried on in South American countries by the World Health Organization, in Africa, and last year in the U.S.S.R. where an extensive program was conducted involving 15 million vaccinations. To date about 50 million doses have been administered. Dr. Hilleboe noted that the Health Department had taken a conservative view of the use of this type of vaccine up to the present but that reports from persons conducting the widespread experiments indicated that the oral vaccine was both safe and effective. Three pharmaceutical companies were in the process of tooling up for mass production, he said, and it was time for New York State to look into the administrative and laboratory problems involved in giving oral poliomyelitis vaccine to large numbers of persons under twenty years of age, by the conducting of a pilot program among school age children from the fourth year of high school downward.

The committe voted to recommend to the Council of the State Medical Society that it endorse the conducting of a field trial of immunization by oral poliomyelitis vaccine this summer by the State Department of Health.

It was agreed that this experiment would be carried out in coordination with the views and suggestions of the Health Department of the City of New York.

The above proceedings were reported to the Council at its April meeting and were appoved by that body.

Respectfully submitted,
Norman S. Moore, M.D., *Chairman*

Section 11 (See 141) Report 60–C

Supplementary Report of the Committee on Public Health and Education, Subcommittee on Accident Prevention

To the House of Delegates, Gentlemen:

The Subcommittee on Accident Prevention continues to advise Dr. William Haddon, Jr., director of the Driver Research Center of the State Department of Health, on problems arising in connection with the granting of operator's licenses to applicants with physical defects. Two types are noted here:

1. A cardiac with complete heart block applying for renewal. Had not yet had a definite convulsion but might well develop Stokes-Adams disease. Committee recommended denial of license, with further examination by qualified cardiologist.
2. Individuals with either unilateral or bilateral aphakia (corrected). Both the ophthalmologist on the subcommittee and a second ophthalmologist who has served as an adviser to the committee considered properly corrected aphakics to be satisfactory driving risks.

Occasional instances are still reported by the State Police to this committee where a physician declines to draw blood from a driver involved in an accident, even though requested to do so by a State Trooper in order to determine alcoholic content of the blood. The chairman of the parent committee writes to each of these physicians, giving him full details of the legal status of the doctor and assuring him that he is fully protected from liability.

Respectfully submitted,
S. Bernard Wortis, M.D., *Chairman*

Section 12 (See 142) Report 60–D

Annual Report of the Committee on Public Health and Education, Subcommittee on Addiction to Alcohol and Narcotics

To the House of Delegates, Gentlemen:

The Subcommittee on Addiction to Alcohol and Narcotics of the Committee on Public Health and Education is composed of the following:

Jerome L. Leon, M.D., *Chairman*	Queens
Herbert Berger, M.D.	Richmond
Webster M. Moriarta, M.D.	Saratoga
Marvin A. Block, M.D.	Erie
John M. Galbraith, M.D.	Nassau
Granville W. Larimore, M.D., New York State Department of Health, *Adviser*	Albany

A meeting of the subcommittee was held on July 29, 1959, attended by all the members.

The primary purpose was to discuss the projected closing of Riverside Hospital, ostensibly because there have been few cures and it has been difficult to persuade trained personnel to work at a hospital located on an island. When the hospital was opened, it was realized that the number of "cures" would be insignificant. The purpose of the hospital was to study the narcotic problem in young addicts and endeavor to treat and rehabilitate them when possible. A proposal to affiliate narcotic treatment units with teaching hospitals was considered unrealistic. University-affiliated hospitals have shown little interest in the problem and no desire to establish such units. The committee agreed that detoxification was not enough and had absolutely no long-term meaning. It was further agreed that the addiction per se is the symptom of a personality defect. The symptom can be rather easily treated in the proper facility. The treatment of the underlying personality defect is extremely difficult and in many instances impossible with our present knowledge.

It was suggested that through rehabilitation of the narcotic addict in State hospitals, savings might be effected and better results obtained. The addict could be treated in a State hospital as a patient and not committed to a prison where he is treated as a criminal. This approach is to be further investigated. The following conclusions were reached:

1. At the present time narcotic addicts are not being cured.

2. Detoxification is a medical problem and not a legal or police matter.

3. Suitable provisions must be made available for the rehabilitation of the detoxified patient.

Upon motion duly made, seconded, and carried it was voted to petition the Mayor to maintain adequate facilities for the study, treatment, and rehabilitation of narcotic addicts, and these facilities should be established before Riverside Hospital is abandoned.

The New York State Pharmaceutical Association was anxious to sponsor legislation which would permit doctors of medicine to order on memorandum preparations containing $^1/_4$ grain of codeine per tablet or dram. A telephone meeting of the subcommittee was held, and it was unanimously voted not to support such legislation. It was our opinion that such a law is contrary to our basic concepts of narcotic control and, in addition, encourages bad medical practice.

The chairman of the Subcommittee on Addiction to Alcohol and Narcotics attended a Conference on Post Hospital Care and Rehabilitation of Adolescent Narcotic Addicts in Albany on January 8 and 9, 1960. This meeting was held under the auspices of the New York State Interdepartmental Health Resources Board. There were no important recommendations made. Some new procedures will be tried such as the establishment of 25-bed units for detoxification at various hospitals affiliated with medical schools. In addition, suitable young addicts will be sent to the country, during which time an attempt will be made to prepare their families for the addict's return. We can see nothing startling in these recommendations and feel that they are contrived gimmicks rather than substantial reevaluation of the narcotic problem.

At the May, 1959, meeting of the House of Delegates, the reference committee made the following recommendation: "That in the coming year, the Subcommittee on Addiction to Alcohol and Narcotics study intensively the problem of narcotic addiction in the light of recent reports (national, State, and local), and in regard to the medical approach, and that the subcommittee in its 1960 annual report give the House of Delegates the result of its study and benefit of its deliberation."

The subcommittee is well aware of the fact that punitive treatment of narcotic addiction has produced very few therapeutic successes. The subcommittee is particularly interested in the addict who breaks the law to sustain his habit. Treating this group in prisons and prison-like institutions is of no avail, and published figures reveal that practically 100 per cent of these so treated addicts return to the use of narcotic drugs shortly after their period of forced confinement. It is from this group that we may be able to salvage some useful citizens if interested doctors are allowed to treat these patients. Those who were criminals first and addicts later constitute a different group entirely, and physicians cannot expect to obtain results in this category. Of course, we realize that the sellers of narcotics who sell for profit and not to obtain their own source of narcotics should be handled entirely by the police.

By and large, narcotic addiction is treatable but seldom curable. However, the medical profession has never had the opportunity to treat addicts according to medical disciplines. We hope that by education and understanding we can eventually produce legislation which would permit qualified and interested doctors of medicine to treat narcotic addicts in the first category described.

This is a continuing study of a difficult problem which may someday be solved.

Respectfully submitted,
JEROME L. LEON, M.D., *Chairman*

Section 13 (See 144) Report 60–E

Supplementary Report of the Committee on Public Health and Education, Subcommittee on Aging and Nursing Homes

To the House of Delegates, Gentlemen:

Since the annual report of the Subcommittee on Aging and Nursing Homes was written, there has been an additional meeting, held on February 11, 1960. Among its actions was the recommendation that the matter of accreditation of nursing homes be considered by the various Blue Cross plans throughout the State with a view to establishing a uniform basis of accreditation State-wide and, further, with a view to eventual Blue Cross coverage of patient care in nursing homes.

It was emphasized that such coverage would enable many chronically ill persons to be moved from general hospitals to nursing homes and thus relieve the Blue Cross plans of long periods of payment of higher rates.

It was agreed to request Dr. Henry Brill, Assistant Commissioner for Mental Hygiene, to prepare a symposium on "Mental Health of the Aging," which is the joint project being undertaken by the subcommittee with the Departments of Health and Mental Hygiene for the coming year. County medical societies will be requested to hold programs on this topic not only for the profession but in conjunction with local agencies for the lay public. They will be encouraged to have a speakers bureau for community programs of this nature and to communicate with their radio and TV stations for program time.

In this connection it was urged that attempts be made to procure adequate physician representation on community council planning committees.

It was reported that Governor Rockefeller had appointed the chairman of the subcommittee and Mr. Alton Barlow, president of the New York State Association of Nursing Homes, as delegates to the White House Conference in January, 1961.

The chairman attended the 1960 National Health Forum on "Positive Health of Older People," sponsored by the National Health Council and held in Miami Beach, Florida, from March 14 to 17, 1960. About 500 persons attended the forum, the purposes of which were as follows:

1. To help obtain a better understanding of the problems in seeking to assure the health of older people.
2. To identify what is being done and what can be done immediately and in the near future.
3. To stimulate action leading toward the goals.
4. To prepare the health professions for constructive participation in the 1961 White House Conference on Aging.

The chairman also attended the American Medical Association's conference in preparation for medicine's participation in the White House Conference. This was held in Chicago on April 22 and 23, 1960. It was a conference of the executive directors of state medical societies, the chairmen of the committees on aging of the state medical societies, and A.M.A. staff representatives. The purposes were as follows:

1. To exchange information concerning the progress of the various states preparations for the White House Conference on Aging and the present or anticipated role of the state medical societies in these preparations.
2. To acquaint the state societies with the role of the A.M.A. in preconference activities.
3. To review facts concerning older people which require special recognition by medicine: health status, economic status, and financing medical care.

It was pointed out that medicine's participation in the White House Conference and preconference activities should go beyond health and medical care. Medicine should have something to say about the various social factors which are intimately related to health in the aging individuals, such as retirement policies, employment opportunities, spiritual values, family and community attitudes, personal mental attitudes, and living habits.

The importance of continuing to meet and solve the needs of aging people at the community level was emphasized.

Respectfully submitted,
JOSEPH J. WITT, M.D., *Chairman*

Section 14 (See 147) Report 60–F

Supplementary Report of the Committee on Public Health and Education, Subcommittee on Diabetes

To the House of Delegates, Gentlemen:

A meeting of the Subcommittee on Diabetes of the Committee on Public Health and Education was held on March 11, 1960.

Several replies were reviewed from hospitals in response to the letter of September 25, 1959, sent to all hospital superintendents, enclosing recommended procedures for the detection of diabetes. The letter had suggested that the postprandial test be included in the routine survey of all admissions. It was decided that the chairman would reply to the questions raised in these letters in accordance with the advice of the committee.

It was apparent from the letters that the chiefs of medicine and surgery, as well as the laboratories, should be made to realize the importance of the postprandial taking of the blood sugar test or at least a urine test postprandially. To assist in educating the medical profession in general it was decided to request that a small "box" be inserted in the *Newsletter*. (This will appear in the May issue.) It was also suggested that industrial concerns might be alerted to make these tests on new employes.

There followed discussion of the functions of the subcommittee:

1. To stimulate county medical societies to activity in this area.
2. To encourage general interest among lay groups.
3. To clarify more exact diagnosis of diabetes when suspected by emphasis on postprandial blood sugar tests rather than on fasting samples and by sugar tolerance test when the diagnosis is not sure.
4. To educate the profession and the public.

The chairman read a letter from Mr. Fred Uetz, assistant to the vice-president of the Pioneer Ice Cream Division of the Borden Company, who manufacture "diabetic" ice cream. The letter had to do with the editorial in the NEW YORK STATE JOURNAL OF MEDICINE written by the chairman to show the fallacy of the claim that this is a low-calorie ice cream. The letter was most courteous and informative, and the chairman was requested to reply in kind.

It was decided that a series of articles on diabetes in the JOURNAL would be desirable. This is in process of being arranged at this writing.

There was further discussion of methods of educating the physician in the area of diabetes, with the suggestion that the State Health Department might install a Clinitron machine at the annual meeting of the State Society so that the doctors themselves might be tested. This plan has been approved by the Council, and the Clinitron will be located in Booth 301 among the scientific exhibits. A card telling of the testing machine will be available to each registrant at the convention.

Respectfully submitted,
CHARLES B. F. GIBBS, M.D., *Chairman*

Section 15 (See 148) Report 60–G

Annual Report of the Committee on Public Health and Education, Subcommittee on General Practice

To the House of Delegates, Gentlemen:

A meeting of the Subcommittee on General Practice was held on February 26, 1960. A letter had been circulated among the committee members by the chairman asking for topics to be discussed. The resulting suggestions he reviewed with the committee.

1. A strong liaison between the State Medical Society and the New York State chapter of the Academy of General Practice: The subcommittee were reminded that there has been close contact through Dr. McKeeby's position on the Council of the State Society; through the Section on General Practice of the State Society, of which a member of the subcommittee, Dr. Howard, is chairman; through Dr. Wagreich, another member, who is chairman of the Dinner Committee for the State Society's Annual Meeting, and particularly through the chairman's personal association in Ithaca with Dr. Norman Moore, chairman of the parent committee. It was agreed, however, that the average general practitioner does not participate as much as he should in organized medicine in his community.
2. Liberalization of policies in hospitals for the general practitioner: (*a*) Hospitals should have G.P. sections, especially the voluntary hospitals; (*b*) postgraduate rounds and sessions should be conducted in all hospitals.
3. Qualifying or certification of the general practitioner for special type of practice in hospitals: He should be permitted to work under a specialist, and if he is considered by that specialist to be qualified, he should be permitted to do that work.

Discussion on this point brought out the dissatisfaction of the general practitioner with the dual system of payment to general practitioners and to specialists by the Workmen's Compensation Board and other governmental agencies for the same type of service. It was recommended to the Council that there be investigation of the dual fee schedule system as followed by the Workmen's Compensation Board.

4. The subcommittee wishes to go on record that the general practitioner of New York State has done his full share in cooperating with the Health Department in providing immunization to polio, and his services are to be appreciated.
5. It was pointed out that hospital insurance plans have made it unattractive for a physician to practice in rural communities. It was recommended that the Medical Society work toward placing general practitioners in the rural areas.

The subcommittee was reminded that the Medical Society has a placement bureau for physicians. It was agreed that this fact should be publicized throughout the State by means of the *Newsletter* and also by contacting local clubs, organizations, and officials.

The subcommittee drew up a suggested list of principles concerning the general practitioner which it believed should be taken into consideration in all aspects of the State Medical Society's activity and objectives:

A. The general practitioner is dedicated to the service of his patient as a family doctor and makes himself available at all times.

B. The general practitioner is the backbone of the practice of medicine.

C. Every part of the State should have its quota of general practitioners, and the Medical Society should devise ways and means of inducing them to take up rural practices.

D. Equal payment for equal work should be provided to the general practitioner and the specialist in all fee schedules.

E. The general practitioner should be offered constant postgraduate training in the hospital as well as in county medical societies, academies of medicine, etc.

F. An all-out effort should be made to encourage eligible students to attend the medical schools in order to meet the medical needs of the State and of the nation.

It was suggested and approved that a pamphlet on the feet be drawn up and circulated among high school students, calling attention to the bad effects of pointed shoes and high heels on women's feet. There followed a discussion of the need for the members of the Medical Society to be made aware periodically, through the New York State Journal of Medicine, of the procedures which podiatrists are permitted to practice by law. When the latter overstep their bounds, it is usually the physician's fault because he fails to tend the feet of his patients as he should and to instruct them in their proper care.

The above proceedings were reported to the Council at its March meeting and were approved.

Respectfully submitted,
G. Alx. Galvin, M.D., *Chairman*

Section 16 (See 152) Report 60–H

Supplementary Report of the Committee on Public Health and Education, Subcommittee on Maternal and Child Welfare

To the House of Delegates, Gentlemen:

On February 24, 1960, a meeting was held of the regional chairmen in obstetrics and pediatrics to discuss plans for studies of maternal mortality and perinatal mortality in the State. These studies are referred to in the annual report already submitted.

The following conclusions were reached:

1. To continue the maternal mortality study throughout the State, using the consultant in each area as the clearinghouse of his respective district, but suggesting that the consultants of each area get together periodically with the chiefs of the various hospitals in their district for the purpose of discussing with them procedures, case histories, etc.
2. To recommend that each county medical society appoint a maternal welfare committee if one does not exist in that county and also an infant and child health committee.
3. To establish a standard nomenclature throughout the State by using a similar history, labor, and postpartum record and a uniform nomenclature for all of the complications that may arise during pregnancy, labor, and the puerperium.
4. It is desirable to attempt to correlate and synchronize these investigations with those suggested by the maternal mortality committee of the American Medical Association; also to attempt to correlate this study with the surveys that are being made in New York City at the present time.
5. The results of the maternal mortality surveys and later the perinatal mortality studies should be either published in the New York State Journal of Medicine at regular intervals or presented at the annual meeting of the Section on Obstetrics and Gynecology of the State Society.
6. To attempt a perinatal mortality study throughout the State by establishing perinatal mortality committees in each hospital of the State and to standardize nomenclature, etc.
7. To continue to use the McBee punch card system which has been adopted in the chairman's office and which is being used for the maternal mortality studies.

The regional chairmen were requested to assist in publicizing the rural medical health program which the chairman, as chairman of the Committee on Rural Medical Service, had formulated. He asked that they serve as chairmen for a similar program in their own districts if the pilot projects in Cortland, Oswego, and Onondaga were successful.

Respectfully submitted,
Edward C. Hughes, M.D., *Chairman*

Section 17 (See 197) Report 60–I

Supplementary Report of the Committee on Professional and Hospital Relations

To the House of Delegates, Gentlemen:

The Committee on Hospital and Professional Relations, in making its supplementary report, is pleased to announce that the following members have been added, after approval by the Council at its February meeting:

Robert A. Moore, M.D., State University of New York Downstate Medical Center	Kings
Joseph H. Kinnaman, M.D., Public Health Officer	Nassau
John J. Murphy, M.D.	Suffolk
Harold T. Golden, M.D.	Herkimer

A combined meeting of the Medical Relations Committee of the Hospital Association of New York State and the Hospital and Professional Relations

Committee of the Medical Society of the State of New York was held on March 25 at the office of the State Medical Society. Both organizations were well represented, and a fine spirit of earnest cooperation prevailed. The following actions with explanations which were derived from this meeting were presented and approved by the Council at the April meeting.

Coordinated Efforts by Hospitals and Physicians in the Area of Malpractice Claims: There was discussion of the joint medicolegal committee which was established three years ago as a result of the joint efforts by Joseph Sadusk, M.D., and Mr. James Ludlow, counsel to the California State Hospital Association. The purpose was to attempt to reduce the incidents which lead to injuries of hospital patients, thus reducing the number of malpractice suits. Three articles were published in the *Journal of the American Medical Association* in regard to the committee setup. The first, in the June 6, 1959, issue, describes the joint A.M.A.-A.H.A. committee; the second, in the June 13 issue, describes the corresponding committee at the state level; and the third, in the June 20 issue, describes the committee at the hospital level.

The committee recommended to the governing bodies of the Medical Society of the State of New York and the Hospital Association of New York State that a Joint State Medicolegal Committee be appointed in New York State to work in conjunction with the national A.M.A.-A.H.A. Medicolegal Committee and that the formation of similar committees in hospitals be encouraged.

Practice of Hypnosis in Hospitals: There was considerable discussion in regard to short-term courses in hypnosis and the dangers of the practice of hypnosis by unqualified persons.

It was reported that the A.M.A.'s Committee on Hypnosis has opposed short-term courses in hypnosis unless they are given as postgraduate courses by a medical school. The American Society of Anesthesiologists has also gone on record as being opposed to these courses.

It was also reported that the subject of hypnosis was referred to the State Society's Council Committee on Public Health and Education. Further, the Council on March 24 voted that persons conducting courses in hypnosis should be either a doctor of medicine, a dentist, or a clinical psychologist and that these persons should belong to an ethical group. After discussion the committee voted that the following be brought to the attention of the governing bodies of both organizations:

> In view of the confusion about hypnosis and its use in medical practice and hospitals, it is recommended that its use be confined to physicians who are qualified in this field by experience or educational activity, approved by the Committee on Medical Hypnosis of the American Medical Association, the American Medical Association's Council on Education and Hospitals, the postgraduate division of a medical school, the American Psychiatric Association, the American Society of Anesthesiologists, or similar reputable medical educational groups.
>
> And it is further recommended that its use in hospitals be limited to physicians specifically granted privileges in its practice through the procedure existing in that hospital for granting privileges to physicians.
>
> And it is further affirmed that short courses in hypnosis of a few days or less in length are not adequate educational experience to qualify a physician to practice hypnosis.

Miscellaneous: Because of cost of drugs, there was discussion on the use of generic names of drugs and the use of formulary in hospitals to keep the costs down. After discussion it was voted that this committee recommend to the governing bodies of both organizations that they come out in favor of the use of formulary in hospitals at the earliest possible time.

It was also voted that committees be set up within hospitals, consisting of officers of the hospital and physicians on the staff of the hospital, to consider matters of cost and to determine how they can be reduced.

Respectfully submitted,
RAYMOND S. MCKEEBY, M.D., *Chairman*

Section 18 (See 129) Report 60–J

Supplementary Report of the Publication Committee

To the House of Delegates, Gentlemen:

Since the publication of the annual report of the Publication Committee in the April 1, 1960, issue of the JOURNAL, a change in the procedure of providing copies free to medical school senior students has been adopted by the committee and approved by the Council.

Following a survey of the deans of the ten medical schools in New York State, conducted by Norman S. Moore, M.D., which recommended discontinuance of the mailing of the JOURNAL to each fourth year medical student, it was voted to provide six copies of each issue for each medical school library and to permit medical students to subscribe to the JOURNAL at half price, $3.75. Letters have been sent by the editor to the medical school deans, notifying them of this new policy.

Respectfully submitted,
ALFRED P. INGEGNO, M.D., *Chairman*

Section 19 (See 113) Report 60-K

Supplementary Report of the Board of Trustees

To the House of Delegates, Gentlemen:

At the March 24 and April 21 regular meetings of the Board of Trustees there was considerable discussion on the question of advice on the raising of dues. The treasurer called attention to the increased cost of our new headquarters. At the time of moving it was stated that we would possibly find it necessary to raise the dues, especially if the expenses of operation continued to mount.

The board expressed satisfaction that we had been able to pay our costs without much use of our reserves and without causing deficits that could not be cared for under our present system. The treasurer expressed the feeling that he would not like to see a request at the House of Delegates that we make use, in part, of our reserve funds. This would especially apply to the Employes' Beneficiary Fund, which may pay itself out and need to be replenished after about five years. It was thought that our important Pension Fund and our War Memorial Fund could be sufficiently protected under the present system.

It was suggested that it might be advisable in the board's supplementary report and in the treasurer's supplementary report to the House of Delegates that the House of Delegates be alerted on the increased expenses resulting from moving to new quarters, the increased salaries that we have to pay for employes, and for everything we buy with the suggestion that in 1960, 1961, or 1962, it may be found necessary to raise our dues. There was general agreement that if the Medical Society of the State of New York continued to spend money as it has been doing the past year, that there would need to be a raise of the dues, probably $10 annually. It was also agreed that we should try to conduct our business so that there would not be a great use of our reserves. The War Memorial Fund, a separate fund not to be used for any other purpose, was expected to use up a large part of its principal when the final benefits to students had been paid in about 1978.

After much consideration, the trustees felt that this was a question that should be dealt with by the Reference Committee on the Reports of Officers. It was thought that the reference committee and the members of the House would have enough information at that time to take action if indicated.

We received no notice of action by the Council, but it was felt that all realized an increase in Medical Society activities would require greater income or the additional use of reserve funds. Some of the trustees thought we should initiate a dues increase this year. It is my personal opinion, expressed many times over the past fifteen years, that we should learn to live within our income until there was a sound reason for change. I do not believe we should increase the dues this year.

The additional cost of moving to the new quarters has been absorbed. The increased rental remains. This is a good investment. The so-called loan of more than $103,000 on the blood banks situation has been wiped off the books, and we hope such costs will not recur. In retrospect and thinking also of the future, the active program to procure blood in many areas in New York State is well in the hands of local hospital blood banks and the Red Cross. The various publications of our county societies present considerable material on the Red Cross blood program. Transfer of the North East District Clearing House to the American Association of Blood Banks for operation would diminish the need for our financial support.

The Management Survey of 1958 made recommendations that would result in a yearly increasing cost of our operations. Some of the recommended changes have been postponed. I feel that many are unacceptable, undesirable, and should not be attempted. I have tried to tell my doubting self that the original expenses of the survey have been warranted. I am certain that a thorough study by ourselves should have been a preliminary step to advice by an outside agency.

If we are to make full use of the report, I think we should have two-day meetings of the Council and also an entire day for the Board of Trustees. Reducing the members of the Council and the trustees would allow for more free, full discussion. This might result in limitation of the grass roots interest and representation, but it has appeared that restrictions of debate may follow because of the time factor. The Board of Trustees meeting in the same afternoon awaits the pleasure of the Council, and I think the trustees require more time than the later afternoon traffic usually allows. I shall refer to our lack of investment study time later in this report. In the annual report I call attention to various items of our expense. Some of these, such as meetings of officers and representatives of counties and district branches, are indeed valuable. I do not feel this way about some other items.

I believe our employes should be well paid and their work well outlined. I do not think we need to increase the employe roster very rapidly. Efficiency is sometimes increased by a reduction in numbers. We have had employe difficulty, most of which was very likely our fault. However, one must be realistic in these situations. Neither lack of authority nor despotism should be accepted.

I have tried to point out in the above paragraphs that there are ways to improve our financial picture, not only without loss of efficiency but with actual improvement.

Some feel there are other unusually high expenses this year, coming on top of the increased cost of the survey. The annual banquet, calling for some estimated 150 complimentary tickets and other expenses, should provide a large gathering which may enhance our public relations standing. If similar efforts are made in Rochester and Buffalo, the budget will need to provide the means. Upstate counties do not have many opportunities for meetings of large medical groups such as we find in New York City. They may well appreciate a really bizarre annual meeting. There is a trend to mounting costs for the two annual A.M.A. meetings. It seems our freedom for spending tends to increase. At this point I wish again to call attention to my earlier suggestions to provide an additional fund for needy retired physicians.

I would like to recommend that our administrative costs and other Medical Society expenses be newly studied by a special ad hoc committee.

In the past years we have had some motions and suggestions that resolutions presented to the House of Delegates which require expenditure of money should, if possible, be accompanied by data from prior discussions with the Board of Trustees. I believe that a similar policy should be followed in action taken by the Council at other times. It is usually the case that the members of the Board of Trustees attend the Council meeting. With the present board I note that all of the trustees attend Council meetings and are keenly aware of the business transacted. In this way the trustees are in a position to cooperate closely with the Council.

The recapitulation of the combined security holdings of the Medical Society of the State of New York at the close of business March 31, 1960, forms part of a quarterly report submitted to the treasurer by our financial adviser and custodian of investment securities. I invite reference to the full minutes of proceedings of the regular March 24 meeting of the Board of Trustees, which consist of several pages of discussion regarding our investment position. The Medical Society of the State of New York owns or is responsible for, as of March 31, 1960, securities that total $1,634,149 at market value with annual income of $58,028. Of this amount $601,185 is in common stocks, $27,275 in preferred stocks, and $1,005,689 in bonds. Of these bonds $477,062 are U.S. Government Treasury Bills. As of March 14 our financial adviser wrote to Treasurer Dattelbaum as follows:

> In line with the views expressed at our last meeting for a market cutback in the common stock position of the regular account, the following would be our candidates for sale:

We Hold (Shares)	Sell		Market	Total Market	Income
400	400	Beech Nut Life Savers	33	$13,200	$ 840
100	100	Deere & Co.	41	4,100	200
217	67	Dow Chemical Company	86	5,762	93
400	100	General Motors Corporation	44	4,400	200
405	105	Hercules Powder	67	7,035	136
100	100	Int. Nickel Co. of Canada	97	9,700	260
290	140	Johns Manville	48	6,720	280
400	200	Montgomery Ward & Co.	44	8,800	400
1041	541	Texaco, Inc.	72	38,952	1,298
				$98,669	$3,707

> Our thoughts regarding the business picture for 1960 have not changed. We believe the level of business will continue good through the year. How far this improving trend will carry beyond 1960 is, of course, a question. While there has been some decline in the common stock market over the past few weeks, most prices are at levels giving recognition to the indicated good earnings for 1960. Such earnings may mark the peak in corporate earnings for some time beyond this year. Under the circumstances we believe a cautious attitude toward the market is justified.
>
> The proceeds from the sales could be reinvested in:

	Market	Total Market	Income	Yield
$100,000 U.S.A. Treasury Notes 4 $^{3}/_{4}$s due 11/15/60	100 $^{17}/_{32}$	$100,531	$4,750	3.94%

> The funds represented by the Notes would be considered a reserve for use in the repurchase of common stocks should a favorable buying opportunity occur.

The trustees seriously considered this advice. In general, it was felt that the most favorable time for selling stock securities had been around the time of settling the steel strike last fall. At the time of March 14, 1960, the price of common stocks was near its low for the year. Decision to sell was temporarily postponed. It was the thought some sales may be made but not all of the advised 1,753 shares at one time. It was pointed out that most of the stocks had returned good income to us for some years.

We discussed the important question of the eventual replacement of these securities and their income for the longer term. The shorter term requirement of this income could, of course, be filled by our present policy of purchasing U.S. Treasury Notes. Longer term investment looms as more difficult.

In a letter of April 15, 1960, to the treasurer, our advisers suggested we sell our total 500 shares of Union Pacific Railroad, common, at the market of 27 and buy $13,000 U.S. Treasury Notes $4^{3}/_{4}$, due November 15, 1960, at the market value of $100^{20}/_{32}$.

I quote from this letter in part: "The highly cyclical railroad industry has shown an average growth trend of less than 1 per cent over the past ten years, and on the basis of past experience rail stocks do not appear cheap on a 9 to 10 price-earnings multiple of the improved earnings projected for 1960. The proceeds from the sale of the Union Pacific Railroad shares, invested in the U.S.A. Treasury Notes, may be considered as a reserve to await a more interesting buying opportunity."

It is the Board of Trustees that must make these decisions. I present this material to illustrate the heavy responsibility vested in the Board of Trustees to safeguard our resources. Such funds and income help to make it possible to continue our programs in the interest of the public health.

Personally, I have a strong feeling that when advice is given to purchase or sell a security, the situation and the security should be analyzed and also presented with some comparative data. This information could be made more available to our board if we transacted our business through a reliable New York Stock Exchange broker. This need not interfere with the advice secured from our present advisers. It need not call for discontinuing the present custodian service. However, the securities we buy and sell must be handled eventually through a brokerage house. At present we do not have such connections. One advantage would be that we would have more direct and prompt service. I know of no reason whatever why the Medical Society should not make use of such services when this may easily be at hand. I have advocated this step at various board meetings. In the past few years members of the board have often complained of delays amounting to weeks or months in suggestions for change in our financial holdings. In recent years it has been extremely difficult to avoid loss when dealing in securities.

For years the Medical Society of the State of New York has been very fortunate in the handling of its funds by its Board of Trustees. The present board, in my opinion, has done an outstanding piece of work with our investment needs. It is recognized that the care and handling of securities is a most difficult proposition. The price of securities in the final analysis depends on what people will pay to buy them. The investment committee deserves our every gratitude. In the discussion at the March 24 meeting, I stated that we were trying to buy good securities which were essentially sound and stable, and we would use the income from them if we needed to. In other words, we are not trying to play the market. We are not trying to buy something merely to make a profit on it or take a loss, as some find it desirable to do, because of tax situations. When you are dealing with other people's money and you get beyond the investment question, the usual difficulties are greatly multiplied. If we have good sound securities, and it looks reasonable to hold them, and we get a good income on them, that is it. I am apprehensive that of late our advice may call for more frequent trading in securities.

If we are to make adventure with capital appreciation, this might be better accomplished in certain mutual funds which would at the same time provide investment income.

In 1951–1952, our records show we were advised to sell Dow Chemical, split 3 for 1 in 1952; General Motors 3 for 1 in 1955; Hercules Powder 3 for 1 in 1956; Johns Manville 2 for 1 in 1956; Montgomery Ward 2 for 1 in 1956; Texaco 2 for 1 in 1956, 2 for 1 in 1951; Standard Oil of New Jersey 3 for 1 in 1956, 2 for 1 in 1951. All these were good dividend payers over a long period. The names of most of our long-time stocks are in the list of investments of Massachusetts Investors Trust and of course are held for income by many institutions.

I have asked the controller to look up our records on the Union Pacific sale suggestion received April 15. He finds that in April, 1947, the Medical Society bought 80 shares Union Pacific Common for $10,342. In July, 1948, there was a 2 for 1 stock split which gave the Society 160 dividend paying shares of common. In October, 1951, to reduce the percentage of stocks owned, our bank advised the sale of 60 shares Union Pacific, which brought $6,252 or $104.20 per share. Since then we held the remaining 100 shares which by 5 for 1 stock split became the present 500 shares we are advised to sell around $27 or $13,500. The total to be received from the first 60 shares at $6,252 and the present $13,500 make a total of $19,752. If the total 160 were sold around the time of the split at $200 per share (high was 205) the return would have been $32,000. If a total of 800 shares, available now from the original 80 shares, were sold at $27, the return would be $21,600. We have no profit or loss tax; Union Pacific has paid dividends since 1900. Fitch rates it BBB. It is more than a rail security. Recent annual dividends since 1956, with extras, have been $1.60 per share of $800 for 500 shares. Following the sale and temporary investment of the proceeds will come the question of when and at what price it may be replaced for the longer term. This may occur to our advantage, possibly to our disadvantage. The sale at present would result in a profit of $9,400 from the original purchase of the 80 shares in 1947. With a good income ever since purchase, this represents a very good investment.

I present these figures to illustrate the time and patience required in our investment practices. I am convinced the Board of Trustees must make the ultimate decision in security transactions. It may be that an ad hoc committee would study our funds and make recommendations on the important subject of investing mainly for income.

At its regular meeting on April 21, 1960, the

Board of Trustees approved appropriations requested by the Council at its morning meeting as follows:

1. Additional administrative secretary salary and equipment—$4,559
2. Installation of public address system in Council room—$679
3. Request by the treasurer for an appropriation of $1,071 to cover an overexpenditure in the budget item, Regional Conference on Medical Care.

The Council approved and referred to the Board of Trustees the request of the Convention Committee for increases in the annual meeting budget as follows:

1. Binders for delegates for resolutions, supplementary reports, and reports of reference committees—$1,100
2. Entertainment expense to provide for out-of-pocket expenses incurred by members of the Guest Reception Committee in connection with invited guests—$400
3. Banquet expense to provide for table flowers and corsages for certain invited guests, additional ($150 has already been appropriated for this item)—$200

To provide for additional complimentary banquet tickets. Provision for an estimated 86 complimentary tickets has already been made. The total complimentary list is now estimated at 150. Cost of the additional tickets will be $1,084.

(It is to be noted that we have estimated a total ticket sale of 500. Tickets sell for $15. For each guest the cost will be $17.19 or a loss of $2.19 on each ticket sold. If we sell in excess of 500 tickets, an additional loss will have to be provided for.)

4. Room rental for Doctor's Orchestral Society of New York—$200

The Board of Trustees approved the above requests.

Respectfully submitted,
Herbert H. Bauckus, M.D., *Chairman*

Section 20 (See 112) Report 60–L

Supplementary Report of the President

Speaker Lane: It is now my pleasure to recognize the president of the Medical Society of the State of New York, Dr. Henry Fineberg, and I would ask Dr. George Lawrence and Dr. Thurman Givan to escort him to the rostrum, please.

. . . George J. Lawrence, Jr., M.D., and Thurman B. Givan, M.D., escorted President Fineberg to the rostrum amid applause . . .

Speaker Lane: I know he did not know his way up here so we had to help him.

. . . President Fineberg then delivered his supplementary report as follows:

To the House of Delegates, Gentlemen:

In my annual report which was published in the April 1 issue of the New York State Journal of Medicine, I outlined the accomplishments of the Council of the Medical Society and some of its committees during the first nine months of the current year and about which I made a few pertinent comments. Also other matters of interest were discussed. For detailed information you were referred to the reports of individual committees. I hope that you have read them.

This morning again I will not compete with committee chairmen nor repeat material submitted to you by them. Undoubtedly, their supplementary reports contain the important progress notes.

* * * * *

I would like to speak to you about the practice of medicine—to present my impressions and ideas, based on experience and personal observations and on information gleaned from the many manuscripts, periodicals, brochures, and bulletins which have come to my attention.

A year ago, as your president-elect, I told you about the small minority of doctors of medicine who to our great distress appear to have lost the spirit of service and who through unethical acts have damaged our professional relationships with the public. I discussed what I believed then could stem the rising tide of criticism against physicians. Today this unsatisfactory situation not only is still with us but probably has worsened.

In nonmedical circles doctors are often maligned. Much of the good that we have done and are doing is obscured and disregarded because of some alleged transgressions: that doctors are not available when needed; that they overcharge; that they will not inform patients; that the traditional doctor-patient relationship is disappearing; that hospital and medical facilities are being overutilized for monetary gain; and that falsification of records is occurring much too often. Unfortunately, in some cases these charges can be substantiated. We do not merit all of the censure that is being heaped upon us—but there is no doubt that the sins of some are plaguing us and will continue to do so unless we take some positive steps to counteract them.

Perhaps what we are seeing in a small group of our colleagues is only another example of a general trend in our lives today. On February 20 I attended an alumni luncheon in New Haven at which the president of Yale University, A. Whitney Griswold, Ph.D., discussed what is taking place in these modern times. He used as his text a letter sent to Adlai Stevenson by John Steinbeck. (The latter had just returned from England where he had been working on a book about King Arthur and the Round Table, a legend that has fascinated him since childhood). Because it contains food for thought and because the sentiments expressed are so beautifully written, I hope that you will bear with me if I read it at this time:

> Dear Adlai:
>
> Back from Camelot and, reading the papers, not at all sure it was wise. Two first impressions. First, a creeping, all pervading, nerve-gas of immorality which starts in the nursery and does not stop before it reaches the highest offices, both corporate and governmental. Two, a nervous restlessness, a hunger, a thirst, a yearning for something unknown—perhaps morality. Then there's the violence, cruelty, and a hypocrisy symptomatic of a people which has too much, and last, the surly ill temper which only shows up in humans when they are frightened.
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> Adlai, do you remember two kinds of Christmases? There is one kind in a house where there is little and a present represents not only love but sacrifice. The one single package is opened with a kind of slow wonder, almost reverence. Once I gave my youngest boy, who loves all living things, a dwarf, peach-faced parrot for Christmas. He removed the paper and then retreated a little shyly and looked at the little bird for a long time. And finally he said in a whisper, "Now who would have ever thought that I would have a peach-faced parrot?" Then there is the other kind of Christmas with presents piled high, the gifts of guilty parents as bribes because they have nothing else to give. The wrappings are ripped off and the presents thrown down, and at the end the child says, "Is that all?" Well, it seems to me that America now is like that second kind of Christmas. Having too many *things* they spend their hours and money on the couch searching for a soul. A strange species we are. We can stand anything God and Nature can throw at us save only plenty . . . If I wanted to destroy a nation, I would give it too much and I would have it on its knees, miserable, greedy and sick . . . And then I think of our "daily" in Somerset, who served your lunch. She made a teddy bear with her own hands for our grandchild. Made it out of an old bath towel dyed brown, and it is beautiful. She said, "Sometimes when I have a bit of rabbit fur, they come out lovelier." Now there is a present. And that obviously male teddy bear is going to be called for all times "Miz Hicks."
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> When I left Bruton, I checked out with Officer 'Arris, the lone policeman who kept the peace in five villages, unarmed and on a bicycle. He had been very kind to us, and I took him a bottle of bourbon whiskey. But I felt it necessary to say, "It's a touch of cheer, officer, and you can't consider it a bribe because I don't want anything and I am going away . . ." He blushed and said, "Thank you, sir, but there was no need." To which I replied, "If there had been, I would not have brought it."
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> Mainly, Adlai, I am troubled by the cynical immorality of my country. I do not think it can survive on this basis, and unless some kind of catastrophe strikes us, we are lost. But by our very attitudes we are drawing catastrophe to ourselves. What we have beaten in nature, we cannot conquer in ourselves.
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> Someone has to reinspect our system and that soon. We can't expect to raise our children to be good and honorable men when the city, the state, the government, the corporations all offer higher rewards for chicanery and deceit than for probity and truth. On all levels it is rigged, Adlai. Maybe nothing can be done about it, but I am stupid enough and naively hopeful enough to want to try. How about you?
>
> John

Why am I bringing this to your attention? Surely not because I have lost faith in medicine. However, I am disturbed by the unwise attitudes of some of our associates. If we are to remain in the realm of free enterprise and maintain our proper place in society, we must organize our own houses before someone else steps into the picture and takes over. We must show that we are capable of disciplining incompetent or dishonest doctors. This must be a sincere effort, not a veneer. Only in this way can we thrive and flourish without governmental, bureaucratic control.

I do not claim sole authorship of this type of thinking. For some time it has been advanced by many of our leaders. We must remember that at one of the meetings of the Council a few years ago, Louis Bauer very vividly described the havoc that is being wrought by a small number of wrongdoers and pleaded that we must do everything in our power to eliminate this threat to the private practice of medicine.

We have been accused of being reluctant to take the initiative in chastising one of our own, especially in small communities where all the doctors know one another. The Judicial Council of the American Medical Association has stated more than once that when a doctor of medicine fails to comply with the code of ethics, his own colleagues in his local society must mete out appropriate sanction or punishment if warranted, distasteful as the task may be. If the county medical societies fail to "curtail unethical practice, ethics lose their effectiveness. Failure on the part of the component society to demand respect for and adherence to the principles breeds contempt and disrespect for them."

At the second regional conference held in Syracuse during the month of March, James Greenough had this to say: "Let us agree that our ambition is to provide the best medical care possible to our patients—the people of this State. We are the only source of this care. No government, labor union, or other agency can provide this care—only the physicians . . .

"Most of us believe that this care should be provided at a reasonable cost. The public has decided overwhelmingly that it should be paid for by insurance. We have gone along with the prevailing opinion by originating Blue Cross and Blue Shield to manage the distribution and management of this care. Other forms of insurance have also offered management of health care services . . . But if we ask for a share in the management we must show that we deserve it. We can only deserve this privilege if we earn it . . .

"Let us be truthful—we all make errors, but when these errors occur in spite of our best efforts, they may be forgiven. But not so errors of willful omission or commission. When any of us deliberately sacrifice the good will of our patients by mistreating them medically or economically, we do not deserve their confidence . . . We must all join together, forget our minor differences, and strive to realize our ambition to take care of all our patients to the best of our ability, in every way." Well said!

The problems that we face are being considered seriously in other parts of the nation. Here are some of the views of California's new medical society president, Paul D. Foster, M.D.: "We doctors must go along with social progress . . . If we doctors don't do it, the government will do it for us . . . The most important thing I must do during my term (as the newly elected president of CMO) is to achieve unity of thinking among the state's doctors . . . If we do our job and take care of the public—give them the best care at the lowest cost and do this with the device of prepaid medical insurance—there will be no need for socialized medicine."

In November, 1958, the Board of Trustees of the American Medical Association sanctioned the appointment of a new committee, which was authorized to investigate, with the assistance of the Law Division, the adequacy of disciplinary rules, laws, and procedures as applied to medical practice and licensure and medical society membership and the degree to which efficient discipline is maintained among medical practitioners in the interest of the public and the medical profession.

The committee met in New York City on March 17 with representatives from all the New England States, Pennsylvania, New Jersey, Delaware, Maryland, and New York.

In conferences such as this we always seem to be talking to the wrong people. I am sure that no one in this House of Delegates needs this "sermon." You are aware of the conditions that confront us and what should be done. We must reach out to those who besmirch our name. Like John Steinbeck, I am naively hopeful enough to want to try to cure the ills that beset us. The tools of therapy are ours to use, and we must unite in prescribing them in such a manner that they will be efficacious and thus eliminate the wall that exists between our profession and the people we serve.

* * * * *

Let us apply John Steinbeck's thesis to what is going on in Washington. Here too we see signs of dishonesty and subterfuge. Please heed this editorial of the *New York Herald Tribune*, dated April 12 of this year, "An Insult to our Senior Citizens":

> Three years ago, Representative Forand introduced a bill in the House to charge the health needs of persons drawing social security to the social security system. The bill sank like a stone, and only a few ripples reached those who, for professional or other reasons, were especially interested. The same thing happened a year later. Today, Representative Forand's bill is the hottest thing in Washington, and from both parties come support for his measure or an alternative.
>
> Obviously, in three years the population of the United States has not aged suddenly, nor have our senior citizens been afflicted with a plague. The need for the Forand bill is no greater. Why has the demand for it or for something resembling it taken on such proportions? The answer is simply that a Presidential election is in the offing; there are fifteen to sixteen million persons eligible under the bill, and all of them have reached voting age. The aged are being courted by the politicians, and the politicians are besieged by persons purporting to speak for the aged.
>
> The economic problem of medical care in the United States is steadily growing in magnitude. Costs keep pace with the rising standards of medical knowledge. That this bears heaviest upon the older Americans goes without saying. With generally lower incomes than in earlier years, they face the virtual inevitability of increased need for medical care.
>
> Once this would have been regarded as an individual or a family responsibility. Now, increasingly, it has become of community concern. In Britain the state (which, of course, means the taxpayer) assumes the cost of maintaining the health of persons of all ages, from the cradle to the grave. The United States still considers that important values would be lost—in terms of the quality of care, the personality of the individual, and the effect upon the public purse—by such an over-all commitment.
>
> This country employs various cooperative devices, such as social security itself, group insurance plans, pension and other arrangements by private industry for its employes, medical help for veterans, municipal and voluntary hospitals and clinics, to cushion the effects of illness and age. This is a complex system. No doubt it has certain inequities and falls short at some points. It can be improved; it can be strengthened. But it will not be strengthened by a wild flight into some open-ended plan for giving the Federal government the whole responsibility for the health care of everyone receiving social security benefits. Nor will it be helped by patching up some substitute in the heat of an election year and under the pressure of a sordid and politically minded exploitation of the troubles of the aged.
>
> The matter deserves real study by Congress and interested government agencies. It deserves a long, cool look at exactly what would be involved, at the experience of the British and at the real needs and facilities of the American people. Above all, it deserves to be taken off the election auction block. The crass assumption that millions of Americans, dignified by the title of senior citizens, can be bought by the offer of a free trip to a nursing home is as cruel and insulting as any political maneuver could be.

This speaks for itself in language much better than any that I could conceive.

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The Council on Medical Education and Hospitals of the American Medical Association has issued a report on medical schools, dealing mostly with the educational opportunities available for the number of medical students considered adequate for the medical service needs of our growing population.

The 1958–1959 graduating class of doctors of medicine numbered 6,860. It has been estimated that we should have 10,000 graduates a year from medical colleges by 1975. To accomplish this task, while continuing to keep our standards as high as possible, is one of the most important problems that faces medicine today. Our basic and urgent concern is that we must expand our educational facilities in medicine in a brief period of time to a greater degree than ever.

Of course, one way to meet the need for expanded educational opportunities in medicine is to increase the capacity of the colleges in existence. However, we must be extremely careful that we do not enlarge our medical schools beyond their capacity to preserve present high standards of education. Even if we expand our existing schools, we will probably require at least ten new colleges, with an average graduating class of 100 students each, to meet the health care needs of our people in the not too distant future.

We have been told that the number of qualified applicants for admission to medical schools has dropped appreciably. We are finding that medicine is experiencing greater competition in attracting top-ranking students because, as the American Medical Association Council states, "it (medicine) no longer occupies the unique position as a profession which it held in the past and shared largely only with law and the ministry." Other postgraduate schools are open to the college graduate—many of them with greater immediate financial returns—and they provide the prestige and intellectual satisfaction comparable to those which are traditionally characteristic of medicine. If we are to avoid a serious loss of the best talent, we must make every effort to let our young folks know of the breadth of interest of the medical profession and the challenges it offers.

It is interesting to learn that of all first-year medical students in 1958–1959, 37 per cent came from five states: New York, Pennsylvania, California, Ohio, and Illinois. About two thirds of the entering classes were "B" average students. Approximately one sixth had college grade averages of "A," and about one sixth to one seventh had "C" averages.

Without a doubt all of us are interested in the welfare and healthy growth of our medical schools. However, here again we see inequities creeping into the system. What I say is in keeping with the opinions of certain medical school leaders with whom I have been in contact.

Too great a number of our medical colleges have placed a tremendous premium on research. Let no one think that I am not in favor of productive research. I shudder to think where we would be today without it. However, it must be put in its true light. If what I have been told by medical educators is true—that in some institutions of medical learning, 60 to 70 per cent of the budget is allocated to research—we are going far afield. Too many so-called potential Nobel Prize winners are being subsidized at the expense of other very important programs. Some of these people confine themselves to their own little ivory towers and shun the classrooms; they abhor teaching.

In a guest editorial in the April 9 issue of the *Journal of the American Medical Association,* William Dock, M.D., of the Downstate Medical Center of the State University of New York, asks these questions: "Is the United States pricing itself out of medical education by the insistence on research as the basis for faculty promotion? Is it wasting a valuable reservoir of teaching ability—the scholarly men who love to practice their art in the light of the best recent progress and the seasoned wisdom of old masters but who are not impelled to carry out investigation? Some of these have done outstanding research before completing their residencies. Others, less productive in youth, continue to publish minor works in order to meet academic custom, but many of the best physicians are too proud to bow to this fetish."

If we are to fulfill the hopes of the Council for more medical schools and the expansion of present facilities, we must train more medical educators. The American Medical Association reports that today there are over 650 vacant full-time positions. Almost two thirds of the vacancies are in the clinical departments. In passing, may I say that part-time teachers can be an important supplement to a solid core of a full-time staff.

Milton Charles Winternitz, M.D., my dean, wrote many years ago, "There should be no 'ins' and 'outs.' The full-time man has one contribution to make and the part-time man has another, but one is not necessarily superior to the other."

What we must not forget is that we must train more doctors to treat sick people. Too often this phase of medical education is relegated to an inferior role. If this pattern continues, how can we justify our existence? If we believe that medical education must include all types of practices—healing, teaching, research—on an equitable basis, the medical societies should raise their voices and be heard.

At the risk of being repetitious, may I stress again the importance of the family doctor, the general practitioner, in the existing format of medical care. There is no doubt that the specialties control our medical colleges and hospitals, and the leaning toward superspecialization has created debatable complications. I cannot go along with the idea expressed by an officer of the Academy of General

Practice who at a recent dinner said to me, "Look around here tonight and you see a dying strain." In traveling around our State, I have found that there is still a great need for the family doctor, especially in the smaller cities and towns. We must strive for better distribution of the means of supplying the best medical care. The GP has a very important role to play in our destiny. He must be afforded every opportunity to keep abreast of the advances that occur so rapidly in this modern age.

Again may I quote my dean. He felt that it was of prime importance in medicine to understand man in the setting of his family and community. This could be done best, he said, by the "old fashioned doctor, who was not a specialist, but who knew all about your passion for fishing, who always asked about your son Billy, and who carried away most of your troubles in his little black bag."

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Based on data released by the U.S. Department of Commerce, the Economic Research Department of the American Medical Association has issued a report that American physicians and dentists are getting a smaller share of the medical care dollar today than they did two decades ago. In 1938 the doctor received 31 cents of the medical care dollar as compared to 24 cents in 1958. Dentists received 13 cents of the medical care dollar in 1938, but this has dropped to 10 cents.

In 1958 the Americans spent 16.4 billion dollars for medical care or an average of $95 per person. In other words, 5.6 per cent of the 293 billion dollars spent by people in this country during the year for all goods and services was utilized for diagnosis and treatment of disease. This compares with 5.8 per cent for recreation and 5.3 per cent for tobacco and alcoholic beverages.

It is important to note that of all the money spent for medical care the hospitals claimed 4.3 billion dollars, physicians 3.9 billion, drugs 3.3 billion, dentists 1.7 billion, and health insurance 1.4 billion. The people spent 1.3 billion for ophthalmic and orthopedic supplies. The remaining 769 million dollars went for other "health costs," including osteopathic service, private duty nurses, chiropractors, and other miscellaneous services. In general, it might be stated that while more Americans are budgeting greater amounts of their incomes for medical care and although more emphasis is being placed on planning for the cost of future illness, the doctor of medicine is receiving a smaller proportion of all of the money spent for medical care. This should be publicized.

The American Medical Association took a step in the right direction when it created a Commission on the Cost of Medical Care to investigate every phase of medicine where cost or spending is involved. The commission will actually serve as a "Little Hoover Commission" to delve into all medical care costs, including doctors' fees, hospital charges, nursing cost, drug expenditures, and health insurance premiums.

Louis M. Orr, M.D., of Orlando, Florida, president of the American Medical Association, points out that we are aware that physician-patient relationships have been strained by misunderstandings about fees perhaps more than by any other disagreements. For some time we have been advocating that part of this misunderstanding is due to a lack of frank discussions between the doctor and his patients. On many occasions we have indicated that a sick person has the right to know why he needs treatment, what it will consist of, and what it will cost.

In other words, the study that will be done by the commission will provide some sound advice for the consumer—how he can get the best benefit from his health dollar. In carrying out the work the commission will consult experts and others: economists, health insurers, prepayment plans, hospital representatives, and even a cross section of patients.

* * * * *

Time does not permit me to bring other important subjects before you, such as shortages of house staffs in our hospitals, the two-year internship, interprofessional relationships, and others. We are sure that these problems will be presented to you as the days go on.

This is the last time that I will address any group as your president. May I emphasize that this has been a full year. How can I express my sincere gratitude adequately to many fine people, those who have helped immeasurably to make my term of office one of the most interesting, educational, and stimulating interludes in my lifetime? I am indebted to the officers, the trustees, the councillors, the committees, our many colleagues throughout the State, the fine staffs of all bureaus and departments, and members of our Woman's Auxiliary.

In a few days the reins of the presidency will be turned over to a distinguished doctor of medicine, Norman S. Moore, M.D. I have admired him for a long time. This past year I have learned to know him intimately, and this has been my good fortune. Here we have a gentleman of intelligence and culture, steeped in the tradition of medicine, a man of integrity with a keen insight into our problems and what is best for us and the people.

Dr. Moore will talk straight from the shoulder, and you will always know where he stands, whether he agrees or disagrees with the popular philosophies. He has the courage of his convictions. He will be a great president. I pledge my full support to him, as I know all of you do, and wish for him a successful administration in the days that lie ahead.

I am nearing the end of this report. I do not intend to retire. With the help of God and with your approval, I hope to continue to serve in one capacity or another wherever you decide that I can be of some value. At my age, you do not stop working and striving for what you believe to be right. Medicine is a grand profession, and we must all dedicate ourselves to it.

Some of you may recall the famous words of Walter Savage Landor, the English author and poet:

I strove with none, for none was worth my strife.
Nature I loved, and next to Nature Art;
I warmed both hands before the fire of life:
It sinks, and I am ready to depart.

I would change these lines to fit my own feelings—something like this:

Although I hated strife, I strove with some.
Nature I loved and Man and Science and Art:
I have warmed my hands before the fire of life:
I hope it sinks slowly, for I am not ready to depart.

I thank you.

Respectfully submitted,
Henry I. Fineberg, M.D., *President*

Speaker Lane: Thank you, Dr. Fineberg.

Section 21 (See 114) Report 60–M

Report of the President-Elect

Speaker Lane: It is now my pleasure to present to you the president-elect of the Medical Society of the State of New York, Dr. Norman Moore, and I will ask that Drs. James Greenough and Leo Gibson conduct him to the rostrum.

. . .James Greenough, M.D., and Leo E. Gibson, M.D., escorted President-Elect Moore to the rostrum amid applause . . .

. . . President-Elect Moore then delivered his report as follows:

To the House of Delegates, Gentlemen:

To fill the shoes of one of the most able, affable, affectionate, and intelligent men it has been my privilege to know and work with—your president, Dr. Henry Fineberg—is, my friends, a large order. You may well understand therefore that this, my first official communication to you of the House of Delegates, is given with a feeling of humility and trepidation. Humility because you chose me from the many qualified members of this House to be your president-elect; and while I am grateful for the honor you have bestowed on me, also I am aware of the responsibility of following your mandates and policies when representing the Medical Society of the State of New York. To speak for you with dignity and preserve the prestige that medicine deserves will be my dedicated effort for the next year. I hope that at the year's end it can be said that I worked hard to accomplish the task and with some measure of success.

Trepidation because, if we can judge the future by the past, some of the Society's mandates will be out of tune with the ever-changing ebb and flow of medical-social attitudes. It is here that the interpretation of your policies may require more skill than I possess. At other times the policy of this Society may be different from my own convictions and conscience. While I abhor neutrality in anyone when the issues are important, I assure you that I will restrain my own feelings and support the policy at hand. I shall consider it a duty, however, to discuss with the House of Delegates when in session and with the Council between sessions of the House the various sides of an issue and its possible effect on other professions, the political scene, and the public in general. As a matter of fact, I intend to discuss some developments in attitudes later in this communication. Suffice it to say here that whatever the majority decision is, after adequate debate I shall represent it as your policy to the best of my ability.

During the Congress on Medical Education and Hospitals this year, Dr. Leo Simmons of Columbia University made the observation that "modern medicine will move along with the times or drop behind." No other phrase has had equal impact on me recently. I realize the magnitude of the many urgent problems confronting our Society with a House definitely divided on many issues, such as reorganization and modernization of the administrative functions of the Society; the distribution of medical care, including the roles of those who furnish medical care via the full-time route and of those who furnish it in the private practice of medicine; also, the roles that the full-time academic doctors of medicine should play; and the roles of men practicing with groups as apart from the solo practitioners. Is it any wonder the public is confused?

On my return from Chicago, I decided to discuss some of these issues with you, not in the context of the rushing, maddening maelstrom of today, but in the context of what medicine was when the constitution of this Society was formulated. Article I of our Constitution says, "The purpose of the Society shall be to federate into one organization the medical profession of the State; to extend medical knowledge and advance the science and art of medicine; to promote the betterment of public health; and to enlighten and direct public opinion in regard to the problems of medicine and health for the best interests of the people of the State." Obviously, this purpose was written when the medical profession fulfilled the Oxford Dictionary's requirements of a profession; namely, that the knowledge be acquired from the study of one or more departments of learning and that the knowledge so acquired be applied to the affairs of others. It is obvious that by this definition there is a differentiation between professions which require learning and applications of learning, and vocations which require no intellectual attainments, and the work of scholars, who lay emphasis on intellectual attainment without application.

By definition, then, medicine is a profession, in spite of the Supreme Court's ruling that it is a trade in the District of Columbia. Medicine is a profession with age and heritage and with a time-honored code demanding the highest integrity and prohibiting the undertaking of procedures beyond the educational qualifications of the individual. In early times strict rules of conduct were prescribed for professions; ideals and standards became a primary concern, contrasted with the idea of business avowedly used in the market place.

Is it by chance that failure to continue self-discipline in the profession of medicine has led the public to believe we have forsaken our ideals?

Dr. Simmons at the Congress on Medical Education this year speculated considerably on changes in the public's attitude about medicine. He thought there were probably several factors involved which I am going to summarize as best I can, using his ideas expressed in words of both of us.

During the last quarter of a century there has been a marked increase in the mobility of our population. From years of association with *Medical Directory* affairs, I can assure you doctors are no exception. This makes a break in the continuity of medical care. In addition, there is movement socially upward with each generation, which makes the public nomadic in two directions—geographically, horizontal, and socially, perpendicular.

Patients these days are becoming more sophisticated. The intellectual aristocracy which physicians of the past enjoyed no longer holds. It is disturbing to the doctor of the old order that patients know so much about medical matters and prescribe so much for themselves. Do I need to remind you of your feeling when patients who drink a little of the Pierian spring say to you, "A little penicillin, please?"

The commercialization of professions is confusing and disturbing to the public. The honorable calling of service seems less evident. The kindly, sympathetic doctor of former times is being replaced by a man who has special skills for sale. "The man with a fractured femur," Dr. Simmons remarks, "thinks of the small hole in his skin where the pin was placed and the resulting large hole in his pocketbook."

Generations of Americans as patients looked to medicine and public health for aid and counsel. People more frequently died of acute illness but had every sympathetic attitude that a kind profession could muster during the short illness. Now many more patients die slowly of chronic disease and face their doom for months without kind, sympathetic help from the professional staff of the past Florence Nightingale era.

Even in my day the medical profession has undergone a transition from an "honorable calling" life of service to a life of pervasive scientific attitudes. At the turn of the century medicine had little to offer in a scientific way, but starting with Banting, Best, Minot, Murphy, and Fleming, scientific discoveries, one after the other in rapid succession, elevated the science of medicine faster than the public could comprehend. With more patients demanding attention and with more tests for diagnosis available and more specific drugs to be prescribed, it was inevitable that the "honorable calling" attitude would be diluted with impersonal, yet effective scientific medicine. With a lessening in the usual patient-doctor relationship the public has become more critical of the changing modes of medical practice.

These forces outside the hospital, bad as they are for the prestige of the doctor, are reinforced by inside forces in the hospital which influence the relationship of the doctor to his patient. The increasing use of expensive medical equipment which requires teams of specialists to operate is awe-inspiring but most impersonal to patients. True it is that lives are being saved by these special skills using special equipment, but the doctor of reference can easily be lost sight of in the myriad of specialists. Also without prepayment medical insurance these miracle procedures would not be available to most people.

Let us return to the original purpose of the Medical Society of the State of New York. At the turn of the century I believe there was an honest effort to federate into one organization the medical profession of this State; academic and full-time people were few then. For the most part only preclinical subjects were taught by full-time men. However, in the clinical fields a full-time teacher emerged as the most effective way of heading up clinical teaching departments in medical schools. As scientific medicine progressed rapidly, hospitals began to employ full-time directors of the various clinical services. These developments were viewed with a jaundiced eye by the private practitioners of medicine. About this time the devastating depression of the thirties brought about consumer groups bargaining for medical care. They were but partially successful. After World War II when labor groups and government agencies began to bargain for medical care with offers to subsidize the effort, the diversity of opinion in the Society widened until we now have a House so divided that we can no longer say we in this Society are one federated organization of the medical profession of New York State.

Bitterness such as broke out in this House last year is not good. We are still men of honorable calling.

We must resist the temptation of the market-place and settle differences in the traditional American way of debate and compromise—that, gentlemen, or rewrite the purpose as stated in the Constitution of this Society. We have many qualified men in medicine who sincerely believe that better patient care is given by one method of distribution of medical care over another. Each proponent of his way believes all others to be less effective. Yes, some think of another way as deceitful and sinful and against the best interests of the Society. The sociologic result of this conflict is that the public is beginning to believe that medicine is not using its full potential or capabilities for patient care because intraprofessional and interpersonal relationships interfere, and it, the public, is beginning to take "with a grain of salt" the statement that the welfare of the patient is the foremost aim of the medical profession. It is my honest belief that during the next year this Society should promote an analysis of the conflicting attitudes about the means of distribution of medical care with full consideration for the reasons our Society chooses to recommend and support one means of distribution of medical care over another. The public is demanding facts; we can no longer dodge the issue. Each year all over this State young men begin careers in the practice of medicine. They join their county societies, and then they too get a letdown at intraprofessional and interpersonal relations.

Remember that it is the most naturally occurring attitude for each generation to challenge the way that the preceding generation conducts its affairs. After twenty years of working with students, I believe no other naturally occurring phenomenon contributes the same amount of energy to an institution, be it academic, business, professional, or organizational. The one who sometimes appears to be a maverick to his elders usually turns out to be one who has inquisitiveness and the impulse to challenge. Young men in county societies are more in harmony with the changing social order than some of us others. Let us guide them and remind them of their true responsibilities as physicians so that they may live up to their heritage and the prestige medicine has earned, but let us not cudgel them with beliefs of past generations on the distribution of medical care. So much of this has occurred in the last decade that more and more men are giving but lip service to their medical society's duties, and medical educators are being blamed for these aloof attitudes. It is reassuring to know there are a few county societies where full-time group members and solo practitioners pull on the oars equally and together toward upgrading medical care in their locality. When bias and prejudice are overcome, the rest is easy.

Last year's House of Delegates mandated the Planning Committee to provide a subcommittee to assist the president-elect in selecting important objectives that he would emphasize during the year he was president, and said, "Let the president-elect report on these objectives to the House of Delegates when he is about to become president." The chairman of the Planning Committee appointed the subcommittee, and each member of this subcommittee was asked by the ex officio chairman, the president-elect, to enumerate what in his opinion were the ten most important issues for consideration during the next year. I received one reply, which coincided for the most part with my own thinking. Believing that work on the mandate of the House should start with me but will continue with the next president-elect, and because obvious issues at hand will keep one president occupied during his term of office, I decided to inform the committee members who had not responded what issues had been selected to emphasize during my term of office, again with an invitation to reply. All either had no further recommendations or did not reply. Therefore, I feel secure in recommending to you that during the next year I be responsible for emphasizing studies and recommendations regarding the following issues or objectives, in addition to the proposed analysis of various systems of distribution of medical care, mentioned before. The order in which I discuss these objectives does not necessarily give them my opinion of their priority rating.

In 1959 the House finished the change in administrative concept which the Council began in November, 1958, when an executive director was appointed, by adding this sentence to Chapter 4, Section I, of the Bylaws, "It may with approval of the Board of Trustees engage an executive director and define his duties." The House also relieved the office of the elected secretary of administrative duties, whereas for many years the elected secretary was the focus around which the Society's administrative affairs revolved (see Appendix I and II). On paper this was a simple move. In reality it created much confusion in implementation. Under the secretary system committee chairmen usually were considered supervisory over those bureau and department heads who were responsible for administrative staff work. Under the new system an executive director's duties were pretty well spelled out in the Management Survey Report. It is an assumption on the part of some members that these recommended duties and authorities came part and parcel from the Management Survey Committee when it recommended the appointment of an executive director. However, the minutes of the appointment recommendation do not state this. Further perusal of subsequent Council minutes do not define these broad powers in the report. During the year a three-way conflict developed between committee chairmen, bureau heads, and the executive director.

When the matter came to the attention of your present president, he called upon the Management Survey Committee to complete the task mandated by the House last year by giving to the Council the responsibility of defining the duties of the executive director. In April the Council approved the definition of duties of the executive director as recommended by the Management Committee. It will be the president's responsibility to see that a working relationship between the executive director on a horizontal plane with bureau and department heads and on a vertical plane between him and the councillors, trustees, officers, and committee chairmen is developed. This relationship of course is the core to success of the executive director system of administration, which is comparatively new to this Society, yet has much precedent and success in the business and professional organization field. I urge all who help carry the burden of the affairs of our Society to assist with understanding and constructive suggestions in this reorganizational effort.

As for more reorganization of the Society, I believe the Management Survey Committee is studying carefully other changes before making other recommendations. Also I believe it is the committee's opinion that consolidation of changes already made is more pertinent than moving into uncharted territory. With this cautious approach, I am in sympathy, and I feel strongly that full consideration should be given to the long-range effects that further changes would involve. As I mentioned earlier, we are going through a fast-moving phase of social change. To be sure we do not drop behind by a faulty or unwise move is certainly prudent. What seems important now is what concerns your present president, i.e., the need for informed members at Council meetings. There must be some way of getting important manifestoes read and understood so that the endless debates at Council meetings can be avoided. It is not fair to penalize those who come prepared, and there is little excuse for your councillors "whipping the fog" because of unpreparedness. Dr. Fineberg has given hours and much thought to the dilemma. It will receive attention from me during the next year.

We must evaluate the commission idea. This will be done this coming year. There is no need to fail, but we must work to make it successful. To date it is the impression of your officers that it will take another year to demonstrate the superiority of the commissions system over the old Council committees. Perhaps because committees are reporting under both systems the idea is slow in developing. At any rate my report next year should carry a specific recommendation to proceed with more commissions or return to the former method of committee reports.

The advisability of allowing committe chairmen, councillors and others a per diem was raised in the House of Delegates last year and rejected. The Planning Committee has reported again that this question has been placed on its agenda and rejected—other than per diem to the president and president-elect. Since this matter appears to be of importance to a number of people, I believe it deserves investigation from a wider frame of reference. I believe thought should be given to the entire question of costs for work that was formerly done on a voluntary basis. I have been on committees of this Society for thirty years. Much time and effort for the fun of doing it went into meetings, surveys, and reports, but as I look back now, I wonder how valuable they were. I remember many as one-sided affairs because the task was too great for amateurs. On the other hand, there is talent available among our membership which, if used, might cause unjustifiable hardship in time lost from practice. The dilemma of the Planning Committee is, where do you draw the line? I should like to propose that this matter be studied in terms of efficiency and worth for all committees of the Society. We must face the fact that traveling expenses mount to a sizeable bill of several hundred dollars for calling a committee together, and where there is no agenda, little or no homework preceding it, little or no staff preparation, it might have been more profitable to have paid the chairman an honorarium to dig into the problem—call on the staff at headquarters to assist him—field work, library research, whatever he might require, then send out the information, and, after a suitable time for homework, call a meeting at which a committee could measure its wits.

It is in this area, as chairman of the Committee on Public Health and Education, that I have informed the Council more than once when it has been necessary to use the staff of other organizations and, frankly, of government at times in order even to approach the heart of the matter. The budget of the Committee on Public Health and Education would not permit the expense of investigational help, yet the cost of our own staff work might well have been less to the Society than if we had assembled the committee, especially when no decision could be made for lack of information. This point of view I believe is fully exemplified in a report this year of the special subcommittee of the Committee on Public Health and Education, which is published as an addendum to the report by the chairman of the parent committee. It is recommended that every member of this House read Dr. Erschler's report on rehabilitation because until you do, it is difficult to comprehend the magnitude of my frame of reference.

The advisers to the president-elect have put high on the agenda a study of the finances of the Society. This of course, under present constitutional organization, is the sole prerogative of the Board of Trustees and the Budget Committee. However, the above-described handicap to fact-finding applies just as much to the Board of Trustees as to the smallest committee of this Society. The Board of Trustees must be guided by the reports of the various segments of the Society stating their requirements for working capital and expenses. Because the Board of Trustees estimates a deficit for the current year of $150,000, I agree with the advisers to the president-elect that thought should be given to the need for raising the dues because of the impact of inflation upon the efficient working of the numerous bureaus, departments, and committees—in fact, the perpetuity of the whole Society as we know it. An appropriate fact-finding body should join with the Budget Committee and Board of Trustees and advise this House of the real fiscal needs of this Society next year.

Closely connected with the question of committee functions, expenditure of funds, and honoraria, is the idea the Committee on Public Health and Education brought to the Council last year—that of setting up a scientific and educational foundation similar to that created by the Pennsylvania Medical Society, which has been so successful in the field of public health and information. Properly conducted, a foundation can receive funds which the Medical Society cannot legally receive and can, through its board of directors, contract with other agencies for research and educational pursuits. Last year the House after reconsideration approved the report of the Ad Hoc Committee of the Council and gave semiclearance to the idea of a scientific and educational foundation. This year the legal structure is complete, and I hope the report of the Ad Hoc Committee will receive your attention. I urge that the setting up of this membership corporation be given priority in the affairs of the Society for the next year.

For years our legislation program was under fire, the main criticism of legislators being that we did not plan our legislation in time to arrange for its introduction before the Legislature convened. It seemed we were always pressed to formulate bills at the last moment. When Dr. Greenough became chairman of the Legislation Committee, he introduced State-wide regional conferences with county and legislation committee leaders. This policy resulted in early crystallization of the sentiment for or against legislation. Dr. Fineberg, the next chairman, continued the regional meetings, and during his tenure the work of the Albany legislative office was transferred to the firm of DeGraff, Foy, and Holt-Harris. While the present chairman has continued to hold regional conferences when invited to do so, a relatively new procedure is presently on trial, i.e., after the fall meeting of the whole Legislation Committee, at which time mandated legislation from the House of Delegates and such new issues as have arisen are discussed, the affairs of the committee tend to be concentrated in the hands of the chairman and committee counsel until the opening of the Legislature when again the whole committee is called together to reaffirm or change its thinking. During the legislative session the committee matters once more concentrate in the hands of the chairman, officers, and legislative counsel. This is a time when emergency action is often required, and it is the executive committee of the Legislation Committee, together with counsel and officers, who direct the attack or defense, whichever is the case. This new technic is spelled out here so that members who have criticized it as being undemocratic can realize that in some instances the time element alone prohibits wider participation. The legislation bulletin formerly published in Albany and now issued each week during the legislative session from the New York headquarters has been challenged on many fronts for its timing. Remember this development too is in the experimental stage.

One problem with which the Legislation Committee has been confronted for years is that of mandates from the House of Delegates which have slim or no chance of passing and which irritate legislators unnecessarily and occasionally reflect on the medical profession as being either naive or unrealistic. A mandate by this House for introduction of legislation should be most carefully considered before approval by this House; conditions may be quite different eight months from now. During my tenure in the Council, on more than one occasion the Council has voted to void the mandate in order not to make the Medical Society of the State of New York look ridiculous. Another source of embarrassment to the committee and to the entire Society occurs when legislation is introduced which has individual interest and pertains to only a small segment of the medical profession. As a delegate to the American Medical Association, I can also say that mandates to that august body from this House at times have caused the New York delegation to appear less than smart men. The A.M.A., however, is another matter, even though it is similar in connotation. I propose that during the next year the president encourage the chairman of the Legislation Committee and his committee and consultants, if necessary, to formulate for these changing times a firm, concise policy regarding legislation that new chairmen and committees may follow as a guide for the construction of a continuing legislative program.

We have lived in a cold war atmosphere for many years. We have witnessed in Korea that a hot war can develop overnight. Since the present administration in Washington took office, there has been a feeling, popular with the public, that a nuclear war cannot happen. Our present State administration in Albany is attempting to arouse us from our complacency. The penalty for complacency could be the destruction of most of New York State's population. Our Society must not lag as it has in the civil defense effort. It cannot lag if the public is to have confidence in us as leaders in a subject about which we should know. Therefore, I propose that this area of civil defense be explored next year, that we learn what county societies are doing to prepare for mass casualties, mass movement, and public health problems which would be created by hordes of refugees pouring over this State. It is grim to think about, but it is better to be prepared and never have it happen than to have a catastrophe such as the world has never known and be unprepared. This too I shall report on next year.

In 1957 the cause of prepayment medical care insurance received strong support when the New York State Temporary Health Insurance Board adopted Blue Cross and Blue Shield as the basic elements of the State plan for voluntary prepayment medical care insurance for civil service employes of New York State. An impetus to service plans came from two directions, namely, the idea of State-wide service benefits for this group by Blue Shield was a step forward; also of importance was the fact that New York State, with the largest number of civil service employes, set the example of Blue Cross and Blue Shield basic medical care for other states, including the Federal government which later adopted a similar plan. One other precedent was set—that of free choice of plan within limits, i.e., an employe could choose the State-designed plan or one of two other plans if they were offered in his locality. The major medical feature applied only to the board-designed plan and was delegated to a commercial insurance company.

The Medical Society's Blue Shield plans were given preference by the board largely because of the belief that the medical and surgical care plans of Blue Shield were based on the principle of service benefits and that participating physicians would honor the contract and thereby would substantially limit the utilization of the major medical feature. During the first year the plan was in effect, the Blue Shield and major medical cost experiences were well below estimates, while Blue Cross experience went well above estimate. During the second year, however, a most peculiar set of circumstances began to unfold. It appeared there were an increasing number of physicians who did not participate in Blue Shield and who did not therefore feel committed to honor the Blue Shield contract made with the board. The result of this was that when the nonparticipating physician charged the patient in excess of the contract, the patient immediately transferred most of this expense to the major medical component of his policy. Do you want physician members of the Temporary Health Insurance Board who supported the Blue Shield concept to continue to be reflected in this kind of light? These members in good faith believed that by a Blue Shield base for medical care the cost could be stabilized because they argued that doctors of medicine would give service first, as their Medical Society-approved plans called for. As more segments of government take advantage of the permissive legislation for voluntary prepayment insurance for their employes—there being an estimated 800,000 persons potentially eligible as employes in all segments of government in this State—greater will be the number of nonparticipating physicians in Blue Shield and greater will the problem be compounded unless participating physicians in Blue Shield can find some way of controlling nonparticipating physicians in what seems to be a serious defect in our basic medical economics. This is a problem presently confronting the Economics Committee.

I cite this case, gentlemen, because we either participate in our insurance plans designed by doctors *for* doctors and approved by medical societies, or we lose the initiative to other plans, which experience-rate their costs, and thus invite government control mechanisms for voluntary plans because of rising premium rates. I do not exaggerate the case that is building up for government control.

Those persons who keep abreast of insurance developments see more and more reports like the following, quoted from *Health Insurance News*, December 1, 1959:

> *Attack on Major Medical.* According to the "Insurance Digest," Dr. Clifton L. Reeder, Vice President Medical Director, Continental Assurance, told the Institute of Home Office Underwriters at its recent annual meeting in St. Louis that:
>
> Major medical violates the basic moral concept of insurance. It tempts the owner of the contract to cheat, and rewards him if he does. It tempts the doctor giving service to charge more for it and rewards him if he does. It therefore interferes with the traditional doctor-patient relationship by putting on a third party the problem of evaluating what a doctor's service is worth to his patient. When a company disagrees with the fees charged or the use made under the contract, then both policyholder and physician get mad.

I recommend that every physician in this State become more familiar with the workings of prepayment voluntary medical care plans. You are now confronted with what can become serious abuse by doctors of a plan developed under Article 9-C of the Insurance Law by doctors and for doctors to stem the tide of compulsory health insurance. If physicians neglect the responsibility they once said was so important for them to have, then the free choice slogan in which we so reverently believe will come crashing down on all of us as a hollow reverberation of our deficiencies in managing our affairs, and we can blame no one but ourselves for our future destiny in insurance matters.

I could give similar examples in other areas, such as emergency care plans, where deficiencies create public distrust. Former presidents-elect have drawn this important matter to your attention—its effect on public relations, intraprofessional relationships, our troubles with hospitals—better than I can do it. Nevertheless, the fact that I do not elaborate on or repeat the warnings of those wise men does not mean their solution is less important than a decade ago when other presidents-elect first called our attention to the changing times and the need for us to recognize that changes in our thinking and procedures were urgent lest we lose the independence to practice medicine as we knew it.

I opened this address with words about Henry Fineberg, your president. I close with words about this man, devoted to medicine, who has given of himself in a most selfless way to shore up our profession where its dikes are wearing thin. He deserves our sincere thanks for the job he has done.

Following my election last year, I said to you that I had observed for years that it was the toil of the staff, officers, members of the Council, members of the Board of Trustees, and the various committees which made an administration successful. I said, "I hope and pray for the leadership to mobilize the resources of this group for a successful year." This I repeat to you now and ask for your cooperation and help. I trust by this means I may render a favorable report next year on the second part of your mandate regarding the president-elect, which said, "At the end of his term as president, let him report to the House of Delegates on the extent to which the year's objectives were accomplished."

This I promise to do, God willing, in 1961. Thank you!

Respectfully submitted,

NORMAN S. MOORE, M.D., *President-Elect*

APPENDIX I

COUNCIL ACTION

1. November 13, 1958: In executive session the Council voted to recommend to the Board of Trustees that Dr. Wagner be employed with a contract of three years at a salary of $20,000 a year.

2. December 11, 1958: President Gibson introduced Dr. Wagner, "who has assumed the duties of executive director."

3. February 12, 1959: It was reported that at a special meeting on January 22, 1959, the Executive Committee accepted Dr. Anderton's proposal that he be relieved of his duties "as designated in the Bylaws, Chapter VII, Section 7." Dr. Anderton quoted the sentence, "He shall be in complete charge of the administration of the headquarters of the State Society."

4. The Council approved a motion to amend the annual report of the Committee to Study the 1958 Management Survey Report. The motion to amend was based on the idea that acceptance by the Executive Committee and by the Council in February (see number 2 above) of Dr. Anderton's request to be relieved of administration of the headquarters of the Society made it possible for the executive director to assume full administrative authority prior to amendment of Chapter VII, Section 7, of the Bylaws.

5. Page 1389, April 1, 1959, NEW YORK STATE JOURNAL OF MEDICINE: Report of Ad Hoc Committee to Study 1958 Management Survey Report—Recommendation VI of Edlund Report: "Give the executive director full administrative authority. This requires amendment of the Bylaws and except for agreement of the secretary, cannot be effected until the annual meeting in May." The committee recommends such change in the Bylaws.

6. Recommendation VII: "Make the office of secretary purely an elective, nonsalaried office. This requires a change in the Bylaws." The committee recommends such a change.

APPENDIX II

HOUSE OF DELEGATES ACTION

7. Page 39, September 1, 1959, NEW YORK STATE JOURNAL OF MEDICINE: Report of Chairman of Special Committee on Constitution and Bylaws.

Dr. George Lawrence: "We recommend that the following be added to the end of Chapter IV, Section 1(a) of the present Bylaws: "It (the Council) may with the approval of the Board of Trustees engage an executive director and define his duties."

During the considerable amount of discussion which followed Dr. Lawrence said, "Your committee also felt that there was a need here to illustrate that it was up to the Board of Trustees to define the powers of the executive director."

When questioned regarding the Board of Trustees part, Dr. Lawrence replied that the wording he proposed meant "the Council, with the Board of Trustees."

Recommendation was carried and made part of the Bylaws.

8. Page 42, September 1, 1959, NEW YORK STATE JOURNAL OF MEDICINE: Dr. Lawrence: "Since we have already recommended that the executive director be responsible to the Council, and that the Council *may transfer* control of the administration of the headquarters of the Society to him, we recommend that Section 7 of Chapter VII which deals with the duties of the secretary be amended so as to delete the sentence which reads, "He shall be in complete charge of the administration of the headquarters of the State Society." Moved by Dr. Lawrence, seconded by Dr. Wolff, carried unanimously.

9. House of Delegates action: Report of the Reference Committee on Report of Council, Part XII, 1958 Management Survey Report, Dr. Waring Willis, chairman: "Assuming that each delegate is familiar with the Survey Report, and in order to highlight those portions of the report considered unacceptable by the Survey Committee for enactment at this session, your reference committee will discuss in detail only those recommendations and suggestions not acceptable to the Survey Committee.

"Recommendations I to VII inclusive are very much as stated in the Survey Report and have been recommended by the Survey Committee. Your reference committee is in complete agreement and recommends their adoption. Mr. Speaker, I so move."

It was carried.

SPEAKER LANE: Both Dr. Fineberg's and Dr. Moore's reports will be referred to the Reference Committee on Reports of Officers.

Awards and Guests

Section 22

Presentation of Citation

SPEAKER LANE: I now have the pleasant duty of making some awards, and the first and foremost will be to Ralph Baker Post, M.D., of Ballston Spa, as the Outstanding General Practitioner of the Year.

. . . The delegates arose and applauded . . .

Speaker Lane: The scroll reads as follows:

> The Medical Society of the State of New York presents this scroll to Ralph B. Post in recognition of his selection by the Council as the Outstanding General Practitioner of New York State for 1959.

It is signed by Henry I. Fineberg, president, and William L. Wheeler, Jr., secretary.

Dr. Post, it is a great pleasure for me to give you this award.

Ralph B. Post, M.D.: Thank you, sir.

This is a great honor, and I appreciate it greatly. First, I want to thank Dr. Fineberg for the wonderful address which he delivered and also the address by our incoming president.

In becoming the "Doctor of the Year," there are certain phases that we should not forget. First is humility. I feel that having had fifty years of practice I have seen great changes in medicine. It is an age of specialization I realize, but there is still room for the general practitioner. What are the small communities going to do if we don't have the general practitioners?

Recently a young doctor came to our town. He has had considerable experience and training, army experience, but just the other day I heard that he is leaving town because he cannot take general practice and anesthesiology. Perhaps he is wise; I don't know.

Before ending my little talk—I hope I am not boring you—I think we all should pay some respect to our wives who helped us greatly.

Second, I am greatly indebted to Dr. John Sampson, Dr. Arthur Bedell, Dr. Moore, head of the New York State College, Dr. Blackfan, Dr. John Lovett Morse, of Boston, my teacher at the Catskill High School, and also the members of the Tanners Bank at Catskill, who enabled me to become a doctor.

Again, I wish to thank you all for giving me this great honor. I thank you! (*Applause*)

Speaker Lane: We would now like Mrs. Post to rise and take a bow and the applause of the House. (*Applause*)

In addition, we have for Dr. Post a book that was gotten up to be presented to him as a memento of this entire proceeding.

Dr. Post: Thank you.

Section 23

Presentation of Award

Speaker Lane: I will now call on Dr. Peter Di Natale, chairman of the Committee on Industrial Health, to make an award.

Peter J. Di Natale, M.D., *Councillor:* Mr. Speaker and members of the House, I have a happy task this morning. On the recommendation of the Council Committee on Industrial Health and with the approval of the Council and the Board of Trustees, I have the happy privilege to present to the Medical Department of the Eastman Kodak Company of Rochester the following citation:

> The Medical Society of the State of New York awards to the Medical Department, Eastman Kodak Company, of Rochester, New York, this citation in recognition of its contributions and achievements in furthering the objectives of occupational health.
>
> Henry I. Fineberg, M.D., *President*
> Medical Society of the State of New York
>
> Peter J. Di Natale, M.D., *Chairman*
> Council Committee on Industrial Health

James H. Sterner, M.D.: I believe this award symbolizes the cooperative arrangement between medicine and industry which will provide the best kind of service for our customers, your patients, our employes.

Our program has been essentially one of two phases: one, a good industrial in-plant health service, primarily preventive in character; the second, largely due to the wisdom and foresight of our management, a benefits program through which our employes can make use of the total community medical services. We believe strongly that any plan that is to be effective and really in the best interests of the community will allow such freedom of choice. We believe that we should help to underwrite the cost of medical care for the employes and their families, but that this can best be done by utilizing the total community services on a free basis.

Thank you! (*Applause*)

Speaker Lane: I would like to introduce too Mr. William Vaughn, vice-president and general manager of the Eastman Kodak Company. (*Applause*)

Mr. William Vaughn: Thank you, ladies and gentlemen. This is Jim Sterner's party. I am not going to spoil it. I want to say the Eastman Kodak Company is greatly honored that you should have made this award through Jim Sterner to the company for its operations in industrial medicine over the years. Our medical department was founded something over forty years ago, and I am told, although I was not around in those days, that it looked for a while as though there might be some danger in going on a collision course with the ideas and notions of the local medical fraternity. I am happy to say that that has never happened. In fact, quite the contrary. It has proved to be a supplement, a complement, to the regular professional services in the community. I think that the men responsible for seeing that it came out that way were Dr. Bill Sawyer, who founded the department, and particularly our good friend, Jim Sterner, whom you have honored today and whom I am delighted to see receive this honor.

At Kodak we believe that the function of management is to try to establish sound policies and let individuals see what they can do. In this case Jim Sterner has shown what he can do.

Thank you very much! (*Applause*)

Section 24
Presentation of Citation

SPEAKER LANE: It is now my pleasure to make an award to Dr. I. Jay Brightman:

> *A Citation for Meritorious Service Awarded by the President of the United States' Committee on Employment of the Physically Handicapped*
>
> Dr. Brightman, executive director of New York State's Interdepartmental Health Resources Board, was recommended unanimously to the Governor's Committee on Employ the Physically Handicapped as the Empire State candidate for the 1959 national Physician's Award, by the Subcommittee on Physical Medicine and Rehabilitation of the New York State Medical Society's Council Committee on Public Health and Education, following Council approval.
>
> Dr. Brightman's contributions to rehabilitation have been in the field of public health administration. As a Board-certified specialist in the fields of internal medicine and public health, the Albany physician has been actively engaged since 1946 in the development of programs and services for the rehabilitation of the physically handicapped.

Dr. Brightman, it is my distinct honor to present this award to you. (*Applause*)

I. JAY BRIGHTMAN, M.D.: Dr. Lane and members of the House of Delegates, it is of course with great appreciation and indeed with a sense of due humility that I receive this citation from the President's Committee handed to me and processed through the Medical Society of the State of New York.

I think we all understand that rehabilitation calls for cooperation by many different disciplines and, within the medical discipline, cooperation by the many medical specialties and the great practice of general medicine. The fact that the President's Committee has chosen to make an award to a physician each year seems to me to be an honor bestowed upon the entire medical profession. To the extent that my contributions, whatever they may have been, have given me the privilege of being the symbol of this award this year, I am deeply grateful.

Thank you very much. (*Applause*)

Section 25 (See 91, 187)
Introduction of Guests

SPEAKER LANE: We now have some distinguished guests to present.

First, it is my pleasure to present to you Dr. John N. Gallivan, president of the Connecticut State Medical Society, and Dr. Ellwood C. Weise, Sr., past-president of the Connecticut State Medical Society.

JOHN N. GALLIVAN, M.D.: Mr. Speaker, members and guests of the House, when I became president a week ago of the Connecticut State Medical Society, the immediate past president told me that one of the greatest privileges that came with the office of president of the Connecticut State Medical Society was that we became your guests at your meetings in New York.

May I say this morning that I was immediately made to feel at home by a very charming colleague from your reception committee. I certainly was warmed by meeting the members of the staff and many friends whom I have known in New York. I was thrilled and inspired by Dr. Fineberg's address and by Dr. Moore's address on the professional status of the physician and the need for self-discipline in our profession, a problem which we have in Connecticut as you do here.

We are closer I think to this city than your Fourth, Fifth, and perhaps out through your Eighth District Branches. We don't practice with you, but many of you sleep with us.

It is a great pleasure to be here and officially to bring to you the greetings of the Connecticut State Medical Society and our wishes for a very successful meeting.

Thank you! (*Applause*)

ELLWOOD C. WEISE, SR., M.D.: Mr. Speaker, officers, delegates, ladies, and gentlemen, my humble remarks certainly fade into insignificance after that magnificent address by your president and my friend, Henry I. Fineberg, and also that most instructive address by Dr. Moore, your incoming president.

As one of the delegates from the Connecticut State Medical Society, this is my second offense here. I was here in Buffalo last year. It is again my privilege and my honor to bring greetings to the Medical Society of the State of New York.

Last year I mentioned that both our state societies had problems of mutual interest and concern and that it would appear your problems were our problems. Though our society is dwarfed in size as compared with your very large membership, I can assure you that our regard for your Society has certainly not been dwarfed but on the contrary has continued to grow. Our very friendly relationships with your officers and many of your members like Henry Fineberg, your ambassador of good will—I must mention him again; he was just up to see us the other day—Herbert Wagner, your executive director, Drs. Louis H. Bauer, George Lawrence, and others, have indeed been a most pleasant association for me during this past year.

Connecticut not only wishes you much success in your deliberations in this House but also progress and accomplishment in every phase of your meeting.

Thank you, gentlemen! (*Applause*)

Speaker Lane: I will now turn the microphone over to Dr. J. Stanley Kenney, vice-president of the American Medical Association, to introduce our next guest. Dr. Kenney!

J. Stanley Kenney, M.D., *Trustee:* Mr. Speaker and gentlemen of the House, it is a very great privilege for me to introduce this next gentleman to you because I believe it is unique in the annals of this House of this Medical Society to have an invited guest from the Massachusetts Medical Society. This gentleman who will address you in a moment is the editor of *Massachusetts Physician;* he is a president of his district medical society and president-elect of the Massachusetts Medical Society. I take great pleasure in introducing Dr. Carl Bearse, of Boston. (*Applause*)

Carl Bearse, M.D.: Thank you, Dr. Kenney.

Mr. Speaker, ladies and gentlemen, it is indeed a pleasure and a privilege to be here. Although the Massachusetts Medical Society was founded in 1791 and in about ten days or so will hold its 179th Annual Meeting, and despite the fact that it has been a neighbor of New York State ever since the founding of these two colonies, and although the Massachusetts Medical Society was a bustling, hustling, vigorous organization in business for twenty-five years before the founding of the Medical Society of the State of New York, this is the first time that the Massachusetts Medical Society has been invited to attend officially the meeting of the Medical Society of the State of New York. Of course, we were delighted indeed to accept, and I came here to learn.

You might say to me, "Well, now, why didn't the Massachusetts Medical Society extend an invitation to New York?"

Well, how can you compare the Massachusetts Medical Society with the Medical Society of the State of New York? We have a mere 7,000 members as compared with your 25,000. We have a mere budget of a quarter of a million as compared with your $675,000. We are modest people; however, we are glad that we have finally been recognized, and I am delighted to be here.

I came here primarily to learn, and I have learned a great deal from the two addresses. I cannot help, however, but say a few words in the nature of a little crusade that I happen to be carrying on.

It has been said that if one ever picks up the hobby of collecting antiques and develops that disease called "antique-itis," it is incurable. I think the same thing can be said for the disease called "crusade-itis." In the remarks made by both the outgoing president and the incoming president, one thing was not mentioned, and I was glad to hear it was not mentioned because it gives me an opportunity to speak of it.

I am planning to present a paper to the Massachusetts Medical Society on the problem of foreign residents and interns in Massachusetts hospitals. For the first time the physicians of Massachusetts will know how many we have throughout the state and how they are distributed. This has been done through a questionnaire survey. Those of you who subscribe to the *New England Journal of Medicine*—I forgot, the Massachusetts Medical Society does own a publication known as the *New England Journal of Medicine,* which now has a circulation of 65,000—that paper will appear in the issue of May 20. I have a message to the medical society in that, and I think it is proper for me to repeat it here because there are more foreign physicians in the State of New York than in any state in this country; that we should welcome these physicians and be sure steps are taken to see that they are competent to care for our patients. We need foreign physicians because there are not enough graduates of American medical schools to care for our patients. These physicians have been, and can be, very helpful if they are properly trained. They should not be exploited, and I believe that if we treat these foreign physicians as guests with kindness, we invite them to our homes, our Rotary Clubs, theaters, medical society meetings, etc., so that they can see America in action, when these foreign physicians go home—most of them do; I read the other day that something like 90 per cent will go back—each of them will have thousands, if not tens of thousands of their countrymen as patients. If we treat them with kindness and consideration, they will be able to serve as wonderful emissaries of international good health and international good will.

Again, for the kind invitation of the Medical Society of the State of New York to the Massachusetts Medical Society and for the privilege of being here, I want to express my very deep appreciation.

Thank you very much! (*Applause*)

Speaker Lane: Thank you, Dr. Bearse.

It is now my pleasure to present to you Arthur E. Hardy, M.D., secretary of the Rhode Island Medical Society. (*Applause*)

Arthur E. Hardy, M.D.: I did not come prepared to make a speech. I hope you will be pleased to hear that I am very happy to be here. This is the first time that Rhode Island has been invited also, I believe. We are about the same age as your society. We are one hundred and fifty years old.

I was interested to note from the incoming president's speech that you still have growing pains, so I imagine that we with our 800 members will have growing pains for a long time too. It is nice to be here. (*Applause*)

Speaker Lane: Next is Dr. Benjamin Singerman, representing the Vermont State Medical Society. (*Applause*)

Benjamin Singerman, M.D.: Mr. Speaker and gentlemen of the House of Delegates of the Medical Society of the State of New York, last year when for the first time I was the delegate of the Vermont State Medical Society to your deliberations in Buffalo, I frankly came with great trepidation. I was really a novice, but this year I came as an experienced individual. It is my second time to attend your House of Delegates and State Society meeting. Though I came the first time with fear, I came the second time with great hopes and with great expectations because I enjoyed my first visit in Buffalo so very much. I felt so highly honored to become acquainted with men like Dr. Fineberg, with whom I had a little correspondence during the year, and deeply honored that I was introduced by your present incoming president, Dr. Moore. Now, after hearing several visiting men from the States of Massachusetts, Connecticut, and Rhode Island, and hearing what they had to say, I feel Vermont is indeed deeply honored, first of all, that we have always had a delegate to the Medical Society of the State of New York, though we have only a total of about 540 members to our entire society. There is the great state of Massachusetts with a large number, some 14,000, and 6,000 from Connecticut that the gentleman mentioned, and they are coming for the first time, and the delegate from Rhode Island coming for the first time. And here is a delegate from the little state of Vermont which I think has always sent a delegate to your Society. We feel in fact deeply honored. Also I am very happy too that in Vermont you don't have to be an ex-president to be sent as a delegate to your Society.

I just want to say thank you very much for the exceptionally fine hospitality that has been extended to me both in Buffalo and here in New York City. I hope I shall return in the future and be with you because I was so very much impressed with the amount of time and work that you gentlemen put in at a meeting of the House of Delegates.

Bless you and the best of luck at your present meeting. (*Applause*)

Speaker Lane: It is now a distinct pleasure to present to you one of our members, whom you all know, Dr. Louis Bauer, to present two visitors.

Louis H. Bauer, M.D., *Ex-President:* Mr. Speaker and members of the House of Delegates, I feel it is a great honor and privilege this morning to present to you two very good friends of mine who are both distinguished physicians. The first one is a gentleman I first met in 1953. I visited him in his home city of Sao Paulo last January. We have been talking about growing pains. Here is a gentleman who really knows what they are because up until a few years ago the great country of Brazil did not have a national medical association, and it is due very largely to the efforts of this gentleman, whom I am going to present to you, that Brazil now not only has a national medical association but a very active one and one which, I am happy to say, is doing a great deal not only for the medical profession in uniting it but for the people of Brazil.

Mr. Speaker, I take great pleasure in introducing Dr. Dorival Marcedo Gardoso, general secretary of the Brazilian Medical Association. (*Applause*)

Dr. Dorival Marcedo Gardoso: Thank you, Dr. Bauer.

Dr. Lane, Speaker of the House of Delegates, members of the House of Delegates, ladies and gentlemen, it is a pleasure and an honor to attend this meeting of the Medical Society of the State of New York, impressions of which I will convey to my colleagues of the Brazilian Medical Association.

With your permission I will give you some data about the Medical Association in Brazil. Our population is 65,000,000 people. Approximately the total number of physicians is 72,000, of whom about 28,000 are actually practicing medicine. By far the larger proportion of our physicians are located in the big cities. For instance, Sao Paulo and Rio de Janeiro, with about 7,000,000 people, have 10,000 physicians. Many small cities and villages in the hinterland are not provided with medical care.

The Brazilian Medical Association is a rather young organization, having been created in 1951. It has about 17,000 members, amounting to 70 per cent of the working Brazilian physicians. Being the general secretary since its foundation, I have had the opportunity to work with my colleagues in our main problems to organize Brazilian physicians into a national organization to improve their economic situation, to obtain a better medical education, and to elevate the scientific level and scientific endeavors of the profession.

The results we have obtained so far are quite gratifying, and we hope that this effort will continue to help the Brazilian physicians in the exercise of their profession. The Brazilian medical schools are changing completely their organization and curricula according to the recommendations of the Medical Educational Congress of the Brazilian Medical Association convened in 1957. The private and official organizations have improved substantially the honoraria and fees, although not to the desired extent.

We publish a medical review and a bulletin with a controlled circulation of 20,000 copies.

Last year we had a National Congress on Medical Care, which was honored with the presence of Louis M. Orr, M.D., president of the American Medical Association. I might confirm to you the hard and useful work done at that meeting. The presence of your national organization was considered by the Brazilian physicians as a sign of your interest in the improvement of their situation.

We sincerely hope that more and more representatives of your association will take part in our activities. We look forward to this opportunity for a better reciprocal understanding with pleasure and confidence.

Thank you all for your kind reception. (*Applause*)

DR. BAUER: Mr. Speaker, I have another distinguished guest to present, another gentleman whom I have known for a number of years. He is a gentleman who elects to wear two hats. Until a few months ago he was editor-in-chief of the *Canadian Medical Association Journal*, and for a number of years he was associate editor of the *World Medical Journal*. Since last September he has been the editor of the *World Medical Journal*, having resigned his position as editor of the former journal and with the Geigy Corporation. He has almost returned to his native heath. That is not accurate. He returned to London. He is a Scot. You know they tell the story about the Scot who visited London for the first time. When he got back, his friend said, "Sandy, how do you get along with the English?"

"I did not see any. I only talked to heads of departments, and they were all Scots."

So may I present that Scot, Dr. Stanley S. B. Gilder, who is the executive editor of the *World Medical Journal*.

STANLEY S. B. GILDER, M.D.: Mr. Speaker, ladies and gentlemen, that was a very kind introduction. The Scots, as you know, are world wide. In that connection there was the Scot who was most unnecessarily boasting about this in a bar and turned to an Australian and said to him, "This is true, isn't it, you have Scots even all over Australia?"

The Australian said, "Yes, but the worst pest is the rabbits." (*Laughter*)

I have had the privilege in my life of serving three different associations: the British Medical Association, the Canadian Medical Association, and the World Medical Association, and I was very gratified indeed when my good friend, Louis Bauer, suggested that it would be well received if I came and sat in with you a little this morning because I felt pretty sure that the problems you were discussing would be the same problems with variations that I had heard before.

I knew that your Society was a progressive, effective, powerful, and socially wide-awake Society, and I think that my own feelings about the value of societies stem from the time when in 1946 I came back to the ruins of my practice in England, the ruins of a somewhat bombed town, after six years of war service, and found the members of the profession there confronted with the threat of a government-controlled national health service. To my horror I discovered that the majority of the members of the profession were adopting the ostrich-like attitude of burying their heads in the sand and like the ostrich, of course, presenting another portion of their anatomy for the government to kick. Any suggestion that such government intervention was virtually inevitable at that time, because both major political parties were committed to it, because the country was broke after a devastating war, and because the hospital service of Britain was also broke—any suggestion of this nature, gentlemen, from angry young men was received not with tolerance but with the suggestion that we were just fellow travelers. This, of course, was quite unfair, and when I heard today that in this Society there have been stormy debates and great diversities of opinion, I welcomed it as a sign of the great strength of this Society because your angry young men and angry older men are obviously right here in the Society putting forward their opinions and not outside simply cursing the old die-hards. So, ladies and gentlemen, I would urge you to continue to give the freest expression of your opinions here and to do what so many bodies failed to do, to decide in the end what your positive measures of agreement are and not to emphasize too greatly the negative aspects of the coming medical economic problems which confront you undoubtedly in the very near future.

Thank you very much, Mr. Speaker. (*Applause*)

SPEAKER LANE: I will now call on Dr. Azzari.

Section 26

Greetings from World Medical Association

RENATO J. AZZARI, M.D., *Trustee:* Mr. Speaker and members of the House, I have been requested to convey to this House a brief message of greeting:

> Please present the greetings and best wishes of the World Medical Association and its United States Committee to the Medical Society of the State of New York for a most successful meeting. The World Medical Association which is the only representative the practicing doctors have on the international level is constantly endeavoring to protect the standards of medical care, medical education, and freedom in the practice of medicine.
>
> LOUIS H. BAUER, M.D., *Secretary General*

Thank you, Mr. Speaker.

Section 27 (See 139)

Announcement

SPEAKER LANE: I now have an announcement to make that I am sure all of you that have been in the House before will be amazed to hear. In contrast to the usual announcement of previous years, the dinner dance on Monday, May 9, is now fully subscribed. However, as a special privilege for any members of the House of Delegates who may not yet have obtained their tickets, the sale has been extended to 5 P.M. or until 800 tickets are subscribed. The present count is 760 sold. Tickets are available in the foyer outside of this House. Dr. Wagreich informed us at breakfast this morning that this is an accurate count and that the final time to purchase them will be 5 P.M. If there are any of you who want tickets, who have not got them, you had better make a beeline, and we will declare a ten-minute recess to let you get them.

. . . Recess . . .

SPEAKER LANE: Gentlemen, will you please take your seats? I will call the House to order. To expedite our business, please resume your seats.

PHYSICIANS' HOME

Section 28

Report of Physicians' Home

VICE-SPEAKER WURZBACH: Gentlemen, Dr. Kaliski will give a report on the Physicians' Home.

DAVID J. KALISKI, M.D.: Mr. Speaker, Mr. Vice-Speaker, and members of the House of Delegates, I am very thankful for this opportunity to speak to you for about five minutes about the Physicians' Home, about what we are doing at the present time, and what we hope to do in the future for those physicians who, because of adversity, hard luck, bad investments, are not able to provide for themselves or their dependents.

We have a very close relationship, as you know, with the Medical Society of the State of New York. We have a small office in the office building at 750 Third Avenue, for which we pay a modest rental, and we receive contributions, voluntary contributions, of $2.00 a year. In the last year we received over $18,000 from members of the Medical Society of the State of New York. From the Woman's Auxiliary of the Medical Society we have received upwards of $3,000 in contributions. From a membership appeal, which is sent out each year, as you know, about Thanksgiving or Christmas time, we have received this year a net amount of about $50,000.

We have given out in beneficiary aid about $65,000, and we have assisted 67 physicians, their wives, widows, or dependents. The difference between the amount of money which we have taken in and the amount of money it costs us to operate the organization and to pay the beneficiaries has been made up by the interest we receive on investments.

I want you to know that our investments are very carefully guarded. We have a board of trustees, of which your past president, Charles Gordon Heyd, M.D., is chairman, and we have as consultant the Hanover Bank of New York.

The administrative operation of the Physicians' Home is carried out by one paid executive, so that the bulk of the money, when received, is used for beneficiary aid.

I want you to know that the Physicians' Home is a human and humane organization, and we have sufficient funds at the present time to take care of any physician who may be recommended to the Physicians' Home for beneficiary aid.

We operate, as you know, through the county medical societies. We have one great goal that we wish to achieve: We wish to obtain sufficient funds through bequests and endowments to provide our guests, when they need it, with hospitalization and care in convalescent homes when they are ill.

I want to thank you all on behalf of the Physicians' Home and bespeak your further efforts so that we may increase our endowments to include these objectives.

Thank you very much! (*Applause*)

SPEAKER LANE: Thank you, Dr. Kaliski.

SPECIAL COMMITTEE ON CONSTITUTION AND BYLAWS

Section 29

Report of Special Committee on Constitution and Bylaws

VICE-SPEAKER WURZBACH: Mr. Secretary, is there a quorum present?

SECRETARY WHEELER: Mr. Vice-Speaker, there is a quorum present.

VICE-SPEAKER WURZBACH: There being a quorum present, we will now consider the report of the Constitution and Bylaws Committee which you will find in the Handbook on page 13 (JOURNAL, April 1, 1960, page 1055).

May I request that anyone wishing to discuss not do so from his seat in the House but come to one of the microphones in the center aisle and speak from there. When you do so, kindly give your name and your county.

The Speaker wishes to make the following statement for the record. It is necessary to have a two-thirds vote to pass an amendment to the Constitution. If a two-thirds vote is not obtained, the motion is lost. Therefore, when the Speaker states that the motion is carried, it is by a two-thirds vote.

Dr. Burgin, will you present your report, please?

GEORGE A. BURGIN, M.D., *Councillor:* Mr. Speaker and members of the House, if you refer to page 13 in your book, I think we can go through part of this fairly easily, and I don't have to read everything that is in this report.

The first proposed amendment is to the regulations governing malpractice insurance and defense. This, as you will note, was taken up with the legal counsel of the Malpractice Insurance and Defense

Board. The problem was resolved since the opinion of legal counsel was that no amendment to the Bylaws is necessary, and the board met accordingly to amend its recommendations. It is unnecessary to make any recommendations to the House at this time.

The next concerns resolution 59–56 which would provide reimbursement of section delegates sitting in the House of Delegates. This resolution favorably impressed the committee but is covered by resolution 59–68, which is even more comprehensive. It is therefore combined with the report on that resolution, which follows:

Resolution 59–68, introduced by George J. Lawrence, Jr., M.D., as councillor, would amend Chapter IX, Section 1 of the Bylaws to provide:

1. Expenses for "employes of the Society" and "commissions." This has already been incorporated in this chapter of the Bylaws.
2. Per diem allowance and expense for president-elect when engaged on official business.
3. Expenses for section delegates when sitting in the House of Delegates.
4. Clarification of traveling expenses for delegates to the American Medical Association.

The resolution follows, and you can follow it yourself.

Your committee recommends the approval of this resolution, Mr. Speaker.

Vice-Speaker Wurzbach: Do you wish to read the resolution, sir, for the record?

Dr. Burgin: Well, if you would like me to, I will.

Chorus: No.

Vice-Speaker Wurzbach: Is there a second?

. . . The motion was seconded from all parts of the room . . .

Vice-Speaker Wurzbach: Is there any discussion on this amendment, as presented?

Samuel Z. Freedman, M.D., *Assistant Treasurer:* This part 3, expenses for section delegates when sitting in the House of Delegates, will you please explain whether the State Society is paying traveling expenses and hotel expenses and all that? Is that what is in that?

Dr. Burgin: Yes.

Dr. Freedman: May I discuss it, Mr. Speaker?

Vice-Speaker Wurzbach: Yes.

Dr. Freedman: As a member of the Budget Committee of the State Society and as assistant treasurer, and also bearing in mind we have been discussing an increase in the dues because the Society already is going in the red more than $130,000, I question the wisdom of burdening the State Society with more expenses. It occurs to me that the delegates who have come here from their county societies are representing the county societies and that this is a fair expense for the local societies to bear. To put that burden on the State Society is unfair.

Vice-Speaker Wurzbach: This is not county delegates.

Dr. Burgin: Only section delegates.

Dr. Freedman: Excuse me.

Dr. Burgin: I may add this was cleared through Dr. Bauckus and the trustees before we recommended it.

Dr. Freedman: This is only for section delegates?

Dr. Burgin: That is right.

Vice-Speaker Wurzbach: Section and district branch delegates.

Dr. Burgin: District branches are already taken care of.

Dr. Freedman: I think my objection would still hold. Certainly it would hold, the same arguments would hold, with the district branch delegates. This should be an economic burden of the district branches. To ask the State Society to carry this burden is something that I can't understand. I know each organization, each local component wants autonomy and wants home rule, and so on and so forth, but when it comes to expenses, it goes to papa. This is no different from what we have been fighting in Washington in the halls of Congress. We have been fighting certain legislation which is basically this. Why don't we behave in our own organization the way we expect Congress to behave? If there is a certain responsibility, there is also a certain cost, and I for one would be opposed. I don't think the State Society can carry the burden right now anyhow.

Vice-Speaker Wurzbach: Is there further discussion?

Thomas M. d'Angelo, M.D., *Queens:* First, I want to ask a question. The district delegates, they already have their expenses paid now?

Dr. Burgin: Yes.

Dr. d'Angelo: The only individuals in this House whose expenses are not paid are those from the sections that are an integral part of the workings of the Medical Society. The sections I know are not allowed to impose any dues or assessments on their members. The Section on Ophthalmology asked that privilege two or three years ago and was denied the privilege of asking money from its members, so in the first place the section could not pay for the expenses of the delegates. I feel, like the rest of us, that the section delegates are an important part of this House of Delegates. I think their expenses should be paid by the Medical Society. Whether or not our funds can stand the added expense, I do not know, but if they can't, our funds should be so organized that they should be able to pay for the section delegates, and I firmly support the action of the committee.

Vice-Speaker Wurzbzch: Is there further discussion?

Solomon Schussheim, M.D., *Kings:* Mr. Speaker and members of the House of Delegates, we in Kings

County must feel right now like some of the senior citizens in this great country who like to stand on their own two feet and take care of their own medical bills. We in Kings County don't get a nickel for coming here. We don't even get 15 cents for the carfare to come across from the other side of the bridge. In some thirty-five years of sending delegates to this House of Delegates from Kings County, we have received remuneration twice, a measly $50 each time. We are carrying the burden of coming here, going to Buffalo, Rochester, or any other place, out of our own pockets. I personally cannot see where there should be such discrimination. If the State Medical Society wants to pay all our expenses, that would be a different problem entirely but to pick out one select group—I feel that they should come right along with paying their expenses like senior citizens of the medical profession, and stand on their own two feet, and have it come out of their own pocket.

Vice-Speaker Wurzbach: Is there further discussion?

Arthur Q. Penta, M.D., *Section Delegate:* I am the delegate from the Section on Chest Diseases. Delegates of the Society, one of the gloomy chapters in the history of this Society for many, many years has been to have delegates from sections who are responsible for your program. Without a program of the State Society there would be no need to have any meeting at all. The delegates of the sections have responded to your program, and for many years they have been coming here without being paid. I think it is time, and last year Dr. Katz and I introduced this resolution allowing us to ask for reimbursement.

We have been coming here for years, and I don't believe it is right. Dr. Schussheim spoke about Kings County. That is a problem of their own, the Kings County Society, and has nothing to do with the State Society at all. We are representing a program committee. We are not representing any society at all. Therefore, I would like to see this resolution go through.

Thank you!

Vice-Speaker Wurzbach: Is there further discussion?

Herbert H. Bauckus, M.D., *Trustee:* In my report to the House and in the supplementary report, I call attention to the need to try to reduce our expenses as much as possible, and I have said for this year it might not be a good idea to increase the dues, but the district branches and the sections are the core of this Society, and I think if we spend any money for things of that nature, that is a good place for it. I speak in favor of Dr. Burgin's resolution.

Vice-Speaker Wurzbach: Is there any further discussion?

Voices: Question!

Vice-Speaker Wurzbach: All those in favor of the adoption of this amendment as presented say "aye," those opposed "no." The amendment is carried.

Proceed, sir.

Dr. Burgin: Annual reports from section delegates—Resolution 59–65 would amend Chapter XII of the Bylaws to allow "the delegate of each section to present an annual report to the House of Delegates concerning the status of his specialty."

Your committee feels that this resolution simply asks permission for the section delegates to present an annual report, which may be done, if they so desire, without amending the Bylaws.

We therefore recommend no action. I move the adoption of this portion of the report.

Vice-Speaker Wurzbach: Is there a second?

Harry P. Smith, M.D., *Section Delegate:* I second the motion.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Burgin: District branches handling disciplinary problems for county societies: This resolution, 59–63, was presented by the County of Montgomery. I can read it if you would like me to do so, Mr. Speaker. However, the committee feels that at present the district branches have no organization to handle this problem of discipline, that the Planning Committee is studying the entire structure and functioning of the district branches, and that the Judicial Council of the State Society would be available if needed in these cases.

We therefore recommend disapproval of this resolution.

Vice-Speaker Wurzbach: Do you so move?

Dr. Burgin: I so move.

Alfred A. Hartmann, M.D., *Franklin:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Vice-Speaker Wurzbach: As recommended, the amendment is lost.

Dr. Burgin: Reports of committees directly to House of Delegates: Resolution 59–66 would amend Chapter X, Section 2 of the Bylaws to allow reports of committees of the House of Delegates, in the discretion of the House, to be presented directly to the House without referral to the reference committees. The resolution is as follows:

> *Resolved,* that Chapter X, Section 2 of the Bylaws be amended so as to add the following to the final sentence: "except that reports of committees of the House of Delegates may, in the discretion of the House, be presented directly to the House without referral to the reference committees."

We recommend the adoption of this resolution, and I so move.

Vice-Speaker Wurzbach: Is there a second?

Charles H. Loughran, M.D., *Kings:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Burgin: Addition to Nominating Committee membership: Resolution 59–64 would add another member-at-large to the Nominating Committee to give the counties of Greater New York plus Westchester, Nassau, and Suffolk increased representation.

Your committee has discussed this resolution with several representatives of the downstate counties. We feel that there has been no injustice done as the Nominating Committee is now set up.

We therefore recommend disapproval of this resolution, and I so move.

Vice-Speaker Wurzbach: Is there a second?

Dr. Hartmann: I second it.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Vice-Speaker Wurzbach: The motion is carried, and the amendment is lost.

Dr. Burgin: Remission of dues during residency training: Resolution 59–4 would provide remission of dues during residency training. The resolution would amend Chapter XIV, Section 2, paragraph 3 of the Bylaws to read: "The dues of any active or junior member of the Medical Society of the State of New York may be remitted for the current year on account of illness, financial hardship, temporary service in the armed forces or in the United States Public Health Service, or when the member is engaged in a residency training program approved by the Council on Medical Education of the American Medical Association, when the request is made by the member's component county medical society."

Your committee feels that if such training constitutes a "financial hardship," it is provided for in Chapter XIV, Section 2 of the Bylaws and can be invoked at the request of the individual county society.

We therefore recommend disapproval of this resolution, and I so move.

Ezra A. Wolff, M.D., *Assistant Secretary:* I second it.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Vice-Speaker Wurzbach: The motion is carried, and the amendment is lost.

Dr. Burgin: Amendments to implement management survey report: This is the same group of amendments that was acted on last year and reintroduced for action this year. I think a word of explanation may eliminate the reading of all of this, but you will note that most of it is the case of eliminating the word "Council" and in many places substituting "the Board of Trustees."

Your committee has given a great deal of thought and study to this problem. We met with Dr. Azzari's committee and were impressed by the return of only nine of the 61 questionnaires sent out to the county societies regarding this basic change. This certainly indicates no strong general interest or feeling about a basic change in the governing of the State Society. Several of the suggestions in the Management Survey Report have been implemented. All of these have not yet completely produced the desired result. We are convinced they will, given time. To add to the situation at this time a fundamental change in the governing bodies of the State Society seems definitely undesirable.

Since Dr. Azzari's Ad Hoc Committee to Study the 1958 Management Survey Report has recommended that no change be made in the present status of the Council and Board of Trustees, and since your committee concurs in this decision for the reasons stated above, and also since Dr. Fineberg in his report as printed feels that this is not a wise move to make at this time, we recommend that all portions of this resolution be disapproved for the present.

Disapproval would mean that the following parts of resolution 59–67 would not be adopted: Constitution (2), (3), (4), (5), (6), (8); Bylaws (1), (2), (3), (4), (5), (6), (8), (9), (10), (11), (12), (13–1, 2, 3, 4, 5, 7, 8, 9, 10, 11), (14), (15–1), (16), (17), (18), (19), (20), (21), (22–2).

I move to disapprove for the present these parts of the resolution.

Raymond J. Byron, M.D., *Schenectady:* I second it.

Vice-Speaker Wurzbach: Is there discussion?

Felix Ottaviano, M.D., *Madison:* I was instrumental in getting this resolution into the House. I don't particularly object to delaying any finalization of this thing. I understand if Dr. Burgin's recommendation is now passed, we lose the advantage of having an amendment read one year and then presented again next year.

I should like to refer to one particular section of this group of amendments that we specifically intended getting some decision on, and that is the long section there with reference to the duties of the executive director as a member of this House and a member of the Medical Society of the State of New York. I don't know what those duties are. I don't know that anybody in this House knows. If we will read the address of the president-elect, we will find that there was a good deal of discussion and dispute concerning these duties. I know it is late. This is a good time to get anything through that we might like to get through and maybe regret it later. I will go along with the words for the present. I should therefore like to move to table the motion concerning this particular resolution.

Vice-Speaker Wurzbach: Is there a second?

James Greenough, M.D., *Trustee:* I second it.

Vice-Speaker Wurzbach: A motion to table is not debatable. It can be passed by a majority vote. All those in favor of tabling this particular part of the report say "aye," those opposed "no."

I will have to ask for a count, Mr. Secretary and Mr. Assistant Secretary. Will those in favor of tabling rise? Those opposed to tabling now rise? The motion to table has been carried.

May I give an explanation to some of you regarding tabling. This means that this report may be lifted from the table during this session of the House of Delegates. However, if this House of Delegates closes, there is no further action unless a new set of resolutions are presented for the amending of the Constitution and Bylaws. Is that understood?

CHORUS: Yes.

DR. BURGIN: Resolution 59–67 also included an amendment to make easier a change in the Constitution. Commenting on suggestion (9) under "Constitution" and suggestion (22–1) under "Bylaws," which are as follows:

> (9) Amend Article XIII (AMENDMENTS) first paragraph by substituting the words "to the Board of Trustees" for the words "at a previous annual meeting" and amend last sentence of last paragraph to substitute words "Board of Trustees" for the word "Council."
>
> (22) CHAPTER XVII (AMENDMENTS)
>
> (1) Amend Section 1 to change words "at a previous annual meeting" to the following: "to the Board of Trustees."

the Special Committee on Constitution and Bylaws, reporting to the 1959 House of Delegates stated: "This proposed amendment would make it easier to amend the Constitution. Your committee feels strongly that the Constitution should be a stable document and not subject to hasty amendment."

The present committee concurs in this opinion and recommends that the House of Delegates reaffirm the action taken in 1959 and disapprove these proposed amendments. I so move.

DR. WOLFF: I second it.

. . . There being no discussion, the motion was put to a vote and was carried . . .

VICE-SPEAKER WURZBACH: The motion is carried, and the amendment is lost.

DR. BURGIN: I would like to move adoption of this report as a whole as amended.

DR. WOLFF: I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

DR. BURGIN: I would like to thank the members of my committee, Dr. Hartmann, of Franklin, and Dr. Wolff, of Queens, and I would also like to express my deep sense of gratitude to Miss Dougherty, for advice and technical help which she has given to us, and to Miss Lewis for helping us edit this report.

VICE-SPEAKER WURZBACH: Now the floor is open for the introduction of supplementary reports and resolutions.

ADDITIONAL SUPPLEMENTARY REPORTS

Section 30 (See 113) Report 60–N

Supplementary Report of the Budget Committee

To the House of Delegates, Gentlemen:

This report is combined. It consists of elements which are the business of the Budget Committee and the treasurer.

The present budget as approved by the Council and Board of Trustees is appended (Table I). You will note that a deficit of $173,706 is forecast for 1960. This amount is, of course, an estimate at best. However, at the present time it is our best guess and is based on the estimates submitted by committee chairmen.

If this deficit of $173,706 proves to be close to actual net expenditures for 1960, we will no longer have a surplus at the year end. Instead, our surplus will be in the red by approximately $76,726.

There are three ways to eradicate this loss: (*a*) Reduce expenditures drastically; (*b*) invade our reserve funds; (*c*) increase member's dues.

As to reducing expenditures, in many instances worth-while projects might be scrapped or curtailed. In other instances we cannot reduce expenditures. Our rent, telephone, salaries cannot be reduced to any great extent.

As to invading our reserve funds, this would be a matter of managerial decision. Undoubtedly, we need reserves to take care of unforeseen contingencies. It has taken many years to accumulate these funds. To use them for current expenses now might mean regret in the years to come.

As to increasing dues, this again is a managerial decision beyond the province of the Budget Committee or the treasurer.

The time is coming shortly, however, when due consideration will have to be given to our financial picture. A determination must be made as to what course we should pursue. It is to be noted that past actions of the House of Delegates have always approved the "pay-as-you-go" principle.

Respectfully submitted,
MAURICE J. DATTELBAUM, M.D., *Chairman*

Section 31 (See 118) Report 60–O

Supplementary Report on Belated Bills

To the House of Delegates, Gentlemen:

A bill for $23.40, expense of attendance at meetings of the Rural Medical Service Committee in Syracuse on September 19, 1959, and February 18,

TABLE I.—AMENDED BUDGET FOR YEAR ENDING DECEMBER 31, 1960

INCOME	
Dues (net)	$ 494,750
JOURNAL	13,536
TOTAL INCOME	$ 508,286
EXPENDITURES	
Administration	$ 229,483
Department of Communications	101,926
Legislation Bureau	26,535
Workmen's Compensation Bureau and Bureau of Industrial Health	29,563
Bureau of Medical Care Insurance	19,650
Scientific Activities	23,286
Woman's Auxiliary	8,127
Travel	51,268
Annual Meeting	19,547
District Branches	5,900
Planning Committee for Medical Policies	1,500
Malpractice Insurance and Defense Board	2,500
Malpractice Audit	2,000
Legal Counsel	40,000
A.M.A. delegates expense fund	5,000
Conference of Presidents	75
Veterans Medical Service Plan of New York	300
Pensions	1,233
Empire State Health Council	100
Blood Banks Association of New York State, Inc.	11,000
Committee to Combat Cults	3,000
New York State Society for Medical Research	100
World Medical Association	1,000
Staphylococcal Committee	2,000
Membership campaign	2,500
Executive director's contingency fund	5,000
Budget Committee's salary and overtime contingency fund	19,000
Commission on Medical Services	1,000
Regional Conference on Medical Care	2,621
Joint Council to Improve Health and Care of the Aged	50
International Congress of Industrial Health	3,000
Special Study—Rural Medical Service Commission and Maternal and Child Welfare Subcommittee	750
Relative values study for the State of New York	1,000
Medical Directory	64,478
TOTAL EXPENDITURES	$ 684,492
Excess of Income over Expenditures	−176,206
Interest earned	2,500
NET EXCESS OF INCOME OVER EXPENDITURES	$−173,706

1960 (transportation only), was received from Donald Charles Walker, M.D., of Delanson, on April 28, 1960.

Bills totaling $82.77 incurred in the name of Herbert T. Wagner, M.D., for meals at the Cornell Club on November 1, 9, 17, 25 and December 16, 20, 23, 1959, were received from the club in April, 1960.

The approval of the House of Delegates is requested in order that these bills may be paid since more than ninety days elapsed between the time the expenses were incurred and the dates on which the bills were received.

Respectfully submitted,

MAURICE J. DATTELBAUM, M.D., *Treasurer*

Section 32 (See 131) Report 60–P

Supplementary Report of the Committee on Public Relations, Subcommittee on Cooperation with Media of Information

To the House of Delegates, Gentlemen:

On April 20, 1960, the Subcommittee on Cooperation with Media of Information held its annual meeting with the special committee of the New York State Bar Association to review and renew the "Standards of Practice for Doctors and Lawyers." Present at that meeting at State Society headquarters were your chairman, John C. McClintock, M.D.; Felix Ottaviano, M.D.; C. Stewart Wallace, M.D.; Kenneth T. Rowe, M.D.; and Herbert T. Wagner, M.D. Representing the Bar Association were H. Stewart Klopper, Esq., chairman of the Association's special committee; Nathan M. Medwin, Esq.; and Ross I. Chamberlin, Esq. The Department of Communications staff also was present.

Your chairman presided at the meeting, which proved very profitable to both organizations. There was a great deal of discussion about doctor's fees for reports requested by attorneys and doctor bills. It was agreed that when there were abuses in regard to various matters handled by doctors and lawyers in litigation, that such doctors and lawyers should be reported to their respective county medical societies and local bar associations. Mr. Klopper pointed out that in Queens County both the bar association and the county medical society had a special subcommittee to handle such matters. There is no need to go to the board of censors or any group of similar nature in the bar association.

In regard to the Standards, there was a great deal of discussion about the present format. All present were in agreement that in substance there was no need for a change in the document. There were many comments, however, that there was a need for a change in the manner in which the principles have been published. One suggestion was that there be an eye-catching introduction that would summarize the principles contained in the Standards. There was also discussion about the fact that perhaps a total revision of the Standards would be in order at this time.

Among the many points stressed were three major ideas. The first was that it was obvious that there is a great need for an educational program among doctors and lawyers because the Standards of Practice are not being read. The second factor developed was that the medical schools should be encouraged to give courses in medical-legal problems. The final major item stressed was that the new Standards of Practice when revised should be sent to medical school seniors.

Following the discussions a motion was adopted that the "Standards of Practice for Doctors and Lawyers" be revised in a more attractive format containing a succinct outline in the beginning. It was also the opinion of the group that a revision, if possible, be scheduled to be completed in time for submission to the September meeting of the Council. Another recommendation was that the new revised Standards could be distributed and perhaps discussed as part of the program at the September meeting of the County Medical Society Officers and Committee Chairmen.

Since publication of a new edition of the Standards will entail additional expense, your chairman recommends that the House request the Board of Trustees to allocate a sum not to exceed $2,500 for this purpose. This figure does not include mailing.

To implement the motion that was adopted, your chairman appointed, with the approval of those present, a special committee for the revision of the Standards. Those appointed to the committee were C. Stewart Wallace, M.D., for the State Medical Society, and H. Stewart Klopper, Esq., for the State Bar Association.

There also were some developments concerning the "Guide for Cooperation for Doctors, Hospitals and Reporters" since the original report to the House. On March 23, 1960, at State Society headquarters the subcommittee met for a second time with a representative of the reporters. Once again, there was a great deal of discussion concerning problems which arise in spot news coverage. As a result of this meeting, the representative of the reporters, at the request of the subcommittee, has submitted a detailed list of items which he wishes the committee to consider, perhaps for future inclusion in the Guide for Cooperation. The committee has taken these suggestions under consideration and will take proper action at the right time.

Respectfully submitted,
George A. Burgin, M.D., *Chairman*

Section 33 (See 203) Report 60–Q

Supplementary Report of the Committee on Legislation

To the House of Delegates, Gentlemen:

There is attached a summation report of the action taken by the Legislature and the Governor pertaining to the various items of legislation in which the Medical Society of the State of New York participated during the 1960 session of the New York State Legislature. This summation and the comments pertaining thereto were prepared by our legislation counsel* and are self-explanatory.

We have this year attempted to correlate all phases of medical and health legislation and have participated in many activities in addition to specific directives, and it is hoped this activity has met with reasonable success.

Although there were certain items of legislation in which we were interested but which failed to obtain approval, it is hoped that we did improve our status in relation to medical legislation by our active participation in the many fields of health and medical legislation. This might be attested to by the following quotation in part from an official communication received pertaining to our legislation program this year:

"Apart from the merits of this particular issue, it was very fine indeed for the Society to write the Governor on a matter such as this. As I am sure you are aware, one of the commonest criticisms among the legislators, and frankly from the staff of the Governor's counsels in the past, has been that the Society's legislation outlook has been a very narrow one and has been almost exclusively confined to legislation affecting the doctors' pocketbooks. This, I am sure, is an unjustified criticism, but nonetheless, it is heard many times during each session.

"For the Society to interest itself in matters which do have health significance and yet have no relationship to medical economics will certainly serve to counteract in a most effective manner this criticism and further will enhance the Society's stature with the Governor's counsel and, if carried over into the day-to-day operation of the Legislature, will serve to build up the Society's influence in an area which, I guess we can admit, does need building."

Summary of Legislative Action—1960 Session of the New York State Legislature

The following bills were sponsored by the Medical Society:

1. S. Int. 1681, Pr. 1705 (Condon); A. Int. 2400, Pr. 2423 (Ostrander)—AN ACT to amend workmen's compensation law, in relation to maximum claim allowable for certain medical and physiotherapeutic services.

This bill passed the Legislature and is presently before the Governor.

2. S. Int. 1622, Pr. 3809 (Brydges); A. Int. 2190, Pr. 4893 (Conway)—AN ACT to amend lien

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* Prepared by DeGraff, Foy, Conway, and Holt-Harris.

law, in relation to liens of physicians.

This bill was recommitted in the Assembly after it was on third reading because of a great amount of opposition, and it was decided between the chairman of the Legislation Committee and ourselves that it was not advisable to press this bill for passage at the 1960 session. Principal opposition came from the insurance companies, Associated Industries, and the Empire State Chamber of Commerce.

3. S. Int. 1918, Pr. 1963 (Condon); A. Int. 2537, Pr. 2568 (Brady)—AN ACT to amend education law, in relation to the administration of physiotherapy upon written prescription of physician.

This bill was recommitted after it was on third reading calendar in the Assembly because Senator Brydges advised that the bill would not be reported out of the Senate Committee.

The following bills were cosponsored by the Medical Society:

1. S. Int. 2941, Pr. 3111 (Meighan); A. Int. 3814, Pr. 3987 (Ashbery)—AN ACT creating a temporary state commission on licensure in the healing arts, and making an appropriation for the expenses of the commission.

This bill was not pressed for passage because of Governor Rockefeller's so-called economy drive, and we were advised to wait until the 1961 session of the Legislature. Our original plan to ask that this be referred to a "task force" in the Governor's office was abandoned because the Governor has decided not to use task forces in the future because of opposition in the Legislature. There is a reasonable chance that this bill will pass at the 1961 session.

2. S. Int. 3237, Pr. 4228 (Albert); A. Int. 4365, Pr. 5038 (Walmsley)—AN ACT to amend workmen's compensation law, to abolish the medical practice committee and to transfer its functions to the medical societies in counties of one million or more population.

This bill was cosponsored with the Workmen's Compensation Board. It has passed both houses of the Legislature after considerable opposition in the Assembly. The final vote was 109 to 35. The bill is presently before the Governor, and we believe it will be acted upon favorably.

The Medical Society was quite active in favoring other bills before the Legislature. The most important bills are as follows:

1. S. Int. 727, Pr. 3861 (Albert); A. Int. 638, Pr. 4752 (Campbell)—AN ACT to amend public health law, in relation to the functions, etc., of department of health, etc.

This bill passed the Legislature and is now before the Governor.

2. S. Int. 795, Pr. 4374 (Bush); A. Int. 1059, Pr. 4441 (Henderson)—AN ACT to incorporate New York dental service corporation.

This bill passed both houses and is before the Governor.

3. S. Int. 3508, Pr. 3762 (Marro); A. Int. 4275, Pr. 4962 (D. Lawrence)—AN ACT to amend Chapter 585 of Laws of 1949, entitled "An act to incorporate the New York Hotel Trades Council and Hotel Association Health Center, Inc.," in relation to the establishment of medical facilities and medical offices.

This bill passed and is before the Governor.

4. S. Int. 1258, Pr. 4140 (Brydges); A. Int. 1863, Pr. 1865 (Curto)—AN ACT to amend education law, in relation to practice of ophthalmic dispensing.

We cooperated with the New York State Ophthalmological Society, Inc., in attempting to obtain favorable consideration of this bill, but the bill was killed in committee because of differences arising between the optometrists and the ophthalmologists.

5. S. Int. 2572, Pr. 2680, 4005 (Hatch); A. Int. 3417, Pr. 4709 (Goddard)—AN ACT to incorporate the Sidney Hillman Health Center of Rochester.

This bill passed and is in the hands of the Governor.

6. S. Int. 281, Pr. 3798 (Bloom); A. Int. 417, Pr. 4661 (Cincotta)—AN ACT to provide for exemption from liability for malpractice in rendering emergency treatment.

We made a strong effort to secure favorable consideration, but the bills were killed in Judiciary Committee because of opposition of attorneys. We believe there is a reasonable chance that this bill will pass at the 1961 session with proper amendments.

7. S. Int. 2082, Pr. 4142 (Metcalf); A. Int. 4206, Pr. 5158 (Russo)—AN ACT to amend public health law, in relation to licensing of radiation technicians and creation of radiation technician advisory board.

This is the radiation technician bill which was strongly supported by the Medical Society and the New York State Department of Health. The bill was on third reading in the Senate, but because of opposition from Majority Leader Walter Mahoney it could not be brought to a vote. Mahoney took the position that this was an election year, and he did not believe it should be brought up at this time. Although no firm commitment was made, he implied that the bill could be passed during the 1961 legislative session.

We actively opposed the following bills:

1. S. Int. 1053, Pr. 4278 (Peterson); A. Int. 1550, Pr. 5104 (Cincotta)—AN ACT to amend the education law, in relation to the practice of chiropractic, etc.

These bills were killed in committee in both houses. The chiropractors were quite active during the entire session attempting to secure passage of this bill, but we were successful in keeping the bill in committee.

2. S. Int. 1888, Pr. 1933 (Mackell); A. Int. 2455, Pr. 2486 (Lentol)—AN ACT to amend the public health law, in relation to certification of persons operating x-ray equipment.

This is the chiropractic x-ray bill. It passed the Assembly, but we were successful in killing it in the Senate Health Committee.

3. S. Int. 2991, Pr. 3169 (Albert); A. Int. 3837, Pr. 4010 (Tifft)—AN ACT to amend the education law, in relation to the use of narcotic postoperative sedatives by licensed podiatrists.

The Medical Society and the State Health Department opposed passage of this bill, but it passed the Legislature and is presently before the Governor for action. We have filed memorandums in opposition to the bill and requested a veto.

4. A. Int. 2441, Pr. 2472, (Chananau)—AN ACT to amend public health law, in relation to requiring the vaccination of school children against poliomyelitis.

This bill killed in committee.

5. S. Int. 1716, Pr. 1742 (Peterson); A. Int. 2234, Pr. 2255 (Mason)—AN ACT to amend workmen's compensation law, in relation to selection of physicians by claimant.

This bill killed in committee.

6. S. Int. 2017, Pr. 2066 (Hughes); A. Int. 2493, Pr. 2524 (Brown)—AN ACT to incorporate the Syracuse Health Services, Inc.

Killed in committee.

7. S. Int. 679, Pr. 679 (Composto); A. Int. 1005, Pr. 1005 (Mangano)—AN ACT to amend the education law, in relation to x-ray and radiation technicians.

Killed in committee.

8. S. Int. 1935, Pr. 1980 (Condon); A. Int. 2666, Pr. 2710 (Russo)—AN ACT to amend the insurance law, in relation to providing medical expense indemnity for optometric care.

This bill passed both houses of the Legislature, but we filed memorandums with the Governor, and the bill was vetoed.

9. S. Int. 1614, Pr. 1630 (Meighan); A. Int. 1209, Pr. 1209 (Lerner)—AN ACT to amend judiciary law, in relation to exemption of chiropractors from jury duty.

Killed.

10. S. Int. 2673, Pr. 2798 (Gittleson); A. Int. 2915, Pr. 2971 (Cohn)—AN ACT to incorporate medical center of the United Wire, Metal and Machine Health and Welfare Fund.

This bill passed both houses and is presently before the Governor. We filed memorandums with the Governor and requested that the bills be vetoed.

11. A. Int. 661, Pr. 661 (Rice); A. Int. 1986, Pr. 1997 (Russo); A. Int. 2235, Pr. 2256 (Mintz); S. Int. 2825, Pr. 2989 (Bush)—AN ACT to amend public health law, to provide for administration and regulation of medical technology, etc.

Killed.

12. S. Int. 2387, Pr. 2474 (Mackell); A. Int. 3111, Pr. 3176 (Brennan)—AN ACT to amend Chapter 214 of Laws of 1952 in re Amalgamated Laundry Workers Health Center, Inc.

This bill passed both houses and is presently before the Governor. We filed memorandums, requesting that the same be vetoed.

13. S. Int. 2825, Pr. 2989 (Bush); A. Int. 2235, Pr. 2256 (Mintz)—AN ACT to amend the education law, in relation to bioanalysts.

Killed.

14. S. Int. 3250, Pr. 3479 (Brydges); A. Int. 4364, Pr. 4588 (Manley)—AN ACT to amend the education law, in relation to physiotherapy practice.

Killed.

Action of Governor on bills before him in which Medical Society of the State of New York is interested (supplement to report of April 15, 1960):

1. A. Int. 2400, Pr. 2423 (Ostrander)—AN ACT to amend workmen's compensation law, in relation to maximum claim allowable for certain medical and physiotherapeutic services.

Vetoed April 30, 1960.

2. S. Int. 3237, Pr. 4228 (Albert)—AN ACT to amend workmen's compensation law, to abolish the medical practice committee and to transfer its functions to the medical societies in counties of one million or more population.

Approved April 30, 1960.

3. A. Int. 638, Pr. 4752 (Campbell)—AN ACT to amend public health law, in relation to the functions, etc., of department of health, etc.

Approved April 18, 1960.

4. S. Int. 795, Pr. 4374 (Bush)—AN ACT to incorporate New York dental service corporation.

Approved April 28, 1960.

5. S. Int. 3508, Pr. 3762 (Marro)—AN ACT to amend Chapter 585 of Laws of 1949, entitled "An act to incorporate the New York Hotel Trades Council and Hotel Association Health Center, Inc.," in relation to the establishment of medical facilities and medical offices.

Approved April 21, 1960.

6. A. Int. 3417, Pr. 4709 (Goddard)—AN ACT to incorporate the Sidney Hillman Health Center of Rochester.

Approved April 21, 1960.

7. A. Int. 3837, Pr. 4010 (Tifft)—AN ACT to amend the education law, in relation to the use of narcotic postoperative sedatives by licensed podiatrists.

Approved April 30, 1960.

8. S. Int. 2387, Pr. 2474 (Mackell)—AN ACT to amend Chapter 214 of the Laws of 1952 in re Amalgamated Laundry Workers Health Center, Inc.
Approved April 21, 1960.

9. S. Int. 3524, Pr. 4571 (Metcalf)—AN ACT to amend the public health law, in relation to transferring the functions, powers and duties of the joint hospital survey and planning commission to the department of health, etc.
Approved March 31, 1960.

10. A. Int. 2255, Pr. 4729 (Savarese)—AN ACT to amend the public health law, in relation to disposition by will or written instrument of eyes or parts thereof after death, etc.
Approved April 28, 1960.

11. S. Int. 2673, Pr. 4434 (Gittleson)—AN ACT to incorporate medical center of the United Wire, Metal and Machine Health and Welfare Fund.
Approved April 18, 1960.

Respectfully submitted,
JAMES M. BLAKE, M.D., *Chairman*

RESOLUTIONS

Section 34 (See 50, 134) Resolution 60-1

Listing of Proprietary Hospitals in Directory

Introduced by NASSAU COUNTY MEDICAL SOCIETY

WHEREAS, the policy of the Medical Society of the State of New York has been not to list proprietary hospitals in the *Medical Directory of New York State;* and

WHEREAS, it is the feeling of the Nassau County Medical Society that the only criterion for approval of a hospital should be its accreditation by the Joint Commission on Accreditation of Hospitals; and

WHEREAS, in recent years many proprietary hospitals have improved and are being granted accreditation by the Joint Commission; now therefore be it hereby

Resolved, that the Medical Society of the State of New York rescind its ban against listing proprietary hospitals in the *Medical Directory of New York State;* and be it further

Resolved, that future editions of the *Medical Directory of New York State* include a listing of all accredited proprietary hospitals in New York State and their active staffs.

Referred to Reference Committee on Medical Communication.

Section 35 (See 162) Resolution 60-2

Social Security for Physicians

Introduced by BROOME COUNTY MEDICAL SOCIETY

WHEREAS, for several years the Medical Society of the State of New York has approved coverage for members under the Social Security Act; and

WHEREAS, opportunity for such coverage has been repeatedly denied our membership by the House of Delegates of the American Medical Association without practical reason; and

WHEREAS, numerous physicians are now covered by the Social Security Act; and

WHEREAS, according to the American Medical Association publication, *AMA News*, January 11, 1960, many more thousands will now be covered since unincorporated groups of practitioners of medicine have been approved for all corporate benefits such as social security and tax deferment pension plans, etc., not available to the solo practitioner of medicine; and

WHEREAS, physicians are one of the few major professional groups in this country not covered under the Act; and

WHEREAS, every evidence has been given in years past that other desirable proposals relating to tax deferment plans will not be passed by Congress; and

WHEREAS, it has been repeatedly demonstrated that the majority of physicians in this State desire coverage under the Social Security Act; now therefore be it hereby

Resolved, that the Medical Society of the State of New York *independently* seek out and utilize every and all means available to obtain coverage for its members under the Social Security Act.

Referred to Reference Committee on Commission on Medical Services—A.

Section 36 (See 143) Resolution 60-3

Telephone Prescription of Narcotic Medicines

Introduced by MEDICAL SOCIETY OF THE COUNTY OF MONROE

WHEREAS, Article 33 of the Public Health Law of the State of New York is in some respects in conflict with the Federal statutes in regard to the prescription of narcotic medications by physicians, and New York is the only state whose regulations are not in conformity with Federal law; and

WHEREAS, rigid interpretation of the New York State Public Health Law requires the physician to be in actual attendance on his patient and to have the written prescription in the pharmacist's possession before narcotic medication can be dispensed, unlike the Federal Law which allows the pharmacist to dispense narcotic medicines on oral prescription, provided a written prescription immediately follows; and

WHEREAS, this requirement has in many instances resulted in the patient's being unable to obtain proper medication at the time he needs it most; and

Whereas, the effect of this "written-prescription-first" provision of the New York State Public Health Law has little immediate bearing on the narcotic addiction problem; now therefore be it hereby

Resolved, that the Medical Society of the State of New York actively support amendment of Article 33 of the New York State Public Health Law to bring it into conformity with the Federal statutes, permitting telephone prescription of narcotic medicines, providing written prescription immediately follows.

Referred to Reference Committee on Public Health and Education.

Memorandum to Accompany Resolution 60–3

The application of the Public Health Law concerning prescription of narcotic-containing medicines by physicians has undergone significant changes during the past year, involving much more rigid interpretation of these statutes. Because this has worked a distinct hardship on many patients and has caused inconvenience and embarrassment to physicians and pharmacists, the attached resolution was passed unanimously by the Medical Society of the County of Monroe.

The essence of the problem is the specific prohibition against acceptance of telephone prescriptions for narcotic medications, even though there be subsequent written confirmation. This is a distinct departure from earlier practice and on a practical level has meant that many patients have been prevented from obtaining the optimal drug treatment at the time they need it most. As typical examples, there can be cited the patient with severe cough, who should be able to obtain quickly a duly authorized codeine or dihydrocodeinone antitussive of effective potency, or the many patients who may require an analgesic preparation stronger than aspirin. Cases of this sort arise many times when patients are under the actual close supervision of physicians, but the immediate physical presence of the physician may be impossible and, in fact, is often unnecessary.

This matter has been discussed with counsel, who has reviewed the applicable statutes contained in Article 33 of the Public Health Law, as well as the expressed interpretation of the chief of the Narcotic Control Section of the New York State Department of Health. Pertinent Federal statutes have been reviewed as well, which differ in some essential points from the New York State regulations. The legal opinion expressed to the Monroe County Medical Society is that the Federal statutes prevail where there is a conflict with State regulations.

This resolution is not a request for liberalizing the dispensing of narcotic drugs without prescription. This State's physicians and pharmacists strongly support effective controls over the prescription of narcotics and are in sympathy with the efforts of the authorities to deal with the addiction problem. It is our opinion, however, that the pharmacist should be permitted to fill narcotic prescriptions when telephoned by physicians, provided that the written prescription be immediately forwarded to the pharmacist by the physician. Such practice conforms to the Federal statutes.

Section 37 (*See 165*) Resolution 60–4

Extension of Notification Period in Public Welfare Cases

Introduced by Medical Society of the County of Oneida

Whereas, Book V, page 560-211.1, of the welfare regulations promulgated by the Department of Social Welfare, State of New York, states, "Notification shall be given as soon as possible, and in no event beyond five (5) days after the emergency service by a physician vendor . . ."; and

Whereas, failure of a physician to notify the Department of Social Welfare on form M-1 within the above mentioned five-day period results in nonpayment for the physician's services; and

Whereas, the five-day period is unfair and unrealistic in that the pressure of work and the lack of sufficient office help makes it impossible for many physicians to comply within that short period, and also the welfare department in most localities is unable to process all the M-1 forms within five days; and

Whereas, the Commissioner of Public Welfare of Oneida County has informed the welfare committee of the Medical Society of the County of Oneida that he would welcome and his department would also benefit from a change of the time limit for submission of M-1 forms; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York mandate the chairman of the Public Medical Care Committee of the Medical Society of the State of New York to confer with the responsible officials of the Department of Social Welfare for the purpose of negotiating a change in the regulations by extending the period for submission of M-1 forms from five (5) days to fifteen (15) days.

Referred to Reference Committee on Commission on Medical Services—A.

Section 38 (*See 167*) Resolution 60–5

Identification Forms for Authorized Welfare Recipients

Introduced by MEDICAL SOCIETY OF THE COUNTY OF ONEIDA

WHEREAS, welfare recipients frequently come to physicians' offices for emergency care on weekends, holidays, or on other days after the welfare office has closed, making it impossible for the physician to check the patient's welfare status before rendering the necessary and proper care; and

WHEREAS, such patients, due to either misunderstanding or guile, allege that they are welfare recipients and obtain medical and surgical care, whereas in fact they are not authorized to receive such care; and

WHEREAS, there are no means at present available to the physician to determine in such cases whether or not these patients are in fact welfare recipients; and

WHEREAS, carriers of medical and surgical coverage provide the insured with identification means in the form of cards or receipts and fee schedules, so that the physician may easily determine the nature of coverage carried by the patient; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York mandate the chairman of the Public Medical Care Committee of the Medical Society of the State of New York to arrange a conference with the Department of Social Welfare for the purpose of devising a means of identification for authorized public welfare recipients to be carried by each such person; and be it further

Resolved, that the chairman of the Public Medical Care Committee of the Medical Society of the State of New York suggest at such conference that each public welfare office send an identifying voucher with its monthly payment to every recipient that will identify him as an authorized welfare charge for that month, and that such welfare recipient use that identifying voucher every time he visits his physician or becomes a patient at a hospital to indicate that he is indeed authorized to receive medical and surgical as well as hospital care under the welfare department with jurisdiction over him.

Referred to Reference Committee on Commission on Medical Services—A.

Section 39 (*See 172*) Resolution 60–6

Payments to Physicians by Insurance Carriers

Introduced by MEDICAL SOCIETY OF THE COUNTY OF ONEIDA

WHEREAS, it is not required of insurance carriers that they include a question in their report forms asking the physician whether or not he has been paid by the patient whom he has treated and who has medical and surgical coverage; and

WHEREAS, some carriers, notably Blue Shield, do ask on their report forms whether the patient has paid the doctor or whether the patient assigns his benefits and authorizes payment directly to the doctor; and

WHEREAS, patients frequently receive payment for their medical and surgical care from their carrier and then convert to their own use the payment so received, neglecting to pay their physician; and

WHEREAS, patients who have signed authorization for assignment of benefits under their contract directly to the physicians have erased such authorization before submitting the form to their carrier; and

WHEREAS, too frequently of late, patients who have received payment directly from their carriers on the basis of their physician's statement and report have kept the payment so received and neglected to pay over to their physicians the fees that have been justly earned and paid for by the carrier; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York mandate the chairman of the Medical Care Insurance Committee of the Medical Society of the State of New York to take whatever action he deems proper and hold whatever conferences he finds necessary to induce the carriers of medical and surgical coverage to include a question on physicians' report forms inquiring whether or not the physician or surgeon has been paid for his services; and be it further

Resolved, that in those instances where the physician or surgeon indicates that he has not been paid, the carrier, in issuing the check for the medical and surgical services, make as joint payees both the patient or the insured, if other than the patient, and the physician who rendered the service for which the payment is being made.

Referred to Reference Committee on Commission on Medical Services—A.

Section 40 (*See 170*) Resolution 60–7

Distribution of Medicare Fee Schedules

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, negotiations with the Federal government for a Medicare contract have been completed; and

WHEREAS, members of the Medical Society of the State of New York have no way of knowing the fees they are entitled to receive under the contract without having a Medicare schedule of allowances; now therefore be it hereby

Resolved, that the Medical Society of the State of New York send a copy of the Medicare schedule of allowances to each of its members.

Referred to Reference Committee on Commission on Medical Services—A.

Section 41 (See 173) Resolution 60–8

Revision of Insurance Forms

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, an increasingly large segment of the population is covered by health, accident, and disability insurance; and

WHEREAS, many of the insured are covered by more than one insurance carrier; and

WHEREAS, the various insurance carriers require completion of a variety of forms by the attending physician; and

WHEREAS, forms are frequently requested at monthly intervals during chronic illness, with considerable and unnecessary repetition; and

WHEREAS, valuable time can be saved and efficiency increased by standardization of the initial and re-examination forms; now therefore be it hereby

Resolved, that the Medical Society of the State of New York, in conjunction with the representatives from the insurance carriers, devise a standard form for use by physicians; and be it further

Resolved, that an attempt be made to devise a simple follow-up form for use in long-term cases; and be it further

Resolved, that the delegates from the Medical Society of the State of New York to the American Medical Association be instructed to introduce a similar resolution at the June meeting of the American Medical Association House of Delegates.

Referred to Reference Committee on Commission on Medical Services—A.

Section 42 (See 200) Resolution 60–9

A Plan to Study the Intern Shortage

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, in the vast majority of cases the armed forces allow only one year of internship before calling a physician to a tour of active duty; and

WHEREAS, it is alleged that the medical schools and the university hospitals are not in favor of a two-year internship; and

WHEREAS, a two-year internship would materially help in reducing the existing intern shortage; now therefore be it hereby

Resolved, that the Medical Society of the State of New York initiate a study to ascertain the reason why the armed forces, the medical schools, and the university-affiliated hospitals do not encourage and endorse two-year internships; and be it further

Resolved, that a similar resolution be introduced at the June meeting of the House of Delegates of the American Medical Association requesting them to undertake a similar study; and be it further

Resolved, that all the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be mandated to support this resolution.

Referred to Reference Committee on Commission on Medical Services—B.

Section 43 (See 106) Resolution 60–10

Voting Records of Delegates to the American Medical Association

Introduced by MEDICAL SOCIETY OF THE COUNTY OF QUEENS

WHEREAS, certain resolutions approved by the House of Delegates of the Medical Society of the State of New York mandate the New York State delegates to the American Medical Association to take specific action; and

WHEREAS, certain New York State delegates to the American Medical Association have at times voted contrary to the mandate of the House of Delegates of the State Society; now therefore be it hereby

Resolved, that the chairman of the New York State delegation to the House of Delegates of the American Medical Association keep a voting record of each delegate on mandated resolutions; and be it further

Resolved, that the voting record of mandated resolutions of each delegate to the American Medical Association be reported at the next meeting of the House of Delegates of the Medical Society of the State of New York.

Referred to Reference Committee on Miscellaneous Business.

Section *44 (See 176)* Resolution 60–11

Hospital Practice of Medicine

Introduced by SEVENTH DISTRICT BRANCH

WHEREAS, resolution 58–8 (*see attached*) was adopted by the House of Delegates of the Medical Society of the State of New York at its convention in 1958; and

WHEREAS, the *Principles of Medical Ethics* was established by the American Medical Association and recently reaffirmed; and

WHEREAS, the intent of resolution 58–8 and the *Principles of Medical Ethics* is being violated by the Associated Hospital Service of the Capital District when their hospitals entered into the corporate practice of medicine on March 1, 1960; and

WHEREAS, the Associated Hospital Service of the Capital District is now dispensing medical services of x-ray, basal metabolism, electroencephalogram, and physical therapy under a Blue Cross contract; now therefore be it hereby

Resolved, that the Medical Society of the State of New York request the Associated Hospital Service of the Capital District to reconsider its present move into the corporate practice of medicine.

Referred to Reference Committee on Commission on Medical Services—A.

Resolution 58–8—HOSPITAL CORPORATE PRACTICE OF MEDICINE

WHEREAS, the specialties of pathology, radiology, anesthesiology, and physiatry have been declared the practice of medicine by the American Medical Association; and

WHEREAS, the practice of medicine is recognized as a profession in the several states of the United States; and

WHEREAS, the practice of pathology, radiology, anesthesiology, and physiatry is partly or wholly carried out in hospitals incorporated for the care of sick and injured patients whether said hospitals are incorporated as profit or nonprofit institutions; and

WHEREAS, said hospitals, through contracts negotiated with insurance plans for the full or partial payment of hospital costs of patients admitted to said hospitals, have included charges for services performed by physicians specializing in pathology, radiology, anesthesiology, and physiatry; and

WHEREAS, the *Principles of Medical Ethics* of the American Medical Association, under Chapter VII, Section 5, provide that a physician should not dispose of his professional attainments . . . under conditions which permit exploitation of the services of the physician for financial profit of the agency concerned; and

WHEREAS, charges for professional services made by a hospital or other corporate body place the physician who renders the service in a position of violating this and other sections of the *Principles of Medical Ethics* of the American Medical Association; and

WHEREAS, fees therefore should accrue personally to the specialist who performs the services above-mentioned and not to the institution in which the services are performed or to any other corporate body; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York go on record as opposing the inclusion of medical services in hospital insurance contracts and recommend the transfer of coverage for such services from Blue Cross to Blue Shield organizations.

Section 45 (See 177) Resolution 60–12

State-wide Participation by Physicians in Blue Shield Plans

Introduced by ALFRED P. INGEGNO, M.D., Councillor

WHEREAS, the State and county medical societies have approved and endorsed service benefits through Blue Shield for those persons in the community who need it; and

WHEREAS, thousands of participating physicians now provide service benefits to patients in their communities who are subscribers to their local Blue Shield plans; and

WHEREAS, subscribers sometimes require treatment from participating physicians in areas of the State other than their own local plan area; and

WHEREAS, the provision of service benefits under these circumstances also would be additional tangible evidence of the significant contribution of physicians to the community's welfare and the advancement of voluntary health insurance; now therefore be it hereby

Resolved, that the Medical Society of the State of New York recommend to all participating physicians in Blue Shield that they provide service benefits protection to eligible subscribers of all the Blue Shield plans of New York State; and be it further

Resolved, that the Medical Society of the State of New York refer this resolution to the county medical societies for their consideration, approval, and implementation.

Referred to Reference Committee on Commission on Medical Services—A.

Section 46 (See 198) Resolution 60–13

Discontinuance of Medical School Cooperation with Veterans Administration

Introduced by RICHMOND COUNTY MEDICAL SOCIETY

WHEREAS, the medical schools through their "deans committees" have cooperated with the Veterans Administration since the termination of World War II patriotically to provide the best possible care for those who were injured in the defense of our country; and

WHEREAS, as a result of this cooperation these institutions have outstanding medical consulting staffs which in turn attract many interns and residents to these institutions for training; and

Whereas, this has caused a shortage of interns and residents in the voluntary and municipal hospitals of the country so that these institutions must work with staffs inadequate in number and often inadequate in training; and

Whereas, fewer than 10 per cent of the general medical and surgical patients treated by the Veterans Administration hospitals have service-connected disabilities, so that the original purpose for the cooperation of the "deans committees" no longer obtains; and

Whereas, the Veterans Administration is even now building three additional hospitals in Cleveland, Palo Alto, and Murfreesboro, which will cause a further diversion of more nonservice-connected patients and in turn ever more interns and residents to these facilities; and

Whereas, the interesting cases which occupy most of the attention of the resident staff and the consulting staff are no longer the service-connected cases since fifteen years after the war the latter are largely custodial and/or incurable; and

Whereas, the curtailment of the activities of the "deans committees" would work no hardship on the custodial and chronic service-connected cases to whom we owe a great debt of gratitude; and

Whereas, the discontinuance of cooperation between medical schools and Veterans Administration hospitals would cut to a fraction the costs of operating the Department of Medicine and Surgery of the Veterans Administration (approximately one billion dollars in 1960) since nonservice-connected patients may revert back to voluntary hospitals; and

Whereas, such disassociation would cause these hospitals to become less attractive as training centers so that our interns and residents might now apply for admission to the seriously understaffed voluntary hospitals; and

Whereas, this change would benefit the hospital population as a whole rather than a relatively small segment of our hospitalized patients, and equally would be of value to interns who would now be trained in the practice of medicine by practicing physicians, and would not work a hardship on the nonservice-connected patients now in Veterans Administration hospitals as many are already insured; and

Whereas, the paucity of American-trained interns and residents in our hospitals has worked a real hardship on patients in these institutions; and

Whereas, we can no longer afford the luxury of staffing both Veterans Administration and voluntary hospitals since there are twice as many internships as there are graduates; and

Whereas, the Veterans Administration even now has 2,777 residents, a disproportionate number when one considers the civilian population versus the veteran population; now therefore be it hereby

Resolved, that the Medical Society of the State of New York urge the discontinuance of further cooperation between the medical schools and the Veterans Administration except where necessary for the care of service-connected patients; and be it further

Resolved, that this resolution be introduced by the New York State delegates in the House of Delegates of the American Medical Association for action by that body and that our delegates work actively for its passage.

Referred to Reference Committee on Commission on Medical Services—B.

Section 47 (See 218) Resolution 60–14

Insurance Protection for Judicial Council and County Society Committees

Introduced by Medical Society of the County of Kings

Whereas, those who make effort to sustain the honor of the medical profession for the common good are often forced into litigation by those prone to sue; and

Whereas, the chairman and members of the Judicial Council of the Medical Society of the State of New York and the chairmen of the grievance committees and their members and the senior censor and other censors of the local medical societies may find themselves in this position; and

Whereas, it is understood that this situation is to be met by insurance which will be underwritten by the company which underwrites malpractice coverage for the members of the 23 county medical societies in Northern California; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York direct the Malpractice Insurance and Defense Board of the Society to negotiate with our insurance carrier so that an arrangement may be made to add this coverage to the members' malpractice insurance; and be it further

Resolved, that the added premium for members of the Judicial Council be paid by the State Society and the additional premium for the county society committees be paid by the local medical societies.

Referred to Reference Committee on Legislation and Legal Matters.

Section 48 (*See 102*) Resolution 60–15

Recommendations to Board of Regents to Relieve the Nursing Shortage

Introduced by MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

WHEREAS, the increasing and persistent shortage of bedside nurses has created a hazard to the health and welfare of the sick, is limiting the full use of hospital beds and other facilities, and is thereby wastefully adding to an already distressingly high cost of medical care; and

WHEREAS, the Medical Society of the County of New York believes that the State Education Department can do much to relieve the nursing shortage by taking leadership in activating the following recommendations:

1. That a comprehensive and realistic master plan for expanding nursing education consistent with the public need for more nurses in the State of New York be quickly developed and given wide publicity;
2. That in this expanded program the hospital nursing schools be supported, strengthened, and expanded consistent with that need;
3. That the State Education Department assume primary responsibility for a more active and effective recruitment program for nurses;
4. That in developing the master plan and recruitment programs, the dominant philosophy be the public need for more nurses; now therefore be it hereby

Resolved, that the Medical Society of the State of New York request the Board of Regents of the State of New York to give urgent consideration to these recommendations and take immediate leadership in any and all action that will tend to relieve this nursing shortage; and be it further

Resolved, that copies of this resolution be sent to Governor Nelson Rockefeller and the president of the Board of Regents.

Referred to Reference Committee on Ancillary Groups.

Section 49 (*See 200*) Resolution 60–16

Plan to Correct Shortage of Interns

Introduced by BRONX COUNTY MEDICAL SOCIETY

WHEREAS, a serious shortage of interns exists in many voluntary and municipal hospitals; and

WHEREAS, this intern shortage interferes with the quality and quantity of service provided for patients in these hospitals; and

WHEREAS, the intern shortage is the result of (1) decreasing internships from two years to one year, (2) the failure of specialty boards to give credit for the second year of internship, (3) increasing emphasis on a straight rather than rotating internship, and (4) the requirements of the armed forces; and

WHEREAS, because of the certification required of foreign interns in the United States hospitals by the Educational Council for Foreign Medical Graduates, under which such interns must pass examinations in medicine and have a satisfactory command of English; and

WHEREAS, many hospitals in the United States will lose their professional accreditation if a sufficient percentage of interns in each hospital does not pass such examinations; and

WHEREAS, a two-year rotating internship is the best foundation for the practice of medicine, for further training in a specialty, or for training in the armed forces; now therefore be it hereby

Resolved, that the Medical Society of the State of New York recommends a two-year rotating internship; and be it further

Resolved, that the New York State delegates to the American Medical Association be instructed to introduce a similar resolution before the A.M.A. House of Delegates in June, 1960.

Referred to Reference Committee on Commission on Medical Services—B.

Section 50 (*See 34, 134*) Resolution 60–17

Listing of Proprietary Hospitals in Medical Directory of New York State

Introduced by BRONX COUNTY MEDICAL SOCIETY

WHEREAS, the attitude of the Medical Society of the State of New York has been not to list proprietary hospitals and their active staffs in the *Medical Directory of New York State;* and

WHEREAS, in past years there has been a great change in the type of medicine practiced in many proprietary hospitals; and

WHEREAS, certain proprietary hospitals in the State of New York have been duly accredited by the Joint Commission on the Accreditation of Hospitals; and

WHEREAS, this accreditation carries with it the knowledge that these hospitals and their staffs are fully cognizant of and do continue to advance the practice of medicine; now therefore be it hereby

Resolved, that the Medical Society of the State of New York rescind its ban against inclusion of proprietary hospitals and their active staffs in the *Medical Directory of New York State;* and be it further

Resolved, that duly accredited proprietary hospitals be included with a listing of their active staffs in future editions of the *Medical Directory of New York State.*

Referred to Reference Committee on Medical Communication.

Section 51 (See 119) Resolution 60–18

Care of Indigent Members

Introduced by Bronx County Medical Society

Whereas, humanitarian principles require that any organization have at least a minimum of charity for its indigent members; and

Whereas, indigent and disabled members of the Medical Society of the State of New York have become the wards of private and public charity; and

Whereas, the trustees and Council of the Medical Society of the State of New York have failed to provide such relief for our unfortunate brothers; now therefore be it hereby

Resolved, that the trustees of the Medical Society of the State of New York allocate 25 per cent of the income derived from the investment funds of the Society for the relief of indigent members of the Medical Society of the State of New York and their families.

Referred to Reference Committee on Reports of Officers.

Section 52 (See 120) Resolution 60–19

Increased Educational Benefits Under War Memorial Fund

Introduced by Bronx County Medical Society

Whereas, inflation has caused marked deterioration in the purchasing power of the dollar; and

Whereas, tuition fees in all educational institutions are increasing each year; and

Whereas, it was the intent of the membership of the Medical Society of the State of New York when the War Memorial Fund was established to provide adequate educational benefits for the children of deceased physician war veterans; now therefore be it hereby

Resolved, that the trustees of the War Memorial Fund be authorized to provide up to $1,200 yearly for benefits.

Referred to Reference Committee on Reports of Officers.

Section 53 (See 205) Resolution 60–20

Exemption from Malpractice Suits for Emergency First Aid

Introduced by Bronx County Medical Society

Whereas, it has occurred repeatedly that physicians giving first aid in accident cases without regard to compensation are subsequently forced to defend themselves against malpractice claims arising out of such intervention; and

Whereas, such occurrences tend to make physicians unwilling to offer their help in accidents and emergencies; and

Whereas, this state of affairs is contrary to the public interest; and

Whereas, this condition may lead to otherwise avoidable losses of life and health; now therefore be it hereby

Resolved, that the Medical Society of the State of New York petition the Legislature of the State of New York to enact a law by which physicians giving first aid in accident cases without compensation shall not be liable to malpractice claims arising out of the rendering of such care.

Referred to Reference Committee on Legislation and Legal Matters.

Section 54 (See 107) Resolution 60–21

Medical Education in the United States

Introduced by Bronx County Medical Society

Whereas, the fundamental purpose of medical education in the United States is the training of physicians to serve the sick and injured; and

Whereas, medical education as now constituted does not sufficiently express this primary purpose but rather by its direction diverts many graduates away from direct care of the public's basic medical needs into areas of activity more remote from the public, such as specialty practice, institutional practice, and research; and

Whereas, this pattern of medical education has produced an insufficient number of physicians needed to supply the day-to-day care of the sick; and

Whereas, such a shortage of available physicians affords an opportunity for cultists, quacks, and quasimedical practitioners to engage in their activities; and

Whereas, these aforementioned effects of present medical education are further accentuated by the diversion of American medical graduates from community hospital training where they could learn the traditional American method of individual patient care among practicing physicians devoted to this concept; and

Whereas, the continuance and progression of these policies of medical education, for which the Council on Medical Education and Hospitals of the American Medical Association has a primary responsibility, will cause public dissatisfaction with the medical service it receives and open the door to governmental intervention and socialized medicine and the consequent deterioration of medical care that follows; now therefore be it hereby

Resolved, that the Medical Society of the State of New York, by a resolution to the House of Delegates of the American Medical Association, request a review of the basic policies of the Council on Medical Education and Hospitals of the

American Medical Association, the purpose of such a review to be to establish methods for the training of and increase in numbers of practicing physicians devoted to the personal care of patients.

Referred to Reference Committee on Miscellaneous Business.

Section 55 (See 166) Resolution 60–22

Increased Fees for Welfare Visits

Introduced by Nassau County Medical Society

Whereas, the Department of Social Welfare of the State of New York has recently issued a new fee schedule raising the fees paid for medical services to a level approximating two thirds of the fees allowed by the Workmen's Compensation Board of the State of New York for similar medical services; and

Whereas, the fee for the first house call made by a general practitioner has not been raised to this proportionate level; now therefore be it hereby

Resolved, that the Medical Society of the State of New York request the Department of Social Welfare of the State of New York to eliminate this inequity by raising the fee for the first house visit by a general practitioner to a level comparable to the increased fees for other medical services.

Referred to Reference Committee on Commission on Medical Services—A.

Section 56 (See 206) Resolution 60–23

Rulings by State Education Department on Scope of Practice of Podiatry

Introduced by Medical Society of the County of Erie

Whereas, counsel to the State Education Department, Mr. Charles A. Brind, has on several occasions, at the request of the New York State Podiatry Society or persons acting for the society, assumed to advise them on matters relating to the scope of the practice of podiatry; and

Whereas, the advice so given by Mr. Brind has been relied on by podiatrists as delineating the scope of the practice of podiatry; and

Whereas, the matters on which Mr. Brind has so made determinations are of a highly controversial nature (on which many well-qualified persons reach a conclusion diametrically opposed to that drawn by Mr. Brind), such as that the foot includes the ankle and 3 inches of the lower leg; that podiatrists can lawfully treat dislocations of the ankle, astragalus, and os calcis; that podiatrists can lawfully administer any and all medication except narcotics either by injection or orally for conditions of the foot, and that podiatrists can lawfully perform a "Keller procedure" involving removal of the proximal phalanges of the big toe; and

Whereas, the effect of such holdings by Mr. Brind in the opinion of many constitutes an expansion of the scope of podiatry practice that cannot be justified under the statute defining the scope of podiatry practice; and

Whereas, to safeguard the health of the public and to comply with the laws relating to the practice of podiatry, it is highly desirable that determinations as to the scope of podiatry practice be made and issued under the name of the State Commissioner of Education and that they not be made and issued under the name of counsel to that Department; now therefore be it hereby

Resolved, that the Medical Society of the State of New York, represented in its House of Delegates, express its deep concern with the present methods of the State Education Department in furnishing rulings on the scope of podiatry practice; and be it further

Resolved, that the Council of the Medical Society of the State of New York take up this problem with the Commissioner of Education for the purpose of working out a more satisfactory method of issuing rulings on the scope of podiatry practice.

Referred to Reference Committee on Legislation and Legal Matters.

Section 57 (See 204) Resolution 60–24

Council Action on Mandated Legislation

Introduced by Medical Society of the County of Erie

Whereas, the 1959 House of Delegates adopted an Erie County Medical Society resolution (59–13) directing the Council to cause the introduction of legislation with respect to the fitting of contact lenses by optometrists; and

Whereas, the Council, for reasons that are not fully stated or understood, decided not to follow the directive of the House of Delegates and did not cause the introduction of the mandated legislation; and

Whereas, it is highly desirable that a procedure be established for the guidance of the Council with respect to mandated legislation; now therefore be it hereby

Resolved, that hereafter the Council, when it decides not to implement a legislation mandate of the House of Delegates, shall with reasonable dispatch make a written report on its action together with its reasons therefor to the county medical society that sponsored the original resolution; and be it further

Resolved, that the Council make a separate report to the House of Delegates on each item of mandated legislation it has decided not to introduce in the State Legislature with the reasons for its action; and be it further

Resolved, that the report so made by the Council shall be referred to the reference committee which passed on the original resolution mandating the legislation for study and the making of a separate reference committee report thereon to the House of Delegates.

Referred to Reference Committee on Legislation and Legal Matters.

Setion 58 (See 178) Resolution 60–25

Blue Shield Reimbursements for Podiatrist Service

Introduced by John C. Kinzly, M.D., Niagara, as an individual

Whereas, New York State Law requires Blue Shield plans to reimburse subscribers for services by podiatrists if reimbursement is made for similar services when rendered by physicians, provided the services are within the scope of the practice of podiatry as defined in the Education Law; and

Whereas, it is highly desirable that Blue Shield plans approved by the Medical Society of the State of New York should decline reimbursement to subscribers for services that are outside the legal scope of podiatry practice; and

Whereas, it is also highly desirable that the Blue Shield plans approved by the Medical Society of the State of New York be in agreement on which procedures and services are within the legal scope of podiatry practice and which are not; and

Whereas, this agreement on the scope of podiatry practice is now greatly hampered by the various and conflicting interpretations of the scope of licensure of podiatrists under the Education Law; now therefore be it hereby

Resolved, that the Medical Society of the State of New York represented in this House of Delegates go on record as being opposed to Blue Shield plans reimbursing subscribers for services by podiatrists if such services are outside the legal scope of podiatry practice; and be it further

Resolved, that the Medical Society of the State of New York assume the responsibility for assisting the Blue Shield plans approved by it in determining the scope of podiatry practice with special reference to specific procedures and services; and be it further

Resolved, that the Medical Society of the State of New York extend every possible assistance to any approved Blue Shield plan that becomes involved in legal action by reason of its refusal to reimburse for services by podiatrists falling outside the scope of podiatry practice as determined under the immediately preceding paragraph of this resolution.

Referred to Reference Committee on Commission on Medical Services—A.

Section 59 (See 163) Resolution 60–26

Social Security for Physicians

Introduced by Medical Society of the County of Rockland

Whereas, the House of Delegates of the Medical Society of the State of New York has at a previous meeting supported social security for physicians; and

Whereas, the New York State delegates to the American Medical Association were instructed to support and introduce a motion in favor of social security for physicians; and

Whereas, these measures were rebuffed and defeated at the House of Delegates of the American Medical Association; and

Whereas, the great majority of the physicians of the Medical Society of the State of New York are still very actively in favor and support of social security for physicians; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York reaffirm its support of social security for physicians; and be it further

Resolved, that the New York State delegates to the American Medical Association be instructed to reintroduce further legislation in support of social security for physicians; and be it further

Resolved, that the New York State delegates work energetically to be certain that all measures and propositions in favor of social security for physicians are recognized and brought to the attention of the House of Delegates of the American Medical Association, including a possible repolling of the membership of the American Medical Association.

Referred to Reference Committee on Commission on Medical Services—A.

Section 60 (See 135) Resolution 60–27

Procedure for Selection of Outstanding General Practitioner

Introduced by John C. McClintock, M.D., Councillor

Whereas, the Outstanding General Practitioner of the Year for the Medical Society of the State of New York is now chosen in the fall of the year; and

Whereas, the actual presentation of the award is not made until the May meeting of the House of Delegates in the following spring; and

Whereas, the recipient of the award for the Outstanding General Practitioner of the year for the State of New York becomes a candidate for the national award given by the American Medical Association in December of each year; and

Whereas, it is possible for the recipient of the New York State award to be named the Outstanding General Practitioner of the Year for the entire nation by the American Medical Association before he actually receives his New York State award; and

Whereas, a change in the current procedure is obviously advisable; now therefore be it hereby

Resolved, that the recipient of this year's (1960) award receive his award under the present procedure at the 1961 House of Delegates; and be it further

Resolved, that the 1961 recipient of the New York State award be chosen by the 1961 House of Delegates from the names of doctors of medicine submitted to the House of Delegates by the Council Committee on Public Relations; and be it further

Resolved, that the 1961 recipient receive his award at the 1961 session of the House of Delegates immediately following his selection; and be it further

Resolved, that the election of the Outstanding General Practitioner be thereafter conducted according to the procedure to be followed in 1961.

Referred to Reference Committee on Medical Communication.

Section 61 (*See 209*) Resolution 60–28

Determination of Insanity in Criminal Cases

Introduced by Edward F. Shea, M.D., Ulster, as an individual

Whereas, the test of the possible insanity of a defendant in a criminal case in the State of New York is based on an English decision known as "M'Naghten's Case," which is over one hundred years old; and

Whereas, this rule was propounded by the judges of the high courts of England over one hundred years ago, which judges were men then untrained in medicine and psychiatry; and

Whereas, the field of medicine has made great strides in the exploration of the human mind, and said rule set forth above has been proved to be based on ignorance and suspicion rather than medical facts; now therefore be it hereby

Resolved, that the medical profession and the legal profession of the State of New York join together in a study to formulate a new rule to govern the defense of insanity in a criminal case and further to submit an ultimate proposal to the appropriate Law Revision Commission of the State of New York, to be acted on in such manner as may be proper by said Commission; and be it further

Resolved, that this House of Delegates take such action as it may deem fit and proper to urge a change in the aforesaid matter in line with the social responsibilities of the medical profession to the general public of the State of New York.

Referred to Reference Committee on Legislation and Legal Matters.

Section 62 (*See 179*) Resolution 60–29

Investigation of General Health Information Service

Introduced by Nassau County Medical Society

Whereas, General Health Information Service, Inc., known as Blue Torch, has been soliciting participation of physicians in a "comprehensive medical and health consultative service"; and

Whereas, the Nassau County Medical Society has been able to secure very little information concerning this organization which it can pass on to its members; now therefore be it hereby

Resolved, that the Medical Society of the State of New York investigate General Health Information Service, Inc., and inform the component county medical societies of its findings so that they, in turn, may advise their membership.

Referred to Reference Committee on Commission on Medical Services—A.

Section 63 (*See 191*) Resolution 60–30

Workmen's Compensation Fees for Osteopaths

Introduced by Medical Society of the County of Queens

Whereas, the president of the Medical Society of the State of New York, on August 15, 1958, in a letter to the Chairman of the Workmen's Compensation Board, urged "that osteopaths in no instance be granted fees higher than those granted to doctors of medicine"; and

Whereas, a supplemental medical fee schedule of the Workmen's Compensation Board, dated February 24, 1959, reveals that osteopaths will be granted higher fees than doctors of medicine in general practice; now therefore be it hereby

Resolved, that this House of Delegates of the Medical Society of the State of New York recommend that a communication be sent to the Chairman of the Workmen's Compensation Board protesting the fact that the schedule of fees for doctors of medicine in general practice is lower than the schedule of fees for osteopaths; and be it further

Resolved, that the Chairman of the Workmen's Compensation Board be requested to raise the fees paid to doctors of medicine in general practice so that they shall at least equal those paid to osteopaths.

Referred to Reference Committee on Commission on Medical Services—B.

Section 64 (See 210) Resolution 60–31

Amendment to Lien Law

Introduced by Medical Society of the County of Oneida

Whereas, physicians frequently provide services to patients for disease or injuries for which the patient seeks remuneration from a defendant through legal action, thereby defeating the payment of the physician's fees until the legal action is completed and a verdict or settlement is obtained; and

Whereas, these cases are frequently adjudicated without the attending physician's knowledge, and the attorney for the plaintiff, after deducting legal fees and expenses, gives the balance of the award to the patient but neglects to pay the physician his just fees for services rendered to the patient; and

Whereas, the physician is often deprived of his just compensation, or is forced to accept a lesser amount to settle his claim, or must resort to legal action to collect his fees from the patient; and

Whereas, Section 475 of the Judiciary Law of the State of New York provides for a general lien, and a charging lien in favor of attorneys against the records, property, and money of his client obtained by judgment, award, or settlement, thus protecting the attorney's interest against the possible knavery of his client and ensuring the payment of his fees; and

Whereas, Section 3, Article II of the Lien Law provides that a contractor . . . laborer . . . or material man who performs labor or furnishes materials for the improvement of real property . . . shall have a lien for the principal and interest of the value or agreed price of the labor or materials upon the real property improved—the so-called mechanics lien; and

Whereas, General Business Law, Article IX, Section 90-143, known as the Uniform Warehouse Receipts Act, provides that a warehouseman shall have a lien on goods deposited, or on the proceeds thereof in his hands, for all lawful charges for storage, etc.; and

Whereas, many other segments of our economy are protected by liens to prevent nonpayment for work, labor, or services; and

Whereas, the Medical Society of the State of New York presented a bill for a physician's lien to the State Legislature at the last session, but the bill was not pressed because of severe opposition on the part of the insurance carriers; and

Whereas, the insurance carriers' objections to the bill were, in the main, their desire to make a physician's lien subordinate to the attorney's lien and to the hospital lien; and

Whereas, the carriers also requested that the county medical societies appoint mediation committees in all counties for the purpose of arbitrating alleged overcharging or irregular charging by physicians in those cases where a lien would attach to a judgment or settlement; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York instruct the appropriate committee to seek legislation that would provide a lien in favor of physicians similar to the attorney's lien, making it mandatory for an attorney to disburse from any award, verdict, or settlement in favor of his client the just fees of the physician who treated the plaintiff preceding settlement of the case prior to his final settlement with his client; and be it further

Resolved, that the committee of the Medical Society of the State of New York, acting in liaison with the New York State Bar Association, contact their lawyer counterparts and make every effort to obtain the Bar Association's endorsement of this proposed legislation; and be it further

Resolved, that the recommendation by the Legislation Committee of the Medical Society of the State of New York for this lien contain a suggestion that the county medical societies appoint mediation committees for the purpose of receiving complaints from carriers or their agents concerning alleged overcharging or other irregularity in charges so that the matter of the reasonableness of the fee in such cases may be arbitrated by the carrier's representative and the mediation committee of the county society before the lien attaches to the judgment or settlement

Referred to Reference Committee on Legislation and Legal Matters.

MEMORANDUM TO ACCOMPANY LIEN LAW RESOLUTION 60–31

Resolution 60–31 is the same as the one presented at the 1959 meeting of the House of Delegates with the following exceptions:

Under "whereas" section, three paragraphs were added explaining the reasons given to the writer of the resolution by an attorney for a carrier why the insurance carriers objected to the previous lien law legislation. The attorney in question stated that should a new resolution cure the defects presented by the carriers, he would be willing to work with the Medical Society for the enactment of this legislation.

Under the "resolved" section, the last paragraph was added which explains the attitude of the carriers toward this legislation and the implied promise of this attorney that they would view it more favorably should such a procedure as outlined in the last "resolved" be incorporated in the legislation.

Section 65 (See 108) Resolution 60–32

American Medical Association Publications

Introduced by MEDICAL SOCIETY OF THE COUNTY OF KINGS

WHEREAS, many librarians and other subscribers are having considerable difficulty in securing recent issues of American Medical Association publications needed in order to have unbroken runs; and

WHEREAS, some out-of-print issues have been poorly reprinted in reduced size, making them unsuitable for binding with the rest of the volume; and

WHEREAS, it is customary for publishers to supply subscribers with all issues for which they have paid; now therefore be it hereby

Resolved, that the Medical Society of the State of New York go on record as requesting the American Medical Association to secure in original print, as soon as possible, enough copies of all its publications to provide all subscribers requesting them with copies, or have them reprinted with letter press in original size and on the same quality paper as the original, including the September and October, 1956, issues of the *Archives of Neurology* and any other American Medical Association publications already reprinted in reduced size; and be it further

Resolved, that the Medical Society of the State of New York recommend to the American Medical Association that future issues be printed in sufficient quantity to supply all subscribers entitled to them immediately upon publication, together with a reasonable reserve supply for future needs; and be it further

Resolved, that a similar resolution be introduced in the House of Delegates of the American Medical Association; and be it further

Resolved, that copies of this resolution be sent to the following organizations: Medical Library Association, Special Libraries Association, American Library Association, and Canadian Library Association.

Referred to Reference Committee on Miscellaneous Business.

Section 66 (See 136) Resolution 60–33

Advertising of Patent Medicines

Introduced by MEDICAL SOCIETY OF THE COUNTY OF HERKIMER

WHEREAS, the avowed duty and desire of the physicians of New York State is to provide the citizens of New York State with the best medical care possible; and

WHEREAS, this involves concern for these citizens not only in therapeutics but in preventive medicine and economic factors as well; and

WHEREAS, the distributors of "patent medicines" through all advertising media bombard the public with exaggerated, false, and even fraudulent therapeutic claims for a variety of medicaments and pseudomedicaments, suggesting in many instances the enthusiastic approval of physicians for their use; and

WHEREAS, those people who use these medicaments gain little if any medicinal value from any of them and in the case of actual disease delay and obscure the detection and diagnosis of these diseases, to their, the users, detriment; and

WHEREAS, most of these medicaments are greatly overpriced in relation to equal or superior U.S.P. drugs, and consequently the public is injured economically; and

WHEREAS, the vast amount of money spent by the public for these medicaments becomes an inflated part of the cost of medical care for which we, the physicians, are blamed but over which we have no control; and

WHEREAS, the time for action in this matter is long past, and it is incumbent on us to take some positive action in this matter; now therefore be it hereby

Resolved, that the Medical Society of the State of New York take the initiative in combating this malfeasance to the public health by advocating counteradvertising by the American Medical Association in appropriate media in a manner that strongly delineates the dangers of self-medication and the economic fraud being perpetrated on the public; and be it further

Resolved, that the delegates of this Society to the American Medical Association be instructed to present this resolution at the next meeting of the American Medical Association House of Delegates.

Referred to Reference Committee on Medical Communication.

Section 67 (See 180) Resolution 60–34

New York State Civil Service Employes Contract

Introduced by MEDICAL SOCIETY OF THE COUNTY OF ORANGE

WHEREAS, participating physicians, extending service benefits to Blue Shield members who are eligible for service benefits by virtue of their income, and thus are the backbone of Blue Shield's community service voluntary health insurance program; and

WHEREAS, in New York State the vast majority of doctors are Blue Shield participating physicians who have agreed to extend service benefits to all eligible service benefits patients among the more than 7,000,000 Blue Shield members throughout the State, including employes of the New York State government; and

WHEREAS, under the State-wide option (which includes basic Blue Shield coverage and major medical coverage) of the New York State Civil Service employes contract, major medical benefits are not available to Blue Shield participating physicians who render care to State employes on a service benefits basis; and,

WHEREAS, these same major medical benefits are available to nonparticipating physicians in Blue Shield, who are thus able to receive benefits in excess of those available to participating physicians; and

WHEREAS, continuation of this inequitable arrangement could have a deleterious effect on the voluntary health insurance program within New York State; now therefore be it hereby

Resolved, that the Medical Society of the State of New York unanimously disapproves of this inequitable arrangement; and be it further

Resolved, that the House of Delegates of the Medical Society of the State of New York petition the president of the New York State Civil Service Commission to modify the New York State Civil Service employes program to remove this inequity.

Referred to Reference Committee on Commission on Medical Services—A.

Section 68 Resolution 60–35

Amendment to Constitution: Selection of Nominating Committee

Introduced by ARTHUR F. GAFFNEY, M.D., Fifth District Branch

WHEREAS, the nominating committee of any organization is one of its most important committees; and

WHEREAS, this committee should be carefully chosen; and

WHEREAS, the Constitution of the Medical Society of the State of New York provides that the Nominating Committee shall be chosen from each district branch; and

WHEREAS, at present this is completely the responsibility of the president; and

WHEREAS, it is impossible for the president to be well acquainted with members from all areas of the State; now therefore be it hereby

Resolved, that Chapter VII, Section 1 of the Constitution be amended by adding after the word appoint in line 7: "from a list of four names submitted by the executive committee of each district branch provided such names are submitted within sixty days after the annual meeting of the State Society, and not receiving a list, a man of his own choice from that area," so that Section 1 would then read: "... Within three months after assuming the office of president he shall appoint, from a list of four names submitted by the executive committee of each district branch provided such names are submitted within sixty days after the annual meeting of the State Society, and not receiving a list, a man of his own choice from that area, a nominating committee and it shall be published."

Referred to Special Committee on Constitution and Bylaws.

Section 69 (See 199) Resolution 60–36

Training of Residents and Interns

Introduced by THOMAS M. D'ANGELO, M.D., Queens, as an individual

WHEREAS, the proper training of residents and interns is necessary for the proper and adequate care of the people of this country; and

WHEREAS, a great majority of the people have some form of prepaid medical care insurance; and

WHEREAS, this condition has brought about a decrease in the number of ward patients for the proper training of residents and interns; and

WHEREAS, a solution of this problem may have legal implications; now therefore be it hereby

Resolved, that the Medical Society of the State of New York through its Council and committees study this problem and consult with the medical schools of this State and their affiliated hospitals and also seek the advice of the legal profession.

Referred to Reference Committee on Commission on Medical Services—B.

Section 70 (See 137) Resolution 60–37

Essay Contest on Advantages of Private Medical Care or the American Free Enterprise System

Introduced by MEDICAL SOCIETY OF THE COUNTY OF MONTGOMERY

WHEREAS, other state medical societies and associations have endorsed the essay contest for high school students sponsored by the Association of American Physicians and Surgeons (topics: The Advantages of Private Medical Care, or The Advantages of the American Free Enterprise

System); and

Whereas, the contest has received the approval and sponsorship of five metropolitan New York county medical societies and their respective auxiliaries, where these exist; and

Whereas, approval by the House of Delegates of the Medical Society of the State of New York is essential to the sponsorship of this contest by the State and local medical societies and auxiliaries; now therefore be it hereby

Resolved, that the House of Delegates of the Medical Society of the State of New York go on record as approving this contest for 1960–1961 and recommend it to the county medical societies and the woman's auxiliaries for sponsorship.

Referred to Reference Committee on Medical Communication.

Section 71 (See 201) Resolution 60–38

Hospital Facilities in Seneca County

Introduced by Seneca County Medical Society

Whereas, it being one of the major precepts of the code of ethics of the Medical Society of the State of New York that its members, the component county medical societies, strive for the best possible hospital facilities for the care of their people; and

Whereas, the people of Seneca County, with the advice and assistance of the Seneca County Medical Society, the Rochester Regional Council, and the administrators of Hill-Burton funds, have built and are now operating a new and modern facility; and

Whereas, this was accomplished in spite of opposition of those who refused to recognize the advice, the desires, and the wishes and judgments of the above-named people of Seneca County and the Seneca County Medical Society, Rochester Regional Council, and Hill-Burton administrators now therefore be it hereby

Resolved, that the Medical Society of the State of New York hereby commend the physicians of Seneca County for their steadfastness to purpose and their ethical conduct in helping the people of Seneca County establish and operate their present new facility, the Taylor-Brown Memorial Hospital.

Referred to Reference Committee on Commission on Medical Services—B.

Section 72 (See 97) Resolution 60–39

Fund to Study Medical Care Needs

Introduced by Jason K. Moyer, M.D., Broome, as an individual

Whereas, various groups in our Society are attempting to direct medical care in the manner which they feel is appropriate; and

Whereas, physicians only can render medical care and are best qualified to determine the manner and means of rendering medical care; and

Whereas, the budget of our State Medical Society will not allow the expanded activities necessary to determine the best means of providing future medical care and countering or correcting the information and actions of groups which are not qualified to determine the status of future medical care; now therefore be it hereby

Resolved, that there be a fund established to meet those needs through voluntary contribution or a required fee to be recommended by the Medical Society of the State of New York.

Referred to Reference Committee on Medical Care.

Section 73 (See 192) Resolution 60–40

Workmen's Compensation Rehabilitation Program

Introduced by Westchester County Medical Society

Whereas, a New York University group was retained by the Workmen's Compensation Board to conduct a study on rehabilitation of the injured worker and make recommendations to the board concerning means and facilities for these services; and

Whereas, plans presented at the New York University discussion session in September, 1959, included the establishment of rehabilitation centers for treatment which would involve compulsion for the patient and loss of free choice of physician; and

Whereas, most practicing physicians have had no opportunity to express an opinion concerning these plans; now therefore be it hereby

Resolved, that the Workmen's Compensation Committee and the Bureau of Industrial Health and Workmen's Compensation of the State Medical Society urge the Workmen's Compensation Board to submit proposed plans for a rehabilitation program to the State and county medical societies for consideration and recommendations before they are put into effect.

Referred to Reference Committee on Commission on Medical Services—B.

Section 74 (See 138) Resolution 60–41

Medical Education and the Public

Introduced by Westchester County Medical Society

Whereas, there seems to be a widespread assumption that the medical profession, through its organizations, local and national, seeks to limit the number of medical students to be trained in this country, both by means of restrictive school admission policies and by opposition to medical school expansion and construction; and

WHEREAS, such misconceptions are not only fallacious but give a most unfavorable impression of the true attitudes and interests of the profession; now therefore be it hereby

Resolved, that the Medical Society of the State of New York, through its Department of Communications, give broader publicity to the fact that doctors are deeply concerned, not only with the standards of medical education, but also with the problem of training enough doctors to care for the increasing population; that they contribute large sums of money each year to help support medical education; and that through the Council on Medical Education and Hospitals of the American Medical Association they have urged expansion of existing medical schools and construction of at least ten new schools so as to increase the number of graduates from approximately 7,000 a year to 10,000 by 1975; and be it further

Resolved, that the American Medical Association also be memorialized to give further publicity to the efforts of the profession in promoting greatly enlarged medical training programs.

Referred to Reference Committee on Medical Communication.

Section 75 (See 208) Resolution 60–42

Licensure of Cultists

Introduced by WESTCHESTER COUNTY MEDICAL SOCIETY

WHEREAS, members of the medical profession are often criticized by the public for opposing licensure of chiropractors, naturopaths, and other cultists; now therefore be it hereby

Resolved, that the Medical Society of the State of New York go on record as affirming its support for licensure in any branch of the healing arts provided a scientific basis exists for the method of treatment practiced and that the training of all practitioners in this field be equivalent to that of a doctor of medicine.

Referred to Reference Committee on Legislation and Legal Matters.

Section 76 (See 98) Resolution 60–43

Nassau County Health Insurance Project

Introduced by WESTCHESTER COUNTY MEDICAL SOCIETY

WHEREAS, some 65 to 70 per cent of the people of the United States now are covered by some form of health insurance and the number is increasing each year; and

WHEREAS, this acceptance of health insurance programs demonstrates the desire of the people to provide for their hospital and medical care financial needs, in the voluntary manner traditional of Americans; and

WHEREAS, the costs of medical care are rising each year, and this fact is promoting extensive inquiries by the recipients of medical care through industry and labor representatives; and

WHEREAS, the medical profession has traditionally emphasized that physicians render essential medical care in the most economical manner compatible with high quality; and

WHEREAS, the Medical Society of the State of New York has traditionally promoted leadership in all fields of medical practice; now therefore be it hereby

Resolved, that the Medical Society of the State of New York commends the Medical Society of Nassau County for the progressive action it has taken in this regard and recommends that its "Program to Conserve the Public's Health Dollar" be studied most carefully by component county societies in the furtherance of this resolution.

Referred to Reference Committee on Medical Care.

Section 77 (See 219) Resolution 60–44

Study of Increase in Malpractice Claims

Introduced by SAMUEL LEO, M.D., Bronx, as an individual

WHEREAS, the number of malpractice suits has reached the state where the health of the public is in danger; and

WHEREAS, the practicing physician is encumbered by the hazard of malpractice suits, thereby affecting the treatment of the patient; now therefore be it hereby

Resolved, that the Medical Society of the State of New York appoint a committee to investigate the problem of the increase in the number of malpractice claims and request the New York State Bar Association to appoint a similar committee, said committees jointly to evolve a modus operandi similar to that provided for under the Workmen's Compensation Law.

Referred to Reference Committee on Legislation and Legal Matters.

Section 78 (See 181) Resolution 60–45

Opposition to Closed Panel Insurance Plans

Introduced by VINCENT J. COLLINS, M.D., Section on Anesthesiology

WHEREAS, closed panel Blue Shield plans (those plans which refuse to pay for the services of nonparticipating physicians) impose a financial hardship on nonparticipating physicians in such plans; and

Whereas, such closed panels impose financial inequities on subscribers who might receive professional services from a nonparticipating physician; and

Whereas, this makes for poor public relations; and

Whereas, this type of plan does not have the approval of organized medicine; now therefore be it hereby

Resolved, that the Medical Society of the State of New York oppose closed panel insurance plans in general and specifically Blue Shield plans which are so constituted.

Referred to Reference Committee on Commission on Medical Services—A.

Section 79 (See 214) Resolution 60-46

Health Care of Aged

Introduced by George J. Lawrence, Jr., M.D., and John C. McClintock, M.D., Councillors

Whereas, the health care of people over sixty-five years of age has become a subject of anxiety in the past few months; and

Whereas, there is no disagreement that people require more medical, hospital, and nursing care as they become older; and

Whereas, several attempts to solve the problems of health care of the aging have been introduced in the present Congress of the United States; and

Whereas, it has now become quite obvious that the needs of our older citizens are becoming secondary to the needs of political expediency; and

Whereas, no one who has presented a plan for financing the health care of the aged has demonstrated the extent of the needs of people over sixty-five; and

Whereas, no plan that has been presented up to the present time can satisfactorily meet the scrutiny of a completely objective analysis regarding acceptability, costs, and administrative structure; and

Whereas, the medical profession has repeatedly advised that any Federally controlled or subsidized plan will inevitably lead to socialization of medicine and eventually to a welfare state; and

Whereas, the members of the medical profession have a personal interest in providing the best care to all their patients, young or old, regardless of their ability to pay; and

Whereas, a conference on the problems of the aging has been scheduled to be held at the White House in January, 1961; now therefore be it hereby

Resolved, that the Medical Society of the State of New York urge the Congress of the United States of America to place the needs of our aging population before political consideration; and be it further

Resolved, that the Medical Society of the State of New York condemn the present tendency to make a political football of our elderly patients; and be it further

Resolved, that the Medical Society of the State of New York recommend to the Congress that no legislative action be taken in respect to methods of financing the health care of the aged until after a complete study has been made of the problem; and be it further

Resolved, that copies of this resolution be sent to the President and Vice-President of the United States, the Secretary of the Department of Health, Education, and Welfare, the two Senators from New York State and all the Congressmen from New York State and all members of the House Ways and Means Committee, and also to the American Medical Association.

Referred to Reference Committee on Legislation and Legal Matters.

Section 80 (See 211) Resolution 60-47

Legislation to Require Establishment of Medical Examiner System Throughout the State of New York

Introduced by Milton Helpern, M.D., Section on Legal Medicine, and Samuel Wagreich, M.D., Bronx, as individuals

Whereas, a medical examiner system has functioned successfully in the City of New York, comprising five counties, since 1918, in Nassau County since 1938, in Westchester County since 1940, in Erie County, and most recently in Suffolk County; and

Whereas, the function of these medical examiners is to investigate all violent and sudden, unexpected, and unexplained deaths and in so doing protects the administration of justice, preserves and helps to maintain the public health and well-being of the community, and guards against hazards in the home and in industry; and

Whereas, medical examiners are required to be trained forensic pathologists and skilled microscopists; now therefore be it hereby

Resolved, that the Medical Society of the State of New York recommend the institution of a similar medical examiner system in all large municipalities and all counties in the State of New York; and be it further

Resolved, that a copy of this resolution be mailed to the New York State and county bar associations and other such interested bodies and legislators who might be concerned with the objectives of this resolution.

Referred to Reference Committee on Legislation and Legal Matters.

Section 81 (See 128) Resolution 60–48

Establishment of Section on Space Medicine

Introduced by William Hall Lewis, Jr., M.D., New York, as an individual

Whereas, in the age of space exploration, the human intellect is continuing through scientific knowledge to advance itself along all fronts of endeavor, and space medicine represents a ten-year stride beyond aviation medicine in the evolution of medicine in general; and

Whereas, the lessons learned from specific research in space medicine are being applied to general terrestrial medicine, e.g., intrathoracic cardiac pacemakers, telemetered electrocardiograms, electroencephalograms, and other physiologic data, intraintestinal monitored information, to mention just a few parameters; and

Whereas, the teaching of space medicine on a civilian institutional level of higher learning has already begun, e.g., New York Medical College, and active research in this field is being conducted in universities and private companies, e.g., University of Illinois, New York University, University of Rochester, Columbia, University of Ohio, Cornell, University of California, University of Pennsylvania, University of Iowa, and a few others; Mayo Clinic, R.C.A., General Electric, General Dynamics, Douglas Aircraft, Convair, Republic Aviation; and

Whereas, the popularity and demand of the intelligent old and young point to the national pursuit of the study of space sciences and space medicine and is evidenced by numerous firsthand statistics; and

Whereas, space medicine has already found seed officially in many of the 28 international space organizations; and

Whereas, space medicine can no longer be considered a monopoly of military organizations but will be shared with the latter in education, research, and development as indicated; and

Whereas, space medicine is part of holomedicine embracing geo- and submarine medicine; there is a great need for incorporating the plural marriages within the allied life sciences, e.g., biodynamics, exobiology, molecular biology, bioastrophysics, radiobiology, bioengineering, biophysics, medical electronics, etc., which should be a part of the domain of general medicine, and space medicine offers that opportunity; and

Whereas, space medicine affecting all known disciplines has finally come of age; and

Whereas, Werner von Braun has said, "Space medicine has become an essential part of our national space program. Soon our rockets will be capable of carrying crews into orbit. To fully utilize this capability space medicine must furnish us answers to many still open questions. I believe the time is at hand when doctors should organize themselves in a special way for this challenge"; now therefore be it hereby

Resolved, that the Medical Society of the State of New York establish a Section on Space Medicine to satisfy the growing need of our time by doing justice to New York State as the leading scientific cradle in the United States.

Referred to Reference Committee on Organization and Policies.

Section 82 (See 182) Resolution 60–49

Multiple Insurance and Service Benefits

Introduced by Suffolk County Medical Society

Whereas, the medical profession has always been willing to participate in efforts to minimize the financial drain associated with illness; and

Whereas, it has devised the principle of service benefits insurance plans to prevent undue hardship to the patient and has been willing under these circumstances to reduce the regular fees to the service benefit level; and

Whereas, the patient who is covered by multiple insurance (often at little cost to himself) would be able to pay regular fees to the physicians and surgeons participating in his case without hardship and, in fact, would usually have a surplus of money available to him because of the labors of his physicians; and

Whereas, regular schedules have been or can be established for each service; now therefore be it hereby

Resolved, that this House recommend that the patient with multiple insurance be charged the regular fees; and be it further

Resolved, that the service benefit contract be amended to read that the participating physician be released from the requirement to reduce his fee to the service benefit level under these circumstances; and be it further

Resolved, that the House of Delegates approve these principles and request the State Insurance Commissioner to instruct service benefit insurance plans to make the necessary amendments to their contracts.

Referred to Reference Committee on Commission on Medical Services—A.

Section 83 (See 194) Resolution 60–50

Change in Workmen's Compensation Law 13-a (5)

Introduced by Henry Vinicor, M.D., St. Lawrence, as an individual

Whereas, Workmen's Compensation Law, Section 13-a (5) states that:
"(5) No claim for specialist consultation, surgical operations, or physio-therapeutic procedures costing more than twenty-five dollars shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or by the board, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency. No claim for x-ray examinations or special diagnostic laboratory tests costing more than ten dollars shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or by the board, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency. (As last amended by L. 1946, ch. 113.)"; and

Whereas, the Medical Fee Schedule of March 1, 1959, has many alterations from the old schedule; and

Whereas, Workmen's Compensation Law Section 13-a (5) was not changed in March, 1959, and in fact has been the same since 1946; and

Whereas, this section (13-a [5]) is impractical, obsolete, and possibly harmful to the patient; and

Whereas, for many years insurance carriers did not enforce this section of the law but have been doing so since March 1, 1959; and

Whereas, this section states that no claims for physiotherapeutic procedures costing more than $25 are valid unless previously authorized, and on page 4, code #0460 in the Medical Fee Schedule, it states:

Physical Therapy and Occupational Therapy
up to 1 hour—$7.50
up to $2^1/_2$ hours—10.00
all day—15.00

which means one would have to write for authorization every two to three days, thus creating an unnecessary hardship on the physician and a real loss in money if it is not done; and

Whereas, this section states no claim for x-ray examinations costing more than $10 shall be valid unless such special services shall have been authorized by the employer, etc., and on page 50, code #7061 in the medical fee schedule it states: Skull–Complete Study–$30.00—which means one could take no x-ray of the skull unless previously authorized, and thus time is wasted and the patient possibly harmed; and

Whereas, one could possibly justify many procedures by his interpretation of the word "emergency," the insurance carrier might believe differently and thus a discussion in semantics ensues with resultant waste of time and possible arbitration proceedings; now therefore be it hereby

Resolved, that this House of Delegates recommend that the Workmen's Compensation Law, section 13-a (5), be altered to read as follows:
"(5) No claim for specialists' consultation, surgical operations, or physio-therapeutic procedures costing more than *one hundred dollars* shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or the board, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency. No claim for x-ray examinations or special diagnostic laboratory tests costing more than *fifty dollars* shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or by the board, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency"; and be it further

Resolved, that the Council, through its Legislation Committee, try to have this bill passed by the next session of the New York State Legislature.

Referred to Reference Committee on Commission on Medical Services—B.

Raymond J. Byron, M.D., *Schenectady:* I make a motion that all the supplementary reports and resolutions that we have now so far received be referred to the proper reference committees noted thereon.

J. Stanley Kenney, M.D., *Trustee:* I second that motion.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Vice-Speaker Wurzbach: The reference committees will meet in this room and in the Penn Top North at 2 p.m. Everybody who has anything to present to these committees will kindly be present and do so, because by a proper presentation to the reference committees these chairmen will be able to give reports to you here which will not have to be discussed at any unseemly length because of the fact that you did not speak to the reference committee.

Speaker Lane: Thank you, Dr. Wurzbach.

Is there any other business to come before the House at this minute that anyone knows of? If not, we now stand recessed to two o'clock tomorrow afternoon.

. . . Whereupon at 1:10 p.m., the meeting recessed . . .

Afternoon Session

Sunday, May 8, 1960

The session convened at 2:10 P.M.

Section 84

Announcement

SPEAKER LANE: Ladies and gentlemen, the House will please come to order. It is obvious that a quorum is here.

There are several reports ready which require signatures for completion before they can be presented to the House, and the members of the Reference Committees on Medical Care, Miscellaneous Business, Ancillary Groups, and Reports of Officers will please go to Miss Lewis and sign those reports immediately.

We are now up to Resolution 60–55.

CHORUS: We did not get 50 to 55 yet.

SOLOMON SCHUSSHEIM, M.D., *Kings:* Number 55 was sent to what reference committee?

SPEAKER LANE: Number 60–55 is sent to Legislation and Legal Matters. You will receive that soon. May I ask that these additional resolutions be distributed now and also reports of reference committees that are completed?

ADDITIONAL RESOLUTIONS

Section 85 (See 208) Resolution 60–51

Administration of Physiotherapy

Introduced by HENRY FLECK, M.D., Section on Physical Medicine

> WHEREAS, at the last session of the House of Delegates a resolution was passed to amend the State Education Law in relation to the administration of physiotherapy; and
>
> WHEREAS, this resolution was approved by the House without dissent and subsequently put before the Legislature for enactment into law; and
>
> WHEREAS, the proposed amendment was not reported out of committee in the Senate and recommended in the Assembly; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York, as represented by this House, strongly reaffirm its previous position with respect to the administration of physiotherapy as follows:
>
> 1. That such administration shall be based on a written prescription by a duly licensed physician;
> 2. That treatment without such written prescription constitutes an intrusion on medical practice by unqualified practitioners;
> 3. That accordingly a law should be enacted after due consultation with all interested parties to put an end to such unethical practice as not in the public interest.

Referred to Reference Committee on Legislation and Legal Matters.

Section 86 (See 212) Resolution 60–52

Amendment to Civil Practice Act

Introduced by WILLIAM HALL LEWIS, JR., M.D., New York, as an individual

> WHEREAS, the Civil Practice Act as a statute of the State of New York in Section 347 provides certain limitations and conditions for the introduction of testimony of a party to an action or interested witness as against the estate or survivors of a deceased person or the representatives of the estate or of the survivors; and
>
> WHEREAS, judicial interpretation in several court actions as far back as 1911 has set a precedent for interpretation of this Section 347 in regard to the physician and his medical services; and
>
> WHEREAS, this interpretation leads to such restrictions that the physician cannot testify in any form verbally or by presentation of hospital records or correspondence to the services rendered; and
>
> WHEREAS, Section 347 of the Civil Practice Act was amended by the State Legislature in 1935, 1940, and 1945 in regard to other respects not relating to medical services; now therefore be it hereby
>
> *Resolved,* that this House direct the Legislation Committee, with advice of the Society's counsel, to review this interpretation of Section 347 of the Civil Practice Act, to correspond thereon with the appropriate committee of the New York State Bar Association, and to seek to introduce in the Legislature of the State of New York, if the Society's committee sees fit, appropriate amendment to Section 347 for the purpose of modifying the undue restrictive effects of the existing judicial interpretation on testimony for medical services.

Referred to Reference Committee on Legislation and Legal Matters.

Section 87 Resolution 60–53

Amendment to Bylaws: Compulsory A.M.A. Membership

Introduced by Gerard V. Farinola, M.D., Nassau, as an individual

Whereas, the Medical Society of the State of New York has not achieved a true numerical representation in the affairs of the American Medical Association equal to and proportionate to other state medical societies; and

Whereas, the unification of all doctors of medicine and surgery can be accomplished only by total membership in one solid and forceful organization; and

Whereas, the realization of the purposes of our medical societies can best be achieved by such a complete medical body; and

Whereas, changes and improvements in A.M.A. thought and procedure can be accomplished only by full participation of all doctors; and

Whereas, the splintering of our forces can best be prevented by such unity of membership; and

Whereas, membership in the parent organization of medicine should be the desire and pride of all doctors of medicine; now therefore be it hereby

Resolved, that the Bylaws be amended as follows:

1. Amend Chapter I, Section 1, first sentence, to add following the words "county medical societies" the words "and the American Medical Association";
2. Amend Chapter I, Section 2(a), first sentence, to add following the words "assessment of the State Society" the words "and the dues of the American Medical Association";
3. Amend Chapter I, Section 3, first sentence, to add following the words "component county society" the words "the American Medical Association" and change the word "its" to "their" in the third line of said section.

Referred to Special Committee on Constitution and Bylaws.

Section 88 (See 116, 121) Resolution 60–54

Increase in Dues

Introduced by Jason K. Moyer, M.D., Broome, as an individual

Whereas, the Medical Society of the State of New York has felt the effect of the nation-wide inflationary trend over the last years; and

Whereas, there is need for increased efforts in the conduct of the business of the Society, particularly in the field of communications; now therefore be it hereby

Resolved, that the individual dues of each member of the Medical Society of the State of New York be adjusted to $40 per year, as of January 1, 1961.

Referred to Reference Committee on Reports of Officers.

Section 89 (See 214) Resolution 60–55

Health Services for Elderly

Introduced by Medical Society of the County of New York

Whereas, the problem of the medical care of our aging population is a matter of concern to New York State as well as the nation; and

Whereas, the medical profession of New York State has always been aware of its responsibility in providing medical care of a high order to all the people of the State; and

Whereas, it is generally recognized that many older individuals among our population, particularly those who have retired, do not have the financial means to pay for necessary hospital and medical services and in many instances are not insured against the costs of these services; and

Whereas, this older age group is faced with an increased need for health services at the very time when it is least able to pay for them; and

Whereas, under present conditions it seems essential that some form of assistance be provided for this group; and

Whereas, the mechanism of the social security system for paying for or providing these services would be excessively costly and cumbersome; and

Whereas, this mechanism would not be applicable to those individuals, and there are many, who are not covered by the social security plan; now therefore be it hereby

Resolved, that the Medical Society of the State of New York recognizes the extent and gravity of the problems facing the elderly and retired of our population in providing for necessary health services; and be it further

Resolved, that the Medical Society of the State of New York endorses the principle of Federal and State participation in providing funds toward the purchasing of voluntary health and hospitalization insurance, or toward continuing such insurance after retirement, the amount of such participation to be based on the ability of the individual to pay for his own insurance; and be it further

Resolved, that the Medical Society of the State of New York recommends that State and Federal commissions begin a thorough study with all possible speed to establish a mechanism and an equitable formula for public assistance along the lines herein indicated; and be it further

Resolved, that copies of this resolution be sent to the President and Vice-President of the United States, the Secretary of the Department of Health, Education, and Welfare, the two Senators from New York State, all the Congressmen from New York State, and all members of the House Ways and Means Committee, and also to the American Medical Association.

Referred to Reference Committee on Legislation and Legal Matters.

ADDITIONAL SUPPLEMENTARY REPORT

Section 90 (See 213) Report 60–R

Supplementary Report of the Committee on Legislation, Subcommittee on Federal Legislation

To the House of Delegates, Gentlemen:

Since the original report of the subcommittee was submitted to the House on or about February 15, there has been a tremendous amount of activity in regard to the Forand Bill both on the part of the State Medical Society and on the scene in Washington.

Through the Department of Communications the subcommittee has carried on a very intense campaign to prevent the enactment of the Forand Bill or any bill of a similar type. Implementing the plan of action for 1960, reported in the original report to the House, some 650 letters with materials were sent out to various organizations in New York from which resolutions opposing the Forand-type bill were requested. Since the staff of the Department of Communications was overloaded with the work of these requests for resolutions and in carrying on several field trips throughout the State contacting the various county medical societies, help was obtained from the A.M.A. Three men from the headquarters of the national organization spent several weeks in New York at the State Medical Society headquarters contacting organizations which had been requested to pass resolutions. Some 110 contacts were made by these men while at work at the State Society headquarters.

There has been a great deal of success in our campaign. This is particularly true in regard to the county medical societies. Many resolutions were received from these groups. In addition, the members of the county medical societies and the officials of the county medical societies literally flooded the Congressmen with letters. The proof of the favorable reaction to this campaign is the fact that the department received numerous copies of replies from Congressmen which had been sent to doctors through the State. The pleasing thing about this response is the fact that the letters were not in a form type but were more of a personalized nature. On the whole the replies indicated opposition to the Forand type of legislation but expressed the opinion that something must be done.

While there has not been a tremendous number of resolutions from outside organizations, there has been a satisfactory number of replies. In most instances the replies indicated that the organizations were on our side and would take whatever action was appropriate. In many instances we were advised that the organization was not in a position to take any stand on any Federal legislation.

There can be no question about the satisfactory results of the efforts of the State Medical Society and those of the American Medical Association in fighting the Forand-type legislation. For one thing the House Ways and Means Committee refused to vote out the Forand Bill itself. The same committee likewise turned down a request by a good margin that a watered-down version of the Forand Bill limiting medical assistance to hospital care be reported to the House. In addition, President Eisenhower on several occasions has vigorously opposed any form of compulsory health insurance, particularly the Forand Bill, as part of the social security system.

The issue of help for the aged along medical lines which was more or less instigated by the Forand-type bill now looms as the number one domestic issue in the coming presidential campaign. Several of the candidates have come out in favor of the Forand Bill. Eight senators, including New York's Senator Javits and Senator Keating, have introduced an alternate type bill which in brief calls for Federal-state aid to obtain voluntary health insurance for the aged. The Democratic leaders in both houses of Congress have sponsored another type of legislation to meet the so-called needs of the aged. Representative Mills himself, chairman of the House Ways and Means Committee, has come out in favor of still another type of legislation in this field. And last but not least, as this report is being written on May 5, the Administration has just introduced a bill along the line of the Javits and Keating bill but more restrictive in nature.

In brief the bill calls for the following, as reported in the *Wall Street Journal*, May 5:

> The Administration program would be open to all people sixty-five and older who did not pay income tax in the preceding year and to taxpayers sixty-five and older whose adjusted gross income was not more than $2,500 for individuals and $3,800 for married couples. Those eligible for the program could get benefits after paying a $24 enrollment fee per year, and after they had paid medical bills of $250 for individuals and $400 for couples. Those on public assistance rolls would not have to pay either the enrollment fee, or the initial medical expenses.
>
> The plan, called the Medicare Program for the Aged, calls for the payment of 80 per cent of the cost of various medical services above $250 a year for most elderly persons, and the full cost of bills of persons receiving public assistance. Hospital

> care of one hundred and eighty days would be included along with a full year of nursing home care and organized home-care services. There would be a $350 limit on the amount that would be paid for drugs.
>
> Each state also would provide that an aged person not wishing to enroll in the state-run plan could elect to buy private insurance with the understanding that half the cost would be paid for him from Federal-state matching funds up to $60 a year.

The *Wall Street Journal* continues its summarization as follows:

> The sharp reaction of Democrats, who control the committee, seems to insure rejection of the plan. Instead, the committee is expected to turn to some system that would finance medical care for the elderly by increasing social security taxes. Such a scheme probably would be much more modest than a plan sponsored by Rep. Forand (D.-R.I.), which was voted down by the committee earlier.

The subcommittee wishes to call to the attention of the House that at the time this report is being written, the A.M.A. has not favored any of the proposals that have been submitted as alternates to the Forand-type bill. As a matter of fact it has opposed some of them.

Of all the proposals previously mentioned in this report, your subcommittee is of the opinion that the Administration's proposal is the most acceptable to the medical profession in New York State. Your subcommittee therefore recommends to the House that the Medical Society of the State of New York commend the Secretary of Health, Education, and Welfare, Arthur S. Flemming, for his efforts in behalf of financing the health care of the aged in a rational manner. As the *Wall Street Journal*, in the issue previously quoted, stated: "Secretary Flemming told the committee the plan was designed to meet certain tests: Participation should be the voluntary choice of the individual; protection should cover expensive and catastrophic illnesses; benefits should be available to persons on public assistance at public expense; some financial contribution also should be made for persons not on public assistance; private insurers should have the opportunity to expand their programs of health protection to the over sixty-five group, and the plan should be a Federal-state partnership."

In view of the fact, however, that the problems concerning the aging have been approached by many methods without any clear knowledge of what the real needs of the aging people are and these methods seem to have been generated by political considerations, the subcommittee feels that no legislative action should be taken at this time. It will be much wiser and much more in the interests of the aging population if action is delayed until after the White House Conference in 1961. At that time the problems, whatever they may be, can be studied by experts, and the real needs of the aging population can be properly evaluated. This is the only logical, rational, and effective procedure which should be followed.

To pass legislation in what has become a political free-for-all in a presidential year would be detrimental not only to the aging population but to everyone concerned with problems affecting this segment of our economy.

A longstanding socioeconomic problem of a highly debatable nature cannot, and must not, be handled primarily as a political football. The problems of the aging, which have been with us for ages, cannot be solved in a matter of months in a political vacuum. There are many views being expressed in a dangerous political atmosphere. These views are in many cases in completely opposite directions Obviously no sane solution can come from such political confusion.

Turning now to other matters which have been watched by this committee, the so-called Simpson-Keogh Bill (H.R. 10) has a good chance of being enacted into law at this session. The bill will not be passed in its original version, however, but will be in a modified version which has been proposed by the Treasury Department. It is interesting to note also that the House Ways and Means Committee has indicated that it will report favorably to the House that doctors of medicine and others be included in social security.

The subcommittee is very grateful to the members of the headquarters staff whom we have frequently called on for assistance.

Among those whom we wish to thank are Herbert T. Wagner, M.D., executive director; the Department of Communications, and especially Martin J. Tracey, without whose help the subcommittee could not have functioned.

Respectfully submitted,
GEORGE J. LAWRENCE, JR., M.D., *Chairman*

Section 91 (See 25, 187)

Introduction of Guests

SPEAKER LANE: May I have your attention, please? It is now my pleasure to present to you Allen W. Cowley, M.D., president of the Medical Society of the State of Pennsylvania. (*Applause*)

ALLEN W. COWLEY, M.D.: Mr. Speaker and members of the Medical Society of the State of New York, last year we changed our name. We are now the Medical Society—wait a minute—Pennsylvania Medical Society. It took us ten years to do that job.

I would like to take this opportunity to express my appreciation and thanks for the invitation to come to your State Society medical convention. I would like to give you the best wishes of our society of Pennsylvania with our 12,000 members.

I am sure that you have many of the problems that we have. We have always looked up to your

Society, on occasions wishing that we could be more like you. I believe you are more progressive in many ways than we. I became addicted to one of your great State's institutions early in my medical career, that is, reading the *New York Sunday Times.* I believe that had something to do with my settling in this area, in the East.

In order to increase our own attendance at our convention, we have stooped to having a convention occasionally outside of the state. This coming fall, in October, October 1, we are meeting in Atlantic City, New Jersey, and I would like to extend an invitation to each and every one of you if you have a little time off to come to Atlantic City to our convention. I believe we can arrange it so that it will be a somewhat enjoyable vacation for you at the same time. At least in Pennsylvania we have found that our ladies like this type of a vacation or convention very much.

I don't want to take up any more of your time, but I want to thank you again for the privilege of being here, and I would like to sit in on your House of Delegates and learn what I can.

Thank you very much. (*Applause*)

REFERENCE COMMITTEE ON MEDICAL CARE

Section 92

Report of Reference Committee on Medical Care: Report of Special Committee on Resolution 58–49

Speaker Lane: We now have ready some reports, and the first report will be that of the Reference Committee on Medical Care, chairman, Dr. Warren A. Lapp. Dr. Lapp, will you please go ahead and present your report to the House?

Warren A. Lapp, M.D., *Kings:* Mr. Speaker and members of the House of Delegates, your Reference Committee on Medical Care reviewed the report of the Special Committee on Resolution 58–49 and noted the following:

The committee recommended that a campaign be undertaken by the State Society for the accreditation of proprietary hospitals and nursing homes in an effort to improve the standards for qualification.

The committee recommended that a program be initiated in an effort to control high hospital utilization costs. It was suggested that committees in local hospitals should review admissions and lengths of stay in order to cut down unnecessary hospitalization.

The committee recommended that a communication be sent to New York State Blue Shield plans, Associated Blue Shield Plans of New York State, and the Health Insurance Council requesting that the problems of irregularities in practice by physicians be referred by the carriers to the doctor's county medical society for review and corrective action and that the carriers report annually to the State Society on the number and disposition of such cases.

These recommendations were duly approved by the Council of your State Society.

Your reference committee commends the committee for its efforts and feels that by such a positive program the medical profession will continue to furnish the leadership necessary to assure the very best of medical care to the people in the State of New York.

The special committee also recommended that regional conferences on medical services be sponsored and that publicity be given these through the New York State Journal of Medicine and the *Newsletter.* These recommendations were duly approved by the Council, and regional conferences sponsored by the committee, held first in Buffalo and subsequently in Syracuse, offered programs which were well diversified and highly informative. The favorable comments after each conference fully justify continuation of these programs for the balance of the districts in the State, as recommended by the special committee.

The special committee will submit a final report to the House of Delegates in 1961.

I move approval of this portion of the report.

Robert S. Cleaver, M.D., *Putnam:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 93

Report of Reference Committee on Medical Care: Report of Special Civil Defense and Catastrophe Committee

Dr. Lapp: Your Reference Committee on Medical Care approves the report of the Special Civil Defense and Catastrophe Committee and commends the special committee for its efforts to stimulate a program for disaster medical care despite public and political apathy. The special committee proposes continuation of its efforts to press for a national plan of disaster care.

I move approval of this portion of the report.

Raymond J. Byron, M.D., *Schenectady:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 94

Report of Reference Committee on Medical Care: Medical Advisory Committee to the Bureau of Disability Determinations

Dr. Lapp: The reference committee lauds the Medical Advisory Committee to the Bureau of Disability Determinations for its efforts in getting authorization for the bureau to accept the New York State Workmen's Compensation fee schedule as the basis for reimbursing its medical consultants, thereby correcting to some extent certain gross inequities. The report of the Medical Advisory Committee is an interim report and was approved by your reference committee.

I move approval of this portion of the report.

THOMAS S. COTTON, M.D., *Steuben:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 95

Report of Reference Committee on Medical Care: Advisory Committee to Columbia University Study

DR. LAPP: Your Reference Committee on Medical Care reviewed the report of the Advisory Committee to the Columbia University Study of Nonprofit Medical Insurance Plans in New York State. This committee has acted only in an advisory capacity to Dr. Trussell and his group, so that the ideas and policies of the Medical Society of the State of New York would be clearly presented and adequately represented.

Dr. Trussell appeared before the reference committee and reported that the work of his study group is only half finished. He stated that the advisory committee had been most helpful to him and his group and praised the advisory committee for its efforts.

Your reference committee recommends continuation of the advisory committee until the study is completed.

I move approval of this portion of the report.

SPEAKER LANE: Is there a second?

PETER J. DI NATALE, M.D., *Councillor:* I second it.

SPEAKER LANE: Is there discussion?

THOMAS M. D'ANGELO, M.D., *Queens:* This report of Dr. Trussell has not as yet been completed. How come that many leaks have sieved through medical circles and even in the newspapers?

SPEAKER LANE: Is there anyone who can answer that question?

HERMAN E. HILLEBOE, M.D., *Commissioner, State Department of Health:* Mr. Chairman, it so happened that when this report was in its formative stages, 75 copies of it were sent to various advisory groups, including those groups in government, the doctors who are concerned, and the various schools. When you distribute 75 copies, of course it is obvious that people can get in touch with the people who have these copies. I think it should be pointed out that they were not officially released by the Health Department, by the Insurance Department, or by Dr. Trussell. It so happens that some of the doctors who received these reports happen to know some of the editors of newspapers and other people, and you can put two and two together.

SPEAKER LANE: Thank you, Dr. Hilleboe.

Is there any other discussion or comment?

JOHN C. MCCLINTOCK, M.D., *Councillor:* I am chairman of the committee that is advisory to the Trussell study. We received these copies; the Council was advised off the record of what was going on, but no one from my committee released any information to any other than the Council of this Society.

SPEAKER LANE: Thank you, Dr. McClintock. Are there any other comments?

. . . The question was called, and the motion was put to a vote and was unanimously carried . . .

Section 96

Report of Reference Committee on Medical Care: Staphylococcal Infections

DR. LAPP: Your reference committee studied the report of the Joint Committee to Combat Staphylococcal Infections.

The committee during the summer of 1959 voted to combine "The Guide for Prevention and Control of Infections in Hospitals" with "The Control of Staphylococcus in Hospitals" into a single booklet. Dr. Hilleboe volunteered to do this work through the personnel of the New York State Department of Health. The manual has since been printed, and copies are available to all physicians on request. Your reference committee recommends that all physicians in the State of New York acquaint themselves with this manual.

The Joint Committee to Combat Staphylococcal Infections is to be congratulated for completing its mission in such a thorough and efficient manner. Your reference committee recommends approval of this report. I so move, Mr. Speaker.

HERBERT H. BAUCKUS, M.D., *Trustee:* I second it.

SPEAKER LANE: Is there discussion?

JAMES GREENOUGH, M.D., *Trustee:* I would like to make one correction in the first paragraph. The manual is being printed and will be available to all physicians after May 20. It has not come out quite yet.

SPEAKER LANE: Thank you, Dr. Greenough.

Is there any other comment or discussion?

. . . There being no further discussion, the motion was put to a vote and was unanimously carried . . .

Section 97 (See 72)

Report of Reference Committee on Medical Care: Fund to Study Medical Care Needs

DR. LAPP: The reference committee studied resolution 60-39, introduced by Jason K. Moyer, M.D., and in consultation with him and other interested delegates revised the resolution as follows:

Whereas, various nonmedical groups in the community are attempting to dictate policies regarding medical care; and

Whereas, physicians are best qualified to direct the manner and means of rendering such medical care; now therefore be it hereby

Resolved, that the Medical Society of the State of New York expand its activities necessary to determine the best means for providing future medical care and to counter or correct the actions of those groups not qualified to propose such medical programs

The reference committee recommends approval of this resolution as revised, and I so move.

Speaker Lane: Is there a second?

Abraham D. Segal, M.D., *Kings:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . . .

Section 98 (See 76)

Report of Reference Committee on Medical Care: Nassau County Health Insurance Project

Dr. Lapp: The reference committee recommends approval of resolution 60-43, introduced by Westchester County Medical Society.

The reference committee suggests that a copy of the bulletin, "Program to Conserve the Public's Health Dollar," be forwarded to each component county society for study and possible implementation. I so move.

Speaker Lane: Is there a second?

John L. Finnegan, M.D., *Queens:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . . .

Dr. Lapp: May I move approval of the report as a whole?

Speaker Lane: As amended. Is there a second?

Francis A. Stephens, M.D., *Albany:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . . .

Dr. Lapp: Mr. Speaker, may I at this time thank my committee for their cooperation and assistance: Francis A. Stephens. M.D., of Albany; John L. Finnegan, M.D., of Queens; Thomas C. Cotton, M.D., of Steuben; and Robert S. Cleaver, M.D., of Putnam.

Speaker Lane: Thank you, Dr. Lapp.

REFERENCE COMMITTEE ON ANCILLARY GROUPS

Section 99

Report of Reference Committee on Ancillary Groups: Dental Health, Pharmaceutical Association, Interprofessional Association

Sol Axelrad, M.D., *Queens:* Mr. Speaker and delegates, the groups include the Advisory Committee to the Woman's Auxiliary, Committee on Nursing Education, Blood Banks Commission, Joint Dental Health Committee with the Dental Society of the State of New York, and the Joint Committee of the Medical Society of the State of New York and Pharmaceutical Association of New York State.

The annual reports of the foregoing committees and the membership thereof are printed on pages 141-144 of the Delegates' Handbook (Journal, April 1, 1960, pages 1135-1138).

The two joint committees (Dental and Pharmaceutical) held no meetings during the past year; hence your reference committee has nothing to report on these.

In connection with the foregoing, page 27 of the Delegates' Handbook, Annual Report of the President, Henry I. Fineberg, M.D., under the topic, "Relations with Other Professions," mention is made of the Council's intense exploration of the idea of an interprofessional association for the purpose of better relations with other professions and matters of legislation. These include the bar, health, hospitals, medical assistants, nurses, pharmacists, dentists, veterinarians, and professional engineers.

Your reference committee looks with favor on this study and hopes that such an interprofessional organization will soon be activated. I move approval of this part of the report.

John W. Latcher, M.D., *Otsego:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . . .

Section 100

Report of Reference Committee on Ancillary Groups: Advisory Committee to the Woman's Auxiliary

Dr. Axelrad: Your reference committee has reviewed the annual report of the advisory committee and notes with approval the many worthy and continued activities of the Woman's Auxiliary in the course of the advancement and maintenance of the best standards of medical care. The following are but a few of its noteworthy efforts: nurses' recruitment and scholarship, promotion of health careers for high school students, support of the American Medical Education Foundation and the Physicians' Home, and the State-wide health poster contest for elementary and high school students. The Auxiliary deserves the utmost support of both State and county societies and should be encouraged in its efforts to expand. I move a hearty approval of this part of the report.

Harry P. Smith, M.D., *Section Delegate:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 101

Report of Reference Committee on Ancillary Groups: Committee on Nursing Education

Dr. Axelrad: The report of this committee tells of several meetings with representatives of hospital and nurse associations and public health officials and their efforts not only to expand educational facilities by urging the State to establish nursing schools in community and junior colleges, but also to expand scholarship aid and encourage high school graduates to study nursing. The report also notes the trend of graduates of practical nursing schools entering and continuing their studies in registered nursing schools.

The proposal submitted to the Board of Regents (approved by the Hospital Association of New York State and the Council of the Medical Society of the State of New York) to grant an associate degree of nursing to graduates of three-year hospital schools of nursing, if approved, should have a profound effect in increasing the number of students entering nursing schools.

I move approval of this part of the report.

Felix Ottaviano, M.D., *Madison:* I second it.

Speaker Lane: Is there discussion?

Samuel Leo, M.D., *Bronx:* To date the nursing service has followed the same pattern as the medical, the physician. Nurses today are going for Ph.D.'s; the R.N.'s are going for Ph.D.'s and have no more in common with the patients in hospitals than a college professor has. It is about time we have a nurse who has an R.N. in to take care of the patient. Some courses that are stimulating the nurses to carry on for M.A.'s and Ph.D's are such that at the time they get them, they have no relationship to the sick patient. That is our fault. If we encourage more education, we will have fewer and fewer nurses, and something should be done in the direction of maintaining the R.N. and having the R.N. take care of patients instead of going back to college.

Speaker Lane: Thank you, Dr. Leo.

. . . There being no further discussion, the motion was put to a vote and was carried . . .

Section 102 (See 48)

Report of Reference Committee on Ancillary Groups: Recommendations to Board of Regents to Relieve the Nursing Shortage

Dr. Axelrad: One resolution was committed to your reference committee—number 60–15, Recommendations to Board of Regents to Relieve the Nursing Shortage, introduced by William A. Cooper, M.D., Medical Society of the County of New York.

Your reference committee recommends approval of this resolution, and I so move, with the following changes in the first two "whereases": Change the word "medical" appearing in the last sentence of the first "whereas" to the word "hospital." Change the words "county of" appearing in the first sentence of the second "whereas" to the words "State of."

I move approval of this resolution.

Speaker Lane: With the changes involved?

Dr. Axelrad: With the changes involved.

Speaker Lane: Is there a second?

Arthur Q. Penta, M.D., *Section Delegate:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . . . . .

Section 103

Report of Reference Committee on Ancillary Groups: Blood Banks Commission

Dr. Axelrad: High lights of this report concern the continuing deficits incurred by the Blood Banks Association and the North East District Clearing House and the offer of the American Association of Blood Banks to take over the North East District Clearing House, for which the Medical Society of the State of New York will be reimbursed in the sum of $7,500. Herbert Berger, M.D., president of the Blood Banks Association, appeared before the committee and informed us that this merger has already been effected, thus eliminating the chief source of further deficits. Furthermore, the membership dues are expected to be more than adequate to keep the organization in the black. However, your reference committee is in agreement with the philosophy expressed by the commission that the Blood Banks Association is, in fact, an educational and scientific group, and any monies requested from the Council and trustees for its activities should be considered not a loan but an outright grant for educational purposes. I move approval of this part of the report.

Speaker Lane: Is there a second?

Phillip J. Hust, M.D., *Delaware:* I second it.

Speaker Lane: Is there discussion?

Thomas M. d'Angelo, M.D., *Queens:* How much will that cost the Society a year for this educational program? Is there any figure given?

Dr. Axelrad: I understand it will cost the Society nothing. The Blood Banks Association does not expect to ask for any money.

Speaker Lane: Is there any further discussion?

. . . There being no further discussion, the motion was put to a vote and was carried . . .

Speaker Lane: Dr. Moore, do you wish to speak?

President-Elect Moore: I do not wish the floor until after the committee chairman is finished.

Speaker Lane: Thank you. I am sorry.

Dr. Axelrad: This concludes my report, and I move approval of the report as a whole.

Speaker Lane: Is there a second? As amended

Arthur J. Bedell, M.D., *Ex-President:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . . .

Dr. Axelrad: At this time I wish to convey my sincere appreciation to the members of my committee for their time and effort in helping me complete this report. These include the following: James L. Palmer, M.D., Broome; Julia Lichtenstein, M.D., New York; Philip J. Hust, M.D., Delaware; and John W. Latcher, M.D., Otsego.

Speaker Lane: Thank you, Dr. Axelrad.

Dr. Moore!

Section 104

Dissolution of Blood Banks Commission

President-Elect Moore: Mr. Speaker and members of the House, I wish to introduce a resolution to be acted on as part of this report by the House, without referral to a committee. Dr. Axelrad knows of this resolution:

> Whereas, the Reference Committee on Ancillary Groups has reported that the Blood Banks Association of New York State has transferred the North East District Clearing House to the American Association of Blood Banks for the consideration of $7,500; and
>
> Whereas, the Blood Banks Association of New York State has agreed to transfer the $7,500 to the Medical Society of the State of New York as reimbursement of funds advanced for use by the North East District Clearing House; and
>
> Whereas, the reference committee report states that the Blood Banks Association of New York State will operate "in the black" from dues of its members and will no longer request funds from the Medical Society of the State of New York; now therefore be it hereby
>
> *Resolved*, that the Blood Banks Commission be dissolved.

Speaker Lane: Is there a second?

Sol Axelrad, M.D., *Queens:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Section 105 (See 122)

Report of Reference Committee on Miscellaneous Business: Report of A.M.A. Delegates

Raymond J. Byron, M.D., *Schenectady:* Mr. Chairman and delegates, the first item of this report deals with the report of the A.M.A. delegates and, in addition, with that part of the president's message which we received that also deals with the A.M.A.

Your reference committee reviewed the reports of the A.M.A. delegates. These consisted of a report from the chairman, a report of the action of A.M.A. House of Delegates at the annual June meeting in Atlantic City, and a report of the December meeting in Dallas, Texas.

Your committee was impressed by the active participation of our delegates in these various meetings and feels that they should be congratulated for their hard work. We also noted the unanimous election of J. Stanley Kenney, M.D., as vice-president of the American Medical Association. This is a distinct honor for our Society. We also noted with interest Dr. Dorman's candidacy for trustee of the A.M.A. We feel that every effort should be made by the State Society to sponsor his campaign.

Included in this report are the items your committee felt would be of most interest to this House:

1. The report of the A.M.A. Commission on Medical Care Plans.

The important item in this report concerns free choice of physician as an important factor in the provision of good medical care. This should be the right of every individual and was strongly endorsed by the A.M.A.

2. Special report of the Judicial Council on the subject of osteopathy.

There was a general policy statement involved in this report. This briefly stated that all voluntary professional associations between doctors of medicine and those who practice a system of healing not based on scientific practices are unethical, except as established by law.

3. The report of the Committee on Preparation for General Practice.

Briefly, this committee stated that they recommended a two-year training program with all the definite basic ingredients necessary for general practice.

4. Social security was a subject that occupied several resolutions that appeared before the House. As we all know, our resolution calling for inclusion of physicians in this program was disapproved by the House of Delegates of the A.M.A. This brings up an important point which should be considered by all members of our State Medical Society. If we had had our full representation, this resolution might have stood a better chance of success. This is again a plea to our State members to become an active part of A.M.A. as advocated by our president in his report. Your committee strongly recommends membership in the A.M.A. and would urge some form of educational campaign on the part of the Council.

5. Relationships between physicians and hospitals. It was suggested that we go back to the 1951 Guide for Conduct of Physicians in relationships with institutions. This list contains many important facts, the most important of which is as follows:

"A physician should not dispose of his professional services to any hospital, corporation or lay body under terms or conditions which permit the sale of such physician's services by such agencies for a fee."

Your committee recommends that the next report of A.M.A. delegates clearly state the results of various resolutions passed on by this House and referred to the A.M.A.

Mr. Speaker, I move the adoption of this part of the report.

Earl W. Douglas, M.D., *Suffolk:* I second it.

Speaker Lane: Is there discussion?

Arthur J. Bedell, M.D., *Ex-President:* I call attention to one important statement. If the chairman of the reference committee will quickly go over his material, he will be able to refer to it. It says there, "in consultation with any legally entitled practitioner." In other words, that is the thought. So I ask, Mr. Speaker, that that one part be repeated for the information of the House. There are certain states where anybody can practice medicine legally. Are we in the State of New York adopting that as our guide, or are we talking about the legal practitioners in the State of New York?

Now, Mr. Chairman of the reference committee, have you that one particular phrase?

Dr. Byron: I believe I have it here, Dr. Bedell. Do you want me to read it again?

Dr. Bedell: Please.

Dr. Byron: That was a special report on the subject of osteopathy. I believe that is what you are referring to?

Dr. Bedell: Correct.

Dr. Byron: There is a general policy statement involved in this report. This, briefly stated, is that, "All voluntary professional associations between doctors of medicine and those who practice a system of healing not based on scientific principles are unethical, except as established by law."

Dr. Bedell: I move you, Mr. Speaker, that we ask our delegates to the A.M.A. session to have that reconsidered and the wording of that particular sentence rephrased.

Speaker Lane: There is a motion to reconsider. Is there a second to that motion?

J. Stanley Kenney, M.D., *Trustee:* I second it.

Speaker Lane: Is there discussion on this motion to reconsider this portion of the report? If not, those in favor will say "aye," any opposed "no." The "ayes" have it; therefore, this portion of the report referring to this particular item will have to be reconsidered by the reference committee.

Louis H. Bauer, M.D., *Ex-President:* Mr. Speaker, I am particularly interested in the section of the report calling for efforts on the part of the Council to start an educational campaign about membership in the American Medical Association. I have just read a resolution which was passed around this afternoon calling for compulsory membership in the A.M.A. Perhaps what I have to say would be better said in connection with that resolution, but as that calls for an amendment to the Constitution and Bylaws, I assume that it must lay on the table until next year and will not be discussed at this time, so I am going to say what I have to say right now.

I think it is rather disgraceful that the Medical Society of the State of New York with nearly 25,000 members has 17 delegates—I believe this year it will have 18 delegates.

We often hear the following: "What did the A.M.A. ever do for me?" "Why should I join?" If doctors would stop to realize that the entire environment of medical practice in this country today is due to the A.M.A., such questions would not be asked.

Take, for example, the activities of some of the A.M.A. councils and bureaus: Fifty years ago medical education in this country was at a low ebb and more or less of a laughingstock all over the world. Only a half-dozen schools really gave good medical education. It was the campaign of the Council on Medical Education and Hospitals that resulted in our having today nothing but first class schools and medical education in the United States which is not surpassed anywhere in the world. The former Council on Pharmacy and Chemistry, now known as the Council on Drugs, started investigating the reliability of various medicaments which were issued by the various pharmaceutical organizations. It gave the profession an opportunity to know what these various medications were, what could be expected of them, and so forth. One of the results was that the Federal government established its Commission on Food and Drugs and originally used much of the material issued by this Council for action. The Federal Trade Commission came along soon after that to prosecute some of these quacks and bar some of the quack remedies from being put on the market.

The Bureau of Investigation has shown up quacks and nostrums. I think the A.M.A. has been sued for something like $50,000,000 for the statements it has made about quackery and nostrums, and I think the total amount paid so far was in one case one cent and in one case one dollar, due to technicalities. The Council on Foods and Nutrition set up standards, particularly for food additives, special foods, and vitamins. The Council on Medical Physics has established regulations and made suggestions about various types of apparatus and about physical medicine.

The Council on Occupational Health established standards for medical care in industry. The Council on Rural Health has done the same for the rural areas—and succeeded materially in increasing the standards of medical care in those areas. The Bureau of Health Education has done a great deal in alerting the public via radio, television, and through its pamphlets for the teaching of health matters to students. The Legislative Committee has kept us alerted about various legislative proposals which have appeared in Congress, and I may say this—that were it not for the A.M.A. you would not be practicing in a free state today!

Everybody says the A.M.A. is always opposed to everything—never for anything. In the first session of this Congress, this present Congress, there were 15 bills on health matters on which the A.M.A. considered it important enough to take a stand. It approved 13 of the 15. On one of them it issued a statement of information for the benefit of Congress without taking any stand. It opposed one.

The publications of the A.M.A. are certainly outstanding. I am not going to take time to go into what they are. Recently the A.M.A. decided that all its members previously receiving the *Journal of the American Medical Association* would receive in addition one of the nine specialty journals, plus *Today's Health*, plus *AMA News*, the cost of which alone far exceeds the $25 membership dues requirement of the A.M.A.

We have a small New York delegation. We frequently hear cracks as to why we do not accomplish more. It is because we do not have the strength we should have. I see no reason why a man who belongs to his county society and must join the State Society should not also be compelled to belong to the A.M.A. I see no excuse for our not having more members in the A.M.A. I believe the chief reason is ignorance on the part of doctors because they do not know what the A.M.A. is or what it is doing for them.

I have had the opportunity in the last thirteen years to go twice around the world, back and forth across the Pacific, and twenty-five times to Europe. I have seen what has happened in these countries and I can tell you that whenever the medical profession has accomplished anything, whenever it has prevented further intervention of government into medical care, it was because the medical profession has stood as a unit, and when they have not stood as a unit they have gone down the drain, and that is what is happening in this country. We are not united. Our opportunity for unity is through the A.M.A.

Now you may not always agree with the A.M.A. You do not all agree with everything the State Society or your county society does. Is that any reason for not participating in them and taking part in their activities?

The following was given to me the other day. I am going to take the opportunity to read it to you. It is entitled "How to Kill an Organization":

1. Do not come to the meeting; or, if you do, come late. Do not think of coming if the weather does not suit, or if you have another engagement of less importance.
2. If you attend a meeting, find fault with the work of the officers (particularly the secretary) and other members.
3. Never be nominated for a committee. It is far easier to criticize than to do things. Be sure, however, to be annoyed if you are not appointed to a committee.
4. If you are asked by the chairman to give your opinion on an important matter, tell him that you having nothing to say. After the meeting tell everyone what should have been done.
5. Do nothing yourself. If other members get busy, grumble and declare that the association is run by a clique.
6. Do not listen to the business, and afterwards say that nobody ever tells you anything.
7. Vote in favor of something, and then do exactly the opposite.
8. Agree with everything that is said in the meeting and disagree outside.
9. Get all the benefits you can through the work of the association, but do not contribute anything yourself.
10. If you are asked to pay your overdue subscription, resent such impertinence and tender your resignation.

Possibly this is a little overdrawn but not too much so. That is too often the attitude of many doctors in this country. They are apathetic, and the medical profession, if it does not get together, is slowly cutting its own throat.

I certainly hope that this portion of this report will be adopted and that the Council will enter on a campaign of education about the necessity of the medical profession in this country standing together, because if they do not they are lost. I hope that this resolution will be adopted when it comes up next year.

Dr. Kenney: Mr. Speaker and gentlemen of the House, I would like to emphasize as strongly as I can everything that Dr. Bauer has just told you. I am not going to presume on your time to outline some of the things currently being done by the American Medical Association. They are of the utmost importance, and I do hope that your local county medical society will make every effort it possibly can to get every member to join the American Medical Association. It is the most important thing it should do.

With the situation in Washington today, confused as it is—we would be in a much worse situation if it were not for the continued, almost commuting, efforts of the officers and Council on Legislative Activities between Chicago and Washington in making a reasonable and honest attempt to get us out of this fix we are apparently in down there.

Please do that. Go back to your county societies and get everybody to join the American Medical Association.

Speaker Lane: Thank you, Dr. Kenney.

Fritz Landsberg, M.D., *Schuyler:* I move that the remarks of Dr. Bauer should be mimeographed and distributed to each single member of this Society in the State.

Speaker Lane: There is a motion on the floor. If you will wait until it is acted on and then make your motion, that will take care of it.

Walter T. Heldmann, M.D., *Richmond:* Mr. Speaker and members of the House, ten years ago Richmond County revised its constitution and made it mandatory for every member of the county society to be a member of the American Medical Association. (*Applause*) I recently reviewed with some of our officers our membership. As far as we know, this has not cost us a single member, so that we do have some experience with this type of activity, and I commend it to the other county societies.

Speaker Lane: Fine!

Is there any other discussion? If not, we will now ask for a vote on Dr. Byron's motion, with a portion to be reconsidered. Those in favor of the motion which will include reconsideration of that part of the report will say "aye," any opposed "no." It is carried.

Section 106 (See 43)

Report of Reference Committee on Miscellaneous Business: Voting Records of Delegates to the American Medical Association

Dr. Byron: The first resolution referred to this committee was resolution 60–10, which had to do with voting records of delegates to the A.M.A., introduced by the Medical Society of the County of Queens.

I will read the "resolved" as instructed:

> *Resolved,* that the chairman of the New York State delegation to the House of Delegates of the American Medical Association keep a voting record of each delegate on mandated resolutions; and be it further
>
> *Resolved,* that the voting record on mandated resolutions of each delegate to the American Medical Association be reported at the next meeting of the House of Delegates of the Medical Society of the State of New York.

Your committee felt that this resolution should be disapproved and draws your attention to the final recommendation given under the report of A.M.A. delegates. We felt that might solve this problem.

I move the adoption of this part of the report.

Arthur J. Bedell, M.D., *Ex-President:* I second it.

. . . There being no discussion, the motion was put to a vote and was carried. . .

Section 107 (See 54)

Report of Reference Committee on Miscellaneous Business: Medical Education in the United States

Dr. Byron: The next resolution referred to the reference committee was number 60–21. This was on the subject of medical education in the United States and was introduced by the Bronx County Medical Society. I will read the "resolved" portion:

> *Resolved,* that the Medical Society of the State of New York, by a resolution to the House of Delegates of the American Medical Association, request a review of the basic policies of the Council on Medical Education and Hospitals of the American Medical Association, the purposes of such a review to be to establish methods for the training of and increase in numbers of practicing physicians devoted to the personal care of patients.

Your committee approved this resolution in principle and would draw your attention to the fact that there already exists a functioning committee at the A.M.A. level which covers this particular problem and which was included in our report of A.M.A. delegates. No action is necessary.

I move approval of this part of the report.

Earl W. Douglas, M.D., *Suffolk:* I second it.

Speaker Lane: It has been moved and seconded. Is there discussion?

Thomas F. McCarthy, M.D., *Bronx:* I fail to understand the disposition of this resolution, because while approval in principle would mean to me that they agree with the purpose of the resolution, they then say that no action can be taken. I think that is a matter where we should spend a few minutes reviewing the status of medical care in the ordinary community hospitals. I have had the unfortunate honor of being president of the medical boards of three diverse hospitals. One is a large voluntary general hospital, one is the so-called geriatric hospital, and one is a proprietary hospital. The necessity for providing medical care for sick people has been lost sight of in the shuffle. In other words, in a large general hospital there is not an American graduate, and there has not been for years; yet there is nothing being done about it, and this is not an uncommon situation. This I think is the existing situation in practically nine tenths of the community hospitals in the State.

I think that we should recognize the fact that something should be done before we get to a crisis, which may occur next year in these institutions, where you will have no so-called house staff. This has followed the policy established by the Council on Medical Education and Hospitals.

The second thing is the Council on Medical Education and Hospitals and the foreign medical graduate examination, which will practically eliminate 50 per cent of what now constitutes the house staff of these hospitals, and apparently they are going to go through with this policy.

The other thing is you realize when you talk to the average young graduate of a medical school that he has had no contact with the man engaged in the general practice of medicine. Essentially he has been brought up in the atmosphere of teaching hospitals, with his internship served in teaching hospitals and his residency served in teaching hospitals. Therefore, he has not had any contact with the average man who serves in a community hospital.

I think, on the contrary, that if you approve this in principle, I would offer the substitute that the "resolved" of the original resolution be used as a substitute motion to the report of the reference committee.

Speaker Lane: You have heard Dr. McCarthy's substitute motion. Is there a second to that substitute motion?

Gerald D. Dorman, M.D., *Councillor:* I second it.

Speaker Lane: It has been moved and seconded that the substitute be placed instead of the reference committee recommendation. Is there any discussion?

. . . There being no further discussion, the substitute motion was put to a vote and was carried. . .

Section 108 (See 65)

Report of Reference Committee on Miscellaneous Business: American Medical Association Publications

Dr. Byron: Resolution 60-32, subject "American Medical Association Publications," introduced by the Medical Society of the County of Kings—there are more "resolved's" than anything else, and I will read them:

> *Resolved,* that the Medical Society of the State of New York go on record as requesting the American Medical Association to secure in original print, as soon as possible, enough copies of all its publications to provide all subscribers requesting them with copies, or have them reprinted with letter press in original size and on the same quality paper as the original, including the September and October, 1959, issues of the *Archives of Neurology* and any other American Medical Association publications already reprinted in reduced size; and be it further
>
> *Resolved,* that the Medical Society of the State of New York recommend to the American Medical Association that future issues be printed in sufficient quantity to supply all subscribers entitled to have them immediately upon publication, together with a reasonable reserve supply for future needs; and be it further
>
> *Resolved,* that a similar resolution be introduced in the House of Delegates of the American Medical Association; and be it further
>
> *Resolved,* that copies of this resolution be sent to the following organizations: Medical Library Association, Special Libraries Association, American Library Association, and Canadian Library Association.

Your committee recommended deletion of the third and fourth "resolved's" and approved the resolution as amended.

Again, Mr. Speaker, I move the adoption of this part of the report.

George E. Anderson, M.D., *Kings:* I second it.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Speaker Lane: Continue, Dr. Byron.

Dr. Byron: Mr. Speaker, I move the adoption of the report of the committee as a whole, except for the section we have to reconsider.

Speaker Lane: And as amended.

Dr. Byron: And as amended.

Speaker Lane: Is there a second?

Earl W. Douglas, M.D., *Suffolk:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Byron: Mr. Speaker, I would like to thank the members of my committee: Earl W. Douglas, M.D., Suffolk; Gilbert A. Clark, M.D., Rensselaer; Michael O. Armao, M.D., New York; and Walter T. Heldmann, M.D., Richmond.

Speaker Lane: Thank you, Dr. Byron. (*Applause*)

Now at this time I would ask the members of the reference committee to meet at Dr. Byron's request to reconsider this matter.

Fritz Landsberg, M.D., *Schuyler:* I now move that there be mimeographed the remarks by Dr. Bauer to send to each member of the Medical Society of the State of New York.

Speaker Lane: Did you make that as a motion?

Dr. Landsberg: Yes.

Speaker Lane: Is there a second?

George A. Burgin, M.D., *Councillor:* I second it.

Speaker Lane: Will the earliest *Newsletter* be satisfactory, Doctor? Everybody gets the *Newsletter.* Dr. Bauckus, would you like to speak to that?

Herbert H. Bauckus, M.D., *Trustee:* I would like to offer an amendment that this be taken care of in the *Newsletter* instead of as suggested.

Speaker Lane: Is there a second?

John L. Clowe, M.D., *Schenectady:* I second it.

Speaker Lane: Is there discussion of the amendment? If not, those in favor say "aye," opposed "no." It is carried.

On the question now, is there any further discussion? Those in favor of the motion as amended will say "aye," any opposed "no." It is carried.

At this time I would like members of Dr. Wagreich's committee please to sign the report at the rear of the House.

ADDITIONAL RESOLUTIONS

Section 109 (See 207) Resolution 60–56

Cease-and-Desist Order Against Podiatrists

Introduced by First District Branch

> Whereas, the First District Branch of the Medical Society of the State of New York approves resolution 60–23; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York obtain a cease-and-desist order against the podiatrists of the State of New York for performing surgery beyond the scope of their licensure.

Referred to Reference Committee on Legislation and Legal Matters.

Section 110 Resolution 60–57

New York International Exposition

Introduced by Medical Society of County of New York

Speaker Lane: Resolution 60–57, subject "New York International Exposition." I will read this from the Chair, anticipating that you may want to take immediate action without referring it.

> Whereas, an international exposition will be held in New York City in 1963 and 1964; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York recommend to the American Medical Association that it display an exhibit at this exposition.

What is your pleasure?

W. P. Anderton, M.D., *New York:* I move this be adopted at once by the House and not sent to a reference committee.

Speaker Lane: You have heard Dr. Anderton's motion. Is there a second?

J. Stanley Kenney, M.D., *Trustee:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 111 Resolution 60–58

Changes in Constitution and Bylaws

Introduced by Arthur F. Gaffney, M.D., Fifth District Branch

> Whereas, the House of Delegates in 1958 authorized implementation of as much of the Survey Report as practical; and
>
> Whereas, several delegates of this convention feel that in the future more of the report should be implemented; now therefore be it hereby
>
> *Resolved,* that the following notice of change of Constitution and Bylaws be introduced in accordance with the provisions of Article XIII of the Constitution and Chapter XVII of the Bylaws of this Society, to wit: as printed in the annual report for the House of Delegates 1959, pages 1652 to 1659, Constitution (2), (3), (4), (5), (6), (8), (9); Bylaws (1), (2), (3), (4), (5), (6), (8), (9), (10), (11), (12), (13-1, 2, 3, 4, 5, 7, 8, 9, 10, 11), (14), (15-1), (16), (17), (18), (19), (20), (21), (22-1, 2).

Referred to Special Committee on Constitution and Bylaws.

Speaker Lane: Resolution 60–58, subject "Changes in Constitution and Bylaws," will be referred to the Special Committee of the House on Constitution and Bylaws and will therefore lay over until next year.

We come now to the report of the Reference Committee on Reports of Officers by Dr. Sullivan.

Paul H. Sullivan, M.D., *Nassau:* Mr. Speaker, before I start, I would like to ask for the indulgence of the House because this is the first time that I have appeared here as the chairman of a reference committee, and I have the confusing problem of having a majority and a minority report.

REFERENCE COMMITTEE ON REPORTS OF OFFICERS

Section 112 (See 20)

Report of Reference Committee on Reports of Officers: Report of President

Paul H. Sullivan, M.D., *Nassau:* This reference committee has considered the reports of the president, secretary, treasurer, Board of Trustees, Budget Committee, executive director, and belated bills. This material has already been printed and distributed in the section entitled "Reports of Officers," pages 21 to 53, inclusive.

We would like to thank Henry I. Fineberg, M.D., for his detailed report and his successful completion of his arduous duties as president. It should be remembered that this is the first complete year since we moved to new quarters and that the problems of his office have not been minor ones. In his supplementary report the president continued to challenge us with his excellent presentation of problems facing the medical profession today. We feel that this report is one that should be read and reread carefully by each member of the House. Particularly important is our president's emphasis on the necessity of component county societies and the State Society to demand respect for and adherence to our code of ethics.

Mr. Speaker, I move approval of this portion of the report.

Speaker Lane: Is there a second?

Thurman B. Givan, M.D., *Ex-President:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 113 (See 19, 30)

Report of Reference Committee on Reports of Officers: Reports of Secretary, Treasurer, Board of Trustees, Budget Committee, War Memorial Committee, and Executive Director

Dr. Sullivan: We also wish to thank Secretary William L. Wheeler, Jr., M.D.; Treasurer Maurice J. Dattelbaum, M.D.; the Board of Trustees; the Budget Committee; the War Memorial Committee; and our executive director for their cooperation in the filing and explanation of these reports.

I move the approval of this portion of the report.

Thomas M. Flanagan, M.D., *Chenango:* I second the motion.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 114 (See 21)

Report of Reference Committee on Reports of Officers: Report of President-Elect

Dr. Sullivan: We compliment the president-elect on his extensive report to the House of Delegates. We would recommend that delegates of the State Society follow the policy established by the House of Delegates when dealing with matters that have been acted on by the House of Delegates. We suggest that this report too should be read and reread by members of this House.

I move approval of this portion of my report.

Speaker Lane: Is there a second?

Peter J. Di Natale, M.D., *Councillor:* I second it.

Speaker Lane: It has been moved and seconded that this portion of the report be approved. Is there discussion?

Ezra A. Wolff, M.D., *Assistant Secretary:* I rise to try to save some of the time of the House. It has been customary in the American Medical Association House to consider that when a report is given by a chairman of a reference committee, it has already been seconded by the other members of the committee who have signed it; therefore, no additional second is required from the floor. I should like to ask, Mr. Speaker, that we follow that custom here, that no additional second be required from the floor since the members of the committee who have signed the report are in effect seconders of the report.

Speaker Lane: It will save some time, and I will be glad to accept that suggestion.

Continue, Dr. Sullivan.

Section 115

Report of Reference Committee on Reports of Officers: Operational Structure

Dr. Sullivan: I feel that in the interest of time, various matters should be taken out of context from all these reports and reported on with our recommendations. We should group them as related to the function of our headquarters and as matters pertaining to possible changes in Bylaws and other specific problems:

A. *Operational Structure*—(1) Schedule of Meetings: Many meetings are held with our State Medical Society heads in the course of the year. It is of the utmost importance, since staff personnel have to be assigned, that any meetings other than those of an urgent nature be arranged so that the most efficient use of our staff personnel may be accomplished. We realize that our members who come from long distances prefer having meetings arranged on a one- to two-day schedule; however, it seems that it will be possible to space certain other committees over a less crowded period.

I move that this part of the report be accepted.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Sullivan: (2) Executive Director: It was unfortunate that the duties of the executive director were not specifically defined. This has now been adequately handled by the Management Survey Committee. It is recommended that in the future any such problems be handled by this committee.

Mr. Speaker, I move this portion of my report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Sullivan: (3) It is noted with regret that there is a problem of securing trained personnel. We feel that the salary schedule should be made adequate to cope with this inflationary problem. We note with approval the consolidation of printed forms which is a proper step toward eliminating additional costs to the Society. We also note with approval the procedure which has been instituted for providing holidays, vacations, physical examinations, and sick leaves for members of the staff. We also approve of the policy of requiring reports on assignments for various members of the staff and committees. This is particularly advantageous since it provides us with information and a report on the funds expended.

Mr. Speaker, I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 116 (See 88, 121, 185)

Report of Reference Committee on Reports of Officers: Matters Requiring Changes in Bylaws

Dr. Sullivan: B. *Matters Which Would Require a Change in Our Bylaws*—(1) Management Survey: We recommend that the Council and Board of Trustees be continued since it is felt that a finance committee that would supersede the duties of the Board of Trustees would not improve our position and would probably result in greater confusion.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Sullivan: Mr. Speaker, the next portion of my report is the controversial part, on which I have a minority report. I shall read mine, and then do we get Dr. McCarthy's?

Speaker Lane: We will rule on that in a minute.

Dr. Sullivan: (2) A.M.A. Membership: Several attempts have been made in the past several years to increase our membership in the A.M.A., none of which have been successful. Despite the fact that we are the largest state medical society in the country, we have a shameful representation in the House of Delegates. Since all of our problems must be settled on a national level and since the A.M.A. has led the way in scientific, educational, and professional problems, we can present a united front on these problems only by all members of the Medical Society of the State of New York becoming members of the A.M.A.

Mr. Speaker, I move approval of this portion of the report.

Gerald D. Dorman, M.D., *Councillor:* Could we hear the minority report on this particular point, and could I also request that we hear from our legal counsel on this problem?

Speaker Lane: We will first hear the minority report from Dr. McCarthy.

Thomas F. McCarthy, M.D., *Bronx:* The minority report is as follows:

On the recommendation of compulsory membership in the American Medical Association, the majority of the members in the metropolitan area have expressed a desire not to require this qualification for membership in the county societies of this area. They would consider such a step divisive and that it would produce a loss of membership to the county and State societies.

I move a substitute motion of the minority report for the recommendation of the reference committee.

Speaker Lane: The ruling of the Chair is that this minority report is read for information and cannot be acted on except by a motion to substitute it for the report of the committee. Dr. McCarthy, I believe, has moved that his minority report be substituted for the majority report, this portion of the majority report. Is that right, Dr. McCarthy?

Dr. McCarthy: Yes, sir.

Dr. Dorman: Is Mr. Martin here?

Speaker Lane: That would have to be seconded. Is there a second to Dr. McCarthy's motion?

Leonard L. Heimoff, M.D., *Bronx:* I second it.

William F. Martin, Esq., *Legal Counsel:* It is my personal opinion that a person like a lawyer is derelict in his duty if he does not belong to the national organization that represents his profession. I have tried to encourage everybody that I know to join the American Bar Association, but you can belong to a host of organizations including the New York State Bar Association without belonging to the American Bar Association.

I am not here to suggest any changes in the majority amendment. This is not to be acted on at this time. As I take it, it is a proposed change in the Constitution, and we can study the thing at some length during the ensuing year.

Monroe M. Broad, M.D., *Queens:* On the substitute motion, I would like to ask the submitter of the minority report on what grounds he makes the statement that the majority of the members in the metropolitan area have expressed their desire not to be members of the American Medical Association. I am not aware of any referendum or any other means of poll that has been taken to get this desired information, and it is my belief that it is the contrary.

Dr. McCarthy: It has been acted on by several county societies in the metropolitan area. This goes back ten years that I know of, back to 1949. There was one when it was first issued, and it created a great deal of disturbance then. I know that there were motions to require membership in the American Medical Association back ten or eleven years ago.

The only thing I can say then is if you feel that your county society is in favor of compulsory membership in the American Medical Association, I think it should be introduced in those county societies and passed, and then you can safely come to this meeting and vote in favor of it. But I would also say that over two thirds of the membership of the State Society is in the metropolitan area. I think unless you are prepared to support your stand that the majority are in favor of it, you should not go ahead with it.

I am a member of the American Medical Association. I would say the recommendation is very good, but I cannot go along with it unless we are prepared to get our members to support it.

Thomas M. d'Angelo, M.D., *Queens:* May I raise a point of order? To substitute the minority report for the majority report is useless. If you defeat your majority report, you are in the same position, so I see no need to substitute one for the other.

Speaker Lane: The rules of order call for this procedure.

Louis H. Bauer, M.D., *Ex-President:* I would like to comment on the point that our Constitution does not provide for compulsory membership in the American Medical Association. It does not provide for compulsory membership in the State and county societies either. It reads that this Society shall be known as the Medical Society of the State of New York. The county society's reads that this society shall be known as the Medical Society of the County of New York, or County of Nassau, or County of Herkimer, or whatever it may be, and specifies what the aims of that society are.

One of the points which counsel mentioned, to bring the medical profession of New York together in unanimity—I am not quoting it exactly, but that was the substance of it—that is what we want to do. They are not a unit with only two thirds of them in the American Medical Association. Nothing can be done about this this year. This does require an amendment to the Constitution and Bylaws, and, Mr. Speaker, it seems to me we are wasting time on deciding whether we will have a majority or a minority report on this. We have already voted in this House that this matter is going to be studied by the Council, who are going to conduct an educational campaign among the members of the State Society.

I would move, Mr. Speaker, that both the majority and minority reports be referred to Council for appropriate consideration in connection with that campaign and that the recommendation be brought back next year as to what action should be taken.

Herbert H. Bauckus, M.D., *Trustee:* I second it.

Speaker Lane: A substitute motion for the other two motions?

Dr. Bauer: Yes.

J. Stanley Kenney, M.D., *Trustee:* I second it.

Speaker Lane: It has been moved and seconded by Dr. Kenney. Is there any discussion on Dr. Bauer's substitute motion for the first substitute motion? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Continue, Dr. Sullivan.

Dr. Sullivan: (3) Matters Which Require a Change in Our Bylaws: This concerns the report of the Budget Committee.

Our reference committee has reviewed with alarm the reports of the treasurer and Budget Committee. It is perfectly obvious to any one who reviews these reports that we have embarked on the road to deficit spending and that our finances are rapidly reaching the point where we will no longer be able to invade reserves or other funds. There are many items on the agenda for approval by the House which will require expenditure of additional funds, such as payment of section delegates expenses and relief for indigent physicians. Therefore, we feel that we must recommend that a dues increase of $10 be approved, effective January 1, 1961.

Mr. Speaker, I move approval of this portion of the report.

Could I also state this is where there is the other minority report?

Speaker Lane: Yes, I have that in front of me. There is a minority report on this portion of the report. Dr. McCarthy.

Dr. McCarthy: The recommended raise in dues is $10 a year. Inasmuch as the chairman of the Board of Trustees in both his regular report and his supplementary report has positively stated that he sees no reason to vote an increase in dues this year, and inasmuch as the chairman of the Board of Trustees is the responsible fiscal officer of the Medical Society of the State of New York, I must go along with this recommendation.

Now may I also discuss this or give my reason after it is seconded, if it is seconded?

Speaker Lane: Yes. Is there a second to Dr. McCarthy's motion?

Arthur J. Bedell, M.D., *Ex-President:* I second it.

Speaker Lane: It is now open for discussion.

Dr. McCarthy: There are several things that I think should be cleared up in discussing the finances. One of them is that the total income of the Society from dues has always been confusing. If I may read, I will call your attention to the report of the secretary. The total membership of this Society in 1959 was 24,689 members. I would take that, especially when you have removed the number of delinquent members, etc., to be the members who pay dues. Now I have been told that that is not so.

Then if you will look on page 31 of the treasurer's report, you will see in the second paragraph the increase in dues income results from an increase in the membership. In 1959 there were 24,689 dues-paying members. I asked and no one yesterday could tell me. They know if the treasurer's report is accurate and the secretary's report is accurate, there are about a thousand members who are not paying their dues because the income from dues listed was $584,000, when it should have been $615,000. There is an explanation. I think this inaccuracy of reporting membership and dues-paying membership should be corrected in order that you can determine how much money and how large a deficit you are going to have. I spoke to the secretary, Dr. Wheeler, and I think he could give the explanation.

Speaker Lane: Dr. Wheeler has the figures. Let him give those, and Dr. Bauckus wants to discuss the matter.

Secretary Wheeler: As a point of information, as of December 31, 1959, there were 24,689 active members. Those who have paid dues for this period of time are 22,929. There were dues remitted on 160 persons, and there are dues remitted of course on life members to the number of 1,260. There are 340 new members who came in after October of 1959, who do not pay dues until 1960, making a total of 24,689 members.

Dr. Bauckus: Mr. Speaker and members of the House, I have been referred to here in this minority report, which I have just seen this afternoon for the first time, that I am the responsible fiscal officer of the Medical Society of the State of New York. I think you are much more fortunate in that I am not. I am the chairman of the board and act as chairman, but I have no more power than the other trustees; in fact, I am just a lame duck at the present time, and after tomorrow I will have nothing more to do with the legal action or the regular action of the Board of Trustees, so I don't feel that you should pay too much attention to what I say. As a matter of fact, I always feel you should not anyway. However, I am the fellow that does stick out his neck some of the time.

I would like to call your attention to what has often happened, as we have said before in this House. When you talk about the spending of money, you should have some approval on the question, especially by the Board of Trustees, who have, as it is said, the final power on the approval of expenditures of money.

Well, this afternoon you approved at first, until it was amended, sending out a communication, a very important one, of Dr. Bauer's remarks by mail. What we did this afternoon in making that change saved you about $2,500. It is estimated that it would cost that much to do it. We can do it just as well through the means of our regular communications.

That is a difficulty that the Board of Trustees has in regard to actions here. That is a difficulty that the trustees have in regard to actions of the Council.

I would like to say that during the year the Council has made many requests of course, and the Board of Trustees has almost always approved. Sometimes there was some reason for doubt, but most of the time everything has been approved, and the trustees have never interfered with what they thought was the proper conduct of business by the Council.

In the meetings of the Board of Trustees on March 24 and in April of this year, we had a great deal of discussion on the question of raising the dues. I want to speak on this because I don't want any of my brother trustees to feel that I in any way have tried to take advantage of them simply because I am chairman. I did not quite say what this reports, but in general I did say that I did not think we ought to raise the dues this year.

At the March meeting we agreed that if the present expenditures continued, we should alert the House that in another year there would need to be a raising of the dues.

In April the trustees had to some extent, some of them, changed their minds and thought that we should do it this year because the matter takes a little time to get underway; it would not start until next January. We then agreed, and it is in our minutes and I thought I had it in my supplementary report, that this matter should be left to the reference committee. In the final analysis it is left to the House of Delegates, and that was the intention of the Board of Trustees.

I did say in my supplementary report I did not think it was necessary to raise the dues this year. I feel that we should live within our dues income except for emergencies, and I feel that we generally have done that. I think when we are running programs that require additional expenditures, we should study them and get them ready before we ask for money that we intend to use. I have said many times since the time they raised the dues five years ago that I was sure if we did not change our policies, we soon would be asking for another dues increase; in fact, it has been delayed in my opinion quite a bit. I am surprised it lasted this long.

About the Management Survey Report of 1958—I want to call attention to the fact that my criticism or disagreement with that report has nothing to do with the present Management Survey Committee. Maybe that name should be changed to some extent. I refer to the original report. Now, as I see it, the main thing we did there was to make a change in the work of the secretary and of the executive director, and we did add some expenditure for that. However, it appears it has not been acted on as yet by the House. It appears that the Management Survey Report in its remaining portions will not be adopted this year, and it may be that it will not be adopted at all, and I say in my supplementary report I sort of have doubts about it and always have had doubts about it.

Speaker Lane: Is this in reference to the minority report concerning the raising of dues?

Dr. Bauckus: Yes, the reference why in the minority report he thinks the dues should not be raised.

Speaker Lane: All right.

Dr. Bauckus: We have lost apparently the obligation of the Blood Banks Association, which cost us a considerable sum of money over a few years. There have been other costs. I did say in my first report that I felt we should have something done about indigent physicians. I would like to say that you don't hear as much about this. Personally, I have been asked about it many times, and I have a letter on the question. Fortunately, the Physicians' Home is doing a great deal of that work, and it is important for us that they do so. They know that my position is that I thought we should learn, that we should have gone along without a raise in dues this year, seeing that many expenses that we might expect will not be forthcoming just yet.

On the other hand, I realize that if we continue with our expenditures the way we have, we would finally need to raise the dues. I hope that explains my position here and explains what the idea of the Board of Trustees in general was.

Thank you!

Speaker Lane: Thank you, Dr. Bauckus.

Dr. Holcomb has the floor, and Dr. Freedman, you are next.

Frederic W. Holcomb, M.D., *Trustee:* Mr. Speaker and members of the House, I appear before you as a rare bird, a Democrat that does not believe in deficit spending. I have been on the Budget Committee for at least ten years I am sure. I have been on the Board of Trustees only three years. However, I feel, gentlemen, that for the year of 1959 we had a deficit of $45,173.30. That is according to the auditor's report, Patterson and Ridgeway, which you will see in your reports. That is for 1959, gentlemen. If we wait until next year to increase our dues we will have a 1959, a 1960, and a 1961 deficit which could be projected at $135,000.

I still say that we may have a legal right to dissipate and spend reserves that have been built up in this House for one hundred or one hundred and fifty years, but I contend that we do not have a moral right.

I speak against the minority report, and ask this House to consider an increase in dues this year.

Samuel Z. Freedman, M.D., *Assistant Treasurer:* I am not talking pro or con. I just want to know whether we would not save some time if we put this over to the consideration of the resolution which has for its purpose the raising of dues. I refer to number 60–54, which is specifically on this subject. I question whether or not a reference committee can come in with a recommendation about a specific increase in dues when the report has not called for it. I think that if we could postpone this to the consideration of the resolution, we could close it all up at one time.

Speaker Lane: You have not made a motion, however?

Dr. Freedman: No.

Speaker Lane: Are you speaking to the minority report?

Dr. d'Angelo: Yes.

Speaker Lane: Go ahead.

Dr. d'Angelo: In discussing this minority report I am going to ask some questions and ask whether either the treasurer or the Board of Trustees can answer these. I will continue as I go along. I note here, first of all, a deficit of $176,000, plus $45,000 from last year, which we had, which would be required to be taken away from the reserve funds of over $200,000. I am sure that although there is an anticipated deficit of $176,000, we will probably not spend that much, but say the deficit would be $150,000. Now, as we go along, the way to reduce expenditures drastically—has the chairman of the Board of Trustees or the trustees taken it upon themselves to reduce these drastically? I think not because if they had, they would not approve the budget with such a large deficit. So we have the approval of the Board of Trustees that this budget is a failure.

The next thing I would like to know is what is the sum total of our reserve funds?

Maurice J. Dattelbaum, M.D., *Treasurer:* About $730,000 as a reserve fund. It has been given to me as that here. As we go along, how long will seven hundred some odd thousand dollars go if we don't drastically reduce our expenditures? I don't see where we are going to reduce them; in fact, the chances are they are going to be increased from here on in. I, with Dr. Holcomb, am one of the few individuals left who like to pay their way as they go. If we can't drastically reduce the expenditures, then I think we should raise the dues.

Speaker Lane: Gentlemen, is there any further discussion?

Dr. Dorman: The question of raising the dues came up in the caucus of the New York County delegation. Unfortunately for many, Sam Freedman was present, and he got taken up and down and across the board as to exactly where the money was being spent and how much. After we had gone into it very carefully, it was the unanimous decision that New York County would oppose an increase in dues at the present time. They realize fully that it will probably be necessary to raise the dues next year; therefore, New York County will support the minority report.

Speaker Lane: Is there further discussion on the minority report?

Walter T. Heldmann, M.D., *Richmond:* One thing that I think we should take into consideration when we are voting on this minority report, and that is the fact that we would like to put on a campaign next year to have every member of the State Society and its component medical societies become members of the American Medical Association. I think we have to consider very seriously whether or not an increase in dues at this time, the timing of it, will interfere with that campaign. In our county it is mandatory of course. I would like to tell you for your information that the question of changing the bylaws came up again two years ago, and there are only three people who voted in favor of dropping that part of the bylaws that made it compulsory. I feel it is the county medical society and not the State Society that should make it compulsory for its members to become members of the American Medical Association, and I am afraid if you raise the State dues you might interfere with that campaign.

Gerald V. Farinola, M.D., *Nassau:* In this morning's caucus it was factually reported that members of one association pay $1,100 dues per year in Ohio. Therefore, the fears of some of our members that we will cause a division of forces by raising dues or by having each one join the American Medical Association appear a little bit ridiculous. We are getting away with murder, and for what we are getting our dues have been for the past ten years on the low side. (*Applause*)

Speaker Lane: Is there further discussion?

Dr. Bauckus: I failed to mention a very important item relating to service. I do not believe we should use our reserves or our surplus funds. We have some very important funds that really we should not touch. The last few years we have been building up a Pension Fund. I merely wanted to stay within our needs until we had money to do more, but I would not want to touch any surplus funds.

Dr. Bauer: Mr. Speaker, the delegate from Richmond County questioned whether this might affect membership in the American Medical Association. I think he failed to take one thing into consideration. I doubt very much if there is any member of the State Society who does not subscribe to at least one of the publications of the American Medical Association, which costs him $15 to begin with, and many of them subscribe to two, which is $30, whereas the dues to the American Medical Association are only $25. Those people would be saving money so I doubt very much whether any question of dues increase now or next year would have any material effect on any campaign for membership in the American Medical Association.

Dr. Dattelbaum: Mr. Speaker and members of the House, I appeal to you, to let you know that the boat is sinking. There is a leak. We are in a deficit, and there is no use delaying action that can remedy the condition by 1961. Why go to 1962, when we will have a bigger deficit? There are demands from you gentlemen that must be met if we want to increase the importance of the State Medical Society, and it costs money. The dues were raised last time about five or six years ago, and since then we went through this period of inflation and scraping the bottom of the barrel, so I appeal to you gentlemen that the $10 in 1961 is more important than more in 1962.

Speaker Lane: Thank you, Dr. Dattelbaum. I might comment at this point, being as impartial as I can, we have had a great deal of discussion, pro and con, on this matter.

Herbert S. Ogden, M.D., *New York:* I just want to rise to congratulate Dr. Dattelbaum on the depth of the barrel because it says on page 38 of the Handbook (Journal, April 15, 1960, page 1306), the combined value of the Medical Society of the State of New York's fund is $1,503,375. If Dr. Dattelbaum is scraping the bottom and it still has a million and one half in it, he has a pretty good barrel.

Speaker Lane: Is there any further comment or discussion? If not, you are now voting on the minority report, a substitute motion, which, if the substitute motion is passed, defeats the raise of dues. Those in favor of the substitute motion, in other words, the minority report, will say "aye," those opposed "no." It is defeated. Do you doubt it for a second on that voice vote?

. . . There was no dissent . . .

Speaker Lane: Now on the original motion of the reference committee, which is that the dues be increased $10 per year effective as of January 1, 1961. Is there further discussion on that motion? If not, those in favor will say "aye," opposed "no." The motion is passed.

Continue, Dr. Sullivan.

Section 117

Report of Reference Committee on Reports of Officers: Problems to Be Given Special Consideration

Dr. Sullivan: C. The committee recommended that the following problems be given special consideration by the appropriate officers or committees of the Medical Society of the State of New York.

(1) We should foster better relations with the State Society and allied groups through committees for public education and the Woman's Auxiliary.

(2) We should encourage joint conferences in various areas of the State which would deal with problems of medical economics, labor, health, etc.

(3) We should foster recommended changes in the autopsy bill.

(4) We should continue our good relationship with the New York State Health Department.

(5) We should approve of the joint committee on adoption procedures.

(6) We should approve of the joint commission of the Bar Association.

(7) We should continue to arrange and support the meetings of officers and chairmen and secretaries.

(8) We should endeavor to improve our relations with the specialty groups, particularly those who have delegates to the State Society, and insist that reports be presented to the State Society.

(9) We should contact the Joint Commission on Accreditation of Hospitals in an attempt to secure representation for the Medical Society of the State of New York.

I move approval of this portion of the report.

Speaker Lane: Is there discussion?

Gerald Dorman, M.D., *Councillor:* If I may, I would like to move that (9) be separated from the rest because I would like to speak on it.

Speaker Lane: That is approved.

Ezra A. Wolff, M.D., *Assistant Secretary:* Mr. Chairman, I should like to question whether approval of this motion will carry with it the suggestions that these joint committees and commissions are now approved, or does this mean that they should be studied with a view to approval? I think that we are not in a position now to know what all of these things entail. I would think that the wording might better be, particularly in (5) and (6), that we should study with a view to approval.

Speaker Lane: It is my interpretation that the committee is recommending that the following problems are to be given special consideration, which would involve I think what you say. Do you want to comment on that, Dr. Sullivan? I think that is what Dr. Wolff wants to get clear.

Dr. Wolff: If we recommend that they should be approved, if we take that action now, they are approved. I think that should be made clear.

Dr. Dorman: I want to take up (9) when you get to it, or is that going to be separate?

Speaker Lane: Yes. We agreed to the separation, the division of the motion. Is there any discussion on the first eight items?

Arthur J. Bedell, M.D., *Ex-President:* The question of (8), Mr. Speaker, will the reference committee chairman read (8)? Please read it carefully, gentlemen.

Dr. Sullivan: "We should endeavor to improve our relations with the specialty groups, particularly those who have delegates to the State Society, and insist that reports be presented to the State Society."

Dr. Bedell: My question, Mr. Speaker, is why we should request reports from these special things? The House is cluttered enough now.

Speaker Lane: Dr. Sullivan, do you wish to comment on that?

Dr. Sullivan: Our purpose in this matter was that since we are now going to pay the section delegates, we thought we ought to get a report.

Speaker Lane: Is there any further discussion?

Thomas F. McCarthy, M.D., *Bronx:* I think if you substitute instead of the words "specialty groups" the word "sections," that is what we meant in the discussion rather than "specialty groups." We wanted a report from the sections, so therefore substitute "sections" for "specialty groups."

Speaker Lane: Does that clear the matter, Dr. Bedell?

Dr. Bedell: No sir, Mr. Speaker. May I speak again?

Speaker Lane: Yes.

Dr. Bedell: Gentlemen of the House, what do these special groups, these section delegates, bring to this House? They do not represent any section of your country. They do not represent any group from a county. All they do is dilute the real decisions that you properly elected members bring to this House. There is not a single reason why the section delegates should be seated on this floor. What do they represent? Take the trouble to go over the method of election of a section delegate. I fully appreciate that I am antagonizing 21 men, but that does not bother me any. They have no program to bring before you for consideration. Frequently a man is elected a delegate who has never ventured out of the State. I therefore move that that portion of the report be deleted.

Speaker Lane: Is there a second?

John J. Masterson, M.D., *Trustee:* I second it.

Speaker Lane: That amendment is now open for discussion, which is to delete (8) of the report.

George J. Lawrence, Jr., M.D., *Councillor:* I would like to second the motion to delete this. I think it is very poor. I have a question in my mind about what represents poor relations with our sections at the present time. I don't see what the reason for this is at all if it refers to the sections, the scientific sections. I have a feeling that it probably does refer to outside specialty groups, and of course they have no right to bring in any reports to this House, so it is a question whether it refers to outside groups or refers to part of our Society. What is wrong with our relations with our sections? I think this is very poor, and I think it should be deleted.

Speaker Lane: You have heard the motion to delete discussed.

Thomas M. d'Angelo, M.D., *Queens:* Actually each section does send in its report to the Medical Society of the State of New York. Every year the program of each section is printed in the bulletin, and that is in essence a report of the section. If at any time the section has anything else to report after its meeting, it does so to the House of Delegates directly through the delegate, but they do make a report.

Speaker Lane: Is there any further discussion on the amendment to delete this section? There being none, those in favor of the motion, which means we delete paragraph 8 of section C of the report of the Reference Committee on Reports of Officers, will say "aye," those opposed "no." The motion is carried, and therefore paragraph 8 of section C will be deleted.

We now have with us the motion to act at this moment on the first seven sections. Is there discussion on those? If not, those in favor of the motion to approve this portion of the report will say "aye," any opposed "no." It is so ordered.

Paragraph 9 is now open for discussion. Dr. Dorman has the floor.

Dr. Dorman: As a member of the A.M.A. committee that some years ago investigated the Joint Commission on Accreditation of Hospitals, I would like to move deletion of this portion of the report. The reason for that is that the Joint Commission on Accreditation is made up of representatives of the American Medical Association, the American Surgical Society—

Speaker Lane: The American College of Surgeons.

Dr. Dorman: The American College of Physicians, the Hospital Association, and at one time representatives of the Canadian Medical Association—that is no longer so. We have had frequent requests of the American Medical Association at various times for various general groups, particularly general practitioners, to be represented on the Accreditation Commission. These have been turned down because the American Medical Association always sees to it that at least two of its members are general practitioners who are sitting on the commission. It would be extremely revolutionary to have one medical society represented on the commission. The commission cannot very well continue to be expanded to take on more members. I believe it has 23 members at the present time. If this continues to be expanded, you will find that all 50, or at least many of the 50 state societies will ask for representation on it. Because we are represented through the American Medical Association, I therefore move to delete paragraph 9. I think we would be a little absurd to request it and you would not have a ghost of a chance of having it granted.

Speaker Lane: Is there a second to that motion?

J. Stanley Kenney, M.D., *Trustee:* I second it.

Speaker Lane: Is there further discussion? If not, those in favor of the motion to delete paragraph 9 will say "aye," opposed "no." It is so ordered.

Continue, Dr. Sullivan.

Section 118 (See 31)

Report of Reference Committee on Reports of Officers: Belated Bills

Dr. Sullivan: The committee recommends that the belated bills, as submitted, be approved for payment. I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 119 (See 51)

Report of Reference Committee on Reports of Officers: Care of Indigent Members

Dr. Sullivan: Your reference committee has considered the following resolutions:

Resolution 60-18. First, I should read the "resolved":

> *Resolved,* that the trustees of the Medical Society of the State of New York allocate 25 per cent of the income derived from the investment funds of the Society for the relief of indigent members of the Medical Society of the State of New York and their families.
>
> The committee recommends that the "resolved" in this resolution be amended to read:
>
> *Resolved,* that the trustees of the Medical Society of the State of New York establish a fund for the relief of indigent members of the Medical Society of the State of New York and their families.

I move the adoption of this portion of the report.

Speaker Lane: You have heard the motion. Is there discussion?

Herbert H. Bauckus, M.D., *Trustee:* I would just like to say that having had the idea of starting a fund— I had not thought of 25 per cent, which would be about $65,000 or so. I thought if we started with a fund of 5 or 10 per cent, that much would be a good way to start, and the Council and trustees in working this out in the next year could possibly make a better accommodation. I think 25 per cent is too much.

Speaker Lane: The "resolved" does not include a specific figure.

Dr. Sullivan: The new "resolved," Doctor, reads:

> *Resolved,* that the trustees of the Medical Society of the State of New York establish a fund for the relief of indigent members of the Medical Society of the State of New York and their families.

There is no 25 per cent mentioned in it.

Thomas M. d'Angelo, M.D., *Queens:* I take it to mean that this fund will be taken purely from the dues. Do the trustees or Council in any way have any idea of appealing to the membership at large to send in contributions toward this fund?

Speaker Lane: Who would like to comment on that?

Dr. Bauckus, do you have any further comment on that?

Dr. Bauckus: I think that the Council, the Board of Trustees, and the Planning Committee will have the best idea of what will be required also as to whether or not a portion of the funds are used from our regular purposes. I think that the Council and the Board of Trustees might be left with that the first year.

J. Stanley Kenney, M.D., *Trustee:* Mr. Speaker, I am probably treading on dangerous ground and Senator McNamara or Representative Forand will hit me because we are all for taking care of people in need. The county medical societies have mechanisms to do this. I think the whole matter requires more study. It should be taken care of at the local level. We do have a Physicians' Home, which takes care of certain of the members in this category, and I think at this time I would speak against the motion and, if it some time needs further exploration, that it be referred to the Planning Committee.

Speaker Lane: I don't believe Dr. Kenney made a specific motion.

Michael J. Crino, M.D., *Monroe:* I wonder how Dr. Dattelbaum scraped the bottom of the barrel when we are now asked to establish a fund.

If we are going to take care of indigent individuals when we already have a Physicians' Home, and if we have or are going to raise the dues and we have already scraped the bottom of the barrel, why should you continue to deplete that fund that you are going to raise by raising the dues in order to take care of something else that somebody else is taking care of already?

Ezra A. Wolff, M.D., *Assistant Secretary:* It has been established where we have resolutions calling for the Society's funds, the makers of the resolutions should incorporate therein some idea of the source of the fund. That was done in the original resolution. It has not been done in the substitute resolution. Inasmuch as there have been several ideas expressed on the floor now as to why this might or might not be desirable and it is obvious this requires more study than it has had, I would like to move, Mr. Speaker, a substitute resolution to the effect that it now be resolved that the matter be referred to the trustees for study and to report back to this House at its next session.

Dr. Kenney: I second it.

Speaker Lane: You have heard the substitute motion. Is there discussion on the substitute motion?

Felix Ottaviano, M.D., *Madison:* I concur with the idea of the motion, but I should like to have an answer when this study is to be made up. Until now I was under the impression that we were taking care of our indigent physicians fairly well. If that is not so, we ought to know.

. . . There being no further discussion, the substitute motion was put to a vote and was carried . . .

Section 120 (*See 52*)

Report of Reference Committee on Reports of Officers: Increased Educational Benefits Under War Memorial Fund

Dr. Sullivan: Next, resolution 60–19:

> *Resolved*, that the trustees of the War Memorial Fund be authorized to provide up to $1,200 yearly for benefits.

The reference committee recommends approval of this resolution and further recommends that the original purpose of the War Memorial Fund be adhered to.

I move this portion of the report.

Speaker Lane: Is there discussion?

Renato J. Azzari, M.D., *Trustee:* Mr. Speaker and members of the House, the recommendation of the reference committee recommends that the original purpose of the War Memorial Fund be adhered to.

I would like to call to the attention of this House that the directive in the Memorial Fund is the interpretation that has been adhered to since the inception of this War Memorial Fund, and that is the amounts given beneficiaries were to be considered as contributions to help defray expenses for education. All of the letters that have been sent out from our office with the checks have contained the phrase, "help to defray expenses."

With reference to this increase, I would like to say that a financial projection was prepared in 1958. It must be noted that the projection is an estimate. The presently projected asset balance of $46,880 is purely an estimate based on experience prior to 1958. This balance can change if experience is not in line with the estimates.

Second, we have received information very recently that there is a family with five children that did not know about the Memorial Fund and that is eligible, each of whom might become beneficiaries. We could pay out approximately $22,500 or more on the $900 basis and $30,000 on the $1,200 basis. This family on a $900 basis would reduce the $46,880 in 1978 to an estimated $24,000. If the benefits to present beneficiaries are increased to $1,200, the estimated balance in 1978 would be a minus $2,000 without consideration of the new family that we have just mentioned. If this family is considered on the $1,200 basis, it would result in an approximately minus $32,000 balance in this fund.

This deficit brings up a question as to what happens if the fund is fully depleted and there are beneficiaries remaining, would they be told there is no money and therefore they will receive nothing, or will the Society make up any deficit from the other funds?

For this reason, Mr. Speaker and members of the House, the War Memorial Committee is opposing this proposal.

Speaker Lane: Is there further discussion?

J. Stanley Kenney, M.D., *Trustee:* I would like to remind the House that it raised the stipend for the beneficiaries from $600 to $900 about two or three years ago. I would question that the amount of inflation that has taken place since would warrant making any further change. I support Dr. Azzari's intention.

Thomas F. McCarthy, M.D., *Bronx:* In 1947 or 1948, when this was passed, the intent of the House of Delegates then was, as I understood it, from the discussion on the floor and in the reference committee that we were going to try to substitute the Medical Society of the State of New York for the father that this child lost in serving his country, and the idea was, I thought, that we were going to try and provide them with an education. Some of the members who just spoke possibly don't have children young enough now to be going to college, but I assure you $900 without any consideration of anything other than the basic expense is ridiculous. That is why I feel that we should utilize this fund 100 per cent, and if eighteen years from now this Society is still in existence, I am sure they will take care of any deficit then as long as we fulfill the purpose of the fund.

Speaker Lane: Is there further discussion? If not, those in favor of the approval of this portion of the report will say "aye," those opposed "no." I will call for a show of hands. There is a doubt in my mind on the hand voting. Those in favor of passing the resolution will stand; in other words, authorizing the expenditure of $1,200. Is that correct, Dr. Sullivan?

Dr. Sullivan: $1,200.

Louis H. Bauer, M.D., *Ex-President:* Would you clarify whether the $900 or $1,200 is the total or per year? It is my understanding it is per year.

Speaker Lane: That is my impression.

Dr. Sullivan: Correct.

Speaker Lane: Now those opposed will please stand and be counted.

Monroe M. Broad, M.D., *Queens:* I would like to ask the trustees of the War Memorial Fund how old will the beneficiaries of this War Memorial Fund be in 1978? When were they born? I have heard of conception periods being accepted in the British Empire of some five hundred and thirty-two days, but not about twenty-five years. How old will the beneficiaries be in 1978?

Dr. Azzari: I am sorry, Mr. Speaker, I am unable to give you that information.

Dr. Broad: Let us say or suppose these children were born at the very last days of the war. Say the war lasted to the end of 1945—

Voices: What about the Korean War?

Speaker Lane: Pardon me for interrupting. Maybe if I ask a question, it will clarify it. Does this include the Korean War veterans?

Dr. Azzari: Yes.

Speaker Lane: Korean veterans are also included.

Dr. Broad: I am sorry.

Speaker Lane: That changes the period of gestation.

Dr. McCarthy: I am wondering when you are going to call the vote.

Speaker Lane: The vote for is 121, opposed 40. The motion is carried. (*Applause*)

Continue, Dr. Sullivan.

Section 121 (See 88)

Report of Reference Committee on Reports of Officers: Increase in Dues

Dr. Sullivan: Resolution 60–54 reads:

> *Resolved,* that the individual dues of each member of the Medical Society of the State of New York be adjusted to $40 per year, as of January 1, 1961.

Since there has already been action taken in this House on this matter, we would suggest that this be disapproved.

Gerald D. Dorman, M.D., *Councillor:* Did I understand him to say disapproved or no action?

Speaker Lane: Would you accept the substitute recommendation, no action?

Dr. Sullivan: Yes, sir.

Speaker Lane: Is there further discussion? Those in favor of the substitute motion will say "aye," any opposed "no." It is so ordered.

Dr. Sullivan: I move the acceptance of this report as a whole, as amended.

Speaker Lane: Gentlemen, do you understand the motion now? There has been quite a bit of controversy on this report. Dr. Sullivan, the chairman of the reference committee, is now moving the acceptance of the report as a whole as amended, with the deletions and everything else.

. . . The question was called, and the motion was put to a vote and was unanimously carried . . .

Dr. Sullivan: At this time I would like to thank the members of my reference committee: Thomas F. McCarthy, M.D., Bronx; Thomas Flanagan, M.D., Chenango; and Edward P. Ginouves, M.D., of Columbia. (*Applause*)

Speaker Lane: Thank you, Dr. Sullivan.

Arthur J. Bedell, M.D., *Ex-President:* Mr. Speaker, personal privilege. I wonder, Mr. Speaker and gentlemen of the House, do you recognize that in the past ten minutes you have saved this Society more than $100,000. The original motion that prevailed raised your dues $10, and the one that you have just killed was for $15.

Speaker Lane: Thank you.

I have one announcement: Will the members of the Scientific Awards Committee please meet Dr. Givan at the back of this room as soon as the House adjourns this afternoon.

Dr. Wurzbach, please take over.

Vice-Speaker Wurzbach: You have been doing pretty well. I will call first on the chairman of the Reference Committee on Miscellaneous Business, Dr. Byron, to make a report on that part which was referred back.

REFERENCE COMMITTEE ON MISCELLANEOUS BUSINESS

Section 122 (See 105)

Report of Reference Committee on Miscellaneous Business: Report of A.M.A. Delegates

Raymond J. Byron, M.D., *Schenectady:* This was in section 2, as you remember, brought up by Dr. Bedell.

Your reference committee met in the back of the hall, and we felt that this could best be solved by eliminating the final statement "except as established by law." This was more an informative report, in this instance to point out to you gentlemen that actually there is a flux at the present time on the American Medical Association level, and it was meant only for information.

Vice-Speaker Wurzbach: Will you read your report as you now present it, sir?

Dr. Byron: This is number 2, Special Report of the Judicial Council on the subject of osteopathy. There was a general policy statement involved in this report. This briefly stated that all voluntary professional association between doctors of medicine and those who practice a system of healing not based on scientific practices is unethical, period.

Vice-Speaker Wurzbach: Do you move its adoption?

Dr. Byron: Yes, I move its adoption.

Arthur J. Bedell, M.D., *Ex-President:* I second it.

Vice-Speaker Wurzbach: Is there any discussion as it is now presented?

. . . The question was called, and the motion was put to a vote and was unanimously carried . . .

Vice-Speaker Wurzbach: Dr. Byron, will you now move the adoption of the report as a whole as amended?

Dr. Byron: I move now the adoption of the report as a whole as amended.

Vice-Speaker Wurzbach: Is there a second?

Dr. Bedell: I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Vice-Speaker Wurzbach: Thank you, Dr. Byron.

Dr. Byron: Thank you, Mr. Vice-Speaker.

REFERENCE COMMITTEE ON ORGANIZATION AND POLICIES

Section 123

Report of Reference Committee on Organization and Policies: Planning Committee for Medical Policies

Samuel Wagreich, M.D., *Bronx:* Mr. Speaker and members of the House of Delegates, your reference Committee on Organization and Policies wishes to report on the following subjects: Planning Committee for Medical Policies—

District Branches: A subcommittee consisting of Joseph Lane, M.D., chairman, and Drs. Boland, Bauckus, and Gagan, studied the subject of district branches in regard to their organization and possible adjustment of district branch boundaries.

The following recommendations were made:

1. The district branches shall be a definite and integral part of our State Medical Society setup.
2. Wherever possible the district branches shall be strengthened.
3. The district branch shall be encouraged to participate more actively in matters concerning the health of the people; also in matters vital to the medical profession such as workmen's compensation, economics, insurance, legislation, public relations, etc.
4. The local autonomy of the county medical society must be insured at all times.
5. The district branches shall set up their own programs or meetings—whether scientific, economic, or social.
6. It is not necessary to adjust district branch boundaries unless requested by a district branch.
7. Assessments are the concern of each district branch.
8. Each district branch is urged to form an executive committee, or advisory council, or coordinating committee.

Your reference committee concurs in these recommendations and suggests that the executive committee or advisory council recommended in number 8 above meet regularly and report annually to the Planning Committee.

Regarding financial support to the district branches from the State Society, your reference committee understands that each district branch receives up to $400 from the Medical Society of the State of New York.

Mr. Speaker, I move approval of this portion of this report.

Vice-Speaker Wurzbach: Is there a second?

Raymond J. Byron, M.D., *Schenectady:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Wagreich: *President-Elect:* The report of the president-elect, Dr. Moore, on objectives for the year he is to serve, was delivered to the House of Delegates at its opening session and is being reported on by the Reference Committee on Reports of Officers.

Mr. Speaker, I move approval of this portion of the report.

Vice-Speaker Wurzbach: I don't think this needs any action.

Dr. Wagreich: *Remuneration:* After a study of a questionnaire, a subcommittee, consisting of Dr. Penta, chairman, and Drs. Di Natale, Jenkins, and Wheeler, recommended full expenses when "engaged in Society business" and that the voucher system be continued (reimbursable items include traveling expenses, meals, hotel bills, tips, etc.)

On January 28, 1960, the Planning Committee for Medical Policies recommended to the Council that the president of the State Medical Society be allowed a per diem of $100 and expenses minimum and the president-elect be directed to submit for "legitimate expense" a bill for $50 per diem minimum. This was approved by the Council.

Your reference committee recommends that the system of remunerating the president per diem at $100 each day and his expenses and the president-elect at $50 per diem and his expenses, which was approved by the Council at its meeting on January 28, 1960, be approved by the House.

Mr. Speaker, I move approval of this portion of the report.

Vice-Speaker Wurzbach: Is there a second?

John L. Clowe, M.D., *Schenectady:* It is not necessary to second a reference committee motion.

Vice-Speaker Wurzbach: If he wants approval, it is.

Ezra A. Wolff, M.D., *Assistant Secretary:* The committee has signed the report.

Vice-Speaker Wurzbach: You ask for approval of action of the Council.

Dr. Wolff: The report has been signed by members of the committee, and that is considered a second.

Vice-Speaker Wurzbach: Is there any discussion?

George J. Lawrence, Jr., M.D., *Councillor:* I would like to ask a question. Does the inclusion of president-elect require a revision of the Bylaws, Chapter IX, on page 32?

Chapter IX, Expenses, section 1, the second sentence says: "The president shall be allowed a per diem and expenses when engaged upon official business." Your Constitution and Bylaws do not include the president-elect.

Vice-Speaker Wurzbach: That is true.

Dr. Lawrence: Although I am in favor of this change for remunerating the president-elect, I still think that it requires a revision of the Bylaws.

Vice-Speaker Wurzbach: If you approve the action of the committee then, it will be recommended to the Special Committee on Constitution and Bylaws for action next year. The Chair so rules.

Dr. Wolff: Mr. Speaker, it is my impression that this was passed this morning, that it was included in Dr. Burgin's report.

George A. Burgin, M.D., *Councillor:* In my report of yesterday, you will note that we included that in the change in the Bylaws which were recommended last year. Our committee recommended it for your approval, and it was approved, if I can find the particular line. It was Dr. Lawrence that made that resolution last year. It is right here, page 13; that is, when we included the section delegates and president-elect, so that is taken care of, Mr. Speaker.

Vice-Speaker Wurzbach: What line?

James Greenough, M.D., *Trustee:* Top of page 13, second column.

Vice-Speaker Wurzbach: I don't see the $50.

Dr. Lawrence: "*Resolved*, that the words 'and president-elect' be added after the word 'president' in line 8."

Vice-Speaker Wurzbach: With the per diem approved, then the only thing is the implementation of the amount.

Dr. Wagreich: That was approved by the Council. This is merely reaffirmation by your reference committee and, in fact, actually will not require action by this House it would seem to me. However, in raising the question it was our thinking that we should bring it to the attention of the House in view of the fact that the Council has already approved the action for president and president-elect.

Vice-Speaker Wurzbach: Is there further discussion?

Herbert H. Bauckus, M.D., *Trustee:* I would just like to say this was also approved by the Board of Trustees because it involved the expenditure of money.

...The question was called, and the motion was put to a vote and was carried...

Dr. Wagreich: *Future Plans* (for future consideration of the committee):

1. Programs in regard to careers in medicine to stimulate young people.
2. Planning for increased membership in county, State, A.M.A. An Ad Hoc Committee was appointed on January 28, 1960, by the president to study this problem.
3. The subject of the elderly physician.
4. Social security for physicians.

Your reference committee wishes at this time to reaffirm in the strongest possible terms the position of the State Medical Society in regard to social security and urges that every possible constructive and positive action be taken to implement this stand.

5. Shortage of interns and residence staffs.
6. Forand bill.

Your reference committee feels that these suggested subjects for future planning are worthy of consideration and effort and wishes the Planning Committee well in their fulfillment.

Your reference committee appeals at this time to all members of the State Medical Society to offer suggestions or ideas for future planning to the Planning Committee so that it may continue to function with dispatch and efficiency.

Mr. Speaker, I move approval of this portion of the report.

Dr. Lawrence: I move an amendment that number 6 be striken from the report.

Vice-Speaker Wurzbach: Number 3, as well, the subject of the elderly physician.

Dr. Lawrence: It looks like we are supporting the Forand bill.

Vice-Speaker Wurzbach: You are making a motion that number 6 only be stricken?

Dr. Lawrence: Yes.

Albert H. Douglas, M.D., *Queens:* I second it.

Vice-Speaker Wurzbach: On the motion to delete number 6, is there any further discussion? If not, all those in favor of number 6 being deleted say "aye," those opposed "no." Number 6 is deleted.

Is there further discussion?

Samuel Leo, M.D., *Bronx:* Number 5, shortage of interns and residence staffs—what suggestion does the chairman have? The report just makes the simple statement, "Shortage of interns and residence staffs."

Vice-Speaker Wurzbach: This is a recommendation for further study on the part of the Planning Committee, topics for consideration.

Dr. Leo: We have been studying that now for about ten years, and we are still where we were ten years ago. That is the trouble, a lot of verbiage and nothing done.

Dr. Wagreich: May I say this matter is being considered by another committee. Your Planning Committee, which your reference committee is reporting on, is considering this as additional material for further study. It in no way affects the consideration of this problem which is taking place at this House of Delegates in the reference committees. It is merely mentioned that further studies by this particular committee will continue.

J. Stanley Kenney, M.D., *Trustee:* In connection with item 1, gentlemen, the program in regard to careers in medicine to stimulate young people, I don't know whether or not you know it, but the American Medical Association has given this top priority in a special resolution adopted at Dallas. A special appropriation of $40,000 has already been made, and a committee has been activated under the chairmanship of Dr. Nora O'London, of the College of Medical Evangelists. I think the Planning Committee should give this early consideration, with the special committee. I am sure you will be contacted by the American Medical Association. That is for information.

Vice-Speaker Wurzbach: Is there further discussion? All of those in favor of the recommendations of the committee with number 6 deleted say "aye," those opposed "no." This portion of the report is accepted.

Section 124

Report of Reference Committee on Organization and Policies: 1958 Management Survey

Dr. Wagreich: On September 8, 1959, a memorandum was sent to the president of each county medical society requesting an expression of opinion as to implementation of suggestions II to IX of the Management Survey Report, listed on pages 120 and 121 of the Delegates' Handbook (Journal, April 1, 1960, pages 1125 and 1126).

As a result of the responses, the committee, first, because of the "meager number of replies" and, second, because "it is questionable that the replies represent the opinion of the membership at large," feels that the results are not clear or conclusive. However, the feeling is that the larger county societies are opposed to implementation of the suggestions and particularly number III which would establish a "unicameral body rather than the presently established Council and Board of Trustees" with subsequent reduced representation and efficiency. The committee feels that financial control by a Board of Trustees permits independent action and acts as a valuable check in the utilization of funds in effecting programs voted by the Council.

The Management Survey Committee recommends that the composition of the Council and Board of Trustees remain as it is, and your reference committee concurs with this recommendation.

Mr. Speaker, I move approval of this portion of the report.

Arthur J. Bedell, M.D., *Ex-President:* I second it.

Vice-Speaker Wurzbach: Gentlemen, is there any discussion?

Thomas F. McCarthy, M.D., *Bronx:* I seek information. Does this have any reference to something that was tabled yesterday?

Dr. Wagreich: No.

Dr. McCarthy: Are they recommending what you tabled yesterday?

Dr. Wagreich: No, we discussed that with Dr. Ottaviano. I am sure he will have some suggestion to make.

. . . There being no further discussion, the motion was put to a vote and was carried . . .

Dr. Wagreich: With reference to suggestion IV, the Survey Committee has expressed its accord with the recommendations of the president, Dr. Fineberg, in which he recommended to the Council that committee chairmen and their committees meet the first two weeks of the month so that their reports would be available to the members of the Council well in advance of the meetings and would therefore be better informed. The Management Survey Committee feels that a change in meetings is not indicated at this time and suggests no action at this time. (A subsequent study of the Survey Committee resulted in the recommendations to the Council that committee meetings be held as usual but their reports be submitted in writing for inclusion in the agenda of the succeeding month. Provisions for report at the current meetings have been made for emergency consideration.) This does not require action by the House.

The committee recommends no action on suggestions V and VI listed on page 122 of the Delegates' Handbook (Journal, April 1, 1960, page 1127), and your reference committee concurs with this recommendation.

Suggestion VII: It was the opinion of the committee that steps had already been taken to accomplish this.

Suggestion VIII was disapproved by motion and vote.

Suggestion IX: No action need be taken since attendance is by invitation.

Your reference committee commends the energetic and conscientious work of Dr. Azzari and his committee.

Mr. Speaker, I move approval of this portion of the report.

...There being no discussion, the motion was put to a vote and was unanimously carried...

Section 125

Report of Reference Committee on Organization and Policies: Constitution and Bylaws

DR. WAGREICH: During the year the Committee on Constitution and Bylaws made recommendations concerning such amendments to county societies' and district branches' constitutions submitted to it and has also cooperated with the House of Delegates Special Committee on Constitution and Bylaws.

Mr. Speaker, I move approval of this portion of the report.

...There being no discussion, the motion was put to a vote and was unanimously carried...

Section 126

Report of Reference Committee on Organization and Policies: Office Administration and Policies

DR. WAGREICH: The committee reports receiving delivery of "our offset printing machine which was immediately placed in operation." The quality of work is better than mimeography, and we are able to produce printed letterheads and forms; also the names of committee members have been eliminated from the stationery as an economy measure.

It was recommended to the Council in February that Blue Cross premiums for staff be paid by the Society. This was approved by the Council and Board of Trustees.

New staff members must receive physical examinations and chest x-rays to determine their employability from the medical viewpoint.

Each salary is reviewed to determine salary needs for clerical personnel; the committee is also responsible for pension allowances, providing recommendations to the Council and Board of Trustees.

The committee is in the process of converting to a tabulating card procedure for the handling of membership cards.

There are some 66 employes of the Medical Society of the State of New York. It is the intent of the committee to encourage high morale on the part of all employes.

Your reference committee wishes to express its confidence in the Council and its committee which is concerned with and intimately connected with the duties of the executive director in his relation to the officers, committee chairmen, and members of the Council and to the department heads and other employes of the State Society.

Your reference committee notes with approval that the Committee on Office Administration and Policies is exploring the following: (1) table of organization with reference to divisional or departmental heads; (2) job analysis, including salary range and promotion and rewards for meritorious service, etc.; (3) setting of standards with minimal-maximal salary ranges; and (4) study of fringe benefits and any other suggestions or ideas the committee may have rightfully belonging within the scope of office administration and policies and urges continuous study.

Your reference committee wishes to go on record as recommending the continuation of the committee and expresses its appreciation for the effective job being performed by its members.

Mr. Speaker, I move approval of this portion.

MAURICE J. DATTELBAUM, M.D., *Treasurer:* Mr. Speaker, I would like to say the Society also pays the Blue Shield as well as the Blue Cross.

...There being no further discussion, the motion was put to a vote and was unanimously carried...

Section 127

Report of Reference Committee on Organization and Policies: District Branches

DR. WAGREICH: Your reference committee has previously reported on the study of the district branches by the Planning Committee for Medical Policies and its recommendations. Your attention is directed to the reports of the district branches on pages 125 to 134 of the Delegates' Handbook.

There is a great deal of worth-while material available here, particularly the activities of the First District Branch which concerns itself with the metropolitan area, and it is the opinion of your reference committee that properly organized and functioning through executive or advisory committees, meeting regularly and periodically, representing the county societies without in any way affecting their autonomy, and working through the State Society, the district branches serve a worth-while purpose. Furthermore, any problems confronting a local society are equally the concern and problem of all the societies and members of the Medical Society of the State of New York.

Your reference committee is in favor of strengthening all district branches.

Mr. Speaker, I move approval of this portion of the report.

...There being no discussion, the motion was put to a vote and was unanimously carried...

Section 128 (See 81)

Report of Reference Committee on Organization and Policies: Establishment of Section on Space Medicine

DR. WAGREICH: Your reference committee

reviewed resolution 60–48 on the subject "Establishment of Section on Space Medicine," introduced by William H. Lewis, Jr., M.D., New York, as an individual.

Your reference committee recommends approval of this.

VICE-SPEAKER WURZBACH: This portion is up for approval by the House. Is there any discussion?

THOMAS F. MCCARTHY, M.D., *Bronx:* Point of order, who will be the section representative on space medicine? This is a Section on Space Medicine?

DR. WAGREICH: A Section on Space Medicine.

DR. MCCARTHY: Are you going to establish a whole section?

DR. WAGREICH: That is correct.

EZRA A. WOLFF, M.D., *Assistant Secretary:* Have a spaceman for a delegate. (*Laughter*)

VICE-SPEAKER WURZBACH: Is there any further discussion? If not, all those in favor of the approval say "aye," those opposed "no."

DR. WAGREICH: In addition to regular members of your reference committee, the following attended the meeting as observers and/or participants:

Constantine Generales, M.D., Ph.D., Associate Professor of Space Medicine and Coordinator of Space Medicine Program at New York Medical College.

Louis H. Bauer, M.D., Major in World War I, who originally organized the Army Air Force School.

William H. Lewis, Jr., M.D., proposer of the resolution.

Gerald D. Dorman, M.D., councillor

William L. Wheeler, Jr., M.D., secretary, State Medical Society

Peter J. Di Natale, M.D., councillor

Arthur Gaffney, M.D., Fifth District Branch.

All these gentlemen appeared before this reference committee, and this entire subject was discussed completely. It was their sincere belief that this was vital, that this would add to the prestige of the Medical Society of the State of New York, that this now had become a phase of medicine which is being taught at many universities throughout the United States. It was on the basis of the testimony submitted by these eminent gentlemen appearing before this reference committee that your reference committee asks you to approve this resolution.

VICE-SPEAKER WURZBACH: The motion is then that this resolution be approved, and there was a question as to the decision of the House. I will ask all those in favor of the resolution as presented stand; all those opposed will now stand. They made an awful lot of noise before. The motion is carried.

DR. WAGREICH: I move the adoption of the report of the Reference Committee on Organization and Policies as a whole, with the deletions and as amended.

GEORGE W. FISH, M.D., *New York:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

DR. WAGREICH: The chairman of your reference committee wishes to express his appreciation to the members of his committee who conscientiously cooperated in a complete and thorough manner and particularly wishes to thank those gentlemen who appeared and offered testimony before this reference committee. The members of the reference committee referred to are Solomon Schussheim, M.D., Kings; George W. Fish, M.D., New York; Philip M. Standish, M.D., Ontario; and Edward F. Shea, M.D., Ulster.

VICE-SPEAKER WURZBACH: Thank you. (*Applause*)

Gentlemen, it is now ten minutes after five. We will recess until 8 o'clock promptly.

. . . A recess was taken at 5:10 P.M. . . .

Evening Session

Sunday, May 8, 1960

The session reconvened at 8:20 P.M.

VICE-SPEAKER WURZBACH: Mr. Secretary, is there a quorum?

SECRETARY WHEELER: Yes, Mr. Vice-Speaker.

VICE-SPEAKER WURZBACH: We will now proceed to the business of the evening. The first report will be by the Reference Committee on Medical Communication, Dr. John Kelley, chairman.

REFERENCE COMMITTEE ON MEDICAL COMMUNICATION

Section 129 (See 18)

Report of Reference Committee on Medical Communication: Publications

JOHN F. KELLEY, M.D., *Oneida:* Dr. Ingegno has submitted a detailed report of the action of his committee during the past year.

The NEW YORK STATE JOURNAL OF MEDICINE continues to increase in size, both as to number of pages and number of articles submitted. We must commend Miss Alvina Rich Lewis, executive editor. It should be noted that Miss Lewis has been with us for over ten years, and this year has been the recipient of an award by the Metropolitan New York Chapter of the American Medical Writers' Association. The committee would also like to commend all members of the JOURNAL staff for their competent assistance. (*Applause*)

The reference committee recommends that the Publication Committee be charged with the responsibility of:

1. Improving the scientific content of the STATE JOURNAL.
2. The utilization to the greatest possible extent of original work in local medical centers.
3. Increasing the readership of the JOURNAL to make it more widely read, thereby adding to the prestige of the Medical Society of the State of New York and at the same time providing a worthwhile service for the benefit of all concerned.
4. Investigating every avenue of augmenting the advertising in the JOURNAL so as to best effect improvement of scientific content, wider readership, and at the same time improve the financial return to the State Society.

The reference committee recommends the acceptance of this part of the report.

ARTHUR Q. PENTA, M.D., *Section Delegate:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

DR. KELLEY: Supplementary Report of the Publication Committee, Report 60–J: The reference committee recommends the acceptance of Supplementary Report 60–J regarding change of procedure in providing free copies of the JOURNAL to senior medical school students.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 130

Report of Reference Committee on Medical Communication: Public Relations

DR. KELLEY: This important committee under the able leadership of John C. McClintock, M.D., has had a very busy year. The Public and Professional Relations Bureau is now known as the Department of Communications. Their activities concerned operations in about 25 areas.

The reference committee recommends approval of the expanded work of this committee, which admittedly will require a larger budget.

The reference committee recommends the approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 131 (See 32)

Report of Reference Committee on Medical Communication: Subcommittee on Cooperation with Media of Information

DR. KELLEY: The reference committee recommends approval of the report of the Subcommittee on Cooperation with Media of Information, Supplementary Report 60–P.

The reference committee also recommends approval of Supplementary Report 60–P requesting a budgetary item of $2,500 to revise the "Standards of Practice for Doctors and Lawyers" into a more attractive format and to contain a succinct outline in the beginning.

I move to accept this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 132

Report of Reference Committee on Medical Communication: American Medical Education Foundation

DR. KELLEY: American Medical Education Foundation—the reference committee recommends approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 133

Report of Reference Committee on Medical Communication: Convention

Dr. Kelley: Last year began the innovation of having the House meet over the week-end. The Convention Committee this year unanimously recommends to the House of Delegates that the meeting days of the House be returned to the first three days of the week, namely, Monday, Tuesday, and Wednesday.

The reference committee recommends that the Planning and Convention Committees be requested to investigate all facilities to improve meeting sites for this convention.

The reference committee feels that because of the additional expense of between $5,000 and $10,000 for week-end hotel reservations, according to the controller, that the above recommendation of the Convention Committee should be approved.

The reference committee recommends approval of this portion of the report, and I so move.

. . . The motion was seconded from all corners of the room . . .

Vice-Speaker Wurzbach: Is there any discussion of this portion of the report?

Raymond J. Byron, M.D., *Schenectady:* Mr. Speaker, we may remember when we have been at past meetings that the reason this week-end thing was set up for us was simply one major point, that in this august group of the House of Delegates are many men who are tied up in the scientific side of this session. As the result of the meeting on Mondays, Tuesdays, and Wednesdays, these men could not attend the sessions. They are an integral part of that, which we must bear in mind when we listen to this recommendation of the committee.

Vice-Speaker Wurzbach: Is there further discussion?

Irwin Alper, M.D., *Oneida:* I recall very well when this originally changed to week-ends by a closely divided vote. I believe like water on a stone the lower part of that divided vote has been working on it year by year to get it back to Monday, Tuesday, and Wednesday. I personally have no feeling one way or the other too much at the present time, and certainly being the sponsor of the original resolution, I am perfectly well aware of the trend of the times, and I am not fighting the issue too far. However, I would like to keep the record straight on one or two items.

One item is the question of cost. It has been said that the cost is excessive, cost to the people of the State Society. The employes, etc., have to come here on Saturday and Sunday and work, thereby causing an expenditure of time and a half for overtime, etc. It seems to me when the convention started on Monday, they came Saturday and Sunday and worked for the convention as well, so that the item of expense does not seem to me to be an insurmountable or even a cogent one.

Beyond that, the annual dinner; I was so happy to hear the Speaker tell us yesterday that the annual dinner for the first time in the history of this organization was oversubscribed, so if we wanted to buy a ticket, we could not. I personally feel having the House meet on Saturday, Sunday, and Monday had something to do with it. However, as a member of this House, I go along with the majority.

Vice-Speaker Wurzbach: Is there further discussion?

George J. Lawrence, Jr., M.D., *Councillor:* Mr. Speaker, I would like to speak on this report. The Convention Committee has recommended unanimously that the House of Delegates meet on Monday, Tuesday, and Wednesday, instead of on the week-end as we have this year and last year. We have had many reasons for doing this. Our reasons have been reasons which we think are personal reasons with the various delegates and also reasons that I think should be very important to the State Medical Society in a financial way.

We have found out that a week-end meeting costs the State Society a lot more money than a meeting that is held on Monday, Tuesday, and Wednesday. The staff of the State Society has to check into the hotel on Friday evening and work Friday evening, Saturday, and Sunday, and of course they have got to be paid. If you have a meeting on Monday, Tuesday, and Wednesday, you are paying them anyway for those days. I can't give you a figure on how much more money it costs, but it does cost more money, and they raised your dues $10 today because you don't have enough money to do this sort of thing. That is one reason.

The second reason is that a Sunday is not a working day, and many members of the House of Delegates feel that Sunday is not a working day, and I am one of them. It is not only Sunday, but every year that the House of Delegates meets on Sunday is Mother's Day. There were a lot of facetious remarks made in Buffalo about Mother's Day. I would like it to be understood that I was not one of those who agreed with those remarks. I would have liked to have been home with my kids, and I had to get my eighty-one-year-old mother to stay with the kids this week-end so I could come here. That is a personal reason that you should all immediately throw out. That is not valid or is no good reason for me to give here now, but that is just the way I feel personally.

Last night at five o'clock the reference committees had to adjourn because the hotel had made previous arrangements for this room, and the reference committees were put out because of some other organization that had hired this room several years back.

Many of you had trouble checking in yesterday because of the fact that there were two or three things going on in this hotel at the same time yesterday.

Your Convention Committee has discussed this with the members of the staff who are concerned with running the convention, and there is no disagreement at all with the members of the staff that this is a poor time for holding the convention.

I feel that the recommendation of the Convention Committee should be upheld by the House and that we should go back to the Monday, Tuesday, and Wednesday type of meeting. (*Applause*)

Vice-Speaker Wurzbach: Dr. Lawrence, as chairman of the Convention Committee, I would like to ask you whether this change, if made, can be arranged for the reservations that have been made in Rochester for next year. Has that been checked?

Speaker Lane: May I speak to that?

Dr. Lawbence: I will refer you to Dr. Lane.

Speaker Lane: The tenet of arrangements does call next year for a meeting on Saturday, Sunday, and Monday. However, we could certainly find out in the very near future if those arrangements could be changed. Dr. Merle D. Evans will probably have that problem on his hands for the meeting next year.

Arthur Q. Penta, M.D., *Section Delegate:* I would like to comment on what Dr. Lawrence said. Dr. Lawrence said this Society has 300 in this House. We don't come here to vote. We come here to attend scientific meetings. Taking Monday, Tuesday, and Wednesday detracts from all scientific meetings. I am sure many want to go to their own sections. They want to learn something about the newer developments of medicine. That is what this Society is for. This is not a political meeting. This is a scientific body. Let us continue the rules as they are now.

Thank you!

Vice-Speaker Wurzbach: Is there further discussion?

Anthony Kohn, M.D., *Suffolk:* I agree very heartily with the last speaker. A lot of us have just so much time that we can devote to a thing like this. If we have the meeting on Saturday and Sunday and maybe take a day or two for the scientific session, that is all the time we can give it. We have to remember, in addition to being semipro politicians as the last speaker said, we are all doctors. We are all interested in learning something new, learning about what is new in the science of medicine, but more important than that I think there is a very schizophrenic trend of thinking with this money business. On the one hand, we hear the treasurer say that we are scraping the bottom of the barrel. On the other hand, somebody wants to give a—I forgot what the sum was to the War Memorial thing—increase it a good deal. Over the past two days there have been some very split thoughts on the whole question of finance. I think for the few dollars that it costs extra on a Saturday and Sunday, outside of the Mother's Day episode, which I think is of some significance, I would personally feel that Saturday and Sunday should be the days for the meeting of the House of Delegates.

Vice-Speaker Wurzbach: Dr. Lawrence, you have spoken once. Somebody behind you wants the floor.

Theodore R. Proper, M.D., *Orange:* I speak against having it on Saturday and Sunday. We listened to a speech by the president on morality. We have the greatest medical society in the country. The Bible and all religions say we shall not work on Sunday, that Sunday shall be free. We should do certain things. Having bathed in Buddha, we are not an example to our country. We are destructive. I need not say any more.

Dr. Lawrence: I am sorry that I have to speak a second time on this, but there is one important question that was raised, and I meant to cover it in my discussion before. I forgot it. When the decision was made to have a week-end meeting of the House of Delegates, the chief reason for making the change was that the delegates could then attend the scientific sessions because they would be free Monday, Tuesday, Wednesday, Thursday, and Friday. Now the staff made a survey last year and found out that after the House of Delegates adjourned on Monday in Buffalo of last year, 75 per cent of them checked out of the hotel and left Buffalo and did not attend any scientific sessions or the banquet Monday night. (*Applause*)

Vice-Speaker Wurzbach: Dr. Kelley wishes to make a statement.

Dr. Kelley: I would like to amend the report of the reference committee relative to the Convention Committee's report at this time: that it be held in abeyance until we understand the situation in Rochester relative to our schedule there next year.

Voices: No.

Vice-Speaker Wurzbach: Gentlemen, we are trying to find out, and we hope to be able to get the information within fifteen or twenty minutes, but if the arrangements are rock fast for Rochester for Saturday, Sunday, and Monday, we must accept.

You have spoken once.

Dr. Penta: I rise to the occasion. I move that this motion be postponed until further study is given to this resolution.

Dr. Byron: I will second that.

Vice-Speaker Wurzbach: This motion is debatable, to postpone.

Are you speaking on the motion to postpone?

Thomas M. d'Angelo, M.D., *Queens:* I want to speak on this motion to postpone.

Vice-Speaker Wurzbach: You are in order.

Dr. d'Angelo: It does not make any difference whether we decide tonight to have the session in Rochester on Monday, Tuesday, and Wednesday if we have already committed ourselves to Saturday, Sunday, and Monday, if it can't be changed. Naturally, we could pass a motion to have it on Monday, Tuesday, and Wednesday, which will take care of it the year after next, and then we will have to see what we can do about next year, and we will then be in order.

Gerald D. Dorman, M.D., *Councillor:* I speak against postponing for exactly the same reason. If this House does not want to meet on Saturday and Sunday, what can be gained by postponing it? If it cannot be done next year, at least it can be done the year after that.

Vice-Speaker Wurzbach: All those in favor of the motion to postpone say "aye"; those against the motion to postpone say "no." The motion is definitely lost.

We are now back on the original motion.

Speaker Lane: The Chair would like to move that we amend the motion as it stands now and have the action on the motion dependent on the report from the committee on arrangements.

Voices: No.

Vice-Speaker Wurzbach: This is a practical point that Dr. Lane and I just presented to you. If these arrangements in Rochester cannot be changed, you must have it then. If this can be changed and you pass this portion of the report, then it can be held on Monday, Tuesday, and Wednesday, but it depends entirely on the report from Rochester.

Joseph J. Russo, M.D., *Albany:* I am one of those who do not attend the scientific sessions. I am not sure a great number of us can if the House meets on Monday, Tuesday, and Wednesday. We can never attend as long as this condition exists. Therefore, I wish to amend the motion to read that the meeting of the House of Delegates be held at a separate time entirely from the meeting of the scientific part.

Voices: No.

Dr. Penta: I second it.

Vice-Speaker Wurzbach: The motion is that the House of Delegates meeting and the scientific session be held at an entirely separate time. Is there discussion?

Dr. Lane: This is an amendment to an amendment.

Eldred J. Stevens, M.D., *District Delegate:* We have been discussing economics today. An entirely different session will double the work involved. I also wish to remind some of my colleagues who practice every day that Saturday and Sunday perhaps are not too busy, and that to me is another economic consideration.

Vice-Speaker Wurzbach: Is there further discussion on the amendment?

Alfred P. Ingegno, M.D., *Councillor:* Mr. Speaker and gentlemen, I have spoken on this proposition in a couple of previous years. I speak in favor of the amendment to have the delegates meet at a separate time. I don't think the cost would be appreciably greater. The delegates can meet in much smaller quarters than are required for the combined scientific session and House of Delegates. They therefore could meet in various districts of the State, which I think would be all to the good because then the profession in various areas would become more conversant with the work of this House. I know it to be true that the delegates, having put in the days of work in the House of Delegates, do not stay for the scientific program.

I realize that this may be because they simply cannot take so extended a period of time away from their work. This difficulty also would be avoided by having the scientific program and the House of Delegates meet separately.

Furthermore, the scientific program is going to be held almost all of the time in New York City, which of course has much the best facilities for the volume of attendance which we need to make the scientific program a success.

I do hope that the House will seriously consider this at least; if not by passing it tonight, by referring it to the Council for further consideration. (*Applause*)

Herbert H. Bauckus, M.D., *Trustee:* I don't care whether you start on Saturday or on Monday, but if you divide this into two sessions, we will say a few weeks or a month apart, there are other things beside the expense which I think would be considerable. There is the question of interfering with the attendance at our scientific program, and the attendance also of those who wish to exhibit and those who wish to go to these exhibits. This question is very important relating to the cost. In general, I think that if you are going to do such a thing you ought to study it much more thoroughly. We certainly need our scientific sessions. I think those are the most important things, after all, that we have, and I would like to see this change, but I would not like to see this change into two separate things at this time. You have an American Medical Association meeting, and some of us like a little time off. I am against having two meetings now.

William T. Boland, M.D., *Chemung:* I rise simply to state that after the sesquicentennial meeting I thought Dr. Ingegno brought a resolution before the House that was brought before the Planning Committee. I was appointed chairman of a subcommittee to study this problem of splitting the sessions, and after writing about 300 letters or more to every county within the State, we had something like 60 or 70 per cent of those letters coming back in which they did not agree that we should split the meeting. It was only the report of the Planning Committee that was voted down that we brought before this House before. Whether the members have changed their minds since then is another question.

As far as this is concerned, I don't care whether you have it on Saturday, Sunday, Monday, Tuesday, or Wednesday. It is a little better for me if I do not have to come down here on Saturday. Personally, I come any time the House meets, but I don't think we should split the sessions.

MONROE M. BROAD, M.D., *Queens:* It has been our impression as a House of Delegates and as officers that we have been doing ourselves harm. We have accepted the great honor. I think we are doing a labor, if not of love, certainly of personal satisfaction. We are here because we want to be here. Nobody drags us here. Nobody drags anybody here, and I think that this House of Delgates is a very important function, and if it can work well during the working week, why not? Why should some of our members be denied what is their prerogative, to attend the house of worship of their choice on Sunday, or be with their families on Sunday, or why should we violate Mother's Day? These all are not good public relations.

Another thing is this: I speak against splitting the thing because after all while the House of Delegates members number only hundreds, the attendance at the joint session is in the thousands, and public relations-wise what we say, we speak of as though it came from thousands, because we do represent them, and if they have been here in attendance at the session, the newspapers will recognize that 25,000, or 26,000, or more doctors have done thus and so. I speak for the recommendation of the reference committee and of the Convention Committee.

EZRA A. WOLFF, M.D., *Assistant Secretary:* Point of order, Mr. Chairman. The Bylaws say that the annual meeting of delegates shall be held at the call of the Speaker at least two and not more than four days before the annual meeting of the Society. The annual meeting of the Society is held during the scientific session. The Bylaws bind us to hold the two together, so I would say this motion is out of order, and I would wish the chairman to rule on this point.

DR. DORMAN: The annual meeting of this organization is at the dinner meeting, and that can be placed on Wednesday, or Monday, or any other time.

VOICES: Question! Question!

VICE-SPEAKER WURZBACH: Quiet! Quiet! I will rule on the point of order, that it is not applicable in this condition.

HERBERT S. OGDEN, M.D., *New York:* I believe in the democratic process of allowing the House to decide this for themselves. I therefore call for the previous question.

VICE-SPEAKER WURZBACH: The previous question is called.

ABRAHAM D. SEGAL, M.D., *Kings:* Point of information. If you separate your two functions, the House of Delegates and the scientific session, your trip to the House of Delegates is no longer deductible as an income tax deduction. That must be borne in mind. That is correct: If you attend one scientific session, you can deduct the traveling expenses; otherwise you can't.

DR. WOLFF: I have another point of order to raise.

VICE-SPEAKER WURZBACH: Another point of order is being raised by Dr. Wolff.

DR. WOLFF: The question before the House primarily is the report of the reference committee concerning the date of the meeting of the House of Delegates. The alteration of the date of the scientific session is another matter. New matters which are brought up to the House according to the Bylaws must be referred to reference committees. I would say that this is much too complex a matter for us to decide on the spur of the moment. I would not like to see this House take precipitate action on which it might have to back water. I don't think that all of us are in full possession of the facts which we should have before we vote on such an important thing. I would suggest, therefore, Mr. Chairman, this either be held over during the year or referred to a reference committee so we can have more facts.

VOICES: Question!

VICE-SPEAKER WURZBACH: Ruling on the point of order: This question that has been brought up of separation will be returned to the reference committee for a further report.

Now on the original question, I have this to read to you from Dr. Wagner in regard to the 1961 meeting: "I checked with Mr. Baldwin, convention manager. He called Rochester and talked with the official of the Manger Hotel. We are assured that we can have the meeting of the House on Monday, Tuesday, and Wednesday, May 8, 9, and 10."

Is there further discussion on the original question? All those in favor—

VOICES: What is the question?

VICE-SPEAKER WURZBACH: Start at the word "convention."

DR. KELLEY: Convention Report: Last year began the innovation of having the House meet over the week-end. The Convention Committee this year unanimously recommends to the House of Delegates that the meeting days of the House be returned to the first three days of the week, namely, Monday, Tuesday, and Wednesday.

The reference committee recommends that the Planning and Convention Committees be requested to investigate all facilities to improve meeting sites for this convention.

The reference committee feels that because of the additional expense of between $5,000 and $10,000 for week-end hotel reservations, according to the controller, that the above recommendation of the Convention Committee should be approved.

The reference committee recommends approval of the Convention Committee report.

Vice-Speaker Wurzbach: All those in favor of this report say "aye," those opposed "no." The "ayes" have it. (*Applause*)

Thank you, Mr. Chairman. Continue with the report, please.

Section 134 (See 34, 50)

Report of Reference Committee on Medical Communication: Listing of Proprietary Accredited Hospitals in Directory

Dr. Kelley: Resolution 60–1, introduced by Nassau County Medical Society, and resolution 60–17, introduced by the Bronx County Medical Society, both on the same subject of "Listing of Proprietary Accredited Hospitals in *Directory*."

These resolutions relate to the inserting of the names of proprietary accredited hospitals in the *Medical Directory of the State of New York.*

The reference committee, after listening to a lengthy discussion, both pro and con, feels that the Council committee on the *Directory* should be the judge of what should be listed in the *Directory.* The reference committee, therefore, recommends disapproval of both these resolutions.

Vice-Speaker Wurzbach: Is there any discussion?

Raymond J. Byron, M.D., *Schenectady:* Mr. Chairman, this afternoon the "resolved's" were asked for on resolutions. I did not hear any "resolved's" read by the chairman.

Vice-Speaker Wurzbach: Thank you. Read both the "resolved's."

Dr. Kelley: I was trying to avoid spending the time necessary to do it.

Resolution 60–1, the "resolved's" read:

> *Resolved,* that the Medical Society of the State of New York rescind its ban against proprietary hospitals in the *Medical Directory of New York State;* and be it further
>
> *Resolved,* that future editions of the *Medical Directory of New York State* include a listing of all accredited proprietary hospitals in New York State and their active staffs.

Resolution 60–17:

> *Resolved,* that the Medical Society of the State of New York rescind its ban against inclusion of proprietary hospitals and their active staffs in the *Medical Directory of New York State;* and be it further.
>
> *Resolved,* that duly accredited proprietary hospitals be included with a listing of their active staffs in future editions of the *Medical Directory of New York State.*

Vice-Speaker Wurzbach: Is there any further discussion?

Abraham W. Freireich, M.D., *Nassau:* We have a Joint Commission on Accreditation of Hospitals that uses the same standards for inspection and approval of hospitals, whether the hospital is run as a government organization, as a voluntary hospital, or as a proprietary hospital. We feel that the standards of accreditation being the same, by deleting the listing of those hospitals we are relegating them to a second-grade category. Whether or not people are in the private enterprise system of using hospitals as a means of making or losing money is not the problem before us. It happens that in Nassau County at least 30 per cent of the hospital beds have to be utilized as proprietary hospital beds, whether we like it or not. The needs for hospitalization are not met entirely by voluntary or government hospitals. Since these hospitals have to be in existence, and since they have to be utilized by physicians and surgeons, and since they are regulated by the same standards, then there is no reason for relegating them to a second-grade category.

Vice-Speaker Wurzbach: Is there further discussion?

Francis A. Stephens, M.D., *Albany:* We in the Third and Fourth District Branches discussed this problem this morning. We feel probably they should be listed in the *Directory* under a separate category, designating them as proprietary hospitals, if they meet the standards of the Joint Accreditation Commission.

Solomon Schussheim, M.D., *Kings:* Mr. Speaker, in thirty-eight years of the practice of medicine, I have done all of my work in proprietary hospitals, and I think I can speak rather freely about them. Anything that you might want to say about them may be true, but in the past few years we have been able to upgrade these institutions where they can compare favorably at times with the voluntary hospitals; in fact, in my county there are a number of voluntary hospitals that are not accredited by the Accreditation Commission, yet you will find these in our *Directory* with the names of the staff. I think it is about time we stopped having all classes of citizens in our medical profession and in our hospitals. If a hospital has received the approval of the so-called governing bodies, which group I hate—

Vice-Speaker Wurzbach: A personal statement.

Dr. Schussheim: A personal statement, and I will ask personal privilege. Therefore, I think it is time we became realistic and place these hospitals in a position where our patients and our fellow doctors can find that the hospitals with which we are associated are so-called first class citizens.

Vice-Speaker Wurzbach: Is there any further discussion?

Samuel Wagreich, M.D., *Bronx:* May I without disturbing the House merely state the Bronx delegation is for the second time introducing a resolution in behalf of proprietary hospitals which are accredited. We feel they serve a particular and important function in our community and serve to take care of our patients and give our physicians and surgeons an opportunity to perform adequate work in these particular areas. We would ask this House to consider this proposition please, to judge in favor of the resolution to approve listing of proprietary hospitals in the *Medical Directory of New York State.*

Alfred P. Ingegno, M.D., *Councillor:* Mr. Speaker and gentlemen, I speak now as chairman of the Publication Committee. This is a question that keeps coming up before our committee. We do not as a committee, acting for the Council and for you, attempt to assess the professional standards of the hospitals concerned. We do, however, feel that the *Directory* is no place to list the names of institutions that serve a private enterprise and private profit purpose. Whatever other things may be said about it, the fact nevertheless remains that these are hospitals which are for the private profit of their own. Our committee has consistently felt that this, therefore, should make them ineligible for the *Directory* listing.

Thomas M. d'Angelo, M.D., *Queens:* I would like to speak. Sometimes I would have no objection to listing the names that have been accredited. I heartily disapprove of listing the staff, but if you want to list the staff directors, director of surgery, director of medicine, director of OB-GYN, etc., you might. However, how are these positions obtained, gentlemen? Gentlemen, I ask you how are these positions obtained? Are they obtained by competent work done by the various doctors in our voluntary hospitals? No, you pay $10,000, or $15,000, or $50,000, and own a share, and you become a director of surgery, or medicine, or OB-GYN. I don't think they should be included as far as the staff is concerned.

Vice-Speaker Wurzbach: Is there further discussion?

Gerald D. Dorman, M.D., *Councillor:* Mr. Speaker, I would point out that in the way these resolutions are worded there is no discussion of whether these are recognized proprietary hospitals, whether they have received any standard; it just merely says listing of proprietary hospitals.

Vice-Speaker Wurzbach: Proprietary accredited hospitals.

Dr. Dorman: Accredited, but it does not state whether this is accredited by the Commission of Hospitals or by the American Medical Association for residency training. I feel that they are fairly loosely drawn. I would speak against inclusion.

Vice-Speaker Wurzbach: Is there further discussion? If not, gentlemen, I will call the question. If you vote in favor of the report of the reference committee, you will disapprove both of these resolutions. Is that understood? All those in favor of the report of the reference committee say "aye," those opposed "no." It is carried.

Section 135 (See 60)

Report of Reference Committee on Medical Communication: Procedure for Selection of Outstanding General Practitioner

Dr. Kelley: Resolution 60–27, subject "Procedure for Selection of Outstanding General Practitioner," introduced by John C. McClintock, M.D., Albany, Councillor:

> *Resolved,* that the recipient of this year's (1960) award receive his award under the present procedure at the 1961 House of Delegates; and be it further
>
> *Resolved,* that the 1961 recipient of the New York State award be chosen by the 1961 House of Delegates from the names of doctors of medicine submitted to the House of Delegates by the Council Committee on Public Relations; and be it further
>
> *Resolved,* that the 1961 recipient receive his award at the 1961 session of the House of Delegates immediately following his selection; and be it further
>
> *Resolved,* that the election of the Outstanding General Practitioner be thereafter conducted according to the procedure to be followed in 1961.

The reference committee recommends approval of this resolution. I so move.

Vice-Speaker Wurzbach: Is there any discussion?

Louis H. Bauer, M.D., *Ex-President:* Mr. Speaker, I think it would be a very grave error to adopt the second "resolved," which is that the 1961 recipient of the New York State award be chosen by the 1961 House of Delegates from the names of doctors of medicine submitted, and so forth. When this General Practitioner Award was established by the American Medical Association, that is how they did it first. They had it adopted by the House of Delegates. What happened? It became purely a political action. People would come from certain states to say, "We have got a man, and we want him named the General Practitioner of the Year," and it would be used for trading purposes, and they made a joke of the whole thing. So they abolished the idea and referred it to a committee which could go into it in detail and really find out the qualifications of the man who seemed to be most outstanding for the year, and then the board designated the recommendation of the committee.

I understand that is the way it has been done in the Medical Society of the State of New York up to now. I think it would be a great mistake to change that procedure and throw what is a very excellent award into anything that would make it have any political aspect whatsoever.

I would move, Mr. Chairman, that the second "resolved" be deleted.

Edward F. Shea, M.D., *Ulster:* I second it.

Vice-Speaker Wurzbach: Is there any discussion on the amendment? If not, all those in favor of the amendment say "aye," opposed "no." It is deleted.

We are now back to the original recommendation with this deletion. Is there any discussion? If not, all those in favor of the report of the committee say "aye," opposed "no." It is carried with the deletion as ordered.

Gerald D. Dorman, M.D., *Councillor:* What happens to the third "resolved," which says it is going to be acted on in 1961?

Ezra A. Wolff, M.D., *Assistant Secretary:* He should be asked there.

Vice-Speaker Wurzbach: That is all right. That is the first time the House of Delegates is going to meet after he is elected. Anyhow I don't think that makes any great difference here. He can only receive it at the House of Delegates. It may be a week or a month after his election is announced.

Voice: What about the fourth "resolved?"

Dr. Wolff: There are only three left.

Dr. Kelley: It reads, "that the election of the Outstanding General Practitioner be thereafter conducted according to the procedure to be followed in 1961."

Vice-Speaker Wurzbach: That goes out automatically.

Delegate: It seems to me since the third "resolved" has been thrown out, it is automatically brought back in future years to the original procedure.

Dr. Wolff: Then why do you need the resolution?

Section 136 (See 66)

Report of Reference Committee on Medical Communication: Advertising of Patent Medicines

Dr. Kelley: Resolution 60-33 (substitute), subject "Advertising of Patent Medicines," introduced by the Medical Society of the County of Herkimer:

> *Resolved,* that the Medical Society of the State of New York take the initiative in combating this malfeasance to the public health by advocating counteradvertising by the American Medical Association in appropriate media in a manner that strongly delineates the dangers of self-medication and the economic fraud being perpetrated on the public; and be it further
>
> *Resolved,* that the delegates of this Society to the American Medical Association be instructed to present this resolution at the next meeting of the American Medical Association House of Delegates.

The reference committee recommends approval, in principle, of this resolution.

Vice-Speaker Wurzbach: Is there any discussion?

Ezra A. Wolff, M.D., *Assistant Secretary:* Is this going to cost any money, going to take some advertising?

Vice-Speaker Wurzbach: It says the American Medical Association.

Dr. Wolff: Not us?

Vice-Speaker Wurzbach: No. Are you ready to vote on the report of the committee? All those in favor of the report of the committee to approve in principle will say "aye," those opposed "no." It is carried.

Section 137 (See 70)

Report of Reference Committee on Medical Communication: Essay Contest on Advantages of Private Medical Care or the American Free Enterprise System

Dr. Kelley: Resolution 67-37, subject "Essay Contest on Advantages of Private Medical Care or the American Free Enterprise System, introduced by Medical Society of the County of Montgomery:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York go on record as approving this contest for 1960-61 and recommend it to the county medical societies and the woman's auxiliaries for sponsorship.

The reference committee recommends approval of this resolution.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 138 (See 74)

Report of Reference Committee on Medical Communication: Medical Education and the Public

Dr. Kelley: Resolution 60-41, subject "Medical Education and the Public," introduced by the Westchester County Medical Society:

> *Resolved,* that the Medical Society of the State of New York, through its Department of Com-

munications, give broader publicity to the fact that doctors are deeply concerned, not only with the standards of medical education, but also with the problem of training enough doctors to care for the increasing population; that they contribute large sums of money each year to help support medical education; and that through the Council on Medical Education and Hospitals of the American Medical Association they have urged expansion of existing medical schools and construction of at least ten new schools so as to increase the number of graduates from approximately 7,000 a year to 10,000 by 1975; and be it further

Resolved, that the American Medical Association also be memorialized to give further publicity to the efforts of the profession in promoting greatly enlarged medical training programs.

The reference committee recommends approval of this resolution.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Kelley: The Reference Committee on Medical Communication wishes to record its sorrow and to extend to Dr. E. Dean Babbage, chairman, its sympathy on the death of his father on May 7, 1960.

The undersigned, as substitute chairman, wishes to thank all the members of the reference committee for their assistance and cooperation: C. Stewart Wallace, M.D., Tompkins; Monroe M. Broad, M.D., Queens; Robert F. McMahon, M.D., Onondaga; and Theodore R. Proper, M.D., Orange.

Vice-Chairman Wurzbach: Now will you move the report as a whole?

Dr. Kelley: I move the adoption of the report as a whole.

Vice-Speaker Wurzbach: As amended and deleted.

Dr. Kelley: Yes.

Robert F. McMahon, M.D., *Onondaga:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 139 (See 27, 159, 220)

Announcements

Vice-Speaker Wurzbach: Ladies and gentlemen, there are a couple of announcements.

The first is that tonight is the last that any resolutions may be presented—none after this evening.

Dr. Dorman has asked me to read the following as listed on the back of the May, 1960, *Newsletter:* The second annual conference of the Medical Society of the State of New York with county medical society officers and committee chairmen will be held on September 23 and 24 at the Biltmore Hotel, New York City. The problems to be discussed will include disability benefit programs, hospital utilization, medical radio systems, practical politics of medical legislation, economics, public relations, legislation, industrial health, and workmen's compensation. Adjournment will be at noon, Saturday, September 24.

I would like to state that the chairman of this reference committee, Dr. Kelley, took over yesterday morning at nine o'clock and very kindly consented to act, so I think we owe him a very great debt. (*Applause*)

Dr. Kelley: Mr. Speaker, I would like to ask the secretary to send a message of sympathy to Dr. Babbage.

Speaker Lane: That will be taken care of.

REFERENCE COMMITTEE ON PUBLIC HEALTH AND EDUCATION

Section 140 (See 10, 158)

Report of Reference Committee on Public Health and Education: Report of Public Health and Education Committee

Leonard L. Heimoff, M.D., *Bronx:* Mr. Speaker and members of the House, the reference committee considered the business brought to it which was printed in the Handbook for the delegates and also as amended and added to in the black folder. Since it has been suggested by the Public Health and Education Committee that not all subcommittees have to meet each year if there is no business, we have considered the reports and recommendations of those that did have something to say during the year.

We also listened to delegates and observers, and we found that their deliberations helped us a great deal.

Your reference committee commends the chairman of the Public Health and Education Committee for his succinct and penetrating report of the salient problems confronted by the committee during the past year. Particularly we would like to compliment him on the close cooperation with the State Department of Health and other State and municipal agencies.

We should like to draw attention to the efforts to bring about a closer understanding on the part of the physicians of the State concerning the efforts of the State Department of Health, the State Police, and the New York Thruway Authority relative to the continuing study carried on jointly by these agencies in determining the relationship between automotive accidents and physical disabilities, principally intoxication by alcohol.

We agree that the doctors of the State should cooperate to the fullest extent in this endeavor.

We note with satisfaction that commencing with the next issuance of application blanks for operators' licenses there will be a general question relative to physical defects which will not compromise the physician in any way, yet will lend itself to the detection of important disabilities by the Commissioner of Vehicles. We approve also the granting by law to the commissioner of broad powers which will enable him to set standards for license renewal with the advice and counsel of the Health Department of the State of New York.

The physician's responsibility in this respect seems clear: He should inform the Department of Motor Vehicles of any doubts as to his patient's ability to operate a motor vehicle safely, yet he can protect himself from legal liability by stating the findings of a certain condition in his patient "as of this day and hour," or that he considers the patient safe to drive "as of this day and as of this hour."

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 141 (See 11)

Report of Reference Committee on Public Health and Education: Accident Prevention

Dr. Heimoff: It is recommended that the Commissioner of Motor Vehicles or the Superintendent of the State Police, at the time of an automotive vehicle accident, notify the Medical Society's Committee on Public Health and Education of the failure of any physician to comply with a request by the State Police to draw blood from a driver of a vehicle involved in an accident in order to determine the alcoholic content. It should be noted that the physician has no responsibility for making the analysis nor determining the actual alcoholic content.

I move the adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Heimoff: We agree with the decisions rendered by the subcommittee relative to other specific physical defects, notably complete heart block, encountered by the director of the Driver Research Center of the State Department of Health.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 142 (See 12)

Report of Reference Committee on Public Health and Education: Addiction to Alcohol and Narcotics

Dr. Heimoff: The next subject heading is Addiction to Alcohol and Narcotics, and it required the reference committee to meet up right until three minutes ago. After hearing all of the evidence, I will read to you the report as approved by the reference committee. It may not follow exactly as you have it here on your report, but I beg your indulgence that you will listen closely.

Since no action was taken on the resolution presented to the House of Delegates in 1959 relative to the treatment of narcotic addicts, the reference committee studied the latest report of the Subcommittee on Addiction to Alcohol and Narcotics. It has been noted that Riverside Hospital in New York City will be closed as soon as other facilities can be made available. The State Health Department will continue to furnish funds for the treatment of narcotic addicts at hospitals other than Riverside, preferably connected with teaching centers and university hospitals. It is to be noted that a pilot center has been in operation at Metropolitan Hospital for the past six months.

I move for the adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Heimoff: It is the feeling of this subcommittee that narcotic addicts are primarily a medical problem and should be so treated.

Under present law doctors of medicine are permitted to treat narcotic addicts if this treatment is rendered "in good faith" and not for the gratification of the addiction. In view of this interpretation, permissive legislation will be sought in order that doctors of medicine may treat narcotic addicts as sick persons.

A procedure for so handling this situation is hereby recommended. The procedure is as follows; this is a recommendation for handling it after permissive legislation is sought:

1. That each county medical society appoint a committee of qualified physicians to act in a screening and advisory capacity to the physician who wishes to treat an addict.
2. The physician should refer his case to this committee.
3. The case should be registered with the county medical society committee in addition to being registered with the State Health Department. If the committee feels that it is a bona fide patient who wishes treatment, the doctor should then be permitted to treat him.
4. The treatment of the addict should include all acceptable therapeutic measures in addition to an active attempt at withdrawal. Where possible, the treatment should include adequate psychiatric and medical consultation.
5. The doctor should render periodic reports to the committee of the county medical society as to the progress and status of the treated addict.

It is also the feeling of your reference committee that the State Medical Society's Committee on Public Health and Education should be advised concerning the treatment of each addict and, if possible, should act as an advisory body.

It is hoped that the setting up of such a pilot study will enable the medical profession to begin treating and studying the large reservoir of addicts who wish to be cured but who at present have nowhere to turn.

I move adoption of this report.

SPEAKER LANE: Is there any discussion?

EZRA A. WOLFF, M.D., *Assistant Secretary:* Point of information. I have before me a page 2, revised, of this report. Am I incorrect in my assumption?

DR. HEIMOFF: You are incorrect. Just five minutes ago another meeting was held, and it was felt that the delegates should know of the plan provided permissive legislation is gotten.

DR. WOLFF: Shall we destroy this revised sheet?

DR. HEIMOFF: Yes.

SAMUEL LEO, M.D., *Bronx:* Mr. Speaker, on number 4, I believe it says should be treated with all methods. There is no one illness treated with all acceptable therapeutic measures. The word "all" should be deleted, and it should read "acceptable therapeutic measures."

DR. HEIMOFF: I will accept that.

DR. LEO: To avoid any confusion I would like to give a little advice to the doctors if I may. Thus far, there is no permissive legislation, either on a State or Federal basis, which permits a doctor of medicine to treat a narcotic addict for the addiction per se. A doctor may use narcotics for years for medical purposes, terminal malignancy, or some such condition, but he cannot use narcotic drugs for gratification.

The recommendation made by the chairman of the reference committee is a good one, and that is to obtain permissive legislation on a Federal and State level to permit doctors to treat addicts if they so desire. I am sure many of us would not want to do so. Some would. Certainly the punitive measures have failed; the medical ones may succeed. But this is not a fait accompli. Until it is, I would advise extreme caution, and don't quote the chairman of the reference committee as an authority to go ahead and start treating addicts.

SPEAKER LANE: Any comments?

DR. HEIMOFF: I have prefaced this, as you know, with the statement that we should seek permissive legislation. We have merely included a formula which would entail the protection of the physician so that he could prove the fact.

HERBERT BERGER, M.D., *Richmond:* I am very uncomfortable taking a position that is at variance with the testimony you have just heard from Dr. Leo, because he is a very well-informed man in this field, but the Supreme Court of the United States has ruled in the *Linder* v. *United States of America* case that a physician may treat an addict as long as he does it in good faith. The words "gratification of addiction" were of a previous level. That was *Bering* v. *United States Government*, so at the present moment there is no legal restriction on the treatment of an addict. That is the Supreme Court decision, and that is the latest decision.

SPEAKER LANE: Is there any discussion?

EDWARD F. SHEA, M.D., *Ulster:* Mr. Chairman, it seems to me rather than dwell on the treatment of addiction, which certainly is not a specific therapy, that the State Medical Society should go on record as being advocates of some form of prevention of addiction. I am rather in favor of government control of narcotics, eliminating the great offender and promoter of addiction, the pusher.

SPEAKER LANE: Is there any further discussion? If not, those in favor of the motion as presented will say "aye," opposed "no." The "ayes" have it.

Continue, Dr. Heimoff.

Section 143 (See 36)

Report of Reference Committee on Public Health and Education: Telephone Prescription of Narcotic Medicines

DR. HEIMOFF: We had resolution 60-3 presented by the Medical Society of the County of Monroe. After considerable deliberation on this resolution, your reference committee should like to present the resolution to the floor of the House without recommendation, except that the last portion of the "resolved," commencing with the word "permitting," be deleted. The "resolved," as thus amended by the reference committee and as recommended by the reference committee, is as follows:

> *Resolved*, that the Medical Society of the State of New York actively support amendment of Article 33 of the New York State Public Health Law to bring it into conformity with the Federal statutes.

I move for the approval of this portion of the report.

SPEAKER LANE: Is there discussion?

CHARLES R. MATHEWS, M.D., *Monroe:* This seems to me simply to report this to the House of Delegates without recommending any action at all. That is something that is an abdication of the responsibility of the reference committee. I think this is something that should either be approved, or submitted for study, or definite action of some sort recommended. This is an important subject, and it is one which is widely misunderstood. There is a detailed memorandum accompanying this, which I hope everyone will read. First of all, this is not a plea for removing any prescription item from the requirement for prescription.

DR. HEIMOFF: It is put in without recommendation.

DR. MATHEWS: As some of you know, it is illegal under the State law for you to telephone a narcotic prescription whether or not you later get that written prescription to the druggist. That means that if you telephone a prescription for paregoric because one of your patients has a gastrointestinal upset and you do not have that prescription in the pharmacist's hands, you have violated the law. If you call for codeine, a codeine antitussic, and you do not have the written prescription in the pharmacist's hands by the time the patient gets it, you are violating the law.

I have discussed this with people who are very knowledgeable on the situation, with Dr. Hilleboe and with Dr. Leon, and with all due respect I submit neither of these gentlemen is in the position that I am in, and that many of us are in, of having to treat these patients. I can give you almost a direct quotation from Mr. Berlitsky, who is in charge of narcotics regulation in the State. This was published in the May issue of the *Onondaga County Bulletin* last year. He said any physician who prescribes a narcotic for a patient and is not in the actual attendance on that patient is deemed to be prescribing in bad faith or deemed not to be prescribing in good faith. These are the words which Mr. Berlitsky has used.

This is not simply a minor annoyance. This works a continuing hardship on our patients, which is the main thing for this situation being brought up in Rochester.

We had a small amount of snow last year, as some of you may have heard. We had the problem of patients who needed empirin with codeine or a similar remedy and were unable to get it. Specifically, I had one patient who needed an antitussive containing narcotic, and the druggist was far enough away that he did not know me. The patient had to drive down 5 miles and back 5 miles through the snow. Action should be recommended by the reference committee.

HERMAN E. HILLEBOE, M.D., *Commissioner, State Department of Health:* I would like to say two things, Mr. Speaker. The first one is that this is not a simple problem of just straight narcotic drugs. There is a group, as you know, of exempt narcotic drugs which have to do with Dr. Mathews' point: dihydrocodeinone, narcoline, paregoric, and papaverine. These are drugs that are used in minimal doses oftentimes, and long before I came to New York State in 1947, this was a law on the books. The reason there has been strict law about this is because of the fact that we have perhaps the biggest narcotics sale in the country in New York State. We have the biggest narcotics problem. We have the biggest city with many of the narcotics problems that are associated with it.

I am not saying that we want to make things difficult for the patients or for the doctors, but I would say this: that we either have to be too tough or too lenient. We are perfectly willing to change from time to time. I would say if you want to bring about a change, it should not be done by resolution.

About four or five years ago we had a meeting of our advisory committee on narcotics, which included representatives of the medical profession, the dental profession, the veterinary profession, and the pharmacists, and this group of advisers advised us not to change the law. These are the people we turn to, and on their advice we have continued to try to enforce it. If you gentlemen would like to have us reconsider it, I would be delighted to have the chairman of the reference committee suggest that the Health Department call together the advisory committee on narcotics with representatives from your group. We would be delighted to reconsider this and come up with recommendations.

Thank you!

SPEAKER LANE: Thank you, Dr. Hilleboe.

Is there further discussion?

GERALD D. DORMAN, M.D., *Councillor:* I would like to make that a formal substitute resolution: that the Commissioner of Health be asked to have this matter considered by his advisory committee with the representation he suggested.

SPEAKER LANE: Is there a second to the substitute motion?

RAYMOND J. BYRON, M.D., *Schenectady:* I second it.

. . . There being no discussion, the substitute motion was put to a vote and was carried . . .

Section 144 (See 13)

Report of Reference Committee on Public Health and Education: Aging and Nursing Homes

DR. HEIMOFF: The reference committee commends the Subcommittee on Aging and Nursing Homes for its assiduous efforts to set in motion in this State the mechanics which will help to solve the problems of the health care of the aged. We agree that the matter of accreditation of nursing homes should be looked into by the appropriate agencies. There should also be a study of the care of the chronically ill in order to relieve hospitals of long-term care and to reduce the costs to this type of patient and to the Blue Cross plans.

The reference committee is gratified that the subcommittee chairman has been chosen as a delegate to the 1961 White House Conference on Aging by the Governor. It should be noted that only 100 individuals will be present from New York State.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 145

Report of Reference Committee on Public Health and Education: Cancer

DR. HEIMOFF: The contemplated efforts of the

Subcommittee on Cancer to promote in the hospitals of the State a "Cancer Detection Week" by means of cytology is commended, and it is urged that county medical societies cooperate in this objective during Cancer Detection week in April of 1961.

The projected report relative to diagnostic facilities in the State and City of New York will be of assistance to the members of the Society when presented in the NEW YORK STATE JOURNAL OF MEDICINE.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 146

Report of Reference Committee on Public Health and Education: Child Accidents

DR. HEIMOFF: The activities of the chairman of the Subcommittee on Child Accidents in endeavoring to obtain the widest possible publicity for the importance of preventing child accidents is most commendable.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 147 (See 14)

Report of Reference Committee on Public Health and Education: Diabetes

DR. HEIMOFF: The reference committee agrees that the importance of the postprandial sampling of blood or urine in the detection of diabetes should be emphasized and compliments the Subcommittee on Diabetes on alerting the hospitals to this fact. The committee opposes the recommendation that a blood sugar test should be included in "routine hospital admissions." The emphasis should lie in the education of the hospital staffs and the individual physician to take both urine and blood samples postprandially as indicated.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 148 (See 15)

Report of Reference Committee on Public Health and Education: General Practice

DR. HEIMOFF: The report of the Subcommittee on General Practice was accepted in principle. However, your reference committee took exception to item 3 regarding the qualifying or certification of the general practitioner for special types of practice in hospitals. Rather than be recommended for specialty work by a specialist on the staff, the general practitioner, the committee believes, should be recommended for qualification by the appropriate medical board or specialty department.

I move adoption of this portion of the report.

SPEAKER LANE: Is there discussion?

SAMUEL WAGREICH, M.D., *Bronx:* Mr. Speaker, I am not quite clear on whether there is any attempt here to limit the particular abilities of a general practitioner who may perhaps be a member of the staff of a specialty in a given hospital. For example, suppose the general practitioner, by virtue of the fact he is a member of the staff of obstetrics in a particular hospital, is qualified or certified by the director of that particular department to do perhaps forceps, or frank breech delivery, or breech extraction. He may in fact be qualified to do this type of obstetric delivery and not be certified by the American Board of Obstetrics and Gynecology. I would suggest, Mr. Speaker and the chairman of the committee, that such an individual by virtue of the fact that he is certified by the director of a particular service, and by virtue of the fact that he is training in that particular department and endeavoring to perfect himself towards the time when he may perhaps be eligible for his specialty boards, be given an opportunity to do that type of procedure for which he can be certified by the director of his particular department. It is no particular trick for him to take his boards if he is so qualified. So we ask this House to consider the fact that in his desire to perfect himself, he be certified or qualified by the director of his particular department so that the generalist may continue to train and perfect himself for that day when he may become a specialist in that particular area if he so desires.

I will ask you then, Mr. Speaker, that you change that portion of this report of the chairman of the reference committee, please.

SPEAKER LANE: Is there further discussion?

DR. HEIMOFF: We agree fully with the remarks of Dr. Wagreich, and perhaps he misinterpreted the meaning of our language. We believe that the general practitioner should be recommended for qualification by the appropriate medical board or specialty department, we could add the three words, "of the hospital." We feel that these are the appropriate people to do the certifying in any given hospital or locality and that not be put on one man, because the recommendation was that a specialist so recommend him. It was our feeling that this should be recommended by the appropriate medical board or specialty department of the hospital and not the American boards.

DR. WAGREICH: May I take the liberty again of speaking one word?

SPEAKER LANE: Yes.

DR. WAGREICH: I would like the chairman of the reference committee to change the wording of that. Instead of saying "by a specialist on the staff," say "by either the director of that department or the medical board of that particular hospital." Would that be acceptable?

Dr. Heimoff: I would so accept it.

Dr. Wagreich: Thank you very much.

Speaker Lane: Is there further discussion? If not, those in favor of this portion of the report will say "aye," any opposed "no." It is so ordered.

Dr. Heimoff: The reference committee recommends that the study of dual fee schedules include not only the Workmen's Compensation Board but other insurance payment plans.

I move the adoption of this portion of the report.

Speaker Lane: Is there discussion on this point? If not, those in favor—

Delegate: Point of information. What is a "dual fee schedule?"

Dr. Heimoff: The dual fee schedule has to do with the differential in payment of the specialist as opposed to the generalist by the Workmen's Compensation Board. It was suggested that an investigation of this matter be made. It was the feeling of the reference committee that the word "investigation" was not appropriate and that a study of this dual fee schedule be made; that is, the generalist and specialist should not only include the Workmen's Compensation Board but also include other insurance payment plans as well.

Speaker Lane: Is there further discussion on the question?

Raymond J. Byron, M.D., *Schenectady:* Mr. Speaker, this brings up something that may be very premature, but there is a general move on foot —and I think it is going to require all of our support —that men who are studying in the field of general practice shall have to have further designations. Today in workmen's compensation they have no such status. The State Labor Department recognizes the fact, and I know several men in Albany who are just waiting for the State Society to start pushing for the generalist who is following up in his field that he receive certain recognition and a further than courtesy type privilege on the general practice basis.

Speaker Lane: I think that this last remark probably, Doctor, was not actually pertinent to the topic. I may be wrong about that, but I believe we are concerned only with the study of the dual fee schedule.

Is there any further discussion? If not, those in favor of the report will say "aye," any objections "no." It is so ordered.

Dr. Heimoff: The reference committee goes on record that hospital insurance plans should be encouraged to make practice in rural areas more attractive.

I move for adoption of this portion of the report.

Speaker Lane: Is there any discussion?

Carlton E. Wertz, M.D., *Ex-President:* I would like to have an explanation of that sentence.

Dr. Heimoff: The general practice group in this report stated that in some localities where a physician does not have a hospital nearby, maybe 20 to 30 miles away, one of two things happens when a patient is placed in this hospital: Either the patient uses a local physician in the community of the hospital, or it is economically unfeasible for this doctor to make a call or trip to this hospital and back for the fee schedule as so outlined, and that this may discourage the rural type of practice. We have felt that hospital insurance plans should be encouraged to take this into account to make practice in rural areas more attractive.

. . . There being no further discussion, the motion was put to a vote and was unanimously carried . . .

Speaker Lane: There seemed to be a lot of discussion there, but the vote was in favor of the portion of the report.

Continue, Dr. Heimoff.

Dr. Heimoff: With specific reference to item (*d*) in the subcommittee's list of principles concerning the general practitioner, your reference committee believes that there is urgent need for further study of the problem of differential pay between the generalist and specialist.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Heimoff: Your reference committee also wishes to go on record that physicians should be better trained in foot care and recommends that the curriculum of medical schools and postgraduate courses should place more emphasis on the care and treatment of the foot.

I move the approval of this portion of the report.

Speaker Lane: Is there any discussion in relation to this recommendation on the feet? If so, you had better speak up now.

. . . The question was called, and the motion was put to a vote and was carried . . .

Section 149

Report of Reference Committee on Public Health and Education: Glaucoma

Dr. Heimoff: Your reference committee approves the report of the Subcommittee on Glaucoma. We feel that the general practitioner can play an important part in the detection of this disease, and we recommend that a joint committee of ophthalmologists and general practitioners develop a practical program to this end. The committee wishes to take this opportunity of commending the ophthalmologists for their cooperation and support of these programs.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 150

Report of Reference Committee on Public

Health and Education: Hard of Hearing and the Deaf

Dr. Heimoff: The report of the Subcommittee on Hard of Hearing and the Deaf is approved. However, we are of the opinion that perhaps the picture is not quite so rosy as painted; that there are not enough hearing centers to diagnose properly the hearing defects of all the population in the State, nor are there a sufficient number of speech centers to train those whose defects have been analyzed.

I move for the adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 151

Report of Reference Committee on Public Health and Education: Heart Disease

Dr. Heimoff: Your reference committee commends the Subcommittee on Heart Disease for its organized joint efforts with the State and City Departments of Health, the New York Heart Assembly, and the New York Heart Association to bring to the attention of the profession and the lay public the various aspects of heart disease together with measures which can be taken to alleviate these. We are pleased that the New York State Journal of Medicine is cooperating in this effort by publishing a series of articles by experts in the field.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 152 (See 16)

Report of Reference Committee on Public Health and Education: Maternal and Child Welfare

Dr. Heimoff: The report of the Subcommittee on Maternal and Child Welfare is approved. The scope and intensity of the continuing study in maternal mortality and the proposed perinatal mortality study attest to the earnestness of the chairman and his committee as well as the regional chairmen in obstetrics and pediatrics. We wish them success in these detailed surveys.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 153

Report of Reference Committee on Public Health and Education: Medical Film Review

Dr. Heimoff: This subcommittee continues without fanfare its review of the latest in medical films, with recommendation to the State Health Department for acquisitions by its film library. It notes that the problem persists of increasing the circulation of films to hospitals, medical schools, and medical organizations. Your reference committee recommends that these agencies make greater use of the film library.

I move for adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 154

Report of Reference Committee on Public Health and Education: Mental Hygiene

Dr. Heimoff: It is hoped by your reference committee that in addition to attendance at various national conferences on mental hygiene by the chairman of the Subcommittee on Mental Hygiene, there may be more concrete recommendations proposed in the future by this subcommittee.

The potential role of the general practitioner is especially noted and could be greatly aided by closer cooperation among the hospital, the psychiatrist, and the general practitioner.

I move for adoption.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 155

Report of Reference Committee on Public Health and Education: Operating Room Deaths

Dr. Heimoff: The reference committee heartily agrees that a uniform nomenclature and classification of operating room deaths would be of great value in the further study of this problem.

I move for adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 156

Report of Reference Committee on Public Health and Education: Physical Medicine and Rehabilitation

Dr. Heimoff: Your reference committee is pleased by the most appropriate choice of I. Jay Brightman, M.D., for the Physician's Award by the President's Committee on Employment of the Physically Handicapped.

The special survey made by Irving L. Ershler, M.D., of the rehabilitation programs being conducted by various departments of the State government is commended as an excellent, comprehensive study of the problem. It is recommended that a study by the State Medical Society in conjunction with the State Health Department be made of the overlapping rehabilitation programs and that monies be made available up to a certain limit to be determined by the Council and the trustees.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 157

Report of Reference Committee on Public Health and Education: School Health

Dr. Heimoff: The reference committee is in favor of screening examinations for school children according to the needs of the community with a complete physical examination at stated intervals. We recommend that the Subcommittee on School Health meet with appropriate representatives of the State Education Department to work out such a plan.

The reference committee goes on record approving the action of the subcommittee and the Council with reference to their approval of a modified program of competitive, body contact athletics for boys in grades 7, 8, and 9, in accord with the program and recommendations of the New York State High School Athletic Association.

I move for adoption of this portion of the report.

Speaker Lane: Is there discussion?

Ralph S. Emerson, M.D., *Nassau:* I would like to speak in support of the second paragraph. This is a very constructive program which is being put on by the New York State High School Athletic Association. It has been worked out in conjunction with the Nassau County Medical Society and some of the upstate medical societies.

I think you should realize that this is not only the first attempt to try to protect the junior high school grade students in contact sports, but, for example, they are developing protective equipment. They have cut down the length or period of activities. They are eliminating the kickoffs. They are having adequate medical examinations and also medical surveillance at the place of activity. I think that the New York State High School Athletic Association is to be commended on this cooperation with organized medicine, and I would like to urge all of the component medical societies to cooperate in this junior high school contact program.

Thank you very much.

. . . There being no further discussion, the motion was put to a vote and was unanimously carried . . .

Section 158 (See 10, 140)

Report of Reference Committee on Public Health and Education: Supplementary Report of Public Health and Education

Dr. Heimoff: We have a supplementary report, 60–B. Your reference committee notes with interest the topics discussed at the meeting of the parent committee on April 20. We particularly wish to endorse the action of the committee concerning the primary immunization by tetanus toxoid of all persons possible, especially children, in order to have as large a segment of the population as possible immunized from the civil defense point of view. We recommend that booster injections be given at intervals as recommended by various health departments.

I move for adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Heimoff: Your reference committee commends the committee for taking the leadership in recommending the field trial by the State Health Department in the use of oral poliomyelitis vaccine in persons under twenty years of age.

I move for adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Heimoff: Your reference committee would like to call to the attention of the House that this is the last year of Dr. Norman S. Moore's chairmanship of the Council Committee on Public Health and Education as he moves on to the presidency. We should like to congratulate him heartily upon the success of his tenure in this chairmanship.

Your reference committee wishes to take this opportunity of thanking the members of the committee for their thoughtful deliberation on the reports under consideration. Gratitude is herewith expressed to Thomas Bumbalo, M.D., Royal S. Davis, M.D., C. Joseph Delaney, M.D., and G. Gordon Knight, M.D.

I would like to add our thanks to Herman E. Hilleboe, M.D., Commissioner of the State Department of Health, for his constant presence, aid, and advice to the committee during our deliberations.

We should like also to wish a speedy and uneventful recovery to Samuel Frant, M.D., who was originally assigned as chairman of this reference committee.

I move adoption of the report as a whole, as amended.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Speaker Lane: The Speaker and Vice-Speaker wish to commend Dr. Heimoff personally for taking over such an assignment on short notice and doing such an excellent job. (*Applause*)

Section 159 (See 27, 139, 220)

Announcements

Speaker Lane: Dr. Kelley wishes me to announce that his reference committee is asked to meet with him in the Penn Top North at 8:30 a.m. tomorrow. There has been some question brought to me about the schedule of the sessions for the remainder of the House activities. If you will notice in your Handbook, we have listed tomorrow morning at 9 o'clock for the regular session and tomorrow afternoon at 2 o'clock for the final session and therefore the election of officers. We realized when this program was set up that it has been customary for a long period of time to have the elections as the first order of business on Monday morning. However, in view of the rearrangement of the reference committees and the necessary time allotted to them, it was felt that this schedule was imperative. If it is possible, if the work proceeds tonight so that we are able to complete our work at an earlier time than is now scheduled, every effort will be made to expedite the situations of the House, but as of the present it would appear that the schedule in your Handbook will be the schedule we will follow, with the single exception that if we are finished earlier in the morning than we anticipate, we will call the final session to order as soon as possible and have the elections.

REFERENCE COMMITTEE ON COMMISSION ON MEDICAL SERVICES—A

Section 160

Report of Reference Committee on Commission on Medical Services—A: Commission on Medical Services

Irving L. Ershler, M.D., *Onondaga:* Mr. Speaker and members of the House of Delegates, your reference committee notes completion of the first full year's operation of the Commission on Medical Services. The experience thus far is inadequate for proper evaluation of the use of the commission as an organizational device. We feel that further study is indicated.

We recommend that the Commission on Medical Services be continued for at least one more year before final decision is made either to extend its use to other areas or to abandon it.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 161

Report of Reference Committee on Comission on Medical Services—A: Economics

Dr. Ershler: Your reference committee complements the Council Committee on Economics and its subcommittees for the exemplary manner in which they have handled their large volume of work. Special commendation must go to the chairman, Waring Willis, M.D., for his diligence and the time and effort he expended. During 1959 his committee completed a study of a revised schedule which provides uniform medical fees for the rehabilitation program of both the Department of Health and Department of Education of New York State. This schedule is fiscally more realistic and in relative conformity with others presently in use. Its implementation should give added impetus to the stabilization of medical fees.

At its meeting in January, 1960, the committee discussed in detail a "relative value" fee schedule plan for the Medical Society of the State of New York and made recommendations for accomplishing this. The Council approved and recommended that the Board of Trustees appropriate $1,000 for this study.

In his presidential report, Dr. Fineberg called attention to the relative value fee schedule and emphasized its importance in our economic structure.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Ershler: In August, 1959, Dr. Willis participated in the first official meeting of the Associated Blue Shield Plans of New York State. On this occasion basic medical economics generally and medical care insurance specifically received attention. Your reference committee feels that continuation of this type of State-wide cooperative effort is of prime importance in putting the medical profession on a sound economic basis. Also it should enhance our public relations as well as help to minimize government interference in medical practice.

In addition to the foregoing, the Economics Committee handled routine matters as they arose. This reference committee is in complete accord with these actions and recommends their approval.

Mr. Speaker, I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 162 (See 35)

Report of Reference Committee on Commission on Medical Services—A: Social Security for Physicians

Dr. Ershler: Two resolutions dealing with social security were considered by this reference committee. Resolution 60–2 urges "that the Medical Society of the State of New York *independently* seek out and utilize every and all means available to obtain coverage for its membership under the Social Security Act."

It is our opinion that the Congress of the United States looks with disfavor on the inclusion of such isolated groups in social security.

We further feel that this Society should not act other than in concert with the entire medical profession of the United States.

We therefore recommend disapproval of this resolution.

Speaker Lane: Is there any discussion in favor of the approval of the report, which is to disapprove social security for physicians—

Thomas M. d'Angelo, M.D., *Queens:* Not social security, it is disapproving that the State of New York take unilateral action.

Speaker Lane: I stand corrected. Is there any discussion? All those in favor of the report of the reference committee which is to disapprove the resolution will say "aye," contrary "no." The motion is adopted, and the resolution is lost.

Section 163 (See 59)

Report of Reference Committee on Commission on Medical Services—A: Social Security for Physicians

Dr. Ershler: Resolution 60–26 reaffirms the stand on social security previously taken by this House on at least two previous occasions. We feel confident that the House of Delegates of the American Medical Association is well aware of the sentiment of the Medical Society of the State of New York in regard to social security for physicians. We have therefore modified resolution 60–26 by striking out the last two "resolved's."

In our amended version there is but one "resolved," which states:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York reaffirm its support of social security for physicians.

We recommend approval of this resolution, as amended, and I so move.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 164 (See 9)

Report of Reference Committee on Commission on Medical Services—A: Subcommittee on Public Medical Care

Dr. Ershler: The subcommittee held one meeting in December, 1959, by means of a telephone conference of its members. On this occasion it discussed possibilities for reducing the cost of medical care of welfare patients and approved the new fee schedule of the New York State Department of Social Welfare. Further, the subcommittee recommended continuation of the existing five-day limit during which a physician must report his first treatment of any welfare patient.

The reference committee is in accord with the subcommittee's action on the fee schedule and its attempt to find means of reducing the cost of medical care of welfare patients.

We recommend approval of this portion of the published report, and I so move.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Dr. Ershler: In the matter of continuing the five-day limit for reporting first treatment of welfare patients, this reference committee feels there is reason for controversy. We feel that there may be adequate cause to lengthen this time limit and therefore recommend disapproval of this portion of the subcommittee's published report. I so move.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 165 (See 37)

Report of Reference Committee on Commission on Medical Services—A: Extension of Notification Period in Public Welfare Cases

Dr. Ershler: The purpose of resolution 60–4 is extension of the five-day limit on the reporting of first treatment of welfare patients.

I shall read the "resolved" of this resolution, which was introduced by the Medical Society of the County of Oneida:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York mandate the chairman of the Public Medical Care Committee of the Medical Society of the State of New York to confer with the responsible officials of the Department of Social Welfare for the purpose of negotiating a change in the regulations by extending the period for submission of M-1 forms from five (5) days to fifteen (15) days.

During the course of our deliberations several interested persons appeared before us and testified extensively to the difficulty imposed by the five-day limit in reporting first treatment of welfare patients. We feel that this time limit should be extended and we therefore recommend approval of this resolution. I so move.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 166 (See 55)

Report of Reference Committee on Commission on Medical Services—A: Increased Fees for Welfare Visits

Dr. Ershler: Resolution 60–22, introduced by the Nassau County Medical Society, brings attention to an inequity in the new fee schedule recently adopted by the Social Welfare Department of the State of New York. Perhaps I had better read that "resolved":

> *Resolved,* that the Medical Society of the State of New York request the Department of Social Welfare of the State of New York to eliminate this inequity by raising the fee for the first house visit by a general practitioner to a level comparable to the increased fees for other medical services.

In testimony before this reference committee it was pointed out that the percentage increase in fees granted the general practitioner is not commensurate with the percentage increase granted the specialist.

The purpose of resolution 60–22 is to eliminate this inequity by raising the fee for a general practitioner's first house visit. We are in agreement with the principle embodied in this resolution and recommend its approval. I so move.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 167 (See 38)

Report of Reference Committee on Commission on Medical Services—A: Identification Forms for Authorized Welfare Recipients

Dr. Ershler: Resolution 60–5 is concerned with the identification of authorized welfare recipients prior to the administration of medical care.

The "resolved" in this resolution, introduced by the Medical Society of the County of Oneida, reads:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York mandate the chairman of the Public Medical Care Committee of the Medical Society of the State of New York to arrange a conference with the Department of Social Welfare for the purpose of devising a means of identification for authorized public welfare recipients to be carried by each such person; and be it further
>
> *Resolved,* that the chairman of the Public Medical Care Committee of the Medical Society of the State of New York suggest at such conference that each public welfare office send an identifying voucher with its monthly payment every recipient that will identify him as an authorized welfare charge for that month and that such welfare recipient use that identifying voucher every time he visits his physician or becomes a patient at a hospital to indicate that he is indeed authorized to receive medical and surgical as well as hospital care under the welfare department with jurisdiction over him.

We recognize the need for such identification and are in sympathy with the principle expressed in the resolution. It is our feeling, however, that this is a matter for correction at a local level and should be handled by arrangement between local physicans and local welfare authorities. We therefore recommend that no action be taken on this resolution, and I so move.

Speaker Lane: Is there discussion?

Irwin Alper, M.D., *Oneida:* I am fully aware and in sympathy with the recommendation of the reference committee. However, this matter arose in our county, and we took it up with the local welfare officials there, and they were also in sympathy with us. But they said that this is something that should be given to them from the Department of Social Welfare as a ruling for the entire State and that they were unable as a local county committee of welfare to handle it without the Department of Social Welfare's consent to do so. That is the reason this resolution was brought into the House. I would like to be clarified by somebody on the subject, if possible.

Speaker Lane: I wonder if Dr. Hilleboe might be here and if he could speak to that.

Francis A. Stephens, M.D., *Albany:* In Albany County this has been done with no mandate from the State Social Welfare Department. Every welfare recipient in Albany County receives a monthly card of a different color with his number and designation of the classification of welfare he is receiving, so I don't see any reason for this House taking any action when it can be done locally.

Speaker Lane: Is there further discussion?

Samuel Sanes, M.D., *Erie:* The same system works in Erie County. Each welfare recipient gets a card.

. . . There being no further discussion, the motion was put to a vote and was carried . . .

Section 168

Report of Reference Committee on Commission on Medical Services—A: Bureau of Medical Care Insurance

Dr. Ershler: The Bureau of Medical Care Insurance has made significant progress in developing liaison between the Blue Shield Plans and this Society. In this connection organization of the Associated Blue Shield Plans of New York State has been of great help.

It is with considerable interest that we note the progressive increase in Blue Shield membership. Our bureau has analyzed the detailed data of each plan operating in New York State, and these are available for our information. Quarterly progress reports on the plans have been prepared and are also available.

Mr. George Farrell, bureau director, in cooperation with George J. Lawrence, Jr., M.D., chairman of the Special Committee on Resolution 58–49—"Medical Care, the Job of the Medical Profession," arranged two regional conferences on medical services. Conducted upstate early in 1960, these were well attended and well received.

This reference committee fully approves of the bureau's published report and commends Mr. Farrell for his skillful conduct of the bureau's affairs.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 169

Report of Reference Committee on Commission on Medical Services—A: Medicare

Dr. Ershler: At the 1959 House of Delegates it was noted that there had been curtailment in certain categories of the Medicare program. This had been necessitated because claims exceeded the appropriated allotment of funds. Most of the services were restored on January 1, 1960, by act of Congress. At present the program is operating smoothly and in a routine manner. Claims which may require special consideration are reviewed and adjudicated each month by the Economics Committee. Recommendations about any unusual claims are then made to the Washington office which has been cooperative in accepting the committee's recommendations. The success of this operation is simply attested by the restoration of the previously eliminated services.

Your reference committee feels that this is an excellent demonstration of the benefit that can be achieved by the orderly, efficient operation of responsible persons acting in good faith.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 170 (See 40)

Report of Reference Committee on Commission on Medical Services—A: Distribution of Medicare Fee Schedules

Dr. Ershler: Resolution 60-7 would mandate the Medical Society of the State of New York to send a copy of the Medicare schedule of allowances to each of its members. It was introduced by the Medical Society of the County of Queens, and the "resolved" reads:

> *Resolved*, that the Medical Society of the State of New York send a copy of the Medicare schedule of allowances to each of its members.

Many persons appeared before this reference committee and debated this issue. After hearing the debate, it is the opinion of this committee that the action required by the resolution not only would serve no useful purpose but might also interfere with the present smooth functioning of Medicare in this State. We therefore recommend disapproval of this resolution, and I so move.

Speaker Lane: Is there discussion?

Thomas M. d'Angelo, M.D., *Queens:* I am not aware of any of the reasons why this resolution is not being approved. I know one reason, which is a very cogent one, why it should not be approved. It would be quite expensive on the part of our Society to send all of these schedules out. However, I am going to ask one question. Each county society has received a copy of this schedule. Is it permissible for each county society on its own to send such a schedule to its members? I would like an answer to that question.

Speaker Lane: Do you know the answer to that?

Dr. Ershler: I think I do, but I would rather have Dr. Willis answer that question, if he is in the House.

Waring Willis, M.D., *Councillor:* The copies of the schedule were sent to the county medical societies for them to treat as they saw fit. The reasons chiefly behind this objection to publishing a fee schedule is that the original agreement with the Department of Dependents Medical Care of the Federal government was that we, as doctors, would treat the dependents who are under an income of $4,500 as we would our other patients who are in that income level. In other words, we were to charge our usual fee. Now, if by chance our usual fee was above the ceiling set by Medicare, we would allow only the maximum of the schedule.

It would seem if we publish a schedule, we will be making a maximum schedule, and everybody will send the maximum fee, and we are not following the principle of sending out a usual fee for services to patients in that income level.

As a matter of practical application, in analyzing payments for the last three months, if the maximum of the schedule had been paid, involving approximately $300,000, we would have saved $60. To publish this schedule would cost very much more. Here is a plan working excellently. It is a plan in which we have a minimum of trouble, and your Economics Committee has to adjudicate a minimum of disputes. I would suggest that we leave it as it is. I see nothing to be gained by publishing a schedule except to spend more money.

Speaker Lane: Is there further discussion?

Dr. d'Angelo: I will say this. This is the first schedule of fees that has been hidden. Every other schedule that I know of has been promulgated, is readily available. This is the only one about which there is a mystery, and I don't like it.

Dr. Willis: There is a letter on the desk of the Economics Committee at the present from the Department of Dependents Medical Care and the Department of the Audit of the United States Government asking what the Medical Society of the State of New York is doing about holding to the principle that we are asking doctors to send their usual fee, and we have to reply to that letter. It is pretty obvious if we publish the schedule, we are not complying with the letter. However, if that is the feeling of the House here that we do publish a schedule, we will have to write them accordingly.

. . . There being no further discussion, the motion was put to a vote and was carried . . .

Section 171

Report of Reference Committee on Commission on Medical Services—A: Committee on Medical Care Insurance

Dr. Ershler: The Council Committee on Medical Care Insurance has completed an enormous amount of work. This reference committee commends Carl R. Ackerman, M.D., chairman, and his committee on their accomplishments, and we are in accord with all of their findings and recommendations.

Outstanding among the committee's many achievements was its participation in the organization of the Associated Blue Shield Plans of New York State. The association consists of three persons from each member plan and three representatives from the Medical Society of the State of New York. The association has agreed to appoint committees on legislation, public relations, and medical policy.

During the course of our deliberations several individuals testified before this reference committee. We were disappointed to learn that the Genesee Valley Medical Plan has not seen fit to join the Associated Blue Shield Plans of New York State. We feel that the Medical Society of the State of New York should urge the Genesee Valley Medical Plan to join with the others in the new organization.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Ershler: Institution of Blue Shield insurance for low-income people over the age of sixty-five occupied a prominent segment of the committee's effort throughout the year. Each county society was informed of the resolutions adopted by this House in 1959 urging Blue Shield plans to provide such coverage. At present the committee reports that all the Blue Shield and Blue Cross plans in the State are progressing with such programs, and it is anticipated that in the near future our older age citizens will have available to them voluntary insurance covering both hospital and medical care.

The Medical Care Insurance Committee's report indicates the extensive ramifications of today's medical economics. It emphasizes the necessity for medicine to take the initiative in controlling and stabilizing an equitable fee system. Health insurance of all types is rapidly expanding, and some type of mechanism must be established for fiscal control. Our Medical Care Insurance Committee should receive our unqualified support in these matters, and this reference committee urges full approval of its published report.

Mr. Speaker, I move approval of this report.

Speaker Lane: Is there discussion?

Thomas M. d'Angelo, M.D., *Queens:* I would like to call the attention of the House to one important matter that may or may not bring some very adverse public relations, and that is the question of the care of the aged. We went on record in this House I think on two different occasions as asking the medical profession to take care of the aged. We also went on record, as I recall it, for a reduced fee. Now these insurance plans are coming out with a schedule for the aging, and actually the premiums are going to be at least twice as high for the low-income groups as they are at present for the others. So we are going to have the aged who are going to buy these plans and are going to pay twice the premium.

Gentlemen, let us not talk out of each side of our mouths. Let us say what we mean. If we mean that the medical profession is not now in a position to take care of the burden of the medical care of the aged, that is one thing, and I agree with that. I don't think we are in a position to take on ourselves the burden of the medical care of the aged. On the other hand, let us not say we are going to take care of the aged at a reduced fee and then come up with premiums that are double premiums.

Speaker Lane: Is there further discussion?

Irwin Alper, M.D., *Oneida:* I would like to refer this House to the action of the Commissioner of Insurance of the State of New York about two weeks ago in approving a new plan put out by the Medical and Surgical, Inc., which embraces 17 counties within the center of the State. In this new plan the Medical and Surgical, Inc., is going to sell this insurance to people over sixty-five years of age at quite a considerable reduction in fee, and at the same time the doctors of all counties embraced within this plan have agreed to reduce fees in these instances at least one third.

. . . There being no further discussion, the motion was put to a vote and was carried . . .

Section 172 (See 39)

Report of Reference Committee on Commission on Medical Services—A: Payments to Physicians by Insurance Carriers

Dr. Ershler: The purpose of resolution 60–6 is to assist physicians in collecting just fees for medical services rendered patients who have insurance.

The "resolved" portion of the resolution now reads:

> *Resolved*, that the House of Delegates of the Medical Society of the State of New York mandate the chairman of the Medical Care Insurance Committee of the Medical Society of the State of New York to take whatever action he deems proper and hold whatever conferences he finds necessary to induce the carriers of medical and surgical coverage to include a question on physician's report forms inquiring whether or not the physician or surgeon has been paid for his services; and be it further
>
> *Resolved*, that in those instances where the physician or surgeon indicates that he has not been paid, the carrier, in issuing the check for the medical and surgical services, make as joint payees both the patient or the insured, if other than the patient, and the physician who rendered the service for which the payment is being made.

We agree that every physician should be paid a just fee for services rendered, but the original resolution contains details of implementation that are too unwieldy. We have altered and amended the resolution as follows and recommend its approval as amended:

In the second "whereas" the words "notably Blue Shield" have been stricken out.

The second "resolved" has also been stricken out.

The single "resolved" has been altered to read:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York mandate the Medical Care Insurance Committee of this Society to take whatever action it deems proper and to hold whatever conferences it finds necessary with the Health Insurance Council to implement proper payment to physicians for services rendered to patients covered by insurance.

Mr. Speaker, I move approval of the amended resolution.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 173 (See 41)

Report of Reference Committee on Commission on Medical Services—A: Revision of Insurance Forms

Dr. Ershler: Resolution 60–8 urges that a standard form for reporting to insurance companies be devised and used. The resolution fails to recognize that such standard forms are already in existence.

I am sorry; I forgot to read resolution 60–8, introduced by the Medical Society of the County of Queens, and which now has three "resolved's" which read:

> *Resolved,* that the Medical Society of the State of New York, in conjunction with the representatives from the insurance carriers, devise a standard form for use by physicians; and be it further
>
> *Resolved,* that an attempt be made to devise a simple follow-up form for use in long-term cases; and be it further
>
> *Resolved,* that the delegates from the Medical Society of the State of New York to the American Medical Association be instructed to introduce a similar resolution at the June meeting of the American Medical Association House of Delegates.

Acknowledging that the use of such standardized forms is desirable, although currently not extensive, this reference committee has deleted the entire resolution and in its place offers a substitute which reads as follows:

> Whereas, an increasingly large segment of the population is covered by health, accident, and disability insurance; and
>
> Whereas, many of the insured are covered by more than one insurance carrier; and
>
> Whereas, the various insurance carriers require completion of a variety of forms by the attending physician; and
>
> Whereas, a standard form has been developed and is currently available; and
>
> Whereas, such standard form is not being universally used by insurance companies; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York urge the Health Insurance Council to use the full weight of its influence on insurance companies to encourage the widespread use of the standardized form.

We recommend approval of this substitute resolution, and I so move, Mr. Speaker.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 174

Report of Reference Committee on Commission on Medical Services—A: Subcommittee on Liaison with U.S. Veterans Administration

Dr. Ershler: Your reference committee is gratified to note that our relations with the U.S. Veterans Administration are mutually satisfactory. It has not been necessary for the Liaison Subcommittee to meet since the present fee schedule was adopted a year ago. The Veterans Medical Service Plan, Inc., is the veterans care plan in New York State. Since its inception in 1946, it has made use of active physician coordinators. The work of these men has decreased almost to the vanishing point, and Herbert Bauckus, M.D., president of the corporation, has expressed the opinion that coordinators will no longer be needed when the present agreement with the Veterans Administration expires on June 30, 1960. He also recommends that this Society cooperate directly with the U.S. Veterans Administration in the future, eliminating the intermediary Veterans Medical Service Plan of New York, Inc. In support of this he has quoted the opinion of legal counsel stating that it is feasible to do this. Counsel has also suggested that consideration be given to placing the administration of this in the Bureau of Medical Care Insurance. It is pointed out that the bureau is already handling the administration of the Medicare contract between the Society and the Federal government.

Your reference committee feels that implementation of Dr. Bauckus' recommendations would streamline the entire program and would result in more efficient operation. We recommend approval, and I so move.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Dr. Ershler: In his report Dr. Bauckus briefly outlines the history of the Veterans Medical Service Plan of New York, Inc., and summarizes some statistics of the work accomplished. This has truly been a formidable enterprise. This reference committee feels that the officers and directors of the corporation are deserving of the Society's recognition and thanks for a job well done.

I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 175

Report of Reference Committee on Commission on Medical Services—A: Committee on Rural Medical Service

Dr. Ershler: The Rural Medical Service Committee has embarked on an ambitious education program in areas of the State which are distant from larger population centers. A pilot study is projected in three counties in the center of the State, and in two of these operations were begun last month. A series of public forums, each staffed by a panel of medical experts, will discuss the latest advances and information concerning important epochs of the entire life cycle. Each forum will be under the egis of the local county medical society.

Other phases of the committee's program include:

1. Small group meetings conducted by county medical society members who have organized speakers' bureaus for this express purpose.

2. Information on careers directed at younger age groups. Meetings will be arranged with 4-H clubs, high school groups, and others to encourage pursuit of medical and paramedical careers.

3. News releases will appear in all types of periodicals which people in these areas receive regularly. In this connection the committee already has secured the assistance and cooperation of several organizations dealing with citizens in the rural areas.

The expense of the program has thus far been met by the committee's own budget. In 1960 the Sears-Roebuck Foundation will give $1,000 to help finance the pilot program. It is hoped that this amount might be increased as the program spreads to the remainder of the State.

Your reference committee feels that this type of educational program is in the best tradition of medical practice. We are completely in accord with the report of the Committee on Rural Medical Service and congratulate its members on the comprehensive scope of their program.

I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 176 (See 44)

Report of Reference Committee on Commission on Medical Services—A: Hospital Practice of Medicine

Dr. Ershler: Resolution 60–11 reads:

> *Resolved*, that the Medical Society of the State of New York request the Associated Hospital Service of the Capital District to reconsider its present move into the corporate practice of medicine.

On the matter of resolution 60–11, your reference committee listened to debate for over an hour. Following this we discussed the matter and arrived at our conclusions in executive session. It is our opinion that under no circumstances should the Medical Society of the State of New York condone the practice of medicine by hospitals. We feel that the Society should reaffirm the principles set forth in resolution 58–8 which reads as follows:

> *Resolved*, that this House of Delegates of the Medical Society of the State of New York go on record as opposing the inclusion of medical services in hospital insurance contracts and recommend the transfer of coverage for such services from Blue Cross to Blue Shield organizations.

We feel that the Society should reaffirm the principles outlined in the Guide to Professional Conduct of the American Medical Association in regard to insurance programs, which were stated in December, 1950, and reaffirmed in December, 1953. Following is the applicable statement from the proceedings of the House of Delegates of the American Medical Association: "The hospital benefits include: bed, board, general nursing care, operating room and obstetrical room services, dressings, and medications while in the hospital. Electrocardiographic, metabolic, roentgenographic, pathology studies, anesthesia, and physical therapy should be included in the medical insurance benefits and not in hospital benefits."

Your reference committee unanimously subscribes to the inclusion of all types of diagnostic medical services in voluntary prepayment insurance. However, we feel that these services constitute part of the practice of medicine and should not be engaged in by the hospitals. We therefore recommend approval of resolution 60–11 and, Mr. Speaker, I so move.

Speaker Lane: Is there discussion?

John C. McClintock, M.D., *Councillor:* I rise as the chairman of the Advisory Committee for the Columbia University Study of Prepaid Medical Care Plans in the State of New York. I am asking you, Mr. Speaker, the privilege of the floor for a member of the Rockland County Medical Society to speak to this point. I would like the privilege of having Dr. Trussell speak to the House.

Ray E. Trussell, M.D.: Mr. Speaker and members of the House, I appreciate the invitation. I wish it were under more positive circumstances than the somewhat negative context in which I appear before you.

As some of you know, Columbia University was retained two years ago to do studies of the Blue Cross, Blue Shield, and independent plans in New York State. As was brought out earlier today, our Blue Cross report has been completed and submitted to the Commissioner of Insurance and has been at the printers for several months. He has had the usual difficulties compounded by several that I have not previously encountered in my own journalistic experience. The report will be out around July 1.

The material was leaked by someone to the newspapers, and that accounts for the fact that it received some premature publicity.

We have been greatly aided in our studies by a committee officially appointed by the president of the State Medical Society. This committee has consisted of Dr. McClintock, chairman, Dr. Wertz of Buffalo, Dr. Evans of Rochester, Dr. Gibson of Syracuse, Dr. Ackerman of the Bronx, and Dr. Norman Moore. They met with us early in our studies, and they met with us when we had a rough draft of the document ready for review. They were quite faithful in reflecting the attitudes expressed through the official actions of this House of Delegates with respect to the subject before you. As a matter of fact, they have been very helpful, and I think Dr. McClintock agrees that really the only points of difference between our recommendations, which up to the present time pertain only to Blue Cross, and the views of the House of Delegates are in the area of the provision of diagnostic coverage in the outpatient departments of hospitals.

You have before you a resolution introduced which requests the Blue Cross plan in the Albany area to discontinue providing diagnostic coverage in the outpatient departments of hospitals, for which it has just recently received approval from the State Insurance Department.

It is true there was a discussion of the subject for an hour this morning, but little of that discussion, if any, is reflected in the report you are now being asked to approve. There are many considerations, and I feel you should have them before you because this issue will come up in other parts of the State. With your indulgence I will take a few minutes to touch on some of these issues.

Our studies have covered many areas, and I won't try to go over all of them. We have become well aware that there is widespread dissatisfaction on the part of the public with the diagnostic benefits available through the Blue plans, whether Blue Cross or Blue Shield.

We are very well aware that there is nothing that will stop the increase in hospital costs in the immediate future. They have gone up on the average $13 in a ten-year period, and our conservative projection is that they will go up another 50 per cent before 1967. This then brings us to the subject of what can you do to minimize hospital costs and slow down the demand for expansion of beds in order to reduce the drain on Blue Cross payments to hospitals and thereby reduce the frequency with which there will be Blue Cross rate increases, of which there will be some across the State within the next year.

One of the many considerations is that of providing services to people on an ambulatory basis rather than having them come as an inpatient and occupy a bed. At the present time unless a patient purchases a rider—and riders are little known to groups and available only to groups of certain sizes—diagnostic benefits are not available under Blue Cross unless the patient is hospitalized. All of you are familiar with the pressures that patients can put on you to be hospitalized; in fact, some physicians are forced into the posture of dishonesty either through their own initiative or through that of the patient.

There are many people who have recommended for many years that Blue Cross extend its diagnostic benefits, which are now available to inpatients and about which there seems to be little question, to ambulatory patients who have Blue Cross. The idea is not new with Columbia University, but of course we support it and for a variety of reasons.

Across the State during the period of our studies we have encouraged the plans to improve themselves, and practically every plan has done something constructive. I won't go into all the ramifications. I want to confine the discussion to the Albany action. In Albany the Blue Cross plan and the Blue Shield plan have acted jointly in applying to the Department of Insurance for permission to provide certain specified diagnostic and other types of ambulatory services in hospitals or in physicians' offices on a basis whereby 80 per cent of the bill would be paid. I believe the services are limited to x-ray, physiotherapy, electroencephalography, and basal metabolism. If the patient has both Blue Cross and Blue Shield, the physician has the option of sending the patient either to another doctor who has an x-ray machine or to a hospital for an x-ray in the outpatient department. If the patient has only Blue Cross, he naturally wants to go to the hospital outpatient department to save money.

There are about 150,000 more people in the Albany area with Blue Cross coverage than with Blue Shield. It hardly seems in the public interest to suggest that these 150,000 be deprived of the new benefit which they now have.

The legal background for this decision on the part of the Department of Insurance is quite clear.

The law passed by the Legislature in 1934, which authorized hospital service corporations, which is what the Blue Cross plans are called, permitted them to pay for hospital services. Prior to 1934 hospitals throughout New York City and across the State were selling to private walk-in patients these kinds of services or similar services which they have since developed. The Superintendent of Insurance I think would have been in a most difficult position if he had refused the petition of the Albany Blue Cross plan to allow them to offer ambulatory coverage in concert with the Blue Shield plan.

In my opinion the plan deserves applause, and they got it in Albany from the public. The public's reaction to this expanded benefit has been very good. The public reaction to the resolutions passed by the Albany County Medical Society has been very negative.

There are certain important facts for you to keep in mind in passing judgment on this matter of whether or not Blue Cross should make itself more valuable to the subscribers. Because of the Albany action it covers, through the hospital outpatient department, services which have been rendered by hospitals for decades. This is an area in which there are no black and white boundaries. It feeds into the area of relationship between the hospital and the physician. This is an area which I feel is a personal matter, because I don't like to pass judgment on how my colleagues choose to make a living as long as they do a good job. So we see physicians working on a fee-for-service basis doing outpatient-department x-rays; we see them on a percentage of gross; we see them on a salary. We have all kinds of arrangements throughout the State, and the men involved seem to be quite happy. The radiologists are quite a divided group, with many on salary and many paid on a percentage of the gross income of the department. There are, however, private radiologists in some communities, and it is that particular group who feel that this extension of coverage by Blue Cross is threatening to them.

The purposes of the recommendations for having Blue Cross extend its coverage are, first, to attempt to reduce inpatient utilization. If you don't think the public isn't upset about the climbing cost of Blue Cross premiums and cost of hospital care, you should attend some of the meetings of the labor committee, with which I am currently working in an effort to help them understand what it means to preserve good medicine.

The second purpose is to gain some experience. We don't have enough knowledge about how much this kind of diagnostic coverage will save.

A third purpose is to enhance preventive medicine by early diagnosis, which really is a secondary type of preventive medicine. We now have available for the adult population in the Albany area additional help to the physicians for the early diagnosis of malignancy, and so forth.

Finally, the purpose is to make the practice of medicine more flexible. The physician can now refer a patient in the Albany area who has Blue Cross to the hospital for services for which otherwise the patient may frequently have great difficulty in paying. If the patient has Blue Shield, then the physician has the choice of sending him either to a private practicing physician in the community or to the hospital.

Another set of facts I would like you to keep in mind are the precedents in this area. This is not something which is new. Uninsured private patients have been walking into hospitals referred by you and other physicians for decades and buying services. Blue Cross in New York State has been providing these services to emergency cases and also under negotiated contracts for the steelworkers.

In the third place, we have a group of commercial carriers who are doing the same thing which we are currently being asked by the resolution before you to have Blue Cross back out of. One of the reasons commercial policies can be attractive to groups is they are more flexible, do more things. The advantage of extension of Blue Cross diagnostic coverage is that it will become somewhat more competitive with the commercial carriers. If you are going to knock out Blue Cross, I assume you are also going to knock out the Metropolitan Life Insurance Company in the Albany area because it has been paying for diagnostic benefits in the outpatient departments of these same hospitals through the General Electric employes coverage, which it has carried from its inception.

Finally, the State employes plan, which, with the help of Dr. Moore, Dr. Hilleboe, and other people, we worked so hard to have consist of Blue Cross-Blue Shield and a major medical overlay, has paid for diagnostic benefits in outpatient departments.

The resolution, if passed and acted on by the Blue Cross plan in Albany—in other words, if they discontinue this coverage which they have now announced to the public—will weaken voluntary health insurance rather than strengthen it. It will also put the House of Delegates in the position of defending a special interest group who started the opposition, namely, a segment of the radiologists. The State Radiological Society has also asked us to recommend in our report that we believe x-ray benefits should be transferred from Blue Cross to Blue Shield. Historically, in part of the State, at the origin of the plans x-ray was placed under Blue Shield. This was true in Buffalo, Rochester, Syracuse, and Utica. In the Albany and New York City areas, x-ray came under Blue Cross. This is generally true across the nation.

I want to point out that there are 2,000,000 more people in this State who have Blue Cross than have

Blue Shield. I have been accused of doing some crazy things in my life, but I am not crazy enough to suggest that 2,000,000 people be deprived of x-ray coverage. It is a very expensive and very important part of medical practice, and we must have as many people covered for it as possible in the interests of the patients and modern medicine.

Further, I want to point out that these benefits are secured for a large number of people in our highly industrialized State through labor-management negotiations. If we are going to weaken Blue Cross, we are going to have labor going back to management and saying, "Look, what we bargained for is no longer with us. It has been taken away from us. How about opening up the contract?" Hence, there are some public relations problems involved.

This morning we had a complaint voiced by somebody from outside of the Albany area that the Albany resolution had attracted no attention at the State Society level. Actually the State Society officers held a meeting here with the radiologists and the Blue Shield representatives and others from Albany plus some of us locally. The Council appointed a committee to study the problems of the radiologists. This committee is chaired by Dr. Blake, who is your Legislation Committee chairman. The committee has had one meeting so far to get oriented, and the meeting was distinguished by the fact that the radiologist members did not appear.

I have brought to your attention certain general conclusions. I wish again that we had more time. You have been working so hard all day that this is not the time to start from scratch about the whole future of voluntary prepayment in our Society, in which I believe so thoroughly. Moreover, I know that this Medical Society has always made its own decisions and not leaned on pronouncements from on high, from the American Medical Association. I think you recognize from some of the things that I have said that what we are talking about is a very complex issue. There is no easy answer to the problem of hospital-physician relationships, but Blue Cross and Blue Shield should not be pushed into trying to solve them.

It is true that in this State and throughout the nation there are many ways of delivering good medical care, and I think that we should judge the different ways of delivering medical care on their excellence. If they are satisfactory to the local people and they are doing a good job, we should be happy about that and confine ourselves to other problems.

I believe very strongly with many other people in the State that voluntary health insurance, and Blue Cross and Blue Shield particularly, have to be strengthened. For example, we will be bringing out a report on Blue Shield in the fall urging, among other recommendations, that the $2,500 to $4,000 contract should be upgraded, because it falls far below the needs of local people.

I think we have to keep in mind that medicine is not only an art but a science. It is becoming increasingly complex and scientific, and this in itself will inevitably bring physicians and hospitals closer together. There is no set pattern in this relationship between hospitals and physicians. I don't know the answer to all this, but I am a great believer in experimentation. I believe poor experimentation in providing medical care fails while good experimentation succeeds. My only conclusion, gentlemen, is that for you to take a rigid point of view on the relationship between voluntary health insurance, the practice of medicine, the development of hospitals, the things that are going on and will continue to go on in our State, is to try to turn back the clock. Our problem is to catch up with it, not turn it backwards.

I know this is a sensitive area. There are very strong feelings about it. I am not a member of this House; I am a guest, and I cannot make a motion. My only suggestion would be that rather than approve the resolution which will put you in the position of saying to the people in the Albany area, "We want your Blue Cross to be worse," you leave the matter in the hands of the committee which has been appointed by the Council and see what they come up with next year.

I apologize for taking so much time. I wish we were talking about a happier subject. I thank you very much. (*Applause*)

SPEAKER LANE: Thank you, Dr. Trussell.

JOHN F. KELLEY, M.D., *Oneida:* Was the last speaker talking on a report or a resolution?

SPEAKER LANE: A report.

DR. KELLEY: I have a few remarks I ought to make before the House to bring it to their minds that we doctors feel that the practice of medicine should be in the doctor's office, not in the hospital where the doctor takes care of the patient. The fundamental reason in the beginning for the hospital plan was to take care of the patient in the bed, giving the food and medication the doctor ordered. It gradually worked out to the point where they want to take care of everything, and that is the practice of medicine.

This outpatient clinic business in the hospital to me is perfectly foolish and ridiculous. Those people could be taken care of in the doctor's office.

I was also rather upset about the fact that in the Albany district 150,000 people who had Blue Cross did not have Blue Shield. In our district, Utica, we have 96 per cent participation in Blue Shield-Blue Cross. There is something wrong with an outfit that has not been able to bring it up to that figure. It must be in promotion of sales or interest in Blue Shield.

This House must bear in mind that the minute you go ahead and let Blue Cross take on ancillary functions, such as x-ray, you may not be able to stop it—outside of the hospital it should go to an x-ray man's office—and you will lose all the other laboratory tests. We are doing them in Utica in the doctor's office, and I don't see why they can't in Albany. No hospital in Utica has an outpatient department taking care of patients of Blue Cross.

Samuel Leo, M.D., *Bronx:* Mr. Chairman, the excellent talk given by Dr. Trussell on the relationship of the resolution that is being presented by the chairman proves one thing: that one cannot stand still. You either go backwards, or you go forwards. I feel very strongly that solo medicine is going out and has been passé. I think the only way to combat this thing and prevent the hospitals taking over the entire practice of medicine—first, will be radiology, then minor surgery, and so forth up the line—is for the State Society to come out with a modus operandi for the men to form groups. If we now had many groups, there would be no problem in servicing these 2,000,000 people who have only Blue Cross and not Blue Shield.

I think that it is important, and this evening the talk by Dr. Trussell brings out the importance of going forward. The only way we can go forward and try to compete with these insurance companies is for the State Society to form a modus operandi for the men to form groups easily, and thereby you can compete or carry on the privileges given by the Blue Cross to take care of these 2,000,000 people who do not have Blue Shield.

Therefore, Mr. Chairman, if a motion is in order, I would suggest that a committee be appointed to study this matter.

Speaker Lane: You are out of order, Doctor. There is a motion on the floor.

Is there further discussion?

Francis A. Stephens, M.D., *Albany:* Albany County has been prominently mentioned by Dr. Trussell, and it might be that the people in this House will get the wrong impression. The Albany Blue Shield is the Northeastern New York Blue Shield plan and it did go along with the Blue Cross in this respect. It was an accomplished fact by Blue Cross. The Albany County Medical Society disapproved it by unanimous vote, but to protect the members of the medical profession in that area, the Blue Shield made the same coinsurance features available as the Blue Cross. Since that has happened in Albany, in all but one city in the area the referrals for radiology have been greater to the physician's office than they have to the hospital outpatient departments.

There is another thing that would seem to help if it could be done, and that would be the simple expedient of making it possible for Blue Cross to pay physicians for outpatient services. I know that that is not possible now, but possibly it might be a solution.

Ralph S. Emerson, M.D., *Nassau:* Mr. Speaker, not being a specialist in any of these services that are mentioned, pathology, anesthesiology, radiology, I think perhaps I can speak as an impartial observer. I would like to correct one misconception which I think grew out of Dr. Trussell's report, and that was the inference that the increasing cost would be up to 50 per cent by 1967 and would be related to the increases of hospital utilization. We know for a fact that in the actual operating, running expenses of a hospital, 70 per cent is actually due to labor costs, salaries of personnel. If you consider the actual expense from the standpoint of building depreciation, insurance, and all these other ancillary factors, it comes down only to about 67 per cent. Now whether these people are serviced as inpatients or outpatients is going to make very little difference because you are still going to have the same personnel, and you will have rising costs in the hospitals until the salaries of hospital personnel approach the salaries in the surrounding community, and it is not tied directly to the utilization of the various services of x-ray, physiotherapy, and the laboratory.

I think we should bear in mind that the overutilization which has been stressed by the unions—and I have been in a lot of discussions with them—and the abuse of the hospital use is not going to result in more than a 5 or 10 per cent decrease in the operating costs. It is definitely tied to the salaries of the personnel in the hospitals.

Speaker Lane: Thank you.

Thomas M. d'Angelo, M.D., *Queens:* Mr. Chairman, no matter what we say here tonight, ultimately the welfare of the patient is the prime consideration of the doctor and in the end will affect the type of medical care that will be rendered to the patient. I firmly believe that a system whereby the hospitals will take over medical practice, the practice of medicine, will give deteriorating service to the patient. That is my basic premise. I think we all have been where certain government institutions and even hospitals have taken over the practice of medicine, and the welfare of the patient, the type of practice that the patient has received, has gradually deteriorated.

Now what are we doing here? In the first place because ancillary services were carried on by hospitals is no reason to say that they belong there. We still feel that they are medical services. This was an expedient way of handling a particular facet of rising hospital costs. I think that other avenues of approach might have been considered before this particular method of almost destroying what I consider the practice of medicine by the medical profession was undertaken.

I think the Albany people should restudy the entire matter. I think that Dr. Trussell's committee should give this matter much greater consideration and study in trying to keep the practice of medicine with the medical profession.

Speaker Lane: Is there any further discussion?

Alfred L. George, M.D., *Genesee:* I am one of the members of this committee. I deplore any controversy that exists between Blue Cross and Blue Shield plans. I think that this is the place where we have got to cooperate, and cooperate fully, and the place where Blue Shield and Blue Cross are going to come to grips is on such a matter as we discussed tonight where certain medical services were performed. X-ray, anesthesiology, pathology, and some of the other specialties mentioned here are medical services. They belong in Blue Shield and not in Blue Cross.

Coming from the Western New York Medical Plan, we follow that through. We have no problems. One statement I must make a comment on, even though it is a statement by Dr. Trussell—and perhaps I am not supposed to discuss his comments—but he said that in this State 2,000,000 more people have Blue Cross than Blue Shield, and that he is not crazy enough to take away the benefits of x-ray from them. By the same argument, gentlemen, for these 2,000,000 people that do not have Blue Shield—he is crazy enough to want to include medical services in hospital care because they don't have that either.

Speaker Lane: Dr. McClintock has the floor. We will take you in turn.

Dr. McClintock: I yield to Dr. Trussell.

Dr. Trussell: Doctor, the law precludes Blue Cross from going to the extreme that you mentioned. I have never contemplated such an idea, but it is true there are 2,000,000 more people who have Blue Cross than Blue Shield, largely because of the differential of enrollment in the New York City area.

Speaker Lane: Whoever is going to discuss this from now on, I want you to confine your comments to the recommendations of the reference committee that this portion of the report calls for approval of resolution 60–11.

Irwin Alper, M.D., *Oneida:* I recommend that this report of the reference committee be approved by the House of Delegates. My simple reason is that I oppose any plan that either encourages services or makes it necessary for any practicing physician to sell his services to a hospital wholesale, so that the hospital may sell it back to the patient at retail.

Speaker Lane: Dr. Mathews is next. Dr. McClintock, I thought you had the floor.

Dr. McClintock: No.

Speaker Lane: I thought you yielded the floor. I had recognized Dr. Mathews. Do you defer to Dr. McClintock?

Charles R. Mathews, M.D., *Monroe:* May I say one sentence, then I will sit down?

Speaker Lane: Yes.

Dr. Mathews: I move that this —

Speaker Lane: There is a motion on the floor.

Dr. Mathews: This refers to the main motion.

Speaker Lane: Are you making a substitute motion or an amendment? If not, you are out of order at the present time.

Dr. Mathews: I would ask the Speaker to hear this, and then advise me: to refer this to a Council committee, as a substitute motion.

Speaker Lane: You may make a substitute; that is in order.

Dr. Mathews: Then the substitute motion is that this be referred to an appropriate Council committee for further study, to be returned to this House in one year.

Dr. McClintock: I second that motion. There is a Council committee already appointed to study this matter, and I was here to move that it be referred back to them, that this portion of the reference committee's report be referred to that committee.

Speaker Lane: Is there discussion? It has been seconded. Is there discussion on the substitute motion?

Solomon Schussheim, M.D., *Kings:* Mr. Speaker and gentlemen of the House, ladies and gentlemen, we have been parlaying this problem now for about ten or twelve years, and now there is the question of further studying. Only a few hours ago we were told that we should encourage doctors to become members of the American Medical Association because that is our governing body, and we should adhere to the principles of the American Medical Association. We are going to ask our membership for an increase in dues to continue the programs of this organization and that of the American Medical Association. As you have read in your resolution, the American Medical Association stated in 1950 and reiterated in 1953 exactly the principles of the practice of medicine. How long are we going to wait and say we are practicing medicine, and we hope to continue to practice medicine as free men?

Speaker Lane: I think Dr. Berger in the back had his hand raised first.

Herbert Berger, M.D., *Richmond:* I think this House owes a debt of gratitude to Dr. Trussell.

Speaker Lane: Are you speaking to the substitute motion?

Dr. Berger: I am speaking against the substitute motion and for the original motion. Dr. Trussell has defined for us our adversary. I think we know now what we have to combat, and we will be armed and do it much better. Here is a man who said the radiologists were a divisive group. I have a strong objection to somebody coming here and saying some part of medicine is a pressure group within the entire practice. I speak in favor of the original motion and against the substitute motion.

Cyril M. Levin, M.D., *Richmond:* I want to speak in opposition to the substitute motion. The issues are clear-cut and well defined and should be acted on tonight conclusively.

Delegate: What are we discussing?

Speaker Lane: We are on the substitute motion.

Voices: Question on the substitute motion!

Speaker Lane: Those in favor of the substitute motion—

Dr. Mathews: I have not discussed the motion. I made it.

Speaker Lane: You are right.

Dr. Mathews: Before we vote on the substitute motion, I would like to point out that this would not be implied as support for the hospital practice of medicine. We should not make the Blue Shield the whipping boy for this thing as long as physicians sell their services to the hospital. I think we should recognize this is the crux of the problem rather than Blue Cross per se supporting what has in actuality been a practice for a great many years.

Speaker Lane: The question on the substitute motion, those in favor of the substitute motion will say "aye," opposed "no." My ears say the "noes" have it. The substitute motion is therefore defeated.

On the original motion is there further discussion?

Voices: Question!

John F. Roach, M.D., *Albany:* Before we vote, we should clarify a couple of facts, which I consider very important in regard to the position that the Albany County group has taken on this. Last November the Blue Shield in the area came out with a plan for diagnostic radiology and offered it in the physician's office or in the hospital, whichever anyone wanted. The hospitals refused. This plan had a $60 ceiling on it and included only radiology. In February Blue Cross announced its plan, which included radiology, physiotherapy, basal metabolism, and electroencephalography, with no ceiling, but only in the hospital. It could not legally and I believe not by their wishes take place in a doctor's office. The county society saw that this would drive the patient ultimately out of the private radiologist's office into the hospital; in other words, it would tend to destroy the private practice of radiology. It could also see the extension of this same philosophy from the field of radiology into the other specialties. It also felt very strongly that if this continued, then there would be less incentive on the part of the public to buy Blue Shield. After all, if I get my coverage on the Blue Cross, why should I turn around and pay an additional premium for Blue Shield?

The Albany County Society, therefore, felt that this move on the part of Blue Cross was a direct blow against the private practice of medicine.

I think you should also know that the Radiological Society is involved, including the State Radiological Society and the Northeastern, and the American College made every effort to gain audience with Blue Cross, and Blue Cross refused even to talk about it.

The Radiological Society then came to the State Medical Society, and a meeting was held down here, as Dr. Trussell said. As a result of that the State Society asked Blue Cross for a conference at which this could be discussed. This was asked by letter. It was some two or three weeks before the answer came back from Blue Cross, and it said in effect "We see nothing to discuss; therefore there will be no meeting."

I think there are some deep philosophies involved in this, and we ought to keep these in mind during our decision on the motion before the floor. (*Applause*)

Speaker Lane: Is there further discussion on the motion to approve this part of the report, which recommends approval of resolution 60–11? If not, those in favor will say "aye,' opposed "no." The "ayes" have it.

Continue, Dr. Ershler, please.

Section 177 (See 45)

Report of Reference Committee on Commission on Medical Services—A: State-wide Participation by Physicians in Blue Shield Plans

Dr. Ershler: Resolution 60–12 would provide for a reciprocal arrangement between participating physicians in all Blue Shield plans of the State. The "resolved's" read:

> *Resolved,* that the Medical Society of the State of New York recommend to all participating physicians in Blue Shield that they provide service benefits protection to eligible subscribers of all the Blue Shield plans of New York State; and be it further
>
> *Resolved,* that the Medical Society of the State of New York refer this resolution to the county medical societies for their consideration, approval, and implementation.

Your reference committee recognizes the desirability of such reciprocity in that it would continue to provide medical care for people who happen to be outside their home area. Further, it should strengthen the entire Blue Shield program. Therefore, we recommend approval of this resolution, and I so move.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 178 (See 58)

Report of Reference Committee on Commission on Medical Services—A: Blue Shield Reimbursements for Podiatrist Service

Dr. Ershler: Resolution 60–25 is concerned with the attempt of podiatrists to receive compensation from Blue Shield plans for services which may be outside the scope of their legally defined field. This resolution was introduced by John C. Kinzly, M.D., of Niagara, as an individual, and reads:

> *Resolved*, that the Medical Society of the State of New York represented in this House of Delegates go on record as being opposed to Blue Shield plans reimbursing subscribers for services by podiatrists if such services are outside the legal scope of podiatry practice; and be it further
>
> *Resolved*, that the Medical Society of the State of New York assume the responsibility of assisting the Blue Shield plans approved by it in determining the scope of podiatry practice with especial reference to specific procedures and services; and be it further
>
> *Resolved*, that the Medical Society of the State of New York extend every possible assistance to any approved Blue Shield plan that becomes involved in legal action by reason of its refusal to reimburse for services by podiatrists falling outside the scope of podiatry practice as determined under the immediately preceding paragraph of this resolution.

Your reference committee is strongly in favor of not permitting podiatrists to exceed their prerogatives. We feel further that the Medical Society of the State of New York should lend its assistance to any organization to effect this.

In order to clarify the intent of resolution 60–25, we have modified the second "resolved" to read as follows:

> *Resolved*, that the Medical Society of the State of New York shall assist any Blue Shield plan during any controversy in determining whether the services performed by a podiatrist have been within the limits of the definition of podiatry as specifically outlined in Section 7001 of the Education Law of the State of New York.

We are in full agreement with the amended resolution and recommend its approval. Mr. Speaker, I so move.

SPEAKER LANE: Is there discussion?

SAMUEL LEO, M.D., *Bronx:* This resolution is also a very important one in ancillary services gradually encroaching from the back door into the field of medicine, and we should take even more positive action than recommended in the resolution.

I would urge and would like to make a substitute motion that we take an active part in initiating a suit against the podiatrists for performing surgery outside the limit permitted by their recognition.

SPEAKER LANE: Section 7001 of the Education Law.

DR. LEO: I offer that as a substitute motion.

SPEAKER LANE: Is there a second to the substitute motion?

WALTER EINHORN, M.D., *Bronx:* I second it.

SPEAKER LANE: Any discussion on the substitute motion?

WILLIAM E. PELOW, M.D., *Onondaga:* Although I have been at every delegates meeting, this is the first time I have spoken on the floor in two years. There is something about this word "suit" I don't like. We have gone through this very thoroughly with the Advisory Committee of Workmen's Compensation, and the question of suit came up then. The law pretty definitely defines the limits and the scope of the podiatrist as being superficial to the deep fascia and to the ankle joint.

We have tried to stay away from a suit because they have asked for a lot of additions to their fee schedule and there are a lot of new modalities they want to perform. They are really trying to get into the general practice of medicine. These requests of theirs have been refuted by the compensation committee item by item, and it is in the hands of the Chairman of the Workmen's Compensation Board, which I know has nothing to do with private practice outside of that, but I think we should stay away from a suit at this time. We have purposely stayed away from any thought of one in compensation against the podiatrists. I think the motion should be defeated.

SPEAKER LANE: Is there further discussion on the substitute motion?

J. STANLEY KENNEY, M.D., *Trustee:* I don't want to prolong it. I would like to know if Dr. Kinzly would like to say a word. It is his resolution. I am familiar with his thinking. I think he can do it better than I can.

SPEAKER LANE: Dr. Kinzly, would you wish to comment?

JOHN C. KINZLY, M.D., *Niagara:* I would like to say a few words concerning this substitute motion. I too am opposed to it for the reason that has just been outlined, namely, the word "suit." We in our area do not contemplate bringing any positive action concerning the practice of podiatry. If claims come into our plan for procedures which we in our plan, as well as our legal counsel, do not feel are reimbursable, such a claim will not be approved for payment. The further procedures that might be taken after that will not be up to our plan to institute. So that we do not intend taking the initiative to bring on any suit whatever.

SPEAKER LANE: Thank you, Dr. Kinzly.

JOHN L. CLOWE, M.D., *Schenectady:* Question: is it legal for this State Society to institute a suit?

SPEAKER LANE: I would have to ask the legal counsel to answer that. Maybe there are others in the House who would wish to declare it. I think it could be under certain circumstances.

Is there further discussion on the substitute motion? If not, those in favor of the substitute motion will say "aye," opposed "no." It seems it is defeated.

Now on the motion to approve this portion—

Ezra A. Wolff, M.D., *Assistant Secretary:* Mr. Speaker, on a change, a minor change, in language. This says "shall assist any Blue Shield plan." I don't think we can say "shall assist." We can offer to assist. We are in a position to assist but whether they ask us or not is another thing.

Speaker Lane: Dr. Ingegno, did you wish to speak?

Alfred P. Ingegno, M.D., *Councillor:* Yes, Mr. Speaker. The House fully realizes the importance this has, not only to the Medical Society of the State of New York, and particularly with respect to compensation, but to all the Blue Shield plans. Certainly, I am in hearty agreement with what is proposed by the reference committee, but I think it is a little bit limited. I think that our attitude should be more positive. We should ask the Council of our Society perhaps to do a little more with the Blue Shield plans, so may I offer an amendment to the amended resolution to the reference committee for recommendation?

Speaker Lane: You may, yes.

Dr. Ingegno: That the Council of the Medical Society of the State of New York authorize an early meeting of its counsel with counsel designated by the Association of Blue Shield Plans of New York State and other representatives of the State Society and the association to prepare a brief specifying the State Society's interpretation of the scope of the practice of podiatry as defined in the Education Law for presentation to the State Education Department and/or Attorney General.

Speaker Lane: You have heard the amendment to the main motion. Is there a second to this?

Dr. Ershler: I will second that.

Speaker Lane: That was seconded by the chairman of the reference committee. Is there any discussion? Those in favor of the amendment will say "aye"; is there opposition, "no"? The amendment is carried.

Now on the main motion as amended, those in favor say "aye," any opposed "no." It is so ordered.

Continue, Dr. Ershler.

Section 179 (See 62)

Report of Reference Committee on Commission on Medical Services—A: Investigation of General Health Information Service

Dr. Ershler: Resolution 60–29 is concerned with a request for information regarding "General Health Information Service, Inc., known as Blue Torch." This was introduced by the Nassau County Medical Society, and the "resolved" reads:

> *Resolved*, that the Medical Society of the State of New York investigate General Health Information Service, Inc., and inform the component county medical societies of its findings so that they, in turn, may advise their membership.

Your reference committee felt that information on this type of corporation is in the best interest of the public as well as that of the medical profession. We therefore recommend that the resolution be approved and referred to the Council for implementation, and I so move.

Speaker Lane: Is there discussion?

Louis H. Bauer, M.D., *Ex-President:* I would like to recommend an addition: that it also be referred to Associated Medical Care Plans, Chicago, for this reason, that the use of the word "Blue" or "Shield" by other organizations is illegal because of the registration of Blue Shield in the office in Washington. There have been a number of organizations that have tried to trade on the name and use either one of those terms to confuse the public and make them think it is the same organization, and every time that has come to court they have been overruled. I think that this is something that the Associated Medical Care Plans counsel would be interested in hearing about because I think they might be able to prevent this organization using that name at all.

Speaker Lane: Do you make that as an amendment?

Dr. Bauer: I make that as an amendment in addition to what has already been moved.

J. Stanley Kenney, M.D., *Trustee:* I second it.

Speaker Lane: Is there any discussion on the amendment? If not, those in favor say "aye," opposed "no." It is approved.

Now on the main motion as amended, those in favor say "aye," opposed "no," if any. It is so ordered.

Section 180 (See 67)

Report of Reference Committee on Commission on Medical Services—A: New York State Civil Service Employes Contract

Dr. Ershler: Resolution 60–34 points out certain apparent inequities for Blue Shield participating physicians who render medical care to New York State civil service employes.

It was introduced by the Medical Society of the County of Orange, and the "resolved's" read:

> *Resolved*, that the Medical Society of the State of New York unanimously disapproves of this inequitable arrangement; and be it further
>
> *Resolved*, that the House of Delegates of the Medical Society of the State of New York petition the president of the New York State Civil Service Commission to modify the New York State civil service employes program to remove this inequity.

Your reference committee listened to considerable discussion which convinced us that this matter is merely a small segment of a broad problem in medical care insurance. The entire problem is of such scope this House could not possibly resolve it at this time. Further, our Committee on Medical Care Insurance is currently engaged with this problem. We therefore recommend that no action be taken on this resolution but that it be referred to our Committee on Medical Care Insurance. I so move.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 181 (*See 78*)

Report of Reference Committee on Commission on Medical Services—A: Opposition to Closed Panel Insurance Plans

Dr. Ershler: Resolution 60–45 has been withdrawn. It was introduced by Vincent J. Collins, M.D., Section on Anesthesiology, and a member of our reference committee, as follows:

> *Resolved*, that the Medical Society of the State of New York oppose panel insurance plans in general and specifically Blue Shield plans which are so constituted.

Speaker Lane: It has been withdrawn. We don't have to give any consideration to that resolution.

Section 182 (*See 82*)

Report of Reference Committee on Commission on Medical Services—A: Multiple Insurance and Service Benefits

Dr. Ershler: Resolution 60–49 is concerned with patients who have multiple medical care insurance coverage. It was introduced by the Suffolk County Medical Society, and the "resolved's" read:

> *Resolved*, that this House recommend that the patient with multiple insurance be charged the regular fees; and be it further
>
> *Resolved*, that the service benefit contract be amended to read that the participating physician be released from the requirement to reduce his fee to the service benefit level under these circumstances; and be it further
>
> *Resolved*, that the House of Delegates approve these principles and request the State Insurance Commissioner to instruct service benefit insurance plans to make the necessary amendments to their contracts.

During the discussion it was pointed out that for a considerable period of time the Society's Committee on Medical Care Insurance has been engaged with this problem. Its many ramifications were revealed in the discussion, and we were convinced of the impossibility of our settling this problem at this time.

The delegates' attention is called to the published report of the Medical Care Insurance Committee for a discussion of this problem. Your reference committee recommends that no action be taken on resolution 60–49 at this time other than to refer it to the Committee on Medical Care Insurance for its consideration. I so move, Mr. Speaker.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Ershler: Mr. Speaker, I move the approval of the report as a whole, as amended.

William T. Boland, M.D., *Chemung:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Ershler: I would like to take this opportunity to thank the members of my committee, Alfred L. George, M.D., Genesee; Harold J. Dunlap, M.D., Westchester; Vincent J. Collins, M.D., New York, Section on Anesthesiology; and William T. Boland, M.D., Chemung. We really had a rough time, and I thank you, gentlemen. (*Applause*)

Speaker Lane: Thank you, Dr. Ershler.

Gentlemen, please be patient for about two or three more minutes, and we will conclude the business of the House for the evening.

Dr. Wolff, I think you have a resolution to introduce.

ADDITIONAL RESOLUTION

Section 183 Resolution 60–59

Amendments to Bylaws Concerning Good Standing, Resignation, and Status on Removal from the State

Introduced by Ezra A. Wolff, M.D., Assistant Secretary, for the Special Committee on Constitution and Bylaws

Ezra A. Wolff, M.D., *Assistant Secretary:* I shall introduce this, Mr. Speaker, by title. It will normally be held over since it concerns amendments to the Bylaws concerning good standing, resignation, and status on removal from the State. This is done to clarify our Bylaws with respect to these problems, which have been difficult ones for the secretary and the office staff. I hereby introduce this resolution, Mr. Speaker. It has been distributed, I believe, and will require no discussion or action at this time:

> *Resolved*, that the Bylaws of the Medical Society of the State of New York be amended as follows:
>
> 1. Amend Chapter I, Section 2 to delete the sentence: "The term 'good standing' is hereby defined as":
>
> 2. Amend Chapter I, Section 2 (*a*) to substitute the following new paragraph: "(*a*) Annual dues and assessments are due and payable on the first day of January of each year. The dues year shall coincide with the calendar year, January 1 to December 31."
>
> 3. Amend Chapter I, Section 2 (*b*), first sentence as follows: "(*b*) Any member, except a member who is eligible and has applied for life

membership, whose dues and assessments are unpaid after March 1st of any current year is not in good standing and shall be deemed to be in arrears."

4. Amend Chapter I, Section 2 (*b*) to delete the second sentence.

5. Amend Chapter XIV, Section 2 to add the following paragraph as the second paragraph: "A member in good standing, whose resignation from membership in his component county society shall have been duly accepted, shall be considered to have resigned from the State Society as of the same date."

6. Amend Chapter XIV, Section 2 by substituting for the present second paragraph (which then becomes the third paragraph): "When any member in good standing, other than a life or honorary member ceases, between March 1st and December 31st, to reside and practice in the State of New York, he shall be considered to have resigned from membership effective as of that December 31st. If such cessation to reside and practice occurs between January 1st and March 1st, he shall, provided he has been in good standing for the prior calendar year, be considered to have resigned from membership effective as of the previous December 31st."

7. Amend Chapter XIV, Section 2 to add the following paragraph as the fourth paragraph: "Upon resignation, a member shall forfeit all rights and title to any share in the privileges and property of the State Society, the district branch, and his component county society."

8. Amend Chapter VII, Section 9, ninth line to change "June" to "April."

9. Amend Chapter XIV, Section 5, eighth line to change "June" to "April."

Referred to the Special Committee on Constitution and Bylaws.

SPEAKER LANE: Thank you, Dr. Wolff.

Section 184

Announcements

SPEAKER LANE: Dr. Mathews has requested that his Reference Committee on Legislation and Legal Matters meet in the Penn Top North at 8:30 tomorrow morning. It is requested that the general practitioners also meet not later than 8:30 A.M. so that the House can convene promptly at 9 o'clock.

Since it is the obvious consensus of the House, we will recess now and reconvene at 9 o'clock tomorrow morning.

. . . A recess was taken at 11:35 P.M. . . .

Morning Session

Monday, May 9, 1960

The session convened at 9:20 A.M.

Section 185 (See 116)

Reconsideration of Previous Action

Speaker Lane: Gentlemen, will you please come to order? The Chair will recognize Dr. Louis Bauer.

Dr. Bauer moved reconsideration of the portion of the Report of the Reference Committee on Reports of Officers having to do with A.M.A. membership. That is subsection 2 of Section B of the report, "Matters Which Would Require a Change in Our Bylaws." The motion to reconsider was seconded and carried.

On reconsideration and with the concurrence of the chairman of the reference committee, Paul H. Sullivan, M.D., of Nassau, the House adopted changes in wording which have been incorporated in the subsection as published on page 83.

Louis H. Bauer, M.D., *Ex-President:* Now, Mr. Speaker, I move that the report again be adopted as a whole as further amended.

Herbert H. Bauckus, M.D., *Trustee:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Speaker Lane: Thank you, Dr. Bauer and Dr. Sullivan.

Section 186

Election of Life Members

Speaker Lane: At this time, since we have a few minutes, we will go on to the business of the election of life members.

Secretary Wheeler: Mr. Speaker, according to our usual custom, nominations for life membership have been printed in the program of the 154th Annual Meeting, and I ask the acceptance of those names as printed. In addition to that we have some more names, which list was compiled too late for publication, and I will read those names:

Hugo Alexander, Jackson Heights
George Baehr, New York City
Fritz Brie, New York City
Eugene H. Coon, Hempstead
Charles S. Dale, Elmira
James C. Donovan, Newburgh
Eliot Duhan, Forest Hills
Rudolph Ebert, Flushing
Edward A. Flemming, Glendale
Anna J. Gosline, Utica
Harry Hanfling, Jamaica
William J. Hicks, Middletown
Walter Kerby, Woodhaven
William J. Lavelle, Long Island City
W. Forrest Lee, Ithaca
William H. Licht, Trumansburg
Francis H. Marx, Oneonta
John J. McShane, Warren
Ray W. Moody, Middletown
Leo E. Reimann, Franklinville
James R. Reuling, Windemere, Florida
David Robb, Ithaca
Max Spencer Rohde, New York City
Michael M. Schultz, Hollis
Charles Shalet, Bronx
Frederick Snyder, Kingston
Joseph V. Sullivan, Flushing
James H. Van Marter, Groton

In compliance with a request from the Medical Society of the County of Westchester, the name of Andrew A. Eggston, M.D., as listed for life membership, has been withdrawn.

Mr. Speaker, I move the acceptance of this report.

Raymond J. Byron, M.D., *Schenectady:* I second it.

. . . There being no discussion, the motion was put to a vote and was unanimously carried, the complete list being as follows:

Fritz Wolf Ackermann, Laurelton
Arthur W. Albones, Frankfort
Hugo Alexander, Jackson Heights
William D. Allen, Albany
Charles L. Allers, Staten Island
Samuel Altman, New York City
Henry Aronson, Brooklyn
George Baehr, New York City
David P. Barr, New York City
David Nye Barrows, New York City
Walter Wolf Bennigson, Kew Gardens
Edward Leo Berger, Brooklyn
Zelman M. Berman, New York City
Erna Biberstein, New York City
Hans Biberstein, New York City
James A. Bilello, Brooklyn
George C. Biondi, New York City
Lewis S. Booth, Fort Lauderdale, Florida
Rose C. Boyer, Grand View-on-Hudson
Willis W. Bradstreet, Rochester
Fritz Brie, New York City
Erich Buechler, New York City
Robert M. Chiascione, Yonkers
Elmer M. Claiborne, New York City
Mather Cleveland, New London, New Hampshire
G. Marcellus Clowe, Schenectady
Harry Eron Cohen, New York City
L. Broderick Cohen, Mineola
Harold J. Constantine, Phoenix, Arizona
Eugene H. Coon, Hempstead
Ernest G. Cramer, Buffalo
James Monroe Cronk, Hyde Park
Paul Tracy Crosby, De Witt
Charles S. Dale, Elmira
S. Alton Dallgaard, East Williston
Richard Dann, Jackson Heights

Eugene Davis, Brooklyn
Richard Derby, Oyster Bay
Cassius Lopez De Victoria, New York City
C. Knight Deyo, Poughkeepsie
James W. W. Dimon, Utica
James C. Donovan, Newburgh
Eliot Duhan, Forest Hills
Harry C. Dumville, Dallas, Texas
Marshall W. Dyer, Syracuse
Rudolph Ebert, Flushing
John J. Ernyey, Seaford
William Feldman, Bronx
Ernest S. Felsenstein, White Plains
Edward A. Flemming, Glendale
Henry M. Friedman, New York City
Walter I. Galland, New York City
William H. Gardiner, New York City
Joseph A. Geis, Loudonville
*Louis Gelb, Brooklyn
Josef Gerstmann, New York City
Frank W. Goeller, Vero Beach, Florida
Byron H. Goff, New York City
Abert Goldey, New York City
Salomon Goldschmitt, New York City
Hyman Goldstein, New York City
*John Gordon, Ovid
Anna J. Gosline, Utica
Lewis Arthur Gould, Interlaken
Siegmund E. Hadda, Kew Gardens
Iser Halpern, Yonkers
Nathan S. Hanellin, Brooklyn
Harry Hanfling, Jamaica
Charles Andrews Hargitt, Brooklyn
*Edward L. Hazeltine, Jamestown
Jacob Heiman, New York City
Arthur D. Hennessy, Buffalo
James P. Hennessy, New York City
George W. Henry, Greenwich, Connecticut
William J. Hicks, Middletown
Oliver S. Hillman, New York City
Frank M. Holcombe, Auburn
William V. Holt, Mineola
Harry S. Howard, Amsterdam
Mabel Huschka, New York City
Julius Jarcho, New York City
Harold P. Jehle, Boston, Massachusetts
Abraham Jerskey, New York City
George Johnson, Staten Island
Rene H. Juchli, Amsterdam
Ludwig C. Kalnin, Staten Island
Abraham Keesing, New York City
William J. Kennedy, Gloversville
Walter Kerby, Woodhaven
David Kidd, Utica
Ilia N. Kovarsky, New York City
Adolph S. Kramer, Brooklyn
Henry R. Kutil, New York City
George LaBalme, New York City
Milton Albert Lampert, Brooklyn
Joseph F. LaSala, Bronx
William J. Lavelle, Long Island City
W. Forrest Lee, Ithaca
Macy L. Lerner, Rochester
Morris Levine, Brooklyn
Jerome L. Levy, Brooklyn
William H. Licht, Trumansburg
David Linett, New York City
Matthew A. Liotta, New York City
Graydon Long, Rochester
Joseph J. Lordi, New York City
David L. MacDonell, Sr., Sayville
Leslie MacNaughton, West Winfield
Albert L. Malabre, New York City
Perry Jefferson Manheims, Brant Lake
Abraham Leon Mann, Albany
Max Mannheimer, Jackson Heights
Clara A. March, Buffalo
Pincus Marlowe, Bronx
Max Marsh, Peekskill
Francis H. Marx, Oneonta
David Matus, Valley Stream
Edgar Mayer, New York City
Gervais W. McAuliffe, Bridgehampton
William S. McCann, Rochester
Albert R. McFarland, Rochester
John J. McShane, Warren
Raymond E. Meek, Stephentown
Virginius Minervini, Yonkers
Ray W. Moody, Middletown
Joseph W. Mooney, Bayside
William A. Morris, Yonkers
David M. Natanson, New York City
Ernst W. Nathan, New York City
Arthur E. Neergaard, New York City
Joseph C. O'Gorman, Buffalo
Francis J. Osborne, Bronxville
Faye H. Palmer, Buffalo
William Barclay Parsons, New York City
Robert F. Perez, Jr., Poughkeepsie
Alfred E. Phelps, Rockville Centre
Robert Edward Plunkett, Troy
David L. Poe, New York City
Karl Polifka, Bronx
Friedrich P. Posner, New York City
Louis I. Posner, New York City
Frank N. Potts, Buffalo
Edgar F. Powell, St. Petersburg, Florida
Grover L. Priess, Eden
*Benjamin Rabbiner, Brooklyn
John A. Randall, Staten Island
Gerson G. Rapoport, Jamaica
Laurance D. Redway, Ossining
Leo E. Reimann, Franklinsville
James R. Reuling, Windemere, Florida
David Robb, Ithaca
Max Spencer Rohde, New York City
Benjamin Rosenthal, New York City
Samuel Roth, Long Beach
Julius Rothschild, New York City
Riccardo F. Ruffolo, New York City
Louis Bertram Sachs, New York City
Hirsch Sagan, New York City
Luther C. Sampson, Rochester
Sigurd C. Sandzen, Pinehurst, North Carolina
Geysa Sarkany, Long Island City
Jacob Sarnoff, Miami Beach, Florida
John G. Savarese, Staten Island
Selina Schryver, New York City
Michael M. Schultz, Hollis
George Schwartz, New York City
Charles Shalet, Bronx
Edward A. Sharp, Snyder
George Sheinberg, Bronx
*Hyman D. Silver, Bronx
*Irving Smiley, Bronx
Henry B. Smith, Hempstead
Martin DeForest Smith, New York City
Frederick Snyder, Kingston
William Spielberg, New York City
Paul Stein, Long Island City
John H. Stewart, Norwich
Ethel D. Stoliar, Bronx

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* Retroactive to May 11, 1959.

Joseph V. Sullivan, Flushing
Timothy F. X. Sullivan, New York City
Tracy C. Swan, Livonia
George E. Taylor, Hornell
Louis H. Taylor, New York City
Emil Treitel, Maspeth
Louis Tulipan, New York City
Arthur S. Unger, New York City
Guy B. Van Alstyne, Honeoye Falls
James H. Van Marter, Groton
Henry Von Schirnding, Marlin, Texas
George L. Warner, Sonyea
Walter L. Weeden, Syracuse
Richard F. Weihsmann, Queens Village
Gustav Weil, New York City
Alexander Andrew Wemmel, Tappan
Willard E. Wheelock, Rockville Centre
Harry O. Zamkin, New York City

Section 187 (See 25, 91)

Introduction of Guests

Speaker Lane: It is now my pleasure to present Allan Woodcock, M.D., president of the Maine Medical Association. (*Applause*)

Allan Woodcock, M.D.: It is a great pleasure for me to come down to New York from Maine to bring the greetings of the Maine Medical Association to this fine Society. Dr. Hanley, the secretary, was going to be here too. We are happy to come. Our meeting in June is at the Samoset Hotel, Rockland, Maine, a nice place, and I hope many of you can come down to it. I am very happy to greet you. It was pleasant to come down. Thank you. (*Applause*)

Section 188

Report of the Special Committee on Prize Essays

Speaker Lane: At this time we will have the report of the Special Committee on Prize Essays by its chairman, Alfred A. Angrist, M.D.

Alfred A. Angrist, M.D., *Queens:* The recommendations of this report were the unanimous opinion of the Special Committee on Prize Essays, consisting of Benjamin G. Dinin, M.D., of Valhalla; David K. Miller, M.D., of Buffalo; and the chairman, Alfred A. Angrist, M.D., of Beechurst, Long Island.

The essay submitted by "Ecce Signum," entitled "A Simple Operation for Spastic Entropion (Orbiculodiathermys)," is worthy of the Lucien Howe Prize.

For the Merit H. Cash prize, the choice was "Pitfalls in the Clinical Diagnosis of Aortic Stenosis" by "Seek and Ye Shall Find," and that represents a rather interesting contribution.

I don't know whether it is proper for me to open the envelopes at this juncture. For the first prize, the name that corresponds to the Latin phrase, the exact meaning of which I have not had a chance to look up—perhaps some Latin scholars can help; here is the translation that somebody has been considerate enough to hand me, "Behold the Sign," or "Look at the Proof"—the name is Martin Bodian of Brooklyn. (*Applause*)

For the Merit H. Cash Prize, the name that corresponds to "Seek and Ye Shall Find," as its nom de plume, is Maxwell L. Gelfand, 60 Gramercy Park, New York. (*Applause*)

Speaker Lane: Thank you, Dr. Angrist.

Section 189

Address by the President of the American Medical Association

Speaker Lane: Members of the House, it is obvious I don't have to introduce this distinguished visitor, but it is my distinct pleasure to do so, and have you hear from Louis M. Orr, M.D., the president of the American Medical Association. (*Applause*)

Louis M. Orr, M.D.: Mr. Speaker, members of the House, ladies and gentlemen, first of all, I would like to congratulate the entire membership of the Medical Society of the State of New York, its officers, its councillors, and its trustees, for the magnificent program that you have carried out over the past several months in the field of national legislation. In the current controversy to provide compulsory health insurance for the aged, the Medical Society of the State of New York has played a key role. This I mean. Not only is your State represented by 43 Congressmen in Washington, but two of these gentlemen are on that important committee from which all money bills must originate, the House Ways and Means Committee. I hope I can tell you a little of the operation of this committee.

Of course, it has been a tremendous task to carry medicine's viewpoint on health care of the aged to these legislators and the other community leaders in all areas of the State of New York. I fully realize it has been a time-consuming task, but it has been a task which you have performed exceptionally well.

I will express my personal appreciation and the appreciation of the entire membership of the American Medical Association to your president, Henry I. Fineberg, M.D., and to the officers, councillors, and trustees for the leadership they have provided. I should mention also James M. Blake, M.D., the chairman of the Committee on Legislation, and George J. Lawrence, Jr., M.D., chairman of the Subcommittee on Federal Legislation.

I would also like to praise at this time Herbert T. Wagner, M.D., your executive director, and his staff for carrying out the details of this State-wide program.

A word should be said in commendation of your Auxiliary, for after all the women still are, as they have always been, the key to the success of anything you men undertake. (*Applause*)

I would like to congratulate you as a State organization for having given to American medicine a man who has been not only one of the greatest presidents of the American Medical Association but a distinguished scientist in the field of aviation medicine and a great leader in international medicine, and I am happy to see here this morning my very dear personal friend, Louis H. Bauer, M.D. (*Applause*)

Now for a bit of satire. When I speak in satiric terms, don't make the mistake a pressman did this morning, for he decided by looking at the first paragraph that I favored the Forand legislation. You have to realize that anyone who indulges in the art or the science of public speaking is often accused of plagiarism. Sometimes this is justified for many speakers do lift out of context those things said by other writers and other speakers, but just as often it is the dispute between two individuals who have had the same idea and express it in similar words. I suppose that I have been guilty of both, but I believe that if someone else has said something very well or expressed a sound idea, why should not others help spread this word?

This morning I want to read to you someone else's words, which summarize the ideas of a physician, and they make his point so effectively that it would be difficult to paraphrase them. The author of these words, interestingly enough, is Hiram Sizemore, Jr., M.D., of Shepherdstown, West Virginia. This is a letter he wrote to the *Washington Evening Star*. Fortunately, it got published. If it had been in *The Post* in the morning, it probably would not have been. This was published about a week ago. This is what Dr. Sizemore has to say—I hope you listen to his words with great interest:

> It appears as though the Forand bill or similar legislation will be enacted at this session of Congress. As a general practitioner I can see where this "double free hospital care for the aged" has hidden advantages for all.
>
> It will greatly aid the overworked physician. Most house calls are made on elderly people who are unable to come to the office. However, now we will be relieved of fighting traffic, driving over back roads, and going out into the elements. We can place our elderly patients in the hospitals without difficulty where they can happily enjoy good food, lodging, and personal attendance at government expense, while lightening our work load. Of course we must admit these patients to the hospital whenever they request and must allow them to remain as long as they please, else some of them might write to their Congressmen. Heaven knows, we physicians have been criticized enough for not being sympathetic with the so-called "problems of the aged," and we too, like the Congressmen, enjoy being popular.
>
> The bill should also benefit us financially as it is easy to see that a person who has free lodging and twenty-four-hour service will have more money left to pay his doctor. This hidden blessing will extend to churches, charitable organizations, and governmental organizations within the state level. This will also involve the city budgets and county budgets. It will make things a great deal easier. They can get out of the responsibility for care and let the munificent Federal government pick up the check. Families can dump their aged parents into hospitals and spend the extra money on a TV set. Even retired corporation executives will be eligible for benefits and thus can save their pensions for new Cadillacs.
>
> The cost will be only $8 or $10 billion a year when the program gets into high gear, and as every progressive person knows, we really "owe it to ourselves."
>
> As with every dynamic and bold new venture there are a few minor problems. With most hospital beds occupied, a few patients with such diseases as severe hemorrhage, crushed thorax, fractured skull, diabetic coma, or meningitis will have to be turned away because no space is available. However, some astute Congressman will be able to make a name for himself by recommending to the Congress the expenditure of some $20 billion for new hospital construction.
>
> I cannot understand the opposition of this so-called reactionary American Medical Association. The proponents of the Forand bill have repeatedly decried the bugaboo of socialized medicine and have given repeated assurances that there will be absolutely no governmental interference in the free practice of medicine or in the operation of free care within the hospital. Therefore, it is easy to see that both the physicians and the hospitals can charge what the traffic will bear, and the government must pay without protest. These honorable proponents surely would not break any promise concerning restrictions.
>
> Now this same stubborn American Medical Association seems to have the outmoded idea that the problem of the aged could be solved by a low-cost voluntary hospital insurance program. They believe that a voluntary program can be administered more cheaply and more efficiently without undue strain on already overcrowded hospital facilities.
>
> This American Medical Association should develop a social conscience, in the collective sense. Hospitals and physicians have a windfall and do not even have to pay for it. The Forand bill is financed out of the worker's check. The American Medical Association should realize that we are living in the space age and that thrift and individual enterprise are really and truly outmoded concepts.

I would like to continue in this vein of satire or irony, but it might destroy the effect of this wonderful piece of writing. Dr. Sizemore's letter, in my opinion, employs to excellent advantage the rarely usable device of ironic criticism.

Now, I would like to become more serious for a moment. Many, and I would say the majority, of the statements now being made about the aged are simply not true, but through constant repetition, as Dr. Herman Goebbels pointed out, are being accepted as fact. Perhaps, it might not be really nice of me to remind you that this principle is still being used in this campaign. It is still being used by governments, Mr. Khrushchev's, in this era and in this area. It is also being used in our own Congress. You might say that in doing this, we are furthering the idea, somewhat crudely, of the big lie campaign.

But there are many facts that are not being told to you as individual physicians. The first is—and this hardly needs to be repeated—that the American people today, young and old, are receiving by and far the best medical care of any place in the world. It is improving daily. We have the finest hospitals, the best-trained nurses, the most capable physicians, and the most effective drugs that the world has ever known.

Second, because of this care, Americans now enjoy a longer life span that you have created. You have added another onto Mr. Shakespeare's ages of man, and the great majority of our citizens incidentally are living healthily, happily, and usefully. As an illustration of the big lie, one important candidate for the presidency has mentioned recently that 17 million people in this country go to bed hungry every night.

These are the facts. It does not mean, however, that we do not have a serious problem, or that there is not a need to do something about it. It does mean there is no reason for raising a specter of fear among our aging and rushing into some premature action that may be tragically wrong for the aged and for all other age groups.

A recent independent survey by the National Opinion Research Center of the University of Chicago disclosed that the very sick among the older population comprise only about 10 per cent of the elderly, of all the 15 million over sixty-five if you wish to call them elderly. I don't, but we have to use some type of figure.

For a moment let us look at some of the inaccuracies which are being accepted in some quarters as facts. For example, it is said that two thirds of the Americans over sixty-five today have no private health insurance. The truth in a recent report issued by the Health Insurance Association of America states that of the 15 million persons sixty-five years of age and older, approximately 49 per cent have voluntary health coverage as of this moment. Much of this coverage has been achieved during the last six years. This rapid growth in voluntary health insurance can be expected to continue so long as our senior citizens are free to choose the sort of health coverage best suited to their individual needs.

It is also said that less than 10 per cent of all workers who retire can retain coverage in their company group insurance plans. This is a highly debatable point. The truth is that 60 per cent of all workers retiring can retain, and convert if they choose, their company group policies, according to Mortimer Spiegelman in his text "Insuring Medical Care for the Aged," published in March, 1960.

It is said that medical costs account for a much larger proportion of the family budget of old people than of other persons and that families in old age spent twice as much on medical care as younger people. The truth is that this fallacy ignores the normal and natural changes in family budgets resulting from increasing age. Few persons who have reached sixty-five are still buying homes and furniture, raising and educating children, or making other outlays which comprise a substantial part of the budget of the younger generations. Obviously the comparison based on the proportion of family budget is meaningless.

Another important point is that the United States census statistics indicate that there is little difference between the gross medical expenses of those under sixty-five and those over sixty-five. Data collected in connection with the 1950 census showed out-of-pocket medical expenditures per person to be $65 per year for those of all ages—$65 for those of all ages—$87 for those from sixty-five through seventy-four and $76 for those above seventy-five.

It is said that 60 per cent of all persons over sixty-five have less than $1,000 in income per year. The truth is that with the normal retirement age established at sixty-five, the average income of those who have passed that age is necessarily less than the average of those who are still working.

Most important of all—pay attention to this—what is left unsaid in all of these calculations is that married women who are supported by their husbands are counted in these figures as having no income. The United States Income Tax Bureau says that although you file a joint tax, for the sake of statistics women are declared as having no income so in 1958—these are United States figures—there were 45 million women of all ages in this country who had no income. What it left unsaid in citing the $1,000 figure is that OASI benefits are excluded as true income.

Left unsaid is that the accumulated savings and the other assets of those over sixty-five are substantially greater than those of the younger generation. The statistics of the Federal Reserve Board show that 20 per cent of those over sixty-five had liquid assets in 1958 of $5,000 or more, 40 per cent had liquid assets of $2,000 or more, and 74 per cent had some degree of liquid assets. Liquid assets include bank deposits, savings and loan and credit union shares, postal savings, and savings bonds. Homes and other real estate stocks and bonds other than savings bonds are not included in these figures. Since the indebtedness of the elderly population is low and their homes usually mortgage-free, their total financial position is much better than is indicated by money income statistics alone.

It is said that once an older person goes to the hospital, his average stay is twice as long as the average for all patients. The truth is that 90 per cent of the people over sixty-five have practically the same average hospital stay as those in the other age categories. Nearly 40 per cent of the total hospital days used by this age group are accounted for by the remaining 10 per cent over sixty-five.

It is said that an old person has two or three times as much chronic illness as a young person. The truth is that a great number of people of all ages have some form of chronic illness, such as defective hearing, hay fever, and poor eyesight. These and many other chronic ailments are in no way disabling to either the young or the old, but the thing I must call attention to is that these and other inaccuracies are being repeated over and over in support of the various legislative proposals that have been presented to Congress.

Most of these proposals do not involve the doctors directly—not yet. Most of these proposals play for sympathy on the health needs of this group over sixty-five; you are accused of being cruel, of planning a hoax of some sort upon this age group to which you owe so much. For this reason we feel it our continuing duty to point out some of the inherent dangers in these plans, dangers not only for the aged but for the entire population.

To pass legislation based on the assumption that we are dealing with identical health problems for all the aging would result in a failure to help those who need medical attention the most and would levy a heavy financial burden on the rest of the people. The premise seems to be under those proposals that at the arbitrary age of sixty-five people automatically become ill, disabled, homeless, and friendless. The truth is a majority of our older people, like a majority of any age, are capable of continuing a productive, happy, healthy life. Catastrophic or terminal illnesses affect but a minority of the aged, and even these cases are best suited for nursing home care. Also the need for serious surgery is far more prevalent before the age of sixty-five than after.

Proposals are based on the premise that the health problems of the aged can be solved simply by including our older people in institutions—away from home, family, and friends. Even if such a program were not so lacking in compassion and understanding, the simple fact remains that much of the nation now suffers from lack of sufficient hospital facilities to care for the critically ill of all ages. Sending millions of elders with minor ailments to hospitals will turn a serious situation into a chaotic one across the nation. Any program calling for prolonged hospital care should go hand in hand with an extensive hospital construction program. Not one of the legislative proposals would provide the capital outlay needed for such a program.

An alternative, of course, is to provide medical care for the minor and chronic ailments of the aged in nursing homes. This plan also is included in proposed legislation. But it, too, lacks proper study and planning. Those who seek election-year makeshift solutions to this pressing national problem would do gross injustice to our elder people. Existing nursing homes would be turned into a turmoil of inefficiencies.

Doctors realize that the legislative proposals which have been made, such as the Forand bill, are based on impulses of good will and good intentions by their sponsors. We recognize, too, that some of our elder citizens are unable to provide for their own medical care, and historically, in such cases, doctors have met their obligations to provide the best possible care regardless of the patient's ability to pay. But we must not forget that the great majority of our aged are in good health and should be allowed to live useful, productive lives. Nor should we saddle the nation with ill-advised and unworkable laws. This is particularly true now that a basis for a sound solution is so immediate.

Two years ago Congress adopted and the President signed a bill introduced by Democratic Congressman John E. Fogarty of Rhode Island which provided that a White House Conference on the Aging be held in January, 1961. The sum of $2 million was appropriated to provide for the extensive studies required in preparation for the conference. In every state in the Union dedicated persons, including doctors and others with knowledge of the problems of the aging, have been intensively engaged in doing the groundwork for the conference. The act requires that a final report, containing a recommended action, must be submitted to the President not later than ninety days following the conclusion of the conference.

In a few short months, then, the best-trained minds in the nation will give to the President and the Congress their recommendations for legislative and administrative action which should be taken to meet the health and other problems of the aging.

We have stated that we recognize the seriousness of these problems. But there is no critical need in 1960 for the kind of legislation that has been proposed. On the contrary. It is imperative that the subject be considered soberly and judiciously and in the light of the findings and recommendations of the conference. Otherwise the entire effort will be threatened by election-year political maneuvering. Americans should not allow their program to be scuttled for any makeshift schemes which might be rammed through Congress in an election-year maneuver for votes.

Thank you. (*Applause*)

SPEAKER LANE: Thank you, Dr. Orr.

I know I express the sentiment of this House in saying we are delighted to have you here. It is a distinct privilege for us and me personally, and I am sure we are all delighted to hear you again.

We will now go on with the business of the House.

Dr. Wurzbach will preside and will take up the next reference committee report, which is the Commission on Medical Services—B.

Vice-Speaker Wurzbach: Dr. Randall, will you proceed with the report of the Reference Committee on Commission on Medical Services—B?

REFERENCE COMMITTEE ON COMMISSION ON MEDICAL SERVICES—B

Section 190

Report of Reference Committee on Commission on Medical Services—B: Workmen's Compensation

Henry T. Randall, M.D., *New York:* Mr. Speaker, Dr. Orr, and members of the House, your reference committee reviewed the report of the Committee on Workmen's Compensation.

It commends the appointment by Colonel Solomon E. Senior, Chairman of the Workmen's Compensation Board, of an Advisory Committee on the Medical Fee Schedule and Allied Problems and approves the participation of representatives of your State Society in this effort to iron out some of the difficulties which have existed. Your committee feels sure that future review and revision of the fee schedules will be more comprehensive and equitable as a result of these efforts.

Your committee particularly commends the work of the chairman of your State Society Committee on Workmen's Compensation, Dr. Pelow, for his vigorous and productive efforts through the year and for his thoroughness and fairness in assembling State-wide representatives in ophthalmology and radiology to review in detail each item concerning these areas in order to submit a comprehensive report and recommendations to the Chairman of the Workmen's Compensation Board through its advisory committee.

Mr. Speaker, I move acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Randall: In connection with fee schedules, your committee received from Dr. Kenneth Gang of White Plains, chairman of the Committee on Economics of the New York Society of Neurosurgery, a letter requesting review of the present fee schedule on the grounds that it was prepared without, in his opinion, adequate consultation with representatives of neurosurgery. This matter has already been placed in the hands of Dr. Pelow's committee by Dr. Gang, and your reference committee feels that the matter will be dealt with equitably by them.

Mr. Speaker, I move acceptance of this part of the report.

Vice-Speaker Wurzbach: Is there any discussion?

William E. Pelow, M.D., *Onondaga:* I happen to be chairman of the Workmen's Compensation Committee. I am not going to talk long. Maybe the few words I say will stop a lot of discussion; I don't know.

We received a letter from Dr. Gang, and as I remember some of the contents of it, this society of neurosurgeons moved together about a year and one half ago. He was apparently under the impression that the Workmen's Compensation Committee of the State Medical Society instituted this review of the sections on ophthalmology and radiology by this advisory committee.

I just briefly would like to say what this advisory committee is. Our representation on it is through Dr. Dorman and myself and the director of the Bureau of Workmen's Compensation and Industrial Health as an adviser. The remainder of the committee is made up of representatives of the carriers, self-insurers, commerce, and industry; labor is not represented, but I assure you that labor indirectly plays an important part.

We will consider Dr. Gang's letter, and we will try to do something about it, but I just would like to say this: There are no pressure groups down at this advisory committee. The only group that the Workmen's Compensation Board will consider negotiating with is the Medical Society of the State of New York. These representatives of ophthalmology and radiology did not represent any organized group of specialists in the State. There was a representative from each of the district branches, and we said that we had State-wide representation of the State Medical Society. Nobody else can negotiate with them.

. . . There being no further discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Randall: Your reference committee strongly agrees with the recommendation that the State Medical Society reaffirm to the Chairman of the Workmen's Compensation Board its opposition to the inclusion in the fee schedule for podiatrists of items which are beyond the competence of podiatrists and illegal under the practice of the podiatry law.

Mr. Speaker, I move the acceptance of this portion of the report.

Vice-Speaker Wurzbach: Is there any discussion?

Dr. Pelow: This request of the podiatrists has been answered by the State Medical Society through its Compensation Committee item by item under the prime premise that it is bad medical care for the injured workman. It is in the hands of the Compensation Board, and I don't think there is any other action that needs to be taken on it by this Society at this time.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 191 (See 63)

Report of Reference Committee on Commission on Medical Services—B: Workmen's Compensation Fees for Osteopaths

Dr. Randall: With reference to resolution 60–30, introduced by the Medical Society of the County of Queens:

> *Resolved,* that this House of Delegates of the Medical Society of the State of New York recommend that a communication be sent to the Chairman of the Workmen's Compensation Board protesting the fact that the schedule of fees for doctors of medicine in general practice is lower than the schedule of fees for osteopaths; and be it further
>
> *Resolved,* that the Chairman of the Workmen's Compensation Board be requested to raise the fees paid to doctors of medicine in general practice so that they shall at least equal those paid to osteopaths.

Your reference committee heard statements from many interested delegates and a long discussion ensued. In view of the continuing and many problems of the present fee schedule and their interpretation, and in view of the pressing problems concerning another profession trying to enter into the practice of medicine, both of which issues are occupying the full time of your Council Committee on Workmen's Compensation, it seems inappropriate and unwise at this time to press the issue of osteopathic fees and their relationships to the medical fee schedule.

Your reference committee recommends that the Chairman of the Workmen's Compensation Board be requested by the Council Committee on Workmen's Compensation to publish the osteopathic fee schedule as a separate and distinct schedule from that of medicine.

Your reference committee recommends that no action be taken at this time on resolution 60–30.

Mr. Speaker, I move the acceptance of this portion of the report.

Vice-Speaker Wurzbach: Is there any discussion?

Charles C. Mangi, M.D., *Queens:* This resolution was introduced by the Queens delegation to implement the action taken in 1959, when House of Delegates resolution 59–33 requested an adjustment of fees for physicians and osteopaths to remove the inequity of paying lower fees to doctors of medicine in general practice than those paid to osteopaths, and a communication to this effect was sent to Colonel Senior in July. Since then nothing has happened. We have therefore requested this resolution to implement the action of last year's House of Delegates. Therefore, Mr. Chairman, I make a substitute motion to recommend the adoption of resolution 60–30 as originally introduced by Queens County.

John L. Finnegan, M.D., *Queens:* I second it.

Vice-Speaker Wurzbach: It is now open for discussion.

Dr. Pelow: Again, I was not going to discuss this, but in this situation we are working at both ends of the spectrum. In the first place we have never been consulted about the osteopathic fee schedule. We never had anything to do with it, and we have been indirectly told if we try to interfere with it in any way, we will be told that it is none of our business.

Now at the other end of the spectrum, there is another group that wants to raise their fees to the equivalent of those of the general practitioner. We think that is a bad approach—any more than we should try to take another group and raise our fees to the level of that group. Conversely, if we try to get the osteopathic fees lowered, we will certainly have a problem. This is my own interpretation of the osteopathic fee schedule. We were never consulted concerning it. Maybe the State Education Department or the people that reviewed this fee schedule consider them as some sort of specialists. That is only my interpretation of it. They get a little more than our general practitioners do, and they get less than our specialists do. Compensation in New York State means $50,000,000 a year to the doctors of New York State. That is what they collect. It amounts to $2,000 a man. Some get more; some get less, but it averages that. We have over 24,000 men doing compensation work. The osteopaths have less than a thousand. If we try to get into this, we are not consistent. We don't like to see the group at the other end of the spectrum trying to raise their fees to our status; therefore, I think we should be consistent and at this time stay away from this.

Vice-Speaker Wurzbach: Is there further discussion on the substitute motion?

Thomas M. D'Angelo, M.D., *Queens:* Mr. Chairman, I think that we are again being accused of double talk to our constituents. We went on record last year as asking that the fees of general practitioners be at least the equivalent of those paid to the osteopaths. It isn't true that the osteopathic specialist gets less than the medical. If the osteopathic specialist carries on the surgical specialties the same as our doctors do, they get the same amount of money from the Compensation Board because they are qualified to do so and they take the same examinations. I don't see why then they should receive a higher remuneration for the first call than the general practitioner does.

It may be perfectly true that this is an inopportune time, and possibly I would agree with Dr. Pelow that this time is not opportune to press the point too much, but I don't think we should give up the principle that that general practitioner should get as high a remuneration as the osteopath. And for compensation people to say that we have nothing to do with the osteopathic schedule is ridiculous. We are treating the same patients. They come to us or to the osteopaths. I don't see why we can't have an equal first call fee for the osteopaths and the medical profession.

John L. Clowe, M.D., *Schenectady:* I agree with the substitute motion that the fees of the general practitioner in compensation should be raised, but I do not feel that we should compare our fees with any of the cults, whether they be podiatrists, osteopaths, or what have you. I feel that if this motion is to be passed, we should delete the word "osteopath," also in the whereases.

Vice-Speaker Wurzbach: Is there further discussion on the substitute motion?

Herbert A. Laughlin, M.D., *Chautauqua:* May I call the House's attention to the fact that the only time the osteopath receives an additional fee greater than I, as a general practitioner, and many in this room is when he does osteopathic manipulation. That has been reiterated many times, as anybody knows who has attended the reference committees on that point, and it has been brought up on a number of occasions. Therefore, I think we are making a great to-do about very little.

It is unfortunate the osteopathic fee schedule is listed in the fee schedule under the same numbers where specialty fees are. That is unfortunate. It was my understanding the last time I talked to the previous director, Dr. Mira, that this was to be adjudicated, but up to this time I do not know of such adjudication. I think we are making a lot of to-do about very little. There are very few services which any osteopath performs for which he is entitled to a greater fee than the general practitioner because there are very few services he does that require osteopathic manipulation.

Frederic E. Elliott, M.D., *Kings:* Dr. Kaliski and myself negotiated the original schedule, and I confirm what the previous speaker has said. There was one special fee, and in return for that in all situations the osteopaths cooperated with the State Society perfectly. Thank you.

Dr. Mangi: On the substitute motion, Mr. Speaker, the basic fee for the general practitioner is $5.00 for the first visit and $3.50 for subsequent visits. On the fee schedule which came out on March 1, the osteopathic physician was not included in the booklet. It was issued a few days later as a separate sheet of paper. The general practice fees start with 0001 and the specialist fees start with 0-100. The code numbers for osteopathy are 0-150. They are listed on the specialists' fees now.

In answer to Dr. Elliott, the basic fee here is office calls, subsequent, with osteopathic manipulation. There is no base fee here of $3.50. The lowest base fee for the osteopath is $4.50. I don't know what the definition of manipulation is, except last evening we accepted one of the reports of the Subcommittee on General Practice, and one of the principles there accepted was Section B stating that the general practitioner was the backbone of medicine. Without trying to be facetious about the backbone of medicine, I think we have much more to do and can claim much more for a base fee than manipulation by an osteopath. This inequity should definitely be removed.

Dr. Pelow tells us there is another fee schedule in the offing—soon we hope. I think that we should not hide the word "osteopath." I think that in the future definitely there should be no distinction between the base fee of the general practitioner and the osteopath. The general practitioner should stop being the low man on the totem pole, especially to an osteopath.

Vice-Speaker Wurzbach: Is there further discussion? If not, we will then vote on the substitute motion which is to adopt the original resolution 60–30. All in favor of the adoption of the substitute motion say "aye," those opposed "no." It is carried.

Section 192 (See 73)

Report of Reference Committee on Commission on Medical Services—B: Workmen's Compensation Rehabilitation Program

Dr. Randall: Your reference committee recommends approval of the efforts being made to study rehabilitation methods for occupationally disabled persons but warns strongly against overcentralization in cases where rehabilitation may be widely achieved at the local level. In this connection your committee thoroughly discussed resolution 60–40 introduced by the Westchester County Medical Society, the "resolved" portion of which reads:

> *Resolved,* that the Workmen's Compensation Committee and the Bureau of Industrial Health and Workmen's Compensation of the State Medical Society urge the Workmen's Compensation Board to submit proposed plans for a rehabilitation program to the State and county medical societies for consideration and recommendations before they are put into effect.

We recommend approval of this resolution with the following modification:

> *Resolved,* that the Workmen's Compensation Committee and the Bureau of Industrial Health and Workmen's Compensation urge the Workmen's Compensation Board to include representa-

tives of the Medical Society of the State of New York in the formulation of plans and policies for rehabilitation.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 193

Report of Reference Committee on Commission on Medical Services—B: Occupational Loss of Hearing

Dr. Randall: Your reference committee also regards favorably the efforts being made to define occupational loss of hearing and to obtain the opinion of many interested groups concerning various phases of this problem. The referral of this problem to the Subcommittee on Hard of Hearing and the Deaf of the Public Health and Education Committee of the Council for the purpose of establishing standards of hearing loss and its measurement seems appropriate and is approved.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 194 (See 83)

Report of Reference Committee on Report of Commission on Medical Services—B: Change in Workmen's Compensation Law 13-a(5)

Dr. Randall: Your reference committee next considered resolution 60–50 concerning a change in the Workmen's Compensation Law, Section 13-a(5) introduced by Henry Vinicor, M.D., of St. Lawrence County, as an individual.

I will read the "resolved" first as we have been requested to do:

> *Resolved,* that this House of Delegates recommend that the Workmen's Compensation Law, section 13-a(5), be altered to read as follows:
>
> (5) No claim for specialists' consultation, surgical operations, or physiotherapeutic procedures costing more than *one hundred* dollars shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or the board, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency. No claim for x-ray examinations or special diagnostic laboratory tests costing more than *fifty dollars* shall be valid and enforceable, as against such employer, unless such special services shall have been authorized by the employer or by the board, or unless such authorization shall have been unreasonably withheld, or unless such special services are required in an emergency"; and be it further
>
> *Resolved,* that the Council, through its Legislation Committee, try to have this bill passed by the next session of the New York State Legislature.

There was not unanimous opinion within the reference committee concerning this resolution, but it was agreed by the committee that this should be presented to the floor for discussion.

Your reference committee recommends—and I will save time, with the Speaker's permission, by not rereading the entire resolution but merely will call your attention to the fact that the figures have been reduced from $100 to $75 and from $50 to $35. Otherwise the wording is exactly the same.

Mr. Speaker, I move acceptance of this portion of our report.

Vice-Speaker Wurzbach: Is there any discussion on the portion as presented?

John L. Clowe, M.D., *Schenectady:* The two important things are the $75 and the $35. Recently the Governor has seen fit to veto a bill calling for an increase in these figures from the original $25 and $10. If he has seen fit to veto this, I don't feel that it would put the Compensation Committee chairman in a very good position to reintroduce this same bill with a much higher figure. I feel that it should be the same as was introduced originally.

Vice-Speaker Wurzbach: Is there further discussion?

Henry Vinicor, M.D., *Lawrence:* I want to speak on this, even though it may seem, and possibly is, unimportant to the men with all the much more important comments that we have had. I want to speak on this at slight length.

It is true that the Governor in an unfortunate decision vetoed a bill raising the $25 to $40 and the $10 to $20. On the other hand, the bill was passed by the Assembly and by the Senate unanimously and with practically no discussion. The argument given is that some physicians would take advantage of the change in notification. It is the same argument being aired that 3 to 5 per cent of physicians doing compensation work are possibly not honest. As I had stated at the committee meeting, I will not agree with this in the least. There is quite a difference between dishonesty and misinterpretation of the medical fee schedule, which on some items is certainly ambiguous.

The argument given is that this law has never been enforced, and thus this change is unnecessary. This was probably so previous to March 1, 1959, when the new schedule was instituted. Since then it is slowly but resolutely being enforced. Some have said to me it had never occurred to them. This goes back again to the old saw that it depends on whose bull is being gored. Since it does not concern me at present, since it does not concern my specialty or my general practice, then why bother? That is wrong and dangerous. It is slowly spreading. As Dr. McCarthy of the Bronx said yesterday morning, why wait until next year for the crisis?

It has been argued that an emergency can be treated without prior authorization. I am cognizant of this fact. I am speaking about nonemergency cases, and incidentally the carriers might define the specific case which you call emergency as a nonemergency. We realize that this consent must be obtained in all such cases. The trouble lies with the fact that in all cases reapproval is needed for every $25 or $10, as the case may be. For example, in physical medicine and rehabilitation this would mean reauthorization every three treatments, which might be every three days. If this is not done, you may not be paid.

Recently I had a case in which consent was asked for treatment, and this was given. Unfortunately further consent was not asked, although C-4 forms were sent every fourteen days, as a result of which a substantial amount of money was lost. This also entails a tremendous amount of paper work, and we are all unhappy about the amount of work that is being done at present.

Some have said, "Why worry about notification? Just call the insurance company on the phone." Gentlemen, may I call your attention to the fact that some of us still practice in rural areas far away from this wonderful metropolitan area, as myself, close to 400 miles. We in the huskings must not be neglected. Let us not show ambivalence. We are encouraged to settle in rural areas, and then you forget about our problems. Too the physicians in distant areas must never be made to feel that you physicians in the larger cities, by virtue of your greater numbers, are indifferent to or negligent of our problems since at present they may not concern you.

Thank you!

William E. Pelow, M.D., *Onondaga:* Mr. Chairman, as chairman of the Workmen's Compensation Committee, I think it would be bad policy to institute or start an attempt to institute any legislation at this time after what has happened, and I think we can stop this discussion if I will be allowed to suggest to you that we hear from Dr. Blake, the chairman of the Legislation Committee. He can tell us why this was vetoed. He knows definitely why it was vetoed.

Vice-Speaker Wurzbach: Dr. Blake has the floor.

James M. Blake, M.D., *Councillor:* Mr. Speaker and members of the House, as you know this bill was in this year and was passed. We got it through both the Assembly and the Senate, but the Governor vetoed it. We did have difficulty getting it passed by the Assembly. Both assemblymen and senators agreed that it would be all right to pass it, with the thought in mind, I am quite sure, that it would probably be vetoed.

I checked the Governor's veto message last night by telephone to verify my memory, and I think it is important that I call to your attention certain points that have a great deal of bearing upon this.

You will all recall that prior to 1935 an employe was not allowed to select his own physician. There was no free choice of physician for workmen's compensation. It was controlled entirely by the employer. This year also there was a bill introduced in the Legislature which would again establish a panel of physicians by the employer from which he could select a physician to treat compensation cases. We killed this bill in committee, and as a result, in the one we are referring to, this was referred to in the message.

At the time that the 1935 legislation was enacted, calling for free choice of physician, this section of the law was added on the theory that it would protect the physician and the employe and the carrier against possible abuses or against possible unnecessary or unrelated services.

I am quoting now from the Governor's message: "The rule has been for special medical services requiring specific authorization. This situation at present is in no way different than it was in 1935 when the limitations were first added. The fact that the maximum is approached more frequently and special authorization becomes necessary more often does not mean that in the face of efforts to control such costs we should raise these charges without specific authorization. In view of the high proportion of workmen's compensation costs which are allowable items, other than the costs paid to the injured workmen, we can take no action which can further increase these costs without a clear demonstration of its need. No such demonstration has been made. It is not clear what effect on workmen's compensation the raising of these items would have, remembering that these limits were so determined when specific authorization was sought."

The Governor also says, "I am asking the Workmen's Compensation Board to study the experience it has had with fees in order to determine what effect such increase might have on the cost of workmen's compensation."

I feel quite confident from my communication and talk with our people in Albany that the enactment or change of this could not possibly be enacted into law until after the Workmen's Compensation Board reports.

Furthermore, I think it brings up the possibility of establishing a panel of physicians by the employer or rather by the insurance carrier, either one, from which they could select physicians for the care.

I would therefore strongly urge that you not adopt this resolution to try to enact this legislation.

Vice-Speaker Wurzbach: I will call the vote. All those in favor of the recommendation of the committee to approve say "aye," those opposed "no." It is lost.

This leaves the original resolution of the $100 and $50 to be acted on. Is there any further discussion? All in favor of the original resolution will say "aye," opposed "no." It is lost.

Dr. Randall: Mr. Speaker, continuing the report on this section, the next item is as follows: Your reference committee further recommends that the Council Committee on Workmen's Compensation through its chairman contact the Chairman of the Workmen's Compensation Board to recommend that outside of emergencies, a time limit of no more than seven days be placed on the insurance carriers on the time of delay in authorization beyond $25.

Mr. Speaker, I move the acceptance of this portion of the report.

Vice-Speaker Wurzbach: Is there any discussion?

Dr. Pelow: This is important for the men to take back to their constituents. Some of these carriers now are working on this technicality, so be careful and get authorization. We have some instances—and if I may say so, they are pulling this omen in their localities that they have had trouble with repeatedly getting an authorization—we will be glad to follow the recommendation of this reference committee on this seven-day thing. I don't know whether we can get it at the seven days or not, but we will try to get it through the advisory committee that there is a time limit on how long they can go without authorization. You always have the out that if you don't think you are getting the authorization fast enough, call them on the telephone and tell them you won't be responsible for this case unless you get authorization, but get it because they may pull a technicality on you, and they will get away with it.

Vice-Speaker Wurzbach: Is there any further discussion? If not, I will call the vote. Those in favor of the report say "aye," those opposed "no." It is so ordered.

Dr. Randall: Your reference committee suggests that the membership of the Medical Society of the State of New York notify the Committee on Workmen's Compensation of instances in which delay has jeopardized the welfare of the patient.

From the lengthy discussions at the reference committee meeting, it was realized that there exists in the present fee schedule considerable ambiguity, and your reference committee recommends that Dr. Pelow's committee continue its efforts to clarify and simplify these controversial points. It would appear that many members of the profession may have been unjustifiably criticized for actions in connection with the medical fee schedule which are the result of many ambiguities. We hope that the new fee schedule, when and if it is released in the near future, will have resolved many of the present difficulties, and we commend the efforts of Dr. Pelow and his committee for their work toward this end.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Randall: The report of the activities of the bureau has been reviewed. The committee notes with regret the resignation of Anthony A. Mira, M.D., as director of the Bureau of Industrial Health and Workmen's Compensation. His services were of great value to the State Society.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 195

Report of Reference Committee on Commission on Medical Services—B: Committee on Industrial Health and the Bureau of Industrial Health and Workmen's Compensation

Dr. Randall: In review of the report of the Committee on Industrial Health and the Bureau of Industrial Health and Workmen's Compensation, your reference committee notes with approval the proposed participation of this Society as a host for the 13th International Congress on Occupational Health to be held in New York City in July, 1960. The committee has been active in the fields of employment of the physically handicapped, occupational loss of hearing, and has participated in meetings of the New York State Society of Industrial Medicine.

Of particular importance in this report is the emphasis given to the increasing trend towards the establishment of union health centers and even union hospitals and union medical schools. Your reference committee joins the Council Committee in urging continuing discussions at an informal level with representatives of both unions and management.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 196

Report of Reference Committee on Commission on Medical Services—B: Questions of Ethics

Dr. Randall: In reviewing the report of the Committee on Questions of Ethics, your reference committee notes with recommended approval two decisions made during the year. The first concerns a question of school physicians serving with an osteopath as a school physician. The question was referred back to the local county medical society to determine whether or not such association was voluntary since voluntary professional association in activities with cultists is unethical.

The second question concerned the ethics of a physician subscribing to a commercial laboratory which, for a flat monthly fee from the physician, offered practically all the usual laboratory procedures without limitation. The committee did not find the plan as such unethical but points out the possibility that unethical practice might develop from association with substandard quality of work, or objectionable advertising by the laboratory, or if a physician used it to exploit his patients. Your reference committee concurs with this point of view.

The Committee on Questions of Ethics replied to a question from the American Medical Association concerning the effectiveness and present status of procedures for professional discipline within our State by stating that present methods appear to be operating effectively. It would seem wise to be absolutely sure that this is the case as emphasized in the address of our president.

The Committee on Questions of Ethics further expressed the opinion that the role of the Committee on Ethics of the Medical Society of the State of New York would seem to be that of a reference committee in view of the establishment of the Judicial Council of the State Medical Society, which now handles appeals from county societies in matters of discipline, and since all recommendations on questions of ethics must be approved by the Council of the Medical Society of the State of New York before they become official. Your reference committee recommends that methods be instituted by the Council to expedite the handling of referred questions.

Your reference committee concurs in this opinion.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 197 (See 17)

Report of Reference Committee on Commission on Medical Services—B: Hospital and Professional Relations Committee

Dr. Randall: The report of the Hospital and Professional Relations Committee in the April 15 issue of the New York State Journal of Medicine was reviewed. This report deals at some length with emergency service and emergency medical panels throughout the State. Because of differing local conditions, particularly population density and number of available physicians, the problem of providing emergency medical care has to be solved in different ways at local level. Most acute is the problem of small towns with only one doctor and rural areas where only relatively few doctors are present. The report urges the development of "group participation" by doctors in these areas, not only to provide emergency medical care, but also coverage for vacations, postgraduate study, and illness. A questionnaire has been proposed to evaluate plans for emergency medical care through the State to gain more information on the subject and to find out just what is being done in various areas.

Your reference committee believes that emergency service is a basic part of professional service to the public. In these days when lack of availability of doctors in emergencies is, justified or otherwise, a subject of criticism by the public of the medical profession, emergency service plans together with ethical doctors and public education concerning medical services are of vital importance both to patients and to good public relations. Your reference committee believes that vigorous efforts to this end are very meritorious.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . The motion was seconded, and as there was no discussion, it was put to a vote and was unanimously carried . . .

Dr. Randall: The Council Committee urges in its report that each physician have his own personal physician and further encourages the members of the Society to carry Blue Shield and Blue Cross insurance or its equivalent for members and their families to avoid the embarrassment of "gifts" to colleagues performing services for them. Your reference committee heartily endorses this recommendation and suggests that it might be the subject of editorials in the Journal.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Randall: The Hospital and Professional Relations Committee notes that many members of the profession in New York State are not members of the State Society, and these physicians are making contributions to medicine in practice and other endeavors. The committee urges that the contributions of these nonmembers be recognized and that they be urged to participate in all phases of our medical organization. To implement this suggestion and to assure greater representation of all phases of medical activities in the State Society's Committee on Hospital and Professional Relations, the committee recommends that its size be increased to six doctors, with a dean of one of the State medical schools (in rotation), a representative from the field of public health, a full-time teaching professor, and a hospital administrator representing the Medical Society to work with two representatives of the rank and file of practicing physicians.

The Council voted approval of these recommendations with the suggestion that, in appointing the committee, the president take into consideration the appointment of practicing physicians who would at least rank equal with the full-time teaching and hospital people.

Your reference committee recommends approval of these actions of the Council.

Mr. Speaker, I move acceptance of this portion of the report.

Vice-Speaker Wurzbach: I will now call for discussion.

Thomas M. d'Angelo, M.D., *Queens:* If these people are physicians, deans of medical schools, etc., why don't they join the Medical Society? Have they given any reasons?

Vice-Speaker Wurzbach: This I think is a personal question.

Dr. Randall: I don't know the answer to this completely. Speaking now as an individual rather than as chairman of your reference committee—normally the chairman of a reference committee does not speak as an individual—I would say that this is a combination of events that has gone on over the past years, in which there has been largely a lack of communication between our State Society and what its purposes are and what we are trying to do and the members of the medical schools, many of whom are members of the Society of course and many of whom have become indifferent or never did know much about the State Society and what it attempted to accomplish.

Perhaps I can speak of my own case by saying that personally I first became interested in the affairs of the Medical Society of the County of New York because of an argument we had, since I happen to be a full-time teacher, but I have since learned a great deal. I think a great deal of effort should be made on both sides in order to bring all of medicine together because we have heard from Dr. Orr and others of the many threats to our independence, to our individuality, to what we are trying to do. I think that the coordination of all doctors in the State should be one of the major objectives of this State Society, and I hope we can accomplish it.

Dr. d'Angelo: Then I understand the individuals we are speaking about are members of the Medical Society?

Dr. Randall: Many of them are. I don't know which individuals would be appointed by the president. That is his prerogative. Many of them may well be members of this Medical Society.

Dr. d'Angelo: He may well appoint individuals who are not members of the Society according to this resolution. Is that so?

Dr. Randall: I can't answer that. You have to ask the counsel how this would be worded, whether this would be the intent. Can anyone not a member of the State Society serve on a committee of the State Society? I think not.

Dr. d'Angelo: All right, that is the answer.

Vice-Speaker Wurzbach: That is your answer. Is there any further discussion?

Alfred A. Angrist, M.D., *Queens:* I just want to comment on this resolution. I think though it received some discussion, it really represents a very important recommendation.

In discussing this matter with Dr. Talbott, the editor of the *Journal of the American Medical Association,* I was informed that this constitutes a serious problem and is receiving considerable attention, and Dr. Talbott himself is devoting considerable energy personally to seeing what can be done to bring into the fold of organized medicine the full-time faculties of our medical schools. There is no doubt about it but there is a hiatus of contact there, and it constitutes the place where the medical student receives his contact and indoctrination, and it is a poor indoctrination.

I think that this recommendation should be implemented and carried to the American Medical Association from this House to the effect of using every feasible means of achieving this objective.

Vice-Speaker Wurzbach: Is there any further discussion? If not, all those in favor of the adoption of this portion of the report say "aye," those opposed "no." It is so ordered.

Dr. Randall: Your reference committee commends the efforts of the Hospital and Professional Relations Committee to bring together often separated elements of the medical profession. It believes that in this modern day, with medicine confronted from many sides with threats to its integrity and independence, that mutual understanding and cooperation among the various groups in medicine are essential if medicine is to continue to control its own destiny in a rapidly changing world.

Mr. Speaker, I move acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Dr. Randall: In a supplementary report the Committee on Hospital and Professional Relations supports the establishment at State level and recommends the formation at local level of joint committees of hospitals and the medical profession to attempt to reduce accidents which lead to injury of hospital patients and thus to reduce malpractice suits. This recommendation urges implementation at State and local level of the recommendations of the American Medical Association and parallels the

Joint American Medical Association and American Hospital Association Medical-Legal Committee at local level.

Mr. Speaker, I move acceptance of this portion of the report.

Vice-Speaker Wurzbach: Is there any discussion?

George J. Lawrence, Jr., M.D., *Councillor:* I would like to question the insertion at the end of the phrase, "and thus to reduce malpractice suits." The purpose is to reduce malpractice and not suits but accidents. I think it would be well to delete that.

Vice-Speaker Wurzbach: Why not add the word "help" instead of "thus?"

Voices: No.

Delegate: Why not insert "incidentally?"

Vice-Speaker Wurzbach: Are you making a motion to delete?

Dr. Lawrence: "And thus reduce malpractice suits."

Vice-Speaker Wurzbach: Is that seconded?

. . . The amendment was seconded from various parts of the room . . .

Vice-Speaker Wurzbach: All those in favor say "aye," opposed "no." This phrase is deleted. Is there any further discussion on the motion as thus amended? If not, all those in favor of the adoption of this portion of the report as deleted say "aye," those opposed "no." It is so ordered.

Dr. Randall: With respect to the practice of hypnosis in hospitals, the report states: "In view of the confusion about hypnosis and its use in medical practice and hospitals, it is recommended that its use be confined to physicians who are qualified in this field by experience or educational activity, approved by the Committee on Medical Hypnosis of the American Medical Association, the American Medical Association's Council on Education and Hospitals, the postgraduate division of a medical school, the American Psychiatric Association, the American Society of Anesthesiologists, or similar reputable medical educational groups.

"And it is further recommended that its use in hospitals be limited to physicians specifically granted privileges in its practice through the procedure existing in that hospital for granting privileges to physicians.

"It is further affirmed that short courses in hypnosis of a few days or less in length are not adequate educational experience to qualify a physician to practice hypnosis."

Your reference committee recommends approval of this report.

Mr. Speaker, I move the acceptance of this portion of our report.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Dr. Randall: The report further recommends and your reference committee concurs that there be set up within hospitals committees consisting of officers of the hospital and physicians on the staff of the hospital to consider matters of cost of drugs and to determine how they can be reduced. It is recommended that the generic names of drugs be used and that hospitals consider the use of a formulary to keep costs down.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 198 (See 46)

Report of Reference Committee on Commission on Medical Services—B: Discontinuance of Medical School Cooperation with Veterans Administration

Dr. Randall: Your reference committee had referred to it resolution 60–13, subject "Discontinuance of Medical School Cooperation with Veterans Administration," introduced by the Richmond County Medical Society:

> *Resolved,* that the Medical Society of the State of New York urge the discontinuance of further cooperation between the medical schools and the Veterans Administration except where necessary for the care of service-connected patients; and be it further
>
> *Resolved,* that this resolution be introduced by the New York State delegates in the House of Delegates of the American Medical Association for action by that body and that our delegates work actively for its passage.

Your reference committee discussed this matter at considerable length with Herbert Berger, M.D., who represents the Richmond County Medical Society and with other interested delegates. Certain facts were brought out: Today in Veterans Administration hospitals approximately 90 per cent of the patients are admitted for nonservice-connected disabilities. Many of these patients are admitted although fully capable of paying for medical care and in violation of the basic purpose of the oath of poverty required for such admissions. The Veterans Administration has a large staff, and this staff included, as of 1958, 2,515 residents and 107 interns. Many patients in civilian hospitals throughout the country are not being as well taken care of as they could be because of the lack of sufficient physicians at the level of interns and residents.

In view of these facts, it is the opinion of your reference committee that Veterans Administration hospital staffs are disproportionately large, particularly in numbers of men in residency training, and that the means test for ability to pay for medical care, *if strictly enforced,* would free for civilian patient care many doctors now in Veterans Administration hospitals.

Your reference committee recommends no action on resolution 60–13, but rather recommends that the Medical Society of the State of New York go on record, and urge that the American Medical Association do likewise, as recommending and urging strict enforcement of legal requirements for patient admission with nonservice-connected disabilities in Veterans Administration facilities.

It is the opinion of your reference committee that this would better meet the purpose implied in the resolution of the Richmond County Medical Society of freeing residents (there are very few interns in the Veterans Administration structure) for civilian patient care in civilian hospitals and would avoid the problems of noncooperation by medical schools and deans committees in the care of veterans.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 199 (*See 69*)

Report of Reference Committee on Commission on Medical Services—B: Training of Residents and Interns

DR. RANDALL: Resolution 60–36, introduced by Thomas M. d'Angelo, M.D., as an individual:

> *Resolved,* that the Medical Society of the State of New York through its Council and committees study this problem and consult with the medical schools of this State and their affiliated hospitals and also seek the advice of the legal profession.

Your reference committee discussed this resolution with Dr. d'Angelo and with his concurrence recommends broadening of the basic purpose by the deletion from the "resolved" of the words "their affiliated," so that the "resolved" will now read:

> *Resolved,* that the Medical Society of the State of New York through its Council and committees study this problem and consult with the medical schools of this State and hospitals and also seek the advice of the legal profession.

It was felt by the reference committee that the problem presented in Dr. d'Angelo's resolution was not confined to university-affiliated hospitals and also that the study which we highly commend should include the problem in all its aspects throughout the State of New York.

Your reference committee further recommends that this resolution together with those concerning interns which follow be referred to the newly expanded Council Committee on Hospital and Professional Relations of the Medical Society of the State of New York as well as wherever else deemed advisable by the Council.

Mr. Speaker, I move the acceptance of this portion of the report.

VICE-SPEAKER WURZBACH: Is there any discussion?

WILLIAM B. RAWLS, M.D., *New York:* Mr. Chairman, this particular problem was taken up by the A.M.A. Council on Medical Education three different years in succession. I attended all of these meetings, and four years ago I presented a resolution here where the question of a two-year internship was presented at the House of Delegates of the American Medical Association. They have been mandated to carry out a study on this problem. They have made a preliminary report, and they have objected to the term "two-year rotating internship," and, Dr. Randall, I believe this committee is supposed to bring in a report this year in reference to the hospitals.

Here, about eight or ten years ago, I was a member of the Council for the Residency and Intern Program of Greater New York. At that time Dr. Carl Eggers was chairman of the subcommittee of which I was a member. We went into the whole problem, and we got all of the specialty boards to agree to go along at that time, but it was a problem of getting the hospitals, the university hospitals, to accept this because, they stated, it would disarrange or cause a great deal of trouble in their present program of intern and residency training.

VICE-SPEAKER WURZBACH: Resolution 60–36—is there any further discussion on this portion of the report?

THOMAS M. D'ANGELO, M.D., *Queens:* May I clarify this point a minute? If you turn to number 60–36, this has only to do with the training of the residents, not anything like the two-year internship. May I call your attention to the fact that because of the number of insured individuals, ward patients are decreasing more and more, and that is the reason why we want to make a study to find out how more patients can be available for the training of residents without meeting some legal obstructions.

VICE-SPEAKER WURZBACH: Is there any further discussion? If not, those in favor of the adoption of this portion of the report say "aye," those opposed "no." It is adopted.

Section 200 (*See 42, 49*)

Report of Reference Committee on Commission on Medical Services—B: A Plan to Study the Intern Shortage; A Plan to Correct Shortage of Interns

DR. RANDALL: Two additional resolutions referred to your reference committee may be properly considered together. They are resolution 60–9, "A

Plan to Study the Intern Shortage,'' introduced by the Medical Society of the County of Queens, and resolution 60–16, introduced by the Bronx County Medical Society, ''A Plan to Correct Shortage of Interns.''

I will read the ''resolved's'' first in resolution 60–9:

> *Resolved,* that the Medical Society of the State of New York initiate a study to ascertain the reasons why the armed forces, the medical schools, and the university-affiliated hospitals do not encourage and endorse two-year internships; and be it further
>
> *Resolved,* that a similar resolution be introduced at the June meeting of the House of Delegates of the American Medical Association requesting them to undertake a similar study; and be it further
>
> *Resolved,* that all the delegates from the Medical Society of the State of New York to the House of Delegates of the American Medical Association be mandated to support this resolution.

Now I will read the ''resolved's'' in 60–16:

> *Resolved,* that the Medical Society of the State of New York recommends a two-year rotating internship; and be it further
>
> *Resolved,* that the New York State delegates to the American Medical Association be instructed to introduce a similar resolution before the A.M.A. House of Delegates in June, 1960.

The problem of interns and intern training must be considered in two parallel and equally important categories. The first is the great benefit to patients in hospitals that results from the activities of intern and resident staffs through their presence within the hospital and the improvement in patient care which is reflected throughout hospitals by the presence of eager young men who devote their full time to hospital patient-care. The second is the obligation which the profession as a whole has to the training of future generations of physicians and the necessity that all intern or residency training programs be truly educational experience for the young doctors; otherwise there exists the danger of their being exploited for cheap technical labor.

There are a few more than 6,800 medical graduates each year from medical schools in the United States, and in 1959 there were 12,469 approved intern positions in American hospitals. In 1959 there were 8,037 American-trained interns and 2,215 foreign-trained interns, leaving more than 2,200 positions vacant. Qualifying examinations for foreign medical graduates will this year further reduce the number of foreign-trained doctors available.

Before the war, although there were fewer hospitals having accredited programs, many internships or ''houseship'' programs were of two years in duration. Most of these were of the ''mixed'' variety where a man spent some time in several departments, winding up in the area of his intended specialization. World War II reduced all internships to nine months, and at its close most of the specialty boards increased the residency requirements in years by at least an additional year. As a result, in general, internships have remained at the level of one year. Today some of the specialty boards will accept a second year of internship in lieu of one year of residency if the preponderant time in that second year is spent on the service of the specialty. However, not all specialty boards will do this, and very few hospitals which have both an intern and residency program will foreshorten the residency period for a man who has had two years as an intern.

Your reference committee recommends approval of resolution 60–9, which in its ''resolved'' establishes a study to determine the reasons why medical schools, university-affiliated hospitals, and the armed forces do not encourage and endorse two-year internships and recommends that a similar resolution be introduced by the delegates of this Society to the American Medical Association meeting in June. The third ''resolved,'' however, mandates the delegates to support this resolution, and your reference committee recommends modification to the extent of substituting the word ''urge'' for the word ''mandate'' in the third ''resolved.''

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Randall: With respect to resolution 60–16, your reference committee recommends approval with the following modifications:

In the last ''whereas'' remove the word ''rotating'' so the resolution will read:

> Whereas, a two-year internship is the best foundation for the practice of medicine, for further training in a specialty, or for training in the armed forces; now therefore be it hereby

And similarly remove the word ''rotating'' from the first ''resolved,'' so that it will now read:

> *Resolved,* that the Medical Society of the State of New York recommends a two-year internship;

It is the feeling of your committee that while it approves the recommendation of reconsideration of a two-year internship, many internships, in order to comply with the recommendation of specialty boards, will of necessity be of the mixed type. It is our feeling that the first year of internship should indeed include more than one discipline, but we feel that a two-year rotating internship would involve problems with the boards that might not be resolvable.

In addition, and as with the previous resolution, your committee recommends that the word "instructed" in the second "resolved" be changed to "urged" so that it will read:

> *Resolved,* that the New York State delegates to the American Medical Association be urged to introduce a similar resolution before the A.M.A. House of Delegates in June, 1960.

Previous experience has suggested that mandates to the delegates to the A.M.A. are sometimes unfortunate in that they permit no flexibility of decision when circumstances may well change sufficiently to warrant discretion by the delegates.

Mr. Speaker, I move the acceptance of this portion of the report.

VICE-SPEAKER WURZBACH: Is there any discussion?

THOMAS F. MCCARTHY, M.D., *Bronx:* As you recall, we passed a resolution yesterday in which we asked an investigation of all the policies of the A.M.A. Council on Medical Education. I think you are being distracted when you say we approve a two-year rotating internship. Repeatedly this has been done in this House that I recall; we pass this year after year. It is not a matter of one-year internships or two-year internships. It is a matter of distribution. In other words, do you think you will be any better off in your community hospital if the large teaching institutions have just as many two-year interns as they have now one-year interns?

The idea behind this, I think, in talking to the men who introduced it, is by doing this you will be able to get interns in these hospitals, say, of three or four hundred beds, but I don't think you will be able to do it any better with this situation than you do now.

VICE-SPEAKER WURZBACH: Is there any further discussion?

MONROE M. BROAD, M.D., *Queens:* Mr. Speaker, I think it is a very simple matter of mathematics. Let us take an arbitrary figure of, say, 8,000 graduates from medical schools. One year let us suppose there are some 14,000, or whatever there are, vacancies for internships. If we would keep the two successive graduating classes, which would then total 16,000 interns, we would fill all of these vacancies. It is very simple. If you have as many two-year interns in a university-affiliated hospital as you now have one-year interns, obviously they cannot take in any more, so as many interns as they would have taken in the second year would now be available to other hospitals.

VICE-SPEAKER WURZBACH: Is there any further discussion? If not, all those in favor of the adoption of this portion of the report say "aye," those opposed "no." It is adopted.

DR. RANDALL: Your reference committee recommends further that the two resolutions, 60–9 and 60–16, as amended, be directed to the attention of the Advisory Board for Medical Specialties of the American Medical Association with the recommendation that the various specialty boards be asked to consider the inclusion of credit to the extent of one year for the second year of mixed internship.

Mr. Speaker, I move the acceptance of this portion of the report.

VICE-SPEAKER WURZBACH: Is there any discussion?

ALFRED A. ANGRIST, M.D., *Queens:* I think there is some correction necessary here. The Advisory Board for Medical Specialties is not the arm or agency of the American Medical Association as such, and I think that might be properly corrected to read to ask the American Medical Association with the Advisory Board of Medical Specialties to see that those boards which now refuse to give credit for that second year, which is the intent of that part of the resolution, be advised and urged to do so.

Then, second, in discussing this matter before the reference committee I had hoped that they would include in part of it, at this stage of their report, that the American Medical Association also be urged to overcome the existing failures in the two-year internship by intervening with the National Council, Selective Service, and the Secretary of Defense to see that the two-year development would also be accepted and remove that element from the barrier which now exists—that barrier which must be removed before anything else can be done.

VICE-SPEAKER WURZBACH: Do you make that as a substitute motion?

DR. ANGRIST: As an amendment.

VICE-SPEAKER WURZBACH: It would be a substitute.

DR. ANGRIST: Supplementing it.

VICE-SPEAKER WURZBACH: Changing the intent of the first part. Instead of becoming part of it, urge that the American Medical Association urge this board to act.

DR. ANGRIST: No, Mr. Speaker. I hope you will forgive this presumption, but as the words are given to us now, that is an incorrect reference. The Advisory Board for Medical Specialties is an independent agency, absolutely independent of the American Medical Association; therefore, you just must make it correct.

VICE-SPEAKER WURZBACH: You are amending that, and you are adding the other?

DR. ANGRIST: Exactly.

VICE-SPEAKER WURZBACH: Is there a second?

. . . The motion was seconded by several . . .

VICE-SPEAKER WURZBACH: Is there any further discussion to the amendment?

DR. ANGRIST: Finally—

VICE-SPEAKER WURZBACH: Wait a minute. We are now speaking on the amendment to the report of the reference committee. Is there any further discussion on this amendment? All those in favor of the adoption of the amendment say "aye," opposed "no." It is adopted.

We are now back on the motion of the reference committee as amended. Is there any discussion further? All those in favor of the adoption of this portion of the report as amended say "aye," opposed "no." It is so ordered.

Dr. Angrist, do you still wish the floor?

DR. ANGRIST: Yes. There is something to come before this stage of the game, but of course this House has repeatedly gone on record giving an opinion that the two-year internship could be established; that lip service is meaningless, and the mathematics of our colleges, including Dr. Broad's explanation, is also meaningless. The only method by which you can get the two-year internship to become an effective means of solving your problem—

VICE-SPEAKER WURZBACH: Are you making a motion for further action?

DR. ANGRIST: To conclude it, and this is by way of introduction. The only way it can be done is by making the two-year mixed internship so effective an educational experience that our graduates will not only want it but demand it. Therefore, I think it is part and parcel of the recommendation made at this juncture after the careful study by your reference committee that they should include an appeal to the Council on Medical Education to come forth with a very specific program for improving the educational value of the rotating—I am sorry—for the mixed internship on a two-year basis, with stipulated requirements so that it will become an effective educational experience and not deserve the accusation of being used as a means of exploiting the graduate for getting us the type of labor we want for our own medical practice. I think that is imperative if you are going to make this more than lip service.

VICE-SPEAKER WURZBACH: We will consider this as remarks on the part of Dr. Angrist.

DR. ANGRIST: I so move.

VICE-SPEAKER WURZBACH: You cannot. That would have to be a resolution which cannot be introduced as of today. It has not been referred to a reference committee. We will consider these as remarks which will become part of the record.

Section 201 (See 71)

Report of Reference Committee on Commission on Medical Services—B: Hospital Facility in Seneca County

DR. RANDALL: Resolution 60–38, "Hospital Facility in Seneca County": While we approve the actions of the Seneca County Medical Society, as expressed in resolution 60–38, and commend them for their public-spirited service, it is the opinion of your reference committee that this is a local affair and, therefore, it recommends no action on this resolution.

Mr. Speaker, I move the acceptance of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

DR. RANDALL: I now move the report as a whole, as amended.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

DR. RANDALL: In conclusion, your chairman would like to express his particular thanks to members of the reference committee—Henry Vinicor, M.D., St. Lawrence; Arthur H. Diedrick, M.D., Westchester; Alfred A. Hartmann, M.D., Franklin; and Michael J. Crino, M.D., Monroe—whose vigorous discussions and willingness to compromise made the task of your chairman a pleasure.

I know also that I speak for all of the reference committees in expressing our appreciation for the excellent and efficient work of the staff in preparing these reports so that all members of the House would have a copy before them when the reports are presented. (*Applause*)

SPEAKER LANE: I will declare a five-minute recess, and I mean five minutes. We have one more long report before you, so this will give you a breath of air.

. . . Recess . . .

SPEAKER LANE: The meeting will please come to order. We are now going to go to the last report, that of the Reference Committee on Legislation and Legal Matters. Depending on the time involved in this report, it will determine the time of the final session. As soon as this report is completed, I will ask your pleasure concerning the final session.

REFERENCE COMMITTEE ON LEGISLATION AND LEGAL MATTERS

Section 202

Report of Reference Committee on Legislation and Legal Matters: Report of Legal Counsel

CHARLES R. MATHEWS, M.D., *Monroe:* Mr. Speaker and members of the House of Delegates, under this year's groupings of assignments to the reference committee, this report concerns the activities of eight different groups which will be considered in the order in which their reports appear in the JOURNAL.

Your reference committee has reviewed in detail the excellent report submitted by William F. Martin, Esq., contained on pages 91 to 94 of the Delegates' Handbook and on pages 1100 and 1103 of the JOURNAL, volume 60. We recognize the invaluable assistance and legal guidance which Messrs. Martin, Robert J. Bell, and their associates have consistently given this Society. In particular, the committee commends to the thoughtful attention of all members of the Society Mr. Martin's advice regarding reliable malpractice insurance coverage.

Mr. Speaker, I move the adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 203 (See 33)

Report of Reference Committee on Legislation and Legal Matters: Committee on Legislation

Dr. Mathews: The report of the Committee on Legislation is contained on pages 95 to 98 of the Delegates' Handbook and on pages 1104 to 1107 of the Journal, and in supplementary report of the Committee on Legislation 60–Q. Included in our study are those portions of the annual report of the president bearing on State and Federal legislation (Delegates' Handbook pages 22–23; Journal, pages 1064–1065).

The diligence and competence which the Committee on Legislation, under the chairmanship of James M. Blake, M.D., has applied to its tasks are clearly apparent and deserve our commendation. They have reported their actions on the several resolutions passed by the House in 1959 concerning State legislation, and particular attention is directed to the efforts for establishment of a Commission to Study the Healing Arts. This seems to be a positive and promising approach to the broad problem of cults, as well as the clarification of the status of the several medical ancillary fields. Your reference committee wishes to give all positive emphasis to the recommendation that we should all participate more actively in medical legislation matters.

Mr. Speaker, I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Dr. Mathews: There are nine resolutions pertinent to this section of the reference committee report.

Section 204 (See 57)

Report of Reference Committee on Legislation and Legal Matters: Council Action on Mandated Legislation

Dr. Mathews: I shall read the "resolved's" of resolution 60–24, introduced by the Medical Society of the County of Erie, subject "Council Action on Mandated Legislation":

> *Resolved*, that hereafter the Council, when it decides not to implement a legislation mandate of the House of Delegates, shall with reasonable dispatch make a written report of its action together with its reasons therefor to the county medical society that sponsored the original resolution; and be it further
>
> *Resolved*, that the Council make a separate report to the House of Delegates on each item of mandated legislation it has decided not to introduce in the State Legislature with the reasons for its action; and be it further
>
> *Resolved*, that the report so made by the Council shall be referred to the reference committee which passed on the original resolution mandating the legislation, for study and the making of a separate reference committee report thereon to the House of Delegates.

This resolution and its "whereases" refer to resolution 59–13 passed by this body last year, which states:

> *Resolved*, that the Medical Society of the State of New York request the introduction of legislation in the 1960 New York State Legislature whereby Section 7101 of Article 143 of the Education Law would be amended to provide that a licensed optometrist may fit contact lenses only under the personal supervision of a physician.

The wording of this resolution is clearly not in the nature of a directed or mandated action. Therefore, this year's resolution 60–24 is inapplicable. While it is the opinion of this reference committee that it is indeed desirable for the Council to inform the membership of its action on legislation requests, this has been done in the instance here cited (pages 95–96 of the Delegates' Handbook and pages 1104–1105 of the Journal and supplementary report 60–Q, page 5).

Accordingly, disapproval of this resolution is recommended, and I so move.

Speaker Lane: Is there discussion?

Samuel Sanes, M.D., *Erie:* I speak against the recommendation of the reference committee. All that the original resolution asked for was to set up an orderly procedure and general method of reporting an explanation to the Medical Society and the House of Delegates on legislation mandated by the House when that legislation was not introduced in the State Legislature. I think every delegate in this House who has the feeling of responsibility and answerability to his membership at the county level can see the primary and fundamental importance of knowing what has happened to the original reference. In fact, the reference committee notes it is indeed desirable for the Council to inform the membership of its action on legislation requests—please note those two words "legislation requests"; I will refer to them in a moment.

The reference committee disapproves the original resolution because it thinks that it is inapplicable on the basis of the "whereases," that the original resolution is clearly not in the nature of a directive or mandated action.

The original resolution reads that the Medical Society of the State of New York requests the introduction of legislation. I am not a semanticist, but I think we are cutting a pretty fine hair here when we try to see a difference of meaning between words like directed, mandated, or requested. Concerning the original resolution, up to the moment of the report of the reference committee it has never been questioned whether it was or was not a mandated resolution. In an issue of the *Newsletter* the Council reported that it was going to take action because of introducing legislation, a bill, on the original resolution.

If you read the report of the Committee on Legislation, you find that it approved this legislation in principle and recommended that legislation incorporate the intent of this resolution and be prepared for introduction in the State Legislature this year.

The Erie County Medical Society never received a letter on whether or not this legislation was introduced or why it was not introduced.

The reference committee points out that information has been given to the membership on the original resolution of 1959. It cites page 96. If you will turn to page 96, the paragraph which is cited, it states in the Committee on Legislation report, "It was further recommended by the committee that this legislation be prepared and introduced only after contact with and approval by the New York State Society of Ophthalmologists." There is no further explanation on whether this legislation was introduced or why not.

The reference committee in its report also gives as a reason for not supporting this resolution page 5 of the supplementary report 60–Q. There is a note of a bill that was introduced in the Legislature and died in committee. I would like to point out that this bill number 4 in 60–Q, the supplementary report, has nothing to do with the original legislation in 59–13, the resolution reported by the House of Delegates and introduced by the Erie County Medical Society. The bill mentioned as number 4 in 60–Q has to do with licensed opticians. Our original resolution was concerned with licensed optometrists.

The source of evidence which the reference committee adduces to support its disapproval of the original resolution is really a source to approve the original resolution. The reasons evidenced do not stand up. So, Mr. Speaker, I would like to make a substitute motion. I would like to move that the original resolution introduced by Erie County be approved.

Joseph P. Alvich, M.D., *Bronx:* I second the motion.

Speaker Lane: It has been moved and seconded that the substitute resolution be approved. Is there discussion?

Thomas M. d'Angelo, M.D., *Queens:* I would like to discuss that. I am in favor of the substitute resolution because I believe that in this particular instance, it seems to me from the reference committee's report they are disapproving the "resolved" portions of this resolution on an ambiguous technicality of one of the "whereases." I agree the "whereases" are not correct. Usually the "resolved" portions are not correct, but in this particular instance there has been a technical interpretation of one of the "whereases." I don't think this difference in interpretation should void the "resolved" portions which are very broad. However, Mr. Chairman, if I may do so, I would like to make an amendment to the substitute resolution in only one word, and that is instead of "to the county medical society," I would like to include "to every county medical society" or "each county medical society," so all will know what it is doing.

Speaker Lane: You have heard the motion to amend the substitute motion. Is there a second to this motion?

Jerome L. Leon, M.D., *Queens:* I second it.

Speaker Lane: It has been moved and seconded that the substitute motion be changed by changing the wording. Is there discussion? If not, those in favor of this amendment will say "aye," any opposed "no." It is so ordered.

We now go back to the substitute motion. Is there further discussion on the substitute motion?

Ezra A. Wolff, M.D., *Assistant Secretary:* This I think is a highly desirable resolution. I think that this House is quite within its rights in asking that when it directs that certain things be done, it be given reasons why they have not been done if they have not been done. It will also help the Council in giving it a chance to explain clearly and without equivocation why it has acted in a given manner if it has not followed directions, and I can assure you that the Council will not lightly disregard any feeling the House may have if it has been the feeling in some quarters the Council has acted arbitrarily. It will do both bodies good. I would remove the specificity from this resolution by deleting the first two "whereases." In that case it will simply say a mechanism should be established, and it specifies what that mechanism is.

I therefore move to further amend by omitting the first two "whereases."

Speaker Lane: You have heard the motion to amend by omitting the first two "whereases." Is there a second to this motion to amend?

Monroe M. Broad, M.D., *Queens:* I second it.

Speaker Lane: Is there any discussion on this amendment? If not, those in favor of this amendment will say aye." Any opposed? It is so ordered.

We now go back to the main motion.

Irwin Alper, M.D., *Oneida:* The Council Committee on Legislation periodically reports to the chairman of legislation of each county, quite frequently I might say, on the status of all pending legislation. I am sure that is available to the chairman of the legislation committee of that county and available to the office of the county society and should be made available to the entire membership. The only thing that is lacking in that particular report that is desired in this resolution is not only the status of the pending legislation but also the status of those resolutions that call for legislation that do not get as far as legislation.

Although I hate to bore you with another substitute motion, I would like to make it because I think this may resolve the situation in a rather simple way.

Speaker Lane: That depends on what you are now attempting to amend because we cannot go beyond a certain number of amendments.

Dr. Alper: I will speak my piece. If you think I am out of order, I will bow out gracefully. What I had in mind—

Speaker Lane: Let me ask this: Are you attempting to amend the amendment?

Dr. Alper: I am attempting to amend the original proposal of the committee.

Speaker Lane: To my knowledge—I will ask for correction on this—we have had two amendments to the main motion and cannot have more than two amendments.

Dr. Alper: What I had in mind, sir, was this: Since we do get this report on pending legislation that has already been introduced as legislation, it might be feasible to include in that same report the facts concerning resolutions that are presented to the Council which have as yet not gone to the Legislature. If we did that, we would have a complete report on both issues.

Speaker Lane: That becomes another amendment, and I regret to say it is out of order on the main motion. Is there further discussion?

Dr. Mathews: I have one brief remark. I would like to remark, as indicated here, it was the unanimous opinion of this reference committee that we are certainly in sympathy with these remarks.

Speaker Lane: On the substitute motion—

Dr. Broad: Are we voting on 64–24 with the first two "whereases" deleted in opposition to the reference committee's report?

Speaker Lane: We are now voting on the substitute motion which is in opposition to the reference committee's report.

Dr. Broad: We are voting for 60–24 with the first two "whereases" deleted.

Speaker Lane: Is there further discussion? If not, those in favor will say "aye," any opposed "no." It is so ordered.

Section 205 (See 53)

Report of Reference Committee on Legislation and Legal Matters: Exemption from Malpractice Suits for Emergency First Aid

Dr. Mathews: Resolution 60–20, "Exemption from Malpractice Suits for Emergency First Aid":

> *Resolved,* that the Medical Society of the State of New York petition the Legislature of the State of New York to enact a law by which physicians giving first aid in accident cases without compensation shall not be liable to malpractice claims arising out of the rendering of such care.

The reference committee has had the benefit of counsel's opinion, which is that malpractice actions arising from purely emergency cases in this State are exceedingly rare, that legislative enactment of a law such as this resolution proposes is very unlikely, and that such a law is of doubtful constitutionality. Accordingly disapproval of this resolution is recommended, and I so move.

Speaker Lane: Is there discussion?

Thomas M. d'Angelo, M.D., *Queens:* Mr. Chairman, I am not going to argue with the counsel of the Medical Society. I understand in some states this matter has already become law. However, rather than disapprove, Mr. Chairman, I move that no action be taken.

Speaker Lane: Dr. d'Angelo has made a substitute motion. Is there a second?

. . . The motion was seconded by several, and since there was no discussion, it was put to a vote and was carried . . .

Section 206 (See 56)

Report of Reference Committee on Legislation and Legal Matters: Rulings by State Education Department on Scope of Practice of Podiatry

Dr. Mathews: Resolution 60–23, "Rulings by State Education Department on Scope of Practice of Podiatry":

> *Resolved,* that the Medical Society of the State of New York, represented in its House of Delegates, express its deep concern with the present methods of the State Education Department in furnishing rulings on the scope of podiatry practice; and be it further
>
> *Resolved,* that the Council of the Medical Society of the State of New York take up this problem with the Commissioner of Education for the purpose of working out a more satisfactory method of issuing rulings on the scope of podiatry practice.

This resolution deals with delineation of the practice of podiatry, a matter which would come within the scope of the proposed Commission on the Healing Arts. It is the opinion of this reference committee that the best approach to the definition of the paramedical and ancillary fields lies in the establishment of such a commission, and we believe this Society should continue to work for its establishment by the Legislature. Since however resolution 60-23 refers to a specific aspect of the podiatry situation which is in need of clarification, the reference committee recommends its approval with these changes: The name of Mr. Charles A. Brind should be removed wherever it appears so that the resolution would now read as follows:

> WHEREAS, counsel to the State Education Department has on several occasions, at the request of the New York State Podiatry Society or persons acting for the Society, assumed to advise them on matters relating to the scope of the practice of podiatry; and
>
> WHEREAS, the advice so given has been relied on by podiatrists as delineating the scope of the practice of podiatry; and
>
> WHEREAS, the matters on which said counsel has so made determinations are of a highly controversial nature (on which many well-qualified persons reach a conclusion diametrically opposed to that drawn by counsel), such as that the foot includes the ankle and 3 inches of the lower leg; that podiatrists can lawfully treat dislocations of the ankle, astragalus, and os calcis; that podiatrists can lawfully administer any and all medication except narcotics either by injection or orally for conditions of the foot, and that podiatrists can lawfully perform a "Keller procedure" involving removal of the proximal phalanges of the big toe; and
>
> WHEREAS, the effect of such holdings in the opinion of many constitutes an expansion of the scope of podiatry practice that cannot be justified under the statute defining the scope of podiatry practice; and
>
> WHEREAS, to safeguard the health of the public and to comply with the laws relating to the practice of podiatry it is highly desirable that determinations as to the scope of podiatry practice be made and issued under the name of the State Commissioner of Education and that they not be made and issued under the name of counsel to that Department; now therefore be it hereby
>
> *Resolved,* that the Medical Society of the State of New York, represented in its House of Delegates, express its deep concern with the present methods of the State Education Department in furnishing rulings on the scope of podiatry practice; and be it further
>
> *Resolved,* that the Council of the Medical Society of the State of New York take up this problem with the Commissioner of Education for the purpose of working out a more satisfactory method of issuing rulings on the scope of podiatry practice.

Mr. Speaker, I move approval of this resolution as amended.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 207 (See 109)

Report of Reference Committee on Legislation and Legal Matters: Cease-and-Desist Order Against Podiatrists

DR. MATHEWS: Resolution 60–56, "Cease-and-Desist Order Against Podiatrists," introduced by the First District Branch:

> *Resolved,* that the Medical Society of the State of New York obtain a cease-and-desist order against the podiatrists of the State of New York for performing surgery beyond the scope of their licensure.

It is the opinion of the reference committee that resolution 60–23 accomplishes the intent of this resolution 60–56. The crux of the matter is the scope of the licensure of podiatrists. Legal counsel advises that a blanket cease-and-desist order against podiatrists is not a practical legal procedure. Accordingly, disapproval is recommended, and I so move.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 208 (See 75, 85)

Report of Reference Committee on Legislation and Legal Matters: Licensure of Cultists; Administration of Physiotherapy

DR. MATHEWS: Resolution 60–42, "Licensure of Cultists," introduced by the Westchester County Medical Society:

> *Resolved,* that the Medical Society of the State of New York go on record as affirming its support for licensure in any branch of the healing arts provided a scientific basis exists for the method of treatment practiced and that the training of all practitioners in this field be equivalent to that of a doctor of medicine.

Resolution 60–51, "Administration of Physiotherapy," introduced by Henry Fleck, M.D., Section Delegate:

> *Resolved,* that the Medical Society of the State of New York as represented by this House strongly reaffirm its previous position with respect to the administration of physiotherapy as follows:
>
> 1. That such administration shall be based on a written prescription by a duly licensed physician;
> 2. That treatment without such written pre-

scription constitutes an intrusion on medical practice by unqualified practitioners;

3. That accordingly a law should be enacted after due consultation with all interested parties to put an end to such unethical practice as not in the public interest.

These resolutions are being considered in this order since they too have an immediate bearing on the establishment of a Commission on Healing Arts.

The reference committee is in strong sympathy with the intent of resolution 60–42 but believes it to be somewhat broad in its terminology and believes this resolution digresses from the commission concept. Accordingly, we recommend its disapproval, and I so move.

Speaker Lane: Is there discussion?

Thomas M. d'Angelo, M.D., *Queens:* I hate to rise, but I want to make plain that if we disapprove these resolutions because of some technical aspect, yet we are in accord with the intent of the resolution, when these resolutions get out into the press and to the public, it would seem that we disapprove these things and are against them, so rather than disapprove I would rather move we take no action.

Speaker Lane: Dr. d'Angelo makes a substitute motion of no action. Is there a second?

Raymond J. Byron, M.D., *Schenectady:* I second it.

Dr. Mathews: May I discuss this?

Speaker Lane: Yes.

Dr. Mathews: This House has the privilege not only of acting on the resolutions brought to it but also acting on the report of the reference committee. As indicated in our report, we are strongly in favor of the establishment of a Commission on Healing Arts for resolving many of these things. If the House should choose to approve our report in this regard, it is going on record as approving this aspect of it. I don't think it adds to the orderly business of the House to ignore, pass, or take no action on resolutions which are obviously not correctly drawn up and which cannot be acted on because of the way they are assembled.

Speaker Lane: Is there further discussion? If not, those in favor of the substitute motion will say "aye," those opposed "no." The substitute motion is carried.

Felix Ottaviano, M.D., *Madison:* I should like to take a moment to answer the chairman in regard to the last remark. It is nevertheless the privilege of a reference committee to redraw, with the aid of the original makers of the resolution, any resolution that is not presented in good form.

Speaker Lane: I am sure that the chairman of this reference committee is very much aware of that.

Dr. Mathews: Thank you.

Speaker Lane: Proceed.

Dr. Mathews: Resolution 60–51, the "resolved" of which has been read concerning the administration of physiotherapy requiring written prescription: Its intent also can best be handled within the workings of a Commission on Healing Arts. The purpose of this resolution is to regulate the practice of physiotherapy. However, the present law requires that physiotherapy be administered only on prescription of a licensed physician, and written prescription was formerly required by law. This provision for written prescription was rescinded only a few years ago without opposition from this Society. Accordingly, although this reference committee is in agreement with the general objective of this resolution, its disapproval is recommended, and I so move.

Speaker Lane: Is there any discussion?

Henry Fleck, M.D., *Section Delegate:* This is to reintroduce the requirement of written prescription of physical therapy. It is perfectly true that the law formerly required written prescription, and the law was changed by the efforts of parties interested in removing any and all controls over their activities.

In order to correct the present untenable situation, we introduced bill 2568 at the last session of the Legislature, but it did not get passed.

Now I see that the reference committee is in agreement with the general objective of this resolution but then turns around and recommends disapproval.

Gentlemen, either you are in agreement, and then you must support us, or you disagree, and you may oppose us. We need the passage of this resolution to introduce corrective legislation to curb the unethical practices of some of the physiotherapists. A disapproval will only encourage them to go even further and to encroach more and more upon the practice of medicine.

I therefore move, Mr. Speaker, to approve this resolution as it stands now.

Speaker Lane: You are making a substitute motion in place of the reference committee's motion?

Dr. Fleck: That is correct, Mr. Speaker.

Speaker Lane: Is there a second to the substitute motion?

. . . The motion was seconded by several . . .

Samuel Leo, M.D., *Bronx:* May I ask Dr. Blake to rise to speak to this point?

Speaker Lane: Dr. Blake, do you have comments to make on this matter?

Dr. Leo: On the matter of practicality, gentlemen.

James M. Blake, M.D., *Councillor:* I am sure it cannot be clarified more than that we tried this year to change this law and put in the word "written." We worked on it very diligently and thought we were being reasonably successful, but as you will see in our report, it was rejected. Based on the inclination in the Legislature in 1960, I don't believe it will be enacted. Again, you never know what 1961 will bring.

Speaker Lane: Thank you, Dr. Blake.

Is there further discussion on this motion?

Dr. Blake: May I speak to it just a moment further?

Speaker Lane: Yes.

Dr. Blake: From my experience on the Legislation Committee it makes for a great deal of difficulty to have mandated resolutions. You can be perfectly clear today on something, and nine months from today the situation is entirely different. I have no objection to mandated resolutions except that per se it puts the Society oftentimes in a rather embarrassing position. There is one thing I have learned in dealing with legislation, and that is you become a pretty good horse trader. There are times when one thing is much more important than another, and you cannot accomplish everything in one session, so many times you have to change your approach to situations based on circumstances that specific week rather than months before.

I think that if the House is desirous of having this law changed to written prescription, it is perfectly fine to ask us to again try once more, but sometimes if you keep going back on the same thing, you get kicked in the teeth every year. The same way you lose a lot of your effectiveness. That is my only concern about it.

Gerald D. Dorman, M.D., *Councillor:* Mr. Speaker, on the substitute motion, which is the original resolution, I move that the substitute be approved in principle and referred to the Council for implementation.

I would like to say that this is a very important piece of legislation. I think the entire House agrees with the idea of having this on prescription in order to avoid—and I can go into some great details on what types of misuse can come up under the physiotherapists. The details of getting at the results that we want I think must be left to the Council and to our legislation representatives. I so move.

Speaker Lane: Dr. Dorman, you are amending the substitute motion?

Dr. Dorman: I am amending the substitute motion to approve in principle and refer to the Council for implementation.

Dr. Fleck: We are now to discuss my resolution 60–51, and we are willing to vote on this resolution. That was the substitute resolution for the report introduced by the reference committee. I again would urge that this resolution be approved as it stands now.

Speaker Lane: Is that understood? Is this amendment of Dr. Dorman's seconded?

Monroe M. Broad, M.D., *Queens:* I second it.

Dr. Wagreich: I want to know how and what effect does this have on the reference committee's report. The amendment of the substitute would imply that this then is approved rather than disapproved and is submitted to the Council for implementation. Is that the point?

Speaker Lane: You are talking now to the substitute motion.

Dr. Wagreich: That will apply to and approve this resolution and refer it to the Council and nullifies in effect the recommendation of the reference committee chairman?

Speaker Lane: That would be my interpretation.

Dr. Wagreich: Thank you very much.

Speaker Lane: Is there further discussion? If not, those in favor of the amendment to the substitute motion will say "aye," any opposed "no." It is carried.

Therefore, on the substitution motion as amended, is there further discussion? If not, those in favor will say "aye," opposed "no." The substitute motion is carried, as amended.

Section 209 (See 61)

Report of Reference Committee on Legislation and Legal Matters: Determination of Insanity in Criminal Cases

Dr. Mathews: Resolution 60–28, "Determination of Insanity in Criminal Cases":

> *Resolved,* that the medical profession and the legal profession of the State of New York join together in a study to formulate a new rule to govern the defense of insanity in a criminal case and to further submit an ultimate proposal to the appropriate Law Revision Commission of the State of New York to be acted on in such manner as may be proper by said Commission; and be it further
>
> *Resolved,* that this House of Delegates take such action as it may deem fit and proper to urge a change in the aforesaid matter in line with the social responsibilities of the medical profession to the general public of the State of New York.

This resolution deals with the legal definition of insanity, indeed a perplexing and complex problem. This seemed to your reference committee to be primarily a problem of the legal profession, and we are certain that qualified members of this Society are currently working with members of the legal profession in this field. While this did not influence our recommendation, no testimony was offered on this resolution during the reference committee's three hours of session on the opening day of this House. Disapproval is recommended, and I so move.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 210 (See 64)

Report of Reference Committee on Legislation and Legal Matters: Amendment to Lien Law

Dr. Mathews: Resolution 60–31, "Amendment to Lien Law":

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York instruct the appropriate committee to seek legislation that would provide a lien in favor of physicians similar to the attorney's lien, making it mandatory for an attorney to disburse from any award, verdict, or settlement in favor of his client the just fees of the physician who treated the plaintiff preceding settlement of the case prior to his final settlement with his client; and be it further
>
> *Resolved,* that the committee of the Medical Society of the State of New York, acting in liaison with the New York State Bar Association, contact their lawyer counterparts and make every effort to obtain the Bar Association's endorsement of this proposed legislation; and be it further
>
> *Resolved,* that the recommendation by the Legislation Committee of the Medical Society of the State of New York for this lien contain a suggestion that the county medical societies appoint mediation committees for the purpose of receiving complaints from carriers or their agents concerning alleged overcharging or other irregularity in charges so that the matter of the reasonableness of the fee in such cases may be arbitrated by the carrier's representative and the mediation committee of the county society before the lien attaches to the judgment or settlement.

As indicated in the supplementary report of the Committee on Legislation (60–Q), a bill sponsored by this Society to amend the Lien Law was recommitted and its passage could not be obtained. The present resolution is similar in intent to resolutions 59–21, 59–22, and 59–43 but is amplified in an effort to meet the objections of insurance carriers and others. Fundamental to this year's proposal is the recommendation for county society mediation committees to receive and act on charges of excessive fees by physicians. It is the opinion of this reference committee that physicians are justly entitled to the benefits of such legislation, and we recommend approval of this resolution. I so move.

Thomas M. d'Angelo, M.D., *Queens:* In this resolution may I bring up a technical point? When are these fees to be adjudicated by the doctor grievance committee and the lawyer: before the case goes to trial, or after the case goes to trial? It is a very, very important point because before the case goes to trial the lawyer always wants the doctor to put in a very high fee, as part of the trial, winning the case, winning a higher award. After the trial they don't want to pay that high fee even though no objection was made to it in court. I would like to know when they want that set.

Speaker Lane: Do you have any comments to make on that?

Dr. Mathews: I would defer to Dr. Alper.

Irwin Alper, M.D., *Oneida:* Mr. Speaker and gentlemen of the House, I would like to tell you how this came about. Two weeks ago I was invited to speak to an insurance adjusters association of about 100 members representing practically all the carriers in the State. At the meeting they let down their hair and told us what they thought was wrong with us. Of course, I did not sit idly by. I let them know what we thought was wrong with them, but I told them that we had a neutral platform on which we could both get together and iron out difficulties in that section. I remarked that I felt kind of badly that they opposed so vehemently our Legislation Committee and our bill for physician's lien; I thought it was unfair.

I was taken aside by the attorney for Allstate Insurance Company, a Mr. Duck, who pulled out a big file on the subject, since he had been in Albany working with the insurance carriers to defeat our bill. He showed me that the main reason for the defeat of the bill was their fear that unless there was some attempt to mediate charges that are too high, this thing can get out of hand. He assured me on behalf of his insurance carrier and on behalf of the others that they would be willing to cooperate with the State Medical Society Legislation Committee to assure the passage of such a lien law if we could do something to give them a standing at the county medical society level so they can come in with a fee on a case that they think is excessive and have a hearing and an arbitration.

The question at point is whether this hearing should be held before or after the case is called to trial. I maintain at the present time this is not really important. The important thing is to get together and have these people back us up and have the entire State Chamber of Commerce back us up because these are the two groups who oppose us, and they are ready, willing, and able to do this. As to whether it should be before or after, I am sure if the machinery is provided, it can be worked out amicably since they want to help us if we go along with that provision. For that reason I would strongly urge the House to go along with that resolution.

Speaker Lane: Is there further discussion? If not, those in favor of approval of this portion of the reference committee's report will say "aye," any opposed "no." It is so ordered.

Section 211 (See 80)

Report of Reference Committee on Legislation and Legal Matters: Legislation to Require

Establishment of Medical Examiner System Throughout the State of New York

DR. MATHEWS: Resolution 60-47, "Legislation to Require Establishment of Medical Examiner System Throughout the State of New York":

> *Resolved*, that the Medical Society of the State of New York recommend the institution of a similar medical examiner system in all large municipalities and all counties in the State of New York; and be it further
>
> *Resolved*, that a copy of this resolution be mailed to the New York State and county bar associations and other such interested bodies and legislators who might be concerned with the objectives of this resolution.

Recognizing that the establishment of a medical examiner system throughout the entire State is an ideal impossible of achievement in the foreseeable future, depending among other things on the availability of forensic pathologists, this reference committee nevertheless agrees with the objectives of this resolution and recommends it approval. I so move.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 212 (See 86)

Report of Reference Committee on Legislation and Legal Matters: Amendment to Civil Practice Act

DR. MATHEWS: Resolution 60-52, "Amendment to Civil Practice Act":

> *Resolved*, that this House direct the Legislation Committee, with advice of the Society's counsel, to review this interpretation of Section 347 of the Civil Practice Act, to correspond thereon with the appropriate committee of the New York State Bar Association, and to seek to introduce in the Legislature of the State of New York, if the Society's committee sees fit, appropriate amendment to Section 347 for the purpose of modifying the undue restrictive effects of the existing judicial interpretation on testimony for medical services.

Legal counsel advises that passage of such legislation is manifestly impossible, and this resolution has been withdrawn by Dr. Lewis.

Section 213 (See 90)

Report of Reference Committee on Legislation and Legal Matters: Subcommittee on Federal Legislation

DR. MATHEWS: Subcommittee on Federal Legislation (pages 99-100 of the Delegates' Handbook and pages 1108-1109 of the JOURNAL and Supplementary Report 60-R): This reference committee has reviewed in detail the report of the Subcommittee on Federal Legislation concerned largely with medical care for the aged and the Simpson-Keogh bill (H.R. 10). There was considerable discussion in committee about the implied support for the present administration's plan for health care for the aged, and it may be that the term "most acceptable" implies more enthusiasm for Federal intervention than many members of this Society feel. It seems to the reference committee, however, that a favorable expression of sentiment from this Society is indicated, if not for this legislation, then certainly for the more moderate approach and responsible insight manifested by the Flemming legislation. We strongly agree that any legislation in this field should await adequate study of the problem and should also await the less impassioned time of a nonelection year. The hard realities of practical politics will almost certainly frustrate our advice on this matter, however. Not all the advances of medical science have produced a remedy for election fever. Let us then, by all means, commend Secretary of Health, Education, and Welfare Arthur S. Flemming and all others who approach this problem with considered judgment.

Mr. Speaker, I move approval of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was carried . . .

SPEAKER LANE: Continue, Dr. Mathews.

Section 214 (See 79, 89)

Report of Reference Committee on Legislation and Legal Matters: Health Care of the Aged; Health Services for Elderly

DR. MATHEWS: Resolution 60-46, "Health Care of the Aged," introduced by George J. Lawrence, Jr., M.D., and John C. McClintock, M.D., councillors:

> *Resolved*, that the Medical Society of the State of New York urge the Congress of the United States of America to place the needs of our aging population before political consideration; and be it further
>
> *Resolved*, that the Medical Society of the State of New York condemn the present tendency to make a political football of our elderly patients; and be it further
>
> *Resolved*, that the Medical Society of the State of New York recommend to the Congress that no legislative action be taken in respect to methods of financing the health care of the aged until after a complete study has been made of the problem; and be it further
>
> *Resolved*, that copies of this resolution be sent to the President and Vice-President of the United States, the Secretary of the Department of Health, Education, and Welfare, the two Senators from New York State, all the Congressmen from New York State and all members of the House Ways

and Means Committee, and also to the American Medical Association.

Now I would like to read the "resolved's" from resolution 60–55, subject "Health Services for Elderly," introduced by the Medical Society of the County of New York:

> *Resolved,* that the Medical Society of the State of New York recognizes the extent and gravity of the problems facing the elderly and retired of our population in providing for necessary health services; and be it further
>
> *Resolved,* that the Medical Society of the State of New York endorses the principle of Federal and State participation in providing funds toward the purchasing of voluntary health and hospitalization insurance or toward continuing such insurance after retirement, the amount of such participation to be based on the ability of the individual to pay for his own insurance; and be it further
>
> *Resolved,* that the Medical Society of the State of New York recommends that State and Federal commissions begin a thorough study with all possible speed to establish a mechanism and an equitable formula for public assistance along the lines herein indicated; and be it further
>
> *Resolved,* that copies of this resolution be sent to the President and Vice-President of the United States, the Secretary of the Department of Health, Education, and Welfare, the two Senators from New York State, all the Congressmen from New York State, and all members of the House Ways and Means Committee, and also to the American Medical Association.

These two resolutions are concerned primarily with health care of the aged. It is the opinion of your reference committee that insufficient emphasis has been placed on the strong interest of this Society as well as that of the American Medical Association in the health, economic welfare, and other sociologic problems of our aging population. The physicians of this country have provided and will continue to provide their services to those unable to pay, whether aged or not, and this is not, in fact, the major problem of the senior citizen. It is scarcely a rational approach to dismember the many wants of the aging population and to treat their needs for nursing home care, hospitalization, medicine, and physician care as though these were unrelated to their environmental needs of housing, adequate diet, and clothing. Even more fundamental to this problem are the emotional deprivation and actual physical deterioration occasioned by our social structure which forces into involuntary retirement a major segment of our citizenry for no other reason than that they have just become sixty-five years old and then penalizes, through the Social Security law, those who would like to continue some gainful activity.

It seems appropriate in this context to read to you an editorial shown to me by Laurance D. Redway, M.D., editor, which will appear in the May 15 issue of the NEW YORK STATE JOURNAL OF MEDICINE:

"YOU ARE OLD, FATHER WILLIAM . . . ."

> Not so long ago, it seems, old people were just old people, gentle, withering relics of the past typified by Whistler's portrait of his mother. True, they had their problems then, but who hadn't? Some were incapacitated, others spry; some were broke, others solvent; some were happy, some sad.
>
> Now our modern old people, more numerous than before thanks to modern doctors, modern medical science, and modern private enterprise in medicine have been metamorphosed. From being just old people they have become recently desirable, valuable political assets! Each has a genuine, exercisable franchise; some 15,000,000 potentially purchasable ballots. Purchasable by inducement—not in cash but by "benefits."
>
> Both major political parties are offering bids, the Democrats a Forand-type bill, the Republicans a Javits-type bill. Suddenly the health of the aged becomes the grave concern of others besides the doctors.
>
> Assuredly the old folks have not offered their votes for sale; the most many ask for is the privilege of continuing to work gainfully after sixty-five, not for a pittance but according to their ability to earn and to pay their taxes, employ their own doctors, and buy their own insurance.
>
> In all the election year turmoil over the health of the old, who hears any concern expressed over the employers, the businessmen, the small and large shop operators, and others, men who create employment for the young? In this election year and every year, many thousands of young people will for the first time have fastened about their necks the yoke of withholding taxes, social security taxes, rent, State and local taxes, union dues, and the national debt. The young—don't they enjoy the prospect of some forty-seven years of work-filled and tax-ridden pursuit of happiness?
>
> The young people—will they not find it increasingly difficult in this inflation-ridden election year and those to follow to buy bread for themselves and their children? Who cares? Let them eat cake! They are only the young. Will they find in their midst anyone to arise and say in a loud voice to politicians of both parties: Thou shalt not press down upon the brow of youth a crown of aging thorns!

This reference committee is not recommending approval of either resolution 60–46 or 60–55 and offers instead the following substitute resolution:

> WHEREAS, the problems of adequate care of our aged is a matter of increasing concern to the physicians of this State and of the nation ; and
>
> WHEREAS, the medical profession is continuing to manifest its responsibility and interest in meeting the health requirement of the needy, whether aged or not; and
>
> WHEREAS, it is clearly recognized that among the serious socioeconomic problems facing some of our senior citizens is the financing of adequate over-all medical care; and

Whereas, although it is generally recognized that adequate study of the many needs of our aged has not been completed and that no governmental agency has any thorough concept of the extent of their needs, that nevertheless Federal assistance in some form is impending; now therefore be it hereby

Resolved, that the Medical Society of the State of New York affirm its continued interest and cooperation with appropriate governmental bodies and legislators in the enactment of such legislation and be it further

Resolved, that the Medical Society of the State of New York indicate its support of legislation which (1) preserves the traditional patient-physician relationship; (2) is administered on a local rather than a Federal level; (3) is voluntary rather than compulsory; (4) provides governmental assistance only in proportion to need; and be it further

Resolved, that the Medical Society of the State of New York emphasize that only on the basis of the study of over-all problems of the aging can rational, equitable legislation be enacted; and be it further

Resolved, that copies of this resolution be sent to the President and Vice-President of the United States, the Secretary of the Department of Health, Education, and Welfare, the two Senators from New York State, all the Congressmen from New York State, and all members of the House Ways and Means Committee, and also to the American Medical Association.

Mr. Speaker, I move adoption of this portion of the report.

Speaker Lane: Is there discussion?

George J. Lawrence, Jr., M.D., *Councillor:* I would rather face all of you while I discuss this. I am speaking on the recommendation just made by the chairman of the reference committee.

Your reference committee, New York County Medical Society, and the two introducers of the first resolution are all in agreement with the aims behind these resolutions and with the methods of financing this problem of health care of the aging, and also, as the reference committee mentioned, solving the problems, all of the problems of the aging. We are all in agreement with the way these problems should be studied and that no legislation should be passed in Washington until an adequate, thorough study can be made, and that legislation, if any be found necessary at that time, be introduced, that is rational legislation, which will not destroy the freedom of these older people and the freedom of the medical profession.

I say we are all in agreement on these points. Our disagreement only is in how strong we should make our resolutions in this House. I feel that the stronger our resolution is, the better it will be for us and the better it will be for the old people.

I would like to recall to your minds a few words mentioned this morning by Dr. Orr. He asked the question, "Will you have the stamina to fight?" He showed us how we must give the public the true facts of what is going on.

I maintain that the resolution, as amended by the reference committee, will not do this. I maintain that the resolution introduced by Dr. McClintock and myself mentions in the "whereases" many facts that we all know are true, and we should have the courage for this Medical Society to speak out and say they are true. If the truth hurts you, then you had better stop talking about the thing altogether.

This problem has become a political football. There are many, many people in Washington, and some of them who represent you men here from New York State, who have forgotten all about the needs of the elderly people and who are using this purely as a means of political advancement for themselves. They go around talking about what is going to happen on Election Day this coming November.

Dr. McClintock and I feel, and the members of the Subcommittee on Federal Legislation feel, as you will see if your read the report, that we as a State Medical Society should speak out and tell the legislators that it is time they stopped playing politics with the old people who are our patients and in whom we have a very personal and jealous interest. They are not going to vote for any of us, but they are all calling on us to take care of them when they get older and when they get sicker.

I feel that I don't have to say any more, but I would recommend and move a substitute motion to that motion just introduced by the reference committee. My substitute motion will be to approve resolution 60–46 and disapprove the resolution of the reference committee.

Paul H. Sullivan, M.D., *Nassau:* I second it.

Speaker Lane: It has been moved and seconded that the recommendation of the reference committee be disapproved and that the original resolution 60–46 be approved.

. . . In discussion, Irwin Alper, M.D., Oneida, and Julia V. Lichtenstein, M.D., New York, spoke in favor of the resolution presented by the reference committee. Albert H. Douglas, M.D., Queens; George A. Burgin, M.D., Councillor; William B. Rawls, M.D., New York; and Monroe B. Broad, M.D., Queens, spoke in favor of resolution 60–46 . . .

Thomas F. McCarthy, M.D., *Bronx:* If you will look at your resolution, I think the only objectionable thing that anybody is arguing against in the substitute motion is probably the second "resolved" of resolution 60–46. I think we all go along with it otherwise, and if you would eliminate that second "resolved," we could all agree, so I would offer an amendment to the substitute motion to eliminate the second "resolved."

SPEAKER LANE: Dr. McCarthy moves to amend the substitute motion by eliminating the second "resolved." Is there a second to that amendment?

JOSEPH P. ALVICH, M.D., *Bronx:* I second it.

SPEAKER LANE: Is there any discussion on the amendment?

DR. MATHEWS: Mr. Speaker and members of the House of Delegates, first of all, let me say I could not agree more with Dr. Lawrence's committee. I have long been impressed by their skillful and productive labors on this thing. As he stated, it is a matter of emphasis. That is the only thing wherein we differ in these resolutions. As another speaker said, it will not be heard by the physicians here, this will be heard by the people of the State of New York. What do we want them to hear: that we are calling our legislators names? They may agree with us on that, but should we not emphasize the fact that we are primarily interested in their health? Should this not be the main thing that will come out of this?

To me this is the most important thing, and I think this is the intent of the committee's resolution. I do not equate courage with the use of epithets. There is a time for diplomacy. There is a time to have the mailed fist inside the velvet glove. Shall we slip it on, or shall we offer cooperation? Shall we have some hand in guiding legislation? Surely, we can, or shall we refuse all cooperation and let them put this through without our help, guidance, and advice?

GEORGE HIMLER, M.D., *New York:* Speaking on the amendment, as one of the framers of the other resolution which is being considered from New York County, which I do not intend to discuss, I would like to disagree with Dr. Lawrence on one thing. The "whereases" and some of the "resolved's" are fairly hard hitting and it would take a good deal of courage to pass them. This is about as nonspecific a group of "resolved's" as I have seen. One thing it carefully avoids is giving any idea of a framework of reference of a system with which we could go along. Both the resolution proposed by the reference committee and the resolution proposed by New York County on the other hand at least provide for some definite framework, some definite idea of what our Society is willing to go along with.

Now aside from the questions that have come up, this is a fundamental weakness of Dr. Lawrence's proposal, and I would recommend personally that the resolution proposed by the reference committee be accepted. Thank you.

SPEAKER LANE: Is there further discussion on the amendment, which involves the deletion of the second "resolved?"

DR. LAWRENCE: The "resolved" that the amendment wishes to delete is as follows:

> *Resolved,* that the Medical Society of the State of New York condemn the present tendency to make a political football of our elderly patients.

Do you want to condemn it, or don't you?

SPEAKER LANE: On the question on the amendment, which would delete the second "resolved," those in favor of this motion will say "aye," those opposed "no." The amendment is defeated.

On the substitute motion of Dr. Lawrence, is there further discussion? If not—

DR. LAWRENCE: I apologize for getting up so much, but this is a very important thing. I have talked this over with Dr. Mathews, and I advised that I thought it would be a good idea to include a "resolved" which the reference committee has included in its report, the second "resolved":

> *Resolved,* that the Medical Society of the State of New York indicate its support of legislation which . . .

and the which would be (1), (2), (3), (4). I certainly heartily endorse that "resolved," and I would be perfectly willing to have that "resolved" added to my original resolution.

SPEAKER LANE: You now want to amend?

DR. LAWRENCE: I would now amend.

SPEAKER LANE: Your substitute resolution?

DR. LAWRENCE: To include that "resolved" just mentioned and approve my resolution with the addition of this "resolved," which has four items underneath it.

SPEAKER LANE: It has been moved and seconded that the "resolved" with items (1), (2), (3), and (4) be attached to or added to Dr. Lawrence's substitute motion.

JOHN C. MCCLINTOCK, M.D., *Councillor:* As cosponsor of the resolution being considered, I merely wish to say that the addition of the "resolved" that he has just mentioned and items (1), (2), (3), and (4) is acceptable to me.

LOUIS H. BAUER, M.D., *Ex-President:* Mr. Speaker, I would be against that for this reason: because that says legislation is necessary. How do we know that legislation is necessary? Dr. Orr brought to your attention this morning a great many facts with which I think many were not familiar. This may be necessary, but this original resolution of Dr. Lawrence calls for adequate study by competent people, which has not been done, and I don't think we should tie ourselves up to supporting legislation until the result of that study is known and shown it is essential. I would be against adding this to Dr. Lawrence's original resolution.

SPEAKER LANE: Is there further discussion on the amendment? The question has been called for. This is the amendment to Dr. Lawrence's substitute motion. It involves the "resolved" of the reference committee with items (1), (2), (3), and (4). Those in favor of this amendment will say "aye," opposed "no." The "noes" have it.

Now on the substitute motion of Dr. Lawrence. Is there further discussion? If not, those in favor of Dr. Lawrence's substitute motion will say "aye," opposed "no." The "ayes" have it. (*Applause*)

Dr. Mathews: I move approval of this portion of our report as amended.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 215

Report of Reference Committee on Legislation and Legal Matters: Special Committee on Autopsy and the Dead Human Body

Dr. Mathews: Special Committee on Autopsy and the Dead Human Body (page 100 of the Handbook and page 1109 of the Journal): The report of the Special Committee on Autopsy and the Dead Human Body has been reviewed in detail, and we commend this committee and its chairman, Alfred Angrist, M.D., for their continued good work. It is unfortunate that their support for rational legislation dealing with the dead human body (resolution 59–8) did not achieve fruition but was limited to action of benefit to the eye banks and did not permit similar utilization of other parts of the human body. Included in our review is that portion of the annual report of the president under this heading.

Mr. Speaker, I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was unanimously carried . . .

Section 216

Report of Reference Committee on Legislation and Legal Matters: Committee to Combat Cults and Judicial Council

Dr. Mathews: Committee to Combat Cults and Judicial Council (page 101 of the Handbook and page 1110 of the Journal): The reports of the Committee to Combat Cults and of the Judicial Council have been carefully and favorably reviewed. The continued diligence of Dr. Blake's committee has been of substantial benefit to the members of this Society. We concur in the recommendation that the Council Committee to Combat Cults be reclassified as a subcommittee of the Committee on Legislation.

Mr. Speaker, I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 217

Report of Reference Committee on Legislation and Legal Matters: Malpractice Insurance and Defense Board

Dr. Mathews: Malpractice Insurance and Defense Board (page 102 of the Handbook and page 1109 of the Journal): The reports of the Malpractice Insurance and Defense Board have been reviewed, and the continued increase in the number of members insured under the State Society program is noted with favor. The annual actuarial survey of the Group Plan has been made available to this reference committee and represents an informative supplement to the report presented by John C. Brady, M.D., for his board. We also believe the relative stability of the malpractice rates for the past few years is deserving of favorable comment. We commend the members of this board for their excellent work which has been of immediate practical benefit to every member of this Society and also wish to thank Mr. James M. Arnold, indemnity representative, for his constant assistance in the preparation of this report.

Mr. Speaker, I move adoption of this portion of the report.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Section 218 (See 47)

Report of Reference Committee on Legislation and Legal Matters: Insurance Protection for Judicial Council and County Society Committees

Dr. Mathews: There are two resolutions appropriate to this section. The first is resolution 60–14, "Insurance Protection for Judicial Council and County Society Committees":

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York direct the Malpractice Insurance and Defense Board of the Society to negotiate with our insurance carrier so that an arrangement may be made to add this coverage to the members malpractice insurance; and be it further
>
> *Resolved,* that the added premium for members of the Judicial Council be paid by the State Society and the additional premium for the county society committees be paid by the local medical societies.

Your reference committee feels that this is a subject that bears thorough investigation and upon which we have not adequate information at this time. Therefore, we move the passage of this resolution amended by substituting for the two "resolved" portions the following:

> *Resolved,* that the House of Delegates of the Medical Society of the State of New York direct

> the Malpractice Insurance and Defense Board of this Society to investigate with our insurance carrier possible arrangements for adding this coverage to members malpractice insurance.

Mr. Speaker, I move for adoption of this portion of the report.

. . . The motion was seconded, and since there was no discussion, it was put to a vote and was carried . . .

Section 219 (See 77)

Report of Reference Committee on Legislation and Legal Matters: Study of Increase in Malpractice Claims

Dr. Mathews: The second is resolution 60–44, "Study of Increase in Malpractice Claims":

> *Resolved,* that the Medical Society of the State of New York appoint a committee to investigate the problem of the increase in the number of malpractice claims and request the New York State Bar Association to appoint a similar committee, said committee jointly to evolve a modus operandi similar to that provided for under the Workmen's Compensation Law.

It was the opinion of your reference committee that the investigation requested in the final paragraph is being very competently performed by the present Malpractice Insurance and Defense Board and that there is no necessity for such further action. Therefore, disapproval is recommended, and I so move.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Dr. Mathews: I move approval of this report as a whole and as amended and deleted.

. . . There being no discussion, the motion was put to a vote and was carried . . .

Dr. Mathews: Mr. Speaker, in concluding I wish to express my thanks for the hard work and patience of my fellow committee members, Irwin Alper, M.D., Herbert A. Laughlin, M.D., Irving M. Pallin, M.D., and E. Kenneth Horton, M.D. (*Applause*)

Irwin Alper, M.D., *Oneida:* In connection with the same thing, it is customary, as you just heard, at the end of the report of a reference committee that the chairman thanks the members of his committee for their assistance in the work that they have done. I would like to depart a little bit in one instance from that particular custom and say this: that our chairman, Dr. Mathews, has shown great ability, open-mindedness, fairness, and fine consideration for the members of the committee and its guests. I think the Society is indeed fortunate in having a young man coming up through the ranks who is so able. Thank you. (*Applause*)

Speaker Lane: Thank you, Doctor.

Dr. Mathews: Thank you very much.

Speaker Lane: One second, gentlemen, we will now recess. It is 1:15. Your schedule calls for 2 o'clock for a final session. Eat fast and be back here on time.

. . . Whereupon at 1:15 p.m. the meeting recessed . . .

Afternoon Session

Monday, May 9, 1960

The session convened at 2:15 P.M.

Section 220 (See 27, 139, 159)

Announcements

SPEAKER LANE: Gentlemen, will you please take your seats so we can proceed with the business of the House.

I have two announcements to make. May I please have your attention? The Council will meet immediately after adjournment here in the Penn Top up in the front.

The Judicial Council will also meet immediately after the House adjourns in the Penn Top North.

Gentlemen, the session will please come to order.

The first order of business this afternoon is election of officers, councillors, and delegates to the American Medical Association.

Mr. Secretary, is there a quorum present?

SECRETARY WHEELER: There is, sir.

SPEAKER LANE: It is reported there is a quorum present.

Section 221

Appointment of Tellers

SPEAKER LANE: The following will act as tellers for the election. Please pay attention, and see if your name is called:

James A. Moore, Albany
Joseph P. Alvich, Bronx
Henry J. Barrow, Bronx
Elton R. Dickson, Broome
Bernard J. Hartnett, Cayuga
Garra L. Lester, Chautauqua
William T. Boland, Chemung
Lawrence Sweeney, Dutchess
Antonio F. Bellanca, Erie
Joseph J. Thompson, Fulton
Alfred L. George, Genesee
John J. Flynn, Kings
Arthur P. Kane, Kings
Michael J. Crino, Monroe
Leo T. Flood, Nassau
Paul H. Sullivan, Nassau
Philip D. Allen, New York
George Himler, New York
George N. Wise, New York
Irwin Alper, Oneida
Robert F. McMahon, Onondaga
Robert M. Price, Ontario
Irving Weiner, Orange
Sol Axelrad, Queens
John L. Finnegan, Queens
Henry Vinicor, St. Lawrence
Earl W. Douglas, Suffolk
James H. Arseneau, Wayne
Harold J. Dunlap, Westchester

We will disqualify Philip D. Allen because he is running for delegate and substitute in his stead William Hall Lewis, Jr., New York.

Location of tables for the tellers will be in the Penn Top North.

Will the chairman of the Nominating Committee, Robert Warren, M.D., please give the report of the Nominating Committee?

Section 222

Report of Nominating Committee

ROBERT F. WARREN, M.D., *Kings:* Mr. Chairman and members of the House of Delegates, in accordance with Chapter XI, Section 4, of the Bylaws of the Medical Society of the State of New York, your Nominating Committee met at the Cornell Club, New York City, on Thursday, January 28, 1960, at 7 P.M. There was a member from every district branch present, and members at large were John L. Finnegan of Queens and W. P. Anderton of New York, and ex officio were Henry I. Fineberg and Norman S. Moore.

Your committee reviewed with deliberation every name submitted by county medical societies, district branches, and others, in response to the memorandum of November 20, 1959.

Your Nominating Committee submits the following nominations:

President	Norman S. Moore, Tompkins
President-Elect	John M. Galbraith, Nassau
Vice-President	W. Walter Street, Onondaga
Secretary	William L. Wheeler, Jr., New York
Assistant Secretary	Ezra A. Wolff, Queens
Treasurer	Maurice J. Dattelbaum, Kings
Assistant Treasurer	Samuel Z. Freedman, New York
Speaker	Joseph A. Lane, Monroe
Vice-Speaker	Frederick A. Wurzbach, Jr., Bronx
Councillors (three-years)	Gerald D. Dorman, New York Edward C. Hughes, Onondaga Alfred P. Ingegno, Kings Raymond S. McKeeby, Broome
Councillor (to fill unexpired term of one year)	George A. Burgin, Herkimer
Trustee (five years)	Henry I. Fineberg, Queens

Delegates to the American Medical Association for two years commencing January 1, 1961:

Philip D. Allen, New York
W. P. Anderton, New York (*Withdrawn*)
Gerald D. Dorman, New York (*Withdrawn*)
Henry I. Fineberg, Queens
John M. Galbraith, Nassau
Thurman B. Givan, Kings
Carl Goldmark, New York
John F. Kelley, Oneida
Joseph A. Lane, Monroe
Charles H. Loughran, Kings
John C. McClintock, Albany
Edward H. Robitzek, Richmond
Edward F. Shea, Ulster
Robert F. Warren, Kings
Carlton E. Wertz, Erie
William L. Wheeler, Jr., New York
Waring Willis, Westchester
Frederick A. Wurzbach, Jr., Bronx

That is respectfully submitted, and it appears on page 20 in the Handbook.

Michael J. Crino, M.D., *Monroe:* Since no one has taken the opportunity or the privilege to thank the individual who was responsible for putting out that folder for each one of us delegates, I wish to take the opportunity to thank whoever was responsible for that folder. I think it is a perfectly splendid thing. It made every one of us very much cognizant of the fact we had work to do and at the same time gave us an opportunity to keep everything together. Thank you very much. (*Applause*)

Speaker Lane: Thank you. I planned to comment personally on this a little bit later.

. . . The report of the Nominating Committee was accepted as amended. . .

Section 223 (See 228)

Nominations and Balloting

Speaker Lane: There are at least two more nominations available from the floor to make a list of 18. As you know, the nine candidates obtaining the highest number of votes become delegates and the next nine become alternate delegates to the American Medical Association.

Nominations from the floor are in order for delegates to the A.M.A.

. . . Felix Ottaviano, M.D., of Madison, and Frank J. Borrelli, M.D., of the Section on Radiology, were nominated from the floor . . .

On motion duly seconded, it was voted that the nominations be closed.

Speaker Lane: The nominations are closed.

We can now proceed with the voting, and four members will please distribute the ballots: Henry Barrow, M.D., Sol Axelrad, M.D., Arthur Kane, M.D., and John Kinzly, M.D.

The president-elect, vice-president, secretary, assistant secretary, treasurer, assistant treasurer, speaker, vice-speaker, four councillors for three years, one councillor for one year, and one trustee for five years were unopposed and were elected by a single ballot cast by the secretary.

After nominations from the floor and the withdrawal of two names presented by the Nominating Committee, the nominees for election of nine delegates and nine alternate delegates to the American Medical Association were as follows:

Philip D. Allen, New York
Frank J. Borrelli, Section on Radiology
Henry I. Fineberg, Queens
John M. Galbraith, Nassau
Thurman B. Givan, Kings
Carl Goldmark, Jr., New York
John F. Kelley, Oneida
Joseph A. Lane, Monroe
Charles H. Loughran, Kings
John C. McClintock, Albany
Felix Ottaviano, Madison
Edward H. Robitzek, Richmond
Edward F. Shea, Ulster
Robert F. Warren, Kings
Carlton E. Wertz, Erie
William L. Wheeler, Jr., New York
Waring Willis, Westchester
Frederick A. Wurzbach, Jr., Bronx

. . . The following members of the House of Delegates were called upon to cast their ballots:

OFFICERS, COUNCILLORS, TRUSTEES

Henry I. Fineberg
Norman S. Moore
John L. Sengstack
William L. Wheeler, Jr.
Ezra A. Wolff
Maurice J. Dattelbaum
Samuel Z. Freedman
Joseph A. Lane
Frederick A. Wurzbach, Jr.
Herbert H. Bauckus
Gerald D. Dorman
Edward C. Hughes
Alfred P. Ingegno
Raymond S. McKeeby
Harold F. Brown
John M. Galbraith
John C. McClintock
George A. Burgin
James M. Blake
George J. Lawrence, Jr.
Peter J. Di Natale
Waring Willis
Renato J. Azzari
John J. Masterson
Frederic W. Holcomb
J. Stanley Kenney
Leo E. Gibson
James Greenough

EX-PRESIDENTS

Orrin Sage Wightman
Chas. Gordon Heyd
Arthur J. Bedell
Louis H. Bauer
Carlton E. Wertz
Edward T. Wentworth
Andrew A. Eggston
Thurman B. Givan

COMMISSIONER, NEW YORK STATE
DEPARTMENT OF HEALTH

Herman E. Hilleboe

DISTRICT DELEGATES

Wilfrid M. Anna
Arthur F. Gaffney
Reid R. Heffner
Norman C. Lyster
George W. McCormick
Edwin G. Mulbury
Charles W. Shlimbaum
Eldred J. Stevens
Roman B. Violyn

SECTION DELEGATES

Frank J. Borrelli
E. Craig Coats
Vincent J. Collins
Royal S. Davis
Alfred W. Doust
James I. Farrell

Henry Fleck
Edmund N. Goodman
Milton Helpern
Michael J. Jordan
Frederick Lee Liebolt
James H. McDonough
John A. Monfort
M. Luther Musselman
Charles Weller
Arthur Q. Penta
Isaac Shapiro
Hyman Sherman
Harry P. Smith
Herbert L. Traenkle
Ralph M. Vincent

DELEGATES FROM COMPONENT COUNTY SOCIETIES

Albany (4)
James A. Moore
John F. Roach
Joseph J. Russo
Francis A. Stephens

Allegany (1)
Irwin Felsen

Bronx (12)
Carl R. Ackerman
Joseph P. Alvich
Henry J. Barrow
Herbert G. Cohen
Walter Einhorn
Jerome B. Flynn
Leonard L. Heimoff
Moses J. Krakow
Frank LaGattuta
Samuel Leo
Thomas F. McCarthy
Samuel Wagreich

Broome (3)
Elton R. Dickson
Jason K. Moyer
James L. Palmer

Cattaraugus (2)
Maurice G. Sheldon
Joseph A. Wintermantel

Cayuga (1)
Bernard J. Hartnett

Chautauqua (2)
Herbert A. Laughlin
Garra L. Lester

Chemung (2)
William T. Boland
Swen L. Larson

Chenango (1)
Thomas M. Flanagan

Clinton (1)
Edward Siegel

Columbia (1)
Edward P. Ginouves

Cortland (1)
George F. Nevin

Delaware (1)
Philip J. Hust

Dutchess (3)
Wallace C. Bedell
John F. Rogers
Lawrence Sweeney

Erie (8)
Kenneth H. Eckhert
Antonio F. Bellanca
John C. Brady
Thomas S. Bumbalo
Leo E. Kopec
Martin L. Gerstner
John D. Naples
Samuel Sanes

Essex (1)
James E. Glavin

Franklin (1)
Alfred A. Hartmann

Fulton (1)
Joseph J. Thompson

Genesee (1)
Alfred L. George

Greene (1)
Kenneth F. Bott

Herkimer (1)
Harold T. Golden

Jefferson (1)
Charles A. Prudhon

Kings (22)
George E. Anderson
Louis Berger
Leo S. Drexler
David Farber
John J. Flynn
Arthur P. Kane
David Kershner
Joseph A. Squillace
Arthur E. Lamb
Warren A. Lapp
Isaac Levine
Charles H. Loughran
Harry A. Mackler
John G. Masterson
Charles F. McCarty
Frederic Elliott
Irving M. Pallin
Solomon Schussheim
Abraham D. Segal
Milton B. Spiegel
Leslie H. Tisdall
Robert F. Warren

Lewis (1)
Edgar O. Boggs

Livingston (1)
James M. Judd

Madison (1)
Felix Ottaviano

Monroe (6)
Michael J. Crino
Merle D. Evans
Maurice M. Maltinsky
Charles R. Mathews
Lynn Rumbold
Arthur H. Walker

Montgomery (1)
Norbert Fethke

Nassau (8)
C. Dean Bohrer
Ralph S. Emerson
Gerard V. Farinola
Leo T. Flood
Abraham W. Freireich
E. Kenneth Horton
Paul H. Sullivan
Joseph G. Zimring

New York (25)
Philip D. Allen
W. P. Anderton
Michael C. Armao
Samuel B. Burk
May E. Chinn
William A. Cooper
C. Joseph Delaney
James H. Ewing
George W. Fish
Carl Goldmark, Jr.
George Himler
Ely Elliott Lazarus
William Hall Lewis, Jr.
Julia V. Lichtenstein
Ira A. McCown
Frank J. McGowan
George W. Melcher, Jr.
Peter M. Murray
Herbert S. Ogden
Bernard J. Pisani
Henry T. Randall
William B. Rawls
Adelaide Romaine
Albert M. Schwartz
George N. Wise

Niagara (3)
Joseph A. D'Errico
Harvey Braden FitzGerald
John C. Kinzly

Oneida (3)
Irwin Alper
Anthony G. Jarosewicz
John F. Kelley

Onondaga (5)
Irving L. Ershler
A. Carl Hofmann
Robert F. McMahon
William E. Pelow
W. Walter Street

Ontario (2)
Robert M. Price
Philip M. Standish

Orange (3)
Robert J. Hewson
Theodore R. Proper
Irving Weiner

Orleans (1)
Walter Shifton

Oswego (1)
Kent W. Jarvis

Otsego (1)
John W. Latcher

Putnam (1)
Robert S. Cleaver

Queens (13)
Alfred A. Angrist
Sol Axelrad
William Benenson
Monroe M. Broad
Thomas M. d'Angelo
Albert H. Douglas
Harry H. Epstein
Frank W. Farrell
John L. Finnegan
Jerome L. Leon
John Edward Lowry
Charles C. Mangi
Louis J. Morse

Rensselaer (2)
Gilbert A. Clark
Allen G. Gifford

Richmond (3)
Herbert Berger
Walter T. Heldmann
Cyril M. Levin

Rockland (2)
Michael J. Cavanagh
G. Gordon Knight

St. Lawrence (1)
Harry Vinicor

Saratoga (1)
Max Vinicor

Schenectady (3)
Raymond J. Byron
John L. Clowe
Philip Parillo

Schoharie (1)
John H. Wadsworth

Schuyler (1)
Fritz Landsberg

Seneca (1)
Stanley B. Folts

Steuben (2)
Thomas S. Cotton
Richard E. Travis

Suffolk (5)
L. Barrett Davis
Earl W. Douglas
David Evancie
Anthony Kohn
Sol Shlimbaum

Sullivan (1)
Sirkka E. Vuornos

Tioga (1)
John H. Jakes

Tompkins (*1*)
C. Stewart Wallace

Ulster (*2*)
Eugene F. Galvin
Edward F. Shea

Warren (*1*)
Morris Maslon

Washington (*1*)
Walter S. Bennett

Wayne (*1*)
James H. Arseneau

Westchester (*8*)
Charles M. Brane
Arthur H. Diedrick
John N. Dill
Harold J. Dunlap
James Q. Haralambie
James M. Jones
Donald R. Reed
Wallace M. Sheridan

Wyoming (*1*)
Willard J. Chapin

Yates (*1*)
John A. Hatch

Speaker Lane: I hereby declare the polls closed, and the tellers will proceed to count the ballots. While they are counting the ballots, we will have a fifteen-minute recess.

. . . Recess. . .

Speaker Lane: Gentlemen, will you please take your seats, and we will try to come to order.

Section 224

Address of Incoming President-Elect

Speaker Lane: I would like to ask Dr. Louis Bauer and Dr. Leo Flood to escort our new president-elect to the rostrum. It is now my pleasure to bring to the rostrum your new president-elect, Dr. John Galbraith.

. . . Drs. Louis Bauer and Leo Flood escorted incoming President-Elect Galbraith to the rostrum amid applause. . .

Louis H. Bauer, M.D., *Ex-President:* Mr. Speaker, I am very happy to present to you the new president-elect.

Incoming President-Elect Galbraith: Mr. Speaker, delegates, and friends, it is a privilege for me to serve as president-elect with our president, Norman Moore. Both of us have a bit of trepidation in following this master Henry Fineberg.

I am deeply appreciative of the kind and helpful expressions of confidence given to me by so many of you. Many times it was unexpected.

. . . At this point Dr. Galbraith spoke off the record. . .

Dr. Galbraith: I will do my best. (*Applause*)

Section 225

Address of Incoming President

Speaker Lane: Now, we would like Dr. Moore to be escorted by Dr. Greenough and Dr. Gibson and to come up and be presented as your new president.

. . . Drs. James Greenough and Leo Gibson escorted the incoming president to the rostrum amid applause. . . .

Incoming President Moore: Mr. Speaker, Mr. President-Elect, and members of the House, I thought I gave my speech the other day, but I am very happy to stand here, humble before you, and say again that I hope I can enlist the help of every person in this House and every member of the Society to make my administration successful. If I can do this, it will be the happiest year of my life. Thank you! (*Applause*)

Section 226

Amendment to the Bylaws

Speaker Lane: Dr. Wolff has a matter on which he wishes to address you.

Ezra A. Wolff, M.D., *Assistant Secretary:* Mr. Speaker and members of the House, I should like to ask unanimous consent of the House to introduce a resolution concerning a change in the Bylaws which was called to our attention just a little while ago by one of our past presidents and which concerns an ambiguity which acts to the detriment of our past presidents.

With your permission, sir, I would like to introduce this. It will lay over until next year. We will save a year if we are allowed to introduce it now.

Speaker Lane: Do I hear that approval of Dr. Wolff's request?

. . . There was no dissent expressed. . .

Speaker Lane: Go ahead, Dr. Wolff.

Dr. Wolff: This is a resolution concerning past presidents, and it will alter a sentence which now reads: "Past Presidents of the Society shall be life members of the House of Delegates," to read, "Past Presidents of the Society shall be members for life of the House of Delegates with all the privileges of elected delegates." Thanks.

Speaker Lane: That lays on the table until next year.

Section 227

Resolution of Thanks

Secretary Wheeler: Mr. Speaker, I should like to introduce this resolution:

> Whereas, the 154th Annual Convention of the Medical Society of the State of New York has proved itself to be successful in every facet; now therefore be it hereby
>
> *Resolved*, that this House of Delegates, speaking for our entire membership, records much thanks to those who have made this possible; and be it further
>
> *Resolved*, that we thank the members of the House who served so efficiently as chairmen and members of the reference committees and so facilitated our deliberations; and be it further
>
> *Resolved*, that we appreciate and admire the successful presiding of Joseph A. Lane, M.D., our Speaker, and the able assistance of the Vice-Speaker, Frederick A. Wurzbach, Jr., M.D., as

well as our Assistant Secretary, Ezra A. Wolff, M.D.; and be it further

Resolved, that we express our deep appreciation to the members of the headquarters staff of the Medical Society of the State of New York for their helpful preparations for the entire convention and particularly for their assistance to this House of Delegates: Herbert T. Wagner, M.D., Mr. George Forrest, Jr., Mr. Charles L. Baldwin, Mr. Thomas E. Alexander, Mr. George P. Farrell, Miss Doris K. Dougherty, Miss Mollie Pesikoff, Miss Camille M. Marra, Miss Mary McMahon, Miss Susan V. Baker, Miss Alice Wheeler, Miss Alvina Rich Lewis, and all the other members of the staff who have worked so diligently; and we are particularly appreciative of the work of the stenographers assigned to the reference committees; and be it further

Resolved, that we highly commend George J. Lawrence, Jr., M.D., Convention Chairman, and all his subcommittee chairmen for their painstaking preparations and thorough work for this convention.

Mr. Speaker, I move the acceptance of this resolution.

Renato J. Azzari, M.D., *Trustee:* I second it.

Speaker Lane: It has been moved and seconded. Is there any discussion?

Peter J. Di Natale, M.D., *Councillor:* I would like to amend it to include the name of William L. Wheeler, Jr., M.D., secretary.

Dr. Azzari: I second the amendment.

. . . There being no discussion, the motion as amended was put to a vote and was unanimously carried . . .

Speaker Lane: At this moment, I would like personally, on the part of myself and Dr. Wurzbach, to make a couple of comments regarding things that have been done this year and to indicate our particular appreciation of the help that we have received from some of the staff people. There have been some comments and some questions about the folders, the handbooks, and the change in reference committees. These things were accomplished after considerable discussion and quite a bit of work that was involved in that particularly with Miss Dougherty, Miss Lewis, Miss Baker, Mr. Forrest, and several other members of the staff, who worked a great many hours to make this possible, and I wish personally that they would be recognized.

Is there any other business to come before the House other than the election of the delegates? Has anyone anything in mind?

Charles R. Mathews, M.D., *Monroe:* I move that this House record its thanks for the wonderful job Dr. Wagreich has done as chairman of tonight's dinner.

Raymond J. Byron, M.D., *Schenectady:* I second it.

. . . The motion was carried by acclamation . . .

Section 228 (See 223)

Report of Tellers

Speaker Lane: Dr. McCarty is here with the count. Are you ready to write them down?

Charles F. McCarty, M.D., *Kings:* There were 221 votes cast:

Henry Fineberg	218
Joseph Lane	215
John Galbraith	212
Carleton Wertz	212
Thurman Givan	211
Philip Allen	206
William Wheeler	176
John Kelley	175
John McClintock	140

Those are the top nine.

The second nine are:

Waring Willis	68
Robert Warren	51
Frederick Wurzbach	51
Charles Loughran	26
Felix Ottaviano	14
Edward Shea	11
Frank Borrelli	7
Edward Robitzek	5
Carl Goldmark	3

Speaker Lane: I hereby declare that the first nine are delegates to the A.M.A., and the second nine are alternate delegates to the A.M.A.

If there is no further business to come before the House, I wish to extend my appreciation to all of you for your good attention, and I thank you. The House is now adjourned sine die.

. . . The House of Delegates adjourned at 3:45 p.m., sine die . . .

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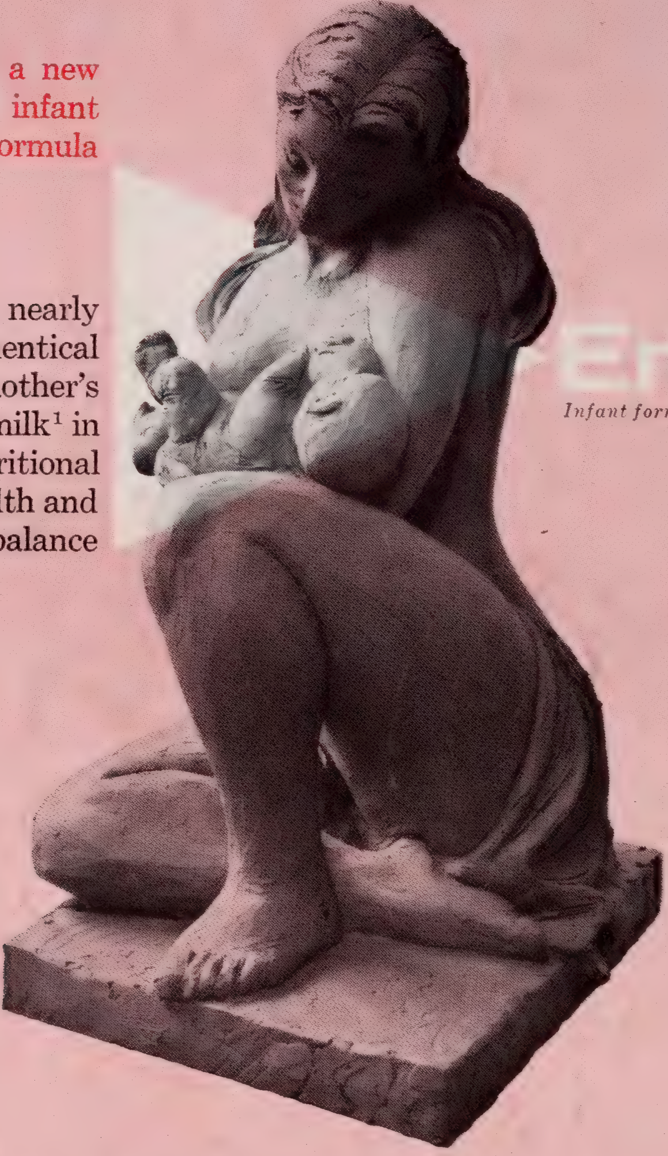

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1. Macy, I. G.; Kelly, H. J., and Sloan, R. E.: With the Consultation of the Committee on Maternal and Child Feeding of the Food and Nutrition Board, National Research Council: The Composition of Milks, Publication 254, National Academy of Sciences and National Research Council, Revised 1953. 2. Brown, G. W.; Tuholski, J. M.; Sauer, L. W.; Minsk, L. D., and Rosenstern, I.: Evaluation of Prepared Milks in Infant Nutrition; Use of the Latin Square Technique, J. Pediat. **56**:391 (Mar.) 1960.

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MEDICAL SOCIETY OF THE STATE OF NEW YORK
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September 15, 1960

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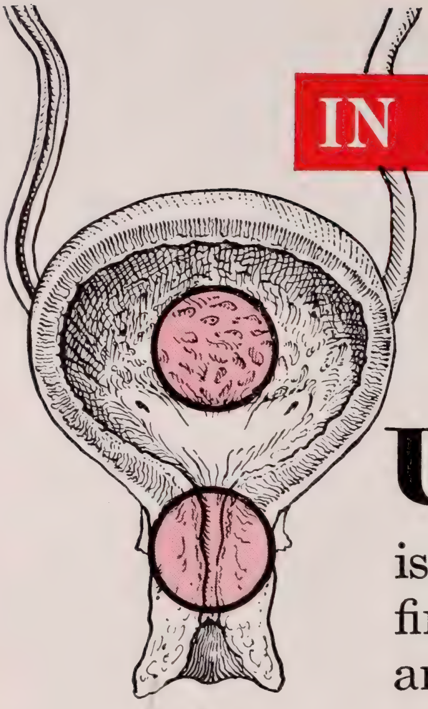

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Source:
Goldner, M. G.; Zarowitz, H., and Akgun, S.: New England J. Med. *262*:403, 1960.

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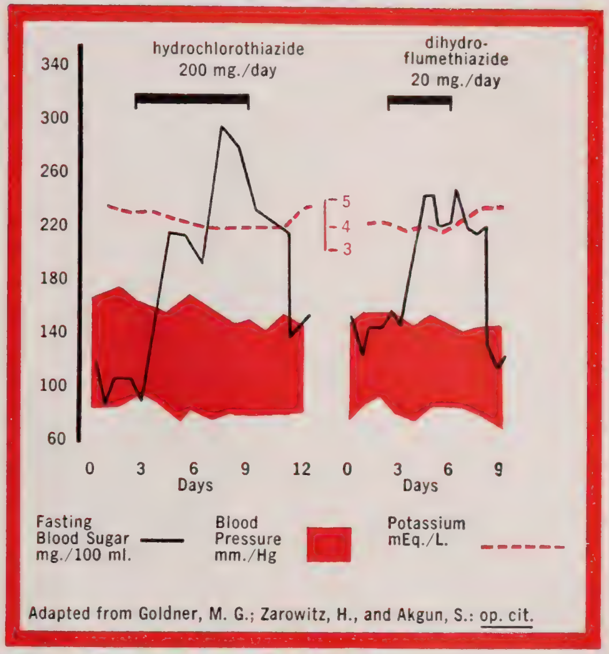

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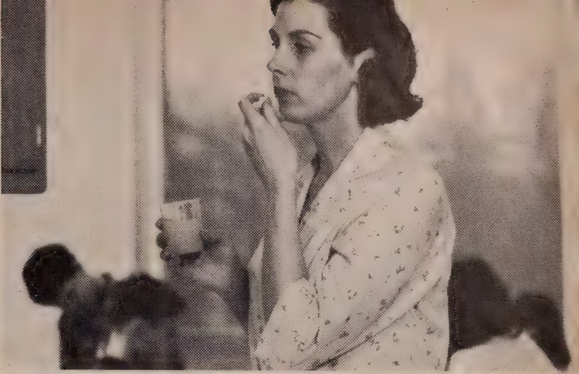

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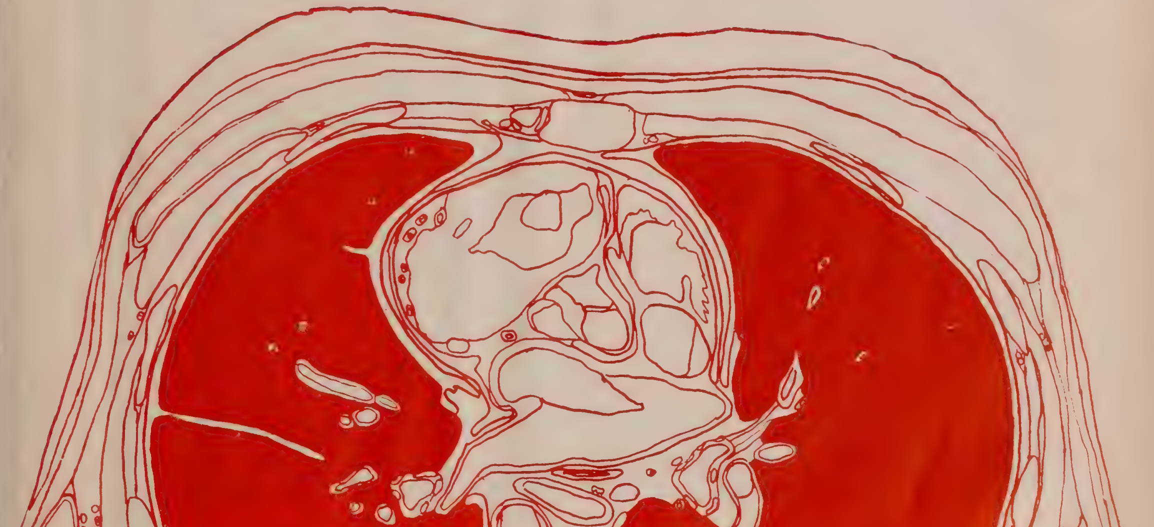

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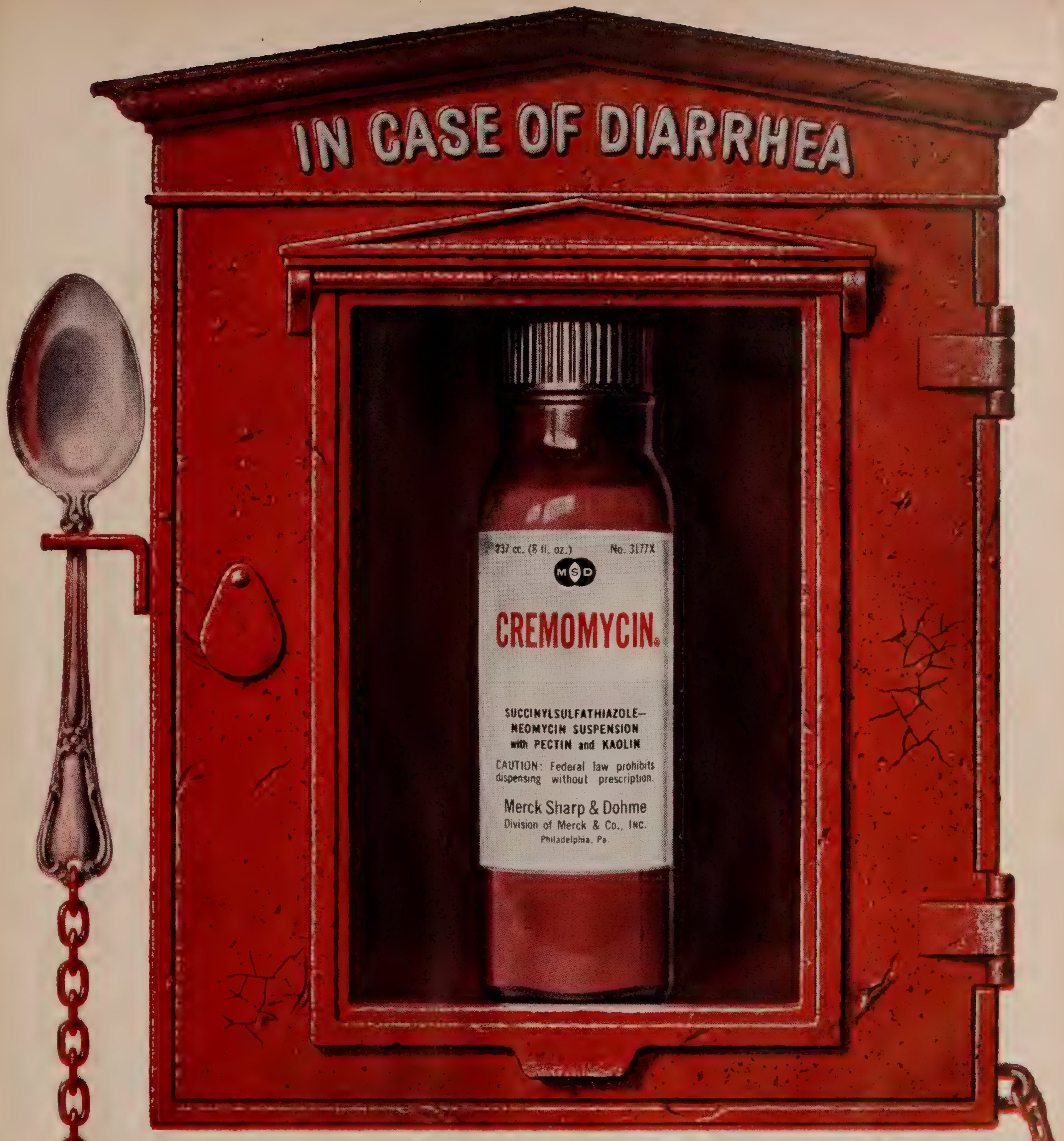
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Each Parafon tablet contains:

Paraflex® Chlorzoxazone†	125 mg.
The low dosage skeletal muscle relaxant	
Tylenol® Acetaminophen	300 mg.
The superior analgesic in musculoskeletal pain	

Dosage: Two tablets t.i.d. or q.i.d.

Supplied: Tablets, scored, pink, bottles of 50.

in arthritis

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Each Parafon with Prednisolone tablet contains: Paraflex® Chlorzoxazone† 125 mg., Tylenol® Acetaminophen 300 mg., and prednisolone 1.0 mg.

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Precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing Parafon with Prednisolone.

McNEIL

McNeil Laboratories, Inc.
Philadelphia 32, Pa.

*tailman on hook-and-ladder fire engine

†U.S. Patent No. 2,895,877

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Calories per tbsp. 40
Protein per tbsp. 3.9 grams

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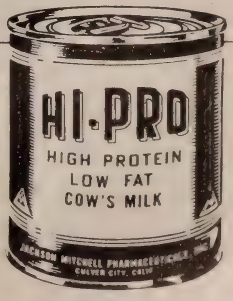
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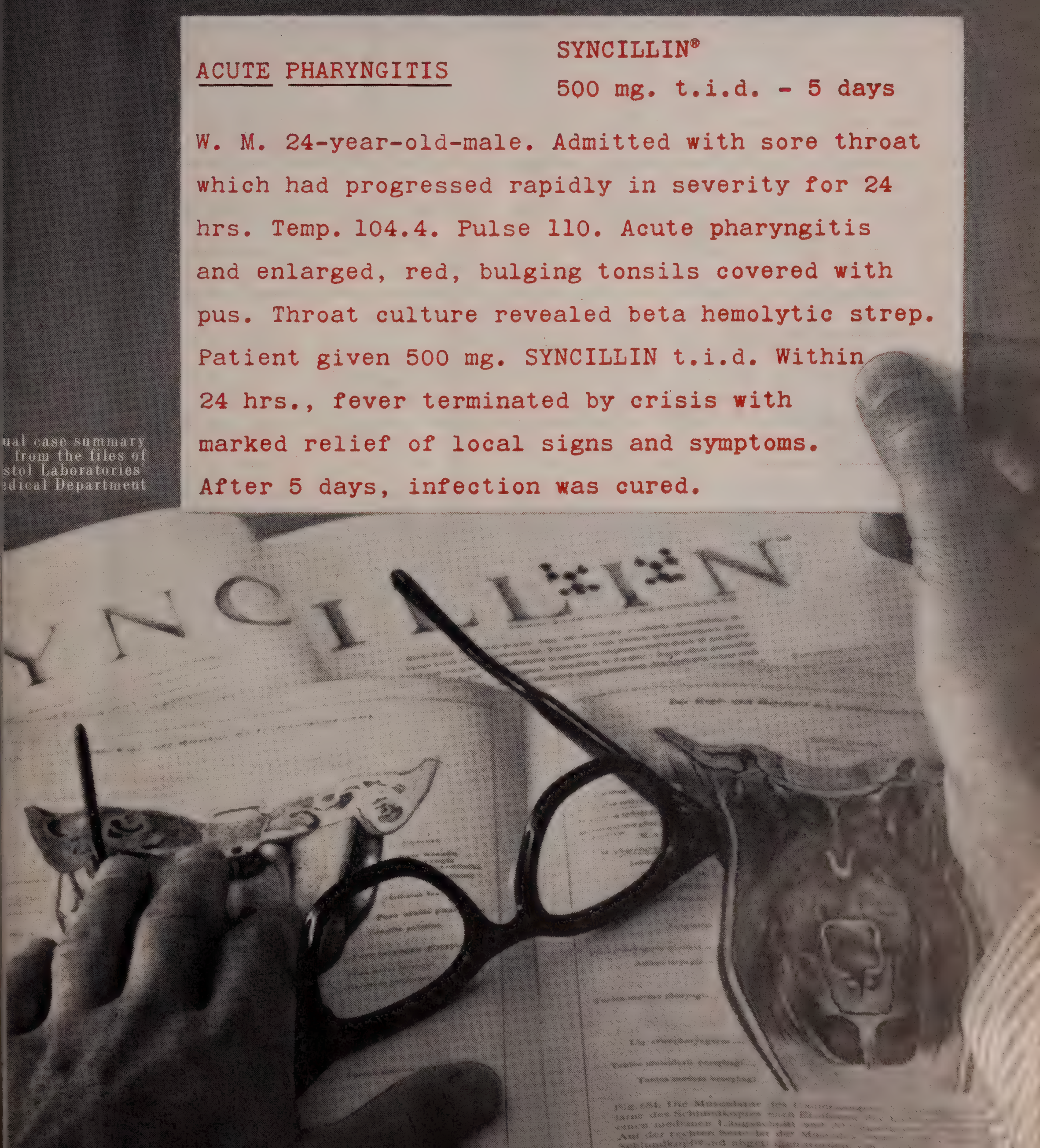

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W. M. 24-year-old-male. Admitted with sore throat which had progressed rapidly in severity for 24 hrs. Temp. 104.4. Pulse 110. Acute pharyngitis and enlarged, red, bulging tonsils covered with pus. Throat culture revealed beta hemolytic strep. Patient given 500 mg. SYNCILLIN t.i.d. Within 24 hrs., fever terminated by crisis with marked relief of local signs and symptoms. After 5 days, infection was cured.

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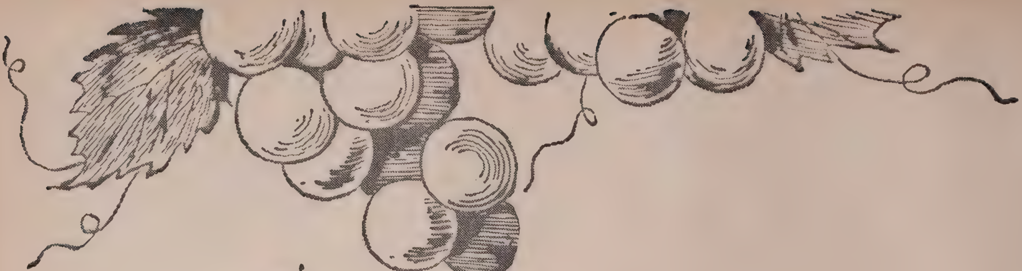

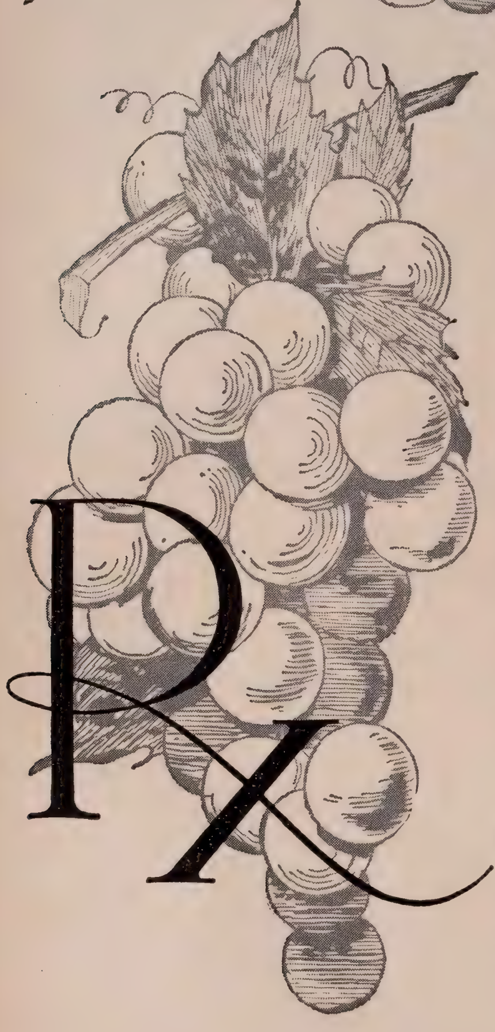

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*Floore, F. B.: Wine is Fine for Hospital Cookery, Mod. Hosp. 94:134 (June) 1960.

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*Newcomer, V. D., **et al.:** A.M.A. J. Dis. Child. **99**:585, 1960.

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McNEIL

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After 5 weeks' treatment with GRIFULVIN. (Photo taken 1½ months after discontinuance of medication.)

INCREASED LIFE EXPECTANCY FOR HYPERTENSIVES

"Life expectancy seems to be the one criterion that is most reliable and least questioned as a method of evaluating treatment for patients with elevated blood pressure."[1] "It is evident that effective therapy of hypertension will prolong the life of the patient by preventing the dreaded complications of this disease in the brain, the heart and the kidneys ." "There is no doubt of the prolongation of life in group 3 and 4 (Keith-Wagener-Barker) by adequate antihypertensive treatment. Some authorities report a 50 per cent, five year survival ratio for treated patients with malignant hypertension as against a 1 per cent survival ratio for untreated patients."[2]

Evaluation based on life expectancy is extremely difficult because of the peril of maintaining an untreated control group.[1] The doctor, however, can evaluate the symptoms related to the elevated blood pressure. . . . We know that retinopathy may improve, the heart may be reduced in size, the electrocardiogram may improve and in favorable cases the blood urea nitrogen level may fall.[2] These are reasonably objective criteria on which to base one's evaluation of treatment.[1]

On the succeeding page is evidence that Unitensen included in any therapeutic regimen may improve the results in hypertension as measured by a regression of objective clinical changes in a substantial proportion of the patients treated.

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Unlike diuretics or ganglionic blocking agents, Unitensen lowers blood pressure through widespread vasorelaxation. Normal vasomotor responses are not altered, and there is no venous pooling with resulting postural hypotension.[3-5] Through alleviation of cerebral vasospasm, Unitensen promotes cerebral blood flow and oxygen utilization.[6-9] Furthermore, Unitensen increases cardiac efficiency, improves renal function and tends to arrest the progress of vascular damage.[3, 4, 10]

Progress of Objective and Subjective Symptoms in Grades III and IV Hypertension Following Treatment with Unitensen and Unitensen-R

The Course of Subjective Symptoms

	Observations in Patients* Treated up to 2 Years			Observations in Patients* Treated up to 3½ Years		
Symptom	Number**	Improved	% Improved	Number**	Improved	% Improved
Headache	27	21	77.7	43	38	88.0
Palpitation	20	13	65.0	29	19	65.5
Angina	15	9	60.0	21	16	76.0
Dyspnea	17	8	47.0	27	14	51.0

Objective Changes Following Treatment

	Observations in Patients* Treated up to 2 Years			Observations in Patients* Treated up to 3½ Years		
Finding	Number**	Improved	% Improved	Number**	Improved	% Improved
Funduscopic Changes	41	24	58.5	59	38	66.0
Enlarged Heart	20	13	65.0	35	23	65.7
Abnormal ECG	37	10	27.0	45	25	55.5
Proteinuria	31	12	38.7	43	27	62.7
Nitrogen Retention	17	6	35.2	28	10	35.7

Left hand charts from Clinical Exhibit "The Ambulatory Patient with Hypertension" presented AMA Convention, San Francisco, June 22-27, 1958, by B. M. Cohen, M.D.

*All patients in this study were initially classified as Smithwick Grades III and IV.

**Expressed as the number of patients exhibiting the symptom recorded.

Right hand charts include patients previously reported who had been continuously maintained on Unitensen and Unitensen-R, plus additional patients later added to the study. From Clinical Exhibit "The Office Diagnosis and Treatment of the Patient with Hypertension" presented American Academy of General Practice, Indianapolis, March 18-19, 1959, by B. M. Cohen, M.D.

UNITENSEN®

Each tablet contains: Cryptenamine (tannates) 2.0 mg.

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Each tablet contains: Cryptenamine (tannates) 1.0 mg., Phenobarbital 15 mg.

UNITENSEN-R®

Each tablet contains: Cryptenamine (tannates) 1.0 mg., Reserpine 0.1 mg.

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a new class of drug
for the relief of pain and muscle tension

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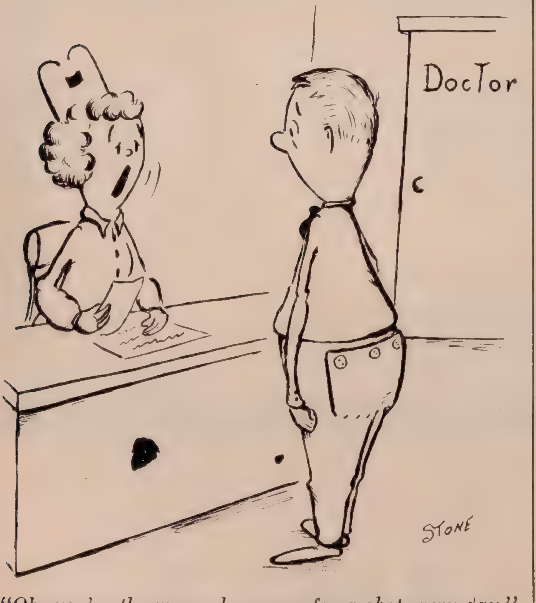

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In trichomonas vaginitis
"...permanent **CURES** in
84.6%"[1] ▪ "...symptomatic
and bacteriologic **CURES**"
in 100%[2] ▪ "symptomatic **CURE**
was obtained in 100%, and
bacteriologic **CURES** in 82.5%"[3]
in moniliasis "symptomatic **CURE**
was effected in about 80%"[4]
in mixed infections "complete
symptomatic and bacteriologic
CURES in 92%"[3]
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clinically and bacteriologically
(as indicated by vaginal
smears and cultures) **CURED**"[5]

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STOPS THE TORMENT
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References: 1. Angelucci, H. M.: Am. J. Obst. & Gynec. **50**:336, 1945. 2. Hensel, H. A.: Postgrad. Med. **8**:293, 1950. 3. Cortese, J. T.: Clin. Med. **2**:45, 1955. 4. Dill, L. V., and Martin, S. S.: M. Ann. District of Columbia **17**:389, 1948. 5. Horoschak, A., and Horoschak, S.: J. M. Soc. New Jersey **43**:92, 1946.

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treats their
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degreases the skin
completely emulsifies and washes off excess oil from the skin.

helps remove blackheads
penetrates and softens comedones, unblocks pores and facilitates removal of sebum plugs.

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FOSTEX CAKE in bar form	Fostex Cream is also used as a therapeutic shampoo in dandruff and oily scalp.

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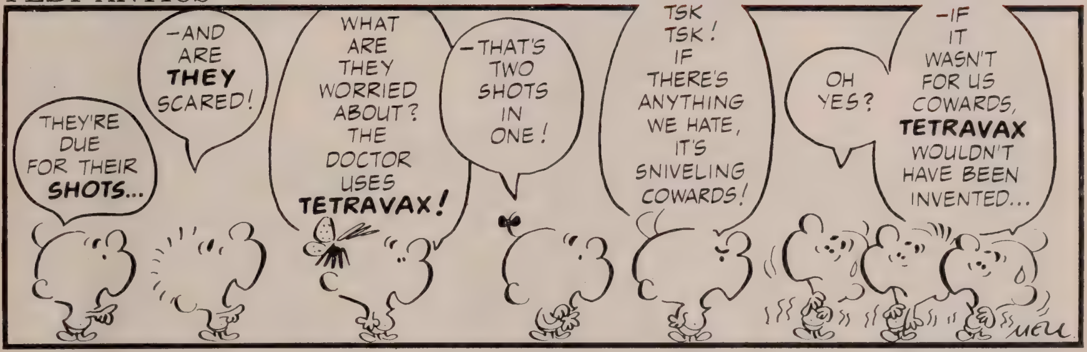
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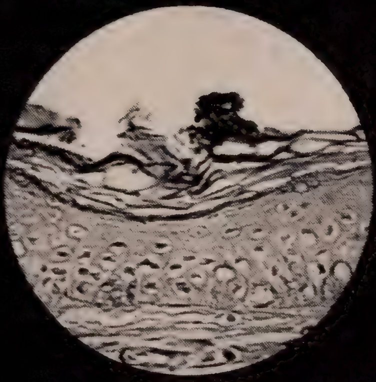
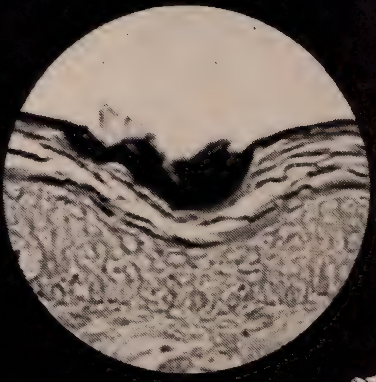
new study:

"almost universally rapidly curative"[1] *in*

infantile eczema



Biopsy section from skin stained with osmic acid after treatment for one week with placebo base shows little unsaturated oil (black stain) on the surface and practically none within the epidermis.



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for **samples** of soothing, protective, healing Desitin Ointment and reprint, please write . . .

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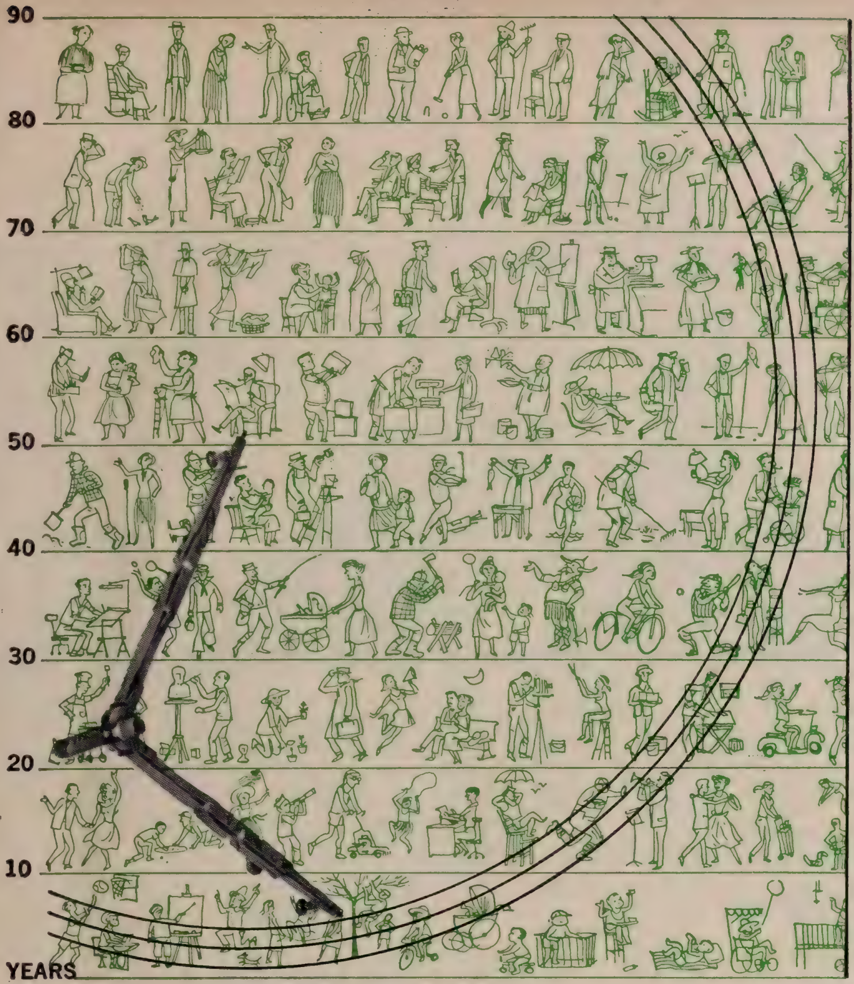

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- disorientation
- agitation
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- irritability
- apprehension
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- chronic urticaria
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- menopausal syndrome
- neurodermatoses
- functional gastrointestinal disorders
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- hyperactivity
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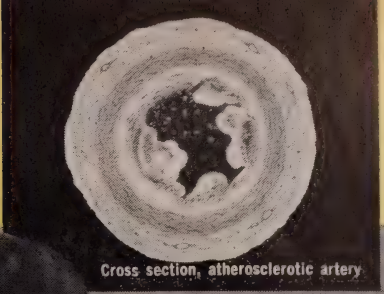
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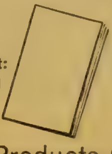

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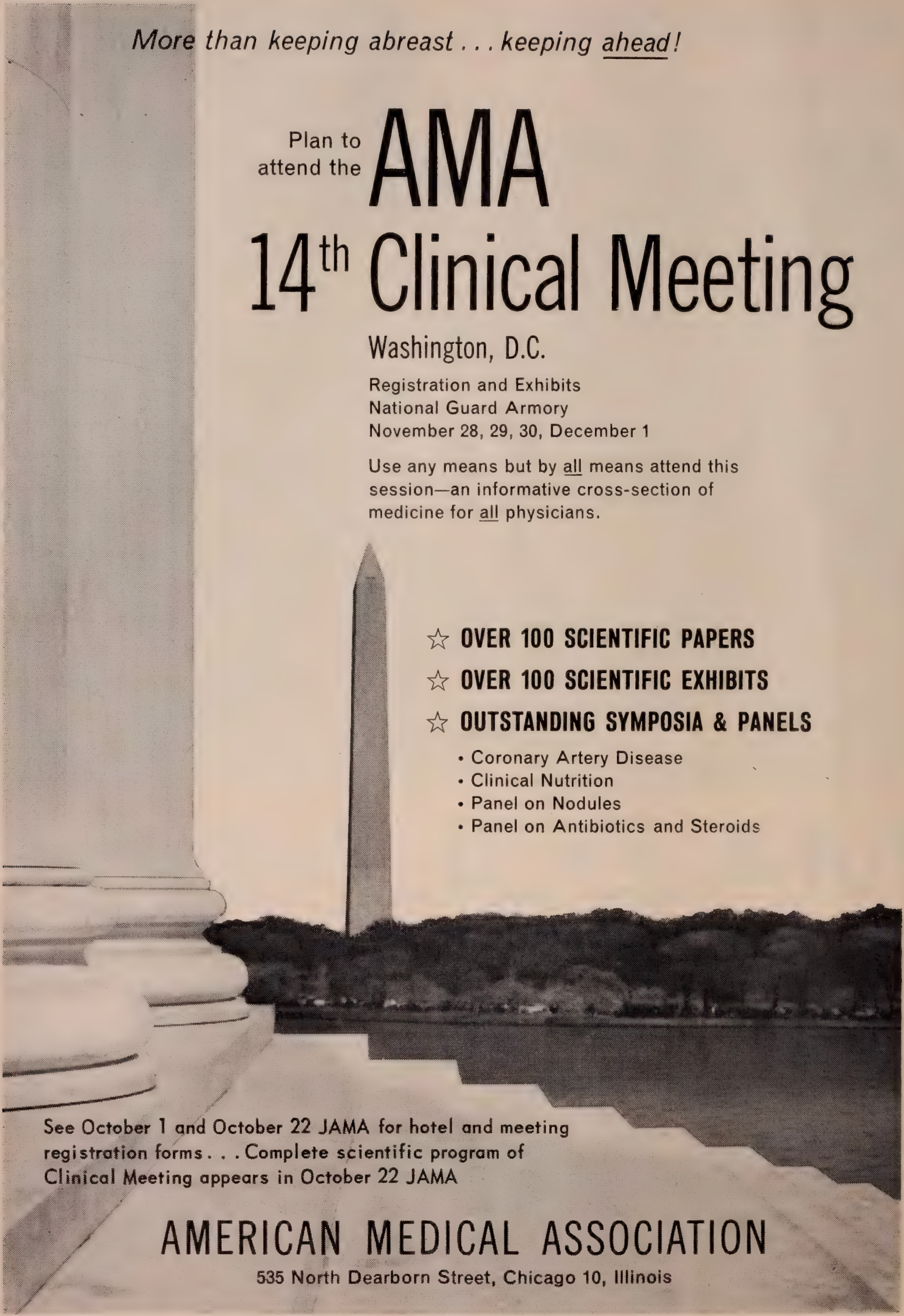

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Coolidge, C. W.; Glisson, C. S., and Smith, A. S.: J.M.A. Georgia 48:167, 1959.

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CIBA
SUMMIT, N. J.

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955.

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Complete information available on request.

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220
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180
160
140
120
100
80
60
40

ctual Clinical Data: Male, 65, with dislocated
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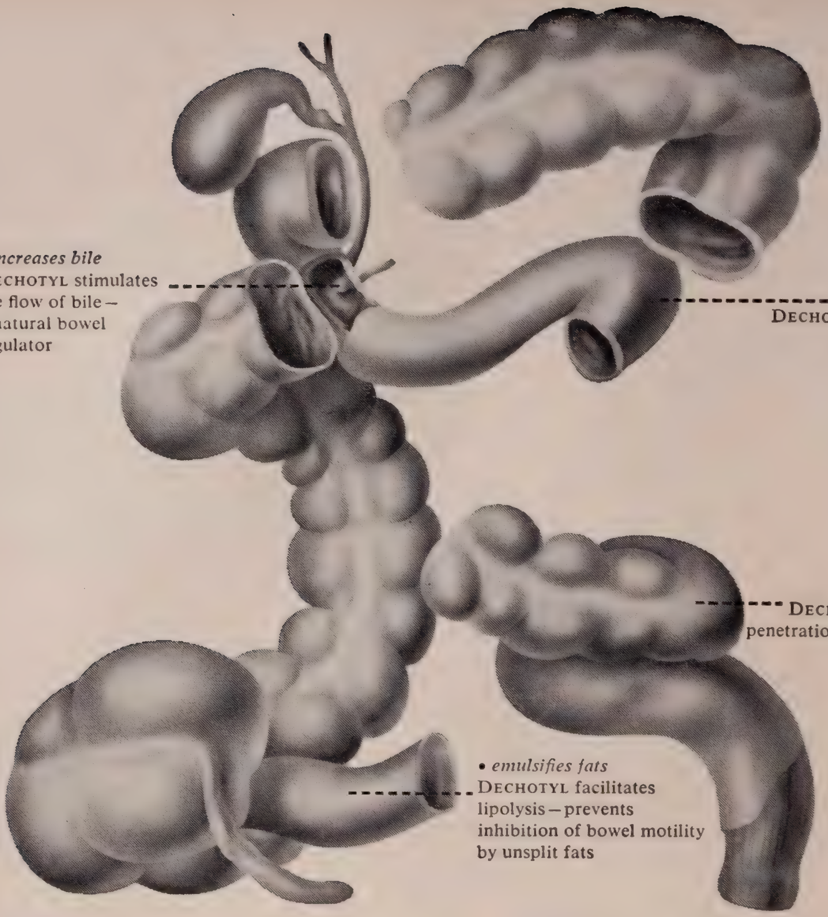
REFERENCES: **1.** Carpenter, E. B.: Southern M. J. 51:627, 1958. **2.** Forsyth, H. F.: J.A.M.A. 167:163, 1958. **3.** Gr[illegible] A., and Thomson, J. E. M.: Clin. Orthopaedics 13:299, 1959. **4.** Hudgins, A. P.: Clin. Med. 6:2321, 1959. **5.** L[illegible] W. B.: California Med. 90:26, 1959. **6.** O'Doherty, D. S., and Shields, C. D.: J.A.M.A. 167:160, 1958. **7.** Park, [illegible] J.A.M.A. 167:168, 1958. **8.** Plumb, C. S.: Journal-Lancet 78:531, 1958. **9.** Poppen, J. L., and Fl[illegible] J.A.M.A. 171:298, 1959. **10.** Schaubel, H. J.: Orthopedics 1:?74, 1959.



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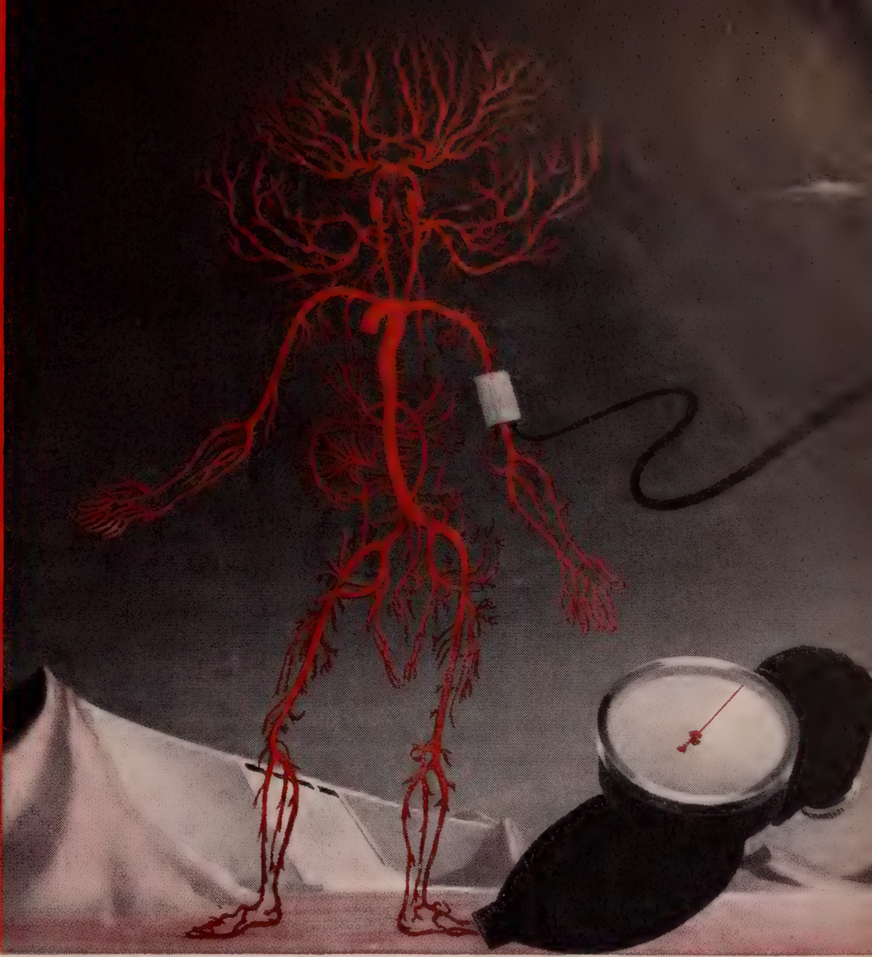

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REFERENCES: 1. Ford, R. V., and Nickell, J.: Ant. Med. & Clin. Ther. 6:461, 1959. **2.** Fuchs, M., and Mallin, S. R.: Int. Rec. Med. 172:438, 1959. **3.** Ford, R. V.: Int. Rec. Med. 172:434, 1959.

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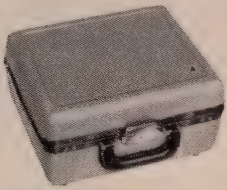

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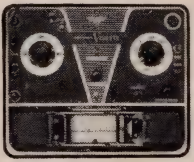

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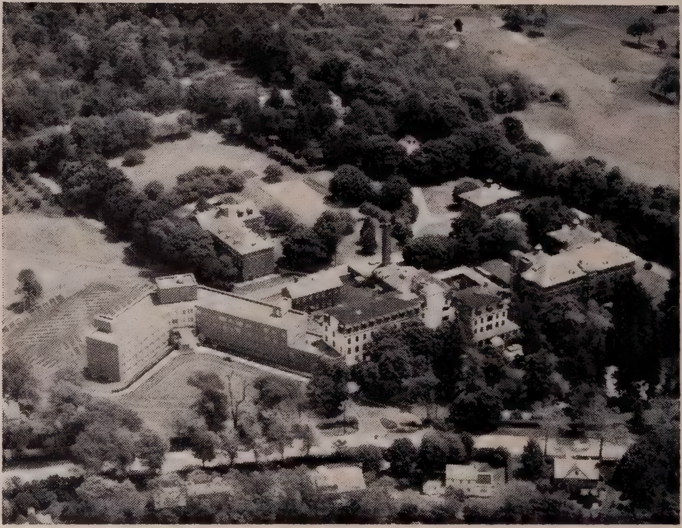

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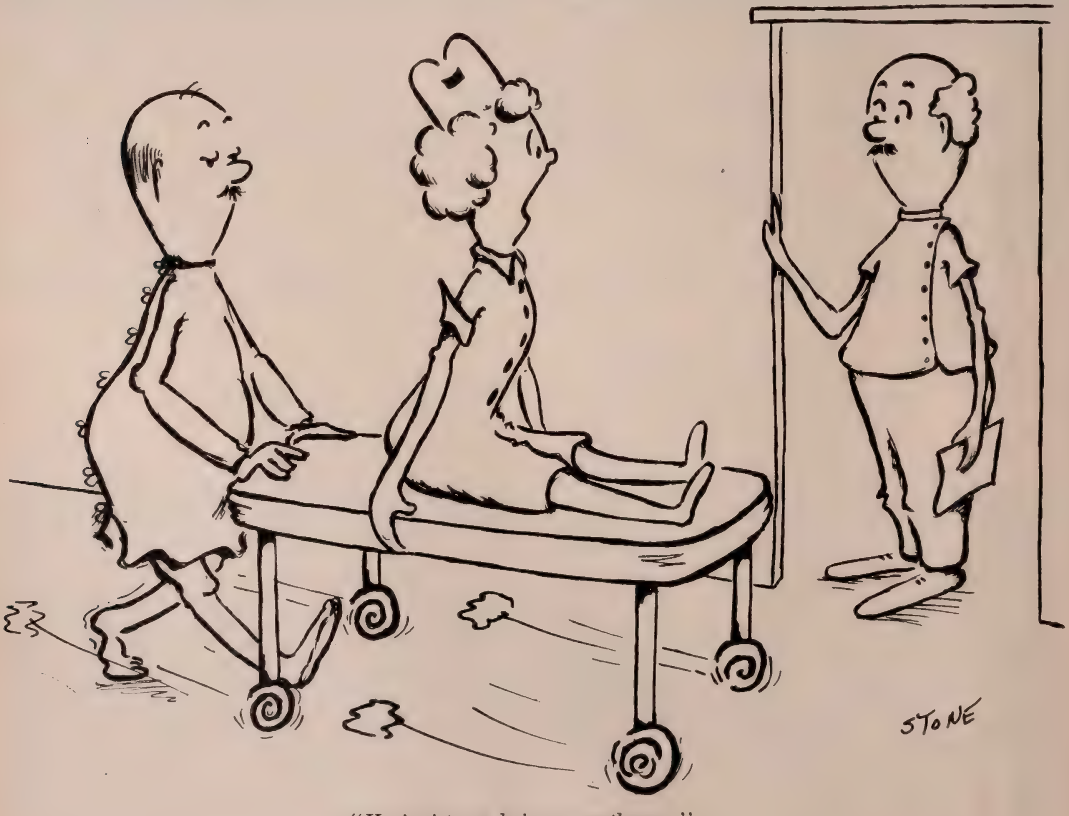

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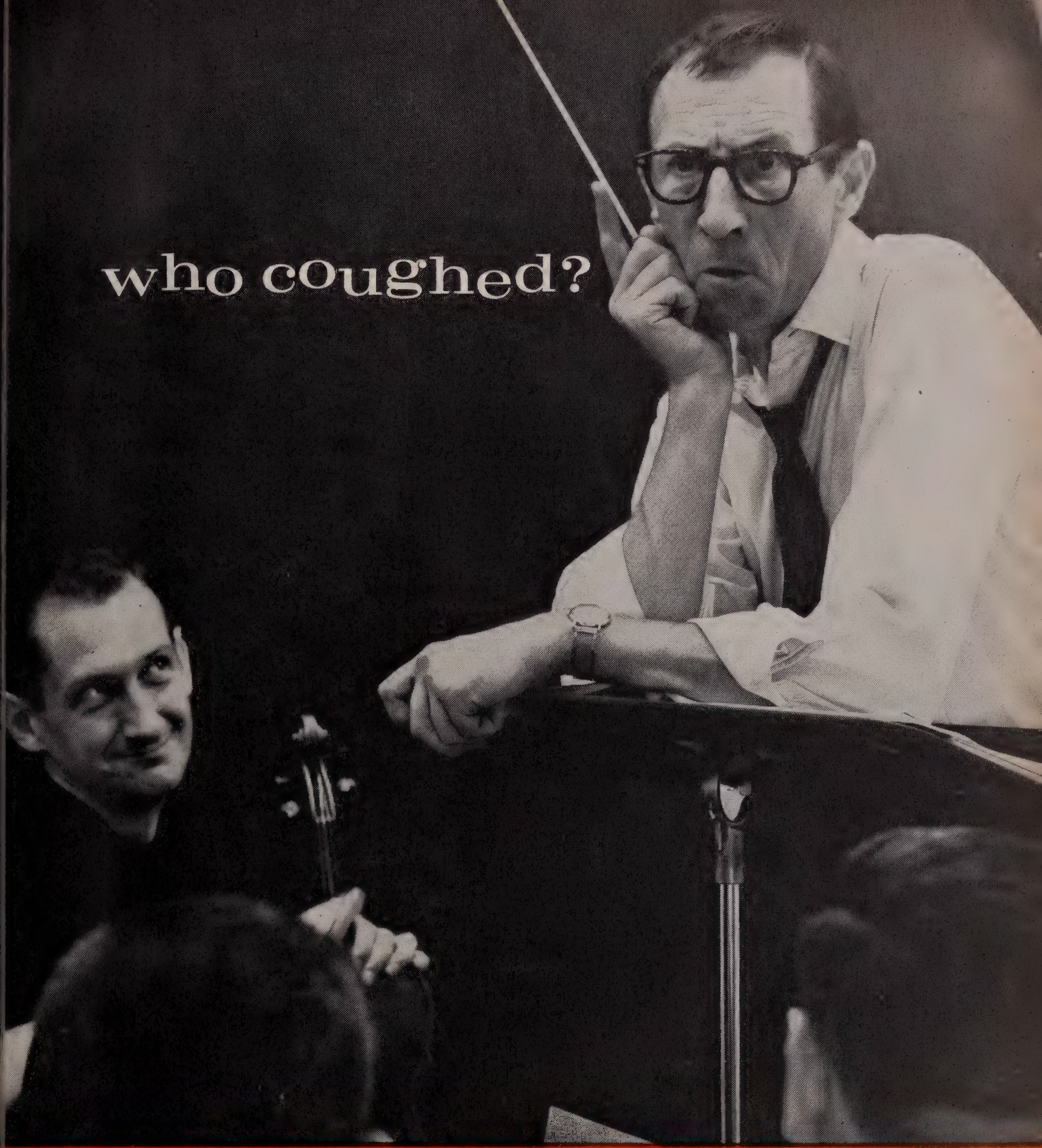
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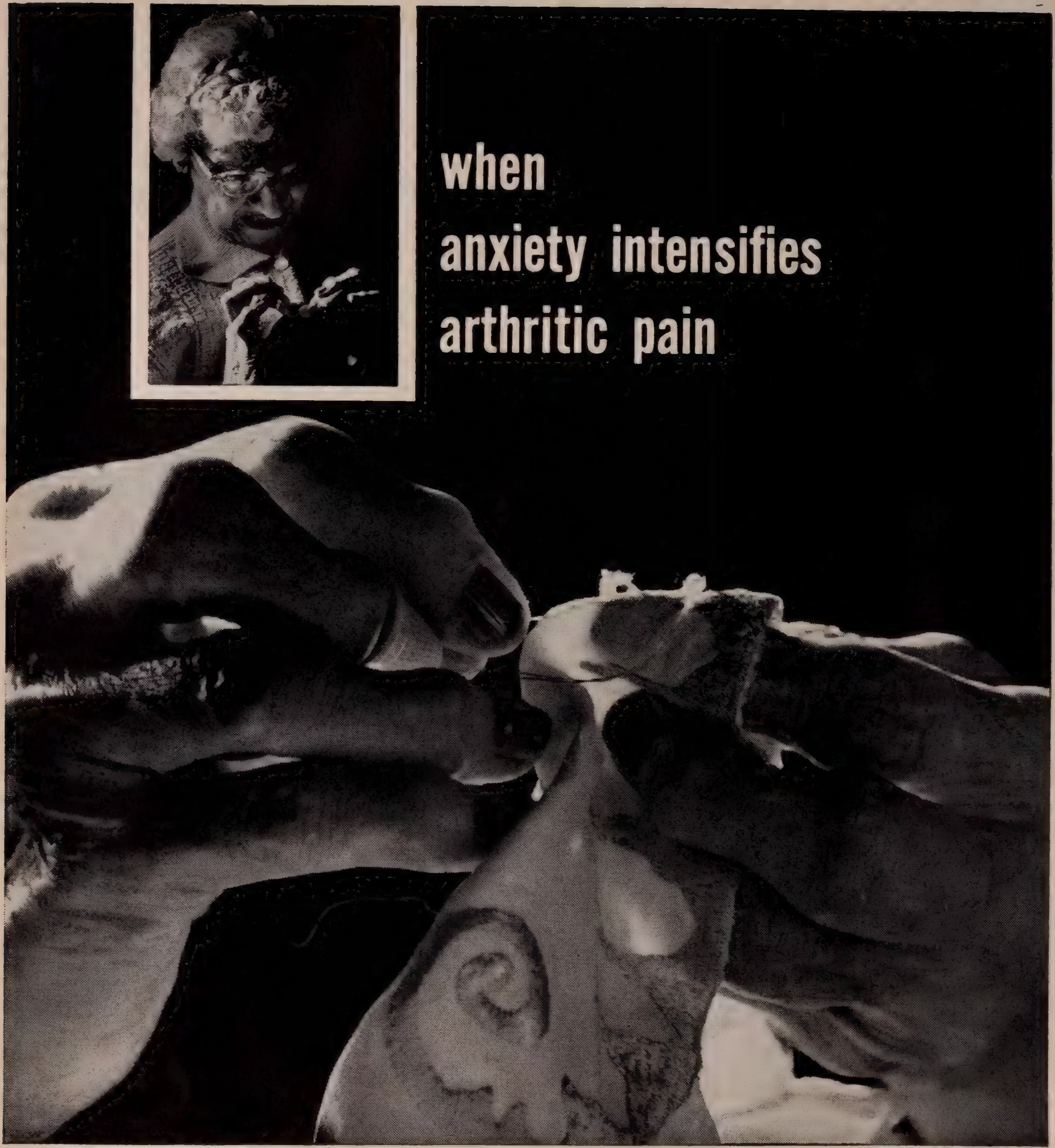

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EDITORIALS

Another New Penicillin

Elsewhere in this issue is a report about another new synthetic penicillin. The new drug (laboratory name X-1497, proprietary name Staphcillin) has a unique and interesting attribute which may be of significant value to every clinician.

At a conference held at the State University of New York Upstate Medical Center in Syracuse on September 7, 1960, 19 investigators from all parts of the country reported uniformly that the synthetic penicillin was able to bypass to an appreciable degree the neutralizing effects of penicillinase, the enzyme produced by staphylococci that makes that organism resistant to all other penicillins. Because of this property the drug inhibited the growth of every strain of staphylococcus studied—altogether some 300 strains isolated from patients in every part of this country and in Canada. The remarkable feature of this observation is that there were no exceptions in the susceptibilities of these hundreds of strains to the synthetic penicillin: All were inhibited or killed by 6.5 micrograms per milliliter or less. This was true regardless of the number of organisms used in any test for sensitivity and regardless of the technic used to measure susceptibility. The investigators then pooled their experiences in the treatment of patients with staphylococcal disease. Approximately 150 staphylococcal infections were treated with the synthetic drug alone. Their seriousness ranged from multiple furuncles to massive sepsis and endocarditis and meningitis. The combined and universal consensus of the entire group of able investigators was that the synthetic penicillin had proved itself an extraordinarily potent weapon against the infection caused by all kinds of staphylococci including the strains resistant to all other penicillins. This is a remarkable experience for a new agent because it was first used in the human being only eight months ago.

The synthetic penicillin effectively inhibits the growth of essentially the same spectrum of microorganism as do penicillin G, V, or phenethicillin, including streptococci, gonococci, and pneumococci. On a weight basis, however, appreciably more of the synthetic penicillin is required for maximal inhibition than is true with the older materials. This fact will probably preclude its use in any infection except resistant staphylococcal ones in which other therapies are not now good enough. Expense may also determine to some extent the decision to restrict its use. If, though, it does indeed prove to be as effective against penicillin-resistant staphylococcal disease as now seems apparent, dosage and expense cannot be restrictive factors.

The drug is not absorbed from the intestinal tract, a property which requires that it be given intramuscularly or intravenously. Both of these routes of administration have been used often enough already to recognize the fact that it can be given easily, safely, and with a minimum of irritative side-effects. A daily dosage of from 4 to 10 Gm. is recommended—1 to 2 Gm. four or five times daily. This daily regimen has been continued without event for as long as seven weeks in a few patients and for two to three weeks in sufficiently large numbers of people to pronounce it safe and tolerable. As the authors in the paper suggest, however, untoward side-effects can be anticipated; no chemotherapeutic agent is wholly without danger when it is administered to the human being. Although it is immunologically different from vitamins G, V, and phenethicillin, this does not mean that allergic reactions will not occur.

The synthetic penicillin appears to be an excellent antimicrobial agent in an area of infectious disease where a new and good drug is urgently needed. We hope this optimism will prove correct as the drug is used more widely. No one can yet endorse it as the first choice of therapy for penicillin-resistant staphylococcal disease, for experience with it is not yet mature enough for that kind of judgment. There is no question though that the evidence to date is appealing.

In the February 15, 1960, issue of this JOURNAL an editorial described the first partially synthetic penicillin to be marketed in this country. This agent (phenethicillin or 152) has proved to be as worthy as predicted: more potent than penicillin G and of approximately equal value with penicillin V. More importantly, the editorial pointed out that newer and more interesting synthetic penicillins could be expected; this new product is one of them. Undoubtedly there will be others still to come. Of significance is the speed with which these are being prepared. New editorials will become more frequent.

Finally, the developers of this and other synthetic penicillins deserve the praise of every physician in this State and country. Perhaps our legislators should recognize more clearly the problems, the expense, and the concerted effort which precede the marketing of new and beneficial therapeutic agents such as the synthetic penicillin.

It is conceivable that virtually every citizen of this world could benefit from this kind of endeavor in which there can be few economies if the job is done wisely and properly.—P. A. B.

Gielskie v. State of New York

In the June 15, 1960, issue of the JOURNAL there appeared an editorial entitled, "An Expensive Lesson in the Importance of Keeping Up to Date." This editorial discussed a recent decision of the Court of Claims of the State of New York in which a young farmer received an award of $175,000 against the State for the alleged negligence of the State Department of Health in distributing tetanus antitoxin serum to physicians with accompanying instructions and information. It was noted at the conclusion of the editorial that the State of New York strongly disagreed with this decision and intended to appeal it to a higher court.

The Supreme Court, Appellate Division, Third Department in a very recent decision unanimously reversed the judgment of the Court of Claims and dismissed the complaint of the claimant. The reasoning and language used by the Appellate Court is of considerable interest because of the importance of this decision to both the medical practitioner and those who supply him with drugs and therapeutic products.

The claimant is permanently and totally paralyzed below the tenth vertebra as the result of an intraspinous injection by his own physician of tetanus antitoxin serum (hereinafter called T.A.T.), made and distributed to doctors free of charge, with accompanying instructions and information, by the State Department of Public Health as a part of its public service.

The Court noted that "(t)he case is unique and novel, particularly in two respects: (1) although a negligence case, there is no dispute as to the basic facts; and (2) there is no case close enough factually to claimant's theory of negligence to be of value as a precedent. . . . Eliminating the elements which are unquestioned, the only issue becomes exceptionally narrow. There is no claim that there was anything wrong with the T.A.T. which the State furnished to claimant's doctor. It is undisputed that claimant actually contracted the disease known as tetanus (despite the administration of T.A.T. as a prophylactic or as a preventive measure) as a result of a compound comminuted fracture of a finger sustained while participating in a horse pulling contest with which the State had no connection. It is entirely undisputed that the introduction of any foreign substance into the spinal canal would have caused the disastrous result."

The Court went on to say that the alleged negligence of the State was based solely on printed information or instructions to doctors accompanying the container of T.A.T. This printed paper contained considerable information about tetanus in general, and also stated: "The antitoxin may be administered intraspinously, intravenously, and intramuscularly. The intraspinous and the intravenous methods are generally recognized as far superior to the intramuscular for the initial injections. There is considerable difference of opinion as to which is the more effective route. On the basis of reports received on cases treated in the State, combined intravenous and intraspinous administration appears to possess an advantage. Antitoxin should be administered at the earliest possible moment and in adequate amounts."

The Court then said: "The very crux of the claim of negligence narrows to this statement contained in the paper distributed with the T.A.T.: 'The intraspinous and intravenous methods are generally recognized as far superior to the intramuscular for the initial injections.' Claimant contends that in 1954, when this T.A.T. was administered, the intraspinous and intravenous methods were not generally recognized as superior and that the State was negligent in saying so. It must be borne constantly in mind that the State mentioned all three methods of administering the T.A.T., and mentioned that there was a considerable difference of opinion, so that a doctor with professional qualifications might elect which method to use."

The Court continued: "One cannot read this record, which consists largely of medical testimony, without coming to certain general conclusions: (1) that tetanus is a rare disease in the United States, almost always fatal if untreated; (2) that the administration of T.A.T. is the only known remedy; (3) that any method of administering T.A.T. is dangerous and involves a risk; (4) that once contracted the disease progresses rapidly, and prompt and drastic measures are essential to avoid fatal consequences; and (5) that there is a difference of respectable medical opinion as to the most effective administration of T.A.T."

Of particular significance is the following language of the Court: "*Medicine is not an exact science.* Even claimant's doctors agree that prior to 1954 the intraspinous administration of T.A.T. was generally accepted as the most effective. They claim that the weight of medical authority had changed by 1954 because there was a greater risk in the introduction of any foreign substance in the spinal canal. *On further experience medical opinion may change again. The weight of medical authority does not necessarily depend on the number of doctors who agree to a certain method, and the weight to be attached to individual medical opinion must necessarily be gauged by the honest judgment of those who must accept or reject it. There is no authority that a doctor, whether employed by the State or in private practice, must use what some doctors consider the best method if a method which is accepted by respectable medical authority is adopted.*"

The Court then said: "By honestly accepting one field of respectable medical opinion, though other and perhaps more numerous medical opinions may differ, does not constitute negligence simply because in a particular case the result was disastrous. To hold the State liable under the circumstances presented here would mean that either the State must render no public service at all or be an insurer against any bad results that might follow. The tragic result suffered by this claimant must be attributed to a misfortune of life, and not to the State Department of Health in honestly trying to assist in preventing or lessening the consequences of a misfortune with which it had nothing to do." (*Gielskie v. State of New York*, 200 N. Y. S. 2d 691.)

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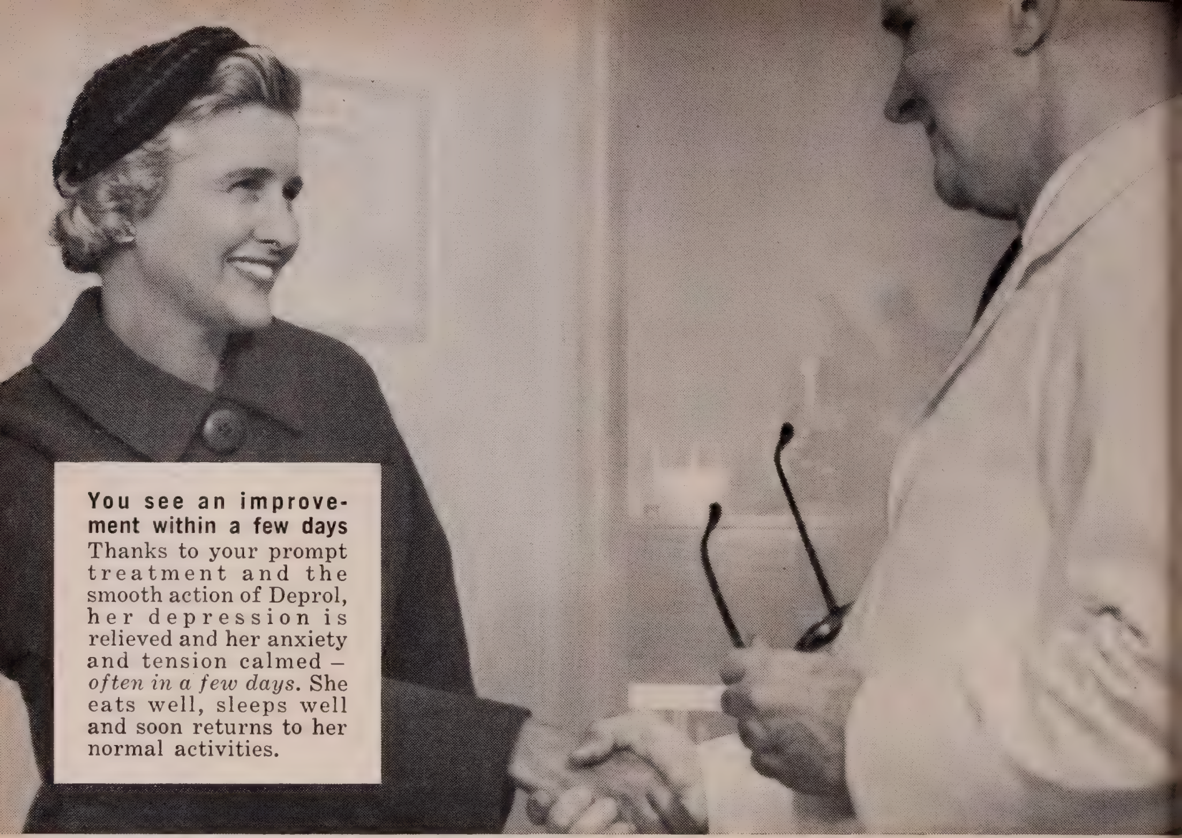

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Guides to the Diagnosis of Hypothyroidism

BENNETT W. BILLOW, M.D., NEW YORK CITY

Hypothyroidism is an important diagnosis frequently missed simply because the physician fails to consider it when the obvious, dramatic symptoms of the rare myxedema syndrome are absent. It must be remembered that hypothyroidism is a common disease that affects 5 to 10 per cent[1] of the adult population and that the ratio of hypothyroidism to myxedema is estimated at about 100:1. Clearly, thyroid insufficiency warrants more frequent consideration conconsistent with its incidence.

Among 3,003 patients seen at the Thyroid Clinic at Harlem Hospital over the last five years, 163 (5 per cent) were hypothyroid. Figures from the author's practice over the same period reveal that among 5,024 patients seen, 635 (12.6 per cent) were hypothyroid. These latter figures are obviously weighted by the fact that the practice is restricted to metabolic diseases and most patients were referrals and therefore represented selected cases.

It is beyond the scope of this paper to discuss iodine metabolism in detail. However, a few points should be kept in mind. The thyroid gland normally traps and stores iodine as thyroglobulin, which is released into the systemic circulation as thyroxine. Both processes are accelerated by pituitary tissue-stimulating hormone. In the blood thyroxine is associated loosely with plasma proteins and iodine, referred to as protein-bound.[2] Iodine leaves the plasma rapidly in the tissues where, according to one concept, thyroxine may undergo partial deiodination to become the more active triiodothyronine. The other concept is that triiodothyronine is a major product of the thyroid gland itself.[3] Some thyroxine is excreted as such by the liver, in the bile, and by the mucosal cells of the duodenum. The bulk of it is degraded, perhaps by the liver, with liberation of inorganic iodide and almost entirely in this form is excreted also by the kidneys, skin, lungs, and intestines and in milk and saliva.[4]

The thyroid hormone increases the rate of oxygen consumption in all tissues except the thyroid gland and increases the rate of energy production, which is reflected in the basal metabolic rate. In physiologic doses it also affects rate of growth by favoring protein anabolism with resultant nitrogen retention. In thyroid insufficiency fluid accumulates to form the basis of myxedema. The hormone also increases the rate of absorption of monosaccharides by the intestine and enhances hepatic glycogenolysis, increasing blood sugar and, simultaneously, utilization of glucose in the tissues. Lipid metabolism in hypothyroidism increases, as reflected in higher levels of plasma cholesterol and phospholipid. Increased interstitial fluid and retention of sodium and chloride are noted, accompanied by decreased plasma volume. Finally, manifestations of vitamin A deficiency have been observed in both hypo- and hyperthyroidism.[2]

Clinical Diagnosis

In view of its protean characteristics, it is not surprising that the diagnosis of thyroid insufficiency is most often difficult. Nor is it surprising that hypothyroidism can masquerade as other diseases.

Since it is the general practitioner who most often sees the patient first, it is essential that he develop a high index of suspicion so that he can single out the individual actually suffering from hypothyroidism. Otherwise, besides countless months of physical well-being, the patient may lose many hours from work and be taxed by consequent reduced income and the cost of ineffective therapy.

First, it is important that the physician not look exclusively for the typical textbook picture of hypothyroidism, that is, the short-statured, obese, sluggish, constipated patient with dry skin and hair, brittle fingernails, and so forth. While it is true that some of these symptoms may be present, hypothyroidism may be manifest also in the thin, tense, and jittery patient with clammy hands, particularly the adolescent.

Here, as always, the physician's clinical acumen and skill in obtaining a careful medical history and a complete physical examination are of utmost importance. Diagnosis most often can be made on clinical grounds in the physician's office, and at this point he would do well to consider hypothyroidism as a possible diagnosis. When in doubt, therapeutic trials with thyroid hormone should be made.

Most physicians will be on the lookout for hypothyroidism following thyroidectomy or treatment with radioactive iodine, but in many other patients the symptoms may be deceptive. The effects of hypothyroidism are diffused, and the symptoms mimic those of other diseases to such an extent that the complaints may send patients to various specialists for treatment.

Gastrointestinal complaints may be so vague that they are discounted or so severe that this condition overshadows the relationship to hypothyroidism. Chronic constipation and colonic gas may develop, particularly in women over forty years old, because of a malfunctioning hypotonic colon due to protein and water accumulation in blood vessel walls and in the smooth muscle of the intestinal tract. Abdominal discomfort or pain may even resemble the symptoms of peptic ulcer and gallbladder disease. It is advisable to consider hypothyroidism in such patients.

Gynecologic symptoms too often indicate thyroid insufficiency. Amenorrhea and menorrhagia particularly, but also anovulation, habitual abortion, mastalgia, and cystadenitis of the breast may be seen. In 1953 Rawson and his coworkers[5] reported a myxedematous patient with amenorrhea of four years duration successfully treated with "massive doses" of l-triiodothyronine.

The nervous system is also affected in hypothyroidism, especially after thyroidectomy. The neural tissues become edematous. While "myxedema madness" is seldom seen today, Rullo and Allan[6] reported a case as late as 1958. A woman about to be committed for senile dementia had been on desiccated thyroid from 1953 to 1955 but had not taken the tablets for many months. Under thyroid therapy, resumed in 1956, she improved in five days and was in good health in 1958.

Bloomer and Kyle,[7] reviewing 80 cases of primary hypothyroidism, found the "leading symptom, . . .paresthesia of the extremities, was of sufficient severity and frequency to be of considerable diagnostic import." The most specific confirmatory sign was slow relaxation of the deep tendon reflexes. Many hypothyroid patients show localized contractures that probably contribute to their myalgic discomforts. Pain may extend from the back into the leg, and the contracture may be seen by tapping the biceps muscle with a reflex hammer.

Symptoms may also be associated with the circulatory system. Since the oxidative rate is reduced, the stroke volume of the heart is diminished, cardiac output is lessened, the pulse and circulation rates are slowed, and the temperature is subnormal. The patient may complain of bradycardia, weakness, dizziness, and dyspnea and may be anemic. Accumulation of protein and water in the body tissues can also cause eventual enlargement of the heart.

Thick tongue, clumsy speech, and deafness may also be attributed to edema of the tissues and extracellular spaces. Impairment of hearing is almost the rule in elderly patients with thyroid insufficiency. Rall,[8] checking the hearing of a few patients made hypothyroid then euthyroid, found "marked and dramatic changes in the audiograms" of middle-aged and older patients but no change in younger patients. We too have had several such patients whose hearing improved with thyroid extract.

Symptoms of hypothyroidism in children are the same as in adults except in one respect: retardation of skeletal growth and development that had been proceeding normally. Since bone development is in part dependent on thyroid hormone, thyroid insufficiency may be the root of a growth problem. Determination of chronologic skeletal age by hand-wrist roentgenograms is a valuable confirmatory procedure of clinical impressions of hypothyroidism. Its early detection is important to the physical, emotional, and intellectual maturation of the child. An infant who fails to grow, is listless, and has a poor appetite and poor peripheral circulation should be suspected of having cretinism, congenital hypothyroidism. The upper segment of the body tends to remain longer in relation to the lower portion in contrast to normal development. Such infants have a normal cholesterol level which rises when treatment with thyroid for a trial period is stopped.

Some clinicians have utilized the terms euthyroid hypometabolism and metabolic insufficiency to describe a group of patients with a basal metabolic rate below 20 per cent in association with clinical symptoms suggestive of hypothyroidism. These patients have apparently normally functioning thyroid glands; their thyroidal I^{131} and levels of protein-bound iodine and serum cholesterol are within normal limits. Other causes of hypometabolism, such as Addison's disease, hypopituitarism, and malnutrition, have been ruled out.

It is difficult for the author to accept metabolic insufficiency as an endocrine syndrome on the sole basis of low basal metabolic rate, considering the fact that a good number of normal individuals have metabolic rates in the low range. In addition, there are no clear-cut features that permit its easy differentiation and recognition. The picture is unclear; the subject polemic and not the purpose of this paper. Nevertheless, it is a fact that there are patients who do not respond to thyroid extract and do well when given triiodothyronine (Trit or T-3) or acetic acid analogs of thyroxine (triiodothyroacetic acid). Therefore, it is important that the clinician remember to try l-triiodothyronine when the patient does not respond to thyroid extract. These compounds, whose physiologic action has still not been clearly elucidated, are more active than thyroxine. There is an excellent review by Barker[9] for those who are interested.

Tumors Caused by Thyroid Insufficiency

Thyroid insufficiency—not iodine deficiency—is the most frequent cause of goiter today; endemic goiter, so commonly seen before the advent of iodized salt, has almost disappeared in the United States. Hypertrophy and hyperplasia result from increased thyrotropic hormone release from the pituitary gland and are secondary to a decreased output of thyroid hormone.

It is therefore not rational to perform thyroidectomies for a condition which is most often a compensatory reaction. Neither is there any reason to administer iodine to these patients since no iodine deficiency is present. The goiter may become multinodular. Only when it is large enough to cause pressure symptoms or to be cosmetically unsightly is surgery indicated. On the other hand, one may see a diffuse, firm, and rubbery enlargement of the entire gland similar to that of Graves's disease. However, the patient may show no evidence of thyrotoxicosis, even though at times the protein-bound iodine and uptake of I^{131} may be increased. Here again, diagnosis rests on clinical examination, not on laboratory figures.

We routinely advise our practitioners and surgeons to prescribe thyroid extract, 0.6 to 1.2 Gm. daily for all patients under fifty years of age, including those who have had surgery for nodular goiter. This is prophylactic treatment since the same factors that caused the goiter in the beginning are still in operation. It is therefore important to inhibit the output of thyrotropic hormone by giving the patient thyroid hormone to prevent later recurrence. Otherwise, the already existing thyroid deficiency will cause further increase in thyrotropic hormone output and further diminution of thyroid hormone. It is imperative that these patients be given substitute therapy with thyroid extract.*

Struma lymphomatosa (Hashimoto's disease) is usually associated with thyroid failure, the enlargement of the gland apparently being a compensatory reaction. It has been suggested[10] that the basic defect is destruction of thyroglobulin by autoantibodies. When the thyroid deficiency is corrected by administration of thyroid, the entire gland shrinks.

Laboratory Aids to Diagnosis

The importance of clinical awareness on the part of the physician and a high index of suspicion of hypothyroidism cannot be emphasized too much. However, in confirming clinical impressions, laboratory aids can be helpful and at times are necessary.

Basal Metabolic Rate.—The oldest of these tests, measurement of the basal metabolic rate, has long been utilized as an office procedure. It should be remembered, however, that the basal metabolic rate is a measurement of the resting metabolic state, not of thyroid function. Obtaining basal conditions is especially difficult in children and in tense and apprehensive patients, as well as in those in depressed states. Starr[11] has pointed out that transient nervousness during the test can raise a minus 30 metabolic rate as much as 20 points, thereby concealing the presence of severe basal hypometabolism. The necessary repetition of tests at least three times at appropriate intervals is time-consuming and expensive.

Heald[12] believes that the "chief and least frequently recognized" error arises in technic when weight formulas or surface area standards are used in calculating the basal metabolic rate of obese adolescents whose total body weights may consist of as much as 30 per cent fat so that false low rates are obtained.

Besides its lack of specificity and possible errors in technic, we have found the test unsuitable in many patients with asthma, cardiovascular and respiratory diseases, and neuroses. Certain other morbid processes and conditions also affect it. Readings will be elevated in diabetes insipidus, leukemias, pheochromocytoma, fever, pregnancy, and in patients who have ingested certain drugs, such as epinephrine. Low readings accompany Addison's disease, nephrosis and nephritis, anemic states, diabetes mellitus, panhypopituitarism with secondary hypothyroidism, and sometimes chronic arthritis and peptic ulcer.

If one keeps in mind the limitations of the basal metabolic rate test and takes the necessary precautions to avoid external influences on readings, the test can be of diagnostic value.

Serum Cholesterol.—Serum cholesterol levels, according to textbooks, tend to be high in untreated hypothyroidism, but it is well known that hypercholesteremia exists in other conditions as well, such as diabetes mellitus, the nephrotic syndrome, and xanthomatosis

In addition, levels can be misleading. In a recent study[13] we found that among 122 clinically euthyroid patients, 53 (43 per cent) showed elevated cholesterol values of above 250 mg. per 100 cc., while 6 patients (5 per cent) actually had figures below 150 mg. per 100 cc. Thus, 59 patients (48 per cent) had misleading serum cholesterol levels. In another unpublished study of 100 consecutive hypothyroid patients whose diagnoses were confirmed either by serum protein-bound iodine, radioactive iodine, or basal metabolic rate, the author found that 35 patients had normal cholesterol values, and 2 had low values. It is readily discernible that 37 per cent had misleading cholesterol values; in only 63 per cent were the levels helpful. Therefore, it is our opinion that hypercholesteremia is not entirely dependable as a sign of thyroid insufficiency.

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* Thyroid tablets were kindly supplied through the courtesy of J. A. Hubata, M.D., Medical Director, Armour Pharmaceutical Company. They are inexpensive and have demonstrated complete stability throughout the years.

The protein-bound iodine test, which measures the protein-bound iodine in the plasma, is preferred by Starr. He believes it is the most reliable screening test with an error of less than 10 per cent in skillful hands and is generally less expensive than the basal metabolic rate test.[11] Bloomer and Kyle[7] found it to be 98 per cent accurate.

Our observations, however, confirm those of Benua[14] that the special technical skill, care, and experience required for protein-bound iodine determinations and the possibility of iodine contamination in the laboratory contraindicate its routine use in general clinical laboratories where technical personnel changes are frequent. Cantarow[2] regards as the most important source of error the presence of large amounts of nonhormonal iodine, which appears to be incorporated in the protein precipitate and is measured as protein-bound iodine. This is particularly true following use of roentgenographic dyes containing iodine. A period of six months to one year is required for excretion of such iodine. Lipiodol instilled into the spinal canal or into the lungs may distort protein-bound iodine determinations for years. Low values are obtained following administration of mercurial diuretics, in hypoproteinemia, and in infectious diseases; elevated levels are found in euthyroid individuals following administration of radioactive iodine used in the treatment of thyroid cancer.

Radioactive Iodine Uptake Studies.—Radioactive iodine uptake studies are more reliable in hyperthyroidism than in hypothyroidism. Nevertheless, because they are simpler and less time-consuming than the protein-bound iodine determinations, they are used quite often as a screening procedure for hypothyroid patients. The avidity of the thyroid gland for iodine is a measure of its function. However, one must always be aware of the possibility of spurious elevations due to previous ingestion of iodine preparations in cough mixtures, to thyroid drugs, or to the use of opaque media for x-ray diagnosis, as well as to ingestion of drugs that influence iodine uptake (cortisone, ACTH, cough mixtures containing potassium iodide, and thiouracil derivatives).

The thyrotropic hormone test aids in the differentiation of hypothyroidism due to primary thyroid failure from that caused by hypopituitary deficiency.

The difference in the radioactive iodine (I^{131}) absorption before and after the administration of thyrotropic hormone is decisive. It is well known that thyrotropic hormone is effective only if the thyroid is intact. Therefore, the uptake values remain unchanged in primary hypothyroidism (thyroid failure) but are increased in secondary hypothyroidism (hypophyseal failure). This test is also useful in differentiating between struma lymphomatosa (Hashimoto's thyroiditis) and nodular goiter. Injection of thyroid-stimulating hormone in a normal person or in one with a nodular goiter results in a striking increase in the absorption of I^{131}. The administration of thyrotropin in struma lymphomatosa does not significantly raise the uptake of I^{131}.

The euthyroid patient with a hyperplastic goiter will have more volume of tissue to pick up iodine, and, therefore, his uptake will be high. A careful history and physical examination are most important in interpreting results. Clinical acumen is as essential as ever.

Various modifications of this test—salivary secretions, urinary excretion, and conversion ratio—are highly technical and of no special interest to the average general practitioner.

It is to be emphasized that these tests are laboratory aids. They are not infallible in the diagnosis of thyroid disease; they should not be accepted blindly. When they do not agree with clinical findings, it is prudent to have the tests repeated in another laboratory since even in the best hands technical errors can occur. In such instances we undertake a therapeutic trial of substitution therapy with desiccated thyroid. If the complaints of the patient are not corrected after careful and adequate therapy, the patient is not suffering from thyroid deficiency.

Other Tests.—Three other tests of thyroid function have been developed and are used in research laboratories at present. The triiodothyronine red cell uptake test, first reported by Hamolsky and others[15] early in 1957, is a rapid in vitro test. It does not require the administration of an isotope to the patient and permits evaluation of thyroid function under circumstances where other standard methods may not be applicable, such as following administration of iodine-containing compounds and during the course of treatment with thyroid medications.

The serum butanol extractable iodine test of thyroid function was introduced in 1951.[16] It had been noted that the serum protein-bound iodine was a useful tool for assaying thyroid function. However, with experience it was found that in some instances the values were at variance with clinical findings. Since thyroxin is extractable from the protein plasma in butanol and remains dissolved therein after alkali washing of the butanol, this was developed as a test method.

Another modality in use in academic circles is the electrophoretic analysis of plasma proteins.[17] There is almost general agreement that a characteristic of hypothyroidism is a decrease in the albumin fraction and an increase in the beta fraction. Some investigators even report an increase in the gamma fraction.

Diagnosis and Tests

Diagnosis of the presence or absence of thyroid disease is the province solely of the physician. It is he who must evaluate the laboratory data, together with the presenting signs and symptoms. His judgment must not be influenced by laboratory figures if they do not coincide with his clinical impressions.

It is imperative to remember at all times that none of the indexes of thyroid function can ever replace a complete history and physical examination. The best guide for further treatment is the clinical state of the patient. There is a good rule to follow: Do not treat the patient on the basis of abnormal laboratory findings in the absence of clinical evidence of disease. Therapeutic decision is based on clinical examination.

Summary

Hypothyroidism as a diagnosis is often missed because it is not considered a diagnostic possibility.

Hypothyroidism masquerades in the symptoms of gastrointestinal, gynecologic, neurologic, and circulatory diseases and in symptoms of growth problems in infants and children.

Hypothyroidism can generally be diagnosed in the physician's office. In case of doubt, a response to trial therapy with thyroid extract is proof of the patient's condition. Patients with so-called metabolic insufficiency who do not respond to thyroid extract should be given the more active l-triiodothyronine.

Hypertrophy and hyperplasia of the thyroid, including struma lymphomatosa, should be treated with thyroid extract to correct the underlying thyroid deficiency.

Laboratory tests should be regarded only as aids in confirming clinical suspicions of hypothyroidism. Merits and limitations of the basal metabolic rate, protein-bound iodine, and I^{131} tests are discussed. The triiodothyronine red cell uptake test, serum

butanol extractable iodine test, and plasma protein index are useful in research.

A careful history and physical examination plus the clinical acumen of the physician are the best guides to the diagnosis of hypothyroidism.

11 East 93rd Street

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Treatment of Upper Respiratory Infections in Infants[*]

ALFRED J. VIGNEC, M.D., AND JESUS G. KUAN, M.D., NEW YORK CITY

(From the Department of Pediatrics, New York Foundling Hospital)

FOR almost a decade prior to 1946 the sulfonamides had proved of inestimable value in the treatment of bacterial infections and had not only reduced greatly the mortality rates of diseases due to bacterial agents, but also had reduced the duration of illness. The introduction of the antibiotics has led to their widespread use.

However, experience has demonstrated that excessive dependence on antibiotics is not an unmixed blessing: Severe side-effects, as well as the development of resistant bacterial strains, have tempered somewhat the earlier enthusiasm over these drugs.[1,2] Interest in the sulfonamides has been reawakened by the development of new preparations producing fewer side-reactions and exerting therapeutic effects in doses administered as infrequently as once or twice daily, this latter feature being of particular interest to pediatricians. In addition to these attributes, the sulfonamide preparations are decidedly less expensive than the antibiotics. It is hardly necessary to point out that there is a growing awareness and concern on the part of the public concerning the cost of medical care.

One of the more recently developed sulfonamide preparations is sulfisoxazole acetyl (Lipo Gantrisin) suspended in a lipid, homogenized emulsion.[3,4] Our interest in this preparation was aroused because of its reputed ease of administration as well as its effectiveness in maintaining therapeutic blood levels on a twelve-hour schedule. When one is dealing with large numbers of small infants, any technics which reduce the need for nursing procedures are welcomed. Our purpose in conducting this study was not only to test the effectiveness of sulfisoxazole acetyl in the common respiratory illnesses of infants, but also to determine its comparative effectiveness with that of the tetracyclines. As a corollary, we were interested also in the action of the drug on the bacterial flora of the nose and throat.

Methods and Material

The New York Foundling Hospital was the main source of clinical material for this study. This institution houses approximately 300 infants awaiting social disposition, and admissions are based on social need rather than on illness. However, some infants are admitted requiring medical attention, and, while awaiting social disposition, they are subject to respiratory infections, the common contagious diseases, and the gamut of other infections peculiar to infants, particularly infants living in the congregate.

The basic plan of study was an alternating one utilizing sulfisoxazole acetyl and one of the tetracyclines (chiefly Achromycin tetracycline but also Terramycin) as therapeutic agents. The former was in a concentrated form with 1 Gm. of sulfisoxazole acetyl to the teaspoon. Both medications were administered orally in fixed doses by weight.

A total of 50 acutely ill patients were observed with some preponderance of males (Table I). Twenty-six patients were treated with sulfisoxazole acetyl and 24 patients were treated with tetracycline. The average age was fourteen months with a range of from five and one-half to thirty-six months.

All of the patients observed suffered from

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[*] This study was aided in part by a grant from the Roche Laboratories, Nutley, New Jersey.

TABLE I.—Age and Sex of 50 Patients Treated with Sulfisoxazole Acetyl and Tetracycline

Patients	Sulfisoxazole Acetyl	Tetracycline
Males	15	15
Females	11	9
Average age (months)	12	16
Age range (months)	$5^{1}/_{2}$ to 24	$5^{1}/_{2}$ to 36

TABLE II.—Diagnosis and Number of Patients Treated with Sulfisoxazole and Tetracycline

Diagnosis	Sulfisoxazole Acetyl	Tetracycline
Upper respiratory infection	7	6
Acute tonsilitis	7	9
Acute pharyngitis	5	5
Nasopharyngitis	4	3
Acute bronchitis	3	1
Totals	26	24

TABLE III.—Bacteriologic Diagnosis and Response of Patients Treated with Sulfisoxazole and Tetracycline

Diagnosis	Sulfisoxazole Acetyl Pre-medication	Sulfisoxazole Acetyl Post-medication	Tetracycline Pre-medication	Tetracycline Post-medication
Hemolytic Staph. albus	7	6	1	. . .
Nonhemolytic Staph. albus	9	8	9	9
Hemolytic Staph. aureus	14/5*	12/4*	12/4*	12/2*
Nonhemolytic Staph. aureus	1	. . .	2	. . .
β-hemolytic streptococcus	3	2	6	2
Nonhemolytic streptococcus	. . .	1	1	. . .
Pneumococcus	. . .	. . .	1	. . .
Streptococcus viridans	8	5	6	3
H. influenzae (H. hemolyticus)	2	. . .	. . .	. . .
Escherichia coli	. . .	. . .	1	. . .
Gram-negative diplococci (nonspecific)	3	2	1	2
Neisseria catarrhalis	. . .	. . .	1	. . .
Diphtheroids	. . .	1	1	. . .
Bacillus aerogenes	. . .	1	1	. . .

* Lower number designates coagulase positive.

upper respiratory infections (Table II). It will be noted that no cases of pulmonary or otologic infection occurred. These infections are observed occasionally in the institution, but the incidence is low, possibly due to prompt treatment.

For the purpose of this study, no variations in the usually recommended dosages were attempted, since we were mainly interested in a success-failure appraisal.

Dosage Schedules

Vanilla-mint flavored sulfisoxazole acetyl, 150 mg. per kilogram every twenty-four hours divided in two equal doses, was administered at twelve-hour intervals. Tetracycline, 30 mg. per kilogram every twenty-four hours divided in four equal doses, was administered at six-hour intervals.

Medication was continued until the temperature remained normal for at least forty-eight hours. If the temperature did not stabilize within forty-eight hours after the start of medication or if it failed to reach normal levels after four or five days of therapy, the course was considered a failure, and substitute medications were administered.

Nose and throat cultures were obtained separately with sterile cotton swabs and were cultured immediately on blood agar plates. Subcultures were utilized, when necessary, for identification. Parenthetically, it should be noted here that, while no attempt was made to obtain a random sampling of the clinical material, a degree of sampling was obtained by this bacteriologic requirement. Patients whose nose and throat cultures could not be incubated promptly were not incorporated in the study.

The usual laboratory work, consisting of blood counts and urine tests, was done, and roentgenograms were taken when indicated. Careful daily clinical records were maintained with emphasis on acceptance, gastrointestinal symptoms, and dermatologic reactions.

Results

The bacteriology was diversified, and several features of the flora are noteworthy

TABLE IV.—RESPONSE OF FOUR BACTERIOLOGIC DIAGNOSES TO TREATMENT WITH SULFISOXAZOLE AND TETRACYCLINE

Diagnosis	Sulfisoxazole Acetyl Pre-medication	Sulfisoxazole Acetyl Post-medication	Tetracycline Pre-medication	Tetracycline Post-medication
Hemolytic streptococcus	3	2	6	2
H. influenzae	2	. . .	. . .	. . .
Pneumococcus	. . .	. . .	1	. . .
Hemolytic Staph. aureus (coagulase positive)	5	4	4	2

TABLE V.—THERAPEUTIC RESPONSE IN TREATMENT WITH SULFISOXAZOLE AND TETRACYCLINE

Result	Sulfisoxazole Acetyl	Tetracycline
Success	23	23
Failure	3	1

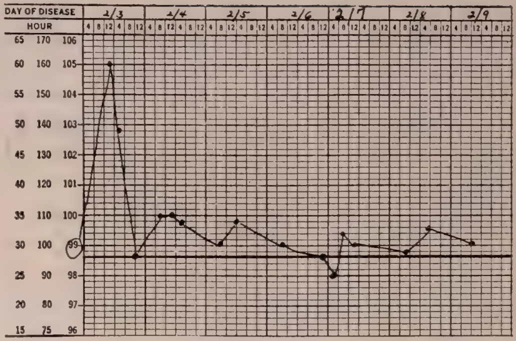

FIG. 1. *Case 1.*—Temperature chart of patient.

(Table III). The hemolytic Staphylococci aureus, coagulase positive or negative, were not eliminated readily by either drug in the dosages utilized regardless of the clinical course. Other pathogens seemed more susceptible. An analysis of Table IV shows that 2 patients harboring Hemophilus influenzae were free of this organism following sulfisoxazole acetyl therapy; the same was true of 1 patient with pneumococcus who was treated with tetracycline. Although hemolytic streptococcus and hemolytic Staph. aureus positive were not eliminated in all treated patients, the number of colonies of these organisms had decreased following therapy. The significance of bacteriologic studies is discussed in the following portion.

The therapeutic response with both drugs was good, and no complications were encountered (Table V). Sulfisoxazole acetyl was ineffective in 2 instances of hemolytic Staph. aureus coagulase positive infections and in 1 instance of β-hemolytic streptococcus infection. On the other hand, success was obtained in 3 patients harboring hemolytic Staph. aureus, coagulase positive. The single failure with tetracycline therapy was ascribed to a hemolytic Staph. aureus, coagulase positive infection, but this drug was effective also in 3 other instances of infection by these organisms. The 4 failures responded either to penicillin or to chloromycetin without complication.

Temperatures fell to normal limits within an average of four days with sulfisoxazole acetyl therapy and within five days with tetracycline therapy. No side-effects were observed with either drug in this series.

Case Reports

CASE 1.—A fifteen-month-old female was apparently well until she suddenly developed hyperpyrexia, and her temperature spiked to 105 F. The only accompanying symptom noted at that time was the passage of soft stools with a water margin and some blood streaks. She had had a mild upper respiratory infection four weeks previously but recovered with aspirin as the only medication.

On current examination her nose was found to be congested and her throat and pharynx were found to be mildy infected. Her chest was clear, and an examination of the central nervous system showed negative findings. Nose and throat cultures indicated the presence of hemolytic Staph. aureus and β-hemolytic streptococcus. Her condition was diagnosed as acute pharyngitis. She was given aspirin, $^1/_2$ grain every four hours, until her temperature fell below 101 F. and an alcohol-water sponging was given, as required, until her temperature fell below 103 F. Sulfisoxazole acetyl, $1^1/_2$ teaspoons immediately and $^3/_4$ teaspoon every twelve hours, was administered. The following day her temperature fell to 100 F., and her stools were no longer bloody, but her pharynx was still infected. On the third

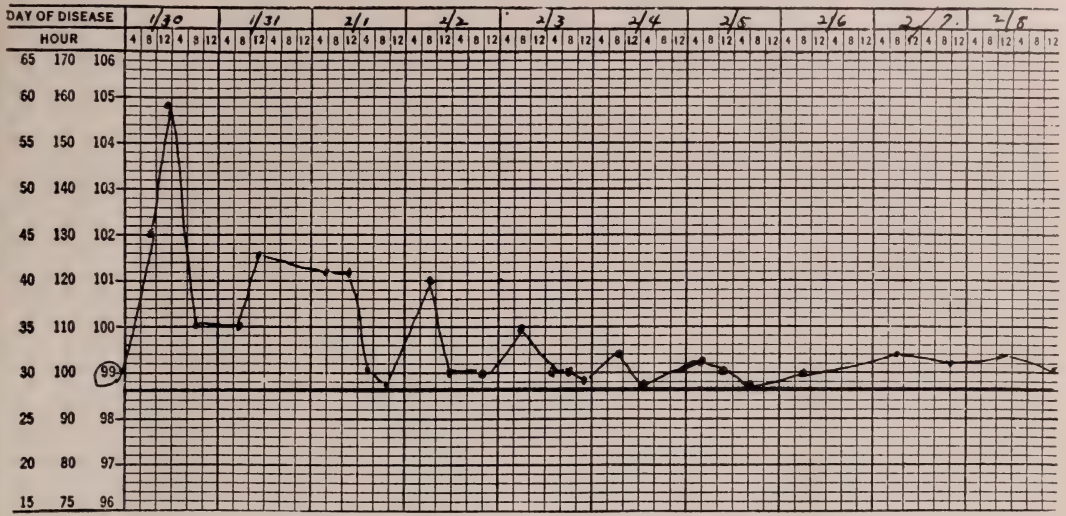

Fig. 2. *Case 2.*—Temperature chart of patient.

day she was much improved with appetite, activity, and temperature within normal limits (Fig. 1). By the fourth day her pharynx was no longer infected, and on the sixth day she was clinically cured and was taken off medication. At this time the nose and throat cultures still showed the presence of hemolytic streptococcus and gram-negative diplococci, although these no longer appeared to be pathogenic.

Case 2.—A five-and-half-month-old male had started coughing and was noted to have nasal congestion one day previous to the development of fever. At 10:00 A.M. his temperature was 102 F., and at 1:30 P.M. it spiked to 104.8 F. (Fig. 2). Although he appeared to be in no acute distress, his respiration was slightly rapid. There was no evidence of meningeal irritation. His condition presented heavy nasal congestion, mild infection of the pharynx, and mildly inflamed eardrums. His chest was clear with no rales present.

The laboratory examination was as follows: The white blood count was 7,400; polymorphonuclears, 29 per cent; lymphocytes, 63 per cent; metamyelocytes, 5 per cent; and eosinophils, 1 per cent. A throat culture disclosed Aerobacter aerogenes, Streptococcus viridans, and H. hemolyticus; the chest x-ray film showed no definite evidence of pneumonia.

The patient's condition was diagnosed as acute diffused upper respiratory infection. Sulfisoxazole acetyl, $^1/_2$ teaspoon every twelve hours, was prescribed together with aspirin, $^1/_2$ grain every four hours, until the temperature fell below 101 F., and an alcohol-water sponging was given until the temperature fell below 103 F. The following day he was clinically improved, his respiration was normal, and his chest was clear, but his pharynx was still mildly infected, and his nose was still stuffy. Neosynephrine hydrochloride, 2 drops to each nostril three times a day, was added to the therapy. On the fourth day the patient still had a low-grade fever; however, he was not toxic, and his appetite was good. He coughed occasionally, and expiratory wheezes were heard on auscultation of the chest. On the fifth day he was very much improved and afebrile with his ears and throat clear. His nose was still slightly stuffy, and expiratory wheezes were still audible on auscultation. On the seventh day his only symptom was crepitant rales audible over the left lower lung field. The following day he appeared clinically recovered. A chest film at this time showed evidence that pneumonia had been present. On the tenth day the patient was fully recovered. The nose and throat cultures showed Aerobacter aerogenes and hemolytic Staph. albus.

Case 3.—A six-month-old female had been reasonably well until a temperature elevation of 103.6 F. was noted (Fig. 3). The infant had a running nose, but no other symptoms were observed. Although she was active and alert, her throat was inflamed. The nose and throat cultures showed the presence of hemolytic Staph. aureus, coagulase positive. Acute pharyngitis

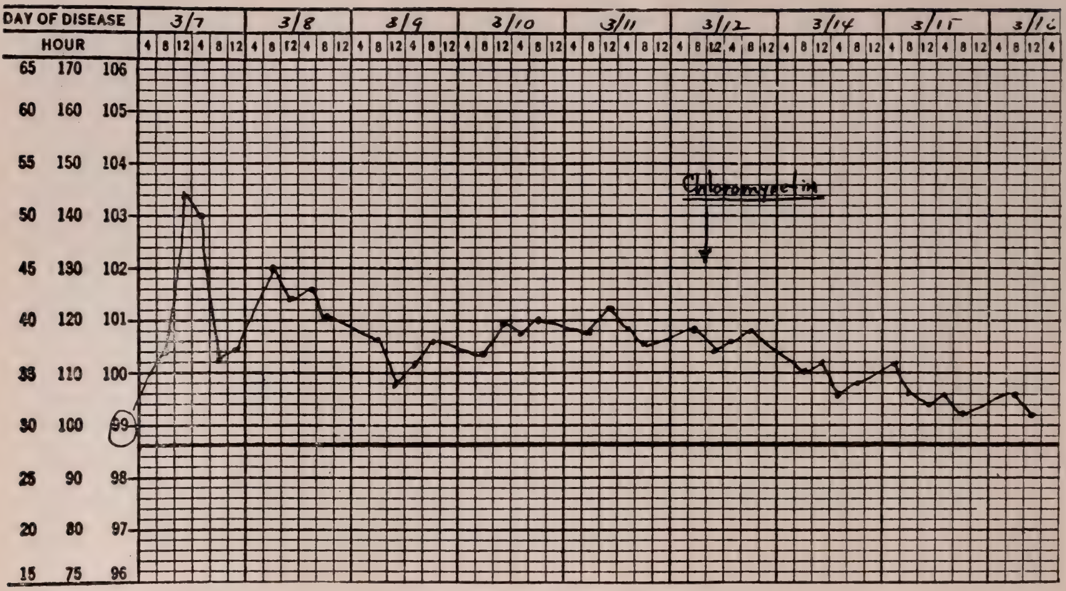

FIG. 3. *Case 3.*—Temperature chart of patient.

was diagnosed. Sulfisoxazole acetyl was prescribed, 1 teaspoon immediately, followed by $^1/_2$ teaspoon every twelve hours, and Novahistine elixir, 20 drops three times a day. Ancillary therapy consisted of aspirin every four hours until her temperature dropped to 101 F. and an application of alcohol-water sponges until the temperature was under 103 F. On the third day her temperature was still elevated, her pharynx was still markedly infected, and nasal discharge was moderately profuse. Other symptoms were not noteworthy. When her symptoms persisted on the fifth day, chloromycetin was substituted for sulfisoxazole acetyl. Four days later her throat was clear, and medication was discontinued. The nose and throat cultures still showed the presence of hemolytic Staph. aureus.

Comment

While the number of cases studied was relatively small, the results obtained with sulfisoxazole acetyl correlated well with data available from a larger series. Hagler *et al.*,[5] Carter and Maley,[6] and Townsend[7] all achieved successful results ranging from 86 to 93 per cent. Our success with 23 cases and failure with 3 cases would give us a per cent of success of 86.4. Perhaps this demonstrates that our bacteriologic requirements were effective in giving us a reasonably good random sampling. Our 24 cases treated with tetracycline also correlated well with the larger group of cases studied by Valente and Nemir.[8]

There are several aspects to be considered in interpreting bacteriologic data. The mere presence of certain organisms does not imply disease. This is brought out in the work of Rabe,[9–11] Michael,[12] and Willard and Hansen[13] who found potentially pathogenic bacteria in the flora of normal patients. Michael stated that, "The location of the point at which these potential pathogens become of clinical significance constitutes a tantalizing enigma." There is considerable disagreement among different investigators as to just what is the normal flora of the upper respiratory tract. The profusion of organisms and the inherent susceptibility or resistance of the host are basic factors of a complex nature; therefore, clinical manifestations in conjunction with quantitative bacterial analyses are important, perhaps with clinical signs—that is, the presence or absence of inflammation, crusting, effusion, and fever—which are the deciding factors in disease and the success or failure of treatment. Bacteriologic studies are of definite value in establishing the etiology of the disease, deciding the mode of therapy, and evaluating the results of therapy. Adequate patient follow-up is as important as the primary therapy in curtailing a flare-up of pathogenic bacteria.

It is quite possible that if we had used a more flexible treatment program, some of our failures might have resulted in success. A prolongation of therapy might have served to reverse more of our bacteriologic flora; however, our object was to observe the effects of treatment in as simplified a plan as possible. Clinically we were well pleased with the results. Patients accepted and retained the medication quite satisfactorily, and none of the patients in either group suffered from side-effects. We were especially happy with the twelve-hour dosage schedule of sulfisoxazole acetyl, and, curiously enough, we found that the nursing personnel had been so conditioned to four-hour medication schedules that at first they were inclined to be dubious about the treatment.

Summary

Twenty-six infants with acute upper respiratory infections were treated with sulfisoxazole acetyl (Lipo Gantrisin) with 23 successful results and 3 failures. A comparable group of 24 infants received a tetracycline preparation with 23 successes and 1 failure. Sulfisoxazole acetyl was approximately equal in effectiveness and safety to the tetracyclines in clearing the clinical symptoms, although neither the sulfonamide nor the antibiotic eliminated the hemolytic Staphylococcus aureus, coagulase positive or negative.

The vanilla-mint-flavored sulfisoxazole acetyl was well accepted by the patients. In view of the advantages of the two-a-day medication, the absence of the development of drug resistance, and its lower cost to the patient, sulfisoxazole acetyl would seem to be a useful drug in the treatment of the common respiratory diseases of infants when antibacterial medication is indicated.

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We should always keep a corner of our minds open and free, that we may make room for the opinions of our friends.—Joseph Joubert

Symposium and Panel Discussion

PRESENT STATUS OF ORAL HYPOGLYCEMIC AGENTS

Moderator

GROSVENOR W. BISSELL, M.D., BUFFALO, *Chief of Medical Service, Veterans Administration Hospital; Associate Professor of Medicine, University of Buffalo School of Medicine*

Panelists

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KERMIT L. PINES, M.D., NEW YORK CITY, *Associate Attending Physician, Presbyterian Hospital; Assistant Professor of Clinical Medicine, College of Physicians and Surgeons, Columbia University*

LEON M. LEVITT, M.D., BROOKLYN, *Attending Physician, Kings County Hospital Center and Long Island College Hospital; Clinical Assistant Professor of Medicine, State University of New York Downstate Medical Center*

Introduction

GROSVENOR W. BISSELL, M.D.: The subject of the panel this afternoon is "The Present Status of Oral Hypoglycemic Agents," and we are going to begin by asking each of the panelists to discuss some phase of this topic in a more or less formal way. I shall introduce the panelists as I announce their various subjects. While they are talking, those of you in the audience who have questions should write them out and pass them up to me so that they can be answered during the informal part of the discussion. At this time I'll ask the panelists to take their places at the table. The Chair will take the prerogative of not accepting any oral questions from the floor. I might also say that I am rather pleased that a few questions have been mailed in to me, and these will be answered during the course of our subsequent discussion.

As an introduction, I think it should be remembered that the subject under consideration this afternoon is by no means new. The oral hypoglycemic agents were under investigation before insulin, and some of us in the room remember the work of Watanabe on guanidin and, later, the compounds synthalin and galegin. Some of the more recent work was obscured by the events of World War II. The work of Loubatieres in France on a hypoglycemic thiodiazol, IPTD, went unnoticed for a long time only to be rediscovered after the observations of Franke and Fuchs in Germany in 1955 relating to carbutamide.

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Since then there has been intensive investigation of oral hypoglycemic agents in this country beginning with carbutamide and going on to tolbutamide, chlorpropamide, phenylethyldiguanide, metahexamide, and two or three others which are now under early clinical investigation.

This has been an intriguing investigation from many viewpoints. It has been particularly interesting because these agents are therapeutically permissive since insulin corrects the specific deficiency in the diabetic, and thus there is not a crucial necessity for another treatment of diabetes mellitus. These are agents which merely permit an adjunctive type of therapy should the physician elect to employ them.

The investigation has progressed against the background of very firm conviction on the part of some that these agents have no place in the therapy of diabetes. Today I think even the most stalwart protagonists of insulin have to agree that these agents do have a very definite place in the physician's therapeutic armamentarium.

There has also been drama in the investigation of these drugs. In 1955 one, carbutamide, was abruptly withdrawn from clinical investigation in the United States because of the toxicity attendant on its use; just yesterday a number of us interested in the investigation of metahexamide were informed that one of the two large laboratories producing this drug was withdrawing it from the clinical investigatory field, also because of excessive toxicity.

More than this, I think all of us interested in the study of diabetes are grateful for this era of oral hypoglycemic agents because it has reawakened an interest in many basic unknown factors in the pathogenesis of diabetes mellitus and its complications. Perhaps in the final analysis the greatest contribution of the oral agents will be in this recrudescence of interest in a very old disease and what really causes it.

Without further comment I would like to begin the introduction of the panel by calling on Joseph L. Izzo, M.D.

Mode of Action of Sulfonylurea Derivatives in Diabetes Mellitus

Joseph L. Izzo, M.D.: I should like to preface my discussion by stating at the outset that despite the intensive clinical and experimental studies that have been carried out thus far, the precise manner in which the sulfonylurea derivatives lower blood sugar remains to be elucidated. Nevertheless, certain facts have emerged from the accumulating volume of clinical and experimental data which do shed some light on the nature and locus of action of the sulfonylureas.

It is generally agreed that the sulfonylurea derivatives are not substitutes for insulin. They do not lower blood sugar in the depancreatized animal or in one which has been made severely diabetic by alloxan. Neither do they lower blood sugar level in the depancreatized human nor in the severe, juvenile, "growth-onset," unstable type of diabetic patient. On the other hand, the sulfonylurea compounds do lower the level of blood sugar in normal animals and humans and also in certain types of diabetic patients, mainly the adult, mild, obese, "maturity-onset," stable type of patient. Before discussing the reasons for the differences in response of stable and unstable diabetics to the sulfonylurea compounds, it might be worth while to digress a moment to discuss the basic difference between stable and unstable diabetics.

The basic difference appears to be related to variations in their residual insulogenic capacity. The capacity of the pancreatic islets to produce insulin seems to be critically impaired or lacking altogether in the unstable diabetic, whereas in the stable diabetic the reduction in insulogenic function does not appear to be so severe. Perhaps a comparison of the metabolic responses of a typical stable and a typical unstable diabetic to withdrawal of insulin or reduction in dose from optimal to suboptimal will serve to illustrate this point more clearly.

Case 1 is an illustration of the typical response in the daily levels of blood and uri-

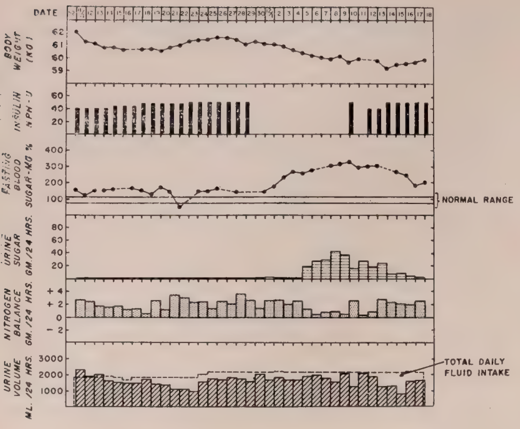

FIG. 1. Typical effect of complete withdrawal of insulin on daily levels of blood and urinary glucose and on nitrogen and water balances in a seventy-eight-year-old female patient (Case 1) with stable diabetes mellitus (*Courtesy of Diabetes*[1]).

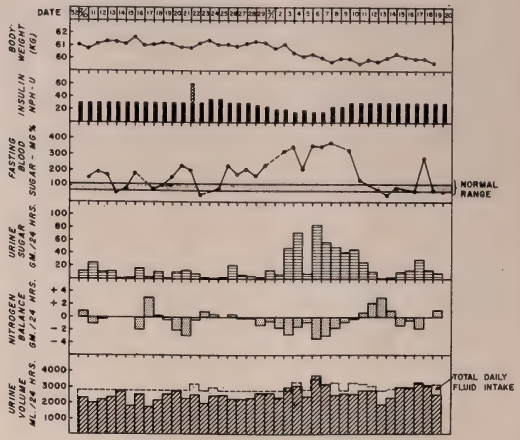

FIG. 2. Typical effect of reduction in daily insulin dose from optimal to suboptimal on daily levels of blood and urinary glucose and on nitrogen and water balances in a sixty-year-old female patient (Case 2) with unstable diabetes mellitus (*Courtesy of Diabetes*[1]).

nary sugar and nitrogen balance of a stable diabetic in the metabolism ward to optimal insulin therapy and its withdrawal (Fig. 1[1]). With the patient on a chemically constant diet and 40 to 50 units of NPH insulin per day, the fasting blood sugar was readily maintained at nearly normal levels without glycosuria or hypoglycemic reactions to insulin at any time of the day. Discontinuance of exogenous insulin for a period of ten days resulted in a gradual rise of the fasting blood sugar with a tendency to level off in the neighborhood of 300 mg. per cent and a delayed appearance of glycosuria up to 30 to 40 Gm. daily. Ketonuria was not observed during the period of insulin withdrawal. The patient lost some body weight and tended to excrete more nitrogen during the period of moderate hyperglycemia and glycosuria but remained in positive nitrogen balance throughout the entire experimental period. Contrast these responses with those of the unstable patient.

Case 2 illustrates the typical response in the levels of blood and urinary sugar and nitrogen balance of an unstable diabetic to optimal and suboptimal insulin therapy under controlled conditions in the metabolism ward (Fig. 2[1]). Despite a weighed diet constant in chemical composition and an optimal dose of insulin (35 to 40 units of NPH insulin per day) this patient demonstrates the characteristic fluctuations of the fasting blood sugar level above and below the normal range as well as irregular, intermittent glycosuria. Note that merely reducing the insulin dose to 50 to 60 per cent of optimal was followed promptly by a progressive but irregular rise in blood and urinary sugar levels, increased urine output, ketonuria (not shown in Fig. 2), weight loss, and increased excretion of urinary nitrogen with reversal of nitrogen balance from positive to negative. Restitution of insulin therapy at optimal doses was followed by a prompt return of the blood and urinary sugar to and below control levels, disappearance of ketonuria, and restoration of nitrogen balance from negative to positive. Note that in this patient there was a temporary rebound in sugar levels and nitrogen excretion during the recovery period.

The differences in metabolic responses of stable and unstable diabetics to reduction in dose or withdrawal of insulin are consistent with the concept that insulogenic function is much more markedly impaired in the unstable than in the stable diabetic. Failure of the sulfonylureas to act in the

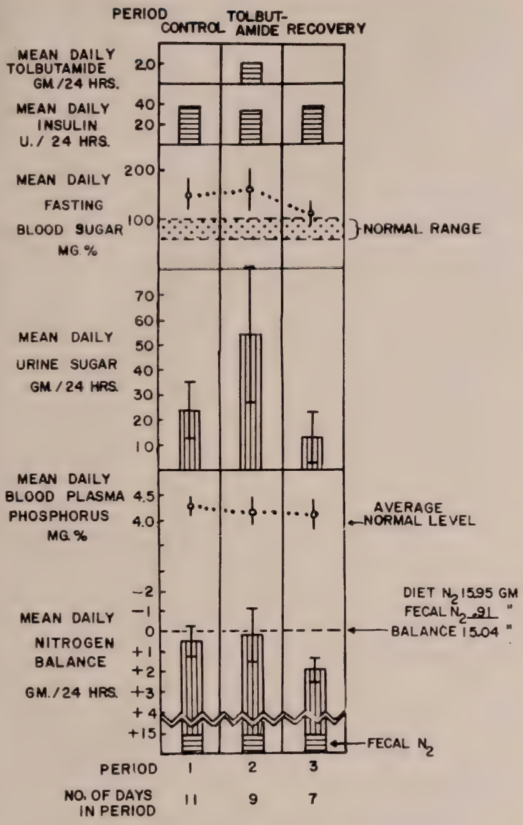

FIG. 3. Effect of continued administration of tolbutamide in a fifty-year-old male patient (Case 3) with severe unstable diabetes mellitus of long duration maintained on suboptimal daily doses of insulin. All data are expressed as mean daily values ±2 S.E. about the mean (*Courtesy of the Annals of the New York Academy of Sciences*[2]).

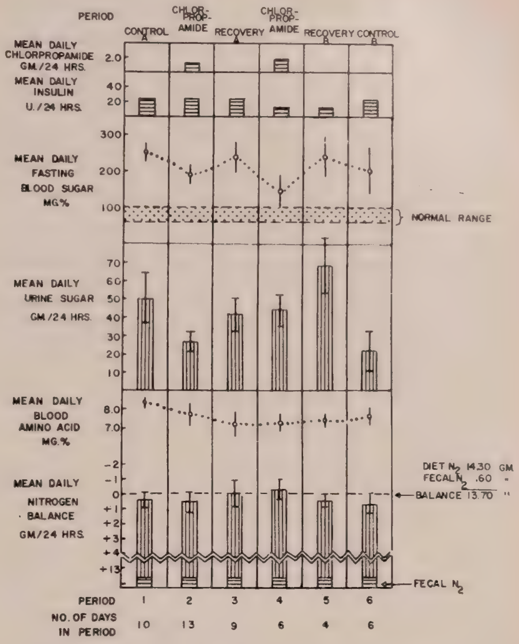

FIG. 4. Effect of continued administration of chlorpropamide in a thirty-one-year-old female patient (Case 4) with severe, unstable diabetes mellitus of long duration maintained on suboptimal doses of insulin. All data are expressed as mean daily values ±2 S.E. about the mean (*Courtesy of the Annals of the New York Academy of Sciences*[2]).

severe, unstable diabetic suggests not only that a certain amount of islet cell function is essential for the hypoglycemic action of these compounds but also that these compounds may in some manner stimulate islet cell function. In fact, because the sulfonylurea compounds fail to lower blood sugar in animals that have been made severely diabetic either by administration of alloxan or by pancreatectomy and because they fail to act in the human with the severe, unstable, juvenile type of diabetes or in the human who has been rendered diabetic by complete pancreatectomy, this failure has been marshalled as key evidence to support the concept that the mode of action of the sulfonylureas is via stimulation of the beta cells of the islets of Langerhans to secrete or release insulin. However, this hypothesis fails to account for some well-established experimental observations.

There is ample evidence from the dog that the presence of the pancreas is not absolutely essential for the hypoglycemic action of the sulfonylurea compounds. Several laboratories have been able to obtain a blood sugar-lowering effect of sulfonylurea derivatives in totally depancreatized dogs treated with suboptimal doses of insulin. While well-defined hypoglycemic action of the sulfonylureas in unstable diabetics treated with insulin has not been consistently observed, nevertheless, in some cases a definite effect may be seen with certain derivatives. Figures 3 and 4[2] illustrate this point.

Figure 3 shows the commonly observed lack of response to sulfonylureas in severe, unstable diabetics treated with insulin. The oral administration of 2 Gm. of tolbutamide daily for twelve days to a fifty-year-old male patient (Case 3) with unstable diabetes of long duration did not lower the levels of blood or urinary sugar. In fact, the glycosuria tended to be greater during the period of tolbutamide administration. This patient received only sufficient insulin daily to maintain the fasting blood sugar level at slightly above normal range and the mean twenty-four-hour excretion of glucose in the urine at approximately 25 Gm. Ketonuria was uniformly absent in all urine specimens. Tolbutamide also failed to affect the mean levels of plasma inorganic phosphorus and mean daily nitrogen balances. Note that with the spontaneous fall in levels of blood and urinary sugar (recovery period), the nitrogen balance became more positive, even though the daily dose of insulin was constant throughout the experiment.

Figure 4 depicts the response to chlorpropamide administered perorally to a thirty-one-year-old female patient (Case 4) while she was receiving insulin in suboptimal quantities. This patient also had severe, unstable diabetes of long duration. On 24 units of insulin daily (20 units of Lente insulin plus 4 units of crystalline insulin), hyperglycemia and glycosuria of moderate degree resulted. A significant reduction in levels of blood and urinary sugar ($P < 0.05$) was achieved with the administration of 1 to 1.5 Gm. of chlorpropamide per day in addition to the 24 units of insulin per day for sixteen days (period 2). The discontinuance of chlorpropamide (period 3) was associated with a return of both the fasting blood sugar and the mean twenty-four-hour urinary sugar to control values. The readministration of chlorpropamide at a higher dose level, 2 Gm. per day, again caused a significant lowering of the fasting blood sugar, even though the insulin dose was reduced to only 16 units per day. There was no change in the urinary sugar level. When the chlorpropamide was discontinued but the daily dose of insulin maintained at 16 units per day, the fasting blood sugar level moved toward but did not exceed the control levels, whereas the mean daily urinary excretion of glucose exceeded that of any previous period. Increasing the insulin to the previous level (24 units per day) only resulted in a slight but insignificant fall in the mean fasting daily level of blood glucose but a sharp fall in urinary glucose excretion. Chlorpropamide appeared to have no effect on either the level of blood α-amino nitrogen or on nitrogen balance.

The lowering of blood and urinary sugar levels in Case 4 by chlorpropamide suggests that sulfonylurea compounds may have a hypoglycemic action in some cases of severe, unstable diabetics when a certain minimal amount of insulin is administered. Since this patient had been shown previously to be critically lacking in endogenous insulin, it would be difficult to explain the hypoglycemic response to chlorpropamide on the basis of stimulation of the insulogenic function of the pancreas. However, it should also be pointed out that the amount of chlorpropamide which was necessary to achieve a significant lowering of the blood sugar in this patient was much greater than the amount that is usually necessary ($<$ 0.5 Gm. per day) to obtain a definite effect in stable diabetics.

Another experimental observation that does not appear to be explained adequately by the theory that the hypoglycemic action of the sulfonylurea drugs is due mainly to stimulation of insulin release by beta cells is the well-established fact that these agents suppress glucose release by the liver. This fact becomes even more remarkable when it is considered in the light of experimental evidence, the bulk of which suggests that the oral hypoglycemic agents do not enhance the peripheral utilization of glucose.

Despite intensive studies on the problem, the mechanisms by which sulfonylurea compounds reduce hepatic glucose output are not well understood. Inhibition of certain enzymes which are probably in-

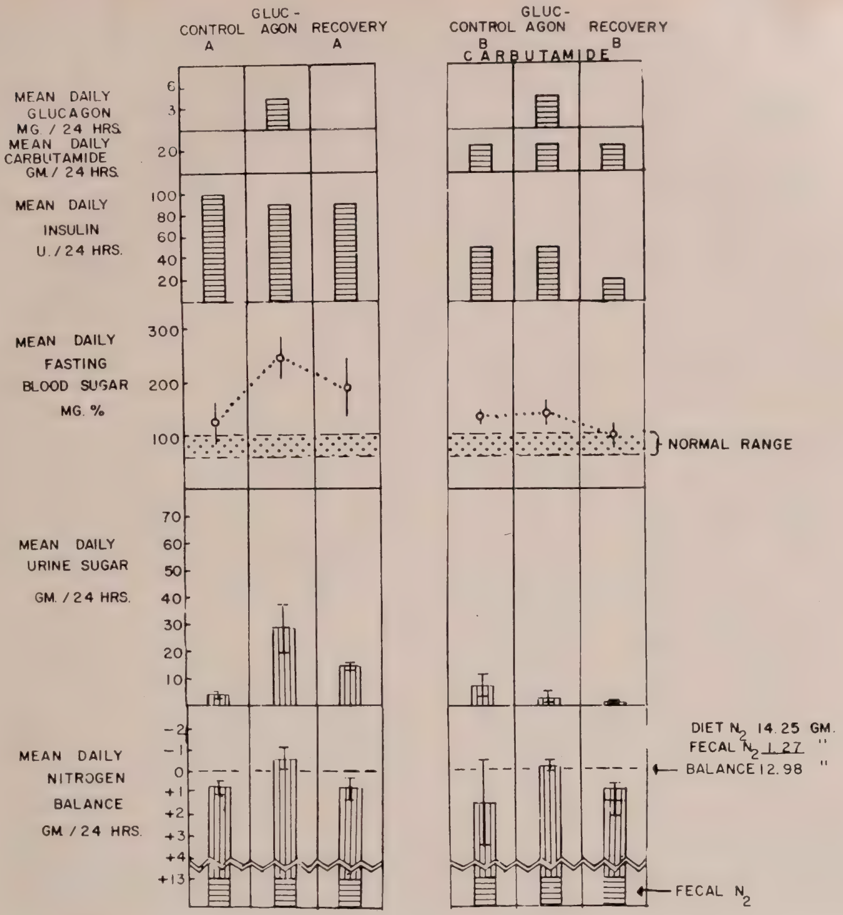

FIG. 5. Comparison of responses of daily blood and urinary glucose levels and daily nitrogen balance to intramuscular injections of glucagon every eight hours for six-day periods in a sulfonylurea-responsive sixty-four-year-old female patient (Case 5) with stable diabetes of long duration when treated with insulin and when treated with carbutamide. All data are expressed as mean daily values ±2 S.E. (*Courtesy of the Annals of the New York Academy of Sciences*[2]).

volved in the regulation of glucose production by the liver, that is, glucose-6-phosphatase and phosphorylase, has been demonstrated by the in vitro addition of carbutamide or tolbutamide. However, the concentration of these substances required to produce a tangible effect is too high to have much physiologic significance. Decreased conversion of galactose or fructose to glucose by the liver has been observed during the period of hypoglycemia induced by administration of sulfonylureas, and this has suggested the possibility that selective interference with hepatic gluconeogenesis may contribute significantly to the hypoglycemia. With this possibility in mind we investigated the effects of carbutamide on hepatic gluconeogenesis and glycogenolysis in two diabetic subjects who showed a striking hypoglycemic response to the drug. Prolonged administration of carbutamide was tested for its effect on the ability of repeated daily intramuscular injections of glucagon to increase the urinary excretion of nitrogen as well as to increase the levels of glucose in blood and urine. Previous studies from this laboratory demonstrated that the increased protein catabolism which seems to be an integral part of the hyperglycemic-glycogenolytic action of glucagon is related to an

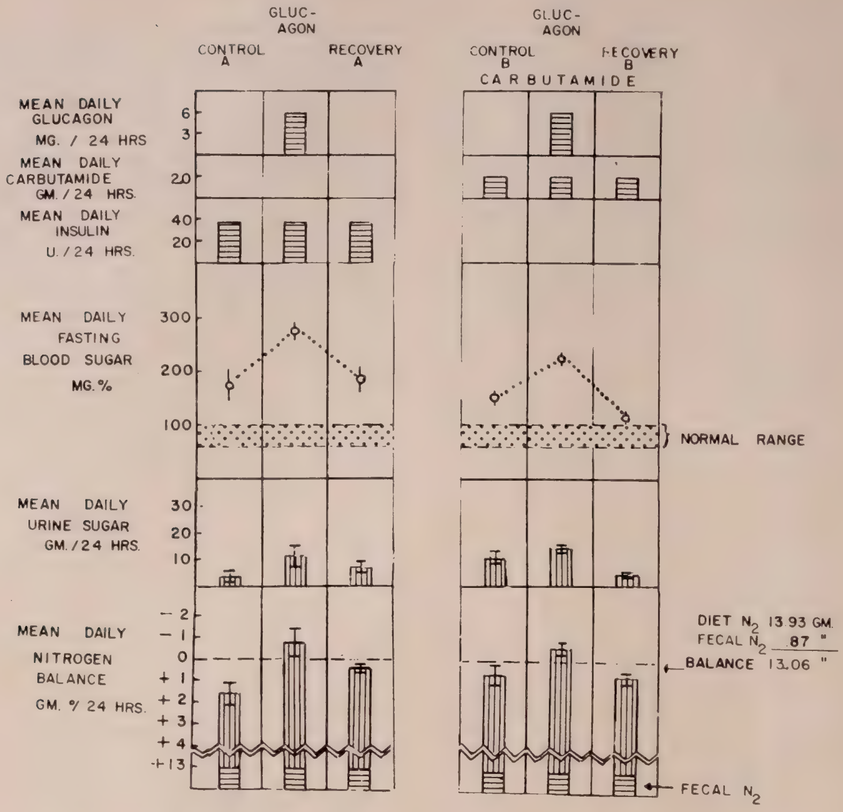

FIG. 6. Comparison of responses of daily blood and urinary glucose levels and daily nitrogen balance to intramuscular injections of glucagon every eight hours for six-day periods in a sulfonylurea-responsive, nineteen-year-old female patient with diabetes of less than two months onset when treated with insulin and when treated with carbutamide plus insulin. All data are expressed as mean daily values of ±2 S.E. (*Courtesy of the Annals of the New York Academy of Sciences*[2]).

enhanced hepatic gluconeogenesis from protein and amino acids.

Carbutamide markedly suppressed the hyperglycemic and glycosuric response to glucagon in Case 5 (Fig. 5[2]) but had no effect in this response in Case 6 (Fig. 6[2]), even though the drug had caused a striking fall in the blood and urinary sugar levels in each case. Furthermore, in neither patient was there any suppression by carbutamide of the increased protein catabolism induced by the administration of glucagon. These results suggest that the well-established action of sulfonylurea derivatives in reducing glucose release by the liver is not dependent on either an inhibition of the hyperglycemic-glycogenolytic action of glucagon or a selective interference with hepatic gluconeogenesis from protein and amino acids.

On the basis of more recent studies on insulin action using radioactively labelled glucose, the claim has been made that the reduced glucose output by the liver induced by administration of sulfonylureas can be attributed to stimulation of the beta cells to release small quantities of insulin directly into the portal system. This is said to explain why it has not been possible in most instances to show an augmented peripheral glucose uptake in the presence of sulfonylureas. However, it should be clearly stated that this explanation cannot be accepted without reservation at this time since other studies have failed either to demonstrate an unequivocal action of insulin on the liver, even when administered intraportally, or to show that insulin always seems to increase peripheral glucose uptake, even when given in small doses.

The apparent association of the hypoglycemic action of sulfonylureas with reduced hepatic glucose output but without a concomitant increase in peripheral utilization of glucose may be more logically explained by the possibility that the sulfonylureas may act by decreasing the ratio of glucagon to insulin secreted by the pancreatic islets through an inhibitory action on the glucagon-producing cells. Glucagon is known to have a well-defined hyperglycemic-glycogenolytic action on the liver, but as yet no action has been established for peripheral tissues.

In summary, all of the metabolic effects of sulfonylureas that have been reported are not readily explainable on the basis of a single locus of action. However, although the sulfonylureas do appear to have a direct effect on the liver, the results do not preclude the hypothesis that the central locus of action of sulfonylureas is the pancreatic islets. This does not necessarily mean a stimulation of the beta cells to secrete or release insulin, as some have suggested. It is possible that the action of sulfonylureas in reducing hepatic glucose output, apparently without increasing peripheral glucose utilization, is due to a reduction in the ratio of secreted glucagon to secreted insulin rather than to stimulation of the beta cells.

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Dr. Bissell: Thank you, Dr. Izzo.

The discussion will be continued by Kermit Pines, M.D., who will take up the action of the sulfonylureas in postpancreatectomy diabetes and in spontaneous diabetes.

Action of Sulfonylureas in Postpancreatectomy and Spontaneous Diabetes

Kermit L. Pines, M.D.: As you may have gathered, the mode of the action of the oral hypoglycemic agents is somewhat controversial. Those of you who have attended any recent meetings of diabetes research groups will recognize the fact that it is one of the most heated controversies in the area.

I think that Dr. Izzo's hypothesis is a very interesting one. I happen to lean a bit toward the other side, although I must say that so far I have been unable to find any single theory which will account for all the observed facts to my own satisfaction. I hasten to say that the work which I'm going to describe will not solve the problem, but perhaps it will lay some of the groundwork for a future solution. It has been done in collaboration with Drs. Edgar Leifer and DeWitt Goodman at the Presbyterian Hospital.

As you know, the blood sugar is unaffected by the sulfonylureas in severe alloxan diabetic animals and in animals and man following pancreatectomy.

We studied two patients from whom the pancreas had been removed for carcinoma sometime previously. They were in good shape at the time of the study and had no obvious evidence of recurrence or metastasis.

During the control periods the blood sugars were somewhat high. After baseline observations which in one case lasted seven days and in the other five, the patients were given chlorpropamide in doses of 1 Gm. daily. Coincidentally, the first patient's insulin dose was reduced from 20 to 10 units of NPH insulin. The blood chlorpropamide level rose to 30 mg. per cent, indicating that absorption was adequate.

In the second patient there was no reduction of the insulin dose.

In the first study the weight was essentially stable. The serum chlorpropamide level rose. The blood sugar, which was quite high initially, was unchanged or rose toward the end of the study. Glycosuria increased.

There were no significant changes in other laboratory findings except for the alkaline phosphatase. In this patient the alkaline phosphatase rose minimally from 12.1 King-Armstrong units (which is the upper limit of normal in our laboratory) to 16 units. A small change, if isolated, may not mean much.

In the second study, after a control period on 40 units of insulin, the patient was given 1 Gm. daily of chlorpropamide with no significant change in the glycosuria; if anything, it increased. The blood level of chlorpropamide rose, again indicating adequate absorption, often a serious problem in pancreatectomized patients. The alkaline phosphatase, which was 12.7, essentially normal, rose slightly to 15.8 King-Armstrong units.

Thus, we were unable to find any detectable blood sugar lowering effect. This is comparable to studies with other oral agents in man. An effect of sulfonylureas has been shown in depancreatectomized dogs receiving insulin. It was not seen here, possibly because stable control could not be achieved during the period available for study and small changes in insulin requirement and blood sugar may have been obscured.

The findings confirm the observation that the presence of the pancreas and probably beta cells of the islets are essential to the action of the sulfonylureas. They do not establish that the action is stimulation of insulin release, but they are certainly compatible with this view.

The next group of patients studied were those with spontaneous diabetes. Our first group consisted of six patients requiring from 20 to 60 units of insulin and ranging in age from fifty-eight to eighty-one years.

Chlorpropamide was given in doses of 0.5 to 1 Gm. daily. Recently we have given no more than 0.5 Gm. initially and 250 mg. as a maintenance dose.

One patient was an eighty-one-year-old woman, a very strong-minded person, who flatly refused to take insulin regardless of any pressure we could bring to bear. She was delighted with chlorpropamide. It is now a year or a little more since she started on the drug, and she has done quite well. The blood sugar for the most part has been within a satisfactory range, and glycosuria has been largely absent. She had previously required about 25 units of insulin which she took irregularly under protest. We gradually decreased the insulin dose and were able to replace it entirely with chlorpropamide. In this patient there has been no significant change in the laboratory data. The alkaline phosphatase did not rise.

As with carbutamide and tolbutamide, we have had better luck in patients requiring smaller amounts of insulin. Five out of the original six did well, one following an initial failure with tolbutamide. The one patient who responded poorly had also failed to respond to tolbutamide.

Six other patients were studied, some with mild diabetes not previously treated with insulin, others requiring less than 20 units. One patient with steroid-precipitated diabetes responded well to chlorpropamide. Four of the second group of six responded satisfactorily, one on a dose as small as

100 mg. a day.

In our small group of chlorpropamide patients, we have had two or three late failures; by that I mean patients who responded initially but who subsequently could not be controlled on small doses. As may be brought out in the discussion later, these may have resulted from a temporary increase in insulin requirement. We did not try chlorpropamide again at a later date.

Our study included observations of plasma unesterified fatty acids. Unesterified fatty acid, as you know, is the form in which fat is transported in the plasma. Fatty acid levels have been considered an index of fat utilization in the body. Dole, Gordon, and others have studied these substances extensively and have shown a relationship to carbohydrate metabolism.

Usually the unesterified fatty acid levels decrease when glucose is metabolized. Thus, the levels may be considered a possible indication of the influence of oral agents on glucose metabolism.

It has been shown that the unesterified fatty acid levels of the plasma fall following administration of either insulin or tolbutamide. Similar results were obtained after chlorpropamide in the present study.

Patients were studied fasting and then were given a single dose of 3 Gm. of chlorpropamide by mouth. The blood sugar concentrations decreased over a period of about five hours. Chlorpropamide levels rose very rapidly, and the unesterified fatty acids fell sharply, returning to baseline levels at the end of the study.

These findings are compatible with the hypothesis that insulin mobilization is facilitated by the sulfonylureas but are not proof of this theory. There are other possible explanations. For example, a decreased mobilization of the fat stores would yield similar results.

Aside from infrequent anorexia and nausea with initial high doses, we had only two major problems in our small series of patients given chlorpropamide. The first occurred in a sixty-nine-year-old Negro man who had been well controlled on 20 units of protamine insulin. A trial on tolbutamide for a month was unsuccessful. Chlorpropamide was then given at a dose level of 0.5 Gm. over a period of five weeks with good results. A subsequent course of tolbutamide, 1 Gm. daily, was again ineffective.

To confirm the evidence of the effectiveness of chlorpropamide after a tolbutamide failure, the patient was once more given chlorpropamide. At this time the alkaline phosphatase was 10.1 King-Armstrong units. After four weeks the agent was discontinued and insulin resumed after further laboratory tests. These included a normal fasting blood sugar, serum chlorpropamide level of 41 mg. per cent, and alkaline phosphatase of 21.3 King-Armstrong units. A month later the phosphatase level had become normal.

The second patient was a sixty-one-year-old Negro woman whose diabetes had been controlled on NPH insulin, 10 units daily. She was given 0.5 Gm. of chlorpropamide daily for seventeen days, after which time the dose was cut to 0.25 Gm. During the following week the patient noted some loss of appetite and a generalized itching skin eruption but continued taking chlorpropamide for three days. At a follow-up visit one month after starting the drug, the patient had a full-blown case of jaundice and severe generalized dermatitis. At the time of admission to the hospital, the temperature was 105 F., and the liver was enlarged. The serum bilirubin was 2.4 mg., alkaline phosphatase 34 King-Armstrong units, cephalin flocculation and thymol turbidity tests negative. There was 24 per cent eosinophilia.

Prednisone was given and was followed by definite improvement. Liver biopsy showed a cholangiolitic hepatitis. After a month in the hospital, the patient was well and has continued to be well.

Dr. Bissell: Thank you, Dr. Pines.

The concluding formal remarks will be made by Leon Levitt, M.D., who will discuss clinical studies with tolbutamide and chlorpropamide.

Clinical Studies with Tolbutamide and Chlorpropamide

Leon M. Levitt, M.D.: Chlorpropamide differs from tolbutamide in that it has one less methylene group in the side chain and has a chlorine atom instead of a methyl group attached to the benzene ring (Fig. 1).

The biologic half-life of tolbutamide is three hours, while that of chlorpropamide is thirty-six hours. Consequently, there is much greater prolongation of hypoglycemic activity following the administration of chlorpropamide. If we recall the time-activity relationship of protamine zinc insulin to regular insulin, we may consider chlorpropamide similar to the protamine zinc insulin and tolbutamide to the short-acting insulin in this regard.

For the past fifteen years our diabetes clinic has been committed to the principle of weight reduction by diet therapy for obese patients. Our attempts to obtain weight reduction with concomitant improvement in sugar tolerance has met with success in less than 50 per cent of our patients. Our own experience with the use of insulin in these "diet failures," in whom ketoacidosis rarely appears, left much to be desired. It frequently stimulated appetites, leading to increase of insulin requirement as well as to further weight gain.

Thus, when oral hypoglycemic agents became available, it seemed worth while to make clinical studies in such cases. For the most part, then, we have used tolbutamide and chlorpropamide clinically in a highly selected group of patients. In addition to these obese patients who failed to respond to diet therapy, there was another large group composed of older, thin patients who needed high calorie diets and ordinarily required insulin. In properly selected cases we have been able to replace the insulin with oral hypoglycemic agents.

This has proved a great boon to patients with poor vision and crippling arthritis or Parkinson's disease who cannot inject themselves. Also patients who would not eat on time or who were in vigorous or hazardous occupations were relieved of the fears and dangers of insulin reactions.

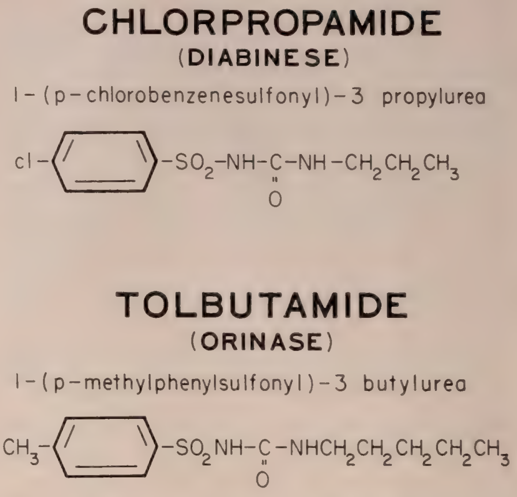
CHLORPROPAMIDE
(DIABINESE)
1-(p-chlorobenzenesulfonyl)-3 propylurea
Cl
SO2-NH-C-NH-CH2CH2CH3
O
TOLBUTAMIDE
(ORINASE)
1-(p-methylphenylsulfonyl)-3 butylurea
CH3
SO2NH-C-NHCH2CH2CH2CH2CH3
O

Fig. 1. Chemical structure of chlorpropamide and tolbutamide.

During the past one and a half years our studies have been confined to chlorpropamide.

Single oral dose tests were performed by estimating the simultaneous venous blood sugar and serum chlorpropamide levels. Figure 2 demonstrates representative experiments following an oral dose of 0.5 Gm. The blood sugar began to fall when the drug level was between 2 and 3 mg. per cent. The drop was maintained for four hours when the drug levels were no higher than 6 mg. per cent.

When 2 Gm. were given orally and the drug slowly absorbed, as in Case 3, the blood sugar also dropped slowly (Fig. 3). However, when absorption was rapid, as in Case 4, the fall in blood sugar was rapid.

The blood sugar continued to decline in nondiabetic and diabetic "responders" throughout the four-hour period in all the oral experiments. Following intravenous administration, however, nondiabetics demonstrated a greater initial drop, after

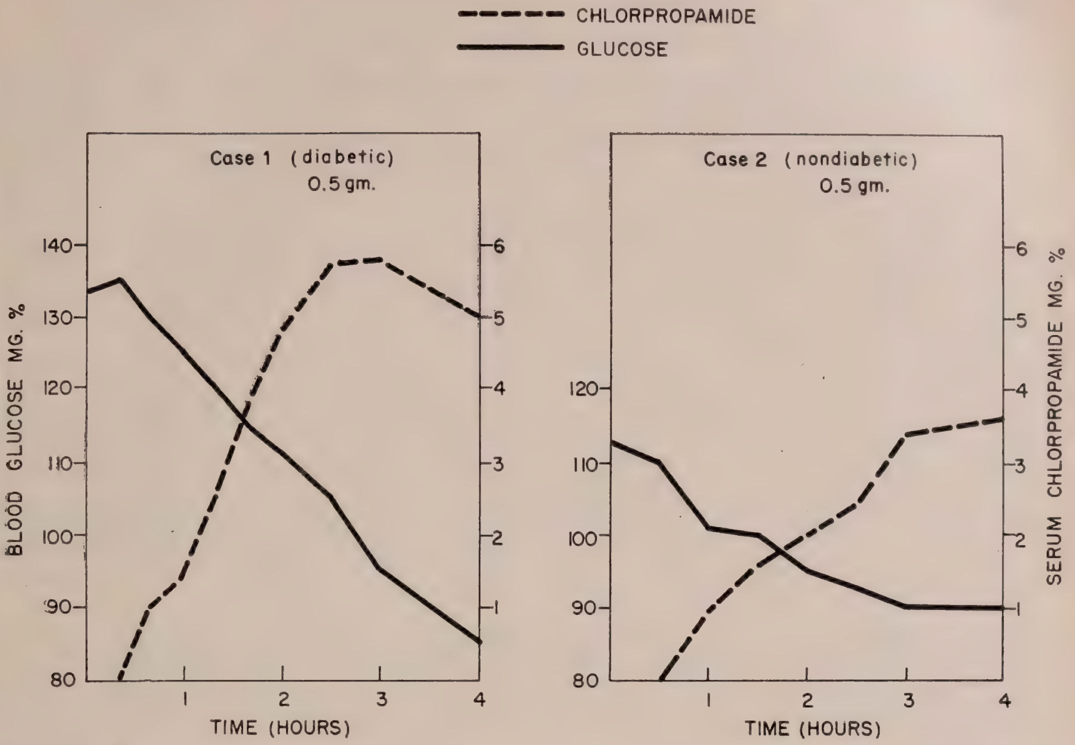

FIG. 2. Blood glucose and serum chlorpropamide levels following an oral dose of 0.5 Gm. of chlorpropamide

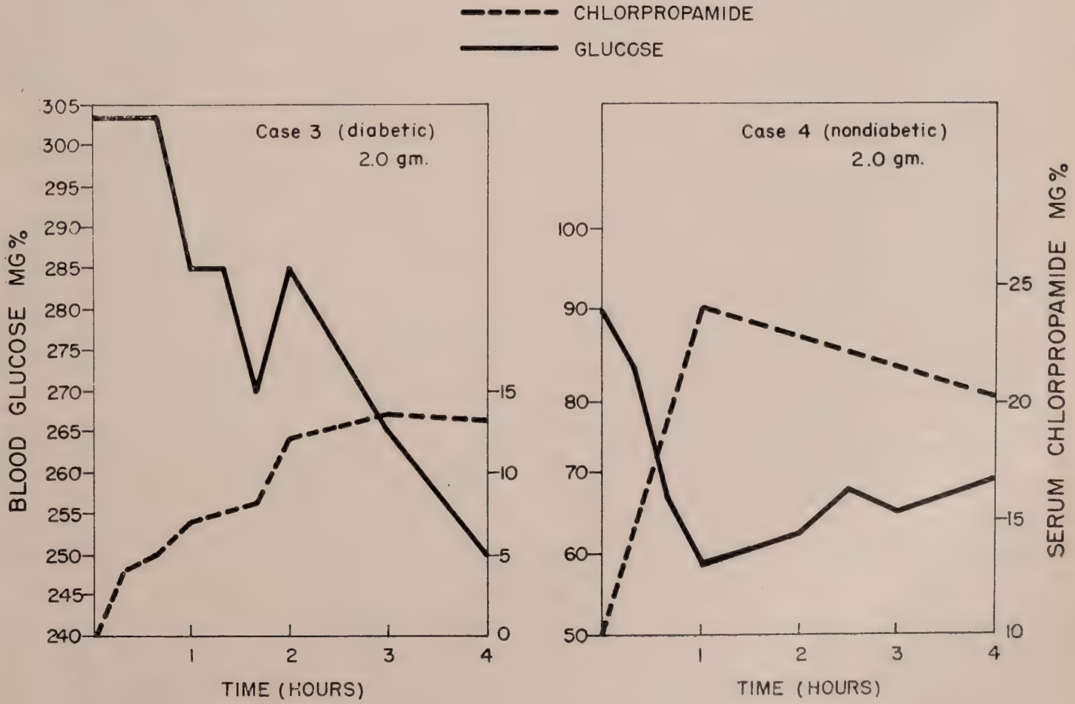

FIG. 3. Results following the administration of 2 Gm. of chlorpropamide orally. The drug was slowly absorbed and the blood sugar dropped slowly.

CASE	DIABETIC OR NON-DIABETIC	BODY HABITUS	SERUM LEVEL (MG%) AT						
			20 MIN.	40 MIN.	1 HOUR	2 HOURS	3 HOURS	4 HOURS	24 HOURS
5	N.D.	O	7.9	6.7	6.3	5.6	5.8	5.0	3.1
6	N.D.	O	4.5	4.0	4.8	4.0	3.6	3.8	1.6
7	N.D.	T	6.4	6.8	7.2	6.2	5.6	5.6	2.4
8	N.D.	T	7.9	6.3	7.0	6.0	6.0	5.8	3.0
9	D.	M	7.2	7.0	5.7	6.4	5.7	2.2	--
10	D.	O	3.3	4.3	4.3	6.1	6.2	5.3	4.7
11	D.	O	7.2	4.5	4.3	--	5.9	4.3	0.3
12	D.	M	6.9	6.2	5.6	5.2	5.6	5.1	1.9
13	D.	O	6.2	5.5	5.5	4.9	4.6	4.4	1.7
		MEAN	6.39	5.70	5.63	5.55	5.44	4.61	2.34
		S.D.	1.55	1.17	1.06	0.81	0.83	1.11	1.30

D...DIABETIC N.D...NONDIABETIC O...OBESE T...THIN M...MEDIUM

FIG. 4. Serum chlorpropamide levels following the administration of 0.5 Gm. of chlorpropamide intravenously.

which the blood sugar tended to rise even when the chlorpropamide blood levels were 10 to 12 mg. per cent.

Figures 4 and 5 demonstrate serum chlorpropamide levels following administration of 0.5 Gm. intravenously and then orally.

I think the critical figure here is the four-hour mean level of 4.61 after the intravenous administration (Fig. 4).

It is to be noted that there was slow absorption when the drug was given orally (Fig. 5). Two hours after the oral adminstration high serum levels were obtained; at four hours the range was similar to that found after intravenous administration. At the end of twenty-four hours an appreciable blood level persisted.

Figure 6 shows the serum levels of chlorpropamide after single oral doses of 1 Gm. at four hours, twenty-four hours, and forty-eight hours.

Figure 7 shows the serum levels after the single intravenous dose of 1 Gm. Serum levels were higher at four and twenty-four hours with oral administration. This suggests that lower absorption from the gastrointestinal tract may be a factor causing prolonged elevation of the serum levels or that there is a storage depot which releases the drug slowly.

The variation of blood level in different patients after the same dose of chlorpropamide could not be related to differences in absorption since it occurred after intravenous as well as oral administration. There was a constant relation to body weight when calculations were made of the distribution of the drug, assuming that it remained in the extracellular space.

Serum levels of chlorpropamide were studied in 52 ambulatory patients receiving maintenance therapy. A single daily dose of 500 mg. was given for one to two weeks; the dose was reduced to 250 mg. in older and very thin patients. In some instances a smaller dose was administered from the start of therapy.

In patients receiving 250 mg. per day, the serum chlorpropamide range was 4 to 10 mg. per cent (Fig. 8). If one recalls

CASE	DIABETIC OR NON-DIABETIC	BODY HABITUS	SERUM LEVEL (MG %) AT						
			20 MIN.	40 MIN.	1 HOUR	2 HOURS	3 HOURS	4 HOURS	24 HOURS
14	N.D.	O	2.4	2.6	3.0	7.1	6.3	5.8	--
15	N.D.	O	0	0.9	1.7	2.5	3.3	3.6	2.5
16	D	M	0	1.8	2.2	2.5	--	4.4	2.5
17	D	M	0	1.0	1.4	4.8	5.7	5.0	2.0
		MEAN	0.6	1.58	2.08	4.23	5.10	4.70	2.33
		S.D.	1.08	0.79	0.70	2.20	1.59	0.93	0.28

D...DIABETIC N.D...NONDIABETIC O...OBESE T...THIN M...MEDIUM

FIG. 5. Serum chlorpropamide levels following the administration of 0.5 Gm. of chlorpropamide orally.

CASE	DIABETIC OR NON-DIABETIC	BODY HABITUS	SERUM LEVELS (MG%) AT							
			20 MIN.	40 MIN.	1 HOUR	2 HOURS	3 HOURS	4 HOURS	24 HOURS	48 HOURS
18	N.D.	T	3.6	8.1	10.1	12.9	14.8	13.9	4.8	
19	N.D.	T	0	0	1.4	7.9	13.2	14.0	9.1	3.7
20	D.	O	0.2	6.1	8.9	13.0	15.1	12.1	9.4	5.4
21	D	M	3.3	7.8	8.0	9.9	10.5	8.8	6.9	
		MEAN	1.8	5.5	7.1	10.9	13.4	12.2	7.6	

FIG. 6. Serum chlorpropamide levels after the administration of a single oral dose of 1 Gm. of chlorpropamide.

Figure 6, twenty-four hours after 1 Gm. was given orally, a level of 4.8 to 9.4 mg. per cent was found. Figure 8 demonstrates that due to an overlapping effect a similar blood chlorpropamide level is obtained when there is continued daily administration of one fourth the dose, namely, 250 mg. In patients receiving 500 mg. daily the serum chlorpropamide range was 11 to 22 mg. per cent. Patients who had either low or high

CASE	DIABETIC OR NON-DIABETIC	BODY HABITUS	SERUM LEVELS (MG%) AT						
			20 MIN.	40 MIN.	1 HOUR	2 HOURS	3 HOURS	4 HOURS	24 HOURS
22	N.D.	O	4.5	5.4	4.5	5.1	--	--	--
23	N.D.	T	14.5	13.1	12.0	11.7	11.4	10.3	--
24	N.D.	O	5.3	5.4	5.4	4.8	4.6	3.2	2.4
25	D	T	6.4	13.7	10.5	10.3	9.8	9.8	3.6
26	D	T	12.5	10.2	10.6	8.9	--	8.5	1.3
		MEAN	8.6	9.6	8.6	8.2	8.6	8.0	2.4

FIG. 7. Serum chlorpropamide levels after the administration of 1 Gm. of chlorpropamide intravenously.

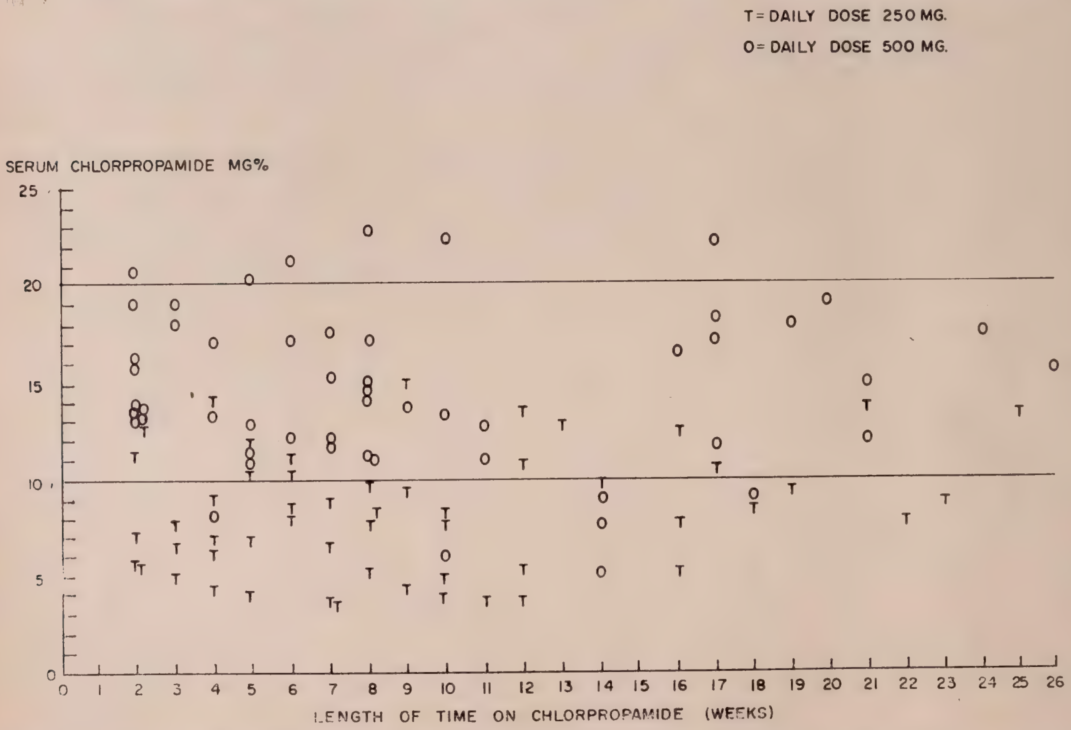

Fig. 8. The serum chlorpropamide range following the administration of various doses of chlorpropamide daily.

serum drug levels on a given daily dose continued to maintain such levels while receiving the same amount of the drug. After a plateau level was attained, no further cumulative effect was noted.

In summary, the illustrations demonstrate that:

1. Blood levels of chlorpropamide as low as 5 to 6 mg. per cent produced good hypoglycemic effect.

2. The drug is found in the blood forty-eight hours after a *single* oral administration.

3. Small daily doses by their cumulative action produce the same blood level of the drug as a much larger single dose in an acute experiment.

Concerning the practical application of the drugs in patients, the use of tolbutamide requires priming with 1 Gm. three times daily on the first day, 1 Gm. twice daily for two more days, and finally 0.5 Gm. twice daily for the average case thereafter. Note that the short, fast-acting tolbutamide should be given in divided daily doses.

On the other hand, chlorpropamide can be given in a 250 to 500-mg. single dose daily for it takes five days to obtain the therapeutic level which that dose will produce.

In our studies on the concentration of the drug in blood, we noted that lower blood levels were obtained in obese patients than in thin patients. Consequently, the initial dose for the latter group should be 250 mg. daily, while that for the obese group should be 500 mg. daily.

Careful follow-up is needed to adjust the maintenance dose of both drugs. In transferring a patient from tolbutamide to chlorpropamide, approximately one fifth to one fourth of the former dose in grams is required.

Because of bizarre neurologic complications related to its pharmacologic rather than to its hypoglycemic effect (severe muscle weakness, dizziness, and mental confusion on higher doses), we have set 750 mg. as the upper limit of chlorpropamide dosage.

In the group selected by the criteria given before, successful diabetic management with tolbutamide and chlorpropamide was attained in 75 to 80 per cent of patients. Only close observation for many years will reveal whether the serious complications of diabetes can be delayed or prevented by the use of the oral hypoglycemic agents.

A small number of secondary tolbutamide failures responded to chlorpropamide. We have not administered tolbutamide to any of our chlorpropamide failures.

Primary treatment failures occur with infection, ketosis, and thyrotoxicosis. We have not been able to substantiate the antiglucocorticoid action reported by others. Initial success in management for weeks or months followed by "secondary failure" may be due to underdosage, overeating with weight gain, and intercurrent infection, most commonly pyelonephritis and cholecystitis. There are some failures for which no cause has been found.

Toxic effects have been minimal. Some may be ascribed to the compounds themselves and consist of rash, mild gastrointestinal symptoms, and pruritus. Jaundice has not been described with tolbutamide, although several such cases have been reported with chlorpropamide. We have not had any jaundiced patients in well over 200 cases now on chlorpropamide.

Early in our experience, while we were still standardizing the dose of chlorpropamide, we encountered the previously described neurologic symptoms when large doses were used. One patient developed urticaria while on tolbutamide; immediately after the administration of 1 Gm. of chlorpropamide intravenously he had an anaphylactic reaction which responded to appropriate therapy.

Many patients who respond well to tolbutamide and chlorpropamide are in the older age group with coexistent coronary and cerebral atherosclerosis. While such patients were on insulin, we learned that they did better from a cardiac and cerebral standpoint when we avoided insulin reactions by allowing glycosuria throughout most of the day.

Unfortunately, with the advent of oral hypoglycemic agents, we focused our attention on the blood sugar levels rather than on the individual patient. In many cases we reduced the blood sugar to normal or moderate levels. We believe that preexisting angina may have been aggravated in some or even that an acute myocardial infarction or stroke may have been precipitated in others.

In closing, I would plead for very careful evaluation of each elderly patient's cardiac and cerebral status and care in administering the agents we have been discussing.

Question and Answer Period

Dr. Bissell: I'd like to ask Dr. Levitt, Dr. Pines, and Dr. Izzo to come up here with me. We will attempt to answer some of the questions which have been submitted.

I think "the ideal patient for treatment" demands a little re-emphasis—although Dr. Levitt very beautifully delineated the type of patient in whom he used the oral sulfonylureas. I would like to ask Dr. Pines whom he would consider to be an ideal candidate for oral sulfonylurea therapy.

Dr. Pines: My approach to this is perhaps a little more conservative than most. We generally select our patients from the group that is over age sixty with stable diabetes and an insulin requirement of 25 units or less.

We make exceptions to these principles under certain circumstances. Some of those were outlined by Dr. Levitt. If the patient is unable for one reason or another to take insulin, if the patient has a psychologic block, we're inclined to liberalize some of those requirements.

Dr. Bissell: Thank you, sir.

Dr. Izzo, there's a question that reads: "If a patient responds equally well to both insulin and to hypoglycemic agents, which therapeutic agent would be preferable, and why?"

Dr. Izzo: My answer to this is that we have used the hypoglycemic agents for those in whom we feel the hypoglycemic agents will induce a hypoglycemic action and control their diabetes. Therefore, unless there are contraindications to the use of sulfonylureas, particularly hepatic damage, we have used the sulfonylureas.

We have not been concerned with the question of whether you should use one and not the other because we've really been interested in exploiting the uses of the sulfonylureas from an investigative standpoint. So, if the patient prefers the use of sulfonylureas, which of course most of them do, I do not see any contraindication to their use at the present time. This may not answer the question, but it explains our position at this time.

Dr. Bissell: Dr. Levitt, do you agree with that philosophy?

Dr. Levitt: I agree with that fully.

Dr. Bissell: Dr. Pines, are you in any disagreement?

Dr. Pines: May I justify my conservatism? We have insulin, and therefore the oral hypoglycemic agents are not essential to the maintenance of the patient with diabetes who cannot be controlled on diet alone or by weight reduction.

If this were 1979 instead of 1959 and if we had seen that twenty years of giving these agents produced no changes that were different from those after twenty years of giving insulin, I would say by all means let's give it to everyone who will respond. This isn't 1979, and for that reason I should prefer to limit the oral agents to people who are not going to be taking it—at least on a statistical basis—for an indefinite period of time.

Dr. Bissell: Dr. Izzo would like to comment on that.

Dr. Izzo: This is not antagonistic to or against Dr. Pines's remarks, but I want to point out that although we have insulin—and it's a wonderful drug and it's lifesaving—we still get complications with the use of insulin after ten, fifteen, twenty years. So we don't have the ideal form of treatment yet. Hence, it isn't a question of comparing an ideal form of treatment against an experimental form of treatment. We must bear that in mind.

Dr. Bissell: I think I'll give this question to Dr. Levitt. Does sensitivity to the sulfonamides contraindicate the use of the oral sulfonylureas?

Dr. Levitt: For the most part, it does. Rarely a patient who has been known to be sensitive to one of the sulfonamides has insisted on the use of one of the oral hypoglycemic agents, and we have administered it, but in general we have considered sensitivity to sulfonamides to be a very definite contraindication.

Dr. Bissell: Yes, and I think one of the things that worries all of us, which is implied, I think, by Dr. Pines's remarks, is the known peculiar vascular phenomena that occur after the use of the sulfonamides on a long-term basis. That has been seen before. This has not been reported to my knowledge with these agents, but perhaps sufficient time has not passed.

Dr. Levitt, I want to ask you another question related to your formal presentation. Would you please repeat your dosage for tolbutamide and chlorpropamide?

Dr. Levitt: Tolbutamide has to be used with priming doses. For the first day we have used 1 Gm. three times a day. For the second and third days we use 1 Gm. twice daily. Subsequently, we've used 0.5 Gm. twice daily. Following observation of the patient, the dose has been revised upward or downward depending on the response.

On the other hand, in the use of chlorpropamide, we have used 250 mg. in thin patients and 500 mg. in obese patients. It must be remembered that this dose is used once a day because, as Figure 8 demonstrates, chlorpropamide tends to cumulate.

Dr. Bissell: Dr. Pines, is this your general policy also?

Dr. Pines: In general, I would agree with respect to tolbutamide. There may be minor differences in procedure, but we certainly use a priming dose and gradually reduce it, decreasing the insulin dose as we switch over to the oral agent.

I have one suggestion. Where it is essential to find out in a short period of time if the patient is going to respond, we sometimes give 1 Gm. three times a day for four or five days. If there is no significant response at the end of that time, we feel that the patient will probably not respond at all.

Dr. Bissell: Dr. Izzo tells me he's in no substantial disagreement with this.

I'll ask him this question: Will insulin need increase in some cases after continued use of an oral hypoglycemic agent?

Dr. Izzo: The general experience is that when an individual responds to sulfonylurea and then, for one reason or another, experiences a secondary failure, the dose of insulin that is required to control the diabetes is not greatly altered from that needed before this individual was started on treatment.

You must remember, however, that in many of these patients or, I should say, in a number of these patients where there is an associated infection which produces this failure, the increased insulin requirements may be related to the complication which has developed and not really to a deterioration of the diabetes after the use of the sulfonylurea.

The fact that the insulin requirements are not changed in most cases is another point which seems to be against beta cell stimulation as the principal mode of action of sulfonylureas.

Dr. Bissell: There's a question here which involves an important problem in the treatment of diabetes. It reads: "A report appeared in the German literature regarding rather high concentrations of tolbutamide in the organs of the stillborn. No other effects were noted; the mother had been given tolbutamide."

Dr. Levitt, what about the use of these oral agents in the pregnant woman with diabetes?

Dr. Levitt: Most of us have preferred to use insulin because we've been positive of its action. I have used oral hypoglycemic agents on some four or five pregnant patients. In none of them was I able to carry on to term without transferring back to insulin. There have been a few cases reported in the literature which have been carried through pregnancy successfully on oral hypoglycemic agents.

Dr. Bissell: Dr. Pines, how do you handle a diabetic whom you have on an oral sulfonylurea and who has to undergo major surgery?

Dr. Pines: In those cases, I generally discontinue the oral hypoglycemic agent in advance of the operation and proceed as I would in any other patient. By that I mean that I usually replace the carbohydrate the morning of the operation with an infusion and with standard insulin and then carry on afterwards with insulin in accordance with the amount of glycosuria. I discontinue the oral hypoglycemic agents because it makes estimation of the insulin requirement more difficult.

I have observed, however, that there are some patients previously maintained on tolbutamide who have not required insulin but have been able to go through surgery on tolbutamide alone.

Dr. Bissell: Would this same philosophy apply to the superimposition of the severe infection in a patient of yours?

Dr. Pines: Yes sir.

Dr. Bissell: Dr. Izzo, there's a question here which I think was answered but I think could be re-emphasized. Are the neurologic complications mentioned with chlorpropamide associated with hypoglycemia or are these due to the drug itself?

Dr. Izzo: These can occur even without hypoglycemia. I think that we have to attribute the neurologic manifestations of chlorpropamide to an effect of the drug itself on the central nervous system. Hypoglycemia of course can aggravate these. This is usually seen with large doses. As a rule, if you keep the chlorpropamide level under 0.5 Gm. per day, it is rare to see neurologic complications.

Dr. Bissell: Dr. Levitt, are hypoglycemic agents safer in coronary thrombosis cases than insulin?

Dr. Levitt: Neither is very safe. A diabetic patient with a myocardial infarction does not belong on an oral hypoglycemic agent, and his severe glycosuria or symptoms of diabetes can be controlled better with small doses of insulin.

Dr. Pines: May I say a word?

Dr. Bissell: Yes.

Dr. Pines: I should like to say that although I agree in general with that statement, we have had patients with frequent angina in whom an insulin reaction might have been catastrophic.

We have been fairly successful in avoiding hypoglycemic reactions in some of these patients by use of the oral agents. In fact, in patients with mild diabetes and coronary disease we have sometimes switched to an oral agent from insulin.

Dr. Bissell: Dr. Izzo, do you want to make a comment?

Dr. Izzo: Yes I would because we have successfully carried coronary occlusion patients right through on an oral hypoglycemic agent. We have carried them through successfully on chlorpropamide. Again I would advise caution regarding the dose of chlorpropamide. If you use it in small doses—by small doses I mean 200 to 250 mg. per day—then you do not get into hypoglycemia and I don't think you have to be worried if you don't get the hypoglycemia. Thus far our experience has not been adverse with the use of the oral hypoglycemic agents in patients with acute myocardial infarctions.

I think it's important to avoid hypoglycemia by the proper and intelligent use of an oral hypoglycemic agent.

Dr. Bissell: We haven't said anything about the biguanides in this discussion. There isn't very much time left to the panel. I think, though, it certainly would be negligent if we made no mention of them at all. They appear to have a place in the treatment of diabetes.

Dr. Izzo, you took the mode of action of sulfonylureas as your subject. Could you briefly summarize what is known about the mode of action of the biguanides?

Dr. Izzo: Well, we can say this: It looks as if the biguanides do not act in the same way that the sulfonylureas act.

We do know something that the biguanides do, which incidentally I consider unphysiologic. In the first place, they depress oxygen consumption. They seem to have an inhibitory effect on oxidative enzyme systems. They increase anaerobic glycolysis at the expense of oxidative phosphorylation. They also depress hepatic glycogen, whereas the sulfonylureas with chronic treatment tend to increase hepatic glycogen.

Dr. Bissell: Dr. Pines, in your view, what type of patient is a candidate for treatment with a biguanide compound?

Dr. Pines: If some of Dr. Izzo's reservations can be overcome, I should like to have an agent like the biguanides to stabilize the brittle diabetic. There are a few patients —all of us have had unpleasant experiences with them—who are in the hospital as often as out, either in diabetic acidosis or in hypoglycemic shock. There are patients who actually die in hypoglycemic shock in spite of our best efforts at control.

I have not had enough personal experience to hazard a guess as to how effective this agent is. I'm going solely on the basis of what I have read. I should like to try a biguanide in some really brittle patients.

Dr. Bissell: Dr. Levitt, how would you feel about this?

Dr. Levitt: My feelings are essentially the same as Dr. Pines's. There is one thing that must be remembered. I have used some of the biguanides in the past and have found them to be very discouraging drugs to administer because well over 50 per cent of patients develop nausea and vomiting. There is nothing more annoying than to give a patient medication and have him return to the clinic a couple of days later complaining bitterly about the side-effects of the drug. I have become quite discouraged about their administration. However, they are worth trying in brittle patients.

Dr. Bissell: Dr. Pines?

Dr. Pines: It ought to be mentioned at least in passing that unlike the sulfonylureas, DBI, the biguanide that is available, does have an effect in the absence of the pancreas.

Dr. Bissell: Dr. Izzo?

Dr. Izzo: You may reduce insulin requirements in the unstable patients by giving DBI. However, I have not been impressed as yet that the biguanides really do stabilize the unstable diabetic. May I point out that in many cases the instability is exaggerated by overtreatment with insulin and excessive use of carbohydrates in the diet. More careful attention to diet and insulin will often result in improved stability of the blood and urinary sugar levels, fewer hypoglycemic reactions, and less rebound glycosuria as well as improved sense of well-being. So we have to be very careful when we talk about stabilization of an unstable diabetic. This is an extremely difficult thing to evaluate, and I'll accept the evidence with a good deal of reservation at the present time.

Dr. Bissell: I do feel, however, in spite of certain reservations expressed about the biguanides, that the unstable, brittle diabetic adult and the unstable diabetic child may represent patients in whom you might want to try this agent.

Gentlemen, the hour is almost at the end. Is there anything that each of you would like to say in summary? Dr. Izzo?

Dr. Izzo: Well, despite what may have sounded like enthusiasm for the hypoglycemic agents, I would like to conclude by saying that we have to accept them with a good deal of caution and must remember that these drugs are still on trial. However, they have done one thing: that is, they have stimulated a tremendous interest in diabetes and diabetes research. In this respect, I think that they have been worth while.

Dr. Bissell: Dr. Pines?

Dr. Pines: That about summarizes my feelings too.

Dr. Bissell: Dr. Levitt?

Dr. Levitt: I feel that Dr. Izzo has summarized my thoughts about the oral hypoglycemic agents. Perhaps in retrospective studies some years hence we'll know a lot more about them than we do today.

Dr. Bissell: It's always pleasant during the course of a panel discussion to see that even though various members may disagree on some points, we end up on such a harmonious theme, which is shared by the chairman. I want to thank the panelists and all of you.

ANNOUNCEMENT

Medical Society of the State of New York

1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

Use of a Prosthesis in Conductive Deafness

ALAN AUSTIN SCHEER, M.D., NEW YORK CITY

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THE introduction of prosthetics into middle ear surgery has enabled the surgeon to overcome situations which previously had posed problems. Of course, a prosthesis, regardless of the type or form, can be used only to restore hearing which has resulted from a conductive type of loss. This presentation is limited to a consideration of the prosthetic technic in hearing losses of a conductive nature wherein the tympanic membrane has remained intact.

Application

The prosthesis can be used in two main groups of cases:

1. In patients in whom there is a gap in the ossicular transmitting mechanism, a condition which usually is the result of previous middle ear disease.
2. In patients in whom there is fixation of the ossicular chain, either by otosclerosis or by an adhesive process.

Both of these groups of patients give a similar clinical picture. However, the history and the examination will suggest the pathologic condition that will be found in the middle ear after the elevation of the tympanic membrane. The polyethylene tube prosthesis has shown itself to be extremely versatile in correcting the hearing loss in both groups of cases.

In instances in which there is a gap in the sound transmitting mechanism, the condition is due most frequently to necrosis of the lower portion of the long process of the incus, which is vulnerable because of its poor blood supply. Generally the stapes remains intact and is mobile, and it may or may not be embedded in adhesions. This situation can be corrected and the patient's hearing can be improved with a polyethylene tube prosthesis (PE-200) after the head of the stapes and the crura have been removed purposely. The stump of the incus is inserted into a window which has been cut into the side of the tube which makes contact with the footplate (Fig. 1).

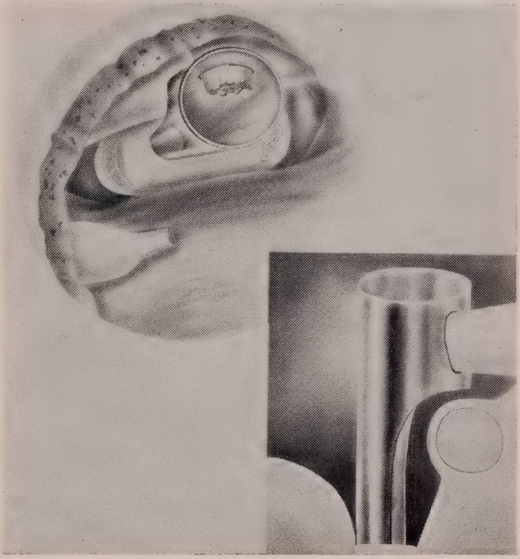

FIG. 1. Polyethylene tube used for contact between eroded long process of incus and mobile footplate.

If the previous middle ear disease has destroyed the incus, the problem of reconstruction with the polyethylene tube prosthesis is different. In these cases the head of the stapes and both crura usually also will be absent. The oval window well generally is filled with adhesions, but after careful microsurgery a clean and mobile footplate will be exposed. The end of a polyethylene tube prosthesis (PE-200) is heated to achieve a widened platter effect. When the tapered end of the tube is on the footplate, the tympanic membrane overlays

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Presented at the 154th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Otolaryngology, May 13, 1960.

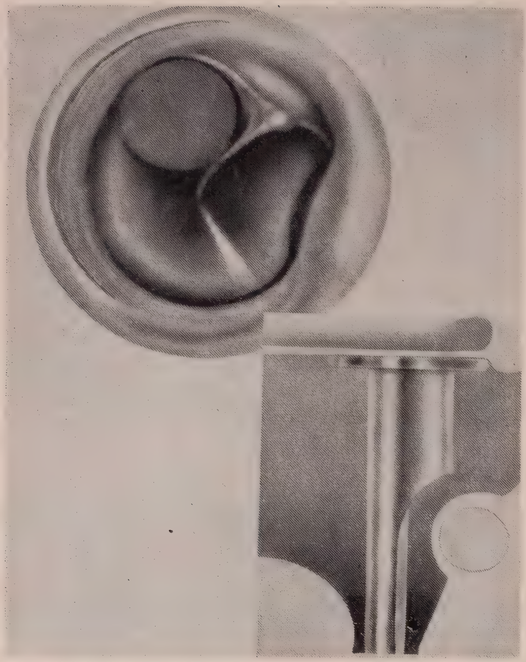

FIG. 2. Tympanic membrane overlaying broad surface of polyethylene tube which is tapered to make contact with mobile footplate. Used if incus is absent or in unsuccessful fenestration cases.

the upper broad surface of the tube. Pressure necrosis of the tympanic membrane will not occur since contact of the tympanic membrane with the prosthesis is made over a broad surface (Fig. 2). The platter surface of the prosthesis is large enough to fill the area between the malleus and the posterior annular rim, and this creates a direct columella effect. Equally effective is a prosthesis locked between the middle of the malleus handle and the footplate.

The polyethylene tube prosthesis is used to advantage in those situations in which the ossicular chain is intact but is fixed by adhesions. When the incus and the stapes are enmeshed in mattered adhesions, it virtually is impossible to remove all of the adhesions with the crura and head of the stapes still in place. Should the stapes be mobilized sufficiently and hearing be obtained, the effect is lost quickly because the moist adhesions reform. We handle such cases as if they were instances of otosclerosis. Once the crura are removed, the field can be stripped of debris more adequately. Most important, should the adhesions reform, they do not appear to have a binding effect on the polyethylene tube strut.

The most frequent application of the prosthesis, of course, is its adaption for stapes mobilization surgery in the handling of otosclerotic deafness. Unquestionably its use in this field has given the surgeon a tremendous advantage over previous methods.

As originally reported, the polyethylene tube prosthesis was adapted as the method of choice to handle crural fractures because it was found to be predictable and to have permanent qualities.[1,2] At the onset this technic was used only when the crura had fractured accidently during the course of stapes surgery. However, the results that were obtained with the technic seemed so superior to those that had been obtained with previous methods that it was decided to use the polyethylene tube prosthesis routinely in all cases of stapes surgery (Fig. 3). This procedure has been resolved to a standard step-by-step operative technic which is modified according to the existing pathologic condition in the middle ear.

Technic

The bony portion of the posterior canal wall must be removed with a curet so that the entire footplate of the stapes and its attachment to the posterior crus is visualized. The stapedius tendon then is severed with a pick before the stapes head is disarticulated from the lenticular process of the incus. The crura then are fractured purposely toward the promontory. The next step is the removal of the head of the stapes and the crura from the middle ear. The surgeon now has a completely unobstructed view of the entire footplate, including its inferior margin next to the promontory, which is rarely observed when the crura are in place. Analysis of the footplate and the adjacent anatomic structures is necessary to determine the next surgical step to be taken.

In the ideal situation the oval window

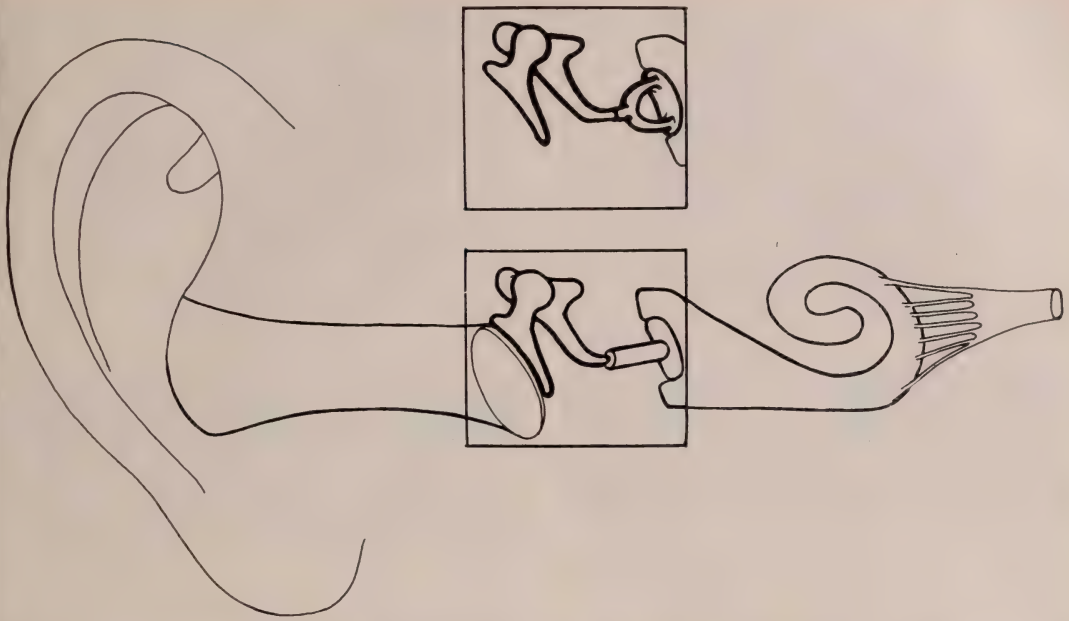

FIG. 3. Diagram showing location of polyethylene tube when used in stapes surgery for otosclerosis. It makes contact with incus and mobile footplate.

well is open widely, all margins of the footplate are completely visible, and the lenticular process is directly above the footplate. Under direct visualization the footplate is mobilized. The proper length of polyethylene tube (PE-50), which is flanged at its upper end, is then inserted into the middle ear. It is set on the posterior half of the footplate, and the incudostapedial capsule is locked into its upper lumen. The incudostapedial capsule must be set into the lumen of the tube with a springlike action to obtain the maximum degree of sound transmission to the cochlea. If the prosthesis slips under the incus too readily, it will have no stability and the maximum gain in hearing will not be obtained.

This is the basic technic to be followed when using the polyethylene tube prosthetic procedure. However, there are anatomic situations in the middle ear which call for exacting modifications of the procedure. These anatomic, variations are related to: (1) the amount of footplate exposure, (2) the degree of fixation of the footplate, (3) the plane of the footplate within the oval window, (4) the height and configuration of the promontory, and (5) the angle formed between the footplate and the lenticular process of the incus. The anatomic arrangements which are encountered in cases in which the polyethylene tube prosthesis is used can be classified into four types:

TYPE 1 (CLASSIC TYPE).—(1) The oval window well is open, and all the margins of the footplate are seen clearly, (2) the lenticular process is directly over the footplate, and (3) the footplate is thin and only moderately fixed.

Operative Technic.—Standard polyethylene tube procedure (Fig. 4).

TYPE 2.—(1) There is a good exposure of the footplate, except for its inferior margin next to the promontory. The degree of footplate fixation varies, but the footplate usually is only moderately fixed in circumscribed areas. (2) The promontory is bulging toward the facial nerve, overhanging and obscuring the inferior margins of the footplate, and the lenticular process slightly overrides the promontory. This

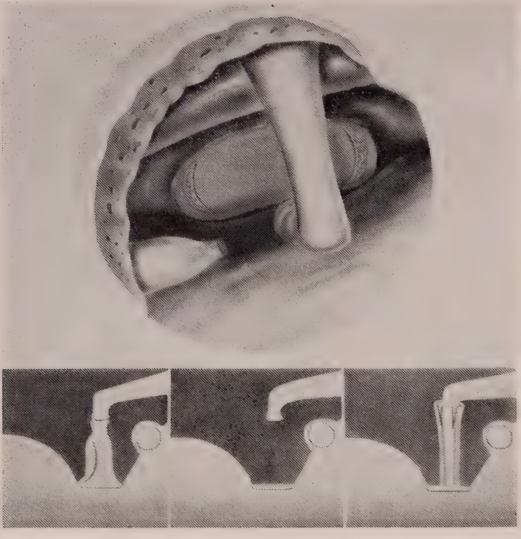

FIG. 4. Classic anatomic arrangement, in which all margins of footplate are visible with lenticular process of incus directly above, for which standard prosthetic procedure is used.

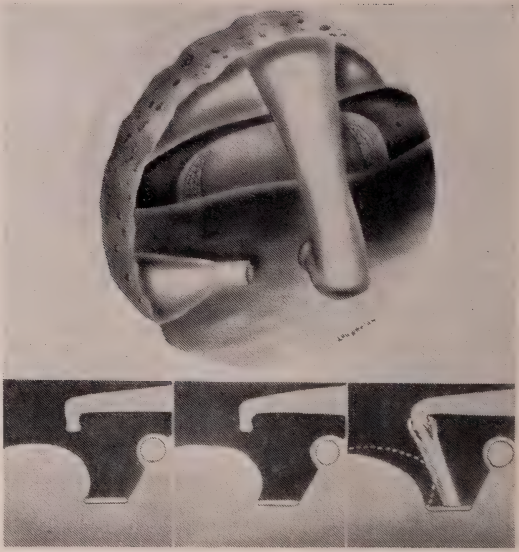

FIG. 5. Variation in anatomic arrangement whereby inferior margin of footplate is obscured by overriding promontory requiring modification of prosthetic technic.

arrangement prevents the usual straight-line insertion of the polyethylene tube between the footplate and the lenticular process. The polyethylene tube would be deflected against the upper margin of the oval window directly under the facial nerve and would not strike the footplate.

Operative Technic.—The bulging portion of the promontory is lowered with a burr so that a straight line can be drawn from the lenticular process to the footplate. The footplate then is mobilized, and the polyethylene tube prosthesis is inserted. The tube may have to be tapered and inserted with its open side facing the promontory (Fig. 5).

TYPE 3.—(1) There is an extremely narrow niche between the promontory and the facial nerve, (2) the promontory has a marked bulge over the oval window well toward the facial nerve so that the inferior margin of the footplate is not visible, (3) the lenticular process of the incus overrides the promontory, (4) that portion of the footplate which is visible in the niche appears fairly thin, and (5) the plane of the footplate within the oval window is angled, and the facial nerve drapes over its superior margin. The upper half of the footplate is recessed under the facial nerve, preventing visualization of its superior margin.

In cases with a narrow niche it is interesting to note that after the removal of the overhanging obscuring portion of the promontory, the inferior margin of the footplate always will be clearly defined. The footplate is thin and only moderately fixed.

Operative Technic.—The niche is opened with a burr by lowering the promontory to expose the inferior margin of the footplate. The bulging portion of the promontory can be removed safely without danger to the basal coil of the cochlea because the position of the cochlea within the promontory is constant. The inferior margin of the footplate can be exposed before the cochlea is opened. The footplate is mobilized, and the polyethylene tube prosthesis is inserted. The polyethylene tube must be tapered so that it does not become impacted against the facial nerve, a situation which would prevent the free transmission of sound to the footplate. It is inserted with its open side up and toward the facial nerve (Fig. 6).

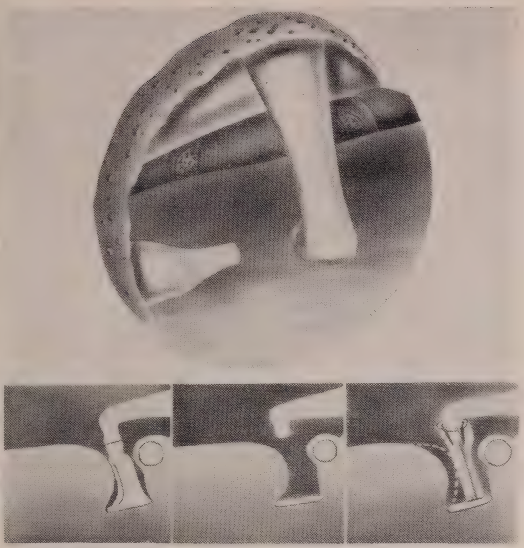

FIG. 6. Variation in anatomic arrangement whereby there is approximation of facial nerve and promontory and a consequent narrowed approach to footplate requiring modification of prosthetic technic.

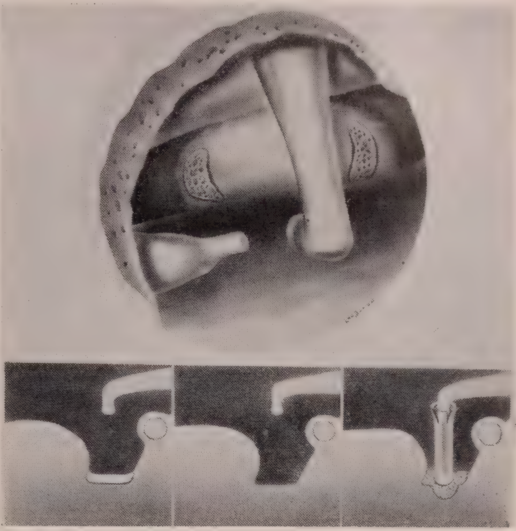

FIG. 7. Variation in anatomic arrangement in which there is a thick footplate with open oval window well requiring removal of footplate.

TYPE 4.—(1) The footplate is densely infiltrated with otosclerosis and is fused into the oval window. It has the resistance of a steel plate. The margins of the footplate usually are not clearly defined. (2) The oval window area is only slightly narrowed by a bulging promontory.

Operative Technic.—Previous experience has indicated that even if the footplate can be loosened successfully, thus resulting in the restoration of hearing, the achievement will be only temporary. With such otosclerotic infiltration of the footplate, one can predict refixation with certainty. As a rule, the results in such cases were unsuccessful with previous methods; therefore, the removal of the footplate is advised. The oval window then is covered with pressed absorbable gelatin (Gelfoam), rather than with a piece of vein, before the insertion of the polyethylene tubing. The gelatin supports temporarily the prosthesis until a secondary membrane grows across the oval window (Fig. 7).

The removal of the footplate is a practical and very workable procedure. It can be accomplished safely and usually without vertigo because there is ample working space between the footplate and the membranous labyrinth. The removal of a small amount of perilymph will allow the labyrinth to drop deeper into the vestibule.

At the present time the fenestration of the oval window, or the removal of the footplate, is being used in instances in which: (1) there are heavy diffusely infiltrated footplates, (2) revision will be done because of refixation, (3) the footplate breaks into multiple fragments, making the placement of a polyethylene tube prosthesis precarious and dangerous to the underlying labyrinth, and (4) the surgeon's past experience suggests that even though a footplate is thin and mobilizes readily, there is a possibility of it refixing. Observing the results in these cases over a longer period of time may cause a modification in the attitude toward this procedure so that cases in which there are thinner footplates and lesser degrees of fixation will be included in the group so treated.

If in any of the types of cases which have been described the footplate is fragmented into small pieces or is split open, the placement of a polyethylene tube on it would present a hazard to the underlying membranous labyrinth. When such situations occur there are two choices, as suggested by House:[3] (1) A piece of pressed absorbable gelatin is placed over the fractured footplate to support the polyethylene tube prosthesis, and in time this is replaced by a fibrous membrane; or (2) the footplate is removed and the oval window is covered with pressed absorbable gelatin before the insertion of the polyethylene tube. The hearing that is obtained with this gelatin technic has been noted to be extremely reliable and spontaneous when the tube is in the proper position. One learns only from experience how deeply the polyethylene tube can be pressed with safety into the pressed absorbable gelatin.

Results

According to the patient the new hearing obtained with the prosthesis is hyperacute and has a characteristic hollow echoing resonance. Within a period of three weeks the hearing assumes a more normal tonal quality. This probably is due to the severance of the stapedius tendon and the unusually free mobility of the footplate or in its absence, of the gelatin.

Frequently, after a good result in one ear has been obtained the patient states that the other, unoperated, ear feels completely corked or plugged. This is an excellent sign, for it occurs when the operated ear has completely closed the air-bone gap, a state which later can be substantiated by audiometric studies.

In those cases in which the footplate was allowed to remain, two important groups of observations have been made:

1. Many more patients obtained higher levels of hearing with the polyethylene tube prosthetic technic than with previous methods in which efforts were made to keep the crura intact. In 90 per cent of patients treated with the prosthesis there was very satisfactory improvement. The air-bone gap was closed in 80 per cent of cases in which the tube was used.

2. Although it still is too early to make a positive assertion, there are indications that the percentage of refixations with the prosthetic technic is considerably less than with methods previously employed.

The lower rate of refixation with the prosthetic technic can be attributed to two circumstances: (1) With complete visualization the stapes footplate can be more thoroughly mobilized after the removal of the crura. The abnormal portion can be left attached to the oval window by sectioning through the normal footplate adjacent to it. Observations of the results of previous stapes surgery done by means of the anterior crurotomy technic (which employs the same principle) revealed that those results were the most longstanding. (2) The footplate can be depressed slightly toward the labyrinth so that it no longer is adjacent to the annular rim of the oval window. Thus, if there is a fracture through the pathologic portion, there is an area of separation.

The polyethylene tube does not act as a foreign body in the middle ear. Several ears were reinvestigated after the polyethylene tube had been inside them for two years. No change was noted in the tube, and the middle ear showed no evidence of any reaction. It is interesting to note that after three months the polyethylene tube prosthesis usually becomes completely enveloped by normal mucosa, which covers it like a stocking. The mucosa grows down from the lenticular process to the footplate, where it joins the mucosal covering. This mucosal covering assists in locking the polyethylene tube to the lenticular process. It grows around the tube but does not fuse into its surface, as evidenced by the fact that when the polyethylene tube is removed the mucosa is left like an empty stocking.

Summary

The polyethylene tube prosthesis is being used routinely in all cases of stapes surgery. A planned surgical procedure has been presented which adapts itself to the anatomic variations encountered in the middle ear and the varying degrees of otosclerosis involving the footplate. The removal of the entire footplate has proved to be a practical and workable procedure capable of giving excellent results, but at the present time it is reserved for selected cases. The polyethylene tube also has a place in the surgical management of adhesive otitis media, previously unsuccessful fenestrations, and other conductive losses in which the tympanic membrane has remained intact.

522 West End Avenue, New York 24

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Trained Manpower Needed for Research

The supply of funds for medical research may have increased rapidly, but the supply of well-trained manpower presents a critical problem.

At present, about 20,000 professional research workers are engaged in medical research, and it is estimated that an additional 25,000 will be needed by 1970 if the projected expansion of medical research is to be achieved. Present training facilities, however, will provide only 19,000.

One hopeful trend is the steadily increasing number of medical school graduates who are entering research, or teaching, or both. It is estimated that about 8 per cent of medical school graduates currently enter these fields, compared with only 2.3 per cent a generation ago. In addition, the National Science Foundation is playing a significant role in helping to increase the supply of qualified workers.

During 1958–1959 the Foundation awarded 250 predoctoral, 59 postdoctoral, and 32 senior postdoctoral grants for advanced training.—*Patterns of Disease Parke Davis & Company*

A Technic for Removal of Imprisoned Abdominal Drain

GERALD ADAMS, M.D., BROOKLYN, NEW YORK

(From the Department of Surgery, Unity Hospital)

The purpose of this article is to describe a method that I have found to be successful in the occasional case of a "tight" abdominal drain that the surgeon may encounter. It is not within the scope of this presentation to debate the problem of drainage versus tight closure of the abdomen.

The most common cause of the imprisoned intraperitoneal drain is the inadvertent suturing of the drain to the peritoneum or the fascia during the closure of the abdominal wall. When this occurs, the surgeon finds that in attempting to shorten the drain on the fourth or fifth postoperative day it is immovable. For example, if after cholecystectomy the drain has been placed at the foramen of Winslow or under the liver bed, forcible manual attempts to loosen it may tear it. This, of course, would necessitate the reopening of the abdomen, thereby exposing the patient to another surgical procedure and the consequent possibility of increased morbidity.

Occasionally the drain may become knotted or twisted, and this too may make its removal difficult. Intraperitoneal drains may become twisted around a loop of bowel or become wedged between omental folds. All of these factors must be taken into consideration when one finds it difficult to recover an abdominal drain.

The method that I have used is simple and is based on the fact that constant and gentle traction will often loosen the drain without any danger of tearing it. A section of orange stick or a thick wooden swab about 5 cm. in length and $^1/_2$ cm. in width is rolled into a strip of adhesive tape 4-cm. wide with the ends and a piece of tape about 6 cm. in length left free. This is taped to the patient's lateral abdominal wall and adjacent to the drain end. A wide safety pin is passed through the end of the drain. A rubber band is passed from the ends of the pin and then is looped around the ends of the wooden stick so that the drain is put in tension. As the drain gradually loosens, the slack is taken up by the rubber band so that the tension is maintained. In about forty-eight hours the drain usually can be removed quite easily.

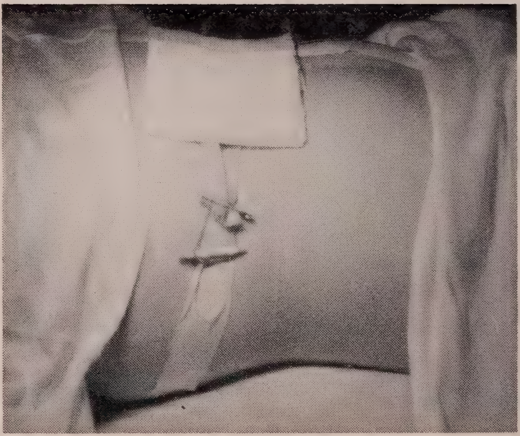

FIG. 1. Traction device used for removing immovable abdominal drain.

Figure 1 illustrates the device in situ. It may be seen that the traction apparatus is outside the dressing area.

264 NEW YORK AVENUE, BROOKLYN 16

Modification of Breast Examination by Simultaneous Palpation

SOLOMON I. GRIBOFF, M.D., LONG BEACH, NEW YORK

(From the Medical Department, Long Beach Memorial Hospital)

In breast palpation, the differentiation of a localized area of increased nodularity (fibrocystic disease) from a tumor is a most difficult decision for the physician.[1-3] Is the nodularity within the normal limits of physiologic variation of breast structure, or does it represent a tumor which requires biopsy? Most carcinomas, in their earliest detectable state, can seldom be distinguished clinically from a mass produced by benign cystic disease. Previous interest in breast disease[4,5] has emphasized to the author the fact that fibrocystic disease as a bilateral phenomenon, with the areas similarly disposed in both breasts, occurs frequently. In contrast, tumors of the breast are unilateral, or if bilateral are not similarly placed.[1] Careful simultaneous examination of the breasts should be helpful in differentiating the neoplastic lesion, since a similar mass would not be present in the mirror image section of the other breast. Current recommended technics of breast palpation[1-3] with the physician standing at the side of the supine patient, do not stress simultaneous palpation of both breasts. In this position, the hands may not be placed accurately for corresponding sections of the breasts, and the amount of pressure on the breast tissue may be different with each hand.

Method

After assessing various modifications, the author has utilized the standard technics of breast inspection and lymph node palpation[1-3] with the addition of simultaneous breast palpation in the following routine. The patient is supine with the arms fully abducted and the forearms bent at right angles above the head. The examiner stands at the head of the table and, after an additional inspection in this position, the flattened adducted fingers of each hand are simultaneously pressed gently on corresponding portions of each breast, with palpa-

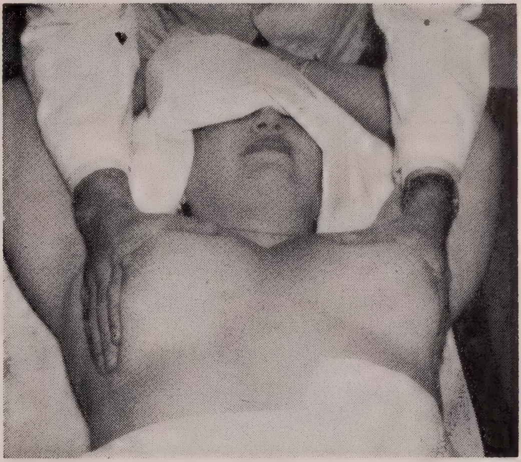

Fig. 1. Position for first maneuver.

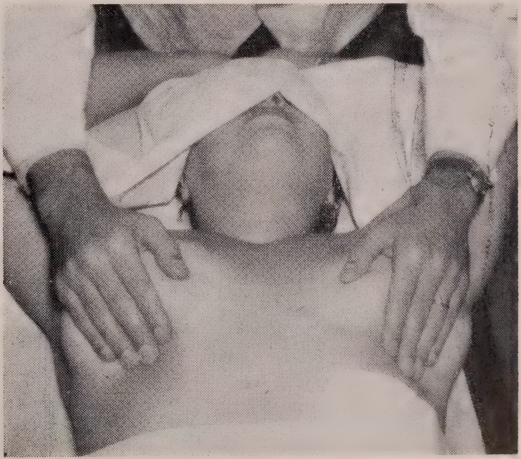

Fig. 2. Second position, starting at upper portion of fascia recta.

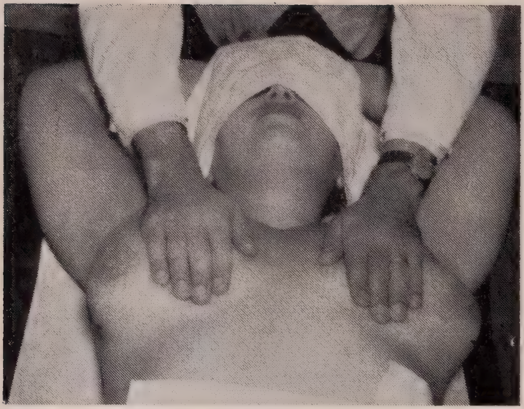

FIG. 3. Position for palpating laterally to areolas.

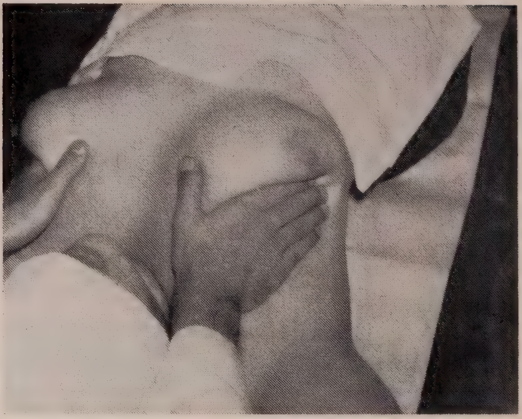

FIG. 4. Palpation of superior portions of breasts.

tion of the breast tissue against the rib cage. The first maneuver (Fig. 1) begins with the hands placed laterally at the anterior margin of the latissimus dorsi. A gradual palpation of the breast tissue as the hands move medially to the nipple line raises any overlapping portion of the breast, and palpation against the chest wall can be performed. The second position (Fig. 2) starts at the upper portion of the fascia rectas. As the hands move superiorly, the palpation procedure includes the inframammary ridge and the subareolar area. The hands are then placed at the medial aspects of both breasts, and palpation progresses laterally to the areolas (Fig. 3). The superior portions of the breasts are then palpated, with movement of the hands inferiorly from the clavicles to include the free border of the pectoralis major and the region above the areolas (Fig. 4). Finally, simultaneous palpation of the areolas is performed (Fig. 5).

Differences in breast tissue content can be determined easily by simultaneous comparison of corresponding portions of both breasts. The examiner must then decide whether this difference is of clinical significance; the finding of a unilateral mass is a strong indication for biopsy. If a carcinoma is arising in an area of cystic mastitis, there may be a delay in diagnosis by any palpation technic until late confirmatory signs are present. However, by means of a simple diagram of the areas of bilateral fibrocystic disease and repeated examinations at three-month intervals one may be suspicious of an enlargement in the involved area and request biopsy at an earlier stage.

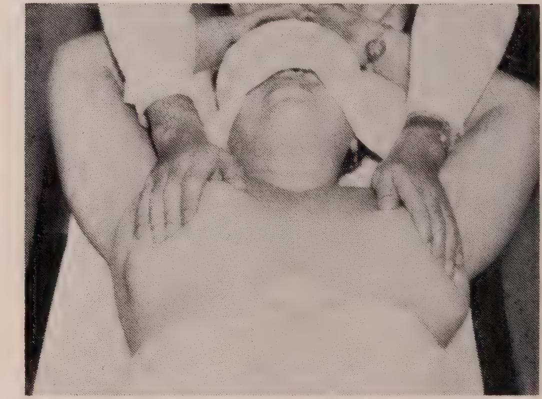

FIG. 5. Simultaneous palpation of areolas.

Summary

A technic of simultaneous palpation of both breasts is described which utilizes the characteristic bilateral nature of fibrocystic disease as an aid in the differentiation of this lesion from a unilateral tumor of the breast which requires biopsy. It is hoped that this method may help in the earlier diagnosis of carcinoma of the breast on routine examination.

365 WEST PENN STREET

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ANNUAL CONVENTION

Medical Society of the State of New York
War Memorial Auditorium, Rochester

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Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

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No applications can be considered after January 1, 1961.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

Group II: Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of facts.

Chronic Disease Problem and Services

WALTER E. BOEK, PH.D., ALBANY, AND JANE K. PELTON, P.H.N., ADAMS, NEW YORK

(*From the New York State Department of Health and the Jefferson County Public Health Nursing Service*)

EDITOR'S NOTE: *During 1958 two interview surveys were carried on by citizen groups in cooperation with local health officers and the State Health Department. One of these was in Montgomery County and the other in southern Jefferson County. This is the fourth of a series of short articles on the findings.**

IT IS widely recognized that people with chronic diseases use a great amount of medical time and facilities and that even more attention to the unmet needs of such people is currently needed. Although it is difficult to define the extent of these conditions in a population and to measure the need for medical care, an interview survey of the type carried on in Montgomery and Jefferson counties can give a rough estimate of the problem as well as of the attitudes of citizens on these specific conditions and their solution. In these two surveys 667 families, chosen as area probability samples of each county, were interviewed in their homes.

Incidence and Type of Chronic Health Conditions

The group of questions about chronic diseases in the interview began with the question:

> Now we would like to learn of any experiences you or your family has had with services available in your community for handicapped persons. First of all, we need to know if anyone in your family has any kind of a health or physical or mental condition that has lasted more than a month. What we mean is any chronic illness, injury, mental condition, or other condition that bothers him or affects his working, going to school, doing housework, or any other activity. Is there such a person in your family?

In 16 per cent of the 667 families the person who was interviewed, usually the wife, answered yes to that question. In a few families more than 1 person was reported as having a chronic type of condition. Of the 2,359 men, women, and children included in this survey 137, or 6 per cent, were said to have had a condition that had lasted one month or more.

Cardiac ailments, such as congenital, rheumatic, hypertensive, or coronary disease, were the most common chronic illness problems, with nearly one fourth of the conditions so classified (Table I). Emotional problems, mental deficiency, cerebral palsy, neurologic diseases, arthritis or rheumatism, leukemia, diabetes, clubfoot, deafness, and blindness were other conditions cited by those interviewed.

When asked "In what way does this bother the person?" most of those interviewed cited the restriction in activity and the pain that the affliction imposed. The restriction related to the inability to work or to carry on personal or home environmental activities. Some of the comments were: the handicapped person "is weak and unable to work sometimes," "drags his feet, his right side is affected, he shakes, has poor speech, and can't work," "is unable to do own work at times," "has a condition that interferes with farm work, especially milking," "cannot do some fine work," "can't bend over while walking because of stiffness in the hip joint," "cannot take part in too vigorous sports," "has trouble with walking and speech and can't sew," "has been bothered

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* The other articles appeared in May 1 (**59**: 1783), Aug. 15 (**59**: 3065), and Sept. 15 (**59**: 3403), 1959, issues of the JOURNAL.

TABLE I.—Incidence of Chronic Diseases Among the 137 Persons (6 Per Cent) With a Chronic Condition in the 667 Families Comprising 2,359 Individuals Interviewed in Montgomery and Southern Jefferson Counties

Type of Condition	Persons Number	Per Cent
Heart ailment	31	23
Arthritis	16	12
Mental condition	11	8
Eye ailment	6	4
Accidental injury	6	4
Asthma	3	2
Diabetes	3	2
Cerebral palsy	3	2
Ear trouble	2	2
Leukemia	2	2
Clubfoot	2	2
Stroke	1	1
Hay fever	1	1
Tuberculosis	1	1
Other conditions	40	29
Unknown	9	7

for three years," "has pain all the time," "has periods of unconsciousness due to the narrowing of the blood vessels in his head," "can do her own housework but avoids people," "has poor hearing in both ears," "is nearly totally blind in one eye," "has spells of falling," "misses more school than he should," and "when she runs, she gets breathless and pale and she faints."

Of the 137 persons with chronic conditions, 16 were under ten years of age, 16 were between ten and twenty years, 22 were between twenty-one and thirty-nine years, 33 were between forty and sixty years, and 37 were over sixty. The proportion of persons with a chronic problem increased with the age group. More of those afflicted were female than male, especially among those in the older years. There was no significant difference between the over-all incidence of these conditions and the socio-economic level of the families, as measured by an index that combines occupation and education scores.*

Source of Treatment

One fourth of the individuals with chronic conditions were not receiving any medical treatment. Of those receiving some treatment, at least 3 out of 10 were seeing a private physician and about 3 out of 10 were using some medication which might have been recommended by a physician. Treatment for the others came from various sources, such as an orthopedic clinic, a general hospital, a mental hospital or clinic, a public health nurse, or a Veterans Administration hospital.

Assistance from a community agency had been given to 1 out of 5 of those with chronic illnesses. Of those obtaining this community agency help, one-third mentioned public health nursing services. Other organizations which were mentioned as giving some aid were: heart associations; medical societies; New York State Departments of Health, Mental Hygiene, and Education; an agency for the blind; tuberculosis and public health associations; the Red Cross; cerebral palsy associations; and chapters of the National Foundation.

Evaluation of Community Services

Those interviewed in families in which a member had received aid from a community agency for a chronic medical difficulty were asked about their satisfaction with what they had been given by the agency. A few desired additional help, such as financial aid, free medicine, or free medical care, but most were satisfied with the endeavors of the various agencies to help them.

When asked to evaluate the services for chronic medical conditions available in their communities, many of the 667 families visited in their Montgomery or Jefferson county homes had difficulty in doing so. This difficulty probably was due to the limited services actually available. Of these families, 100 did not even make a statement about chronic disease services and 264 said that they did not know how good they were. Twenty-eight stated that there were no community services for chronic diseases in their area.

Of the 567 who ventured an opinion, a rating of very good was given by 22, good by 124, adequate by 12, fair by 34, not very good by 22, and poor by 51. Thus, 22 per cent of those who replied to this question rated community services for chronic illness as good or very good, and 11 per cent rated them as poor. The comments ranged from: "wonderful," "health nurses have been doing a good job in the last five years," and "the services are improving all the time" to "the mentally retarded clinic should be expanded," "services should be provided nearer our community," "they should publicize the programs more," "mental hygiene services should be improved," "95 per cent of the red tape required before you get help should be cut out," "if possible we should have a doctor in our town," and "we should have more practicing physicians."

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* Hollingshead, A. B.: Two Factor Index of Social Position, Dittoed Report, New Haven, Yale University, 1956.

Conclusion

If it is correct to assume that medical care might control some chronic conditions or might reduce the extent of the handicap, these surveys indicate a need for more medical care. One fourth of those suffering from a chronic condition were not receiving any medical treatment, and a significant number of the rest were not under the care of a physician. According to what was reported by the interviewed families, the availability of community services for the chronically ill could also be improved.

Summary

Within the limitations of the interview data gathered from people in their homes, it was found that 6 per cent of the 2,359 persons in the 667 families covered by this survey had a condition recognized by the family respondent as a chronic medical problem which handicapped them. A wide variety of conditions were found to affect the carrying on of normal patterns of life by these individuals. Socioeconomic factors did not seem to be related to the general prevalence, but age and sex were. More older people and more females were listed as being afflicted. It is concluded that there is a need for more medical care.

Medical Society of the State of New York
District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
I	May, 1961	. . .
II	October 26 and 27, 1960	Grossinger
III & IV	September 14 and 15, 1960	Schroon Lake
V	Spring, 1960	. . .
VI	September 28, 1960	Ithaca
VII	October 13, 1960	Corning
VIII	September 29, 1960	Jamestown
IX	May, 1960	. . .

Field Experience with Mouth-to-Mouth Resuscitation (Expired Air Inflation)

Preliminary Report

GAMLIEL SALAND, M.D., AND VINCENT J. COLLINS, M.D., NEW YORK CITY

(From the City of New York Fire Department and Bellevue Hospital Center)

THE expired air inflation method of resuscitation includes methods utilizing mouth-to-mask, mouth-to-airway (Safar), mouth-to-nose, and mouth-to-mouth technics. The simplicity, effectiveness, and superiority of these expired air technics has been well demonstrated. A summary of the investigations of these methods was reported in the *Journal of the American Medical Association* as a symposium to the Council on Medical Physics.[1] In consequence of the investigations of this symposium, the expired air technic became established as the preferred method of respiratory resuscitation. Subsequently, the technic was approved by the Red Cross, for children in 1958 and for adults in 1959, and was adopted by the Boy Scouts in 1959.[2]

In addition, there have been many community experiences attesting to the utility of the methods. In February of 1959, the Fire Department of the City of New York instituted a program of instruction at the Fire College[3] and adopted a procedural manual for the instruction of rescue workers.[4] The technic approved for the Fire Department was that of the head-tilt method.[5] No adjuncts or artificial airways were recommended either in the training program nor were they recommended for field application.

Since the effectiveness of any first aid measure must ultimately be tested in the field by laymen, it was decided to study carefully and record all asphyxial states handled by the members of the Fire Department. During the period of June, 1959, to January, 1960, a significant number of accidents were treated. The experiences of the firemen in various field situations requiring respiratory resuscitation is the subject of this report. The details of each case are contained in department files and are considered irrelevant. The diagnosis and progress in each case was under the direct control of a fire physician.

Asphyxial Conditions Treated

CARBON MONOXIDE.—There were 3 cases of carbon monoxide poisoning, none was breathing when they were first seen, and 2 of these were dead on arrival. However, 1 patient, a child of four years who was not breathing when he was first seen, was restored to normal breathing after one minute of treatment, and he was then removed to the Kings County Hospital.

SULFUR DIOXIDE.—There was 1 patient with sulfur dioxide poisoning whose breathing was shallow when he was first seen, and he was restored to normal breathing.

DROWNING.—There were 3 cases of drowning. No patient was breathing when he was first seen and each was pronounced dead after he was treated for five minutes, seventy-five minutes, and one and one-half hours respectively.

CARDIAC CASES.—There was a total of 21 cases of cardiac disease. All except 1 patient were not breathing when they were first seen; of these, 20 had probably been dead for some time, and breathing was not restored in any of these cases. There was 1 patient who was breathing poorly when he was first seen and died after twenty-two minutes of therapy.

Unknown Causes.—There were 7 patients in whom the cause of asphyxia was not known, none of whom was breathing when first seen; only 2 of these persons were restored to normal respiration.

Miscellaneous Cases.—There were 7 patients in the miscellaneous group and none was breathing when he was first seen. Three of these people were homicides, were dead on arrival, and were not resuscitated. One patient in shock, another with cancer of the esophagus, and 1 who had been buried in an excavation were restored to normal breathing. It was impossible to restore to normal respiration a child with bronchial pneumonia.

Smoke Exposure.—There were 29 cases of smoke exposure. Of these, 9 patients were breathing feebly when first seen; 8 of the 9 were restored to normal breathing, but 1 patient, a child two years of age, died fifty minutes after arriving at the hospital. Twenty individuals who had been exposed to smoke were not breathing when they were first seen. Of this number 9 were restored to normal respiration, almost half the total of the nonbreathing individuals.

A Comparison of the Various Methods Used

Mouth to Mouth.—The mouth-to-mouth method was used 44 times and 20 people were restored to normal respiration. A point to be noted is that smoke cases constituted 23 of this number and it was in the smoke cases that the best results had been obtained.

Mouth-to-Mask.—The mouth-to-mask procedure was followed in 22 cases and only 2 persons were restored to normal respiration.

A Combination of Mouth-to-Mouth and Mouth-to-Mask Procedures.—There was a total of 6 cases in the combination procedures series and only 1 person was restored to normal respiration.

Use of the Resuscitator in Addition to the Other Methods.—The resuscitator was used with the combined procedures 12 times, and 5 persons were restored to normal respiration.

Comment

Several points should be emphasized in the consideration of the foregoing report. It is important to notice that the procedure was administered by members of the City of New York Fire Department. These men are lay people who have been schooled in the method of mouth-to-mouth resuscitation. They are usually the first to arrive at the scene of an accident, usually before the arrival of a doctor. Certainly the fireman is always on hand at fires to give first aid, and since the time element is so important, these facts probably account for the large number of successes in smoke exposure resuscitation.

It can be seen from the figures given that in instances of death from cardiac disease this procedure has not been of any avail; such patients are usually elderly, have diseased hearts, and have been dead for a considerable time prior to the arrival of anyone who knows how to use artificial respiration.

The same applies in situations where cessation of respiration has occurred in cases of homicides, infections, cancer, drownings, and so forth; but one should always attempt this method when faced with the problem of an individual who is not breathing. One cannot always know how long respiration has ceased, and the first few seconds or minutes are important in the saving of lives.

When the various technics of resuscitation are considered, it becomes apparent that the best results were obtained when only mouth-to-mouth respiration had been used. There are two factors which no doubt contributed heavily to the results obtained in this series. The first factor is that a considerable number of the individuals in this series had been exposed to smoke in places where a fireman could apply his knowledge and skill very early and often in time to restore normal respiration. This method is prompt, readily available, efficient, and easily applied. The second factor is that the rescuer did not have to contend with gadgets such as breathing masks or resuscitators. We have urged that adjuncts are not necessary to save lives; and that if a rescuer has any qualms about using his mouth directly on the mouth of the victim, the thickness of a handkerchief placed over the victim's mouth will eliminate this objection. A number of objections have been evident in regard to the use of airways: the search for and the application of an airway is time consuming; one must be skilled in the use of airways; and, on occasion, the use of airways is attended with definite dangers.[6] Finally, if a rescuer knows how to position the head properly, the artificial airway is unnecessary.

We wish also to emphasize the fact that while we are reporting only on 72 cases, for the past year and one-half during which time this procedure has been in vogue in the City of New York Fire Department, we have had a total of over 100 resuscitation attempts. In no case where mouth-to-mouth resuscitation was used has any rescuer sustained any infection.[7]

Addendum

Since this paper was submitted for publication there has been an additional case of drowning in which a nine-year-old victim was not breathing when he was first seen and was restored to normal respiration by a fire chief in the Fire Department.

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Home Test for Toxemia Aids Prenatal Care

A simple home test can enable an earlier diagnosis of toxemia of pregnancy and provide better prenatal care, according to three New York City physicians.

Jacob Clahr, M.D., Edwin J. Pear, M.D., and Leon S. Gabaef, M.D., reported on the home test program in the July 30, *Journal of the American Medical Association.*

Testing for the presence of protein is done routinely during prenatal office visits. However, the authors felt a home test each day, or every other day, would detect the disease quicker. This can be accomplished by passing a specially treated paper strip through the urine. The paper will turn a greenish-blue if protein is present.

For the past year these physicians have recommended the home test for patients who showed some signs of being potential victims of the disease. Among the first 50 of these patients, one detected evidence of protein five days before her next scheduled office visit. She was immediately hospitalized and gave birth to a healthy baby. A previous pregnancy of the patient had resulted in a stillbirth associated with toxemia.

"It is reasonable to assume that had she not detected the proteinuria, a five days' delay would have occurred before her condition would have been detected at her next scheduled visit," the physicians wrote.

"As so often happens within this short interval, a severe grade of toxemia may result before initiating therapy. The potential risk involved in such a delay is well established and may have resulted, in this case, in a second stillbirth."

The three physicians are associated with the Department of Obstetrics and Gynecology, Morrisania City Hospital.

Some Notes About a New Synthetic Penicillin for Staphylococcal Disease

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THIS report is concerned with four aspects of the new synthetic penicillin (X—1497; 2,6, dimethoxyphenylpenicillin, monohydrate; Staphcillin): its pharmacologic properties in the human being; an in vitro study of various materials used to dilute the serum containing it, with a final recommendation about which diluent is sensibly satisfactory in its routine assay; some notes about the influence of penicillinase that is derived both from Bacillus cereus and from staphylococci, on its antistaphylococcal activity; and a summary of its use alone in 20 patients with acute infections, most of them with serious staphylococcal disease. Included is a short commentary about its freedom from toxicity in the human being. All of the work reported and all of the clinical observations have been done in our own laboratories and hospitals.

Material

Tables I, II, and III and Figure 1 summarize the distribution of the synthetic penicillin into blood and other body cavities following its parenteral administration in single or multiple doses to normal adult subjects and those with infections. Peak concentrations are attained in serum by the first hour (Fig. 1). The highest levels observed are dependent entirely on size of dose; levels less than 11 micrograms per milliliter are expected with 1 Gm. or less, and between 12.5 and 26.5 micrograms per milliliter after doses of 1.5 or 2 Gm. Thereafter, levels fall to below 10 micrograms per milliliter at four hours, after a 2-Gm. dose, and to less than 5 micrograms per milliliter following smaller amounts.

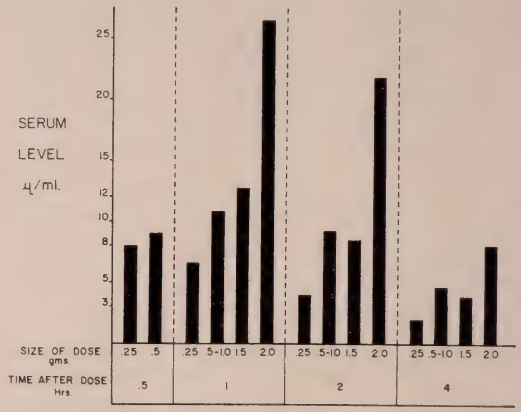

FIG. 1. Blood levels after single intramuscular doses of synthetic penicillin.

Variable levels are maintained after multiple doses but concentrations of at least 6 micrograms per milliliter are generally present for the vast majority of hours each day when a total daily amount of from 5 to 10 Gm. is given in divided doses at four- or five-hour intervals (Table I). In 1 patient with serious renal disease (not infection) receiving a 5-Gm. daily dose, levels above 30 micrograms per milliliter persisted. As virtually all strains of staphylococci, whether penicillinase producers or not, are susceptible to 6.25 micrograms of the synthetic penicillin per milliliter or less, a daily regimen of 1.5 to 2 Gm. given every four to five hours theoretically would provide maximal antimicrobial activity in the serum.

Excretion is rapid and at least a third of the administered dose is recovered in urine, most of it within the first eight hours (Table II). Other routes of ex-

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* With the technical assistance of Winifred Osborne.

TABLE I.—Blood Levels After Repeated Doses of Synthetic Penicillin*

Dosage	Range of Concentration (Micrograms per Milliliter) Hours After Last Dose 1	3	4	5
After 1 or 1.5 Gm.† given intramuscularly 5 times daily	3 to 31	12.5 to 45	8.5	
After 2 Gm. intramuscularly 5 times daily	8.5 to 38	16.5	6 to 9.5	4.4
After 10 Gm. intravenously given continuously	11 to 12	3.3 to 10	11 to 31	3 to 19

* Isolated samples from 7 patients taken after at least one full day of therapy.

† Concentrations in serum of 1 patient in uremia ranged from 34 to 57 micrograms per milliliter at one and three hours.

TABLE II.—Twenty-Four-Hour Urine Excretion Following Synthetic Penicillin Therapy

Dosage (Gm.)	Number of Patients	Average Recovered* Gm.	Per Cent
1.5 intramuscularly	4	.474	32
2 intramuscularly or intravenously	6	.98	43

Approximately 75 per cent of that recovered appears in the urine in the first eight hours.

* There was a remarkably narrow spread among the individual results.

TABLE III.—Distribution of Synthetic Penicillin Into Body Spaces After 1.5 Gm. Doses

Condition	Concentration (Micrograms per Milliliter) Body Cavity	Blood	Time After Dose (Hours)
Spinal fluid: 3 normal subjects	.53 .2	10.2 6.7	2 4
Peritoneal fluid:			
2 patients with noninfected ascites	12 12	23 15	2 4
Infected knee fluid: 1 patient	7.3	16.1	1
Cord blood: 2 patients	12.3	13.8	2
Noninfected pleural fluid: 1 patient			

cretion, such as bile and stool, have not been investigated. Concentrations of the synthetic penicillin in cord blood and in pleural and peritoneal fluid are of approximately the same order as occur in the blood. The amount found in an infected knee space is about one-half the blood level. There is an appreciable blood brain barrier to the synthetic penicillin in normal adults (Table III).

Irrespective of the method used to assay the synthetic penicillin in body fluids, the specimen—serum or other—must be diluted five or more times to make an accurate measurement. In the instances of other synthetic penicillins, as well as with penicillin G and penicillin V, the choice of the diluting fluid is crucial if comparisons of the resulting blood levels are to be made, or if a comparison of levels following the use of one of them is assayed in different laboratories. Normal serum, without antibacterial activity, is a sensible diluent for with it the resulting assays should reflect the distribution of the agent in vivo. Using normal serum as a standard for reference, a series of bloods were assayed for the synthetic pencillin with a number of other diluents and the results were compared. Table IV summarizes the observations.

The synthetic penicillin can be recovered with reasonable accuracy when it is added to human serum and diluted with it. Recoveries with 1.75 per cent bovine albumin and albumin with 5 per cent gel as the diluents are also satisfactory. On the other hand 7 per cent and 1 per cent albumin and 5 per cent gel are associated with discrepant results when compared with those with serum.

After an intramuscularly administered dose, levels of the synthetic penicillin in serum with gel as the diluting substance generally are somewhat higher than those measured with normal serum or 1.75 per cent bovine albumin as the diluents. Thus, while normal serum is the ideal substance to prepare an unknown serum for assay of its penicillin content, it is impracticable to use a routine procedure. Consequently we recommend that a 1.75 per cent bovine

TABLE IV.—DILUENTS IN PREPARING HUMAN SERUM FOR ASSAY OF SYNTHETIC PENICILLIN

Test Serum Diluted 5 Times with These Diluents (pH Adjusted to pH 7.3)	Normal Serum	Bovine Albumin (Per Cent) 7	1.75	1	Gelatin (5 Per Cent)	Gel (5 Per Cent) Bovine Albumin (1 or 1.75 Per Cent)
In vitro (with human serum)						
Amount recovered after adding 2 micrograms of synthetic penicillin per milliliter	2.05		1.9	2.3	2.2	2.1
Per cent variation	+ 2.5		− 3	+15	+10	+5
Amount recovered after adding 3 micrograms per milliliter	3.2	3.9	3.4		2.9	
Per cent variation	+ 7	+30	+13		− 3	
In vivo (average of 3 normal adults)						
Hours after 1.5-Gm. dose 1	12.7		12.75		13.9	
2	8.45		7.95		9.55	
4	3.9		3.7		4.3	
Hours after 2-Gm. dose 1	18.4		20.2		20.1	
2	17.6		18.9		18.6	
4	8.6		9.5		8.8	

TABLE V.—COMPARATIVE RESULTS OF TWO ASSAYS OF SYNTHETIC PENICILLIN IN HUMAN SERA, USING FOUR DILUENTS

		Diluents			
Condition	Hour*	Normal Serum	Bovine Albumin (1.75 Per Cent)	Gelatin (5 Per Cent)	Brain-Heart Infusion Broth
Cylinder cup plate with Sarcina Lutea Concentration of synthetic penicillin (micrograms per milliliter)	1	36.2	38 (+5)	31.7 (−13)	
	2	28	29.5 (+5)	20.2 (−29)	
	4	8.85	9.88 (+10)	6.98 (−23)	
Serial Dilution with Staphylococcus 209 P Concentrations of synthetic penicillin (micrograms per milliliter)	1	35.6 (−4)			24 (−33)
	2	26.8 (−4)			19.2 (−32)
	4	9.5 (+7)			9.2 ...
Tube of inhibition	1	6			4.4
	2	5.6			4
	4	4			2

* After 2-Gm. intramuscular dose.
Percentage figures in parentheses represent variation from results with normal serum.

albumin solution in buffer adjusted to pH 7.35 be used. This has proved adequate also for measurements of other penicillins and for routine use by all laboratories; blood levels can be compared more favorably.

The cylinder cup plate technic using Sarcina lutea as the test organism gives results reasonably comparable to serial dilution methods using Staphylococcus 209 P as the test organism (Table V). At low concentrations the cup plate method is somewhat more precise because the dilution factor in the other method precludes precision. Normal serum as the diluent in the serial-diluting method gives more accurate results than brain-heart infusion broth and probably should be considered the diluent of choice. Staphylococci do not grow well in bovine albumin solutions.

The synthetic penicillin has the unique property of being equally active in vitro against penicillin-sensitive and resistant staphylococci. Since the resistance of these microorganisms are due mostly, if not solely, to their ability to produce penicillinase in varying and often large amounts, it is our presumption that the synthetic penicillin has the unique property of bypassing at least some of the neutralizing propensity of penicillinase. The following studies were done in an attempt to demonstrate this phenomenon.

Method

Growth curves of two strains of staphylococci are noted after incubation in tryptose phosphate broth. Penicillin assay seed agar is used as base medium on which colony counts, after appropriate dilutions in broth, are made. Counts are made on plates containing no fewer than 25 colonies and no more than 500. The two strains studied are the penicillin-sensitive Staph. 209 P and a strong penicillinase-producing strain isolated from a patient (Staph. 6418). The penicillinase production of each is estimated by use of Got's plates. With each strain the initial inoculum in the broth is approximately 5×10^{-6} organisms. At eight hours in the control cultures the number of organisms increases to 500,000,000 (5×10^{-8}).

Staph. 209 P is sensitive to between 0.6 and 0.625 microgram of synthetic penicillin per milliliter and strain 6418 is sensitive to between 2.5 and 3 micrograms per milliliter by the serial dilution technic. Staph. 6418 is totally resistant to more than 60 micrograms of penicillin G per milliliter (after twenty-four hours incubation) and 209 P is sensitive to 0.03 microgram per milliliter. With the addition of the synthetic penicillin in concentrations equaling or more than these two susceptibility points (0.6 microgram per milliliter with 209 P and 3 micrograms per milliliter with 6418) both growth curves, with an initial inoculum of 5×10^6 organisms, show progressive decrease in the numbers of staphylococci after the second hour and a precipitous drop in the number of colonies after the sixth hour (Fig. 2). At eight hours there are approximately 3×10^{-5} viable organisms in the instance of 6418 and less than 10^{-5} in tubes containing 209 P. Increasing concentrations of synthetic penicillin to threefold, that is, to 3 and 9 micrograms per milliliter respectively, do not alter these growth curves appreciably for eight hours. Although sterilization of any culture is never achieved irrespective of the amounts of synthetic penicillin added, more than 99 per cent of both strains are killed after twenty-four and forty-eight hours with concentrations of 9 micrograms of synthetic penicillin per milliliter. Concentrations of the synthetic penicillin less than the measured level of sensitivity interfere with the growth of both strains to a small, though definite degree.

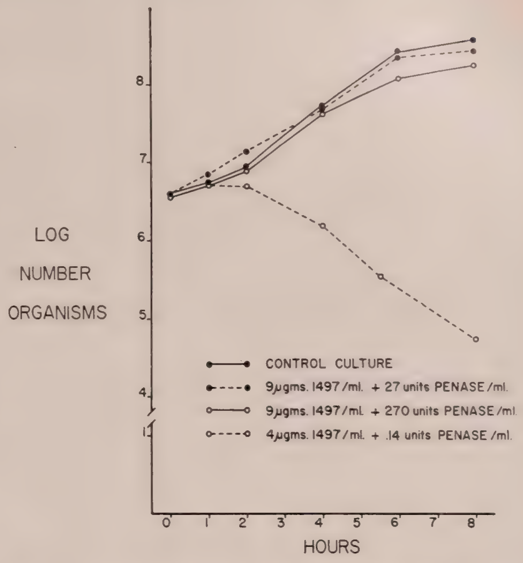

FIG. 2. Growth curves: synthetic penicillin, Staphylococcus 6418, and penicillinase.

Growth curves after the addition of the synthetic penicillin and commercial penicillinase, derived from B. cereus (Schen-Labs penicillinase A) are shown in Figures 2 and 3. One unit of penicillinase used inactivates 1 unit (0.6 microgram) penicillin G in one hour at 25 C. As 30 units of penicillin G are antibacterially equivalent to about 1 mg. of synthetic penicillin, the concentration of penicillinase theoretically

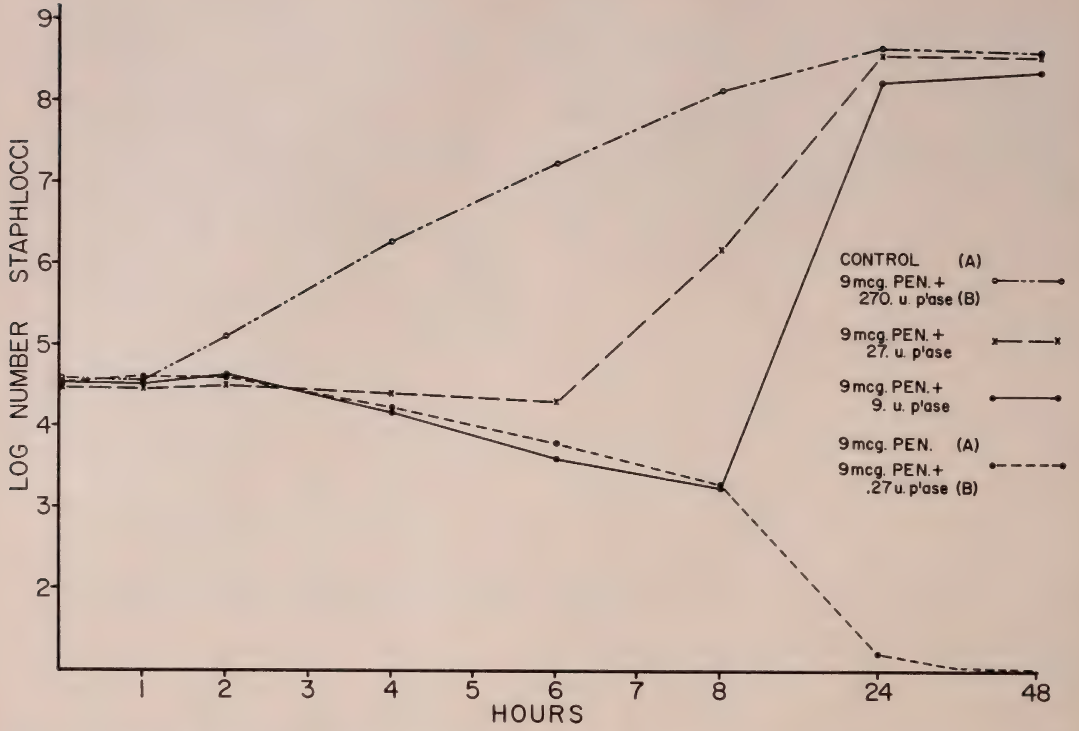

FIG. 3. Growth curves. Synthetic penicillin (micrograms)—staphylococci (penicillinase producer)—penicillinase.

needed to inactivate 1 microgram of synthetic penicillin is approximately 0.03 unit. Thus, for example, with Staph. 209 P, which is inhibited by 0.6 micrograms of synthetic penicillin per milliliter, 0.02 units of penicillinase have been used. With this concentration of penicillinase added, growth curves of both organisms are essentially identical to those with the penicillin alone; that is, there is an appreciable reduction in the total number of viable units at six and eight hours. Perhaps the inhibition of growth of staphylococci at two, three, and four hours is somewhat slower when penicillinase is added, but after six hours the curves with and without penicillinase are virtually identical. Penicillinase added alone to the control culture does not affect growth.

In contrast, when 100 and 1,000 times more penicillinase than the 0.03 unit of penicillinase per microgram of penicillin are added, growth curves simulate the control tubes, if a large inoculum of organisms is used (Fig. 2).

It must be emphasized that growth curves of both strains of staphylococci as affected by the synthetic penicillin are the same, despite the ability of one to produce penicillinase. There continues to be marked inhibition of growth of both strains when small amounts of penicillinase are present. Neutralization of the synthetic penicillin's antibacterial activity occurs only when excess amounts of penicillinase are added.

Concentrations of 0.5 or 1 microgram per milliliter of penicillin G inhibit the growth of Staph. 209 P in about the same fashion as does the synthetic penicillin, with the expected drop in colony count at six and eight hours. Contrariwise, when 0.8 units of penicillinase are added with 0.5 microgram of penicillin G, or 1.6 units with

TABLE VI.—Patients Treated with Synthetic Penicillin

Organism	Infectious Disease	Associated Disease	Bacteriologic Cure (Days)	Clinical Response
Pneumococcus	Pneumonia 3 lobes*	Cardiovascular collapse	1	Crisis: 48 hours Death: 4 days
Pneumococcus	Pneumonia 3 lobes	Acute alcoholism	1	Cure with crisis 36 hours
Pneumococcus	Pneumonia 1 lobe	Alcoholism with cirrhosis	1	Cure with slow resolution

* Positive blood culture. Death from irreversible shock. No organisms culturable from lung at autopsy.

1 microgram of penicillin G there is complete inactivation of penicillin G's inhibitory property. With a small amount of penicillinase regardless of the concentration of penicillin G, growth curves simulate the control culture. This observation suggests clearly that 1 unit of penicillinase used does indeed neutralize 1 unit (0.6 microgram) of penicillin G.

Penicillin G alone fails to inhibit the growth of the penicillinase-producing strain of staphylococcus; studies with additional amounts of the extracellular penicillinase, therefore, were not performed.

Growth curves, when the initial inoculum is 5×10^{-4} organisms, are appreciably different in certain respects (Fig. 3). The addition of the synthetic penicillin in concentrations three times the sensitivity point (9 micrograms per milliliter) results in a significant drop in number of viable staphylococci at eight hours and an almost total sterilization (99^{+} per cent) at twenty-four and forty-eight hours. Small amounts of penicillinase do not alter this maximal antimicrobial effect. When the amount of penicillinase is increased thirtyfold (the dosage is arranged so that 1 unit of penicillinase is used with each microgram of synthetic penicillin) the inhibition of growth is marked for eight hours, but thereafter the resumption of the multiplication of organisms is observed, and at twenty-four and forty-eight hours there are essentially the same number as in the control culture. With 100 times the amount of penicillinase added, some inhibition of growth is observed for six hours; thereafter the antistaphylococcal effect of the synthetic penicillin is against lost. A thousandfold increase in concentration of the penicillinase interferes completely with the synthetic penicillin's effect.

These differences are of some interest because with the usual serial dilution technic for measuring the sensitivity point, the inoculum size of the staphylococcus does not alter the end point when the synthetic penicillin is used. The minimal inhibiting concentration of the synthetic penicillin against Staph. 6418 is less than 3 micrograms per milliliter when the inoculum size is 5×10^{6} organisms and also less than 3 micrograms per milliliter when $5 \times 10^{-4\prime}$ organisms are present initially. It appears that slightly excessive amounts of penicillinase indeed do interfere with the antistaphylococcal effect of the synthetic penicillin.

Results

A series of 20 acute bacterial infections have been treated (Tables VI, VII, and VIII). Dosage schedules ranged from 5 to 10 Gm. daily given in individual parenteral doses of from 1 to 2 Gm. every four hours with one night-time dose omitted. A few patients received the drug intravenously. The regimen was adjusted grossly according to body weight and to our own estimation of the type and location of inflammation: if penetration of the drug into the lesion was considered to be compromised, the larger amounts were administered.

All of the patients were adults, all were acutely ill, and in the vast majority (17 of

TABLE VII.—PATIENTS WITH STAPHYLOCOCCAL DISEASE TREATED WITH SYNTHETIC PENICILLIN

Pt.	Staphylococcal Disease	Associated Disease	Bacteriological Response days.	Clinical Response	Daily Dose (Grams) Duration (Days)
1	hugh post-traumatic leg infection	coronary insufficiency	marked reduction in organisms on day 3	beginning control of Inf. - death(1)	10 (I. V.) x 3
2	massive carbuncle leg	diabetes	4	I & D,(2) rapid resolution	5 x 9
3	carbuncle leg	trauma	6	I & D, cure	5 x 5
4	carbuncle leg	-	2	I & D, cure	5 x 7
5	acute relapse osteo, femur(3)	-	4	complete remission	5 x 7
6	acute relapse osteo, femur	-	2	complete remission	5 x 7
7	new and acute osteo, ulna	obesity and diabetes	3	impressive cure without surgery; no relapse after 4 months	5 x 12
8	acute relapse osteo, ankle	allergic to G, diabetes	3	gratifying resolution	7.5 x 7
9	acute osteo, hip	post traumatic amputation	3	ultimate complete healing	5 x 7
10	multiple furuncles	hyperpyrexia, agranulocytosis	(see text)	rapid cure, crisis 36 hours	7.5 x 7

(1) death from massive myocardial infarction - day 3 of Rx
(2) I & D - incision and drainage
(3) osteo - osteomyelitis

Gratifying clinical response 9 of 10
Gratifying bacteriological response 8 of 10

20) it was not believed practicable to use either penicillin G or an oral synthetic penicillin; 16 had infections caused by staphylococci resistant to penicillin G, and another was allergic to penicillin G. Three patients with pneumococcal pneumonia were treated to determine the efficacy of the synthetic penicillin, and another patient received it because it was prejudged that her high fever, agranulocytosis, and multiple small furuncles were staphylococcal in origin. Organisms were not recovered from the lesions, mostly because the cultures failed to reach the laboratory for seventy-two hours. Subsequent cultures were sterile. The patient made a remarkable recovery from the infection with the synthetic penicillin therapy.

Responses, particularly bacteriologic, were gratifying in 19 cases. One patient, known to be exquisitely allergic to penicillin G, received a full seven-day course of 5 Gm. daily intramuscularly without untoward side-effect. Four of the bacteremic patients died after the termination of therapy with the synthetic penicillin. Death in the 4 patients was from a morbid associated disease, and at autopsy there were no residual staphylococcal lesions in any. Indeed in 3, who died seven to thirty-eight days after the treatment with the synthetic penicillin had stopped, infections

TABLE VIII.—Seven Cases of Staphylococcal Disease with Bacteremia Treated with Synthetic Penicillin

Age	Local Site	Staphylococcal Complication	Associated Disease	Outcome	Daily Dose (Grams)	Route	Duration (Days)
55	I. V. cutdown	Pneumonia	Acute coronary occlusion	Cure	5.	I. M.	10
49	Chest wall trauma with abscess	Bilateral pneumonia	Pulmonary infarct broken femur	Cure	7.5 3	I. V. I. M.	10 7
58	Appendectomy wound	Local peritonitis	Obesity	Cure	10 7.5	I. V. I. M.	3 7
86	I. V. cut down	Pneumonia	Heart failure, under nutrition	Bacty cure died 6 weeks later-heart disease	5.	I. M.	7
72	Pneumonia		Alcoholic with cirrhosis	Cure-died later liver disease	7.5 5	I. V. I. M.	4 6
75	Abscess over old hip nailing	Pneumonia	Heart failure under nutrition broken hip	Cure died later no autopsy	6	I. V.	5
70	Diabetic ulcers, amputation stumps both legs	Pneumonia	Diabetes and multiple draining sinses from acute bilateral osteo-myelitis	Died 4 days post Rx staph. gone, Ps. aerug. in wounds	4 or 6	I. V.	12

All patients were receiving one or more antimicrobial agents when the staphylococcal bacteremia and worsening of disease occurred

played no recognizable role as contributory causes of death. The other patient with bacteremia died four days after his last dose of the synthetic penicillin. His amputation stump was still infected, but the staphylococci had been replaced by pseudomonas. This patient had had staphylococci continuously for many weeks in his various surgical and diabetic wounds and had had bacteremia for at least ninety hours prior to use of the synthetic penicillin. Seven antibacterial agents given alone or in combination, often in adequate amounts, had failed to control the infections during this long interval. With the synthetic penicillin the staphylococci disappeared from his blood within twenty-four hours and from his multiple wounds within four days.

Death in 1 patient with localized staphylococcal disease of the leg occurred during therapy with the synthetic penicillin, as a result of a massive myocardial infarction.

Conclusion

It would be presumptuous with this series to draw sweeping conclusions about the efficacy of the synthetic penicillin. We are satisfied now that it does represent as good therapy for penicillin-resistant staphylococcal disease as any prior regimen of antimicrobial drugs alone or in combination, and we consider it a fine drug of choice in such infections.

Two features must be emphasized that conceivably could change our opinions about this. The first is that staphylococci do not disappear from the lesions as promptly as is desirable. In at least 6 cases staphylococci could be recovered from local lesions from four to six days after treatment was started. This is a bothersome observation. On the other hand, the continued presence of organisms apparently is not associated with prolonged clinical illness. The patient gets well in spite of the presence of the organism for four or more days.

Second, we have used the synthetic penicillin for only from four to twelve days in all but 1 case; this patient received it for seventeen days. We have observed that bacterial resistance does not develop in that period, but it could occur with further exposure; time will answer this. The event seems possible, however, when one considers the observations that have been made about penicillinase. The addition of only slight extra amounts of the enzyme inhibits the antistaphylococcal activity of the synthetic penicillin. Perhaps some rearrangement in microbial habits may enhance the development of even larger amounts of penicillinase that would be sufficient to permit the emergence of strains that would be able to overcome the presently observed penicillinase-bypassing activity of the synthetic penicillin. It is evident from the work of others* that staphylococci may also emerge which are resistant to the synthetic penicillin, the resistance being caused by events other than penicillinase production.

Finally, untoward side-effects have not yet been observed; in fact we used the drug without event in 1 patient who was known to be exquisitely allergic to penicillin G. We are certain that the lack of observed evidences of overt toxicity is strictly fortuitous. However it is surely true that local reactions are negligible and no excessive incidence of other untoward effects are anticipated.

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* Symposium on A New Synthetic Penicillin, held at State University of New York Upstate Medical Center, Syracuse, New York, September 7, 1960.

ANNUAL CONVENTION

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RECENT ADVANCES IN MEDICINE AND SURGERY

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ROBERT TURELL, M.D., *Editor*

The Total Approach to Surgical Treatment of Acute Hand Injuries

M. LEON CANICK, M.D., F.A.C.S., NEW YORK CITY

(*From the Plastic and Reconstructive Services of Beth-El and Maimonides Hospitals, Brooklyn, New York*)

THE acutely traumatized hand presents problems of considerable magnitude to the injured person. The most important factor in the success of this type of rehabilitation is competence in the handling of the acute emergency.[1] The improved results which have become apparent are attributable to increased knowledge, improved first aid and definitive treatment, better nutrition, and probably antibiotics.[2] The entire emphasis in the last fifteen years has been to perform optimum surgery for maximum functional benefit at the earliest possible time, preferably, of course, on the day that the deformity is acquired.[3]

Diagnosis

In the emergency room the surgeon examines the injured member but does not probe within the wound.[2] The preliminary diagnosis should be made carefully to serve as a basis for planned procedures. The physical examination is directed to the skin, tendon, nerve, bone, and joint.[3] All potentially viable skin should be preserved.[4,5] Areas of anesthesia are plotted. Special attention is given to the sensory and motor components of the main nerves: the action of the interossei and adductor pollicis for the ulnar nerve, the short abductor and opponens pollicis for the median nerve, and the extension of the thumb for the deep branch of the radial nerve.[6]

The action of the profundus and sublimis flexor tendons is noted for loss. Extensor tendon injury is to be suspected whenever there is a laceration on the dorsum of the hand.[7] These tendons are not infrequently injured through the smallest lacerations[8] and even when there are no lacerations at all. The distal two joints can be fully extended by the intrinsic muscles.[9] The injuries to bones can be detected clinically, but roentgenograms in the anteroposterior, lateral, and oblique views should be taken routinely. Many of these tests become unreliable when applied to the hysterical adult or frightened child,[7] and sedation may be required prior to establishing the diagnosis.

General Considerations

All patients with tendon and nerve injuries, skin injuries requiring grafts and/or flaps, and the more extensive bone injuries are admitted to the hospital for surgery to be performed in the operating room. Those with lesser skin and bone injuries may be treated satisfactorily in the emergency room. In one study covering 240 patients it was found that only 90 were admitted to the hospital with an average stay of 1.7 days.[10] Of the 240 patients, 220 were treated under local anesthesia. In another study it was found that only 1 per cent of patients with hand injuries were admitted to the hospital.[11]

Local anesthesia may be induced by means of digital, metacarpal, wrist, elbow, or brachial block.[2,9] One may use 1 per cent Xylocaine or 2 per cent procaine without adrenalin at the hand and finger level. One method, not in wide use, involves the injection of procaine into the epiphysis of the styloid of the radius or the olecranon after the application of a tourniquet.[12] Approximately 60 cc. of a 0.5 per cent solution are used, and the effect is achieved by diffusion. Of course, this process materially prolongs the time during which the tourniquet is inflated. General anesthesia also is used.

The tourniquet is an important aid, particularly in those cases involving tendon and nerve repair.[5,13] A pneumatic tourniquet is by far the best type. It is inflated to 275 to 300 mm. of mercury and is applied to the upper arm. It may be used under brachial block, anesthesia, but it is too painful when the arm is unanesthetized. It may be kept inflated for one and a half hours. Prior to the final closure of the skin, the tourniquet is released to allow for good hemostasis.

Most wounds may be treated primarily if they are seen within twelve hours unless there has been obvious, infective contamination.[14] The prevention of infections is the concern of all surgeons, but the unrestricted use of antibiotics is actually contraindicated.[2] When it was noted that the ratio of 7 infections among 1,740 operations had increased to 8 infections in 603 operations, it was found that faulty preparation of the patient's and the surgeon's hands, air contamination by personnel, and poor methods of dressing were all culpable.[15] However, the prophylactic use of antibiotics was abandoned since 7 infections occurring within a week were resistant to penicillin. In an experimental study on rabbits it was found that the administration of antibiotics to nondebrided wounds did not prevent the development of a localized wound infection.[16] Furthermore, the early administration of large quantities of an antibiotic exerted little beneficial effect if the wounds contained organisms which were resistant to this antibiotic. In a controlled study of 1,007 cases, infection complications developed in 9.8 per cent of 558 patients who did not receive antibiotics and in 11.4 per cent of 449 patients given prophylactic antibiotics.[17] These were mostly wound infections. In my own series of over 600 patients with hand injuries I found the infection rate to be low with no appreciable difference between those given antibiotics prophylactically and those to whom antibiotics were not administered.

Soft Tissue Injuries and Amputations

No laceration is too small for consideration.[18] Providing the elapsed time from injury has not exceeded twelve hours, primary repair is done on all lacerations. A fine suture technic is not necessarily equated with fine suture material although rarely is a suture heavier than 4–0 required. An intradermal splint for triangular flap lacerations has been used to preserve the tip of the flap.[19] At 3-mm. intervals number 34 stainless steel wire sutures are placed in one side of the wound and are then inserted intradermally through the flap and out the other side. Jagged lacerations due to crushing must be debrided carefully, with the extent of the debridement frequently a matter of personal judgment.[20] The use of the nail as a splint for lacerations and partial amputations has much to recommend it.

Avulsions and amputations might be treated more simply if, as Douglas[21] points out, the patient would not rush from the scene of the accident with no concern for or knowledge of the whereabouts of the missing finger or finger part. A portion of skin or even skin with underlying structures including bone can be replaced, and the wound frequently heals satisfactorily. In all instances every conceivably viable portion of skin should be saved.[5,13]

The major concern in amputations is the preservation of finger length and function.[22] In my experience it is a rare patient, gainfully and necessarily employed though he may be, who places the speedy return to his job before the conservation of his digits or hand. When replacing a portion of finger with a composite graft, the most meticulous approximation is required.[21,23] Occasionally these segments may turn black with dry gangrene, but they must not be disturbed since there frequently is viable tissue underneath including the major portion of the phalanx with a usable joint. Regarding amputation, some surgeons[24–26] feel that there is too much conservation to save length. They do not replace a small amputated segment but rather use local flaps or further amputate for suitable closure. This naturally shortens the finger, an effect which could just as easily be accomplished afterward if an attempt at replacement had failed. The use of local flaps often results in irregularly shaped, scarred, and sensitive finger tips.[27]

Avulsed segments may be replaced by full-thickness grafts.[25] I have done this procedure successfully numerous times. Others[27,28] prefer to discard this skin and to use a skin graft from other portions of the body. The use of split-thickness skin grafts are imperative for many avulsion defects, although these grafts may only be the preliminary to later reconstruction.[29] The thicker the graft, consistent, of course, with good healing, the better the functional and cosmetic result. Grafts also can be used for nail bed injuries instead of conservative measures.[30] At the tip of the finger, grafts also tend to draw up good skin during the shrinking process.[31] Suitable pressure dressings and immobilization are used by most surgeons.[4,5,25,29] Some prefer the open treatment since they consider it less damaging to the remaining soft tissues.[24,32] I do not believe that pressure dressings properly applied in conjunction with immobilization causes more fibrosis; in fact, I believe that the converse is true.

For flap closures in avulsions and amputations skin and subcutaneous tissue from many areas, including the fingers, palm, forearm, and abdomen, are utilized. In the thenar flap, which I prefer, a small preferential area on the thenar eminence is utilized with the finger in medium flexion at all three joints.[33] In the first stage the donor site of the flap is grafted, a process resulting in a functional, soft palmar scar. Sensory innervation is better accomplished with a thenar flap than with a skin graft.[34] In instances in which the fingers are too short and correction of the defect calls for only 1 phalanx length of skin, the cross-finger flap is a good alternative. Mason[27] and others[18,35,36] frequently utilize cross-finger flaps, and they have found the disability in the donor finger to be minimal by this means. The abdominal flap for large defects or multiple fingers has much to commend it, although the caliber of the skin and its tactile sensation leaves something to be desired.

Other methods currently in use for coverage and/or replacement are: forearm flaps and tubes,[37,38] free nail grafting (either partial, complete, or composite) utilizing the great toe,[39] filleting the little finger and using the skin and soft tissues for covering an avulsed tactile pad from the thumb,[40] removing the skin of the severed digit and inserting the denuded finger into the subdermal pocket to support the blood supply,[41] and employing an autograft of skin embedded in an abdominal tubed flap and inserting the patient's own denuded finger or a recent corpse finger.[42] Although most of these methods are ingenious, they all possess one or both of two major faults: They cause unseemly disfigurement and deformity to another structure or they involve excessive surgery. In one study in which the late results of the four methods of treatment of finger tip injuries—namely dressing only, proximal amputation to allow primary closure, free grafts, and pedicles—were assessed, it was found that there was no difference in the length of time that the patient was away from work but that otherwise pedicle flaps were the most acceptable method.[43]

If further amputation is required, every fraction of the length of the thumb is preserved, and additional length is obtained through phalangization. Similarly, the length of the index finger is preserved as much as possible. Amputations through the middle and ring fingers should extend no more proximally than to the distal third of the middle phalanx.[44] For other fingers the amputation should be carried down through the metacarpal heads. In the latter type of amputation it is important to be aware of the adductor pollicis.[45] Nichols[9] preserves the proximal phalanx even of the middle and ring fingers. However, for the unskilled laborer who has to lift heavy objects the protruding phalanx of these central fingers would interfere.

Fractures

The majority of fractures of the phalanges and metacarpals have associated skin lacerations. Since the preponderance of these lacerations heal satisfactorily after reduction, the factor of compounding generally does not influence greatly the decision on the mode of treatment.

Distal phalanx fractures are treated by means of molding and splinting. These fractures should not be regarded lightly since they can result in a sensitive, useless finger tip. The proximal phalanges must be reduced with the finger in the position of function. If this is improperly done, a crippling deformity due to palmar angulation of the proximal segment secondary to the pull of the interossei and lumbrical muscles may result.[46] On occasion, in spite of the possibility of the introduction of infection,[47] wire fixation is required. Bunnell[4] uses wire fixation frequently. He stresses the importance of the anatomic position of the fingers in the splint with the longitudinal axis of each finger passing through the tubercle of the scaphoid. The position of the finger in the splint rather than the traction is the important factor in healing.[9,47] In fact, Burnham[47] does no reduction until the wrist, hand, and fingers are splinted.

If possible, metacarpal fractures are reduced by a closed method in which adhesive tape traction on the fingers is utilized.[48] In some cases open reduction is necessary, a method sometimes requiring a small intramedullary bone peg from the tibia to hold the bone fragments in position.[49] Other methods are: intramedullary fixation with a Kirschner wire,[50] threading of stainless steel wires through parallel holes in the metacarpal and its fragment (for Bennett's fracture),[51] and the use of an iliac bone graft in one piece to replace multiple metacarpals lost in injuries to the dorsal aspect of the hand.[52] Although simple splinting and casting are being employed for fractures of the metacarpals, including Bennett's fracture,[45] I believe that Kirschner wires are more secure in the setting of such fractures.

In one series of 191 fractures 109 were treated with traction and splinting; 55 were treated with pins, wires, and screws; and 23 required amputation.[14] In my own series there were 103 fractures, of which 83 were treated with traction and splinting, 26 with pins in closed reduction and, 16 with open reduction (some with wiring); the remainder either required amputation or went untreated.

Tendon Injuries

At present it is generally accepted that flexor tendon repair proximal to the distal palmar crease (with the occasional exception of the carpal tunnel) and distal to the insertion of the sublimis tendon should be done primarily.[4,9,20,34,53–56] In the digital sheath and carpal tunnel area secondary repair should be done. It has even been advocated that no primary repair be done in any part of the fingers.[57] However, it should be noted that secondary repairs do not give uniformly good results.[4,9,57]

Meticulous surgery and complete hemostasis are the sine qua non of tendon repair.[53,55,58,59] Crushed and devitalized tissues usually necessitate postponement of surgery as does a lapse of over four hours from the time of injury.[20] The loss of more than $^3/_8$ inch of a tendon is a contraindication to primary surgery[14] as is the severance of the two tendons unless the sublimis is sacrificed.[54] Mason[54] also repairs the profundus tendon alone in the carpal tunnel. More leeway is allotted in the primary repair of the flexor pollicis longus tendon.

Although there may be a successful repair after primary suture within a tunnel, the failures that I have experienced have all been due to such a repair. The removal of a window from the tendon sheath does not help, but the recommendation that a new insertion be made when the tendon is severed close to its original insertion is useful.[60] This method was used successfully in children when the laceration of the profundus was at or distal to the sublimis insertion.[61] In one series primary repair of tendons within the flexor tunnel resulted in the inability of anyone to touch the distal palmar crease and in the ability of 38 per cent to do so within 1 inch. After repair outside the tunnel, 35 per cent could touch the crease and 52 per cent could do so within 1 inch.[62] In another series there were 92 per cent and 87 per cent good results with primary repair at the wrist and proximal palm respectively and only 56 per cent good results with primary repair in the distal palm and proximal phalanx.[55]

Tendon grafting is the procedure of choice for those lesions which are not susceptible to primary suture. One of the main criteria is the existence of useful and mobile joints. A time lapse of no more than three months is allowed.[57] Joints which have been in flexion for a long period of time will not extend until both collateral ligaments have been excised and the volar ligament has been divided.[63] The palmaris longus and the extensors of the toes (except for the little toe) are used for this purpose. Bunnell[4] also uses one of the long extensors of the fingers. The Bunnell pull-out wire technic is the most popular. In it the hand is splinted for a period of from two to three weeks, after which time progressive mobilization is instituted.[64] Boyes[65] suggested a formula for measuring joint movement:

$$\text{Per Cent of Joint Movement} = \frac{\text{Voluntary Flexion}}{\text{Passive Flexion}} \times 100$$

In one series there was useful range of motion in 80 per cent of cases with a noninjured sublimis and in 70 per cent of cases with both tendons severed.[59] In another series 25 per cent were able to touch the distal palmar crease, 50 per cent were able to flex to within $^1/_4$ inch, and all were able to flex to within $^3/_4$ inch.[66]

Primary tendon grafting has been suggested,[67,68] but the results have not been very encouraging. A double length of strong nylon covered with polyethylene tubing has been used with equivocal results.[69] The use of polytetrafluoroethylene material as a pulley was completely unsatisfactory.[70]

The results of primary repair of the extensor tendons have been almost uniformly good, the one reservation being the joint stiffness secondary to immobilization.[14] However, there are pitfalls in diagnosis that are more common in these injuries than in others. Kaplan[71] has written a thorough account of this subject, describing the action of the lumbricals and interossei, the action of the lateral bands, and the reaction to a one-sided lesion. Another pitfall lies in the apparently innocuous skin injury that is associated with an extensor tendon lesion. This is particularly true of lacerations from the multiple edges of glass.[18] If many tendons on the back of the hand have been cut, Nichols[9] suggests the use of a buttonhole technic. He also utilizes a tendon graft for the repair of a rupture of the central slip of the tendon over the middle phalanx.

There are many methods for the treatment of the mallet finger, a common injury. These have included one-joint intramedullary wire fixation (there were 9 good, 7 fair, and 4 poor results in a late series of cases),[72] pull-out wire fixation with immobilization for five weeks,[73] placement of the finger in the usual position with maintenance by means of a double-armed wire through the tip of the finger,[74] and immobilization for five weeks following the insertion of a Kirschner wire through the distal, the head of the middle, and the shaft of the proximal phalanges.[75] Although I have used the last method and simple splinting satisfactorily, I tend to agree with Bäckdahl[76] that not infrequently initial good results are followed by a return of extension loss. He advises that nothing be done if the extension defect is less than from 30 to 40 degrees.

Nerve Injuries

Nerve injury is rare as an isolated injury in the hand and digits, although at the wrist it is less so. Although several surgeons[34,77,78] usually perform secondary repairs on nerves with the possible exception of the digits, I have found primary repair rewarding at all levels except in the presence of mangling or of multiple or markedly contaminated injuries. When secondary repair is indicated, one must wait for a minimum of three weeks.[77] A gap of $^1/_2$ to $^3/_4$ inch in the fingers or palms can be overcome by flexion of the fingers and wrist.[9] Transposition of the ulnar and/or the median nerve is sometimes indicated and may be accomplished satisfactorily.[9,79] Occasionally there is the paradox of continued innervation in the face of confirmed severance of a nerve. This may be explained on the basis of abnormal anastomosis, neurolysis of a sensory branch originating above the site of injury, or the removal of scar tissue at the time of nerve repair.[80]

The carpal tunnel syndrome, which was treated surgically for the first time over fifty years ago,[81] for the most part is still being treated surgically.[82–84] However, hydrocortisone injections were used effectively in 16 of a series of 20 patients.[84] Although trauma is not necessarily the cause of the injury, dislocations or fractures have been implicated.[82] The incidence of this syndrome is greatest in middle-aged women with pain and/or paresthesia as the main symptoms.[85,86]

For peripheral nerves cortisone was used experimentally either locally or systemically to prevent connective tissue interposition, but the results were equivocal.[87] An experiment on rabbits showed that the tensile strength of the suture line reached that of the nerve itself by the fourth week.[88]

Burns

Burns of the hand must be treated early, vigorously, and intelligently. The initial care includes the treatment of shock, pain, and gross contamination. Occlusive dressings with the fingers dressed individually are very satisfactory.[89] The prevention of infection is vital.[90] The coverage of burns should be attempted as early as possible, generally between one and a half and two and a half weeks after the injury.[4,5] The need for the proper preoperative positioning of the hand and for exercise as soon as possible postoperatively has been stressed repeatedly.[4,9,90,91] Mobilization is equally important for second degree burns.

Much has been written recently concerning very early[92–94] and even immediate[35] skin grafting or flap closure. Edgerton[35] and Muir[92] treat electric burns by this means, but Muir notes that when deep thrombosis is evident, one must await the formation of a line of demarcation. This actually is one of the main contraindications to very early grafting, the other being potential damage to viable structures. Electric burns particularly are notorious for their deepness and the fact that they tend to extend along tendons and nerves. Two series of patients did not show any appreciable advantage from excision and very early grafting.[94,95] Partial salvage of tissues by waiting for spontaneous separation may obviate subsequent complicated reconstruction.[89] My own satisfactory experience in treating burns of the hand more conventionally leads me to suspect that the desire to do very early grafting may be a reaction to the prolonged and meddlesome type of treatment formerly prevalent whereby burns were not grafted for six or more weeks.

Sometimes during the rehabilitative period bone must be removed since restriction of motion cannot always be alleviated by surgery on the soft tissues of the joints alone.[91] Osteotomy of each metacarpal obliquely near its head has been done to regain flexion.[96] Earlier in the course of the treatment pyoarthritic joints must be fused.

Almost invariably in the Negro individual there is marked hyperpigmentation of the skin graft. The Negro person also has a greater tendency to keloid formation. This tendency is also noted among Caucasians with second degree burns, particularly burns with infection.

Volar burns of the hand, which fortunately are less common than dorsal ones, are much more difficult to treat, and the results are not as satisfactory as with dorsal burns.[97] There is general agreement that early excision and grafting should not be attempted for volar burns.

Extensive studies on the cause, action, and control of infections in burns in general[98] have direct application to burns of the hand. Although these studies stressed streptococcal pathogenicity, nowadays we have to contend more often with staphylococcus infections. It was shown that Pseudomonas aeruginosa did not cause grafts to fail, and that in certain instances grafts curtail the activity of pathogens. This has been my experience.

Radioactive isotope uptake, which has been widely used as an experimental tool,[99,100] was used to measure the burn depth in swine[101] and was successful enough to indicate a clinical trial on patients. Adrenocorticosteroid therapy is not indicated in burns. Experimental work on this type of therapy indicates that there rarely is a demonstrable adrenal insufficiency in spite of increased corticoid excretion.[91,102] The use of enzymes for removing eschar,[103] including kinases and parenzymes, has not proved successful with me. It is true that the eschar is removed, but the bed that remains is of poor vitality for accepting a graft.

Infections

Acute infections include mainly paronychia, felon, dorsal, and volar abscesses and web space and palmar space infections. The appropriate incisions for exploration and drainage have been described very graphically by Bunnell,[4] Nichols,[9] and Kanavel.[104] Important modifications include: the use of hockey-stick and through-and-through incisions near the bone for felons rather than the fish-mouth incision, bilateral incisions in the cuticle and removal of a portion of the proximal nail for paronychias, cruciate incisions for dorsal carbuncles, following the hand creases for all incisions—laterally for the digits, longitudinally for the webs, transversely for the dorsum, and curvilinearly or transversely for the palm—and the judicious use of counterincisions for large abscesses. All measures are followed by soaks with warm water and soap flakes.

In regard to antibiotics, a reduction in the over-all postoperative healing time in a controlled series of 320 patients with infections was reported to be less than one quarter of a day.[105] However, I have found the intensive, therapeutic use of a suitably sensitive antibiotic to be very efficacious. In diabetic patients and in patients with vascular disturbances this sometimes may be the best mode of treatment. Even staphylococcic infections need not be regarded too pessimistically if a definitive treatment is undertaken.[106]

I have noticed that among those of my patients in the working group who develop an infection at the site of trauma, there is a preponderance of people of Puerto Rican nativity. This probably is not due to poor diet alone, as is shown by the lesser incidence among the impoverished native-born patients, both white and Negro. The more likely cause is chronic infestation with parasites.

Tenosynovitis

In the category of tenosynovitis there are two main groups, de Quervain's disease (stenosing tenosynovitis at the radial styloid process) and trigger finger. The condition known as the carpal tunnel syndrome, or compression of the median nerve, is considered among the nerve injuries.

The cause of tenosynovitis is generally recognized to be chronic trauma,[107,108] and the most satisfactory treatment is considered to be surgical.[107,109,110] I concur with this opinion although I also administer hydrocortisone injections. However, with the latter form of treatment there is poorer follow-up and more difficulty in persuading the patient to allow immobilization so that not infrequently surgery must be done.[111] The use of a subcutaneous tenotome to cut the osteofibrous canal has been advocated for the trigger finger,[112] but this seems unnecessarily risky.

Other factors have been suggested for the causal relationship since the age and sex of large numbers of afflicted patients (women in their fifth and sixth decade) make trauma less tenable as the primary factor. Rheumatoid arthritis has been cited with much justification,[113,114] and ulnar deviation of the wrist,[4] peritendonitis calcarea,[115] and untreated or poorly treated fractures and dislocations have also been suggested as etiologic factors. I have found all of these to be implicated at one time or another. In children the last mentioned situation and congenital anomalies are important factors.

Mangling and Crush Injuries

Although some of the most serious of these injuries make the injured part unsalvageable, treatment with flaps, grafts, digitalization, and tendon and nerve repairs can give the patient a chance to develop a useful hand.[116,117] If, in my own series, more conservation was attempted on occasion than could reasonably be hoped for, I had the satisfaction on many another occasion to rescue a hand or fingers from amputation or complete uselessness. The proper sequence in repair—cleansing, debridement, repair of fractures, and the final closure of the skin—can give the best assurance of securing primary healing.[118] No attempt at tendon or nerve repair usually is possible, and, when made, such attempts are generally unsuccessful. The closure of exposed bone, tendon, and nerve is accomplished by rotational, digital, palmar, or distant flaps together with the judicious use of skin grafts.[119,120] One should not be too sanguine concerning the results; a claw hand may be the best result possible. Still, it is better to make the attempt at salvage, no matter how time-consuming, than to decide peremptorily, "off with the hand."

Rehabilitation

Many injured hands require no more than conventional exercises for the completion of the rehabilitation, which begins with the original first aid. Many others, however, require the services of a trained physiatrist, which for best results should be begun early in the convalescence.[121] This need, which is so obvious, is unfortunately not widely realized. In many states there is no provision in the law for physical or vocational rehabilitation.[1] The attitudes of employers and insurance carriers are too often affected by purely economic factors. The physician, too, is sometimes not as scrupulously attentive to his patient's needs as he should be. The physician's responsibility includes seeing that the patient is able to get back to work.[1] The profound psychologic disturbances attendant on hand injuries will be resolved in a degree and at a rate directly proportional to the physician-patient relationship.[122]

Comment

There certainly is a decided need for a great variety of safeguards in industry. In 1952 there was a cost to industry of 641 million dollars for hand and finger injuries alone.[123] Eighty-five per cent of all injuries to the hand were due to personal factors, such as fatigue, horseplay, and poor selection of workers. Yet there are still many instances in which machines are physically unsafe and in which workers had no training prior to handling a machine, did not understand instructions, or were poorly suited for the type of work. The average number of work days lost in my series was sixteen, which was comparable to that of other series. The highest incidence of accidents occurred between the hours of 9:00 and 11:00 A.M. and 2:00 and 4:00 P.M. This finding lends support to the idea of the "coffee break."

The older age group (over fifty-six years) constitutes 17 per cent of the general working population.[124] In my series this group suffered only 7 per cent of the hand injuries, a relative incidence of 0.4. The youngest age group (sixteen to twenty-six years) showed a relative incidence of 2. This accentuates, if indeed it should be necessary, the desirability of retaining and employing the older person.

I studied the effect of climatic conditions on the incidence of injury and found that 52 per cent of the injuries occurred during and seemed to be related to inclement weather conditions, such as high humidity, temperature extremes (over 85 F. or below 25 F.) low barometic pressure, high winds (over 30 miles per hour), and sudden squalls; only 34 per cent occurred while the weather was pleasant. However, the statistical evaluation must be postponed because during many hours of the day there is unpleasant weather.[125]

Disability evaluation requires expert judgment. Often patients are returned to work "healed" but with residual weakness and pain.[126] A variety of factors influence this evaluation, including the hand involved, the fingers affected, the sensation, the range of motion, and the patient's age.[127] In my series 10 per cent of all cases suffered moderate or severe disability. The basis for this evaluation should be twofold: functional deficiency and physical impairment.[126] In this regard some of the guides which have been set up tend to accentuate physical impairment over functional deficiency and vice versa. Sometimes the thumb is rightly valued highly but the little finger is incorrectly underevaluated.[128] The power of grasp, which is so vital to the continuance of work,[129] can be disrupted nearly as severely by a crippled little finger as by an index finger.

There are two decidedly encouraging aspects to hand surgery at present. First, it has become standard practice for hand injuries to be treated from the beginning by experienced surgeons. Second, the injured person is now treated as a whole person with all factors, not only the physical, incorporated into the rehabilitation program.

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Plump Child Grows Faster, Matures Earlier

A plump child generally grows faster and matures earlier than a slender child, according to a recent study.

This conclusion was drawn from a study of 259 Ohio-born boys and girls which was reported in the June issue of the *Journal of Diseases of Children*, published by the American Medical Association.

"Childhood fatness results in accelerated growth and advanced maturation in both sexes," according to Stanley M. Garn, Ph.D., and Joan A. Haskell, B.A., Fels Research Institute, Yellow Springs, Ohio.

"Though body size in childhood is obviously determined by many variables, among them parental stature, accumulated fat is clearly related to size superiority during the growing period. It is not unreasonable to conclude, therefore, that an excess of calories is growth-accelerating, with the degree of acceleration related to the energy surplus."

Between the ages of one-and-a-half and twelve-and-a-half, children above the average in fat were advanced in height by approximately half a year's growth, the study showed.

The relationship between fatness and body size was more marked among girls, the authors said, perhaps because of a wider range of fatness found in the female.

Referring to chubby children, they said, "their developmental acceleration carried them to earlier puberty on the average, and to earlier cessation of linear growth."

Increased fat storage is associated with advanced body development during prepuberty and early puberty, they added.

The youngsters studied ranged from one-and-a-half to seventeen-and-a-half years of age and were not selected on the basis of fatness.

CLINICOPATHOLOGIC CONFERENCE

KINGS COUNTY HOSPITAL AND STATE UNIVERSITY OF NEW YORK
DOWNSTATE MEDICAL CENTER

BROOKLYN, NEW YORK

Conducted by PATRICK J. FITZGERALD, M.D. MARCH 19, 1959

Discussed by LOUIS M. HELLMAN, M.D.

Cervical Changes in Pregnancy and Carcinoma In Situ

Case Report

Frank Y. Watson, M.D.: A thirty-six-year-old Negro woman was admitted to the hospital with the chief complaint of abdominal cramps and vaginal bleeding of two days duration.

Present History.—The patient was apparently in good health until the onset of abdominal cramps and vaginal bleeding two days prior to her admission. The patient's last normal menstrual period occurred sixteen weeks prior to her admission. Since then, at the time her menstrual periods would have been expected there was some bleeding, but it was distinctly less than usual. The bleeding began early in the morning and became more profuse with the passage of some clots later in the day. It was associated with intermittent lower abdominal cramps but no fever.

Past History.—The patient had had no serious illnesses or operations. A review of the systems revealed no history of significant signs or symptoms related to the ears, nose, throat, or cardiorespiratory, gastrointestinal, or neurologic systems. During the three months prior to her admission there had been nocturia two or three times a night but no dysuria or hematuria.

The patient's menarche occurred in her twelfth year of life. Her periods occurred every twenty-eight to thirty days and lasted five days with moderate flow and moderately severe, crampy pains. There was no history of bleeding between periods. The patient had had seven previous pregnancies during her fourteen years of marriage. Of these pregnancies, five resulted in term births and two resulted in abortions. The youngest living child was two years old.

Physical Examination.—The patient was a well-developed, well-nourished thirty-six-year-old woman in no acute distress. Her temperature was 99.2 F., pulse 84 beats per minute and regular, respirations 24 per minute, and blood pressure 106/78. The head, eyes, ears, nose, and throat were unremarkable. The thyroid was not enlarged. The superficial lymph nodes were not enlarged. The lungs were clear to percussion and auscultation. The heart was normal in size and had a normal sinus rhythm. No murmurs were heard.

The breasts were full and slightly tender. The abdomen was soft and nontender. The uterus was palpated 3 cm. above the pubic symphysis. The liver, kidneys, and spleen were not palpated. There was no tenderness in the costovertebral angles. The external genitalia were normal. The vagina contained a bloody discharge. The cervix was moderately firm and nodular. The external os was somewhat dilated and contained fragments of blood clots and tissue resembling portions of placenta. The uterus was enlarged to the size of a gestation of ten weeks. The adnexa were normal. The rectal examination gave negative findings. The extremities were unremarkable. The neurologic examination gave negative findings.

Laboratory Examination.—The white blood cell count was 8,600 (no differential recorded), and the hemoglobin was 11.8 Gm. The urinalysis gave negative results. The sedimentation rate was 22 mm. per sixty minutes. On the day after the patient's admission a curettage of the uterus removed a large amount of placental and decidual tissue which exhibited evidence of acute inflammation. A biopsy of the cervix showed marked cellular atypicalities which were considered to be related to pregnancy.

Course.—It was decided to follow the patient in the Outpatient Clinic. A biopsy of the cervix taken at the clinic four months after the initial biopsy revealed an essentially normal cervix. Five months later the patient was found to have an enlarged uterus the size of a gestation of eighteen weeks, and the frog test for urinary chorionic gonadotropins gave a positive result. Atypical cells in the Papanicolaou smear of the cervix were classified as Type IV.

On the patient's subsequent clinic visits over a twelve-week period the uterus seemed to decrease in size to that of a gestation of ten weeks, and the frog test result for chorionic gonadotropins became negative. However, amenorrhea persisted. The Papanicolaou smears continued to be classified as Type IV. It was therefore decided to readmit the patient for further evaluation.

Repeat biopsies of the cervix revealed extensive carcinoma in situ with gland involvement. On the day following the second admission the patient passed via her vagina a small fetus and placenta estimated to be of approximately ten weeks gestation. Ten days subsequently an operation was performed.

Discussion

Louis M. Hellman, M.D.: The subject for discussion is one of the most interesting and challenging problems in current gynecology, namely, the question of carcinoma in situ of the cervix and the possible effect of pregnancy on this lesion.

As revealed in the protocol, the patient was a thirty-six-year-old Negro woman who up to the time of her first admission or eighth pregnancy apparently had nothing very seriously the matter with her. At the time of her first admission her last menstrual period had occurred sixteen weeks previously. She had seven previous pregnancies with five term deliveries and two abortions. This is not unusual. The youngest child was two years old.

On physical examination nothing unusual was discovered except for the size of the uterus, which was a little small for the duration of the pregnancy. She was passing some blood, some tissue resembling placenta, and possibly some fetal tissue. As would be expected, she had a curettage, a measure consonant with our treatment of incomplete abortion. Because of the fact that we are interested in some of the cervical changes associated with pregnancy and with abortion, she had a biopsy of the cervix, a routine practice here in such cases since 1951. A rather large amount of tissue was collected.

The diagnosis of the pathology department was a cervix with markedly atypical cells. One of the problems in this type of case is linguistic. I am not sure what was meant by this diagnosis. I can tell you what I think was meant, but I am not certain that my interpretation is correct. In any event, the findings were considered to be related to the pregnancy. It was decided to follow the patient in the Outpatient Department. The biopsy specimen was taken by means of a single punch, and, of course, this method is subject to many errors because the specimen is taken from only one area in the cervix. One might think that the patient was not followed quite as carefully as she should have been, but at this point she falls only into a routine. Four months after the initial biopsy another biopsy was taken, and her cervix was found to be essentially normal. I think that this finding can be assessed when we discuss whether or not such changes can revert to normal.

Five months after the second biopsy she again had an enlarged uterus. Apparently she was pregnant again. This time the uterus was enlarged to the size of an eighteen-week pregnancy, which would mean the halfway mark. The frog test result was positive, and this time a routine smear was taken. These are no longer done on all pregnant patients, but apparently this patient was chosen, for one reason or another. The smear was classified as Type IV. This is a rather unusual type of smear for a pregnant woman; most pregnant patients with unusual smears do not have Type IV smears.

On subsequent clinic visits over a twelve-week period the uterus apparently did not get any larger. The patient had death in utero, and finally the frog test result became negative. After ten weeks she had what we call a missed abortion unless the patient is dead: The uterus is not growing, and eventually the woman will pass its contents. The Papanicolaou smears continued to be Type IV, and it therefore was decided to readmit the patient. Repeated biopsies of the cervix showed extensive carcinoma in situ.

The day following her second admission the patient passed a fetus and placenta of approximately ten weeks gestation. I must admit that I am a little confused by this history because ten days later some sort of operation was performed, and Dr. Watson and Dr. Fitzgerald refuse to tell me what kind of operation it was. Any statement on the nature of the operation would be a pure guess on my part.

Under ordinary circumstances, even though the patient had a Type IV smear and carcinoma in situ, we would not have operated ten days after an abortion. We would have thought that the patient was still apt to be infected and that if further studies of the cervix were done perhaps we could wait a month or so before operating. If we contemplated a hysterectomy, we certainly could have waited several months to do it. Whatever was done would seem to me to be out of line with our routine handling of these cases. The only thing that I can suppose happened, and, as I have said, this is a guess, is that the patient may have had some kind of an accident. She may have had some bleeding or she may have had some abdominal symptoms which occasioned the operation. The indication for the operation ten days after abortion does not appear in the protocol.

I think that Dr. Fitzgerald probably will discuss the rest of the cervix, and I suppose that there is a pretty good chance that when the cervix was carefully examined it may well have shown invasive carcinoma. This would make this conference very much to the point, but I must admit that this too is only a guess on my part.

I would like to summarize some of the background in the recording of cervical changes in pregnancy and carcinoma in situ. In 1910 Rubin,[1] in describing some cases of carcinoma of the cervix, called attention to some peculiar changes adjacent to the carcinoma lesion, which he claimed was incipient carcinoma. He believed that malignancy progresses from normal cells in the cervix to abnormal cells in the carcinoma lesion. I think that this was the first American paper published on the subject and certainly the first one published in the American obstetric literature. I suspect that Rubin had just returned from Europe, where he had seen the work of Schöttlander and Kermauner,[2] who, as far as we know, really were the first ones to describe this change. This instigated an intensive investigation of the changes which precede carcinoma of the cervix.

These cell changes occur in a number of other organs, but the ones that I happen to know about pertain to the cervix. An extensive literature sprang up about carcinoma in situ, and a number of phrases were used to describe these changes, ranging from basal cell hyperactivity to various grades of basal cell activity and from atypical cells with carcinoma in situ to true carcinoma. The argument among gynecologists for a long time pertained to whether or not these changes which we call carcinoma in situ were related directly to carcinoma of the cervix. There was some indirect evidence that this was so. I believe that the most cogent piece of evidence advanced in favor of this premise is the fact that the diagnosis of carcinoma in situ is made most often in the third decade or fourth decade of life with an average age of these patients at about thirty-eight years, whereas carcinoma of the cervix occurs on the average about ten years later. On this basis it was argued that patients developed a progressive change in the cervix from normal to carcinoma in situ to carcinoma, a process which takes about ten years. It also was reported in several studies that biopsies taken of the cervix over a period of several years showed progressive changes from hyperactivity of the cells to carcinoma in situ to carcinoma. This too was indirect evidence.

As late as 1952 or 1953 there was no positive evidence except for a few isolated cases that the two entities were related to each other. At that time a number of individuals embarked on some experimentation in which patients with carcinoma in situ were not treated but were observed very carefully. We started such a study here, but it never was completed, for reasons that I will soon relate. Such a study was conducted at the Radium Institute in Stockholm. In this study 59 patients with carcinoma in situ were allowed to remain untreated, and after a period of eight years 8 true cases of carcinoma of the cervix were found in this group. A better study was conducted by Peterson,[3] also in Scandinavia, in which a series of patients with carcinoma in situ were followed very carefully and the exact period of years at which they developed carcinoma was defined. He did not follow the entire series to completion, but he followed enough of the patients to make the findings valid. These two experiments changed the complexion of our thinking about carcinoma in situ and put a stop to further experimentation along this line.

It then was felt that it would be unjustifiable to allow patients with carcinoma in situ just to exist and to be followed without being treated. If it has been established without doubt that the condition is carcinoma in situ and if an adequate operation is performed, the cure is almost 100 per cent. Those patients who have not been cured have had a recurrence of true carcinoma in the vaginal cuff.

Pregnancy poses a somewhat separate problem. When Papanicolaou started to work on cervical smears, one of the phenomena that he studied was the changes in cervical smears in pregnancy. For some time it was thought that these changes were so striking that the smears constituted a test for pregnancy. It developed subsequently, however, that this was not a very good test for pregnancy, but nevertheless the fact remained that a considerable portion of pregnant patients had abnormal smears in pregnancy and that these smears reverted to normal after the completion of the pregnancy.

Of our Type III smears, which represent about 8 or 9 per cent of our total population, about 7 per cent are associated with pregnancy and the vast majority return to normal when the pregnancy is over. Furthermore, biopsy specimens of the cervix taken during pregnancy have been a little difficult to analyze. In the early 1950's there were statements to the effect that certain findings would represent carcinoma in situ except for the fact that the patient was pregnant. One got the impression of a general refusal to take a definite stand. There were a number of individuals who were really interested in this problem, and we became interested in it because we had some patients who were diagnosed as having carcinoma in situ but who after their pregnancy was over apparently reverted to normal. Slides of biopsy specimens were sent around the country, and various diagnoses and interpretations were advanced. This was very confusing, and so we inaugurated the practice of doing biopsies on pregnant women. I think that the number done probably was well over a thousand. They were taken at various times during pregnancy, and the slides were studied. There were some changes in these slides that were difficult to interpret.

I did not think that the changes represented carcinoma in situ; at least, they were different from what I thought was the typical lesion of carcinoma in situ. I found out that various people were referring to different findings and to lesions in different areas of the cervix. Most of the carcinoma in situ lesions which were studied previously occurred in the squamous portion of the cervix, to be specific, in the stratified squamous epithelium at the squamous columnar junction. However, most of the pregnancy changes occurred in the canal. Whether these cases were the same or different lesions, nobody knows.

For many years Pund and Auerbach[4] in Atlanta, Georgia, had maintained that these changes were true carcinoma in situ, and then a funny thing happened. Atlanta has a fairly stable population, and Pund was fortunate enough to see most of the cervical specimens, both biopsy and operative material, from the entire community. Because he labeled these peculiar lesions in the canal as carcinoma in situ, these patients were subjected to hysterectomies. Pund had a a file of true carcinoma of the cervix occurring in Atlanta for each year covering a number of years. When he started to make the diagnosis of carcinoma in situ and such patients were operated on, the yearly incidence of true carcinoma in Atlanta began to decrease. He used this information as partial evidence that the two entities are the same lesion. My own feeling about the matter is that if the lesion reverted to normal, it probably was not carcinoma in situ but rather was a hormonally induced lesion. The problem is how to prove this.

There is one individual who is exposed to the hormonal changes of pregnancy and who never gets carcinoma of the cervix: the baby in utero. The baby in utero receives all the hormonal impact of pregnancy, at least that of all the steroid hormones. As far as I know, no true epithelial carcinoma of the cervix in the newborn infant has been reported. We decided to study stillborn infants. It was found that these peculiar changes were present in the cervical canal, including those canals that showed some abnormal cells. The changes were not as striking as in the adult, but they were present.

Another group of patients who do not have any estrogenic hormone, or extremely little, are those with atrophic cervices. These cervices can be stimulated, and perhaps some of these changes can be demonstrated. We did this with estrogen in postmenopausal women by administering large doses of estrogen, doing a biopsy, and then doing a hysterectomy. These women showed marked hyperplasia of the cells lining the canal, and in some instances the cells also looked atypical, but in none of the cases—either in the baby or the adult—did the cell picture actually resemble carcinoma in situ. There were a few odd cases. There was extraneous hormonal stimulation, such as in elderly individuals with granulosa cell tumors. Some of these cervices also showed this sort of change.

The argument waxed hot and heavy on two points: whether or not the lesions that were being called carcinoma in situ in pregnancy actually did revert to normal and whether or not they were related to estrogen. As far as I know, the problem has not definitely been solved. My own feeling about this matter has been that, as far as the lesions in the canal are concerned, there is a stimulation during pregnancy and there are changes in the canal. It is quite possible that if a patient who is destined to have carcinoma of the cervix receives this stimulation, she will respond in an abnormal fashion. As she has repeated pregnancies, there will be an ebb and flow of this response until eventually something will trigger off the mechanism and she will have full-blown carcinoma.

There are several such cases reported in the literature. One is of a woman who lives in Boston. During her first pregnancy she had a normal cervix, in her second pregnancy she had basal cell hyperactivity with atypical cells, and in her third pregnancy she had carcinoma in situ. In her fourth pregnancy she had a hysterectomy for the lesion.

To return to the case under consideration, we are dealing with a thirty-six-year-old woman who had a number of pregnancies. She was diagnosed as having carcinoma in situ, and once this diagnosis has been made there is no reason for this patient to keep her uterus. What we must be absolutely certain about is that she does not have true carcinoma. As I have indicated to you, the original pathologic reports described the cervix as showing changes in cells adjacent to true invasive carcinoma. The single-punch biopsy or even the four-quadrant punch biopsy is probably inadequate to give the answer. If after her second miscarriage this patient had been worked up properly, say in about a month or two, she would have been brought into the clinic and a four-quadrant knife biopsy or conization of the cervix would have been done so that the pathologist could have examined an entire specimen instead of a little piece of tissue. Obviously, if she had true carcinoma of the cervix with invasion, the treatment would be different from that of carcinoma in situ. If she had carcinoma in situ, a modified total hysterectomy would cure her. If she had true invasive carcinoma, she would need a more extensive operation or treatment by radiation.

There is no definite agreement about what I have said. I think that most physicians concerned with the matter agree that there is a change in the cervix which does ebb and flow. There are some who feel that if the diagnosis of carcinoma in situ is made the lesion will never regress. It seems to me , however, that there are enough cases on record which do show regression to indicate that although regression is not common it does and can occur.

I have to venture a guess on this case. I suppose that a hysterectomy was done for some reason other than what is stated in the protocol. You must now have evidence that this is true invasive carcinoma.

Patrick J. Fitzgerald, M.D.: Thank you Dr. Hellman. Dr. Hellman has covered this subject so thoroughly that there is no opportunity for comment. Two or three students disagreed. Five called the lesion choriocarcinoma. Would any student like to develop this diagnosis? The opposition is formidable. I am afraid the speakers have been wrong before. Twelve students diagnosed the lesion as carcinoma of the cervix, one as invasive carcinoma in situ, and one as carcinoma of the cervix with choriocarcinoma.

Diagnoses

Clinical.—*Extensive carcinoma in situ of cervix with gland involvement.*

Dr. Hellman.—*True invasive carcinoma of cervix. (?)*

Anatomic.—*Carcinoma in situ of cervix with extensive gland involvement of vaginal scar and carcinoma in situ and infiltrative squamous cell carcinoma of apex of vagina without involvement of lymph nodes in pelvis.*

Pathologic Report

Dr. Watson: The original biopsy of the cervix, as stated in the protocol, showed marked epithelial changes in the epithelium and glands. The section of the portio cervix showed marked cellular atypicality. The differentiation between the basal layer and the malpighian layer was lost. The cells had roughly the same appearance throughout. The orientation with the basement membrane in a large measure was lost, and the cells, particularly the nuclei, varied in size, shape, and staining effect. Some were hyperchromatic; others were rather large and pale.

In the next section the changes were more striking. They were in the cervical glands. The marked epithelial changes were pushing the columnar epithelium up. This apparently is a change that occurs in the area of the reserve cell just above the basement membrane. Some mitosis was evident. Mitosis in the first section occurred in the basal layer. In this section it occurred throughout the thickness of the epithelium. The changes were so marked that in the absence of pregnancy there would be no question about the diagnosis. The condition then would have been called carcinoma in situ. There was no evidence of infiltration. The changes were so extensive that one would wonder if we might be dealing with a superficially infiltrating carcinoma. In the minds of some these changes could occur in pregnancy and then regress afterward. For that reason it was decided to follow this patient.

Over a period of a year all the biopsies gave negative findings. One of the Papanicolaou smears was reported as Type III, and others were reported as Type IV. Another pregnancy complicated the picture, and it was thought to end in a missed abortion. After a year of persistent Type IV Papanicolaou smears the clinicians rebiopsied the cervix. At the time of this biopsy the endometrial cavity was probed and, I suspect, curreted, but no tissue was obtained. The next day vaginal bleeding was noted to be more profuse than usual, and later in the day the abortion of a fetus of an estimated ten-week gestation occurred.

At this time a biopsy of the cervix showed marked atypicalities in the epithelium similar to those already seen. Marked thickening of the epithelium was noted. The columnar epithelium had disappeared. There was a sharp line of demarcation between the abnormal epithelium and the underlying stroma. Apparently many of the portio epithelium were involved in this change. By this time it was realized that these changes must be considered at least carcinoma in situ. The extensiveness of the gland involvement actually made one wonder whether or not there might be stromal invasion. Examinations of many sections did not reveal definite evidence of infiltration.

A modified radical hysterectomy was performed. This was a wide hysterectomy which included a cuff of the vagina, the ovaries, and the fallopian tubes. There was no lymph node dissection. As Dr. Hellman has pointed out, patients with changes that must be considered carcinoma in situ should not be left indefinitely with this lesion since there is sufficient evidence that over a period of years many of these changes will infiltrate.

A careful examination of the cervix showed changes similar to those already noted. In sections of this specimen the changes were more marked and the nuclear changes were very evident. The changes which were found involved the portio epithelium and the glands of the endocervix extensively, and some foci were found in the cuff of the vagina.

Postoperatively the patient did well. She was re-examined in the Tumor Clinic a year later. A small nodule was found in the right wall of the vagina. A biopsy of this revealed only moderate cellular atypicalities in the squamous epithelium. The patient continued to be followed in the Tumor Clinic, and approximately four months later she returned with a somewhat larger mass in the same area. At this time a biopsy revealed infiltrating squamous carcinoma, and a Papanicolaou smear was interpreted as Type II. The mass in the wall of the vagina measured approximately

5 cm. in diameter. It seemed to consist in part of tumor as well as of residual scar tissue from the previous operation. Shortly after this the vagina was removed, and a right radical lymph node dissection in the pelvis was carried out. The tumor was found to be an infiltrating squamous cell carcinoma that extended into the mass of scar tissue at the apex of the vagina. In addition, foci of carcinoma in situ were found in the overlying squamous epithelium. In a follow-up examination approximately six months later there was no demonstrable residual tumor, and the patient seemed to be doing quite well.

In summary, we are dealing with a woman who was first found to have epithelium atypicalities in the cervix during pregnancy, which at the time of her pregnancy were considered by some to be related to it. The lesion may have disappeared following the abortion and then reappeared subsequently, or, as Dr. Hellman has pointed out, the biopsies taken at the clinic by the single-punch method may have missed the lesion. In situ carcinoma can often occur in a focal fashion, and it is known that a single-punch biopsy of the cervix will miss up to 50 per cent of such lesions. When the lesion was found, apparently it was very extensive. Whether or not it was present in portions of the vagina other than in the vaginal cuff we, of course, do not know. There is a good possibility that it was present in the other portions because we know that carcinoma in situ is a lesion that often arises in a multicentric fashion and that in some cases it will involve the wall of the vagina or the epithelial lining of the vagina as well. In quite a few pregnant women mild to moderate atypicalities occur in the cervix, but when the changes, as were seen in this patient, are consistent with carcinoma in situ, it is now known that they do not regress but actually persist. This has been shown by a long, careful follow-up with multiple, adequate cervical biopsies.

Marsh and Fitzgerald[5] of our Pathology Department have studied a series of 20 cases which have occurred in this hospital. Dr. Hellman stated that practically all of the pregnant women in this hospital are submitted to a biopsy of the cervix. This usually is a punch biopsy. It is not intended that it be a biopsy that discovers any lesion that has occurred, but it has picked up quite a few malignant cases that otherwise might have been missed. In a total number of 4,000 pregnancies, over 1,000 biopsies were obtained. The total number of invasive carcinomas found by this means was rather small, but the total number of intraepithelial carcinomas was 20, or about $^1/_2$ of 1 per cent of the total number of pregnancies. In this series it was found that carcinoma in situ occurred approximately with the same frequency in pregnant women as in nonpregnant women and that it persisted with approximately the same frequency. Pregnancy, as far as could be deduced from the examination of these multiple biopsies, had no particular effect on the epithelial changes that were called in situ carcinoma. That is to say, in situ carcinomas do not appear to be significantly more anaplastic in appearance in pregnant women than in nonpregnant women. Apparently failure to recognize that these changes are independent of pregnancy may possibly be related to inadequate biopsies in the follow-up period and to the length of this period.

Greene[6] recently presented a review of the literature in which a series of cases that yielded findings which very closely substantiated the findings of Marsh and Fitzgerald is included. Approximately 122 pregnant patients with carcinoma in situ or changes considered to be indicative of carcinoma in situ were followed, and in 73 per cent of the cases the lesion persisted for a significant period of time. Some of these cases have persisted for several months and others for many years. Of those patients who were followed for a prolonged period of time, there were 20 instances of regression. Greene has excluded 3 of these because he believes that the follow-up was not adequate. For instance, the follow-up in 1 of the cases consisted only of a Papanicolaou smear following delivery and did not include a biopsy. It is evident that most of the lesions that are interpreted as carcinoma in situ persist, but it also is true that in pregnancy some of them do not persist. It is also true that, for unknown reasons, in nonpregnant women the same lesion does not always persist. The incidence of lack of persistence, if we can put it that way, is essentially the same in both groups of patients. It is felt that these changes are probably independent of the effects of pregnancy, whatever they are.

The final anatomic diagnosis in this case is carcinoma in situ of the cervix with extensive gland involvement and focal involvement of the vaginal scar and carcinoma in situ and infiltration squamous cell carcinoma of the apex of the vagina without involvement of the lymph nodes in the pelvis.

DR. FITZGERALD: I know that one ought to present a united front, but I am afraid that I have to disagree with Dr. Watson. I do not think that any carcinoma of the cervix that most of us diagnose, whether in pregnant or in nonpregnant women, ever disappears. I cannot say categorically that they do not disappear, but I have never seen a case that I have been convinced that I would call carcinoma in situ that has disappeared. This applies to the skin, larynx, esophagus, stomach, bowel, or any other place for which I have ever made the diagnosis. One usually says this the day before he has to retract his own statements. Fred F. Stewart, M.D., of Memorial Hospital has had some cases which he believes disappeared, but the follow-up material was inadequate for confirmation.

DR. HELLMAN: If this would be a meeting of gynecologists, by this time the discussion would have become very acrimonious because this is a subject that, for some reason, invokes anger. I think that Dr. Fitzgerald, Dr. Watson, and I have presented the various opinions. In 122 cases which were gleaned from the literature, 90 persisted. Some of them did not persist, and Dr. Fitzgerald said that they all persisted. If you listened to him very carefully he said something else. He said "what I would call carcinoma in situ persists," and this is the argument that one gets into all the time because there are various shades of lesions in the cervix, and some of these will be called carcinoma in situ by some observers and not by others. I believe that with the passage of time we have become more careful in our diagnosis of carcinoma in situ, and a good many lesions in the canal which are associated with pregnancy no longer fool us. At least we do not call them carcinoma in situ so readily. I believe that Dr. Fitzgerald himself would have been a little suspicious that the first lesion which was seen was something associated with pregnancy. Perhaps it was carcinoma in situ, and perhaps it was not.

I still am of the opinion that there have been some cases which most would label carcinoma in situ that at present have normal cervices. There are 4 such women out of 5 cases in Baltimore.[7] The fifth is dead of carcinoma. Of course, the others have not lived out their lifetimes yet, and it is possible that the number of biopsies that these women have had have removed so much of the cervix that the lesion is gone and that they have been cured by the biopsy technic.

I should have recognized the case presented; I am sorry that I did not. It made a rather marked change in our therapy of this lesion. All the cases of carcinoma in situ that have recurred as far as I know have recurred in the vaginal cuff, and the point made by Dr. Watson that this lesion is multicentric in origin is an important one. Since this particular case, we always spray the vagina with iodine, perform a Schiller's test, and mark out the suspicious areas (areas where the spray does not stain). We then take further biopsies. Furthermore, in doing even the simple operation for carcinoma in situ great care has been taken to remove extensively the vaginal cuff and to examine this area to make sure that some lesion has not been cut through. I think that if these precautions are taken, the patient can be told that she is cured of the disease.

The only other thing that I would like to say is that when these changes with or without pregnancy are seen in young women who desire to have a family, it is reasonably safe for these individuals to be followed carefully and to be operated on after their family has been founded, for the life history of carcinoma in situ—from hyperplasia to carcinoma in situ to carcinoma—occupies about eight to ten years.

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America's Wage Earners Attain New High in Longevity

America's wage earners and their families registered a new high in longevity last year, it is reported by statisticians of the Metropolitan Life Insurance Company.

Average length of life—or expectation of life at birth—among the Metropolitan's millions of industrial policyholders was 70.4 years in 1959. This was 0.3 years above the 1958 figure and 0.2 years above the previous record high in 1956.

Last year was the fifth in succession in which the average lifetime of these insured persons remained at or above the seventy-year mark. This stability is in sharp contrast with the experience for several decades prior to 1954, when the increase in expectation of life at birth averaged about one-half year per annum.

The increase in longevity has amounted to 2.7 years since 1949, to about 8 years since 1939, and to 24 years since 1909. The gain during the 1950's was appreciably less than it was in the 1940's, which included the years of World War II and its aftermath, or in the 1930's, the period of the great depression.

"The long-term increase in the average length of life has been greater for American wage-earners and their families than for the general population of the United States," the Metropolitan statisticians point out. "In 1909, the average lifetime of the company's industrial policyholders was about six years less than that for the population as a whole; currently the average is about the same for the two groups."

Current Concepts in

DIABETES MELLITUS

Sponsored by the Clinical Society of the New York Diabetes Association

Editors

MAX ELLENBERG, M.D.
HAROLD RIFKIN, M.D.

*Carbohydrate Metabolism**

Metabolic Interrelations and Control

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METABOLISM of carbohydrates functions to provide energy and materials for synthetic purposes. Energy generated as a consequence of glucose oxidation, which may be used potentially for performing work, is referred to as free energy. In biologic systems free energy can be utilized in two ways. If the reaction producing free energy (exergonic reaction) can be coupled to a reaction that needs work done on it to proceed (endergonic reaction), the exergonic reaction will drive the endergonic system. This method of utilization of free energy is not as frequent an occurrence as is the use of energy to synthesize materials which can subsequently decompose and release energy. These energy-rich compounds provide both temporal and spatial flexibility to the energy-yielding systems in the body. Such energetic compounds are, in general, of two types, either hydrogenated materials such as reduced diphosphopyridine nucleotide or phosphorylated compounds such as adenosine triphosphate, creatine phosphate, guanosine triphosphate, and so forth.

In addition to energy, a cell may derive from the metabolism of carbohydrates certain necessary materials which either are not in the diet or are present in insufficient amounts. Many of these materials are made by simple conversions of metabolic products. Thus, glucose may be metabolized to pyruvate, oxalacetate, and alpha-ketoglutarate, which in turn can be transaminated to the amino acids, alanine, aspartate, and glutamate, respectively. These amino acids can be incorporated into proteins as an endergonic process.

During the past decade, great progress has been made in elucidating the various biochemical reactions involved in metabolizing sugars, fats, and proteins. Undoubtedly, one of the most important achievements in biochemistry during this period has been the discovery of the existence of alternative metabolic pathways for a variety of substances, including glucose. Recognition of these multiple pathways for a given metabolite has made it necessary to inquire into the quantitative relationships between these pathways and to attempt to define the factors regulating their relative activities under normal and pathologic conditions. Regulation of metabolic pathways appears to be achieved in a variety of fashions including:

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* This review is intended to be selective rather than inclusive, and certain areas such as glycogen synthesis have been omitted by the authors.

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1. Control by changing enzyme activity by: (*a*) a change in enzyme concentration; (*b*) a change in enzyme inhibitors (the special case where an enzyme inhibitor is a product of a later reaction in a metabolic sequence is referred to as negative feedback); or (*c*) a change in enzyme activators.

2. Control without change in enzyme concentrations by: (*a*) competition for substrate; (*b*) competition for cofactor; or (*c*) compartmentalization. There may be an abundance of substrate for a reaction present in a cell, but if it exists in a compartment different from that in which the enzyme is found, that is, mitochondria versus the nonparticulate portion, the reaction cannot take place.

This review will indicate briefly certain details of the major biochemical pathways involved in carbohydrate metabolism and will consider the possible function and regulation of alternative pathways of glucose utilization. More detailed information with regard to recent advances in carbohydrate metabolism is available in several comprehensive reviews.[1–8]

Transport of Sugars

Before sugars can be metabolized by one or another pathway, they must gain entrance into the cell. The entry of glucose and other hexoses into cells is not a result of simple diffusion. This is indicated by such observations as the finding that the rate of entry of sugars is dependent on their chemical configuration. For example, *d*-galactose may enter a cell rapidly while a very similar sugar, *l*-galactose, is almost totally excluded.[9] Further, it has been shown that the rate of entrance of glucose is a function of its external concentration only up to a certain concentration beyond which the rate remains constant. This "saturation phenomenon" may be interpreted in terms of an enzymatic system or a nonenzymatic carrier. As one increases the amount of substrate for an enzyme without changing the total amount of the enzyme present, the velocity of the reaction increases until a substrate concentration is reached, when all the enzyme present is saturated. Under such conditions, the further addition of substrate will have no effect on the rate of reaction. The observed saturation phenomenon also could occur if the sugar transport system involves a carrier substance located in the cell membrane which is nonenzymatic and does not require metabolic energy. The chemical nature of a possible carrier substance is unknown.[9–12]

Evidence has accumulated indicating that insulin has an effect on the transport of sugar into cells. Levine and his coworkers[13,14] observed that a number of sugars whose volume of distribution equaled that of the extracellular fluid were distributed in an expanded fluid space following insulin administration. These data suggested that insulin increased the transport of sugars into the cells, chiefly into muscle. These findings were soon confirmed and extended with the demonstration that insulin increased the transport of glucose into isolated muscle in a preparation that was cooled to the point where hexokinase was relatively inactive.[15–17] On the basis of such observations it has been suggested that the site of action of insulin is prior to the phosphorylation of glucose.

The Embden-Meyerhof Pathway

The main pathway of glucose catabolism

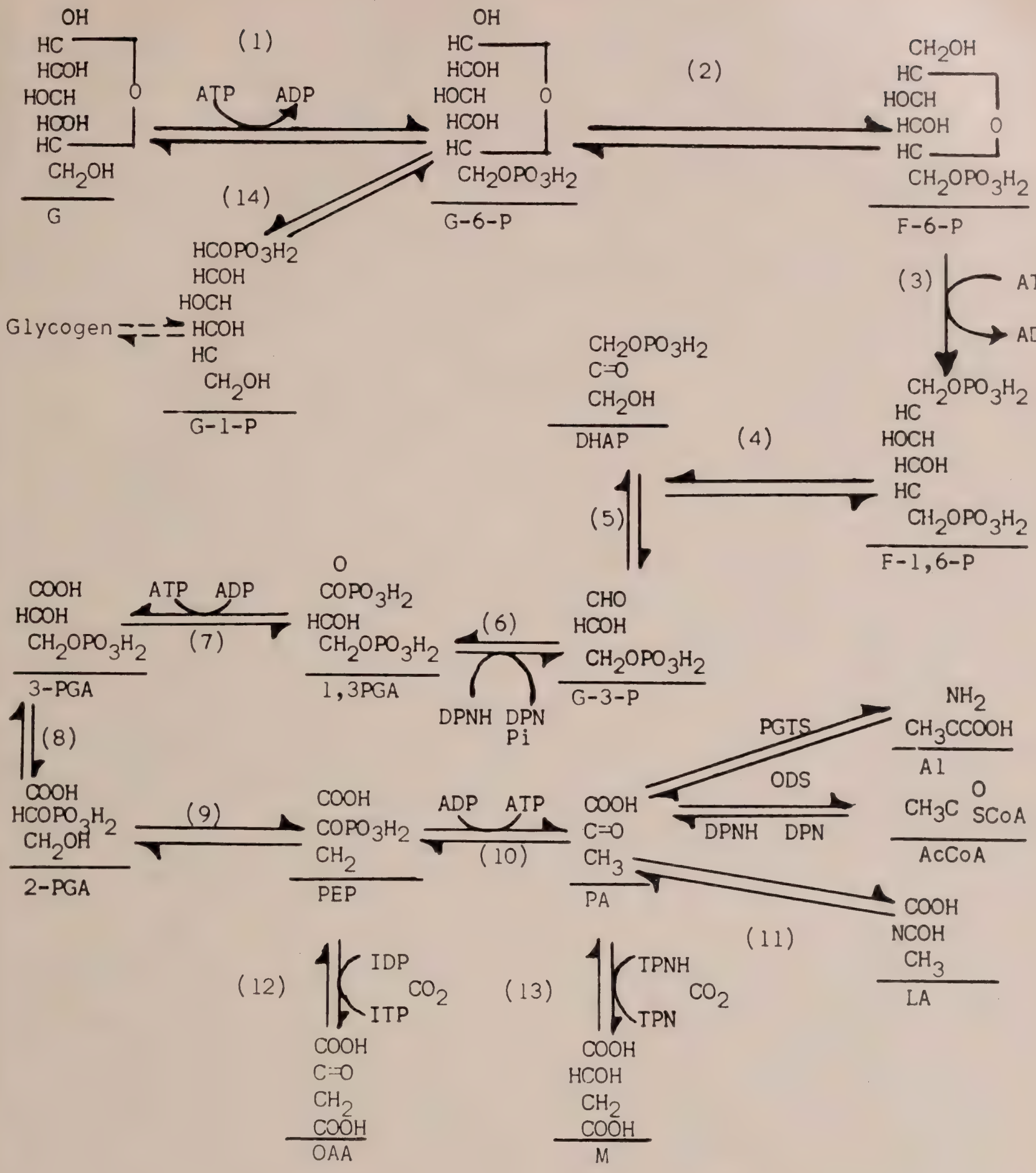

FIG. 1. Embden-Meyerhof Pathway. Abbreviations: G, glucose; ATP, adenosine triphosphate; ADP, adenosine diphosphate; G-6-P, glucose-6-phosphate; G-1-P, glucose-1-phosphate; F-6-P, fructose-6-phosphate; DHAP, dehydroxyacetone phosphate; G-3-P, glyceraldehyde-3-phosphate; 1,3-PGA, 1,3-diphosphoglyceric acid; 3-PGA, 3-phosphoglyceric acid; 2-PGA, 2-phosphoglyceric acid; F-1,6-P, fructose-1,6-diphosphate; PEP, phosphoenolpyruvate; PA, pyruvate; LA, lactate; M, malate; OAA, oxalacetate; CoA, coenzyme A; Al, alanine; DPN$^+$, oxidized diphosphopyridine nucleotide; DPNH, reduced diphosphopyridine nucleotide; Pi, inorganic phosphate; ODS, oxidative decarboxylation system for pyruvate including thiamine pyrophosphate, lipoic acid, coenzyme A, α-ketodecarboxylase, and the conversion of DPN$^+$ to DPNH$^+$H$^+$; TPN$^+$, oxidized triphosphopyridine nucleotide; TPNH, reduced triphosphopyridine nucleotide; IDP, inosine diphosphate; ITP, inosine triphosphate: PGTS, pyruvic glutamic transaminating system including glutamic acid, transaminase, pyridoxal phosphate.

Enzymes: (1) hexokinase; (2) phosphohexose isomerase; (3) phosphofructokinase; (4) aldolase; (5) phosphotriose isomerase; (6) triose phosphate dehydrogenase; (7) phosphoglyceric kinase; (8) phosphoglyceromutase; (9) enolase; (10) pyruvic kinase; (11) lactic dehydrogenase; (12) phosphoenolpyruvate carboxylase; (13) malic enzyme; and (14) phosphoglucomutase.

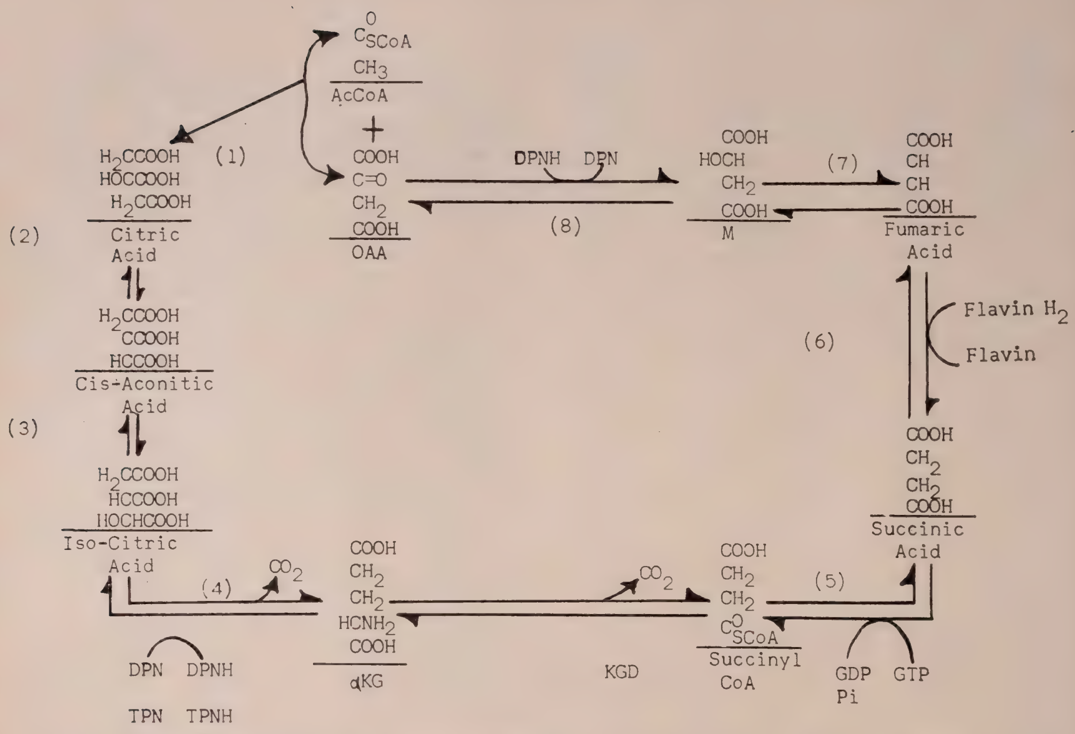
O
CSCoA
CH3
AcCoA
+
COOH
C=O
CH2
COOH
OAA
(1)
H2CCOOH
HOCCOOH
H2CCOOH
Citric Acid
(2)
H2CCOOH
CCOOH
HCCOOH
Cis-Aconitic Acid
(3)
H2CCOOH
HCCOOH
HOCHCOOH
Iso-Citric Acid
(4)
CO2
DPN DPNH
TPN TPNH
COOH
CH2
CH2
HCNH2
COOH
αKG
CO2
KGD
COOH
CH2
CH2
CO SCoA
Succinyl CoA
(5)
GDP Pi
GTP
COOH
CH2
CH2
COOH
Succinic Acid
(6)
Flavin H2
Flavin
COOH
CH
CH
COOH
Fumaric Acid
(7)
COOH
HOCH
CH2
COOH
M
DPNH DPN
(8)

FIG. 2. The Tricarboxylic Acid Cycle and Electron Transport System. Abbreviations: Ac, acetyl; CoA, coenzyme A; M, malic acid; OAA, oxalacetic acid; KG, α-ketoglutaric acid; GDP, guanosine diphosphate; GTP, guanosine triphosphate; αKGD, α-keto dehydrogenase system including thiamine pyrophosphate, lipoic acid, coenzyme A and α-keto dehydrogenase.
Enzymes: (1) condensing enzyme; (2) aconitase; (3) aconitase; (4) isocitric dehydrogenase; (5) succinic thiokinase; (6) succinic dehydrogenase; (7) fumarase; and (8) malic dehydrogenase.

in the body is the Embden-Meyerhof or glycolytic pathway (Fig. 1). In certain tissues, such as brain and skeletal muscle tissue, it is essentially the only pathway. In adipose tissue, the liver, and the red blood cells, however, it accounts for a variable fraction of the glucose metabolized.

The first portion of the Embden-Meyerhof pathway involves the conversion of glucose to fructose diphosphate. Since a compound at a higher energy level has been made, this requires an energy input. Indeed, 2 mols of energy-rich adenosine triphosphate are expended for each mol of glucose converted to fructose diphosphate (Fig. 1, Reaction 3). In the next conversion, the aldolase step (Fig. 1, Reaction 4), the six-carbon sugar, doubly phosphorylated, is split into two three-carbon sugars, each singly phosphorylated. The succeeding steps involve the oxidation of the three-carbon sugar to pyruvic acid. This series of oxidations yields energy, some of which is trapped as adenosine triphosphate. For each mol of glucose metabolized, 4 mols of adenosine triphosphate are formed. It should be noted that this nucleotide is not made in the electron transport system but in a coupled reaction with the glucose catabolite. In addition to the adenosine triphosphate generated, for each mol of glucose oxidized, 2 mols of reduced diphosphopyridine nucleotide are formed (Fig. 1, Reaction 6) which can be used for hydrogenation. This nucleotide can serve in the conversion of pyruvate to lactate or lead to the generation of adenosine triphosphate in the electron transport system (Fig. 1).

Note that many steps of the Embden-Meyerhof pathway are reversible. Some reactions, notably those involving phosphorylation with adenosine triphosphate, are irreversible. Since pyruvate can be converted to glucose it is evident that these irreversible steps can be circumvented. In mammalian tissue, the decarboxylation of pyruvate to acetyl coenzyme A (Fig. 1, Reaction ODS) is irreversible and cannot be circumvented.

The course of pyruvate conversion to glucose-6-phosphate (Fig. 1 and Fig. 3) initially may involve pyruvate conversion directly to phosphoenolpyruvate (Fig. 1, Reaction 10).[18] However, on thermodynamic grounds, it is unlikely that this reaction is readily reversible in the living cell.[19] Indeed, it has been shown that in the liver, some 90 per cent of the pyruvate going to form glycogen does so by an alternate pathway, the dicarboxylic shuttle circumventing the pyruvate to phosphoenolpyruvate step.[20] This shuttle involves part of the tricarboxylic acid cycle (Fig. 1, Reaction 13 and Fig. 2, Reactions 7 and 8). The reactions involved in the conversion of phosphoenolpyruvate to fructose diphosphate are freely reversible (Fig. 1). The conversion of fructose diphosphate to fructose-6-phosphate is effected by fructose diphosphatase rather than reversal of the phosphofructokinase reaction. Similarly, the conversion of glucose-6-phosphate to glucose occurs by the action of glucose-6-phosphatase, an enzyme present mainly in the liver. The hydrolysis of phosphate esters, such as fructose-6-phosphate and glucose-6-phosphate by phosphatases produces energy. However, the body apparently has no mechanism for trapping this energy and it is converted to heat. These backward reactions are stressed because they are active metabolic pathways involved in the multiorgan relationships characteristic of an intact animal. Free glucose is released from intracellular precursors primarily by the liver because only there is glucose-6-phosphatase present. Lactate, formed from pyruvate, can be released by all tissues. After the transport of lactate to the liver by the circulation of the blood, it can be reconverted to pyruvate and, via the reactions just discussed, to free glucose and can then reenter the blood stream. This lactate-glucose cycle is but one example of the contrapuntal role played by the liver in metabolism.[21]

The Tricarboxylic Acid Cycle

The tricarboxylic acid cycle (Fig. 2) is the final pathway for most energy-yielding reactions of fat and protein, as well as for carbohydrate metabolism.[22] In this sense it is no more an integral part of the catabolism of carbohydrate than it is of protein or of fat. Its characteristic features are: (1) the interconversion of all members of the cycle by movement in a clockwise manner (note that all but the reaction catalyzed by alpha-ketoglutarate dehydrogenase are reversible), and (2) the synthesis of polybasic members of the cycle from pyruvate and some amino acids but not from fatty acids.

The substrates for the cycle are of two parts, both of which are needed for operation of the cycle: (1) a dicarboxylic acid which may be obtained (*a*) as the product of the previous turn of the cycle, (*b*) directly from pyruvate by the malic enzyme, or (*c*) from the glucogenic amino acids, and (2) acetyl coenzyme A which can be obtained (*a*) from fatty acid catabolism, (*b*) from oxidative decarboxylation of pyruvate, or (*c*) to a minor extent from the ketogenic amino acids.

The products of the cycle are: (1) carbon dioxide which will not be further considered except to note that carbon dioxide is required for fatty acid synthesis and carboxylation reactions; (2) reduced diphosphopyridine nucleotide and to a lesser extent, reduced triphosphopyridine nucleotide; and (3) those members of the cycle that can be chemically converted to other materials. Thus, oxalacetate may be transaminated to aspartate, and alpha-ketoglutarate to glutamate. Both aspartate and glutamate not only are used in the synthesis of proteins but also are vital to the synthesis of purines, pyrimidines, the urea cycle, and a host of other reactions. In terms of free energy production, the cycle furnishes what is quantitatively the chief source of reduced diphosphopyridine nucleotide. This nucleotide can transfer its hydrogen to the electron transport system, which serves to moderate what might otherwise be an explosive reaction between hydrogen and oxygen to form water. From such an explosive reaction a cell could not obtain useful energy. Rather, a slower stepwise reaction occurs by which three molecules of adenosine triphosphate are synthesized for every molecule of reduced diphosphopyridine nucleotide supplied to this system. The adenosine triphosphate thus synthesized is free to participate in the many reactions in which it is known to enter.

The electron transport system is located in the mitochondria and consists of a series of enzymes containing characteristic chemical groupings.[23,24] They include flavin adenine dinucleotide which contains the vitamin riboflavin and several cytochromes labeled b, c, a_3 and a_3 in that order. The cytochromes are related chemically to hemoglobin and contain a protoporphyrin nucleus bound to iron and a protein. In contradistinction to hemoglobin, however, the iron can exist in both an oxidized and a reduced state. The compounds in this series differ in their increasing avidity for electrons; therefore the electrons will stream to cytochrome a_3 which will transfer the electrons to molecular oxygen. The source of electrons, hydrogen, is left stripped of electrons and remains as hydrogen ions to be neutralized in the buffer systems of the body. In addition to these factors, there are involved in the electron transport system certain quinones including coenzyme Q whose exact role remains to be elucidated.[25]

Along this transport chain, the energy produced is in part used to drive the reaction converting adenosine diphosphate plus inorganic phosphate to adenosine triphosphate. Since this reaction is a phosphorylation occurring as the result of an oxidation, it is referred to as oxidative phosphorylation. This type of phosphorylation is the largest source of energetic compounds in the cell.[23,24]

The tricarboxylic acid cycle and the electron transport system exist at the common final pathway of carbohyrate, fat, and protein catabolism, and it may be anticipated that its interrelations are complex and multidimensional.

Pyruvate is a significant branch point in catabolism. A branch point has been defined as a compound whose metabolic control has a great influence on the ultimate course of cell metabolism. Thus pyruvate may be transaminated to *l*-alanine, converted, along the Embden-Meyerhof pathway, to glucose and glycogen, enter the tricarboxylic acid cycle either as acetyl coenzyme A or a dicarboxylic acid (oxalacetate or malate), or be converted to a lipid. Further, since all the intermediates of the tricarboxylic acid cycle can be synthesized from each other, the synthesis of malate from pyruvate or oxalacetate from phosphoenolpyruvate is a necessary precursor of the synthesis of glutamate and glutamine from alpha-ketoglutamate, and aspartate from oxalacetate.

The dicarboxylic shuttle involves a portion of the tricarboxylic acid cycle. In this series of reactions pyruvate is converted initially to malate.[26] Malate may be oxidized to oxalacetate which, in turn, may be converted to phosphoenolpyruvate (Fig. 3).[18] The constant replenishment of the tricarboxylic acid cycle intermediates is a consequence of their vigorous utilization. It is to be stressed that while carbohydrate can form pyruvate and pyruvate can form the tricarboxylic acid intermediates in mammalian liver by at least three mechanisms,[18,26,27] fatty acids can produce neither pyruvate nor tricarboxylic acid cycle intermediates.

The regulation of the utilization of pyruvate has been the subject of extensive study. In fasted, contrasted with fed rats, there is a tenfold greater rate of pyruvate conversion to tricarboxylic acid intermediates in the liver.[28,29] Thus, when food

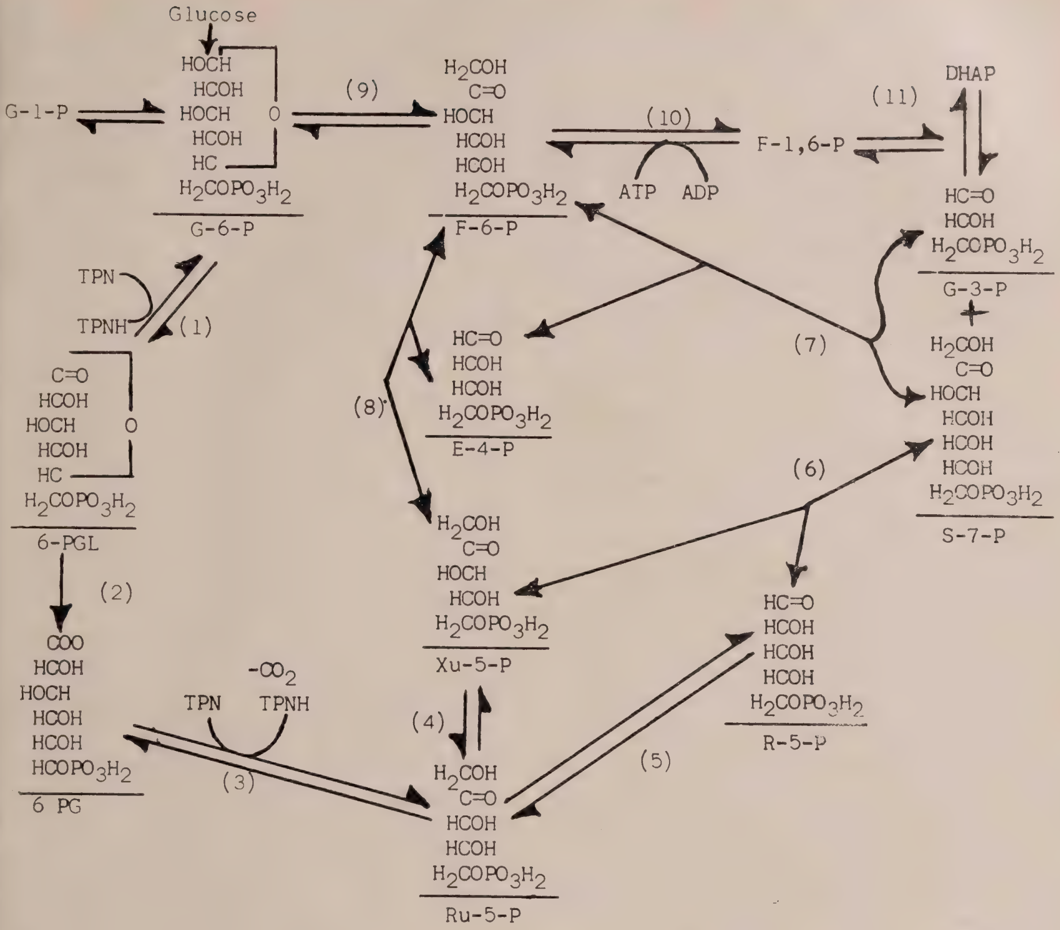
Glucose
G-1-P
HOCH
HCOH
HOCH
HCOH
HC
O
H2COPO3H2
G-6-P
(9)
H2COH
C=O
HOCH
HCOH
HCOH
H2COPO3H2
F-6-P
(10)
ATP
ADP
F-1,6-P
(11)
DHAP
HC=O
HCOH
H2COPO3H2
G-3-P
+
H2COH
C=O
HOCH
HCOH
HCOH
HCOH
H2COPO3H2
S-7-P
(7)
(6)
TPN
TPNH
(1)
C=O
HCOH
HOCH
O
HCOH
HC
H2COPO3H2
6-PGL
(2)
COO
HCOH
HOCH
HCOH
HCOH
HCOPO3H2
6 PG
(8)
HC=O
HCOH
HCOH
H2COPO3H2
E-4-P
H2COH
C=O
HOCH
HCOH
H2COPO3H2
Xu-5-P
(4)
-CO2
TPN
TPNH
(3)
H2COH
C=O
HCOH
HCOH
H2COPO3H2
Ru-5-P
(5)
HC=O
HCOH
HCOH
HCOH
H2COPO3H2
R-5-P

Fig. 3. Pentose Phosphate Pathway. Abbreviations: G-6-P, glucose-6-phosphate; 6-PGL, 6-phosphogluconolactone; 6 PG, 6-phosphogluconate; Ru-5-P, ribulose-5-phosphate; R-5-P, ribose-5-phosphate; Xu-5-P, xylulose-5-phosphate; S-7-P, sedoheptulose-7-phosphate; G-3-P, glyceraldehyde-3-phosphate; E-4-P, erythrose-4-phosphate; F-6-P, fructose-6-phosphate; F-1,6-P, fructose-1,6-diphosphate; G-1-P, glucose-1-phosphate; DHAP, dehydroxyacetone phosphate.

Enzymes: (1) glucose-6-phosphate dehydrogenase; (2) lactonase; (3) 6-phosphogluconic dehydrogenase; (4) phosphoketopentoepimerase; (5) phosphoriboisomerase; (6) transketolase; (7) transaldolase; (8) transketolase; (9) hexose isomerase; (10) phosphofructokinase; and (11) aldolase.

intake ceases the liver utilizes fatty acids to a greater extent than pyruvate to form acetyl coenzyme A. Under these conditions, fatty acids cannot supply tricarboxylic acid intermediates, and the small stores of carbohydrate and the larger stores of glucogenic amino acids obtained by the hydrolysis of proteins are drawn on to supply this need. The specific role played by the liver in the economy of the body differs from any other organ or tissue. Accordingly, one might expect that the control of the branch point pyruvate would differ appreciably in various organs, which is indeed the case. In the brain and kidney there is little change in pyruvate metabolism with fasting.[30,31] The fact that these two organs are known to utilize plasma glutamine and thus are not wholly dependent on their own intracellular metabolism may explain this lack of response.[32] This interorgan relationship is undoubtedly a characteristic of metazoan life. Skeletal muscle and lymphatic tissue demonstrate a branch point response intermediate between liver and brain or kidney.[33] Adaptation to environmental changes such as hypoxia again introduces different but characteristic changes at this branch point.[34]

The Pasteur Effect

Pasteur noted some eighty years ago that in yeast cells fermentation abruptly ceased when oxygen was made available to the cells, and a vigorous respiration ensued. Fermentation in yeast is the anaerobic production of alcohol from glucose, while respiration is defined as the utilization of oxygen with the production of carbon dioxide. Fermentation involves the conversion of glucose through the Embden-Meyerhof pathway to pyruvate (Fig. 1). In yeast, pyruvate is reduced to ethyl alcohol and in mammalian cells to lactic acid. In respiration, the pyruvate is oxidized further in the tricarboxylic acid cycle to carbon dioxide with the generation of reduced pyridine nucleotide. The nucleotide is then in turn oxidized along the electron transport system by taking up atmospheric oxygen and forming adenosine triphosphate and water. The Pasteur effect is not limited to yeast. It has been observed to be a general property of animal tissues with several notable exceptions such as neoplastic tissue, brain slices, and embryonic tissues. In the Pasteur effect, there appears to be metabolic control with a vengeance. The rapidity, completeness, and preciseness of the cessation of the formation of the appropriate fermentation product, with a concomitant decrease in glucose consumption and an outpouring of carbon dioxide, have challenged the greatest biochemical minds of this century.

Although a detailed discussion of the attempts at explaining the Pasteur effect is beyond the scope of this review, most current theses are based on the postulates of Johnson[35] and Lynen.[36] These workers reasoned that in the presence of oxygen the electron transport system rapidly became active, utilizing oxygen and forming adenosine triphosphate from adenosine diphosphate and inorganic phosphate. As a consequence, adenosine diphosphate and inorganic phosphate concentrations decreased and this led to a diminished operation of triose phosphate dehydrogenase, resulting in a fall in glucose consumption. Under these conditions, triose phosphate dehydrogenase would be operative only as adenosine diphosphate and inorganic phosphate became available to it. In short, in the presence of oxygen, the more complete oxidation of glucose results in a larger yield of energy-rich compounds, and glucose is used in smaller quantities. The Pasteur effect, according to this concept, is an example of metabolic control by competition for a cofactor. Similar concepts, differing considerably in detail but based on the supposition that the protagonist in this control is critical quantities of a cofactor or cofactors, have emerged from the laboratories of Racker,[37] Chance,[38] and Holzer.[39]

It seems reasonable that this type of metabolic control is significant in the instantaneous response of cells to drastic environmental changes. What its applicability may be to longer-term control in a system (the cell) that is clearly capable of synthesizing more enzyme and cofactor and of absorbing inorganic ions and a host of other materials from the plasma, whose composition is being held remarkably constant, is, to say the least, an unresolved problem.

Pentose Phosphate Pathway

The pentose phosphate pathway, or hexosemonophosphate shunt, appears to be the main alternative pathway to glycolysis in carbohydrate utilization in mammalian tissues. Glucose-6-phosphate is the branch point for glucose utilization via glycolysis or the pentose phosphate pathway. As indicated in Figure 3, glucose-6-phosphate is oxidized to 6-phosphogluconolactone by a reaction catalyzed by glucose-6-phosphate dehydrogenase. After enzymatic hydrolysis of the lactone, 6-phosphogluconate is oxidized to the 5-carbon sugar, ribulose-5-phosphate. Reactions 1 and 3 require oxidized triphosphopyridine nucleotide as a cofactor and generate the reduced cofactor, reduced triphosphopyridine nucleotide. Carbon di-

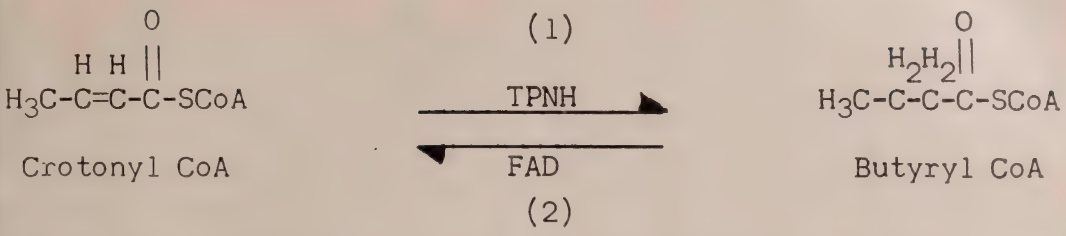

FIG. 4. Interconversion of Crotonyl Coenzyme A and Butyryl Coenzyme A. Reaction (1) is catalyzed by the enzyme reduced triphosphopyridine nucleotide ethylene reductase. Reaction (2) is catalyzed by the enzyme acetyl coenzyme A dehydrogenase. Abbreviation: FAD, flavin adenine dinucleotide.

oxide is formed from the first carbon of glucose. The subsequent reactions of the pentose phosphate pathway are nonoxidative and involve the interconversion of ribulose-5-phosphate to two closely related sugars, xylulose-5-phosphate and ribose-5-phosphate (Fig. 3, Reactions 4 and 5). These two five-carbon sugars may then be converted to fructose-6-phosphate either via a seven-carbon sugar, sedoheptulose-7-phosphate (Fig. 3, Reactions 6 and 7), or more directly by a reaction involving a four-carbon sugar, erythrose-4-phosphate (Fig. 3, Reaction 8). Transketolase requires thiamine pyrophosphate as a cofactor. In conditions associated with a thiamine deficiency, transketolase activity may be considerably diminished.[40,41]

The sum of all the reactions of the pentose phosphate pathway have the potentiality of converting one molecule of glucose to carbon dioxide for every six glucoses that enter this pathway. There is evidence to suggest that in animal tissues in vivo the pentose phosphate pathway does indeed form a cycle.[42,43] However, the fructose phosphate and triose phosphate formed from pentose phosphate via the transketolase and transaldolase reactions may be further metabolized to pyruvate or converted to glycogen rather than recycled in the pentose phosphate pathway. The factors governing the recycling of sugars in this pathway are not fully elucidated. There are apparent differences among the different tissues, and various factors, as for example fasting, affect the extent of recycling.[44]

The relationship between the reactions of the pentose phosphate pathway and glycolysis are indicated in Figure 3. Both pathways share certain intermediates, namely, glucose-6-phosphate, fructose-6-phosphate, and glyceraldehyde-3-phosphate. Both schemes, however, represent distinct sets of reactions catalyzed by a separate series of enzymes.

Physiologic Role of the Pentose Phosphate Pathway

Glycolysis and the tricarboxylic acid cycle, as previously indicated, provide the major sources of energy (adenosine triphosphate), and also provide intermediates for fatty acid synthesis (glycerophosphate and acetyl carbohydrate) and for amino acid synthesis (pyruvate, oxalacetate, and α-ketoglutarate).

The pentose phosphate pathway provides ribose phosphate, a constituent of such important cell components as the nucleic acids, pyridine nucleotides, adenosine triphosphate, and other nucleotides. Ribose phosphate may be synthesized by one of two pathways; decarboxylation of glucose-6-phosphate (Fig. 3, Reactions 1 through 4) or by a reversal of the transketolase-transaldolase reactions (Fig. 3, Reactions 6 through 8).[42,43,45] In nonmammalian tissues, the pentose phosphate pathway has further significance in providing a substrate for synthetic processes.

Among microorganisms, the pentose phosphate pathway provides the precursor, sedoheptulose, of aromatic amino acids.[46]

A major difference between the pentose phosphate and glycolytic pathways is the pyridine nucleotide cofactor requirement, oxidized triphosphopyridine nucleotide for the pentose phosphate pathway and oxidized diphosphopyridine nucleotide for glycolysis. As indicated previously, the formation of three mols of adenosine triphosphate from adenosine diphosphate is coupled with the oxidation of one mol of reduced diphosphopyridine nucleotide by the flavoprotein-cytochrome oxidative chain of reactions.[47] There is no evidence, however, that reduced triphosphopyridine nucleotide oxidation may be involved in the production of energy.[48,49] Nevertheless, reduced triphosphopyridine nucleotide serves as an essential cofactor in a number of biosynthetic systems important to cell function and growth. There is much evidence to suggest that reduced triphosphopyridine nucleotide is the coenzyme for reductive synthetic reactions, while oxidized diphosphopyridine nucleotide is the coenzyme of oxidative energy-yielding reactions.[6]

Thus, reduced triphosphopyridine nucleotide is required for carboxylation reactions such as the conversion of pyruvate to malate (Fig. 2).[26] The transformation of carbohydrates to protein may require reduced triphosphopyridine nucleotide for the conversion of α-ketoglutarate to glutamate by glutamic acid dehydrogenase.[50] At several steps in steroid biosynthesis, reduced triphosphopyridine nucleotide is a required cofactor. Thus it is required in the conversion of squalene to cholesterol[51,52] and of cholesterol to pregnenolone[53] and in the subsequent steroid transformations involved in hydroxylation[54] and androgen conversion to estrogen.[55] In addition, this nucleotide appears to function in several types of reactions involved in the metabolism of drugs;[56] in a variety of hydroxylation reactions;[57] in ascorbic acid synthesis;[58] in the maintenance of the integrity of the red cell;[59,60] and in the reduction of dihydrofolic acid to tetrahydrofolic acid, an important step in one-carbon metabolism.[61]

Role of Reduced Triphosphopyridine Nucleotide in Fatty Acid Synthesis

Of particular interest to a consideration of diabetes is the role of reduced triphosphopyridine nucleotide in fatty acid synthesis. During the past four years evidence has accumulated to indicate that at least two separate pathways exist for the synthesis of long-chain fatty acids. Fatty acids can be synthesized in the mitochondria of cells by a series of reactions which are similar to those involved in fatty acid oxidations. A notable difference is that in fatty acid oxidation, the oxidation of butyryl coenzyme A to crotonyl coenzyme A involves a flavin adenine dinucleotide cofactor as the electron acceptor,[62] whereas in fatty acid synthesis reduced triphosphopyridine nucleotide provides the hydrogen for the reversal of this reaction (Fig. 4).[63,64] A second mechanism for fatty acid synthesis appears to be confined to the soluble fraction of the cell cytoplasm.[63,65–67] Fatty acid synthesis by this soluble system requires reduced triphosphopyridine nucleotide,[68,69] adenosine triphosphate,[68] biotin,[70] and carbon dioxide. It recently has been shown that biotin and adenosine triphosphate are required in this system for the fixation of carbon dioxide to acetyl coenzyme A to form malonyl coenzyme A.[71] In addition, fatty acid synthesis by the soluble system requires two molecules of reduced triphosphopyridine nucleotide for each two-carbon fragment added to a fatty acid chain,[67] while the mitochondrial system requires one molecule of reduced triphosphopyridine nucleotide and one molecule of reduced diphosphopyridine nucleotide for each two-carbon fragment addition.[72] It may be noted in this connection that the enzymes of the pentose phosphate pathway which generate reduced triphosphopyridine nucleotide, and those of glycolysis, which generate reduced diphosphopyridine nucleotide, are in the soluble portion of the cell cytoplasm.

In normal animals, on the basis of both

in vivo and in vitro experiments, it is established that fatty synthesis is stimulated by glucose. In diabetic animals there is a block in glucose utilization and a defect in the conversion of glucose or acetate to fatty acids, although there is no impairment in fatty acid oxidation.[73–78]

It has been suggested by several investigators that the rate of reduced triphosphopyridine nucleotide generation in the pentose phosphate pathway limits the rate of fatty acid synthesis. These workers proposed that in diabetic animals, decreased reduced triphosphopyridine nucleotide formation consequent to decreased glucose utilization might account for the block in fatty acid synthesis.[64,79,80] Recently, however, Matthes, Abraham, and Chaikoff[81, 82] have provided evidence that acetyl coenzyme A dehydrogenase (Fig. 4) activity, which was found to be reduced in livers of alloxan diabetic rats, and not reduced triphosphopyridine nucleotide limits fatty acid synthesis in diabetic rats.

It is of considerable interest with respect to the possible metabolic role of oxidized triphosphopyridine nucleotide that this cofactor is present in animal tissues almost exclusively in the reduced form, unlike oxidized diphosphopyridine nucleotide, which is predominantly in the oxidized form.[83,84] This would suggest that under normal circumstances, the sum of the reactions utilizing reduced triphosphopyridine nucleotide do not exceed those generating this nucleotide. The primary reduced triphosphopyridine nucleotide generating reactions in the body are the oxidative steps of the pentose phosphate pathway.

Relative Importance of the Pentose Phosphate and Glycolytic Pathways

Evidence has accumulated to indicate that the enzymes of the pentose phosphate pathway, as those of glycolysis, are present in most animal tissues.[85] Skeletal muscle alone appears to possess the enzymes catalyzing the oxidative reactions of the pentose phosphate pathway (Fig. 3, Reactions 1 and 3) in low concentration. Six-phosphogluconic dehydrogenase and, to a lesser extent, glucose-6-phosphate dehydrogenase also have been reported to be reduced in alloxan diabetic rats.[86] Even more striking is the increased glucose-6-phosphatase activity observed in livers of diabetic rats.[87]

A great number of investigators, using a variety of isotope methods, have attempted to determine the relative contributions of the Embden-Meyerhof and the pentose phosphate pathways to total glucose catabolism. There are many difficulties encountered in evaluating the significance of these various measurements of the quantitative relationships between the Embden-Meyerhof and the pentose phosphate pathways, and these results must be interpreted with caution.[88] They do give some index of the relative order of magnitude of the two pathways. In the in vitro studies with normal rat liver, it has been reported that as little as 5 per cent and as much as 50 per cent of glucose breakdown proceeds via the pentose phosphate pathway.[89–92] Observations with intact perfused liver suggest that about 40 per cent of the glucose is catabolized by this pathway.[93] In addition, it appears to be particularly important in lactating mammary gland[94,95] and adipose tissue.[96] On the other hand, the oxidative reactions of the pentose phosphate pathway are essentially nonfunctioning in skeletal muscle.[44,97]

The regulatory mechanisms which determine the rate of glucose catabolism via the Embden-Meyerhof and pentose phosphate pathways are of considerable interest. There is much evidence to suggest that a major factor in this control is the metabolic demand for the cofactor, reduced triphosphopyridine nucleotide. Substances which increase the utilization of this nucleotide, such as artificial electron acceptors like methylene blue[95,98–101] or naturally occurring substances such as ascorbic acid and cysteine,[102] have been shown to increase pentose phosphate pathway activity in lens, liver, mammary gland, leukocytes, and erythrocytes.

A regulatory mechanism, probably of less general importance than the requirement for reduced triphosphopyridine nucleotide, appears to be the alterations in enzyme activity. Most enzymes are generally present in considerable excess. Thus, alterations in enzyme activity may affect the regulation only if the amount of enzyme present is rate-limiting. Alterations in the activity of such an enzyme may be reflected in changes in the over-all rate of metabolism via one pathway as compared with another. This type of control of pentose phosphate pathway activity is well exemplified by the correlation between the level of glucose-6-phosphate dehydrogenase and the proportion of glucose-6-phosphate metabolized via this pathway in the lactating mammary gland[94,95] and in skeletal muscle.[44,85,97]

Summary

Great strides have been made in recent years in elucidating the details of the metabolism of carbohydrates. It is established that for several intermediates in glucose metabolism, such as glucose-6-phosphate and pyruvate, alternative pathways of catabolism exist. These different pathways appear to have distinct functions. Much has been learned about the biochemical interrelation of these pathways with fatty acids and protein metabolism. A question of great importance is what regulates the rate of flow of metabolites over alternative pathways. A beginning has been made in elucidating this problem, but it is likely that in this area the major advances in metabolism are yet to come.

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(*Number one in a series of articles on Current Concepts in Diabetes Mellitus*)

CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

The Diagnosis and Treatment of Occlusive Cerebral Vascular Disease

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IN THE past decade there has been an impressive increase in the study of the problem of cerebral vascular disease. Three international conferences have been held, and the publication of their transactions has added immeasurably to our knowledge.[1–3] In addition, several large cooperative studies were begun in this country and in other centers to elucidate this problem. However, the additional knowledge thus acquired has emphasized to those physicians studying patients with strokes how much more there is to learn. This report is an attempt to summarize the present state of knowledge and to draw attention to topics on which there is either disagreement or insufficient information.

Differential Diagnosis

Attempts to intervene during the evolution of a stroke have made accurate diagnosis imperative. The use of an agent whose function is to interfere with the clotting activity in a patient whose primary disease is hemorrhagic in nature might well be fatal. Little difficulty is encountered in distinguishing one classic form of stroke from another. However, there remain the problems related to classifying certain cases of nonhemorrhagic infarction into those cases due to cerebral embolus and those cases due to cerebral thrombosis. In addition, there are a few patients with small intracerebral hemorrhages in whom the subarachnoid fluid is not bloodstained. As yet there are no accurate methods available to indicate when one is dealing with such a patient, and the indirect methods of history, physical examination, and present-day laboratory studies leave a dangerous gap of 10 per cent of misdiagnoses.[1] Certainly the presence of a marked depression of consciousness, a prolonged coma, a severe hypertension, a sudden worsening of the evolving pattern of a stroke, and even a minimal discoloration of the cerebral spinal fluid should be considered as evidence suggestive of the presence of

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intracerebral hemorrhage. It must be emphasized that a cerebral spinal fluid examination should be performed in every patient with the clinical picture of a stroke, and, if properly executed, it can be done without appreciable risk.

A carefully recorded history of the patient, a physical examination, and laboratory studies will reduce to a minimum the misdiagnoses of intracranial lesions simulating strokes. Nevertheless, even if one is prepared to perform routine angiography in every patient with a clinical diagnosis of stroke, this minimum will be appreciably greater than zero.[4]

The diagnosis of stroke cannot be made with assurance unless one is willing to investigate every patient thoroughly. Unless one is willing to do this, the present-day therapeutic technics cannot be utilized.

Specific Syndromes

The classic paper of Kubik and Adams[5] did much to arouse interest in the various syndromes associated with vascular disease of the brain. In addition, these authors described a most important feature of the clinical pattern of disease of the basilar-vertebral tree, namely, that frequently there is a period of transient intermittent ischemic episodes prior to an occlusion. Millikan and Siekert[6,7] delineated further the syndrome of intermittent ischemia of the basilar-vertebral tree and noted also that a similar phenomenon existed in the history of occlusive disease of the carotid artery system. The importance of defining the area of the brain involved by a stroke is revealed when one studies the mortality rates associated with various syndromes. The patient with brain stem-basilar artery disease has a poorer prognosis than a patient with carotid artery disease.[8]

The history for accurate localization is often sufficient in itself. Bilaterality of symptoms points to a basilar system involvement. Involvement of the cranial nerve nuclei with resultant symptoms of diplopia, interference bilaterally with visual acuity, dysphagia, dysarthria, and vertigo are found in basilar system disease together with objective findings related to these symptoms. In addition, the impairment of the function of a cranial nerve and a contralateral hemiparesis or hemisensory defect are frequent findings, as is the impairment of cerebellar function, in basilar artery disease.

Pathologic conditions in the carotid tree cause unilateral symptoms and signs with the exception of the syndrome of ipsilateral visual disturbance with contralateral hemiparesis and hemisensory defects. Recent studies have cited the aids to the diagnosis of disease within the carotid artery itself. Auscultation of the carotid artery and eyeball bruits,[9,10] pharyngeal palpation of the pulsation of the internal carotid artery,[11] the presence of a Horner's syndrome,[12] and ophthalmodynamometry[13,14] are all clues and technics which, if employed carefully, should lead to a correct clinical diagnosis of carotid artery occlusive disease in 80 per cent of the patients seen with these phenomena.

Therapy

While intervention with new dynamic medical and surgical technics has been much acclaimed in recent years, it should not be forgotten that carefully maintained conservative therapy has much to offer to patients who have strokes. A recent report has pointed out the fact that by increasing the diligence with which medical services are administered to these patients, an impressive decrease in mortality was obtained (from 44 per cent in 1,000 patients to 31 per cent in a later group of 1,000 patients).[15] It is therefore the responsibility of physicians caring for patients with strokes to be certain that the following measures are carried out:

1. An adequate level of blood pressure should be maintained, and both severe hypertension and hypotensive states should be corrected.
2. Dehydration should be avoided.
3. Respiratory embarrassment should be detected and treated early.

4. Polycythemia should be recognized and treated immediately.

5. Hypoglycemia and the injudicious use of respiratory depressants and sedatives should be avoided.

6. Early ambulation of the patient should be effected.

Despite well-planned, conservative care, considerable morbidity and mortality remain. Physicians have therefore turned to a more dynamic approach.

Cerebral Embolus.—The concept of the use of anticoagulant therapy to prevent the recurrence of systemic embolization in rheumatic heart disease and myocardial infarction, pioneered by one of the authors,[16] has gained widespread acceptance. However, when applied to the pathologic conditions associated with cerebral emboli, the knowledge that a marjority of these lesions are associated with some degree of hemorrhage has stimulated animal experimentation.[17,18] Some investigators using varying methods of producing infarcts, none of which simulate exactly the situation encountered in the human being, have concluded that in some animals the use of anticoagulant therapy may lead to enlargement of the area of infarction and to possibly greater mortality. This does not occur in all animals, but the incidence of this phenomenon is increased. In human beings this has not been found to be true.[19,20] Nevertheless, one must balance the possible worsening of a stroke due to cerebral embolus caused by the early use of anticoagulants against the possibility that this first embolus is only the forerunner of a shower of emboli. Our study group has reached a compromise, whereby anticoagulant therapy is withheld for from twenty-four to thirty-six hours after the onset of the stroke. Under these circumstances we have not seen any further deleterious results.

Cerebral Thrombosis.—Any statement concerning the efficacy of a specific technic used in patients with cerebral vascular disease must contain a definition of the state which is being discussed. The natural history of cerebral vascular disease must be considered, and one must not compare patients in the stage of transient ischemic attacks with a group of patients with completed strokes. The mixing of these two groups in a series may produce profound statistical changes.

Transient Ischemic Attacks.—The work of Millikan and Siekert[6,7] has done much to clarify the concept of transient ischemic attacks in the evolution of cerebral thrombosis. It is in this phase of the disease that the greatest benefit can be achieved with a prevention of serious neurologic impairment. However, cerebral vascular disease is not the only cause of transient ischemic attacks. Demyelinating diseases and brain tumors are among the other important pathologic states whose first manifestations can simulate transient ischemic attacks.[21]

Anticoagulant Therapy.—Fisher[22,23] was among to first to observe the remarkable effect of anticoagulant therapy in causing a cessation of transient ischemic attacks. The later work of Millikan, Siekert, and Whisnant[24] with a larger number of patients fortified the concept that anticoagulant therapy was efficacious in halting the progress of this phase of cerebral thrombosis. Recognizing the need for a controlled study of the effects of antocoagulant therapy in cerebral vascular disease, a cooperative study sponsored by the National Institute of Neurological Disease and Blindness was organized. A preliminary report by the chairman of this group confirmed the value of anticoagulant therapy as a means of halting transient ischemic attacks.[25] Because of the short length of follow-up, this report left unanswered the question of the number of untreated patients who, when followed for a long period of time, will proceed to permanent and severe neurologic damage. Millikan[26] and his associates are now in a position to furnish a partial answer to this question. They have followed 128 patients with the syndrome of insufficiency of the carotid artery tree for a period of from three to five years. Thirty-six per cent of 25 patients not treated with anticoagulant therapy experienced a major stroke with serious neurologic impairment. Seven per cent of 103 patients treated with anticoagulant therapy developed a major stroke. It seems probable that their results with patients experiencing ischemic attacks of the basilar artery circuit will be as significant. Thus, it can be said that all the available evidence supports the use of anticoagulant therapy for patients seen with this clinical picture.

Surgery.—The reports of corrective surgical procedures utilized in patients experiencing transient ischemic attacks, particularly those in whom anticoagulant therapy is said to have been unsuccessful, have been of great interest.[27,28] It has been claimed that the morbidity and mortality of the procedure have been reduced to an acceptable figure. However, recent work has underscored the limitations of vascular surgery, particularly in patients with basilar-vertebral lesions.[29] At the present time two types of studies which are essential for the proper evaluation of this technic are lacking. There has been no randomized study reported to date, and adequate follow-up records are not yet available. Undoubtedly there is a place in surgery in the treatment of strokes. However, until this type of information is available, it will be impossible to assess adequately the place of surgery in the treatment of this type of syndrome. It is not enough to open a vessel or to bypass it temporarily. There must be both temporary and long-term improvement to warrant surgery of this degree of complexity and risk.

Thrombolytic Agents.—There are as yet no data on the results of the use of thrombolytic agents in any large number of patients with cerebral vascular disease. It is apparent to those of us who are either preparing such studies or have already treated some patients with this technic that the problems presented are by no means simple ones. It is apparent that agents must be used in conjunction with anticoagulants if the temporary gain obtained by their use is to be maintained. It is clear that well-controlled, randomized studies will be essential to the determination of the value of these agents.

Thrombosis-in-Evolution

Many patients who are followed carefully during the period of evolution of a stroke are seen to progress to severe neurologic deficits in steplike fashion over a period of from hours to days. In the past the physician has found himself in the position of standing by, completely helpless, as the patient's condition deteriorated progressively. Two recent reports describing the use of anticoagulant therapy in this situation suggest that the use of anticoagulant therapy can frequently halt the evolution of the stroke.[23,30] The prognoses of patients seen in the first stages of this pathologic state are so very variable that a controlled study is essential to assess adequately the value of this therapy. It is hoped that the cooperative study group will be able to collect a large enough number of randomized patients to gain a definite answer as to the place of anticoagulants in this stage of cerebral thrombosis. At this time it can be stated that, to date, experience suggests that anticoagulant therapy may be helpful.

Accomplished Stroke

Many patients under consideration in our study have reached the stage of accomplished stroke when they are first seen by a physician. There is much that can be offered to these patients, even to those patients who live far from major medical centers. Diligent care may carry them safely through the critical period to a time when rehabilitation procedures may be of help. A recent study conducted by our group indicates that, in the case of an average patient, the dedicated physician working with a nurse, or even the family alone, may do about as well as the rehabilitation expert in aiding his patient to recover much of the deficit caused by the stroke.[31] A great deal depends on the patient's motivation for recovery. This motivation may be "built-in" or strengthened by the attitudes of his physician, his family, his employer, and others. During the acute phase the patient who is hospitalized with cerebral thrombosis is exposed to a high incidence of thromboembolic complications. In a recent study 37 per cent of the patients hospitalized with a cerebral thrombosis were found to have experienced a thromboembolic complication during the period of hospitalization, and 14 per cent of these patients died of a pulmonary embolus.[32] In addition, there is a great danger of recurrence, so that in a group of 535 patients studied by the life-table method,[33] one third of the patients were found to have experienced a recurrent stroke at the end of one year, and two thirds of the patients were found to have experienced a recurrent stroke at the end of four years. In addition, at the end of four years 80 per cent of these patients had died either of a recurrent occlusion within the cerebral vascular tree or of a myocardial infarction.

Comment

Because of this experience, it is of the utmost importance to seek a therapeutic measure which might affect these shocking figures favorably. For the past four years our study group, utilizing the facilities at Bellevue Hospital of the Second (Cornell) Medical-Neurological Services and the First (Columbia) Medical Service by means of a random selector system, has been investigating the efficacy of anticoagulant therapy in preventing recurrent thromboembolic phenomena in patients with strokes.[34,35] It is important to emphasize that only one third of all the patients with cerebral vascular disease seen by the study group were deemed suitable for inclusion in the random study. No patient was accepted in whom there was any abnormality in the cerebral spinal fluid. Severe hypertension (blood pressure of 230/120 or greater) was an absolute contraindication for the study and each patient with a diastolic pressure of greater than 110 mm. Hg was scrutinized most carefully. In addition, all other contraindications or indications for caution in the use of anticoagulant therapy (liver disease, renal insufficiency, blood dyscrasia, and so forth) were applied to these patients. In the period from July 20, 1956, to July 1, 1960, 199 of 611 patients were found to be suitable for the study. Ninety-eight patients were selected as controls, and 101 patients were selected to receive anticoagulant therapy. To date there appears to be a definite reduction in the incidence of recurrent thromboembolism in those patients receiving anticoagulants in an uninterrupted fashion (2 per cent versus 13 per cent). In addition, there have been no deaths due to recurrent thromboembolism in the treated group as contrasted to 9 of 31 deaths (29 per cent) in the untreated group. Balanced against this is a rate of hemorrhagic complications of 18 per cent in the treated group and a rate of 1 per cent in the control group. Many of these complications were of minor degree. There has been 1 death due to hemorrhage in each group, but there have been no deaths due to intracranial bleeding in the treated group.

At this time our figures are not statistically significant, but this trend has been present in every yearly review of results obtained and is in agreement with the figures of another study published recently.[36]

It is possible that anticoagulant therapy may prove to have the same place in cerebral vascular disease as long-term studies in Great Britain indicate it has in myocardial infarction.[37] It is planned to continue this study for another two to three years to assess more completely the long-term results.

SURGERY.—Surgery in the treatment of the completed stroke has not been successful. There is a critical period of probably less than eighteen hours after which even lesions which might be approached by the surgeon are no longer benefited.[38] As has been pointed out previously, the number of strokes that are caused by lesions that can be treated theoretically by surgery is as yet unknown, but it is probably less than 10 per cent of all the strokes seen at a large municipal hospital.[39]

THROMBOLYTIC AGENTS.—At the present time one cannot say how effective the use of thrombolytic agents will be for the completed stroke. It may be found that this technic, as we know it today, will have a limited role.

Summary

Today the physician is no longer helpless in his attempts to aid patients with occlusive cerebral vascular disease. Adequate medical care has been broadened to include specific measures that are effective in certain well-defined syndromes. The availability of effective measures makes a complete evaluation of every patient with a stroke imperative. The aids to diagnoses, which have been found to be of assistance and which are available to all physicians, are detailed. These aids consist of accurate histories of the patients and complete physical examinations together with a study of the cerebrospinal fluid and, in selected patients, ophthalmodynamometry and angiography.

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ANNOUNCEMENT

Medical Society of the State of New York 1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. ANGRIST, M.D., *Chairman*
Committee on Prize Essays

NUTRITION EXCERPTS

Prepared with the cooperation of the Faculty of the Graduate School of Nutrition

CORNELL UNIVERSITY

ITHACA, NEW YORK

J. H. FRYER, M.D., *Editor*

Overemphasis in Nutrition

RICHARD H. BARNES, PH.D., ITHACA NEW YORK

MOST of us, through one medium or another, are being subjected to a barrage of confusing and conflicting reports concerning the nutritional properties of the foods we eat. The unseen voice of authority may be heard over the radio proclaiming the virtues of a certain diet for the treatment of liver disease. A patient may ask why her doctor does not prescribe a proprietary diet supplement that has cured her sister-in-law's arthritis while his treatment is having far less dramatic results. An overweight housewife frantically tries out each special diet treatment for obesity that appears in her collection of "home" magazines and proclaims with enthusiasm and faith the advantages of the newest one to her bridge companions, but the extra pounds remain just where they were originally. A well-known popular book on diet[1] suggests that inositol in the diet is of major importance in preventing the loss of hair. Three vitamins—pantothenic acid, para-aminobenzoic acid, and inositol—are said to help in restoring gray hair to its natural color. A quart of yogurt daily and a tablespoon of brewers' yeast before each meal is recommended. According to this author, any man who has trouble with his hair should eat wheat germ, brewers' yeast, liver, and blackstrap molasses. In another section of the same book it is stated that three important nutrients in food—calcium, vitamin D, and vitamin B_6—promote "the relaxation of muscular and nerve tissue necessary to sound sleep"; that in some cases of St. Vitus' dance and paralysis agitans, vitamin B_6 has been "found to have an ameliorating influence," and that to obtain enough of this vitamin "you must eat such foods as wheat germ, brewers' yeast, blackstrap molasses, liver" frequently, not occasionally. These are spoken of as "wonder foods."

Caution Needed to Protect Public

These are but a few examples of the wares of the food faddist. Usually half-truths are to be found in his statements which give credence to the complete doctrine. Some of these authors and lecturers must be charlatans, others are merely misinformed; but regardless of motive or background they fill the public mind with confusion and, all too often, ill-founded hope.

Food fad is an expression familiar to all, but sometimes it is difficult to decide what is a fad and what is not. Many food fads can be described as placing overemphasis on either nutrition, a specific food, or a specific nutrient. In the few illustrations already cited we see examples of overemphasis being given to nutrition as a means of curing a disease. It is a well-known principle that nutrients supplied in excess of known requirements, at least insofar as we know requirements or "recommended allowances,"[2] do not provide any additional beneficial effects. In fact, in several instances excesses have been proved harmful and in others long-term detrimental qualities are suspected. In our economically highly developed countries deficiencies are extremely rare and, with a few notable exceptions, treatment of disease by dietary means alone is hopeless. During the heyday of vitamin discoveries nutrition was oversold to the physician. Unfortunately we see evidence that now he has swung over to relative neglect of nutrition in his practice. Today the public is being oversold on nutrition, but this time the selling is being done by the quack, not the legitimate nutritionist, and the public seems even more gullible than the physician was a few years back.

Again referring to the illustrations given previously, overemphasis is being given to the therapeutic properties of individual nutrients. Inositol is a compound known to be synthesized by the body. Only with highly artificial and carefully controlled diet experiments in a few species of laboratory animals has inositol been shown to be a required nutrient. Never, to my knowledge, has a scientifically sound study in man shown an effect of inositol in the diet. In fact, laboratory studies with rats, using highly purified diets, leave some doubt as to the dietary need for inositol of this species.[3] Para-aminobenzoic acid is required in the diet of experimental animals only when large amounts of sulfonamides are fed. It is seriously doubted that it should be classified as an essential dietary nutrient. On the other hand, vitamin B_6 is required by man. Furthermore, it is ubiquitous in its role in metabolism and, as might be expected, its symptomatology of deficiency is quite varied. However, for a lay adviser to suggest treatment of such conditions as insomnia or paralysis agitans by the ingestion of foods containing vitamin B_6 is nothing short of ridiculous. Such inferences or teachings, whichever way you wish to look at them, encourage the public to overemphasize the benefits to be derived from ingesting increasing amounts of a nutrient.

A third example of overemphasis is to be found in the selection of foods that are purported to be uniquely important in providing the nutrients needed by the body, such as yogurt, wheat germ, brewers' yeast, blackstrap molasses, and liver. To this can be added a remarkable list of odd foods found in any "health store," sold to the public on the basis of special virtues that are extolled in lay publications. Certainly most of these foods are not harmful. Some people may enjoy yogurt, others probably prefer cheese and milk. Perhaps wheat germ and brewers' yeast satisfy an appetite craving. Surely there is no harm in eating such foods in moderation, but to class these as "wonder foods" clearly overemphasizes their place in the diet.

Variety in Diet Important

The judicious use of a variety of foods in the daily diet is the basis of modern nutrition education. To encourage this variety in selection and at the same time to assure that all nutrients are being supplied in adequate amounts, classes of foods have been established in a new daily food guide.[4] This guide is simple to follow and merely emphasizes (1) meat, poultry, fish, and eggs; (2) fruits and vegetables, including potatoes and citrus fruit or other fruit or vegetables important for vitamin C and dark green or deep yellow vegetables; (3) milk; and (4) bread and cereals. Any other foods selected, then, provide additional food energy and other food values. No special emphasis is given to any one of these groups and by spreading the selection appropriately among all, there is no question that the essential nutrients will be eaten in adequate quantity.

The food faddist overemphasizes his selection of "wonder foods" by proclaiming unusual health advantages provided by them. More subtle and undoubtedly less objectionable is the overemphasis given some of our highly nutritious foods by trade groups as a result of their advertising campaigns. In an attempt to increase consumption, several food groups listed in the basic four classification are supported strongly by certain agriculture and food industries with the major objective of bringing their special attributes to the attention of the public. Citrus fruit, meat, eggs, milk, and cereals are all extremely important in our diet, yet constant bombardment by advertising tends to overemphasize the importance of any one of these foods. In most instances the advertising copy is highly ethical and frequently is approved by the Council on Food and Nutrition of the American Medical Association. Perhaps such advertising should be considered a normal part of the competitive world of business. Yet, regardless of the ethics involved, the net result may be overemphasis.

Physicians' Use of Dietetics

Finally, a word about the physician's attitude toward nutrition. Overemphasis during the vitamin era may have diverted the medical schools and the practicing physician away from learning the fundamentals of nutritional science. Whatever the explanation may be, only a handful of medical schools teach an appreciable amount of nutrition. Physicians frequently must rely completely on the advice of dietitians or consulting nutritionists. They may not be able even to evaluate the adequacy or soundness of this advice. Patients with specific questions regarding their diet are sometimes parried with generalities or perhaps told to read up on the subject in a nutrition book. Although few conditions treated by the physician will respond to diet treatment alone, a knowledge of modern nutritional science and dietectics is an important, even an essential part of his armamentarium. Consider the need for sound knowledge in advising the patient who is pregnant or the new mother, or in helping to solve the eating problems of the preadolescent child, the obese, or the aged. Consider also the special nutritional problems associated with the treatment of diabetes, kidney disease, liver disease, hypertension, coronary disease, and a host of other medical situations.

How much should the physician depend on the advice and consultation of others in providing for his patients' needs? How much should the physician depend on multiple-vitamin capsules to correct possible nutritional deficiencies? Here we seem to have a confusing picture of de-emphasis and overemphasis. The physician may be de-emphasizing the role of nutrition in the care of his patient and overemphasizing the ability of a small group of essential nutrients to correct an undefined nutritional problem.

To achieve a proper balance in medical education we should strive to provide some sound training in nutrition and practical dietetics in the medical curriculum. When the physician prescribes a low-cholesterol diet he should know whether he is talking about cholesterol or fat. He must also know foods for when he advises: "Do not eat butter, but substitute margarine," does he realize that ordinary margarines are hydrogenated and possess the characteristic blood-cholesterol-raising properties of all saturated fats? When is a food, a nutrient, or a nutritional principle being overemphasized? For that matter, when is it being de-emphasized? Answers can be given only through a sound, basic knowledge of nutritional science and dietetics.

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(*Number fifteen in a new series of Nutrition Excerpts*)

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D., Secretary, Medical Education for National Defense (MEND) Committee, Albany Medical College

Survival in a Thermonuclear War

V. Types of Shelters

SOLOMON GARB, M.D.,* ALBANY, NEW YORK

THERE are several types of hydrogen bomb shelters which can be constructed at a reasonable cost on the property of the average home owner. This article describes the basic construction and requirements of such shelters. Later articles in this series will describe the necessary ventilating and sanitary systems.

Steel Shelters

A corrugated steel pipe covered with 5 feet of earth offers a safe, inexpensive shelter. A complete shelter of this type should cost considerably less than a garage. Corrugated steel is at least five times stronger than an equivalent weight of plain steel. It usually comes galvanized, so that it is protected from rust.

Several shapes are available, and suitable for shelters. The round pipe offers the greatest volume per dollar. The pipe arch (Fig. 1) is slightly more expensive per cubic foot, but is more convenient for situations where a deep excavation is impossible. The half-oval or semicircle may be a good choice for ground which is very dry.

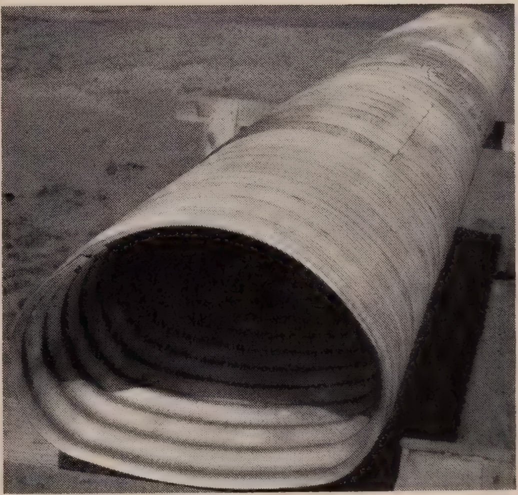

FIG. 1. Corrugated steel pipe arch.

These items are manufactured in a wide variety of diameters and gauges, but for practical purposes only a few are suitable shelter material. The largest diameter pipes, which would be most comfortable, require a very deep excavation which is not practical in most soils without considerable expense. Furthermore, the resistance to blast decreases as the diameter increases. As a reasonable compromise, several different

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TABLE I.—Features of Galvanized Corrugated Steel Pipe Necessary to Provide Suitable Shelter for an Average Family

		8 Gauge		10 Gauge		12 Gauge	
Diameter (Inches)	Necessary Length (Feet)	Dollar Cost (Approximate)	Weight (Pounds)	Dollar Cost (Approximate)	Weight (Pounds)	Dollar Cost (Approximate)	Weight (Pounds)
48	26	520	2,756	434	2,275	338	1,780
54	20	474	2,440	399	2,000	313	1,570
60	16	417	2,144	352	1,760	274	1,394
72	12	374	1,920	315	1,572	246	1,236

TABLE II.—Features of Galvanized Corrugated Steel Pipe Arch Necessary to Provide Suitable Shelter for an Average Family

			8 Gauge		10 Gauge		12 Gauage	
Span (Inches)	Arch (Inches)	Necessary Length (Feet)	Dollar Cost (Approximate)	Weight (Pounds)	Dollar Cost (Approximate)	Weight (Pounds)	Dollar Cost (Approximate)	Weight (Pounds)
72	44	18	487	2,412	414	1,980	326	1,566

sizes have been selected which should provide a sufficient variety for most situations. Table I and Table II indicate the size of pipe which would make a suitable shelter for an average family of 2 adults and 2 teen-aged children, or 2 adults and 3 small children.

Any of these pipes or pipe arches has a large margin of extra strength and will resist not only a weight of many feet of earth but also an added blast overpressure from a nearby explosion. The 8-gauge steel pipe when properly buried will resist blast overpressures of about 100 pounds per square inch or 14,400 pounds per square foot. This is a practical maximum of protection, and persons in a shelter of this material *at the time of attack* can expect their chances of survival to be about 999 in 1,000.

The same pipes in 10-gauge steel are almost as strong and should give survival chances of about 998 in 1,000. In pipes of 12-gauge steel the chances of survival should be about 996 in 1,000.

These chances are based on the assumption that there is an earth covering 5 or 6 feet thick over the pipes to ward off the extremely penetrating radiation of the fireball. If the earth cover is only 3 feet thick, the chances of survival will drop to about 990 in 1,000 no matter what gauge steel pipe is used.

If there is little or no warning before attack, these shelters can protect against fallout only, and there would be no difference at all in the protection afforded by the various steel gauges.

The decisions as to whether round pipe or pipe arch is best and which diameter to use have to be based on the amount of land available, the nature of the soil, and the accessibility of the site to motorized excavating machines. It is almost impossible to dig a suitable hole by hand. In most cases, the hole can be dug and the shelter placed and then covered by earth by a machine for a total cost of about $100. It would be best to request a local excavating contractor to take the job and to ask him whether or not his machines can reach the site and dig holes of the proper depth, width, and length. If possible, a local engineer also should be consulted. His fee usually will be quite reasonable.

Selecting the Pipe.—The reasoning to be followed in selecting a pipe or pipe arch can be explained best by a series of examples.

In terms of comfort and cost, the 72-inch diameter pipe would be a good choice in suitable ground. To be covered with 5 feet of earth, the bottom of the pipe must be 11 feet below the surface or earth must be mounded over the pipe. If it is known that there is a ledge of hard rock within 11 feet of the surface, or if the water table rises to within 11 feet of the surface, the 72-inch pipe presents problems. Another difficulty could be that the excavating machine that is capable of digging an 11-foot-deep hole may not be able to maneuver into the space available.

If the maximum depth of excavation possible in a particular area is 7 or 8 feet, the 48-inch diameter pipe would be a good choice, provided there is room for a 26-foot length.

If the maximum possible depth of excavation is less than 6 feet, pipe arch would probably be better than round pipe.

Of course, it is always possible to put a pipe or a pipe arch in a shallow excavation, or even on the surface of the ground, and cover it with earth. In many cases, however, the mound is unsightly and must be renewed from time to time as the earth washes off. In some areas with high water tables, this will be necessary, however.

The corrugated pipes and pipe arches may be purchased from local dealers or through any of the following manufacturers: Armco Drainage and Metal Products, Inc., Middletown, Ohio; Wheeling Corrugating Co., Wheeling, West Virginia; and United States Steel Co., 525 William Penn Place, Pittsburgh 30, Pennsylvania.

The ends of each pipe or pipe arch should be sealed with galvanized corrugated sheet steel at least 8 gauge thick with a small hinged door about 2 feet wide and 3 feet high cut into one end. They should be ordered from the manufacturer with the order for the pipe. They can be attached with devices furnished by the steel company, with a series of large angle irons, or by welding.

It will prove easiest to do all construction work on the pipe when it is above ground.

Corrugated pipe or pipe arch should never rest directly on rock or concrete. There must be at least an 8-inch layer of earth between the pipe and any ledge of rock.

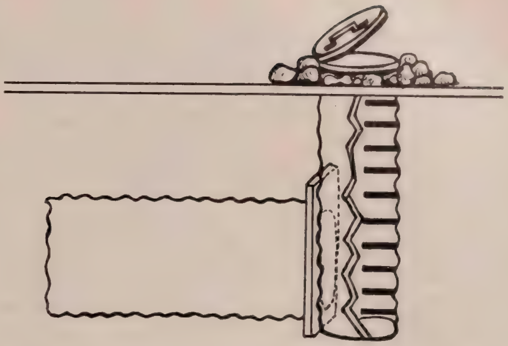

FIG. 2. Entrance to shelter from outside. This type of entrance is less satisfactory because it has only one right-angled bend.

When the pipe or pipe arch is placed in the excavation and covered, it is important to tamp in the earth at the sides solidly. It will be best to have the loose earth filled in up to about three quarters of the height of the pipe and tamped in, and then to have the remaining fill added. Water is considered unsuitable for packing the earth around corrugated pipe. The manufacturers also recommend another method of assuring maximum strength from their pipes. Steel struts or wood jacks are used to deform slightly the round pipe into an oval with the vertical axis the longer. After the pipe is in position and the earth is filled in, the struts or jacks are released allowing the pipe to spring back and to exert pressure against the earth at the sides. This increases greatly the resistance of the structure to pressures from above.

The pipe can be ordered with the struts already in place at an additional cost of only $1.00 to $2.00 per linear foot.

ENTRANCE.—The entrance to the shelter should be a passageway with two right-angled turns. It should be at least 8 and preferably 10 to 12 feet long and should slope down to the shelter. Less satisfactory is the entrance that has only one right-angled turn (Fig. 2).

If possible, it should be made of 8- ,10- , or 12-gauge corrugated galvanized steel

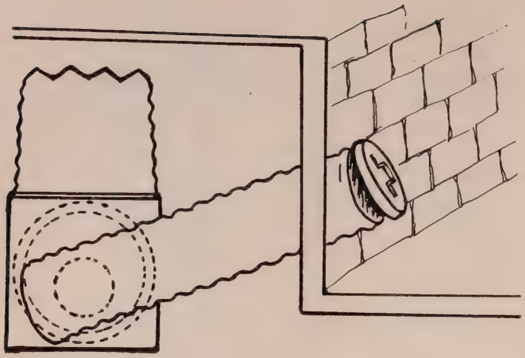

FIG. 3. Entrance to shelter from basement.

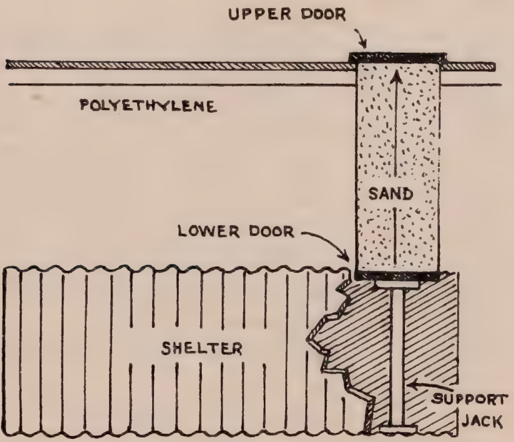

FIG. 4. Emergency exit from shelter.

pipe, either 36 or 42 inches in diameter. It can be ordered from the steel company already fabricated to fit exactly the main body of the shelter. In some cases it will be possible to make such an entrance a direct extension of a basement or garage (Fig. 3). This is a distinct advantage.

Also, there must be a hinged cover which can be opened or closed from within the shaft. The cover can be made of sheet steel or corrugated steel. It should have a lip extending around the pipe. It too can be ordered from the pipe manufacturer.

An emergency exit can be added if desired (Fig. 4).

PROTECTION AGAINST WATER SEEPAGE.—In some cases, radioactive rain may fall soon after an explosion, and in other cases, bombs may explode in bodies of water. Unless the shelter is protected against water, the radioactive rain might seep through the sand and harm the occupants of the shelter. Fortunately, it is a rather simple matter to protect the shelter against such rain. A wide sheet of polyethylene covering the shelter and anchored securely by sandbags or sand will give good protection. Because this material is inexpensive, it is practical and worth while to use several layers, each separated by 2 or 3 inches of sand.

The polyethylene should be placed near the surface, not near the steel. If possible, there should be 3 feet of earth between the plastic and the steel. Enough topsoil can be placed over the plastic to allow grass to grow.

Polyethylene of sufficient thickness in widths up to 20 feet can be purchased from the Montgomery Ward Company at a reasonable price. At least 4-mil or preferably 6-mil polyethylene should be used.

Concrete Shelters

A poured concrete bomb shelter is not a suitable project for the home handyman. It must be built by a reliable contractor, preferably under the supervision of an independent engineer or architect.

In general, the shelter should be designed and built in conformity with the building code requirements for reinforced concrete and the designs of the Civil Defense Administration. The exact design drawings are available at a cost of only 5 cents from the Superintendent of Documents, Washington 25, D.C.[1]

Changes can be made, of course, in accord with local needs provided there is no weakening of the structure.

The concrete must be mixed, poured, vibrated, and cured properly. It must never be allowed to freeze before it is cured. Steel reinforcement using deformed steel bars must be prepared according to strict specifications. In the roof slab, the longitudinal bars are spaced every 12 inches whereas the horizontal bars are only $4^1/_2$ inches apart. Note that these are thick number 4 steel bars about $^1/_2$ inch in diameter, not the reinforcing mesh which is used to reinforce driveways and which looks like a wire fence. Even if thicker concrete is used, the reinforcing bars must still be present. It should be noted that all the concrete in this shelter is reinforced. This includes roof, walls, floor, and interior partitions. Furthermore, the reinforcing bars run in 2 planes to make a grid pattern. The amount of reinforcing bars needed for the concrete of the simple shelter is approximately 1,300 feet and weighs about 870 pounds. The concrete itself will weigh about 45,000 pounds. The earth cover weighs still more.

The structure will be much stronger if all walls are poured as a single unit, and since the roof slab is relatively thin and weak anyway, it also should be poured as a single unit.

There are many pitfalls in the construction of a concrete shelter which make continual supervision of the job essential. For example, after excavating the earth for the shelter the bottom of the excavation must be leveled and thoroughly tamped before the slab is poured. Otherwise, there may be uneven settling which could crack the structure. Other details relating to the mixing, pouring, and curing of the concrete can be adequately supervised only by someone experienced in concrete construction.

Costs.—The costs of a reinforced concrete shelter are very high. It is quite misleading to calculate the cost of the raw materials and assume that the total cost will be in the same range. The major cost of concrete work is not the concrete but the forms which must be properly built, placed, supported, and then removed. Highly skilled labor is needed, and the hourly wage is high. In the case of a concrete bomb shelter, the weight of concrete will require extra-strong supports which will have to be placed in a relatively cramped space underground. This, of course, adds to the cost.

On the other hand, the picture might be quite different if there were a government shelter building program. Then, prefabricated reusable forms would be available, and shelters could be constructed on an assembly-line basis. This would bring costs way down and as a result concrete shelters could be provided at a cost of under $1,000 per family.

If a decision is made to have a poured concrete bomb shelter, it seems essential that an independent engineer or architect be engaged to supervise and inspect the contractor's work. To the inexperienced, concrete placement may seem like a relatively simple thing. However, there are many pitfalls in concrete work, and if there should be any defect in the concrete, the entire structure might be dangerous as well as useless.

Problems Involved.—There are many problems involved in concrete mixing and placement. The mix proportions may not be ideal. The sand, or coarse aggregate, may not be perfectly clean. Excessive water may be used. Vibration may not be done properly. Indeed, even the angle at which concrete is poured from a mixer or wheelbarrow into the forms can greatly affect its strength. The concrete manual of the U. S. Department of the Interior points out that if concrete is poured into a deep form at an angle and strikes the side of the form on the way down, separation of the components will occur.[2] This will weaken the base of the entire structure.

These are only a few examples of what can go wrong in concrete construction. They illustrate the importance of expert professional supervision of the building of a poured concrete shelter.

It would be an error to assume that a builder or contractor experienced in pouring concrete footings or concrete driveways would necessarily be capable of pouring a concrete bomb shelter properly. It is relatively simple to pour shallow layers of concrete directly onto the ground. However, a bomb shelter wall is a much more difficult and complex proposition.

The floor and walls of an underground concrete bomb shelter should be a minimum of 8 inches thick. The roof slab must be not less than 6 inches thick. As mentioned previously, all the concrete must be strongly reinforced with steel bars. These dimensions can, of course, be increased but only at a tremendous increase in cost. Under certain circumstances, the roof, instead of being 6 inches of concrete covered by $2^1/_4$ feet of earth, might be 20-inch thick concrete. When this thickness is used, the concrete is usually placed as two separate layers of 10 inches each.

Interior Shelters

Several government publications describe basement corner shelters, interior room shelters, and other shelters which may be incorporated into existing homes.[3,4] The plans for such shelters are frequently reproduced in newspapers and magazine articles. Although such shelters are much better than no shelter at all, they are less satisfactory than an outside underground shelter. It is difficult to support safely the required weight of earth or concrete in the average basement. If the shelter walls and ceiling are the full 3 feet thick, the shelter will weigh 50,000 to 100,000 pounds. This weight probably will crack the house foundations unless the entire basement floor rests on bedrock or unless additional footings are poured, a costly and difficult task in an existing house.

Most basements are relatively shallow; therefore, it is impossible to have a 3 foot thick ceiling and still have much room in the shelter. In such cases, the Federal Civil Defense Administration advises that the floor above be covered with sandbags after the floor joists are strongly braced.

However, this, in effect, means taking a room away from the house and therefore most people are not likely to build such a shelter until an attack is imminent. By then, it may be too late, since it is not easy to move such enormous masses of earth.

The energy and expense of building this type of shelter would usually be spent better in making an underground shelter where possible.

Nevertheless, there are those who live in urban areas and who simply haven't the land for underground shelters. Although the basement or interior room shelter is not ideal, it can give enough protection to save most people's lives if properly designed and built.

It is difficult to calculate the survival chances in basement and interior shelters because so much depends on the basic structure of the house.

If the decision is made to build a basement or interior room shelter, an architect should be consulted. Without his advice, it would be easy to ruin the entire house.

The basement or interior room shelter needs all the accessories required for other shelters and a supply of food, water, and other items.

From time to time, government agencies issue press releases describing different kinds of interior shelters. Unfortunately, they use such general terms that some people may be confused about the relative degree of protection provided. For example, a shelter was recently described in an official civil defense manual as consisting mainly of solid concrete blocks, 8 inches thick. Concrete of this thickness will attenuate radiation fallout to about one twelfth of its original value. To be sure, such protection is better than nothing, but it cannot compare with the protection offered by some of the other shelters described by government publications. A thickness of 3 feet of earth or 20 inches of concrete attenuates fallout radiation to about one thousandth of its original value.

Before deciding on a particular shelter, one should know the amount of protection to be provided. This can be calculated readily from the half-thickness values given in the third article in this series.

Occasionally, suggestions are made that a structure be built for a dual purpose—to serve as a bomb shelter and also for other uses. Perhaps in large reinforced concrete structures this may be practical. However, for the family shelter it is not. Attempts at a dual function are likely to result in inadequate protection or may result in greater expense rather than savings. Therefore, it is recommended that the shelter be designed solely as a shelter.

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(*Number five in a series on the Physician in Civil Defense*)

Accidents Claim Lives of Many Women

Last year about 11,000 American women at ages fifteen to sixty-four years were killed in accidents, it is reported by statisticians of the Metropolitan Life Insurance Company.

Among women at these ages, accidents take twice as many lives as pneumonia and nearly five times as many as tuberculosis. During adolescence and early adult life, accidents outrank every other cause of death among women.

Motor vehicle accident fatalities far outnumber those sustained in any other type of mishap, and account for three fifths of all fatal injuries among white women at ages fifteen to sixty-four and nearly half the total among colored women. Most of these women were occupants of automobiles—either as passengers or as drivers—when fatally injured.

Falls rank second, and fires and explosions third as causes of accidental death. Other types of accidents adding to the death toll are poisoning by solids and liquids (mainly the ingestion of barbiturates and other drugs), drowning, poisoning by gas, and wounding by firearms.

Only one fifth of all fatal injuries among women at ages fifteen to sixty-four occur in and about the home. Even more surprising, fewer than 50 accidental deaths a year occur among women in industrial places, despite the millions of women gainfully employed in the United States.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Postoperative Myocardial Infarction

THE care of patients during surgical anesthesia and immediately postoperatively should be individualized. For example, certain complications can occur in certain elderly, debilitated persons who are submitted to routine measures. In a previous Clinical Anesthesia Conference* it was shown that after the administration of normal doses of narcotics, respiratory and circulatory depression can occur in such individuals. The following case report illustrates another type of complication that may develop in these patients.

Case Report

A sixty-eight-year-old woman was admitted to a hospital with a diagnosis of acute exacerbation of cholecystitis with cholelithiasis. It was proposed that a cholecystectomy and a common duct exploration be done.

In addition to the confirmation of the preoperative diagnosis the pertinent preoperative findings included an essential hypertension of 180 mm. Hg systolic and 100 diastolic and electrocardiographic evidence of sinus tachycardia at a rate of 112 beats per minute, ischemia of the anterior wall, and incomplete right bundle branch block (Fig. 1). The patient's temperature was 101.6 F. Her pulse rate was 100 beats per minute, and her respiratory rate was 20 respirations per minute. The hemoglobin content of her blood was 14.7 Gm. per 100 ml. Urinalysis findings were negative.

For preanesthetic medication the patient was given 100 mg. of pentobarbital and 0.4 mg. of

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Discussed at a conference held at Bellevue Hospital, New York City, June 6, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

* Clinical Anesthesia Conference, Burstein, C. L., Ed.: Respiratory depression due to postoperative narcotic overdosage, NEW YORK STATE J. MED. **60**: 2296 (July 15) 1960.

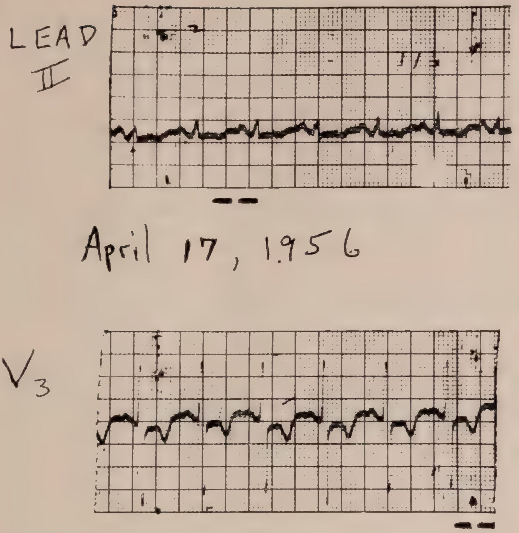

FIG. 1. Preoperative electrocardiogram showing sinus tachycardia at a rate of 112 beats per minute, ischemia of the anterior wall, and incomplete right bundle branch block.

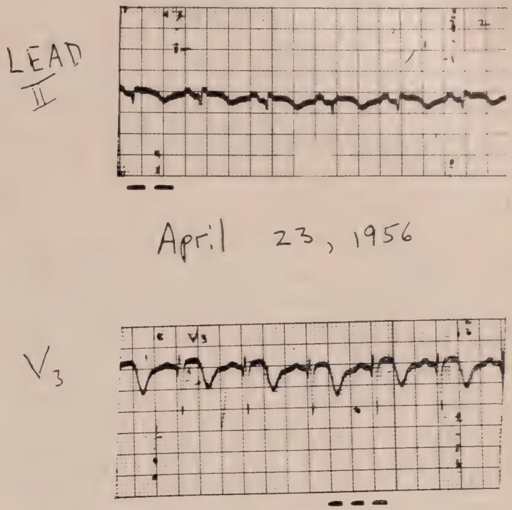

FIG. 2. Postoperative electrocardiogram at time of hypotension showing deep-coved T-wave inversions with S-T elevation in leads V_3 through V_6 and in leads I, II, and aVf; increased T waves in lead III; narrow Q waves in leads V_3 through V_6 and in leads II and aVl; and reduced R waves in precordial leads. These serial records indicate anterior wall infarction.

atropine by intramuscular injection. On her arrival in the operating room fifty-five minutes later the patient's arterial blood pressure had diminished to 120/80. Her pulse rate was 104 beats per minute, and her respiratory rate was 24 respirations per minute. Anesthesia was induced with 10 cc. of a 2.5 per cent thiopental sodium solution and was supplemented with cyclopropane and oxygen in a closed carbon dioxide absorption system. A total of 40 mg. of succinylcholine was injected intravenously, and endotracheal intubation by means of a number 34 cuffed plastic tube was accomplished uneventfully. Anesthesia was maintained with cyclopropane, oxygen, and "top" ether. An intravenous drip of succinylcholine in a 0.1 per cent concentration for a total of 50 mg. also was used. Respirations were controlled artificially by intermittent manual compression of the breathing bag.

During the first thirty minutes of surgery the patient's arterial blood pressure remained at 120/80 with a pulse rate of 90 to 100 beats per minute. During the next twenty-five minutes the blood pressure rose to 140/90 while the pulse remained at 100 beats per minute. At the end of this time the blood pressure diminished again to 120/90. Thereafter the blood pressure gradually rose to 150/90 without any significant change in the pulse rate. The blood loss had been minimal, and no blood replacement was deemed necessary.

On her arrival in the recovery room the patient's blood pressure was 120/96, and her pulse rate was 100 beats per minute. She awakened and responded rapidly to questioning. For five hours her blood pressure remained between 120/90 and 110/80, and then it suddenly fell to 90/60 while the pulse rate rose to 118 beats per minute.

Oxygen administration by mask inhalation was started, and the patient was placed in 10 degrees of the Trendelenburg position. Two doses each of 15 mg. of Vasoxyl were administered intramuscularly without any improvement resulting. An intravenous drip of Levophed bitartrate was begun. Following this procedure the patient's blood pressure was maintained at 110/75 with a pulse rate between 96 and 100 beats per minute.

The following morning there was another episode of hypotension to 88/66. An electrocardiogram taken at that time revealed a change from the previous tracing. It showed deep-coved T-wave inversions with S-T elevations in leads V_3 through V_6 and in leads I, II, and aVf; increased T waves in lead III; narrow Q waves in leads V_3 through V_6 and in leads II and a Vl;

and reduced R waves in the precordial leads (Fig. 2). This picture was interpreted as an anterior wall infarction, and the patient was treated accordingly. She recovered and six weeks later was discharged from the hospital.

Comment

As has been pointed out, great care should be exercised in administering depressing drugs to elderly patients. In this case the administration of 100 mg. of pentobarbital resulted in a diminution of the patient's arterial blood pressure from 180/100 to 120/80. This represents more than a 50 per cent reduction in blood pressure. Such a hypotension manifested on the patient's arrival in the operating room should have resulted in a postponement of the operation and an attempt to diagnose the cause of the hypotension by electrocardiographic and ventilometer studies.

Instead of canceling the operative procedure, the patient was given 250 mg. of thiopental sodium intravenously. Although such a dose of this drug is well tolerated by a robust and young individual, it may produce significant detrimental consequences in an elderly and poor-risk patient. If such a drug is to be given to an elderly, poor-risk patient, it should be administered slowly in 25-mg. increments to the point of grogginess. Also it should not be forgotten that from the time such a drug is injected peripherally by intravenous administration, it may take forty-five seconds for the drug to circulate to the brain centers and before its full effects are produced.

The acute and sudden hypotension in the recovery room five hours after the end of the operative procedure poses a problem in differential diagnosis. The possibility of hemorrhage should be considered and investigated. In this case the dressing was inspected and was found to be dry. Blood drawn for hemoglobin and hematocrit determinations showed respectively 15 Gm. per 100 cc. and 43 per cent. A second possibility is an overdose of a sedative given in the recovery room. The only medication given to this patient had been 25 mg. of meperidine hydrochloride ninety minutes prior to the onset of the hypotension. Although this is a relatively small dose, it could have caused the hypotension. A third possibility is a transfusion reaction. However, in this case it was ruled out since the patient had not been given any blood transfusions.

Other possible causes for postoperative hypotension also were ruled out. These included adrenocortical insufficiency, which was excluded when the administration of 100 mg. of soluble hydrocortisone failed to yield improvement; potassium deficiency, which was eliminated when the potassium level in the blood was found to be normal; a cerebral vascular accident, which was not considered since there were no neurologic signs to incriminate it; embolism, which was omitted since there were no localizing signs; and congestive heart failure, which was ruled out since there was no venous congestion and no rales could be detected by auscultation of the lungs.

It was the electrocardiographic signs of myocardial infarction of the anterior wall that contributed to the final diagnosis. The several episodes of acute hypotension, which probably caused this complication, were manifested following the administration of sedative drugs. These effects might have been enhanced because of the correlation that is known to exist between gallbladder disease and cardiac pain associated with abnormal electrocardiographic tracings.

(*Number ninety-six in a series of Clinical Anesthesia Conferences*)

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Internal Drug Poisonings Including Three Fatalities

The following are a few of the incidents recently reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Menadiol Sodium Diphosphate	5 days	Male

The infant was born by cesarean section. Soon after the infant's delivery the obstetrician requested that the infant be given intramuscularly 2.5 mg. of menadiol sodium diphosphate. The nurse erroneously injected subcutaneously an ampule (2 cc.), or 75 mg., of the drug. The only positive finding was leukocytosis. As of this writing, the infant apparently suffered no undue ill-effects from the administration of the medication.

There was some concern because the marked sensitivity of newborn infants to drugs is well known. Instructing and supervising the nursing personnel in the delivery room is the distinct responsibility of the attending physician.

Incident 2

Toxic Agent	*Age*	*Sex*
Hyoscine Hydrobromide	57 years	Male

Information was requested from the Center by a physician about a fifty-seven-year-old male who presented with a history of hyoscine poisoning. The patient, who is a pharmacist, experienced sudden dizziness and numbness while in his pharmacy. Advice relating to emergency treatment was provided, but, in addition, since this was an unusual case, a public health sanitarian of the Drug Division of the Department of Health visited the patient in the hospital to obtain additional information. The sanitarian reported on his interview with the patient as follows:

> As I entered the room and approached his bedside, he greeted me and asked me to sit down. The patient appeared to me to be well and in good spirits. He was waiting for his wife to accompany him home since he had recovered completely and was to be discharged that afternoon (January 7, 1960).
>
> The patient recalled that he had compounded

a prescription for hyoscine hydrobromide $^1/_4$ per cent, a $^1/_2$-ounce eye solution, on January 5 at his pharmacy at about 5:30 P.M. He stated that, as well as he could remember, while he was filling this prescription and weighing on the balance the minute quantity of hyoscine required, his brother or his clerk placed tea and crackers nearby on the prescription counter. After the prescription was filled, he did not wash his hands. He said that he proceeded to "dunk" the crackers into the tea and to eat the refreshment. The pharmacist stated that apparently a small amount of hyoscine had adhered to his finger or under his fingernails.

Three hours later, he continued, he began to feel faint, and in three or four minutes he lost consciousness and remembered nothing until he awoke in the hospital. He stated that his brother called his family physician, who is on the hospital staff. The physician came immediately, called an ambulance, and removed him to the hospital.

The patient at the time of this bedside interview appeared to be healthy in body and mind. He was cooperative, rational, and helpful in answering questions.

In addition to interviewing the patient, the sanitarian reviewed the medical record with the permission of the attending physician. The following is an abstract of that record:

> Mr. P. was admitted on January 5, 1960, at 9:10 P.M. . . . The patient's face was flushed, and his pupils were dilated and fixed. The physician suspected an atropine-type poisoning or a heart condition. All laboratory tests gave negative findings. The patient's stomach was lavaged, and he was catheterized and put on bed rest.
>
> On January 6 the patient awoke alert and well oriented and showed no evidence of cyanosis. He was restless, throwing himself about. The dilated pupils and the hyoscine prescription incident led his physician to diagnose the case as acute accidental hyoscine poisoning.
>
> On January 7 the patient's condition was excellent. He was well oriented, clear, and calm.
>
> A fifty-seven-year-old male with present history of sudden dizziness and numbness in drug store at 7:30 P.M. on January 5, 1960. Symptoms of atropine poisoning. No evidence of taking drugs. 1956: symptoms of angina pectoris. Given stomach lavage, spinal tap, urinalysis, catheterization, bed rest. Discharged January 7, 1960.

Hyoscine is a belladonna alkaloid and resembles atropine in its action. It may act as a stimulant and, in larger doses, as a depressant of the central nervous system. Although as little as 10 mg. may produce severe symptoms, recovery in adults may follow the ingestion of large doses since the drug is presumed to have a wide margin of safety. The drug acts on the smooth muscles, which are innervated by the parasympathetic nervous system, and on the secretory glands.

The most prominent symptoms are dryness of the throat and of the mucous membranes, difficulty in swallowing, intense thirst, dilation of the pupils (an occurrence which may cause blurred vision), and, at times, photophobia. Hyperpyrexia is not uncommon. Symptoms that are referable to the heart are tachycardia, palpitation, and an elevated blood pressure. The skin manifestations are warmth, dryness, and flushing. A maculopapular rash resembling scarlatina has also been described. Restlessness, excitement, irritabilty, confusion, delirium, and convulsions may also manifest themselves, and these symptoms may even persist for several hours or days. In fatal cases coma and circulatory collapse also are noted.

As stated in previous reports, there is no specific antidote for the belladonna alkaloids. Antipyretics, control of convulsions, gastric lavage, and supportive measures are included in the therapy. Although pilocarpine, if given early, may counteract the dryness, it does not have any effect on the symptoms referable to the central nervous system. If depression occurs, central nervous stimulants may be tried. In the event of respiratory depression, artificial respiration and oxygen therapy may be of value.

If the eye symptoms become disturbing, a miotic drug may be employed to advantage.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Jimson Weed	19 years	Male

The Center received a telephone call from an anonymous nineteen-year-old male who was suffering from dilated pupils and was therefore unable to read. He identified himself as a college student who had to take an examination on that day. He related that some friends had persuaded him to eat some Jimson weed for the "sensation" it provides. He was advised to seek prompt medical guidance. An attempt to inquire into the extent of this practice was unsuccessful because the student feared identification.

From the telephone conversation it was deduced that this individual was a "beatnik." In their quest for stimulating effects the "beatniks" are exploring the psychopharmacology of the drugs derived from the vegetable kingdom. Peyote, for example, is enjoying considerable vogue in Greenwich Village. Unfortunately, the classical orthodox narcotics, such as heroin, are also being used.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Progesterone	$2^1/_2$ years	Male

A young child obtained the progesterone medication from his mother's pocketbook, which was given to him to play with, and ingested 24 pills (dosage unknown). The only positive finding was moderate secondary anemia, which could have been unrelated to the occurrence. Since no clinical symptoms were manifested, the child was observed for one day and discharged as improved.

The effects of accidental ingestions of such hormone products as have been reported to the Center have not been particularly noteworthy. It is believed by all concerned with the problem of toxic manifestation due to drugs that detailed reporting of overdosages unassociated with symptoms is of value. This case is also cited because of the mode of occurrence.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Digitoxin	80 years	Male

An eighty-year-old male died because of an overdose of digitoxin. He was taken to a hospital, where his stomach was lavaged with saline soon after the ingestion. On admission the only positive finding was vomiting. In addition to the gastric lavage with saline, the treatment in the hospital consisted of a low-salt diet and restricted fluid intake. In spite of these measures the patient expired on the day of admission. The death was ascribed to an overdose of digitoxin.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Aspirin	49 years	Female

The patient apparently ingested 200 5-grain aspirin tablets with suicidal intent. She immediately vomited spontaneously, and the vomiting continued intermittently.

The woman was admitted to a hospital, where her stomach was lavaged with saline. She also was treated with fluids intravenously, and a psychiatric consultation was obtained. However, the patient died within twenty-four hours following her admission, and her death was attributed to salicylate intoxication.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Acetophenetidin-Aspirin-Caffein Combination	54 years	Female

The patient ingested 100 5-grain analgesic tablets with suicidal intent. She was brought to a hospital in coma. On her admission her stomach was lavaged with saline. The only positive findings were a lowered blood pressure (110/70), yellowish gastric contents, and methemoglobinemia thought to be secondary to acetophenetidin intoxication. In spite of the treatment the patient expired within several hours after admission.

The unhappy outcome in the last 3 cases is ascribed to the massive doses ingested.

(*Number sixty-two in a series of Briefs on Accidental Chemical Poisonings*)

Clinical Effectiveness of Oleandomycin-Oxytetracycline Combination in Serious Surgical Staphylococcal Infections

In 48 patients suffering from resistant surgical staphylococcal infections, the clinical response to treatment with an oleandomycin-oxytetracycline combination was favorable in all cases, including 15 who were classified as poor risk patients. All patients with cutaneous and soft tissue infections were cured in a few days, including 2 cases of soft tissue infection in diabetic patients. Complete recovery was obtained in 29 cases with serious infections. Disappearance of inflammation, absence of pus, and restoration of a feeling of well being were often immediate and dramatic, particularly in mixed infections.

The author cites the case of a young woman in whom a renal furuncle was found at operation. The pus yielded Staph. aureus and E. coli. Treatment with penicillin plus streptomycin, oleandomycin alone, erythromycin, and oxytetracycline was ineffective. But twenty-four hours after initiating the oleandomycin-oxytetracycline therapy the patient's sense of well being was restored and the temperature dropped to normal in a few days. Interruption of treatment was necessary in only one case, due to phlebitis.—*International Record of Medicine, March, 1960, Jose Luis Morador, M.D., Hospital Pasteur, Montevideo, Uruguay*

MEDICAL CARE INSURANCE

A series of articles on health insurance prepared by the Associated Blue Shield Plans of New York State

LEONARD J. RAIDER, M.D., *Editor*

The Blue Shield Trinity

Physician, Medical Society, and Plan

JAMES E. BRYAN,* NEW YORK CITY

A ZEALOT has been described as one who redoubles his effort as he loses sight of his objective.

Let us make quite certain that we shall not lose sight of our objectives. For the woodsman is always in danger of losing sight of the forest through his preoccupation with the trees. It is good for all of us now and then to check our compasses, to ask ourselves some ultimate questions: Where are we? How did we get here? Where do we want to go—and why? What roads will take us there?

My title assumes that the doctor, his medical society, and his Blue Shield plan are a trinity, that their purposes are—or should be—identical. It is my own conviction that this is true. I believe that the doctor can realize his own purpose, the medical society can fulfill its community responsibility, and our plans can achieve their greatest usefulness only when all of us realize we are working toward the same ends and, therefore, that we should work together.

Of course, it is not difficult for the doctor to acknowledge his kinship with the medical society for the society is only himself multiplied. But where does Blue Shield fit into this picture? By what right or reasoning does Blue Shield claim the medical society as its parent and the doctor as its brother?

First, Blue Shield is a member of the medical family by birth or legal adoption. Every Blue Shield plan was organized by a medical society or with its approval. What other prepayment organization can make that claim?

Second, Blue Shield is a member of the medical family because it observes the rules of the family group and submits to its discipline. The medical operations and policies of Blue Shield plans are controlled by medical men and by the medical societies whose continuing approval the plans must have. What other prepayment organization can make that claim?

Third, Blue Shield is a member of the medical family because, like its parents and brothers, Blue Shield exists only for public

---

*Mr. Bryan is executive secretary of the National Medical Foundation for Eye Care and the American Federation of Clinical Research in New York City, and research associate, Columbia University School of Public Health and Administrative Medicine. He has served as executive secretary of the Westchester County Medical Society, the New York County Medical Society, and the Medical Society of New Jersey. He is also staff associate to the Blue Shield Medical Care Plans, and the author of *Public Relations in Medical Practice*, published in 1954.

service. This is indeed the true meaning of Blue Shield's nonprofit operation: that it exists for no purpose other than to serve the public welfare. What other prepayment organization can make that claim?

Fourth, Blue Shield belongs to the medical family because, like the doctor and his medical society, Blue Shield attempts to serve the *entire* community, including most particularly the lowest income groups, the highest risks, the least profitable elements in the population. The social philosophy of Blue Shield is identical with that of the doctor and his medical society. What other prepayment organization can make that claim?

Finally, Blue Shield belongs to the medical family because it seeks to embody the service traditions of the medical profession. In most instances, although not yet in all, Blue Shield offers its benefits in terms of fully paid services to the lower income groups and attempts to relate its dollar payments to the doctor's normal charges for his services to Blue Shield patients. This Blue Shield is able to do because of the voluntary cooperation of participating physicians who recognize that the job of Blue Shield is their job to do. What other prepayment organization can make that claim?

So I think we can agree that the physician, the medical society, and the plan are, indeed, a trinity.

During the early years, when Blue Shield plans were going through their childhood diseases, the average physician thought of Blue Shield (if he thought of it at all) as an idea rather than a fact. It represented his only *potentially* effective answer to the imminent threat of compulsory health insurance. The doctor had not yet felt the practical impact of Blue Shield in his practice for Blue Shield patients were few and far between, and the plan was a negligible item in his economy.

Paradoxically, it was only when Blue Shield began to be a success that many doctors became concerned or alarmed about it. As Blue Shield grew, so also the misunderstandings and misapprehensions about it grew. Until very recently, most of the plans were so intent on enrollment and so preoccupied with the myriad administrative headaches of a burgeoning business operation that plan administrators had little if any time for what they sometimes thought of as the ballyhoo of professional relations activities.

In little more than a decade 70-odd Blue Shield plans have enrolled more than 45 million people. What this actually means, both as a vote of confidence and as a burden of responsibility, I think few of us truly appreciate. The medical profession, working through Blue Shield, has built up an enormous asset of public confidence for itself. And these millions of Americans, for whom Blue Shield is serving a vital purpose, have bought themselves a stake in the voluntary nonprofit medical care program. They like Blue Shield; they want it to be strengthened and broadened. Hence, these 45 million people want the same things their doctors want, and Blue Shield is the mutual friend who has brought the doctor and his patient together in a new rendezvous of mutual confidence and friendship.

What other public relations project of American medicine, outside of its professional service itself, has ever attracted the hard money endorsement of 45 million people?

If Blue Shield fails, then the American physician will have failed in his efforts to adjust his economy to the economy of his patients. If Blue Shield fails, then the effort of organized medicine to meet its collective responsibility to the community, by voluntary cooperation with the community, will have failed.

I feel it is the dreamiest kind of nonsense to think that the commercial insurance industry could discharge the responsibility of the doctor and of organized medicine to provide a satisfactory community-wide prepaid medical service. It is not that our insurance friends lack the will to do it. They are, broadly speaking, just as idealistic in their desire to meet human needs as we are. They are possibly even more businesslike in their approach to the job than we have been. But it is no part of the insurance industry's business to help doctors deliver their services, to accommodate their programs to the changing requirements of medicine, or to fulfill the community responsibility of the medical profession. It is no part of their concern that the lowest income people, who have the highest incidence of sickness, will be protected at a premium rate mutualized over the entire community. The business of the insurance industry is to earn a margin of profit for its owners, and this it can do only if it underwrites risks having a profitable expectation. This means selective underwriting, which is the antithesis of community enrollment.

The job for which the medical profession created Blue Shield was in the beginning to insure the uninsurable—to cover those who most need protection but who are the least able to pay for it. This Blue Shield was able to do because the profession in the beginning accepted a subnormal fee schedule or a prorated portion of a normal schedule. The doctor made this contribution to the community during the early phases of Blue Shield only because the doctor knew Blue Shield was his, that he could control this mechanism.

As Blue Shield grew and gradually came to cover a true cross-section of the community, fee schedules approached the average fee levels of the profession, prorated payments passed into history, and the essential community aspects of Blue Shield became apparent.

The dynamics of Blue Shield, as we are now beginning to realize, are such that it can cover the low-income, high-cost elements of the population—those elements that the doctor primarily wanted it to cover—*only* if it enrolls its proportionate share of the higher-income, lower-cost elements. Blue Shield in a word is a community program, and it can exist only if it enrolls a true cross-section of the entire community.

Now we are faced with a determined effort on the part of our insurance friends to take away from us the blue chip part of our business. To criticize the industry for wanting to underwrite the profitable portion of the community is to criticize the sea for being wet. They are attempting to fulfill their mission, which is to operate a profitable business. And we for our part should be attempting to fulfill our mission, which is to enable the doctor to provide medical care to the entire community, including first and foremost those whose need for care is greatest and whose capacity to pay for it is least.

There are two ways to meet this competition. One way is to maintain our own product and improve it; to merchandise the features that distinguish our product from that of our competitors. The other way is to imitate our competitors and try to beat them at their own game. This is the strategy of experience rating, of cheap indemnity schedules, of writing packages that will meet premium bids rather than packages that provide an adequate medical care program. I think this would be the strategy of suicide for Blue Shield, the strategy of defeat for organized medicine, and the strategy of ultimate socialization for the doctor.

If Blue Shield stands for anything—indeed, in my humble judgment, if it is to stand at all—it must stand for community-wide enrollment, community-wide rates, the maximum extension of the service benefit principle, and, eventually, community-wide participation in the ultimate guidance of the plans. Physicians must always control the medical aspects of Blue Shield for Blue Shield is nothing more than an instrumentality of the doctor to facilitate his service to the patient. But the community and the patient have bought a stake in Blue Shield, and the fundamental purpose of Blue Shield is to serve the welfare of the community and the patient.

Blue Shield has assets that can never be duplicated by any other insurance organization. These assets are bound up in the confidence and cooperation of the physician.

But we can only safeguard these assets, we can only put them to work in our mutual enterprise by doing the job that has to be done in professional relations. The doctor who truly understands Blue Shield, who truly participates in guiding it will never let Blue Shield fail. For that doctor knows that if Blue Shield goes, the control of the economy of medicine will pass, perhaps irrevocably, out of the hands of the medical profession.

On the other hand, if the Blue Shield trinity—the physician, his medical society, and his Blue Shield plan—becomes a living fact, then the future cannot be anything but bright.

(*Number one in a series of special articles on Medical Care Insurance*)

ANNUAL CONVENTION

Medical Society of the State of New York
War Memorial Auditorium, Rochester

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
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The Annual Convention will be held May 8 to 12, 1961, at the War Memorial Auditorium, Rochester.

No applications can be considered after January 1, 1961.

There will be two groups of awards:

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NECROLOGY

Franklin Earl Atwater, M.D., of Plattsburgh, died on June 13 at the age of forty-one. Dr. Atwater graduated in 1944 from Albany Medical College. He was an attending in anesthesiology at Champlain Valley Hospital and in general practice and anesthesiology at Physicians Hospital. Dr. Atwater was a member of the American Academy of General Practice, the Clinton County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Pio Blanco, M.D., of Buffalo, died on August 9 at the Millard Fillmore Hospital at the age of sixty-eight. Dr. Blanco graduated in 1916 from Johns Hopkins University School of Medicine. He was a consultant in orthopedic surgery at Millard Fillmore and Columbus Hospitals. Dr. Blanco was a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, and a member of the American Academy of Orthopaedic Surgeons, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Nathan Blitzer, M.D., of Brooklyn, died on March 28 at the age of eighty-one. Dr. Blitzer graduated in 1902 from the University of Maryland School of Medicine.

Harry Austin Blutman, M.D., of New York City, died on February 15 at the age of fifty-seven. Dr. Blutman graduated from the University of St. Andrews Conjoint Medical School, Scotland, in 1933. He was an assistant attending physician at Bellevue Hospital.

Charles W. Breimer, M.D., of New York City, died on July 28 at the age of forty-nine. Dr. Breimer graduated in 1935 from Columbia University College of Physicians and Surgeons and interned at St. Luke's and Lenox Hill Hospitals. He was an attending in roentgenology and associate director of roentgenology at the Hospital for Special Surgery and an assistant in roentgenology at New York Hospital. Dr. Breimer was a Diplomate of the American Board of Roentgenology (Diagnostic Roentgenology), a Member of the American College of Roentgenology, and a member of the Radiological Society of North America, Inc., the Society of Medical Jurisprudence of New York City, the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Fritz Brie, M.D., of New York City, died on June 5 at the age of seventy-one. Dr. Brie received his medical degree from the University of Leipzig in 1914. He was a member of the New York County Medical Society and the Medical Society of the State of New York.

John Joseph Cahill, M.D., of Brooklyn, died on March 27 at the age of seventy-six. Dr. Cahill graduated in 1912 from Albany Medical College.

Jeremiah John Donovan, M.D., of Randolph, Massachusetts, formerly of New York City, died on May 2 at the age of eighty. Dr. Donovan graduated in 1914 from Harvard University Medical School.

Robert Richard Donovan, M.D., of Brooklyn, died on March 27 at the age of fifty-nine. Dr. Donovan graduated in 1929 from Loyola University School of Medicine.

Samuel G. Ehrenreich, M.D., of New York City, died on April 3 at the age of seventy-three. Dr. Ehrenreich graduated in 1909 from Columbia University College of Physicians and Surgeons and interned at Montefiore Hospital.

Louis A. Falk, M.D., of Brooklyn, died on April 12 at the age of seventy-two. Dr. Falk graduated in 1912 from New York University and Bellevue Hospital Medical College.

Isidor Fine, M.D., of Brooklyn, died on August 19 in Brooklyn Jewish Hospital at the age of sixty-five. Dr. Fine graduated in 1928 from Eclectic Medical Institute, Cincinnati. He was a clinical assistant in neurology and psychiatry at Brooklyn Jewish Hospital. Dr. Fine was a Member of the American Psychiatric Association and a member of the American Academy of Neurology, the Association for Research in Nervous and Mental Dis-

[Continued on page 3150]

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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[Continued from page 3148]

ease, the New York Society for Clinical Psychiatry, the Brooklyn Neurological Society, the Brooklyn Psychiatric Society, the Kings County Medical Society, and the Medical Society of the State of New York.

Rexford William Finegan, M.D., of New York City, died on August 21 at his home at the age of forty-nine. Dr. Finegan graduated in 1935 from Creighton University School of Medicine. He was medical director of underwriting of the Metropolitan Life Insurance Company. Dr. Finegan was a member of the Association of Life Insurance Medical Directors of America, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Hyman Fromm, M.D., of Brooklyn, died on February 11 at the age of seventy-four. Dr. Fromm graduated in 1921 from New York Homeopathic Medical College and Flower Hospital.

John Garb, M.D., of New York City, died on August 13 in University Hospital at the age of seventy. Dr. Garb graduated in 1921 from Long Island College Hospital School of Medicine. He was an associate clinical professor of dermatology at New York University Medical Center and had been a staff physician there for thirty-two years. He was a founder of the Long Island College Medical Alumni Memorial Fund and a patron of the New York University Medical Center. Dr. Garb was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Academy of Dermatology and Syphilology, the Society for Investigative Dermatology, the New York Academy of Medicine, the Bronx Dermatological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Selmar Gutman, M.D., of New York City, died on August 17 at his home in Glenham at the age of seventy-four. Dr. Gutman received his medical degree from the University of Heidelberg in 1910. He was a senior assistant in gynecology at Lenox Hill Hospital Outpatient Department. Dr. Gutman was a member of the New York County Medical Society and the Medical Society of the State of New York.

Clement Joseph Handron, M.D., of Troy, died on August 5 at St. Mary's Hospital at the age of fifty-nine. Dr. Handron graduated in 1929 from Albany Medical College. He was an attending physician at St. Mary's Hospital. President of the Rensselaer County Medical Society, Dr. Handron was also a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and a member of the State Medical Grievances Board, the Rensselaer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Helmer Powers Howd, M.D., of Troy, died on April 16 at his home at the age of fifty-eight. Dr. Howd graduated in 1928 from Harvard University Medical School. He was in charge of the industrial hospital of Cluett, Peabody and Company and former medical adviser to the Rensselaer County chapter of the American Red Cross. Dr. Howd was a member of the Rensselaer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Rudolph John Huebel, M.D., of the Bronx, died on February 28 at the age of seventy-two. Dr. Huebel received his medical degree from the University of Vienna in 1915. He was an assistant attending in obstetrics and gynecology at Morrisania Hospital. Dr. Huebel was a Fellow of the American College of Obstetricians and Gynecologists and a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph William Jailer, M.D., of New York City, died on August 23 at the Columbia-Presbyterian Medical Center at the age of forty-six. Dr. Jailer graduated in 1943 from Columbia University College of Physicians and Surgeons and interned at Presbyterian Hospital. He was an associate attending physician at Presbyterian Hospital, an assistant attending physician at Bellevue Hospital, and an associate professor of clinical medicine at the College of Physicians and Surgeons. Dr. Jailer was a Diplomate of the American Board of Internal Medicine and a member of the Association of American Physicians, the American Society for Clinical Investigation, the American Physiological Society, the Society for Experimental Biology and Medicine, the Endocrine Society, the New York County Medical Society, and the Medical Society of the State of New York.

Norman Thomas Kirk, M.D., of Montauk, died on August 13 at Walter Reed General Hospital at the age of seventy-two. Dr. Kirk graduated in 1910 from the University of Maryland School of Medicine. He was a consultant in orthopedic surgery at Southampton Hospital Association. A World War II veteran, from 1943 until his retirement in 1947 he held the post of Army Surgeon General. Dr. Kirk was a Diplomate of the American Board of Surgery, a Diplomate of the American Board of Orthopedic Surgery, a Fellow of the American College of Surgeons, and a member of the American Orthopaedic Association, the American Academy of Orthopaedic Surgeons, the American Surgical Society, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

J. Irving Kushner, M.D., of New York City, died on August 10 at his home at the age of fifty-seven. Dr. Kushner graduated in 1929 from Harvard University Medical School and interned at Bronx Hospital. He was an attending in gynecology at Grand Central Hospital and an adjunct in obstetrics and an associate in special pathology at the Tumor Clinic at the Bronx Hospital. Dr. Kushner was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, a Fellow of the American College of Obstetrics and Gynecology, and a member of the American Society for the Study of Sterility, the New York Academy of Medicine, the Bronx Gynecological and Obstetrical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harold H. Levy, M.D., of the Bronx, died on April 30 at the age of sixty-four. Dr. Levy graduated in 1926 from Boston University School of Medicine and interned at Fordham Hospital. He was an associate attending physician at Fordham Hospital. Dr. Levy was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Harry Joseph MacMahon, M.D., of Buffalo and East Aurora, died at his home on July 20 at the age of seventy-two. Dr. MacMahon graduated in 1913 from the University of Buffalo School of Medicine. He had been an attending in otolaryngology at Mercy Hospital. Dr. MacMahon was a Diplomate of the International College of Surgeons, a Fellow of the International College of Surgeons, and a member of the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward Mahler, M.D., of New York City, died on July 25 at the age of seventy-one. Dr. Mahler graduated in 1911 from Cornell University Medical College and interned at Mount Sinai Hospital.

[Continued on page 3152]

while she is planning
her family,

she needs your help
more than ever

Ortho-Gynol
VAGINAL JELLY

the most widely prescribed contraceptive
WHENEVER A DIAPHRAGM IS INDICATED

Ortho

086359

[Continued from page 3151]

Robert Lowry Moorhead, M.D., of Brooklyn, died in St. John's Hospital on August 2 at the age of seventy-nine. Dr. Moorhead graduated in 1904 from Columbia University College of Physicians and Surgeons. He was senior attending surgeon at Brooklyn Eye and Ear Hospital, a consultant in otolaryngology, rhinology, and laryngology at Wyckoff Heights Hospital, chief of otolaryngology at Brooklyn Hospital, a consultant in bronchoscopy at Cumberland Hospital, a consulting surgeon in otolaryngology at the Lutheran Medical Center, a consultant in bronchoscopic surgery at St. Mary's Hospital, and a consultant in otolaryngology at Long Island College, St. John's, and Maimonides Hospitals. Dr. Moorhead was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the American Broncho-Esophagological Association, the American Laryngological, Rhinological and Otological Society, the American Academy of Ophthalmology and Otolaryngology, the American Otological Society, Inc., the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Wallace Morrison, M.D., of New York City, died at his home on April 17 at the age of sixty-five. Dr. Morrison graduated in 1919 from Western Ontario Faculty of Medicine of the University of London and interned at the New York Eye and Ear Infirmary and Bellevue Hospital. He was a consultant in otolaryngology at New York Polyclinic Hospital. Dr. Morrison who was a former associate clinical professor at the New York University Post-Graduate Medical School, was a Diplomate of the American Board of Otolaryngology and a member of the American Academy of Ophthalmology and Otolaryngology, the American Laryngological, Rhinological and Otological Society, the American Laryngological Association, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William P. Muirhead, M.D., of Armonk, retired, died on May 27 at the age of sixty-three. Dr. Muirhead graduated in 1926 from Queens University Faculty of Medicine, Kingston, Ontario.

Gilberto S. Pesquera, M.D., of New York City, died on February 26 at the age of sixty-six. Dr. Pesquera graduated in 1915 from the College of Physicians and Surgeons of Baltimore. He was a member of the Saratoga County Medical Society and the Medical Society of the State of New York.

Arthur Emerson Pitts, M.D., of Albany died on April 21 at his home at the age of seventy-four. Dr. Pitts graduated in 1909 from Albany Medical College. A former instructor at Albany Medical College, Dr. Pitts was a member of the Albany County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leo E. Reimann, M.D., of Franklinville, died on June 28 at his home at the age of sixty-eight. Dr. Reimann graduated in 1916 from the University of Buffalo School of Medicine. He was an attending physician at Olean General Hospital until his retirement in 1959. Dr. Reimann was a member of the Cattaraugus County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arthur Schmorr, M.D., of Rye, died on May 17 at the age of fifty-nine. Dr. Schmoor graduated in 1926 from New York Homeopathic Medical College and Flower Hospital.

Robert Willis Shearman, M.D., of Brooklyn, died on August 5 at the age of eighty-four. Dr. Shearman graduated in 1901 from Columbia University College of Physicians and Surgeons and interned at Methodist Hospital of Brooklyn. Dr. Shearman was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Eugene Spitzer Spencer, M.D., of Kew Gardens, died on April 26 at the age of fifty-nine. Dr. Spencer received his medical degree from the University of Vienna in 1924. He was an assistant attending in anesthesiology at St. Mary's Hospital and an attending in anesthesiology at Creedmoor State Hospital. Dr. Spencer was a Fellow of the International College of Surgeons and a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Matthew James Sullivan, M.D., of Stony Point, died at his home on August 28 at the age of eighty. Dr. Sullivan graduated in 1904 from Baltimore University College of Medicine. He was a consulting physician at Nyack Hospital and had been health officer of the village and town of Haverstraw for more than forty years, a member of the Board of Visitors of the Rockland State Hospital, and a

[Continued on page 3154]

important new therapy in Peptic Ulcer

cessation of all symptoms and complete healing in 70 out of 78 cases as reported in Postgraduate Medicine (Oct.) 1959

"...chymotrypsin offers a new approach to the treatment of peptic ulcer."

In 54 cases, most of them hospitalized, in which chymotrypsin (Chymar) was used in conjunction with other agents "All of the symptoms disappeared and *complete healing of* the ulcer occurred in 49 (90.7 per cent) of the 54 cases . . ." Average time for cessation of symptoms . . . 6 days; for complete healing . . . 36 days; average follow-up period . . . 12 months. *In 24 cases* in which Chymar was used alone, "Cessation of all symptoms and *complete healing occurred in 21* (*87.5 per cent*) of the 24 cases . . ." Average time for cessation of symptoms . . . 5.8 days; for complete healing . . . 24 days; average follow-up period . . . 25.5 months.

Conclusions: "Because of the excellent results obtained in 78 cases of peptic ulcer . . . I strongly recommend its use as a most valuable adjunct in the treatment of this disease."*

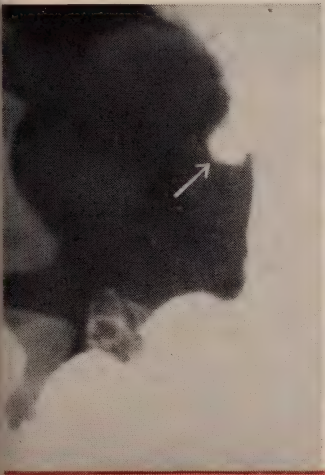
*Mozan, A. A.: Postgraduate Med. 26:542, 1959

the superior anti-inflammatory enzyme

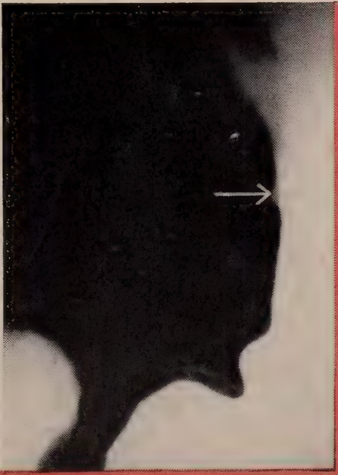
Chymar®

chymotrypsin *Buccal/Aqueous/Oil*

controls inflammation, swelling and pai



retreatment roentgenogram made n January 26, 1957 shows a large iche on the upper third of the lesser urvature.



Roentgenogram made on February 23, 1957 shows only a slight indentation on the lesser curvature.

CHYMAR Buccal—Crystallized chymotrypsin in a tablet formulated for buccal absorption. Bottles of 24 tablets. Enzymatic activity, 10,000 Armour Units per tablet.

CHYMAR Aqueous—Solution of crystallized chymotrypsin in sodium chloride injection for intramuscular use. Vials of 5 cc. Enzymatic activity, 5000 Armour Units per cc.

CHYMAR—Suspension of crystallized chymotrypsin in oil for intramuscular injection. Vials of 5 cc. Enzymatic activity, 5000 Armour Units per cc.

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KANKAKEE, ILLINOIS
Armour Means Protection

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[Continued from page 3152]

visiting physician at the New York State Rehabilitation Hospital, West Haverstraw. Dr. Sullivan was a member of the Rockland County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sydney Ross Titsworth, M.D., of Bergenfield, New Jersey, formerly of New York City, died on April 19 at the age of eighty-three. Dr. Titsworth graduated in 1906 from Columbia University College of Physicians and Surgeons.

Herbert G. Warden, M.D., of New York City, died on February 8 at the age of sixty-four. Dr. Warden graduated in 1928 from Boston University School of Medicine.

Edward William Warren, M.D., of Ithaca, died on August 4 at his home at the age of fifty-nine. Dr. Warren graduated in 1931 from the University of Maryland School of Medicine. He had been a consultant in obstetrics and gynecology at Tompkins County Memorial Hospital. Dr. Warren was a member of the Tompkins County Medical Society and the Medical Society of the State of New York.

Jacob Weinstein, M.D., of Brooklyn, died on February 19 at the age of fifty-one. Dr. Weinstein graduated in 1936 from Anderson College of Medicine, Glasgow, Scotland. He was a clinical assistant attending physician at Unity Hospital Outpatient Department. Dr. Weinstein was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

August F. A. Wiggers, M.D., of Santa Barbara, California, formerly of Flushing and New York City, died on April 21 at the age of eighty-four. Dr. Wiggers graduated in 1913 from Columbia University College of Physicians and Surgeons. He was a Diplomate of the American Board of Otolaryngology, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the Queens County Medical Society, and the Medical Society of the State of New York.

People With Normal Vision Are in Minority

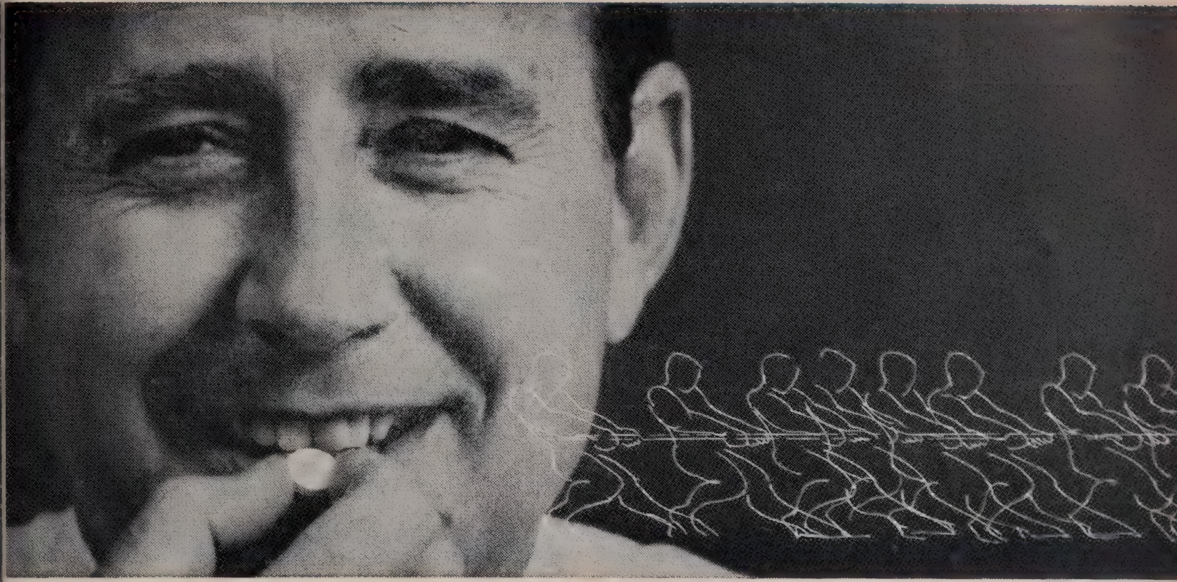
Every other person in this country wears either eyeglasses or contact lenses, according to *Patterns of Disease*, a Parke, Davis & Company publication. Figures quoted by *Patterns* show that in the United States 77,000,000 wear eyeglasses and an additional 6,500,000 wear contact lenses.

As these estimates imply, the person who has normal vision is in the minority. The results of one study reported by the publication revealed that only 43.5 per cent of people have normal vision—that is, 20–30 vision, or better in both eyes. Almost 10 per cent of people in the same study were found to be using only one eye.

There are 960,000 blind persons in this country and an additional 2,064,000 people with serious visual impairments. Together, poor vision and blindness rank fourth in the list of disabilities in the United States, outranked only by impairments of hearing; of the limbs, back, and trunk; and of the lower extremities.

in antacid therapy...

patient cooperation is half the battle



Are you chancing unsatisfactory results because the patient doesn't like the taste of the antacid you have prescribed? Assure patient cooperation. Prescribe the antacid which assures patient acceptance through its excellent palatability.

Palatable

'Margel'

unsurpassed in performance
unequalled in palatability

antacid suspension/tablets

MARGEL is a highly palatable formulation of four antacids: selected aluminum hydroxides, magnesium hydroxide, magnesium trisilicate and calcium carbonate. Balanced to be non-constipating; formulated to be non-chalky. Write for a sample and see for yourself.

Supplied: Margel Suspension — bottles of 12 fluid ounces. Margel Tablets — boxes of 96.
Dosage: SUSPENSION: 1 tablespoonful 20 minutes after meals and on retiring. May be taken with milk if desired. TABLETS: 2 or more tablets 20 minutes after meals and on retiring. May be chewed or allowed to dissolve slowly in the mouth.

MRT *M. R. Thompson, Inc.* CRANFORD, N. J.

Woman's Auxiliary

to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Priority Projects for 1960 and 1961

The members of the Woman's Auxiliary to the Medical Society of the State of New York are placing special emphasis for the 1960 to 1961 year on what is known as priority projects. Under the leadership of Mrs. Milton W. Kogan, president, these priority projects are:

1. An Increased Membership.—This includes the reactivation of old members, the stimulation of new, the making use of the active membership, and the enlistment of the aid of organized auxiliaries in the organization of those counties without auxiliaries by inviting individuals from the unorganized counties to attend the county auxiliary meetings.
2. American Medical Education Foundation.—This priority project must have more support for both the independent and the privately endowed schools.
3. Physicians' Home Fund.—This is used for the support of the aged and indigent physicians and their widows and is a most worthy project.
4. Establishment of Scholarships and Loans.—The scholarships and loans are for the benefit of the needy students in the medical and paramedical fields. Not only is it necessary that the scholarships and loans be continued but this priority also requires the renewed efforts of the membership for the recruitment of personnel for careers in the paramedical fields.

The Auxiliary members must not forget the other projects needing attention and action. It must promote interest in and subscriptions to *Today's Health*; participation in the Statewide "Health Poster Contest" by the schools for posters which are so helpful in making the public aware of the necessity of good health and of the fine medical care available in the State; and through the national and State legislation committee chairmen information on proposed Federal and State legislation in the fields of public health, medical care, and related health and welfare programs will enable the membership to stand ready for action to promote or defeat specific bills as the need may be.

Individually and collectively, the members of the Woman's Auxiliary to the Medical Society of the State of New York are the ambassadors of good will for their husbands and are the doctors' best instruments for good public relations.

Mrs. Lawrence J. Radice, *Chairman*
State Program

501 Linwood Avenue
Buffalo 9, New York

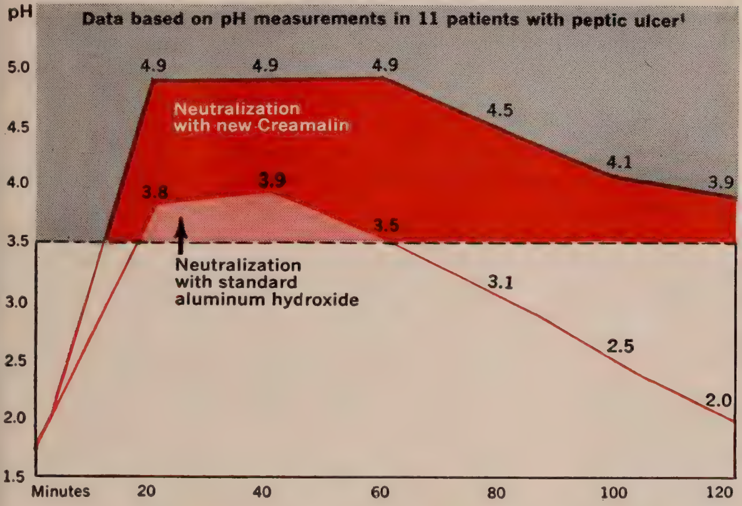
Nutrition Supplement to Cut Latin American Infant Mortality

One of the modern world's grimmest paradoxes is the varying forms of malnutrition: While overeating is the problem in the U.S., the undeveloped nations experience it as near-starvation. Chronic protein deficiencies, for instance, produce staggering death rates among the young children of these aspiring nations. According to Dr. V. G. King, Executive Director of the Nutrition Foundation, the range is from 5 to 20 times higher than in the U.S.

This toll may be sharply reduced soon thanks to a dietary supplement developed by the Institute of Nutrition of Central America and Panama (INCAP), located in Guatemala City. Working with grants from the Nutrition Foundation and other sources, the Institute has created "Incaparina," a highly nutritious blend of locally available substances, including corn, sorghum and cotton seed flour, plus yeast and vitamin A. Found tasty by the Central Americans, "Incaparina" can be produced cheaply. A day's ration is three cents.

At the site of peptic ulcer

Following determination of basal secretion, intragastric pH was continuously determined by means of frequent readings over a two-hour period.



neutralization is much faster and twice as long with

New CREAMALIN® ANTACID TABLETS

New proof in vivo[1] of the much greater efficacy of new Creamalin tablets over standard aluminum hydroxide has now been obtained. Results of comparative tests on patients with peptic ulcer, measured by an intragastric pH electrode, show that new Creamalin neutralizes acid from 40 to 65 per cent faster than the standard preparation. This neutralization (pH 3.5 or above) is maintained for approximately one hour longer.

New Creamalin provides virtually the same effects as a liquid antacid[2] with the convenience of a tablet.

Nonconstipating and pleasant-tasting, new Creamalin antacid tablets will not produce "acid rebound" or alkalosis.

Each new Creamalin antacid tablet contains 320 mg. of specially processed, highly reactive, short polymer dried aluminum hydroxide gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. Minute particles of the powder offer a vastly increased surface area for quicker and more complete acid neutralization.

Dosage: Gastric hyperacidity — from 2 to 4 tablets as necessary. Peptic ulcer or gastritis — from 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed whole with water or milk, or allowed to dissolve in the mouth. **How supplied:** Bottles of 50, 100, 200 and 1000.

1. Data in the files of the Department of Medical Research, Winthrop Laboratories. 2. Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

Winthrop
LABORATORIES
New York 18, N. Y.

for peptic ulcer ■ gastritis ■ gastric hyperacidity

MEDICAL NEWS

Homestead Tuberculosis Sanatorium Closes—The closing of the Homestead Tuberculosis Sanatorium at Middle Grove, Saratoga County, effective as of September 1, has been announced by the State Health Department. The sanatorium was opened in 1929.

Postgraduate Courses on Diseases of the Chest—The American College of Chest Physicians is offering two postgraduate courses on diseases of the chest. The first course, "Clinical Cardiopulmonary Physiology," will be held October 24 through 28, at the Sheraton Towers Hotel, Chicago. The second course, "Recent Advances in the Diagnosis and Treatment of Diseases of the Heart and Lungs," will be held November 14 through 18, at the Park Sheraton Hotel, New York City.

For additional information write to: Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

Monroe County Initiates Emergency Service Plan—A plan that places two doctors on duty around-the-clock every day of the year to meet the community's medical emergencies went into effect in Monroe County on September 1.

The plan is a cooperative effort by Monroe County physicians to provide residents of the Rochester area with prompt medical attention in time of emergency. More than 500 physician-members of the Monroe County Medical Society are pledged to stand the emergency duty on a rotating schedule that will provide coverage day and night throughout the year. Participating physicians will also cover their own practice on their duty day.

The Academy of Psychoanalysis Elects Officers—Frances S. Arkin, M.D., New York City, one of the founders of the first psychoanalytic training institute in the United States to be connected with a medical school, was recently elected president of The Academy of Psychoanalysis for the year 1960–1961.

Among the other officers elected by the Academy are the following New York City physicians: Joseph H. Merin, M.D., secretary; and John L. Schimel, M.D., treasurer.

New York City physicians who presently hold offices in the Academy include the following: John A. P. Millet, M.D., past-president; and Nathan W. Ackerman, M.D., Ralph M. Crowley, M.D., Alexander R. Martin, M.D., and Natalie Shainess, M.D., trustees.

Institute Given Grant—The Institute for Advancement of Medical Communication has received a grant from the United States Steel Foundation for general support of the Institute's program of research and development in inter- and intraprofessional communication in the health sciences.

Postgraduate Course in Allergy—A two weeks course is being offered by the Departments of Allergy and Applied Immunology of the Temple University Medical Center and the Graduate School of Medicine of the University of Pennsylvania. Sessions will be held daily at the Temple University Medical Center from 9:00 A.M. to 5:00 P.M., from February 27 through March 10, 1961.

The course is designed for physicians desirous of extending their knowledge of allergy. It could serve as an introductory course for those about to enter the field or as a review course for practicing allergists.

For further information write to: George Blumstein, M.D., Temple Medical Center, Philadelphia 40, Pennsylvania.

Revised Booklet on Immunization Information Now Available—The Department of Health, Education, and Welfare has announced that the revised edition of the booklet "Immunization Information for International Travel" is now available. Copies of the booklet may be obtained for a small fee from: Superintendent of Documents, Government Printing Office, Washington 25, D.C.

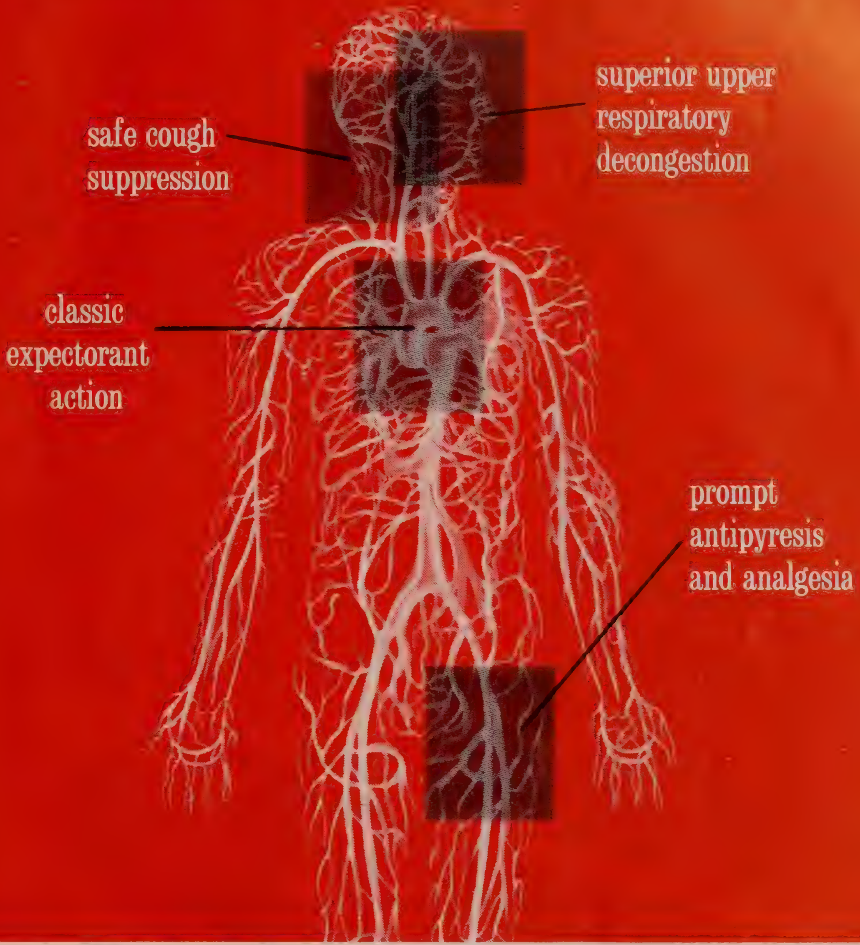
American Board of Obstetrics and Gynecology—The American Board of Obstetrics and Gynecology has announced that the next scheduled examination (part 1), written, will be held on Friday, January 13, 1961.

Reopened candidates are required to submit case reports for review thirty days after notification of eligibility. Scheduled part 1 and candidates resubmitting case reports are required to submit case reports prior to August 1st each year.

Current bulletins may be obtained by writing to:

[Continued on page 3160]

for relief from the total cold syndrome...


safe cough suppression
superior upper respiratory decongestion
classic expectorant action
prompt antipyresis and analgesia

Tussagesic*

timed-release tablets / suspension

Each Tussagesic timed-release Tablet provides:

TRIAMINIC®	50 mg.
DORMETHAN (brand of dextromethorphan HBr)	30 mg.
TERPIN HYDRATE	180 mg.
APAP (acetaminophen)	325 mg.

Dosage: *Adults and children over 12* – one tablet in the morning, midafternoon and at bedtime. Each tablet should be swallowed whole to preserve the timed-release action.

Each tsp. (5 ml.) of Tussagesic Suspension provides:

TRIAMINIC®	25 mg.
DORMETHAN (brand of dextromethorphan HBr)	15 mg.
TERPIN HYDRATE	90 mg.
APAP (acetaminophen)	120 mg.

Tussagesic Suspension is especially suited for children and for adults who prefer liquid medication; it is pleasantly flavored, non-narcotic and non-alcoholic.

Dosage (to be taken every 3 or 4 hours): *Adults and children over 12* – 1 or 2 tsp.; *Children 6 to 12* – 1 tsp.; *Children 1 to 6* – ½ tsp.; *Children under 1* – ¼ tsp.

*TRADEMARK

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

[Continued from page 3158]

Robert L. Faulkner, M.D., Executive Secretary and Treasurer, 2105 Adelbert Road, Cleveland 6, Ohio.

MEDICAL MEETINGS

New York Proctologic Society

The New York Proctologic Society will hold its next scientific session at the New York Academy of Medicine, 2 East 103rd Street, New York City, on Thursday, October 13 at 8:30 P.M.

The program will consist of a formal paper on "Medico-Legal Aspects of Colon and Rectal Disease" by Henry J. Gureasko, M.D., and discussion by Francis J. Hughes, LL.B., William F. Martin, LL.B., and George A. Friedman, M.D., to be followed by a question and answer period. Members of the medical profession are invited to attend.

Mid-West Forum on Allergy

The fourth annual meeting of the Mid-West Forum on Allergy will be held on October 22 and 23, at the Penn-Sheraton Hotel in Pittsburgh, Pennsylvania.

Among the physicians who will participate in the meeting are the following from New York State: Carl E. Arbesman, M.D., Buffalo; and Murray Dworetzky, M.D., and Mary H. Loveless, M.D., New York City.

For further information concerning the meeting write to: Philip Blank, M.D., Publicity Chairman, Midwest Allergy Forum, Brentwood Medical Group, 3028 Brownsville Road, Brentwood, Pittsburgh 27, Pennsylvania.

Clinical Conference in Texas

The University of Texas M. D. Anderson Hospital and Tumor Institute and the University of Texas Postgraduate School of Medicine will hold their fifth annual clinical conference on October 21 and 22. The title of the conference will be "Cancer of the Uterine Cervix, Endometrium, and Ovary."

For further information contact: Felix N. Rutledge, M.D., Chairman, The University of Texas M. D. Anderson Hospital, Texas Medical Center, Houston 25, Texas.

The American College of Gastroenterology

The twenty-fifth annual convention of the American College of Gastroenterology will be held at the Bellevue-Stratford Hotel, Philadelphia, October 24 through 26.

The College will again give its annual course in postgraduate gastroenterology immediately following the convention, October 27 through 29.

For copies of the program and additional information concerning the postgraduate course write to: American College of Gastroenterology, 33 West 60th Street, New York 23, New York.

CLINICAL REMISSION IN A "PROBLEM" ARTHRITIC

In disabling rheumatoid arthritis. A 62-year-old printer incapacitated for three years was started on DECADRON, 0.75 mg./day. Has lost no work-time since onset of therapy with DECADRON one year ago. Blood and urine analyses are normal, sedimentation rate dropped from 36 to 7. He is in clinical remission.*

New convenient b.i.d. alternate dosage schedule: the degree and extent of relief provided by DECADRON allows for b.i.d. maintenance dosage in many patients with so-called "chronic" conditions. Acute manifestations should first be brought under control with a t.i.d. or q.i.d. schedule.

Supplied: As 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Also available as Injection DECADRON Phosphate. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

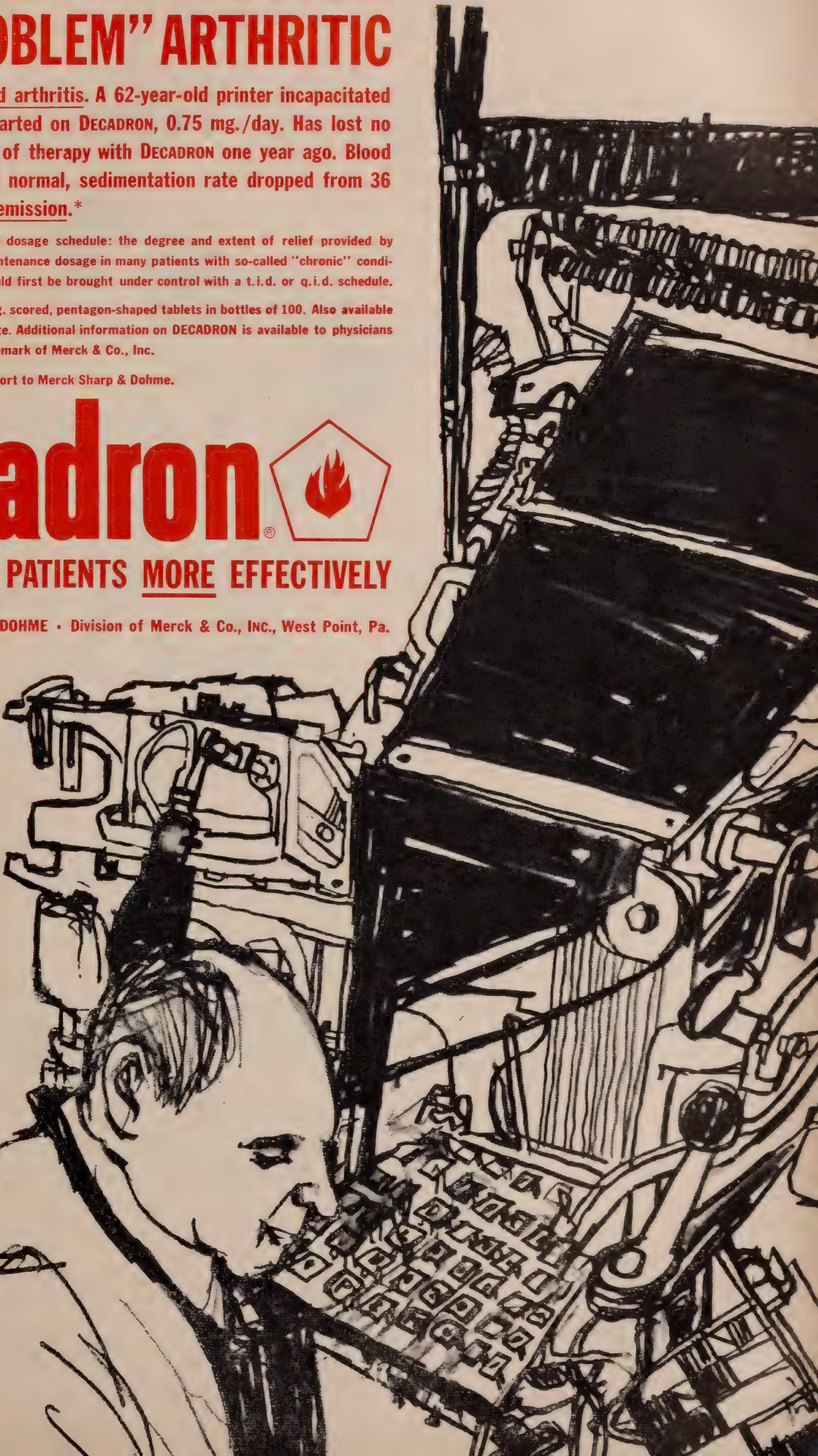
*From a clinical investigator's report to Merck Sharp & Dohme.

Decadron®

Dexamethasone

TREATS MORE PATIENTS MORE EFFECTIVELY

MSD MERCK SHARP & DOHME • Division of Merck & Co., INC., West Point, Pa.



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In over five years

...for the tense and nervous patient

Despite the introduction in recent years of "new and different" tranquilizers, Miltown continues, quietly and steadfastly, to gain in acceptance. Meprobamate (Miltown) is prescribed by the medical profession more than any other tranquilizer in the world.

The reasons are not hard to find. Miltown is a ***known*** drug. Its few side effects have been fully reported. ***There are no surprises in store for either the patient or the physician.***

# of clinical use...

Proven

in more than 750 published clinical studies

Effective

for relief of anxiety and tension

Outstandingly Safe

1 simple dosage schedule produces rapid, reliable tranquilization without unpredictable excitation

2 no cumulative effects, thus no need for difficult dosage readjustments

3 does not produce ataxia, change in appetite or libido

4 does not produce depression, Parkinson-like symptoms, jaundice or agranulocytosis

5 does not impair mental efficiency or normal behavior

Miltown®

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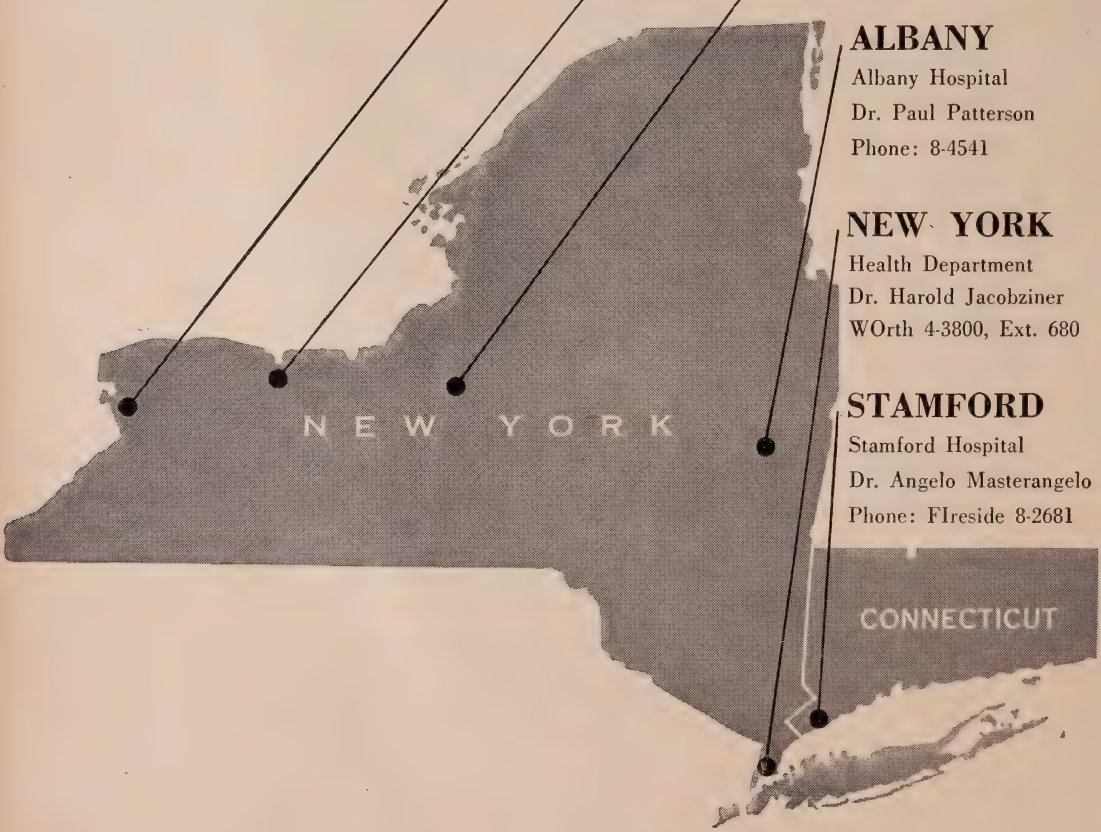

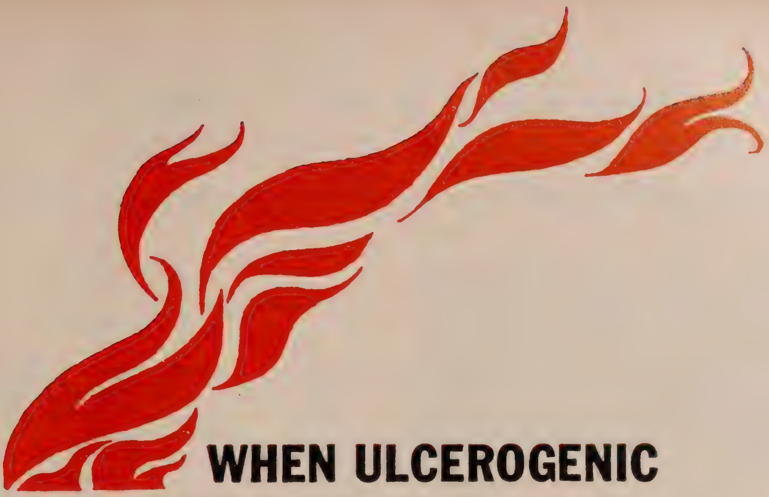

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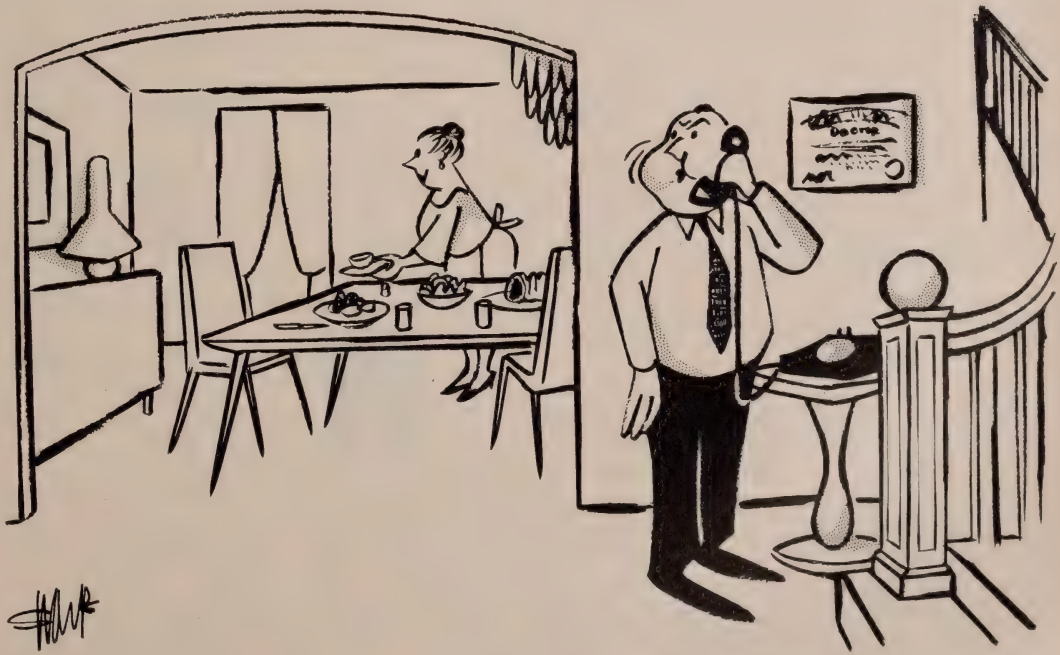

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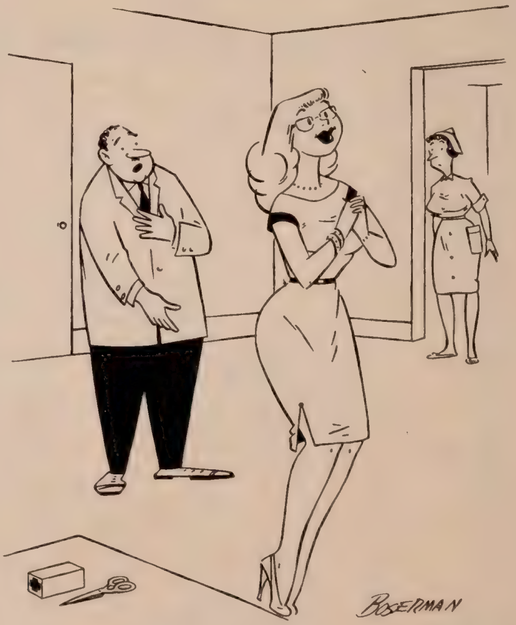

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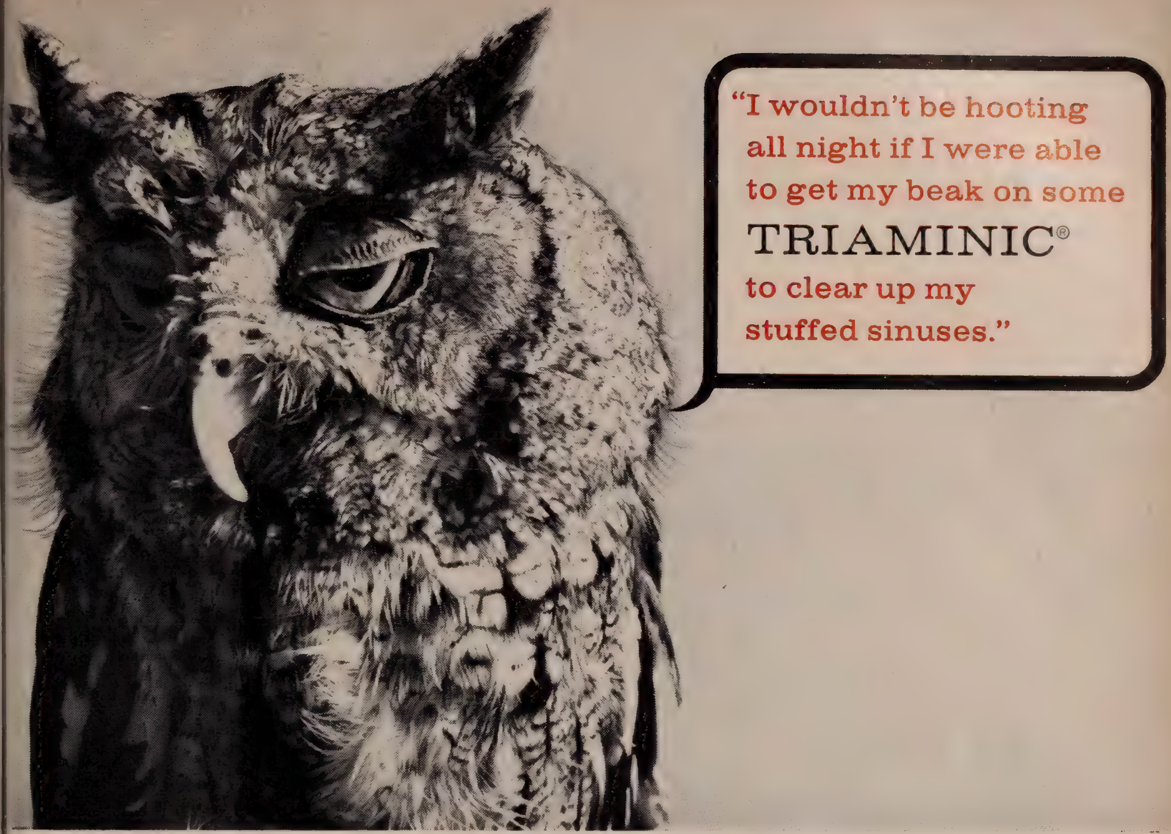
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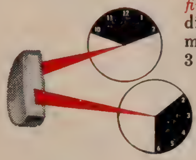

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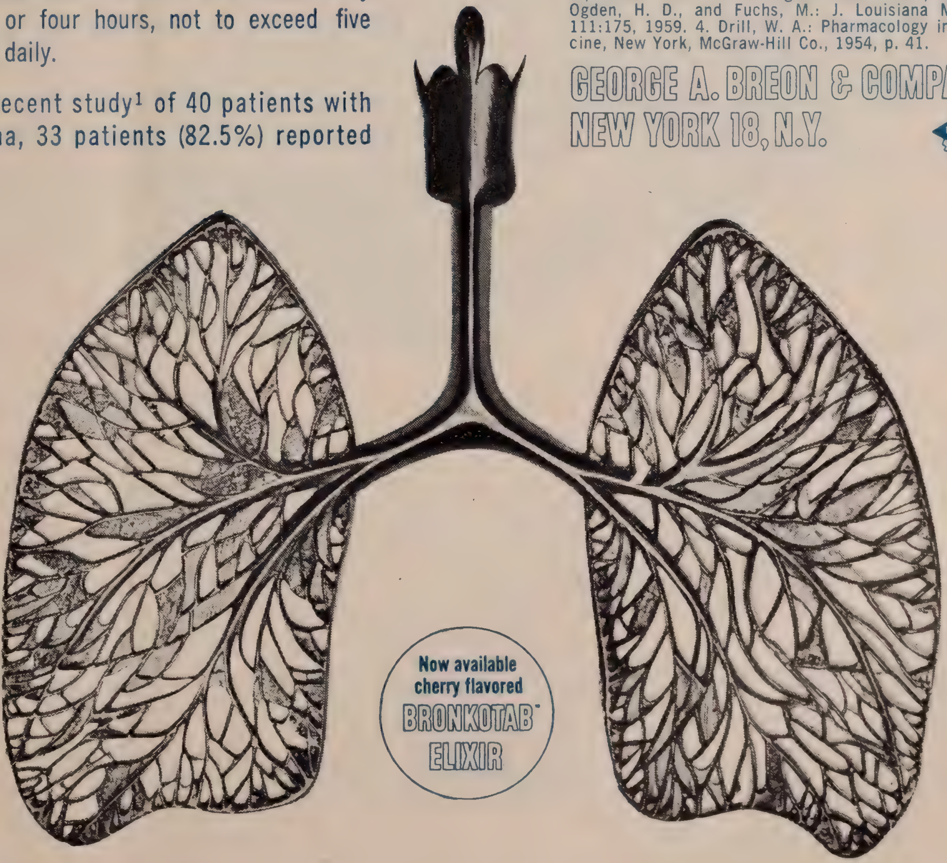

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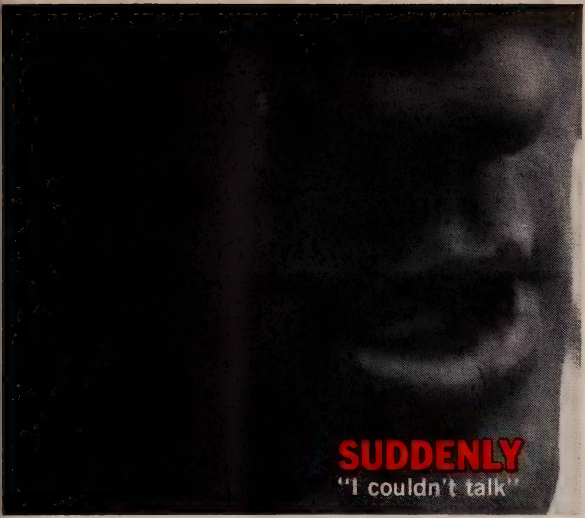
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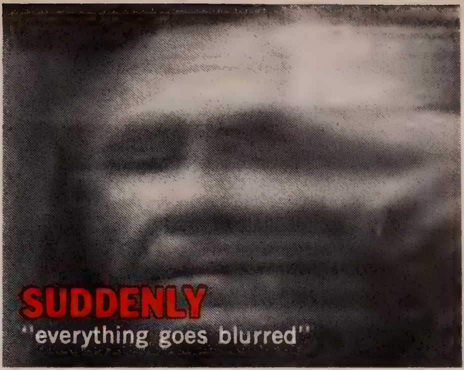
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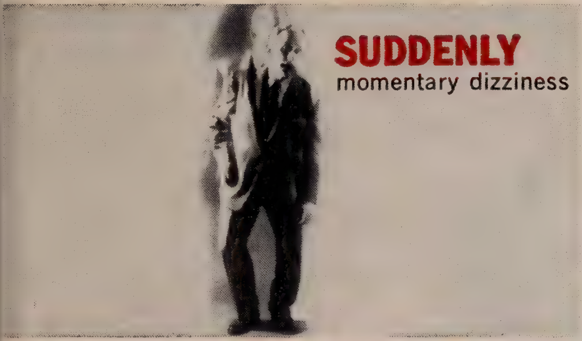
"everything goes blurred"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momentary dizziness

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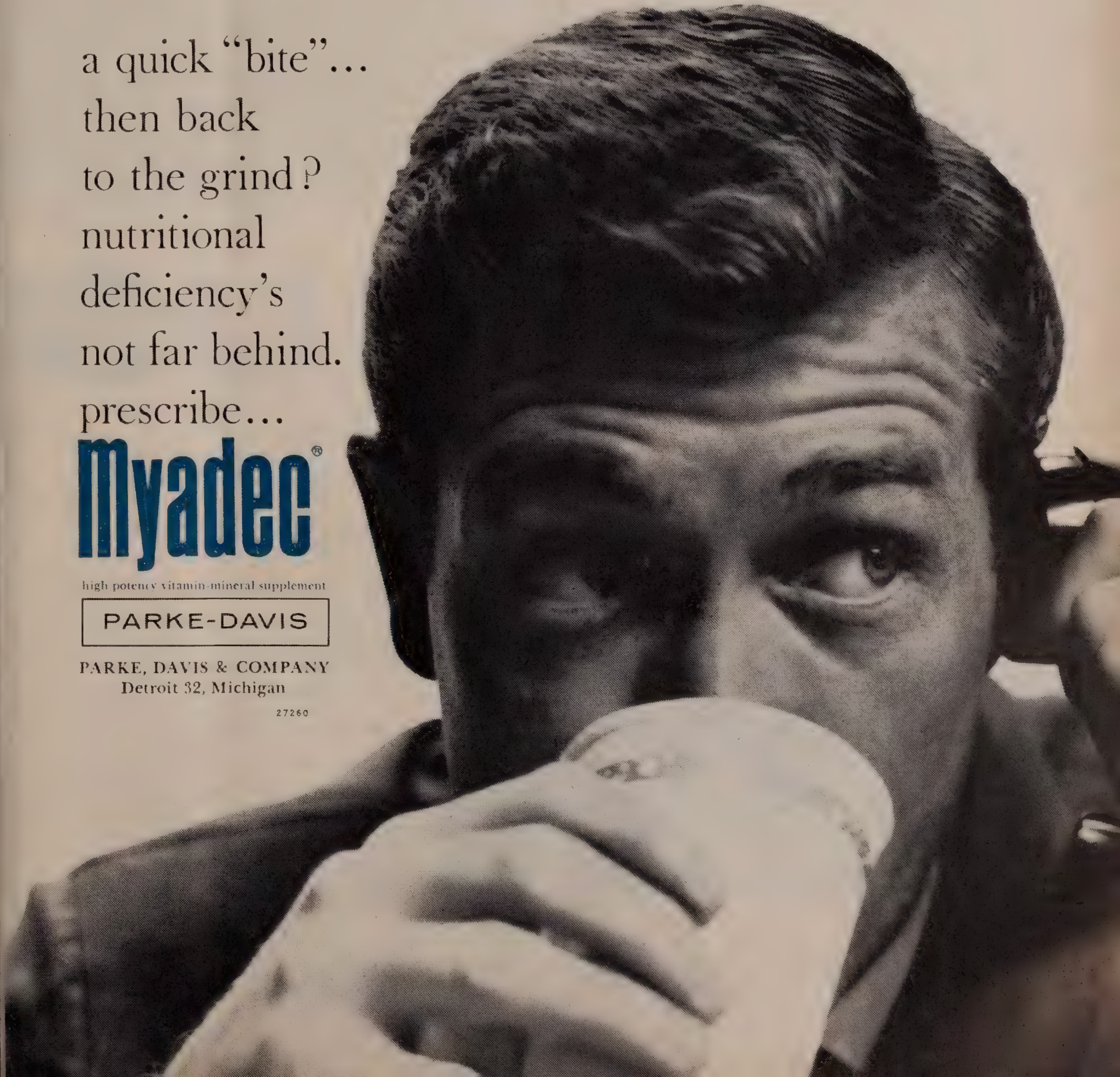

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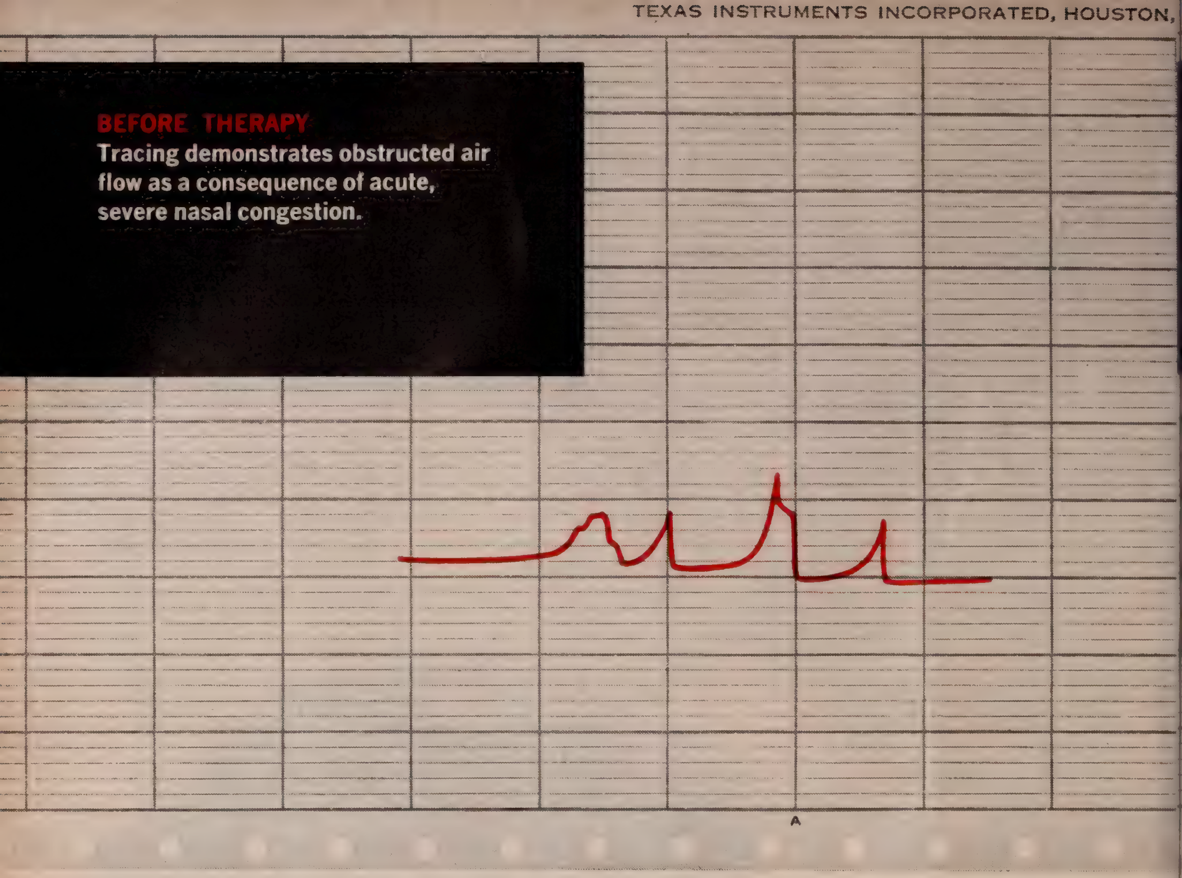

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Tracing demonstrates obstructed air flow as a consequence of acute, severe nasal congestion.

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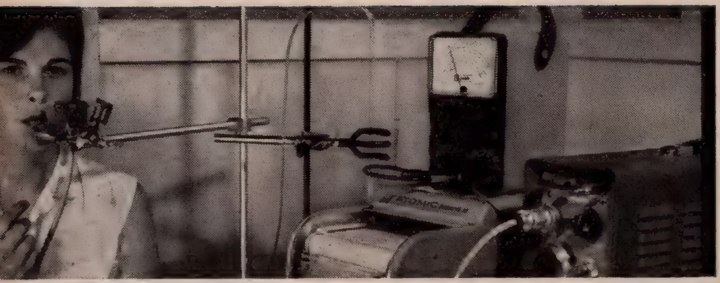

Photo shows use of electronic rhinograph, a new technique to measure air flow and response to decongestant therapy, using same subject as control.

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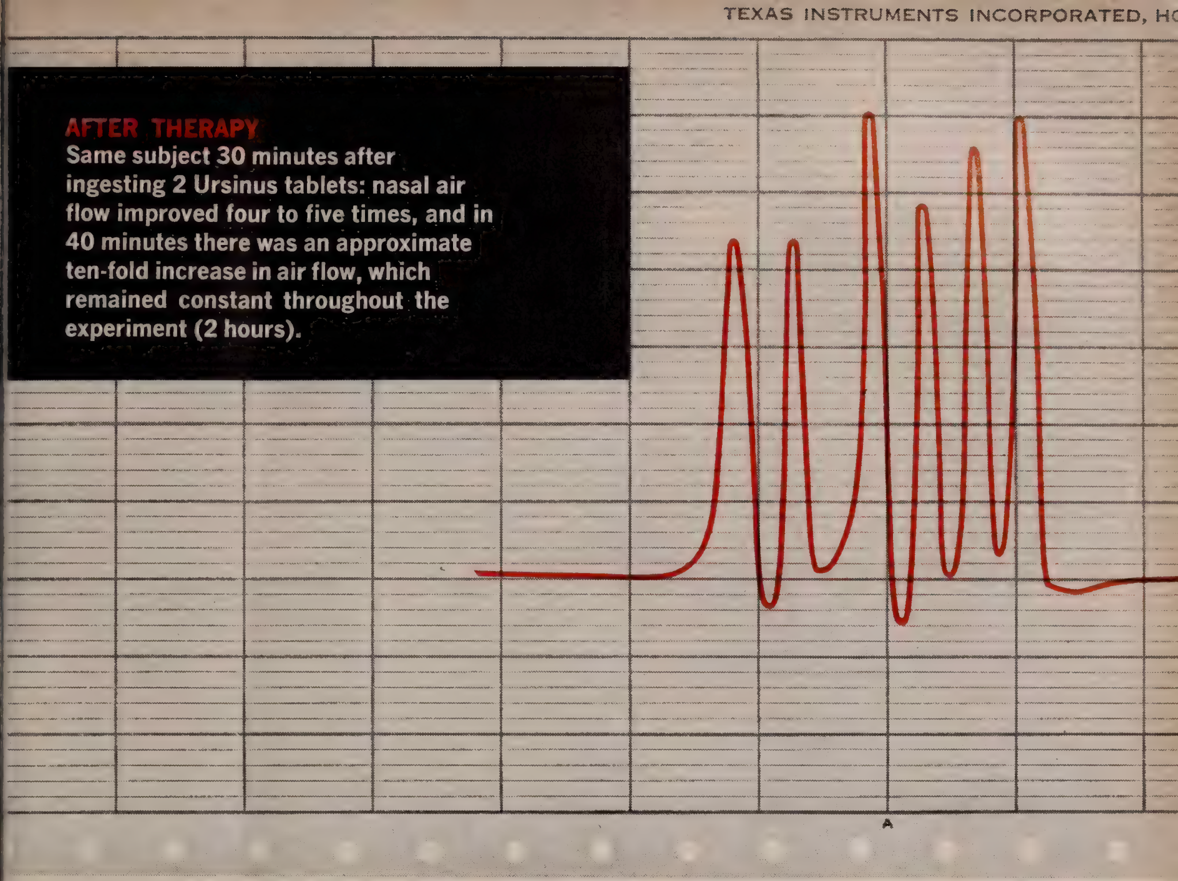

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Iron (as sulfate)	10 mg.
Copper (as sulfate)	0.15 mg.
Iodine (as calcium iodate)	0.1 mg.
Manganese (as sulfate)	0.05 mg.
Magnesium (as oxide)	0.15 mg.
Calcium (as phosphate)	250 mg.
Phosphorus (as calcium phosphate)	193 mg.

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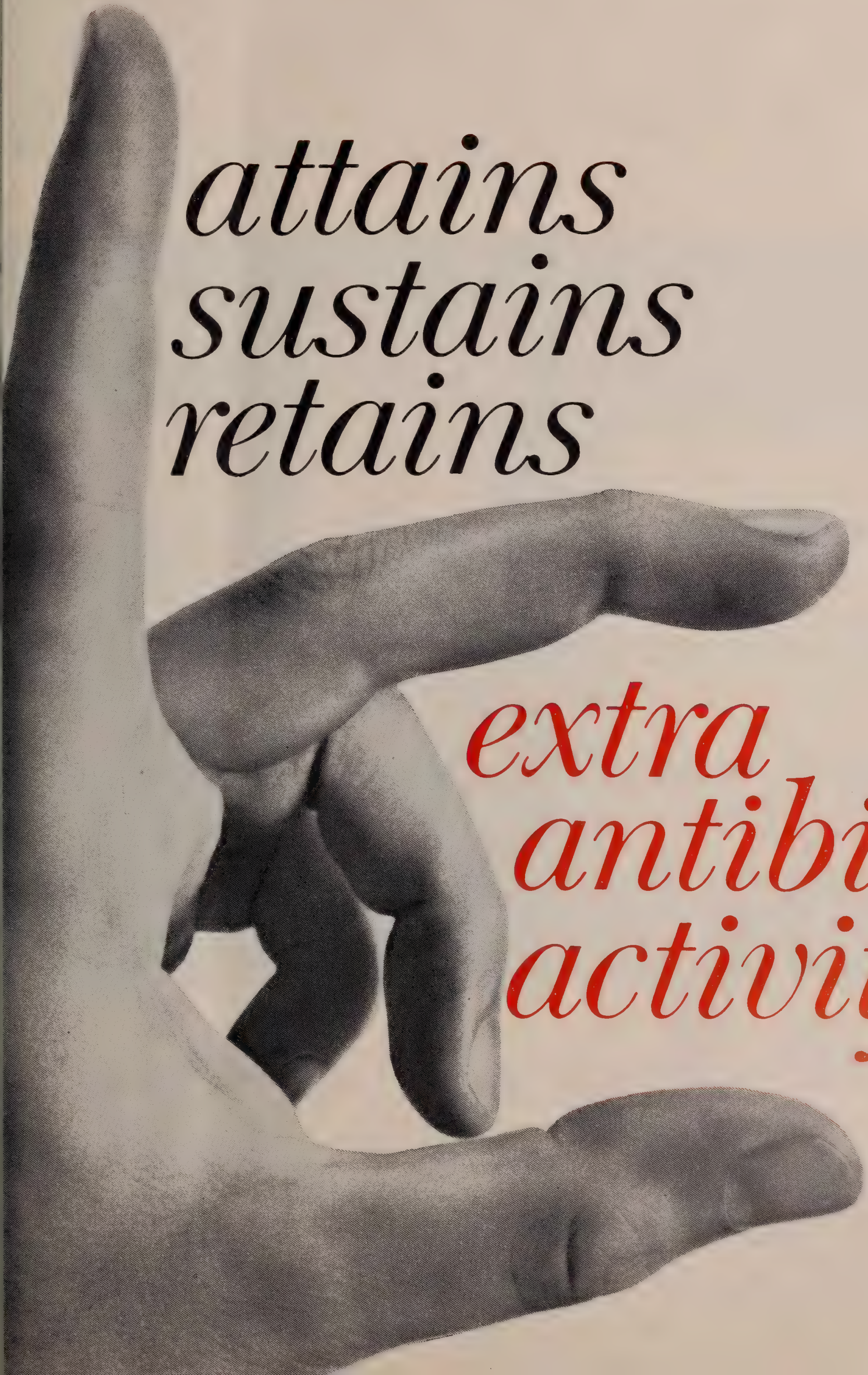
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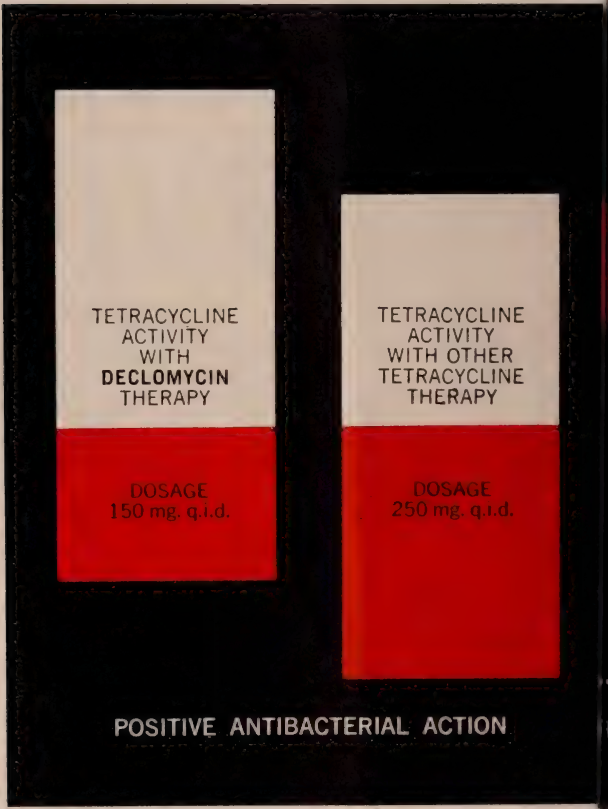
DEMETHYLCHLORTETRACYCLINE LEDERLE
attains
sustains
retains
extra
antibiotic
activity

extra-activity...promptly attained

DECLOMYCIN Demethylchlortetracycline attains—usually within two hours—blood levels more than adequate to suppress susceptible pathogens. These levels are attained in tissues and body fluids on daily dosages substantially lower than those required to elicit antibiotic activity of comparable intensity with other tetracyclines. With other tetracyclines, the average, effective, adult daily dose is 1 Gm. With DECLOMYCIN Demethylchlortetracycline, it is only 600 mg.



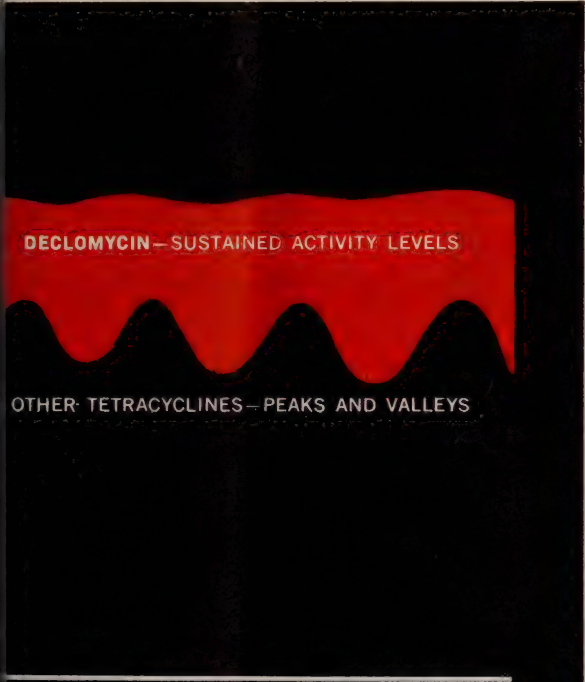
DECLO

venly sustained

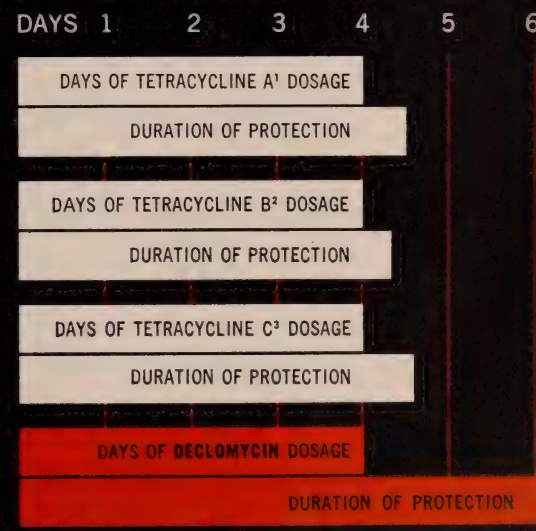
ECLOMYCIN Demethylchlortetracycline sus- ins, through the entire therapeutic course, the gh activity levels needed to control the pri- ary infective process and to check the onset of complicating secondary infection at the orig- al—or at another—site. This combined thera- eutic action is sustained, in most instances, ithout the pronounced hour-to-hour, dose-to- ose, peak-and-valley fluctuations in activity vels which characterize other tetracyclines.

long retained

DECLOMYCIN Demethylchlortetracycline retains significant activity levels, up to 48 hour after the last dose is given. At least a full, extr day of positive antibacterial action may thus be confidently expected. One capsule four times a day, for the average adult in the average infec tion, is the same as with other tetracyclines—bu the **total** dosage is lower and the duration o anti-infective action is longer.



OTECTION AGAINST PROBLEM PATHOGENS



(1) Oxytetracycline. (2) Chlortetracycline. (3) Tetracycline.

PROTECTION AGAINST RECURRENCE

MYCIN®

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- higher activity/intake ratio—positive antibacterial action
- sustained activity levels—protection against problem pathogens
- up to two extra days' activity—protection against recurrence

CAPSULES, 150 mg., bottles of 16 and 100. **Dosage:** Average infections—1 capsule four times daily. Severe infections—Initial dose of 2 capsules, then 1 capsule every six hours.

PEDIATRIC DROPS, 60 mg./cc. in 10 cc. bottle with calibrated, plastic dropper.

Dosage: 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into 4 doses.

SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz.

Dosage: 3 to 6 mg. per pound body weight per day—divided into 4 doses.

for the
added measure
of protection
in clinical
practice

PRECAUTIONS: As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs, discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under observation.

DECLOMYCIN®

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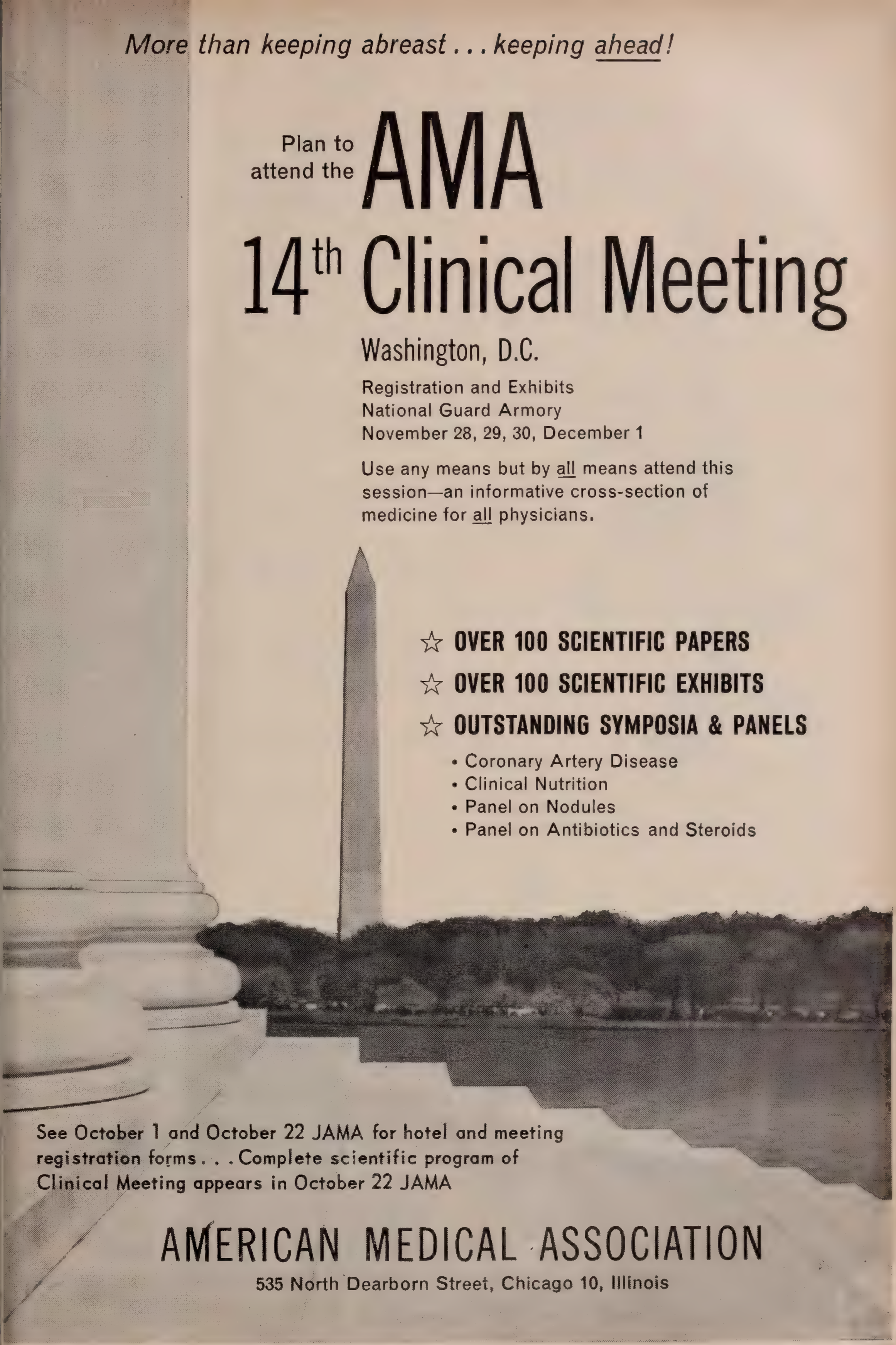
LEDERLE LABORATORIES, a Division of AMERICAN CYANAMID COMPANY, Pearl River, New York



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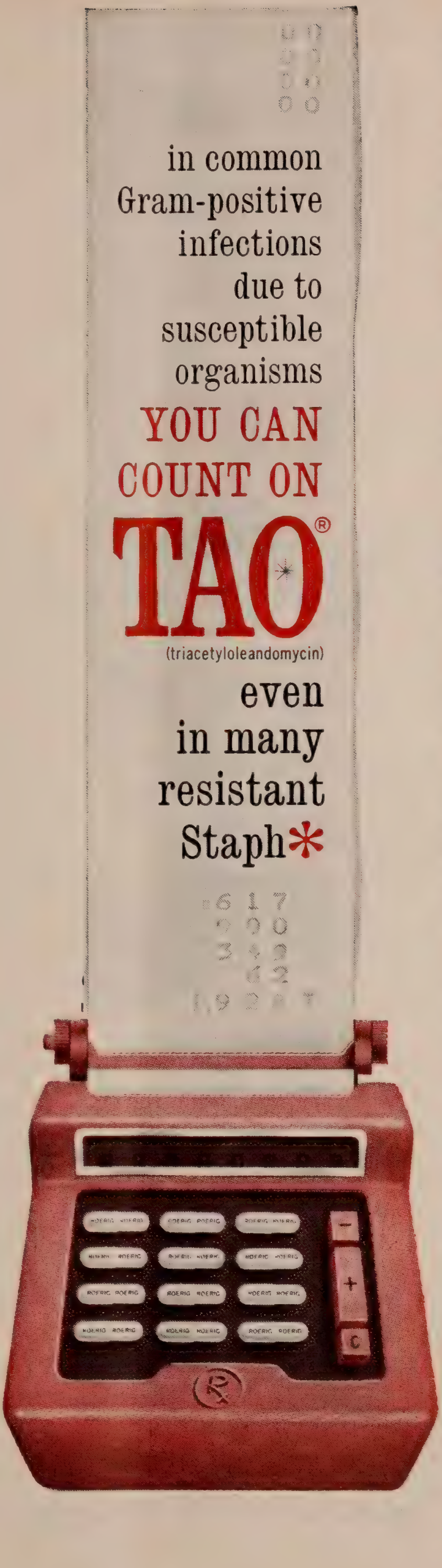

1,928 published cases in the two years since TAO was released for general use show:

94.3% effectiveness in respiratory infections (617 cases including tonsillitis, staphylococcal and streptococcal pharyngitis, bronchitis, infectious asthma, bronchopneumonia, lobar pneumonia, bronchiectasis, lung abscess, otitis.) **You can count on TAO.**

92% effectiveness in skin and soft tissue infections (900 cases including pyoderma, impetigo, acne, infected skin disorders, wounds, incisions and burns, furunculosis, abscess, cellulitis, chronic ulcer, adenitis.) **You can count on TAO.**

87.1% effectiveness in genitourinary infections (349 cases including urethritis, cystitis, pyelitis, pyelonephritis, orchitis, pelvic inflammation, acute gonococcal urethritis, lymphogranuloma venereum.) **You can count on TAO.**

75.8% effectiveness in diverse infections (62 cases including fever of undetermined origin, peritoneal abscess, osteitis, periarthritis, septic arthritis, staphylococcal enterocolitis, gastroenteritis, carriers of staphylococci.) **You can count on TAO.**

95.6% of 1,928 cases free of side effects—in the remaining 4.4%, reactions were chiefly mild gastrointestinal disturbances which seldom necessitated discontinuance of therapy.

*In 884 of 1,928 cases the causative organisms were mostly staphylococci. The majority of clinical isolates were found to be resistant to at least one of the commonly used antibiotics and many patients had failed to respond to previous therapy with one or more antibiotics.

TAO proved 93.4% effective in these 884 cases.

Complete bibliography available on request.

DOSAGE: varies according to severity of infection. Usual adult dose—250 to 500 mg. q.i.d. Usual pediatric dose: 3-5 mg./lb. body weight every 6 hours.

NOTE: In some children, when TAO was administered at considerably higher than therapeutic levels for extended periods, transient-jaundice and other indications of liver dysfunction have been noted. A rapid and complete return to normal occurred when TAO was withdrawn.

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- d-amphetamine depresses appetite and elevates mood
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IN
APPETITE CONTROL

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now! by mouth! a liquid bronchodilator terminates acute asthma in minutes with virtually no risk of gastric upset

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Following oral dosage of 75 cc. Elixophyllin, mean blood levels of theophylline at 15 minutes[1] exceed those produced by 300 mg. aminophylline I.V.[2]—and therapeutically effective[3] levels persist for hours.[1]

- No sympathomimetic stimulation
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Each tablespoonful (15 cc.) contains theophylline 80 mg. (equivalent to 100 mg. aminophylline) in a hydroalcoholic vehicle (alcohol 20%).

For acute attacks: Single dose of 75 cc. for adults; 0.5 cc. per lb. of body weight for children.

For 24 hour control: For adults 45 cc. doses before breakfast, at 3 P.M., and before retiring; after two days, 30 cc. doses. Children, 1st 6 doses 0.3 cc.—then 0.2 cc. (per lb. of body weight) as above.

1. Schluger, J. et al.: Am. J. Med. Sci. 233:296, 1957.
2. Bradwell, E. K.: Acta med. scand. 146:123, 1953.
3. Truitt, E. B. et al.: J. Pharm. Exp. Ther. 100:309, 1950.

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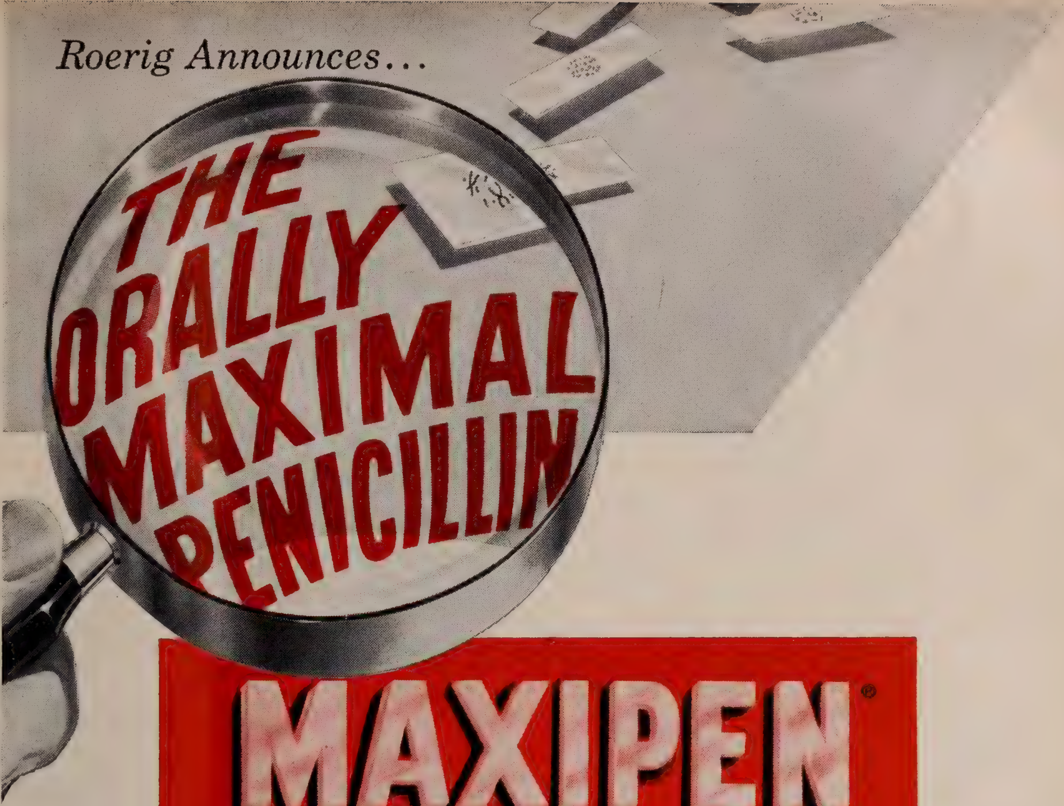

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α-phenoxyethyl penicillin potassium

THE ORALLY MAXIMAL PENICILLIN

Maximal Absorption

Acid stable, highly soluble

Maximal Blood Levels

Maximal Flexibility

May be administered without regard to meals. However, highest absorption is achieved when taken just before or between meals.

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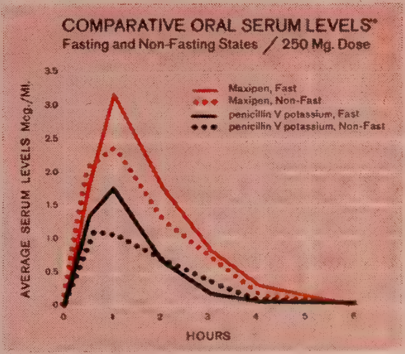
Indicated in infections caused by streptococci, pneumococci, susceptible staphylococci, and gonococci

DOSAGE: For moderately severe conditions, 125 to 250 mg. three times daily. For more severe conditions, 500 mg. as often as every four hours around the clock.

NOTE: To date, MAXIPEN has not shown less allergic reactions than older oral penicillins. Usual precautions regarding penicillin administration should be observed.

SUPPLIED: MAXIPEN TABLETS, scored, 125 mg. (200,000 units), bottles of 36; 250 mg. (400,000 units), bottles of 24 and 100 tablets. MAXIPEN FOR ORAL SOLUTION; reconstituted each 5 cc. contains 125 mg. (200,000 units), in 60 cc. bottles.



*Based on 3294 individual serum antibiotic determinations. Complete details available on request.

MAXIPEN, the orally maximal penicillin, is a triumph of man over molecule; a product of Pfizer Research

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meprobamate **plus** d-amphetamine... depresses appetite... elevates mood... eases tensions of dieting... **without** overstimulation, insomnia or barbiturate hangover.

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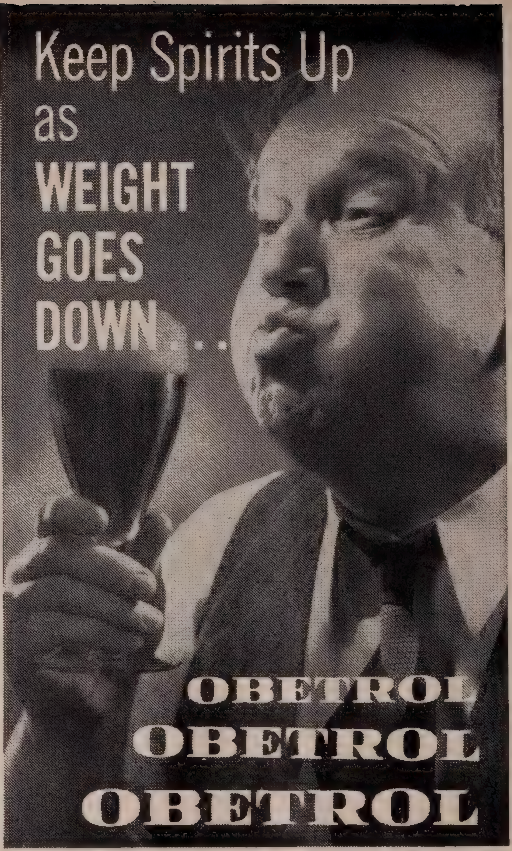

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new chemically improved penicillin which provides the highest blood levels that are obtainable with oral penicillin therapy

As a pioneer and leader in penicillin therapy for more than a decade, Squibb is pleased to make Chemipen, a new chemically improved oral penicillin, available for clinical use.

With Chemipen it becomes possible as well as convenient for the physician to achieve and maintain higher blood levels—with greater speed—than those produced with comparable therapeutic doses of potassium penicillin V. In fact, Chemipen is shown to have a 2:1 superiority in producing peak blood levels over potassium penicillin V.*

Extreme solubility may contribute to the higher blood levels that are so notable with Chemipen.* Equally notable is the remarkable resistance to acid decomposition (Chemipen is stable at 37°C. at pH 2 to pH 3), which in turn makes possible the convenience of oral treatment.

And the economy for your patients will be of particular interest—Chemipen costs no more than comparable penicillin V preparations.

Dosage: Doses of 125 mg. (200,000 u.) or 250 mg. (400,000 u.), t.i.d., depending on the severity of the infection. The usual precautions must be carefully observed with Chemipen, as with all penicillins. Detailed information is available on request from the Professional Service Department.

Supply: Chemipen Tablets of 125 mg. (200,000 u.) and 250 mg. (400,000 u.), bottles of 24 tablets. Chemipen Syrup (cherry-mint flavored, nonalcoholic), 125 mg. per 5 cc., 60 cc. bottles.

*Knudsen, E. T., and Rolinson, G. N.: Lancet *2:*1105 (Dec.19) 1959.

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a balanced
Hematinic Concentrate
combining all the best
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factors for treatment
in any anemia
amenable to
therapeutic
measures

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- pernicious anemia
- macrocytic anemia
- iron deficiency anemia
- megaloblastic anemias

Each HEMOZYME tablet contains:

Special Liver-Stomach Concentrate (containing Intrinsic Factor)	150 mg.
Vitamin B-12 with Intrinsic Factor Concentrate (U.S.P.)	½ Unit (Oral)
Vitamin B-12 Activity (Cobalamin Concentrate)	7.5 mcg.
l-Lysine	50.0 mg.
Iron (Ferric Citropyrophosphate)	40.0 mg.
Copper (Sulphate)	0.25 mg.
Folic Acid	0.2 mg.
Ascorbic Acid (Vitamin C)	75.0 mg.
Vitamin B-1 (Thiamin Mononitrate)	5.0 mg.
Vitamin B-2 (Riboflavin)	5.0 mg.
Niacinamide	50.0 mg.

TWO TABLETS SUPPLY:

Vitamin B-12 with the Intrinsic Factor Concentrate in the amount to produce the calculated response in patients with pernicious anemia in relapse (one unit) and also:

Iron	800% M.D.R.*	Vitamin B-1	1000% M.D.R.
Vitamin C	500% M.D.R.	Vitamin B-2	833% M.D.R.
Niacinamide	1000% M.D.R.		

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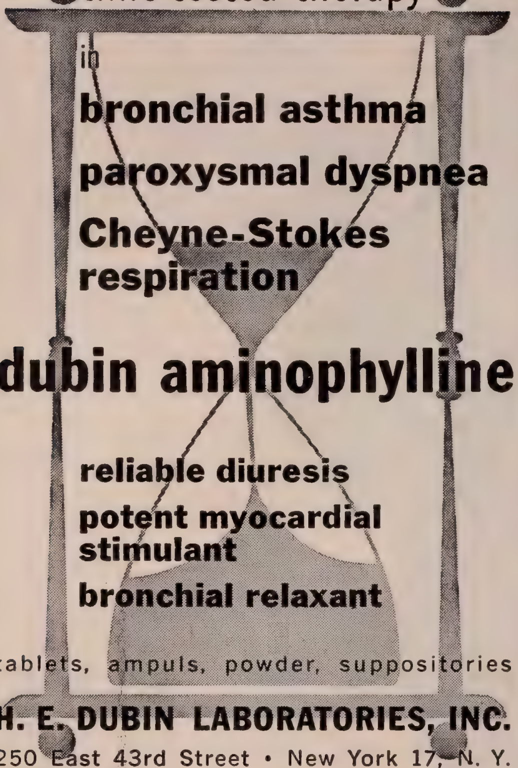

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relieves pain, spasm; improves function increases tolerance to exercise

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1. Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

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references: 1. Blanchard, K., and Ford, R. A., J.-Lancet, 74:433, 1954. 2. Cass, L. J., and Frederik, W. S., Am. Pract. Dig. Treat., 2:844, 1951. 3. Hayes, E. W., and Jacobs, L. S., Dis. Chest, 30:441, 1956. 4. Blanchard, K., and Ford, R. A., Clin. Med., 3:961, 1956. 5. Blanchard, K., and Ford, R. A., Rocky Mt. M. J., 52:278, 1955. 6. Boyd, E. M., et al., Can. M. Assoc. J., 54:216, 1946.

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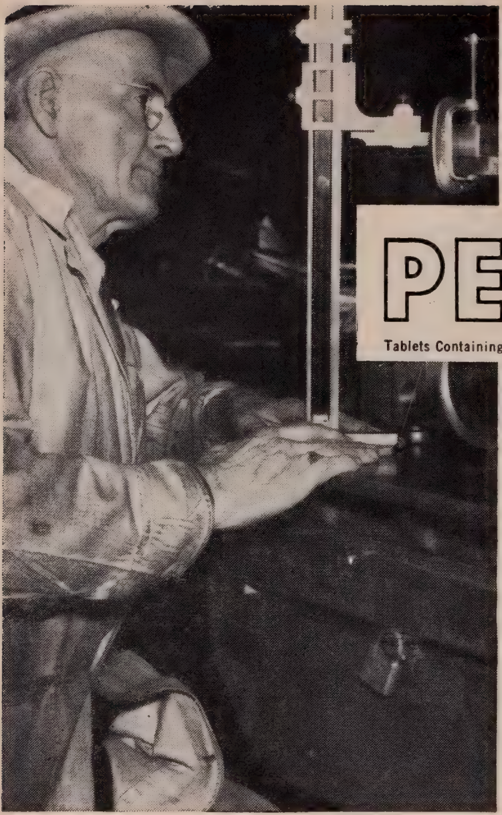

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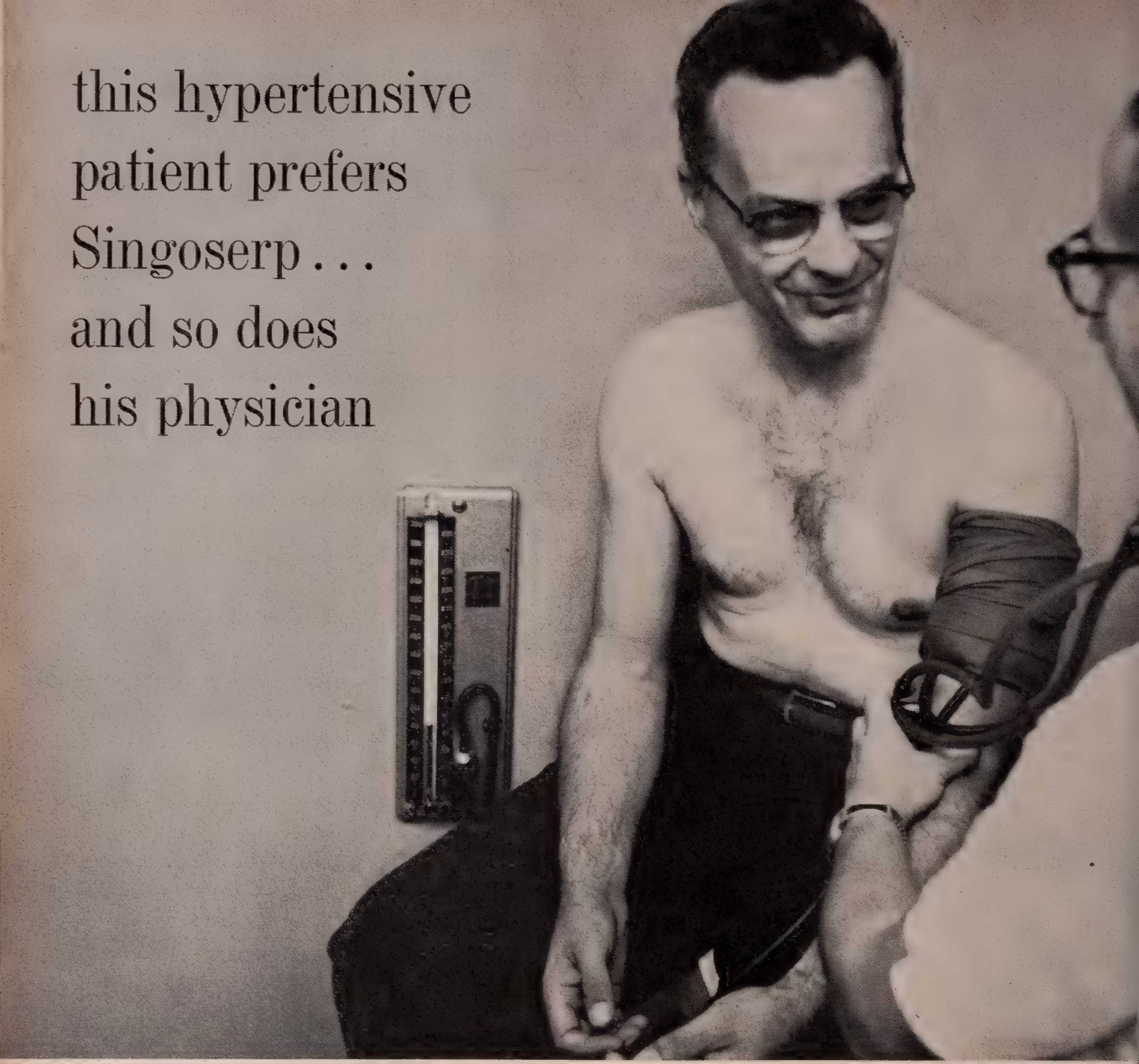
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*Rock, J.; Garcia, C. R., & Pincus, G.: *Am. J. Obst. & Gynec.* 79:758, 1960.

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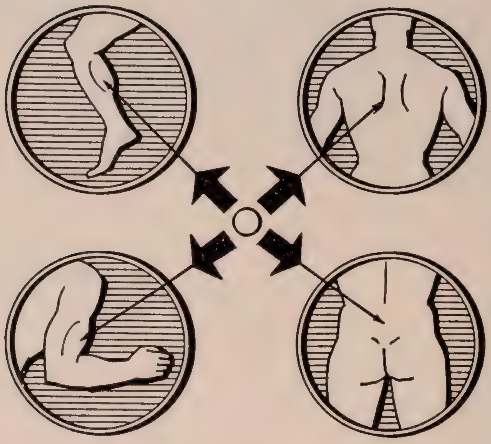

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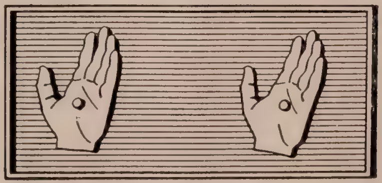

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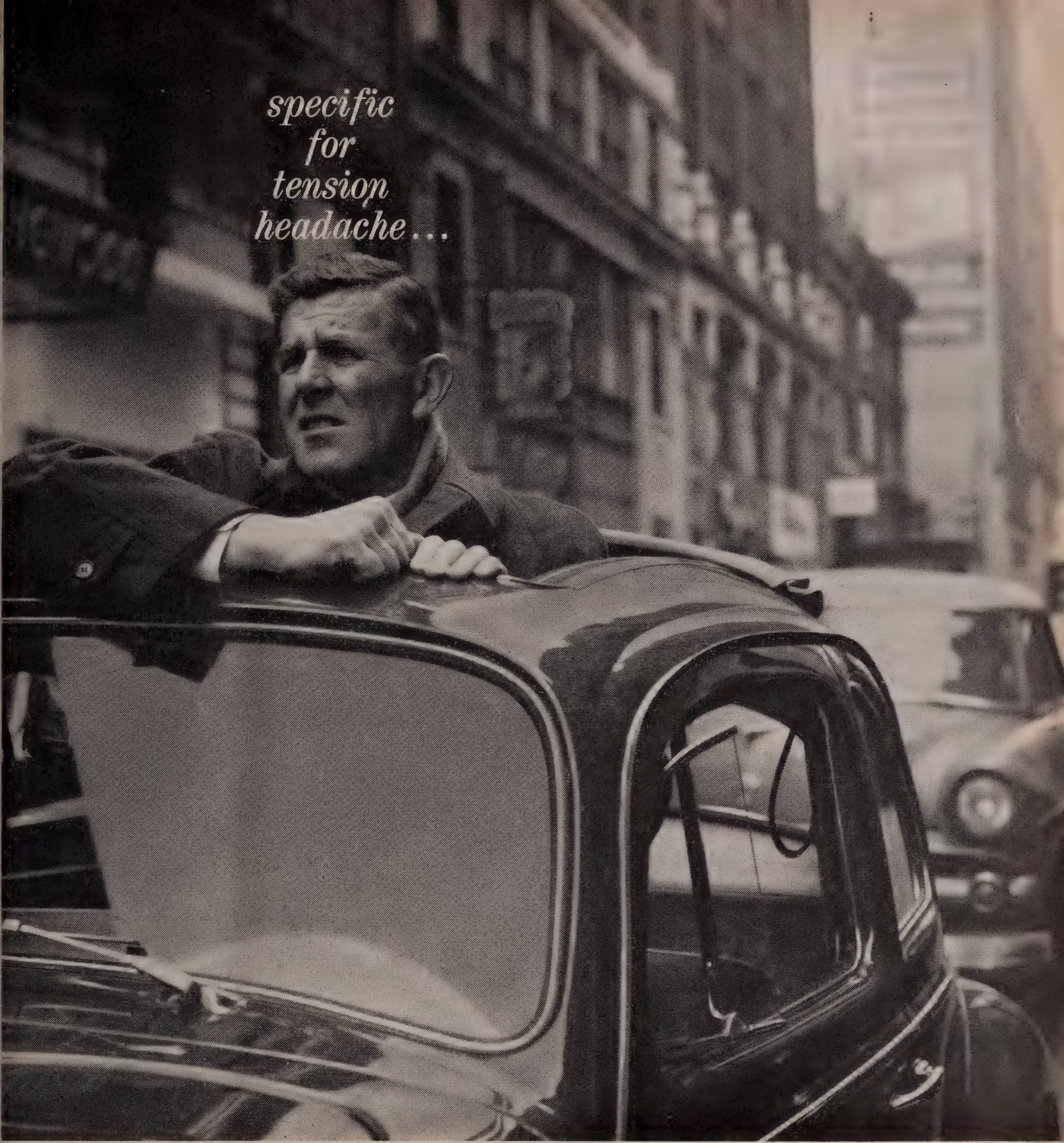

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Friedman, A. P., and Merritt, H. H.: J.A.M.A. *163*:1111 (Mar. 30) 1957.

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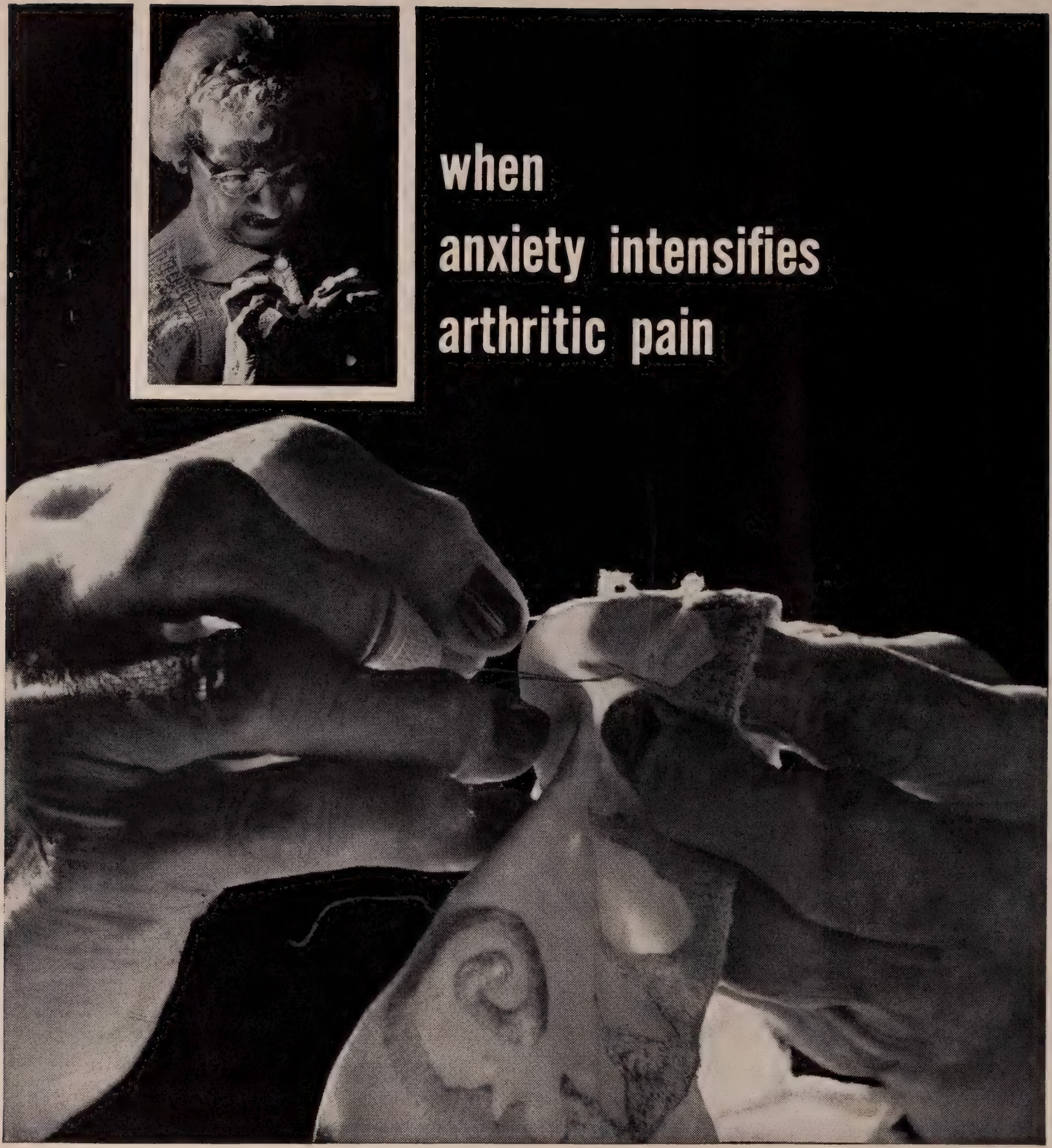

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EDITORIALS

National Diabetes Week in November

With National Diabetes Week from November 13 to 19, county chairmen of diabetes committees are urged to make plans to arouse interest in education and discovery of unknown diabetics by intensive testing of patients and supposedly healthy people.

Important as it is to have a week emphasizing the search for diabetics, it is becoming clear that continuing year-long emphasis will produce more results. Thus all the hospitals in New York State have been asked to urge their staff members to keep in mind the value of *postprandial* blood and urine sugar determinations of as many hospital admissions as possible. In this way a good percentage of the population could be tested in the course of a year. As is well known, early discovery of diabetes is a long step toward effective control and better health.

With New York State a strong leader in health matters in the nation and with the increasing frequency of diabetes among our older citizens, the importance of persistent efforts for detection becomes of serious moment.—C. B. F. G.

Reflections on the Image of American Medicine

Anyone who reads the slick prints today must have observed that every occupational group or institution is intensely preoccupied with its "image." Indeed, to speculate about one's image has become a contemporary obsession, in somewhat the same way that the self-examination of one's complexes and aggressions or the contemplation of one's navel has obsessed people at various times in the past.

This agonizing solicitude about our public images testifies to the grotesque effect of the public relations philosophy on our present-day values and motivations. For ours is a society so bemused with manufactured symbols and vested illusions that most of us are more concerned with manipulating our images than with becoming what we want people to think we are.

The medical profession, like every other group, has two images and back of both images, a reality. Our *interior* image is the picture we fondly indulge of ourselves, the picture we would dearly love to project on the public screen. Our *exterior* image, of course, is the picture we actually do register in the popular mind. Neither image, as a rule, exactly coincides with the reality of ourselves. But if either or both images depart too radically from actuality, we are likely to be in deep trouble.

Just as there are some physicians who treat the symptom rather than the disease, so there are some public relations practitioners who try to manipulate the image instead of improving the reality. A candid examination of one's popular image should suggest diagnosis and treatment of the subject, with assurance that a shinier reality will project a happier image.

Radio and television, some powerful labor unions, the natural gas industry, and most recently the pharmaceutical manufacturers all provide eloquent examples of what can happen to a powerful group when its social image is sullied by revelation of questionable realities.

The exterior images of personalities or groups in our frenetic society may be downgraded at varying speeds and by any one or a combination of causes, but the basic and inescapable fault is almost always a deep and elemental failure to match real performance with vaunted ideals.

What can we say of American medicine's popular image in 1960?

It is perhaps both a major strength and a dangerous liability to the medical profession that the nature of its mission and the purity of its aspirations have combined to produce, historically, an image of great nobility. The traditional picture of the physician is that of a learned and sacrificial man, who works all hours of the day and night, whose "prime object . . . is . . . service to humanity," and for whom "reward or financial gain is a subordinate consideration." But this ideal physician is an anachronism in an age in which the rest of us work feverishly (but only five days a week and from nine to five) in unabashed pursuit of the "quick buck"; and in a society where power, glamour and conspicuous consumption seem to make a mockery of humility, modesty, and the life of service.

To trace the myriad convoluted trends and circumstances that have altered and in my opinion tarnished the popular image of the modern physician would require at least a volume.

In this limited space, we will consider only one element, but, I think, a central one, in the deterioration of that image. I refer to the factor of remoteness, of the lack of personal involvement between patient and doctor. Compared to the emotional content of the doctor-patient relationship fifty years ago, one might almost characterize that relationship in our day as an estrangement.

Part of the price we have paid for the scientific benefits of specialization has been to separate physicians from one another and to circumscribe the interest and concern of each physician both with respect to the people as a whole and with regard to any one patient.

Science has given physicians so many instruments to test and treat disease, and the doctor's understanding of disease itself has so far outpaced his understanding of the patient, that the personality of the physician has gone into partial eclipse along with the art of medicine. Indeed, it seems that many people today respect and admire the apparatus and institutions of medicine more than they do the physicians who alone can give them any function.

All this is profoundly regrettable in what we all recognize as an age of insecurity, in which the truest definition of an optimist is one who thinks the future is uncertain.

The estrangement of medicine from modern society is remarkable in the political and social arena, too. With its intense inherent attachment to the principle of individual responsibility, and its insistence on the individual patient, rather than society, as the proper object of rehabilitation, medicine again finds itself somewhat out of touch with the dominant social philosophies of our times.

Thus there are radical differences between the ideals of the individual physician and those of his fellow workers in our affluent society, and there is also a radical conflict between the profession's social outlook and the popular ideologies of our day.

These conflicts pose some extraordinarily difficult problems from a public relations viewpoint. For it is one of the easiest tricks in the trade to portray the individual physician's attachment to individualism as blind selfishness, ignorant reactionism, and antisocial obstructionism.

We must all be realistic enough to admit that organized medicine's activities in the socioeconomic realm have not always been utterly devoid of crass self-interest. Medicine has been far too slow in recognizing the fact that modern medical care is now so highly respected and so universally coveted that it has become a basic human right, along with liberty, breathing, and the right to have a TV set. American medicine in the 1960's will undoubtedly confront some crucial issues, in which the man in the street will make the ultimate decisions. Whether or not he harkens to the voice of medicine, urging him to leave intact the basic freedoms under which physicians can continue to progress in scientific skill and can practice the art of healing for the direct and exclusive benefit of the patient—all this will depend on the image of the physician and of the profession as a whole that rests in the mind and heart of the average American citizen.

The image of the physician will be shaped and colored by his daily performance, by the qualities of dedication and consideration he displays in his daily rounds.

And it would appear that the average citizen's image of American medicine as a whole can be vastly enhanced not by any radical change of social policy, but by a better exposition of policy, and by a more skillful and imaginative public interpretation of the ideals and principles which have enabled American medicine to reach its present high level of effective service to ailing humanity.—J. E. B.

Medical Society of the State of New York
District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
I	May, 1961	...
II	October 26 and 27, 1960	Grossinger
III & IV	September 14 and 15, 1960	Schroon Lake
V	Spring, 1960	...
VI	September 28, 1960	Ithaca
VII	October 13, 1960	Corning
VIII	September 29, 1960	Jamestown
IX	May, 1960	...

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"They all experienced diminution or elimination of pain during treatment. Nine were entirely free of pain. Others were definitely improved but had occasional episodes of pelvic discomfort. . . . The improvement observed during treatment has generally persisted [during an average follow-up period of five months]. . . . Patients with the most extensive tenderness, nodularity, and symptoms had the best results."

The effect of Enovid in another study is described[2] as follows:

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The author[2] recommends that this therapy be continued for a minimum of five to six months if the pseudopregnancy is being effected to avoid operation. The side effect of nausea, which usually disappears within four or five days, may be diminished by starting with 5 mg. instead of 10 mg. of Enovid, by use of an antiemetic or by administering the drug with the evening meal or with milk or an antacid.

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2. Kistner, R. W.: Endometriosis and Infertility, Clin. Obst. & Gynec. 2:877 (Sept.) 1959.

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The Approved Public Health Laboratory System in New York State

JOHN J. CLEMMER, M.D., ALBANY, NEW YORK

(From the Bender Hygienic Laboratory)

In 1953 an ad hoc committee of the Committee on Public Health and Education of the Medical Society of the State of New York was appointed to review the pattern of the practice of laboratory medicine. It consisted of Theodore J. Curphey, M.D., Harry P. Smith, M.D., Gilbert Dalldorf, M.D., Victor Tompkins, M.D., and John J. Clemmer, M.D. Several meetings were held between 1953 and 1957. In 1954 Maurice Richter, M.D., replaced Harry P. Smith, M.D. The committee had the able asistance of John K. Miller, M.D., and others of the New York State Department of Health and the Medical Society of the State of New York. Reports of the committee were published in the New York State Journal of Medicine.[1] An extensive monograph, entitled "New York's Public Health Laboratories," based partly on the work of this committee, was published by Gilbert Dalldorf, M.D., in 1956.[2] From my experience as chairman of the Ad Hoc Committee on Medical Laboratory Practice and as director of an approved medical laboratory in New York State performing public health laboratory service on a contract basis, I have prepared this review and evaluation of New York State's public health laboratory system. However, I wish to emphasize that I alone am responsible for the views which I express.

The approved public health laboratory system in New York State seems a very fitting subject for an Augustus B. Wadsworth Lecture, for Dr. Wadsworth, more than any other man, deserves the credit for the success of this system. It has been my good fortune to know this distinguished, pioneering scientist and to observe this system closely in operation for over twenty-five years. The approved laboratory system in New York State perhaps began in 1914 with the revision of the Public Health Law, the appointment of Herman M. Biggs, M.D., as Commissioner, and the establishment of a Public Health Council.[3] In 1915 the first certificates of approval were issued to laboratories. In the beginning these were for just a few types of examinations. In 1918 a ruling by the Public Health Council requiring physicians to submit specimens from certain reportable diseases to approved laboratories added a stimulus to the system. From the beginning Dr. Wadsworth adopted the very wise policy that approval of laboratories should be voluntary and should not be confused with licensing of laboratories.

In 1932 the Public Health Council es-

Presented as the 10th Annual Augustus B. Wadsworth Lecture at the New York State Department of Health, Division of Laboratories and Research, by invitation of the Division of Laboratories and Research and the New York State Association of Public Health Laboratories, Albany, October 15, 1959.

TABLE I.—NUMBER OF APPROVED LABORATORIES IN NEW YORK STATE

	1925	1935	1945	1955
Approved laboratories	109	116	130	155
State-aided	16	30	40	49
Non-State-aided	70	66	73	78
Other	23	20	17	28
State aid grants in thousands of $	76.5	117.8	212	1,072

tablished a very far-sighted regulation to the effect that, "The qualifications for directors shall include an adequate knowledge of pathology and bacteriology, and, subsequent to graduation, at least four years training and experience in pathologic and bacteriologic work, approved by the Public Health Council."[3] It is of interest to note that these are essentially the qualifications now required for certification by the American Board of Pathology, which was organized in 1936.[4] Thus, board-certified pathologists directing medical laboratories throughout the country now have the minimum qualifications specified by this Public Health Council ruling in 1932. It was Dr. Wadsworth's belief that if a laboratory was under the direction of a well-qualified pathologist, that pathologist should have the authority and responsibility for selecting the technical personnel working under his direction.

Another resolution of the Public Health Council was as follows: "Resolved, that diagnostic laboratory service being imminently concerned with the practice of medicine, the State Commissioner of Health be advised that a laboratory offering diagnostic service should not be approved unless, in addition to meeting other conditions which may be prescribed, the person actively in charge is licensed to practice medicine in the State of New York."[3]

In 1923 the State offered financial aid to approved county and city laboratories. This was liberalized by an amendment in 1948. This system encouraged the establishment of excellent local medical laboratories throughout New York State. It brought the services of well-qualified pathologists to the practitioner of clinical medicine in most of the areas of this State. During these early days in other areas of the United States pathologists tended to be concentrated in medical schools or in large metropolitan areas. The public health laboratory service provided by most of the other state health departments was cen-

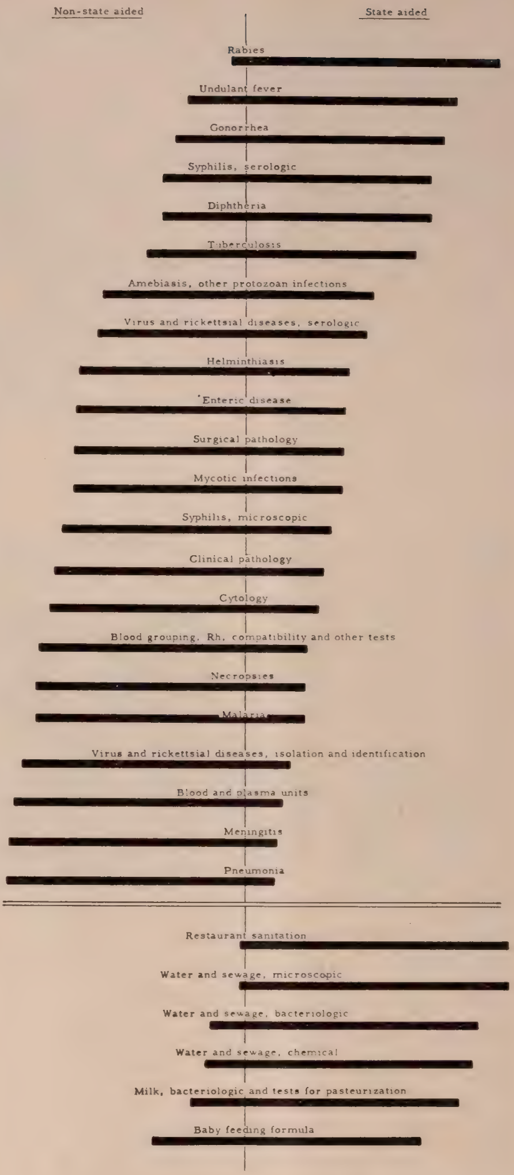

FIG. 1. Relative percentage of specimens examined in non-State-aided and in State-aided laboratories, 1955. (*Reproduced from Dalldorf*[2])

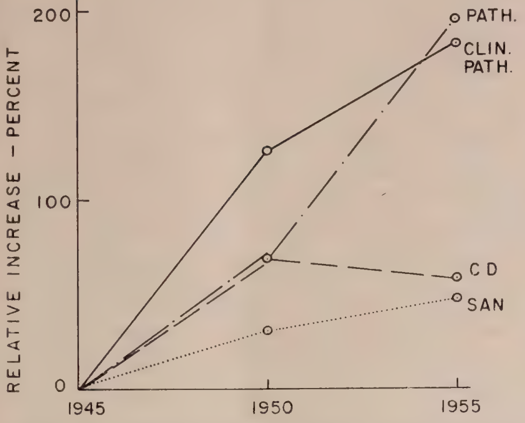

Fig. 2. Relative increase in number of specimens by category in all approved laboratories. Previous to 1945 figures represented number of examinations rather than number of specimens. (*Reproduced from Dalldorf*[2])

tralized, and laboratory service for the control of communicable disease and environmental sanitation was not readily available at the local level. The New York State system resulted in a rapid increase in the establishment of State-aided local laboratories during the fifteen years from 1925 to 1940.[2] Liberalization of State aid in 1948 did not result in another rapid increase in the number of laboratories receiving financial support from the State (Table I).

Originally, approval was concerned only with examinations related to infectious disease and sanitation, and tests of this type occupied much of the time of these State-aided laboratories. However, they were not restricted to these activities, and since they were often located in hospitals, they provided all types of medical laboratory service. During this same period other approved laboratories not receiving State aid provided extensive laboratory service, much of which was in the public health category (Fig. 1).[2]

During the last thirty-five or forty years there has been much change in the pattern of disease and with this a change in medical laboratory practice. Most communicable infectious diseases have been brought under control and have greatly diminished. Cases of diphtheria and typhoid fever are a rarity. Although serologic tests for syphilis are still very frequent, positive results are found in a fraction of 1 per cent of the specimens examined. The premarital test for syphilis has probably outlived its usefulness. As a corollary, degenerative and neoplastic diseases have increased. At the same time the many advances in the field of clinical pathology have made the services of specialists in this field of increasing importance in the practice of medicine. Specimens classifiable in clinical pathology, such as biochemical examinations, procedures in hematology, tests related to blood transfusion service and isoimmunology, procedures in microbiology and serology other than for evidence of communicable disease and the control of environmental sanitation, examinations concerned with pathologic anatomy, and various miscellaneous clinical pathologic procedures including pregnancy tests, metabolism studies, and uses of radioisotopes have more than doubled in the last ten years. Tests for evidence of communicable disease increased only slightly from 1945 to 1950 and then began to decrease.[2] Probably examinations of this type could have been further curtailed, for positive results were seldom obtained. Tests for the control of environmental sanitation have shown a gradual increase over the years, probably in relation to population increases (Fig. 2).

It is apparent that the approved public health laboratory system succeeded in developing a wide network of excellent pathology services at the local level throughout New York State several years before most states had a comparable service available. State aid was undoubtedly an impetus to this development. In the beginning the chief concern of State-aided laboratories was to provide service for the control of communicable disease and environmental sanitation, although the laboratories were not limited to these fields. Approved non-State-aided laboratories were engaged in similar activities. In the booklet entitled "City and County Laboratories, Guide for Officials and Boards of Managers,"[5] it is stated, "The purposes for which State aid to cities and counties is granted include assistance in providing laboratory service adequate to their needs by granting funds to extend local facilities, which should supplement, not supplant, private enterprise."

It is now pertinent to examine the fiscal policies under which State aid operates. State aid may be provided to the extent of 50 per cent of the net expense incurred in operating an approved county or city laboratory. In counties having a county health department, this may be as much as 75 per cent. Net laboratory expense varies greatly, depending on the assessment of fees for laboratory services. The appropriating body, usually the board of supervisors, determines whether fees shall be charged or laboratory services shall be rendered free. In some instances no fees are charged, while in others there are charges for certain types of examinations on the grounds that they are for the individual's own benefit and have no connection with the prevention of communicable disease or the condition of the general health of the community. It is the duty of the board of laboratory managers, appointed by the board of supervisors, to establish a schedule of fees and to amend such schedules from time to time as may be deemed necessary or advisable.

Apparently this liberal policy of State aid was justified, at least at its inception, as a means by which the State might finance public health medical laboratory service, providing such service at a local level and at the same time encouraging complete medical laboratory service for all areas of the State. Another justifiable responsibility of the State that was met by this program was the provision of medical laboratory service to the indigent or welfare patient.

Since the beginning of this program a number of new factors have appeared, and a reappraisal of policy is indicated. First is the changing pattern of disease and with this changes in the type of medical practice. As has been mentioned, infectious disease, especially of a communicable or contagious type, is very much on the wane. Conversely, degenerative and neoplastic diseases are on the increase. The ready availability of the services of a well-trained pathologist is of equal or greater importance with reference to degenerative and neoplastic diseases than it has been with the infectious disease group. Diagnosis and prognosis of almost every hospitalized patient is dependent to some extent on the practice of the pathologist. Indeed, the course of the treatment is often regulated to a large extent by the observations and consultations of the pathologist. New laboratory procedures are continually being devised and introduced into our practice of medicine. The Bender Laboratory performed approximately 60,000 examinations in 1933, while twenty-five years later in 1958 this figure had increased to 591,603 examinations. During this period certain procedures were discontinued, others were modified, and many entirely new types of examinations were provided, so that not only was there a great numeric increase, but the variety and complexity of the procedures had also increased.

This growing importance of the specialty of pathology is of course not a local situation but is true throughout the country and throughout the world. Adequate programs for the care of the sick in present-day medical practice must always provide for competent pathology service. Thus, there is a growing demand for physicians who have specialized in pathology. Unfortunately, the demand is greater than the supply, but it is being met by the establishment of more and more approved resident training programs in pathology, and the number of physicians who are being so trained is increasing by about 10 per cent each year.[6] National societies for pathologists recognize the need for continuing postgraduate education. The American Society of Clinical Pathologists has a well-organized postgraduate training program with councils in chemistry, cytology, forensic pathology, hematology, immunohematology, microbiology, and radioisotopes and annual seminars in pathologic anatomy, which provide workshops and tutorial courses for pathologists who have already completed approved postgraduate training programs in their specialty. Thus, pathology as a specialty in medicine is now well recognized and no longer needs the stimulus of State financial support. Hospitals, physicians, and even patients, who frequently do not see the pathologist, recognize the value of his services and demand them.

The increasing use of insurance to pay for medical care is an important factor to be considered. The great majority of patients who are hospitalized today have prepaid for most, if not all, of their medical care by insurance. The Blue Cross and Blue Shield plans have had a tremendous growth. Much could be said concerning the relative merit of payment of the services of the pathologist by Blue Shield rather than by Blue Cross, as is frequently the case. A lengthy discussion of this problem would be irrelevant, but it might be mentioned briefly that provision of adequate pathology service on an outpatient basis through Blue Shield would undoubtedly reduce hospitalization and, hence, reduce the over-all cost of medical care and the combined premiums necessary from Blue Cross and Blue Shield to provide this care. Furthermore, those patients who carry prepaid medical insurance and then receive their medical laboratory service from a tax-supported institution are in a very true sense paying for that service twice. It is unnecessary for the State-aided laboratory to provide the service without fee, for the insured patient has made provision for this expense. Also the growth of insurance plans has reduced the number of indigent and welfare patients to a very small minimum. Service to these indigents is usually provided without cost by physicians. If their expense must be borne by a government agency, then it should be by a welfare department. There appears to be no valid reason why tax funds should be used to supply the services of the pathologist when the patient, either from his own funds or by means of insurance, pays the other members of the medical team who are managing his case. If the disease is communicable and hence the patient is a menace to the community, it appears reasonable that its detection should be at public expense.

This poses the problem of defining the limitations or scope of public health laboratory procedures which should be financed from tax funds. This point deserves special emphasis. In a broad sense the health of everyone is a matter of public interest. The strength and success of a community, state, or nation is dependent in no small degree on the health of its individuals. Medical care is of course only one contributing factor. Proper nutrition and adequate clothing and housing are of obvious importance. The American free enterprise system has successfully permitted individual initiative to provide most of these necessities. Government regulation has at times been necessary and advantageous. It is difficult to arrive at a concise definition of public health, especially as it relates to the services of the pathologist or to that part of his service which should be at government expense. The Ad Hoc Committee for the review of the pattern of the practice of laboratory medicine defined the field as follows: "In the absence of a clear-cut and generally accepted definition of public health laboratory services, it is recommended that such services should include tests necessary for the control of communicable disease. Such tests are named and described under the title, 'Methods for the Examination of Specimens for Evidence of Certain of the Communicable Diseases,' form LR 18 8-11-52-400. Tests for control of environmental sanitation also should be provided. These are specifically described under the title, 'Methods for Examinations Concerned with Sanitation,' form LR 18-a 10-20-53-400 (3-OMO-859). The committee agrees that the medical laboratory procedures referred to in these New York State bulletins are definitely in the realm of the public health laboratory."[1]

The definition should be amended, as recommended by Dalldorf, to include laboratory examinations required in the identification of virus infections and the mycoses.[2] It would seem justifiable that examinations in these categories should be provided at public expense. Dalldorf further recommends that the definition of public health laboratory services be enlarged to include "those blood group determinations useful in the recognition and prevention of blood group incompatibilities, and the provision of histologic examinations of tumors, wherever satisfactory service is not provided locally." He continues, "We may reserve for the future such extensions in the list as the growth of knowledge and changing conditions will justify."[2] These latter categories, i.e., examinations concerned with isoimmunology and the conduct of transfusion services and tests for the diagnosis and identification of neoplasms, appear to be of more interest to the individual patient concerned and less to the community as a whole than the other categories included in public health laboratory procedures. No one would question that competent medical laboratory service should be readily available to protect the health of individuals who require the aid of a pathologist skilled in these fields. However, competent and reliable pathologists nearly always are available in other than public health laboratories to provide these services.

It may be pertinent to point out that other forms of medical practice inherently concerned with the individual patient are not closely supervised or regulated by government or public health agencies. Surgical procedures are an obvious example. Organized medicine has with increasing success regulated the practice of members of the medical profession. This has been done by accreditation committees, certifying boards, tissue committees, hospital audit committees, credential committees, boards of censors, and others. This is not to argue against the voluntary approval program of the New York State laboratory system. However, it should rarely, if ever, be mandatory except perhaps with reference to that type of laboratory service which should be provided at public expense. Here the governmental agencies have a natural right and duty to inspect that for which tax funds are being spent. Also it is sound and reasonable that if medical laboratory services are important and necessary and can be provided in no other way, then a government agency should provide this essential service.

Pathologists, being physicians, are subject to the same legal rules and ethical principles as all other licensed physicians. They also are entitled to the same rights and privileges. Inequities arising at the expense of the pathologist will discourage competent individuals from entering this field and inhibit the progress of medical laboratory practice. It has been emphasized that pathology is assuming more and more importance in the practice of medicine. In other areas of the country this growth in the practice of pathology has been accomplished to a large extent by pathologists in private practice. These pathologists have had control of the income received for clinical pathology services. They have been in a position to apportion this income equitably for the physical facilities of the laboratory, including equipment, maintenance, and supplies, for administrative and clerical staff, and, finally, for professional staff, including both physicians and medical technologists. This happy state has resulted in the income received for patients' medical laboratory services being used for that service. It has avoided the diversion of laboratory income to other activities often completely unrelated to the laboratory. The wise use of such income should lead to

TABLE II.—Distribution and Increase in Number of Pathologists

Diplomates in Pathology	Number			Per Cent Increase		
	1951	1955	1959	1951 to 1955	1955 to 1959	1951 to 1959
Upstate New York	85	117	136	37.6	16.2	60.0
Metropolitan New York	168	197	279	17.2	41.6	66.0
New York State	253	314	415	24.1	32.2	64.0
U.S.A.	1633	2431	3480	48.8	43.1	113.3

better pathology practice and perhaps to lower laboratory fees. This situation might also be expected to attract more young physicians into the specialty of pathology.

It is of interest to note that in 1951 there were 85 diplomates of the American Board of Pathology practicing in upstate New York and, in 1959, 136, an increase in this eight-year period of 60 per cent. Most of this increase occurred during the first four of the eight years.[4] In the entire United States in 1951, there were 1,633 diplomates of the American Board of Pathology and, in 1959, 3,480, an increase of 1,847 or 113 per cent. This increase had been fairly steady and progressive at the rate of about 10 per cent each year (Table II).[6]

These figures would appear to indicate that pathologists are increasing in number more rapidly in other areas of the country than in upstate New York. It is difficult to draw valid conclusions from these figures for a number of factors are involved. One is inclined to think that these data indicate that opportunities in pathology are greater in other parts of the country. However, there is little doubt that pathology service was more widely established in New York State at an earlier date than in most other states. Thus, the opportunities for expansion in this area were lessened. The fact remains, however, that it is becoming increasingly difficult to provide professional staffs in our State-aided laboratories in spite of considerable increase in financial remuneration.

The position of the medical technologist in our approved laboratory system is worthy of comment. Although Dr. Wadsworth did not favor a policy of licensing or approving the technologists serving in local laboratories, in the belief that the director was in a position to determine whether or not his staff was competent, Dr. Wadsworth had a high regard for the value and professional service of individuals in this group. Today, even more than in the past, the pathologist needs the assistance of medical technologists for the performance of the numerous and diverse laboratory procedures which he must supply. Beginning in 1961 the Registry of Medical Technologists will require that candidates for the M.T. degree must enter a three-year college course which will be followed by a minimum of twelve months of approved medical technology training. These courses will usually lead to a bachelor's degree.

Emphasis is being placed on continuing education of medical technologists. Pathologists must continue to encourage and assist medical technologists in postgraduate education. Medical technologists might well take a more active part in the program of the New York State Association of Public Health Laboratories. Their professional status should be recognized and their financial remuneration improved. This too might be achieved more successfully if the pathologist had both professional and fiscal control of his laboratory practice.

It was mentioned earlier that assessment of fees by State-aided laboratories was at the discretion of the appropriating body. In county laboratories this is the board of supervisors. Fee schedules have been the province of the board of laboratory managers. Many State-aided laboratories have quite properly assessed fees for laboratory procedures of primary benefit to the individual patient. In these laboratories

TABLE III.—ALLOCATION OF STATE AID DOLLARS PER CAPITA, SELECTED LABORATORIES*

Laboratory	Dollars per Capita
A	0.63
B	0.00
C	0.66
D	0.66
E	0.19
Weighted mean	0.15

* Based on 1953 State aid; 1950 census.

fees collected for clinical pathology, hematology, chemistry, and similar tests have at times been almost sufficient to meet the total expense of the laboratory. Under these circumstances the public health laboratory has required little State aid or local government financial support, and the private patient has paid the expense of the public health laboratory service. It seems only proper that tax funds should have been used to defray the cost of those public health laboratory procedures which were provided free to patients by these laboratories. This tax income, added to fees collected for tests of primarily individual benefit, could have been used advantageously in the operation of these laboratories. Other State-aided laboratories have provided complete laboratory services, including the usual public health laboratory procedures as well as various types of clinical pathology, completely without fee. In such localities the amount of State aid and local government financial support has necessarily been considerable. This has resulted in a very inequitable distribution of State funds (Table III).

In a letter dated August 21, 1959, to directors of city and county laboratories, Albert Harris, M.D., stated, "Governor Rockefeller is raising taxes and cutting State expenditures in order to put State finances on a pay-as-you-go basis," and he pointed out some of the inequities that exist in State aid. He concluded by saying, "If State aid can be controlled equitably, we may hope that no radical change will be made. If you consider that the financial policies of your laboratory or laboratories are vulnerable, please bring the matter up at the next meeting of your board of managers so that recommendations may be made to your local appropriating body."[7]

Other fiscal problems that beset the State-aided laboratories have to do with the collection of fees by hospitals from hospitalized patients for services which the laboratories provide. Municipal laboratories are not specifically authorized to have charges collected in this manner. Also nothing in the law binds hospitals to the fee list established by the municipal laboratory board of managers. Corrective legislation is needed.

It was the opinion of the Ad Hoc Committee that many of the difficulties currently faced by the New York State system of approved public health laboratories could be corrected if government agencies contracted with local approved laboratories for that public health service which the agencies should provide without fee to the patient. This presupposes that a satisfactory definition of such public health laboratory service can be established. An attempt has been made to provide such a definition.

Contracts for public health laboratory service should be negotiated in a businesslike way, preferably with the director of a local approved laboratory. In accordance with the concepts of Dr. Wadsworth, this laboratory should be under competent medical direction and should be capable of providing extensive and complete medical laboratory service. Government control need be concerned only with that part of the laboratory service covered by the contract. The contract could be based on a fee schedule in which fees for tests had been computed from studies of the cost of performance of such tests. Individual contracts might also be for an annual stated amount for specified minimum and maximum amounts and varieties of laboratory service. Whether or not the financial payment was reasonable, whether or not the arrangement was in the public interest, and whether or not public funds were adequately safeguarded would be readily apparent from past experience with costs in State-aided laboratories providing similar professional service under close government scrutiny. Surely, it would seem that the public interest and public funds would be as adequately safeguarded in a contractual arrangement between a government agency and a pathologist supplying professional services as it would be in an arrangement between a government agency and a commercial supplier or contractor.

Under this plan for government contract with a local approved laboratory for public health laboratory service as defined, the local approved laboratory would be free to provide other laboratory service on a private enterprise basis. In many instances it might follow that the pathologist-director, when he ceased being a full-time salaried government employe, would change to a salary arrangement with a nongovernment institution for the clinical pathology which was not public health laboratory service. It would be hoped, however, that the pathologist would eventually be freed from a salary arrangement and could develop his laboratory practice on a fee-for-service basis, for, as previously mentioned, this independence of the pathologist should lead to better clinical laboratory service.

In conclusion, as stated in the Ad Hoc Committee report of December 16, 1954, it appears that a reappraisal of the New York State program of State aid to local laboratories is in order.[1] Government units, both local and State, in conjunction with their public health departments, should provide public health laboratory service without fee. Such services might satisfactorily be supplied by contract with well-qualified pathologists directing local medical laboratories. By limiting use of government funds in this way, a more uniform and efficient public health laboratory service should be provided throughout the State. It should also promote the return of the practice of clinical pathology to its proper relationship with the other specialties in the practice of medicine. A gradual reapportionment of State funds to local approved laboratories should be inaugurated in line with the above principles.

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Women Have Weaker Eyes Than Men

Women have weaker eyes than men, according to *Patterns of Disease,* a Parke, Davis & Company publication for the medical profession.

Approximately 48 per cent of women in the thirty to thirty-four year age groups have defective vision compared to only 42 per cent of men. In the forty to fifty year age group the disparity between the sexes is even more marked. At age forty-five, for example, 57 per cent of men have poor vision compared to 69 per cent of women—a difference of 12 per cent.

Around fifty years old, though, the gap narrows—about 76 per cent of women, and 73 per cent of men, have defective vision.

Anesthetic Management for Basal Ganglia Surgery in Patients with Parkinson's Syndrome

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ANESTHETIC requirements for basal ganglia surgery are somewhat different from those for other neurosurgical procedures. Patients with Parkinson's syndrome who are treated by means of basal ganglia surgery undergo pneumoencephalography immediately prior to the surgical procedure, and the lumbar route with the patient in the sitting position is used.

Roentgenographic localization per se of the cannula is often of insufficient exactitude for maximum physiologic relief because of the variability of the intracerebral structures. The ability of the surgical team to keep in contact with the patient throughout the operation is of paramount importance. This permits an objective, clinical evaluation of the surgical intervention by the surgeon and by the patient as well as of the subjective changes that are felt by the patient.

Explosive anesthetic agents are contraindicated because of the use of an electrocautery and of radiologic equipment. Intubation is not employed in order that verbal contact with the patient may be maintained. Accordingly, a nonexplosive anesthetic technic combining local analgesia with intravenous medication and resulting in partial to total amnesia-analgesia has been employed, and it has been successful in over 1,000 patients.

This paper is limited to a presentation of this technic for patients with Parkinson's syndrome since other neuromuscular disorders have been handled somewhat differently and our experience with them is somewhat less.

Anesthetic Regimen

Prior to the operation visits to the patient by the anesthetist are essential. They not only allow for a medical evaluation of the patient with emphasis on his neurologic condition, but they also provide an opportunity to discuss the forthcoming surgery in as much detail as may be appropriate to allay the patient's concern. No preanesthetic medication is given to the patient who has been given nothing orally for at least six hours prior to surgery. It is felt that closer adherence to the anesthetic requirements can be managed by the avoidance of preanesthetic medication.

In fact, only one drug, an ultrashort-acting barbiturate, is administered intravenously, and it is injected intermittently. The intermittent intravenous technic appears to offer advantages if the operating time is not excessive (approximately one and a half hours including the time required for pneumoencephalography). The barbiturate facilitates the injection into the scalp of a local analgesic agent at the beginning of surgery and the closure of the wound at the end of surgery when the local agent is no longer effective. The use of a local anesthetic agent permits a decrease in the required amount of barbiturate and allows for more ease in keeping in contact with the patient throughout the entire procedure.

It is rare for a patient to complain of discomfort during the operation. The anesthesiologist's presence can act as a nonpharmacologic tranquilizer to decrease the quantity of the barbiturate that is administered. This decrease may be remarkable,

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and an occasional patient has been lightly hypnotized. Time permitting, perhaps this would be the technic of choice for those patients who are amenable to hypnosis.

Anesthetic Procedure

An 18-gauge intravenous needle is inserted into the upper extremity. If the surgical procedure is for the relief of the left side (that is, the basal ganglia surgery will be performed on the right side), the needle is inserted into the right side since, in testing for improvement from the surgery, the right side would be handled less. We rarely make the insertion into the antecubital fossa, since the placing of the patient in the sitting position for the lumbar spinal tap and later in the supine position for the roentgenographic examination and the surgical intervention usually causes the arm to be bent and consequent dislodgment of the needle from the vein. The use of an arm board is clumsy. Moreover, we later wish the patient on request to raise his arms and bend them at the elbows, make a fist, spread the fingers, and so on.

Either a part of the forearm where twisting of it will not displace the needle or the back of the hand is used as the site for the insertion of the needle. It is helpful to administer $^1/_2$ to 1 per cent procaine intradermally with a 25-gauge needle, for this strengthens the unpremedicated patient's confidence in the preoperative assurances of the lack of pain and contributes to the probable feeling of only a sensation of pressure. Since most patients talk to each other about their surgical experiences and since they submit to surgery voluntarily, a satisfied patient can do much to diminish the fears of those who are in need of this surgical procedure.

The administration of the intravenous barbiturate depends on several factors. When in doubt as to the amount of the agent to be administered, the least amount is the rule. First, a sufficient degree of rigidity and/or tremor should be present at the time the balloon cannula is inserted into the basal ganglia. If this is not so, one should wait until the effects of the drug wear off; otherwise, it is difficult to decide what portion of the response is due to the surgery. The amount to administer, even if all the rigidity and/or tremor disappear at the time of administration, depends primarily on how long the surgeon will take to insert the balloon cannula. If in doubt, the criterion should be the constant presence of some rigidity and/or tremor.

Second, the comfort of the patient is of considerable importance, especially during the pneumoencephalographic procedure and the period of preparation for surgery. For the pneumoencephalogram small increments of drug may be required during the injection of air to decrease the resultant headache, which is generally transient. Most patients have very little discomfort since only 35 cc. of air (replacing approximately 20 cc. of cerebrospinal fluid) are used and the patient is placed immediately from the sitting to the supine position after the lumbar tap with no further turning.

The preparation of the patient for surgery involves the use of a local analgesic agent, such as thiamylal (Surital), not only for the suturing of the drapes and of the incision but also for the fixation of the head with a special head holder which incorporates a quick-release mechanism in the event of emergencies (for example emesis and intubation). These steps may require the administration of additional amounts of the drug. Amounts up to 1 Gm. of the agent have been administered.

If there appears to be any deficit from the surgery, further administration of the drug is rarely indicated. Most patients tolerate the closure of the wound without additional increments of the agent, particularly if they experience surgical relief of their condition, if they are told that they require no more anesthesia because of the need for evaluating their good results, and if they are assured that they may feel only a few pinpricks when the dressing is applied to the head.

Considerations in Management

Regardless of the amount of the drug that is administered, verbal contact with the patient should be maintained at all times for then the patient can state his subjective sensations. These statements may be invaluable. The patient may inform us that he feels like vomiting, that his arm is less tense or that it feels heavy, that he never could snap his fingers even before the disease, or that he has pins-and-needles sensations on the face or arm. Aphasia, dysphasia, dysphonia, dysphagia, and somnolence are other neurologic guides. These are further reasons for maintaining a verbal response to command. If slurred speech is present, it must be determined whether or not it is due to the barbiturate.

It is important to keep in contact with the patient during pneumoencephalography, for syncope and/or convulsive movements of short duration as well as emesis may occur and the patient's ability to cooperate at such times is helpful, especially if he is vomiting. The management of vomiting has presented no particular difficulty. The patient is told to breathe deeply and slowly (to counteract any shallow respirations from the intravenous barbiturate) and to open his eyes and mouth; he is frequently asked questions regarding his age and so on, to which he replies with slurred speech or in a drunken manner. To date we have not had a case of aspiration of vomitus. Although ultrashort-acting barbiturates have been implicated as a cause of laryngospasm, we have not seen a single instance of this in over 1,000 unpremedicated patients with Parkinson's syndrome who have been subjected to basal ganglia surgery.

We do not administer oxygen during pneumoencephalography or during the operation itself, because such oxygen intake complicates the holding of the head, obscures the responses of the patient, and makes the taking of the vital signs quite difficult and hazardous. Moreover, there is the possibility of gastric distention, especially if the patient is assisted in his breathing; even with the more comfortable nasal catheter this may result.

More important is the avoidance of obstruction of the patient's airway while the head is held for air to enter the cerebral ventricles. In these levels of amnesia-analgesia the patient raises his head to the stimulus caused by the injection of air and thus helps to counteract any airway obstruction. The maxilla, and not the mandible, should be pressed, with the head somewhat flexed and with the chin on the chest. Otherwise, obstruction may result, even in the conscious patient who is straining to clear his airway.

Elevations in blood pressure are more apt to occur from a pain stimulus, such as in pneumoencephalography (during which there usually is a classic rise). In pneumoencephalography this is especially so if the local analgesic agent is poorly placed or, as is more likely, the head is fixed before the agent can take effect. Coughing, vomiting, respiratory obstruction, or other such disturbances contribute to a rise in the intracranial venous pressure. Hypotension might occur from a toxic reaction to local anesthesia (which we have not witnessed in this series) or from a carotid sinus reflex (which we have noted only occasionally during cerebral angiography). Sudden postural changes and/or the intravenous administration of a small dose of a barbiturate agent to an arteriosclerotic patient may produce severe falls in blood pressure that may last for as long as half an hour. Rarely is there any change in the blood pressure or the pulse rate during the syncope that is seen occasionally during pneumoencephalography.

Perhaps the management of these patients may be termed pharmacologic hypnosis with the emphasis varying from the adjective to the noun, depending on the suggestibility of the patient and the ability of the anesthesiologist.

Summary

A sequence of steps for the anesthetic

management of patients with Parkinson's syndrome undergoing basal ganglia surgery has been presented. This anesthetic procedure has been found suitable not only for the operating room team but also for the patient. Postoperatively the patient may recall sensations of pressure but rarely of pain, and for the most part he is surprised at the comfort that he experienced during surgery. This in itself is good preoperative medication for any subsequent patient, since prospective surgical patients usually ask those who have undergone the procedure about the results. In our hands more than 1,000 patients have been anesthetized in this manner without any observed complications or fatalities due to the technic.

600 West 246th Street

Discussion

Vance Lauderdale, M.D., *New York City.*—In spite of the remarkable results obtained by Dr. Steen and his surgical colleagues with patients with Parkinson's syndrome, it seems unlikely that more than a few of us are likely to participate in many of the procedures that he has described. However, this by no means implies that we should regard what he has told us merely as a curiosity or as a blind alley of endeavor from which we can learn nothing. At first glance it may seem that Dr. Steen has thrown away all the existing rules of the game and written a new set of rules as a basis for this new procedure, but I think that a second look indicates that he has successfully applied established sound principles of anesthetic management to a new surgical problem.

Several questions are prompted by what we have heard. However, I would like to mention but two of them and then remark briefly on something that must have occurred to many of us as we listened to Dr. Steen.

First, Dr. Steen's use of a short-acting intravenous barbiturate when his patients complain of pain during these procedures rather goes against what most of us have found to bring the best results in what seem to be similar situations. There can be few of us who have not let ourselves be lured into giving such a drug under similar circumstances only to find ourselves either struggling with an active, disoriented patient or having to resuscitate one whom we have depressed too much. As a result of such experiences most of us, I believe, have come to feel that in these difficult situations an analgesic or a tranquilizing drug is preferable to a hypnotic drug. There is an understandable reluctance among many neurosurgeons to employ narcotic and related drugs, but I should have supposed that small intravenous doses carefully monitored by an experienced person such as Dr. Steen would be more efficacious than the barbiturate he employs and would be no more likely to produce undesirable side-effects.

Second, there seems to be an inconsistency in Dr. Steen's description of the procedure. At first he emphasized the importance of the patient being kept in contact with his environment so that the progress of the procedure might be evaluated. However, his comments on the management of airway obstruction would suggest that at some point in some cases this desirable contact is lost. One wonders if the patient who becomes obstructed is the rare exception or if, owing to the nature of the procedure, this is a fairly common complication. If it is rare, one should not quibble with Dr. Steen's choice of technic. However, if obstruction occurs frequently, one wonders whether or not endotracheal intubation might be desirable. Anticipating protests against the proposal to maintain wakefulness in an intubated patient, I would point out that a precedent has been set by the bronchospirometric procedure, whereby patients who are awake seem to endure endotracheal catheterization for considerable periods of time without significant trouble.

I think that it would be extremely unfortunate if the impression were gained that Dr. Steen is some sort of supertechnician for his surgical colleague. The fact that in the strict sense the procedures are done under local anesthesia in no way diminishes the importance of the anesthesiologist's contribution to their success. Traditionally we have a tendency to regard a procedure scheduled for local anesthesia as a break in our working schedule. We see it as a chance to relax—to reorganize our equipment for the next case, to make rounds, to catch up on paper work, to take a coffee break. All of these uses to which we put this time are no doubt good, but it may be that in the long run we can enhance our professional stature by making ourselves more available to help patients undergoing procedures under local anesthesia. We all are aware that surgeons are not alike in their skill in providing and operating with local anesthesia. Some inject accurately and with regard for the established concepts of neurology and pharmacology; others do so haphazardly and hopefully. Some need to have the patient "snowed" with premedication; others can calm the most excited patient with a few reassuring words.

Some are competent to deal with untoward reactions, overdosage, and related problems; others cry for help (or should) at the slightest suggestion of trouble.

As our ability to provide safe general and regional anesthesia for patients increases, an increasing decline in the number of surgeons with the experience necessary to give local anesthesia successfully is noticeable. To the extent that we are responsible for this deficiency, perhaps we will have to assume responsibility for providing other means of dealing with situations for which local anesthesia, for any reason, is desirable. Dr. Steen's presentation is an example of how we can do this.

ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. ANGRIST, M.D., *Chairman*
Committee on Prize Essays

Recent Advances in the Evaluation and Management of the Hemiplegic Patient

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Those of us who are privileged to have witnessed the transformation that has taken place during the past decade in the management of the hemiplegic patient can testify to the very dramatic nature of this change. Not much more than ten years ago the patient with a stroke received at best a few hours of life-prolonging medical services. Those patients who were fortunate to survive the acute episode were given rehabilitation care in the form of firm encouragement to leave the hospital. Many were inappropriately considered permanently and completely disabled and were transferred to nursing homes and other terminal facilities. These patients served as a reservoir for some of the dramatic restorations of function which were reported as rehabilitation services moved into these settings.

In contrast, at present most rehabilitation centers confidently quote a 90 per cent figure as the success level for the achievement of ambulation in hemiplegic patients. In a study conducted at our center of 232 stroke patients admitted to Metropolitan Hospital we found that about 66 per cent of the survivors recovered practically complete independence in ambulation and self-care with little or no rehabilitation effort.[1] In a similar study carried out in Glasgow an almost identical percentage of patients was reported as independent.[2] The percentage of patients considered to be fully dependent was significantly different in the two studies. In the Glasgow group, for whom no rehabilitation services were offered, 18 per cent were reported as fully dependent. Our study, which included full rehabilitation services, reported only 3 per cent as fully dependent. Although these studies are not entirely comparable, the startling difference in the end results is suggestive of the impact of rehabilitation.

The success of rehabilitation in hemiplegia depends on the application of a number of general principles of care with suitable modification as required by the individual nature of the hemiplegia syndrome. The purpose of this paper is to outline these principles of care.

Early Active Therapy

The initiating of rehabilitation measures early in the course of the stroke is of paramount importance for promoting recovery. In addition to the obvious advantages of minimizing such factors as deconditioning and deformity, early active therapy may well facilitate the reorganization of cortical function and thus enhance recovery.

Optimally, therapy in the form of attempts at achieving a suitable passive range of motion and bed positioning can be started during the acute phases. Active participation on the part of the patient is to be encouraged as soon as the clinical condition permits. There are no suitable criteria to determine how soon and to what degree such patient involvement should be encouraged. Some clinical factors which can serve to guide the practitioner include: (1) stability of the underlying disease process, (2) adequate cardiovascular reserve, and (3) adequate memory and orientation to permit active participation in the rehabilitation program. Since the clinical picture tends

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to change rapidly early in the course of recovery, there is a need for frequent re-evaluation to assure that the prescribed measures are related to the changes in the patient's condition.

Prevention of Deformity

Deformity in hemiplegia is produced mainly by the effects of spasticity, but it can result also from the unopposed influence of gravity. The most useful measure to prevent deformity is the early institution of therapy, and this includes the early mobilization of the patient. The tendency to develop deformity is significantly reduced in patients who are "up and about." For any patient threatened by deformity, prophylaxis by means of encouraging the passive range of motion and, where necessary, bracing are indicated.

Special attention is required to prevent subluxation of the shoulder. Early mobilization may encourage the development of this deformity because the traction effect of gravity may operate before sufficient spasticity has developed to maintain the humerus in its anatomic position. It is advisable that the arm be supported by a sling when the patient is out of bed. Such support should be continued until the return of active motion or the onset of spasticity in the shoulder muscles.

In the lower extremity the combined effects of spasticity and gravity may produce flexion deformity of the hip, flexion deformity of the knee, and equinovarus deformity of the foot. Unless daily efforts are made to maintain the joint range of motion, contractures can develop rapidly.

Restoration of Motor Function

The basis of the principle of the restoration of motor function is the concept that movement, and not muscles, is represented in the cortex. Therapeutically this means training the patient to stand and exercise by walking rather than attempting to produce active contraction of the hip and knee musculature in the supine position. Training in standing and walking is of special importance for the confused, disoriented, and incontinent patient. Often the presence of incontinence and confusion discourages the physician from prescribing active therapy, but activity in the form of ambulation and self-care is the most effective therapeutic means of overcoming these symptoms.

Early in the course of training in ambulation many patients require bracing of the ankle, some also of the knee, and a few even of the hip. With training, most patients can discard hip and knee supports, and many manage without a brace. In assessing the need for bracing it is important to evaluate the stability of the paretic limb and the patient's environment since physical stresses can vary considerably. For example, in one home climbing stairs may be a necessary daily activity, whereas in another an elevator may eliminate this physical stress.

The development of motor power in paretic muscles requires exercises against resistance. In the hemiplegic patient such exercises are not performed readily. Of interest is a recent report of the increase of muscle power in normal individuals by a single daily contraction held for only six seconds.[3] The force of such a contraction must be equal to two thirds of the muscle's maximum power. The effect of such a procedure in increasing the power of paretic muscles has not been established. If it is effective, the advantages are obvious. The increase in muscle power would be very helpful in promoting motor recovery in hemiplegia.

Spasticity and Contracture

Spasticity is an almost universal phenomenon in stroke. Severe spasticity, by preventing knee extension or by producing marked equinovarus foot deformity, may prevent training in ambulation. At present there is no satisfactory medical approach to severe spasticity. Pharmacologic agents have limited value. Because of the difficulty in predicting their effect, they must be evaluated in individual cases.

Recently, success in reducing spasticity by means of prolonged stretching of the spastic muscle has been reported.[4] However, in our program similar efforts have met with such limited results as to preclude the clinical application of this procedure. Surgery remains the one useful approach to spasticity, especially when deformity is present or is threatening. In selected cases tenotomy, neurectomy, and tendon transplants, separately or in combination, are effective. At the ankle such procedures can be combined with stabilization by arthrodesis, thereby eliminating the need for bracing.

After a fair trial of conservative measures surgery should be resorted to promptly because delay may permit the development of contractures. Contractures can always be expected in immobilized joints, especially in those immobilized by spasticity. The presence of pain may enhance the development of a contracture markedly. The combination of pain and spasticity requires special attention to prevent permanent deformity.

Progress in the control of spasticity may be looked for in the area of spasmolytic agents. Although those that are now available are generally ineffectual, it is hoped that future products will be more selective in their effects and reduce spasticity without reducing the power in normal muscle groups.

Kinesthetic and Perceptual Losses

An awareness has developed of the role of kinesthetic and perceptual losses in producing disturbed function. The patient with weakness or marked spasticity suffers some degree of disruption of his motor function. The patient with normal power and little or no spasticity but with kinesthetic sensory loss may find his motor function more radically disrupted. Hemiplegic patients with severe kinesthetic sensory loss are seldom encountered. They may appear dramatically with findings such as severe apraxia, denials, or body image disturbances. The use of visual cues usually serves to reduce the handicap and permits a measure of independence in ambulation. The role of more subtle kinesthetic sensory loss is yet to be assayed, but it is not unreasonable to speculate that such losses may contribute to the difficulty that some patients encounter in gait training.

The role of perceptual losses in hemiplegia is even less understood and less defined. A number of these losses have been detailed by us[5] and by others.[6] They include displacement of the horizontal and vertical axis and disorders of depth perception. Their effects in rehabilitation training have yet to be described. Again it is not unreasonable to speculate that these losses may be a factor in the continuing disability of the hemiplegic patient with adequate muscle strength and yet with very limited recovery of motor skills.

Aphasia

Aphasia is frequently seen early in the course of right hemiplegia. In most cases speech function tends to return spontaneously. However, the problem of aphasia is of significance in rehabilitation, as evidenced by the fact that every chronic disease facility has its quota of hemiplegic patients who are ambulatory and independent in self-care but who remain institutionalized because of a severe impairment of communication.

The role of speech therapy in promoting the recovery of speech function remains obscure. Many consider speech therapy to be of no value. In our experience speech therapy does provide the patient with opportunities for new learning. Such therapy should not be confined to the brief session with the speech therapist. All members of the professional staff can participate in the relearning process by encouraging the patient to participate in verbal communication. The patient must be urged to make use of whatever language skill is available. It is not uncommon for a patient to refuse to make use of his residual function because of the awareness of his inadequacies in speech production.

The participation of the patient in physical rehabilitation may also serve to promote the recovery of speech function. This belief is in line with the concept that learning in one area is enhanced by the skills attained in another. Efforts to improve speech function should be continued long after maximum motor recovery has been attained. Improvement can be observed even two years after the onset of the stroke.

Comment

The principles of care which have been elaborated have been gleaned from the collective clinical experience in the field of physical medicine and rehabilitation. They are suitable for most hemiplegic patients. Their general application need not be postponed because of the unavailability of the type of personnel who traditionally have been associated with the rehabilitation process. Any physician can implement the basic tools of rehabilitation at some level. It is gratifying to see that with each passing year care is being extended to more and more patients. It is safe to predict that within this decade very few patients with hemiplegia will be denied rehabilitation.

FIFTH AVENUE AT 106TH STREET,
NEW YORK 29

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Health Insurance Reaches New Enrollment High in New York State

The number of persons in New York State with health insurance reached a new high of 15,044,000 at the end of 1959, the Health Insurance Institute has reported. This was an increase of 1.8 per cent over the 1958 year-end total.

The report was based on the fourteenth annual Health Insurance Council survey of health insuance coverage in the United States, which revealed that nearly 128 million Americans, or 72 per cent of the total civilian population, were protected by health insurance as of December 31, 1959.

The survey of reports from insurance companies, Blue Cross-Blue Shield and other health care plans, disclosed that the number of persons in the State with hospital expense insurance increased by 264,000 during the year to reach a total of 15,044,000.

The number of persons with surgical expense insurance climbed from 13,200,000 at the end of 1958 to 13,806,000 at the end of last year. Persons protected by regular medical expense insurance, which helps pay for doctor visits for nonsurgical care, increased from 9,151,000 to 10,228,000.

Helminths of Dogs and Cats as Potential Sources of Human Infection

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(*From the Wellcome Research Laboratories*)

In recent years there has been an increase in interest in the parasites of dogs and cats which can be transmitted to man.[1-3] Toxocara canis and T. cati, large roundworms of the dog and cat respectively, are responsible for visceral larva migrans, especially in children. There is a possibility that another roundworm of these animals, Toxascaris leonina, may cause visceral larva migrans, but further evidence is required. Cutaneous larva migrans, or creeping eruption, is due to the penetration of human skin by infective larvae of three species of hookworm found in dogs and cats: Ancylostoma braziliense, A. caninum, and Uncinaria stenocephala. The first species is the most common source of infection, but the latter two species may be responsible at times. In addition to these species, several others found in dogs and cats may infect man. They are: Strongyloides stercoralis, the threadworm; Trichuris vulpis, the dog whipworm; and Dipylidium caninum, the double-pored dog tapeworm.

Procedure

During the past four years 1,707 adult dogs and cats from New Jersey and 60 registered beagle puppies from two New York kennels have been examined for intestinal helminths. Stool examinations were done with the zinc sulfate flotation method, using a solution with a specific gravity of 1.2, rather than with the usual 1.18, because the stronger solution floats many cestode and trematode eggs in addition to nematode eggs and larvae.

Results

The findings from the stool examinations are summarized in Table I. Hookworm infections were more prevalent in cats than in dogs. The incidence in puppies was about four times and in cats about three times that of roundworm infections of adult dogs. The most common nematode infection of dogs was whipworm, which occurred in about 40 per cent, but nearly half the dogs harbored Dipylidium caninum, the double-pored dog tapeworm, which is found occasionally in children. Strongyloides stercoralis, a parasite of man, was encountered in one sixth of the puppies, but was not found in any of the adult dogs. Approximately half of the animals surveyed harbored helminth infections which can be transmitted to man.

Comment

Comparison with Other Surveys.—The incidences of the various infections recorded here are much higher than those found by Dorman and Van Ostrand[3] in a survey of 500 dogs in New York City. Although variations in percentages of infection with different species occur, the present survey is comparable to those of Mann[4,5] on 155 dogs and 400 cats from New Jersey and of Baughn and Bliznick[6] on 126 cats from upper New York State. Puppies generally show a higher incidence of Toxocara canis infections as well as heavier worm burdens than do older dogs, [7,8] and our examination of young puppies confirmed this.

Helminths of Dogs and Cats in Man.—A general review of the various types of larva migrans which occur in man was made by Beaver.[1] The two types of particular concern to us are cutaneous larva migrans and visceral larva migrans, for hookworms

TABLE I.—Parasitic Infections in New Jersey Dogs and Cats and New York Puppies

Parasites Found*	Dogs		Cats		Puppies	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Helminth positive	423	58.1	570	58.3	35	58.4
Ancylostoma caninum Uncinaria stenocephala (hookworms)	167	22.9	320	32.7	15	25.0
Toxocara canis (dog roundworm)	93	12.7			27	45.1
Toxocara cati (cat roundworm)			378	38.7		
Toxascaris leonina (roundworm)	15	2.1	2	0.2	12	20.0
Trichuris felis (cat whipworm)			5	0.5		
Trichuris vulpis (dog whipworm)	287	39.4			6	10.0
Strongyloides stercoralis (threadworm)					10	16.7
Capillaria aerophila (fox lungworm)	7	1.0	103	10.5		
Aelurostrongylus abstrusus (cat lungworm)			11	1.1		
Dipylidium caninum (double-pored tapeworm)	13	1.8†	3	0.3†		
Taenia sp. (tapeworms)	32	4.1†	41	4.2†		
Number examined	729		978		60	

* In addition to the common species listed above, the following were found: Physaloptera sp. (1 dog, 1 cat); Paragonimus kellicotti (1 dog, 1 cat); Eurytrema procyonis (2 cats); Parametorchis complexus (2 cats); Alaria sp. (2 cats).

† These percentages are too low, as most tapeworm infections are not found on flotation examinations. Autopsy examinations of 134 dogs and 216 cats revealed the following percentages of tapeworms: Dipylidium caninum (dogs, 47; cats, 15.7); Taenia pisiformis (dogs, 19.4; cats, 6); and Hydatigera taeniaeformis (dogs, 1.5; cats, 16.2).

and ascarids of dogs and cats are the sources of infection for man. In addition to larva migrans, two other species, Trichuris vulpis and Dipylidium caninum, may be ingested in the infective stage and develop in the intestine.

Cutaneous Larva Migrans.—Cutaneous larva migrans is caused by the penetration of human skin by infective hookworm larvae from dogs and cats. Instead of leaving the skin, entering the circulatory system, passing into the lungs, and then migrating to the intestine via the trachea and esophagus, as the human species do, these remain in the skin and wander primarily within the stratum germinativum, causing creeping eruption.[9] Although the primary cause of cutaneous larva migrans in this country is Ancylostoma braziliense, evidence from trials done on volunteers indicate that both A. caninum and Uncinaria stenocephala can cause the serpentine burrowing of the larvae, urticarial swelling, or development of small pustules characteristic of creeping eruption.[1] The appearance of creeping eruption in more northern areas may be due to Ancylostoma caninum or to Uncinaria stenocephala, unless the individual has returned recently from southern localities, in which case Ancylostoma braziliense probably could be considered the cause. As over one fourth of the dogs and cats in this area were found to harbor one or both species of hookworm, opportunities for the acquisition of cutaneous larva migrans are not lacking.

Strongyloides Stercoralis.— Strongyloides stercoralis of dogs is morphologically indistinguishable from the same species in man, but there may be physiologic differences. If infective larvae from a dog penetrate the skin of a child, there is a possibility that they may cause creeping eruption rather than an intestinal infection. More evidence is required as to the nature of its action, for even the human species will, at times, cause creeping eruption in man.[1] Strongyloides apparently is rather uncommon in dogs in this area, but one sixth of the puppies examined had this infection.

Visceral Larva Migrans.—Whereas dog and cat hookworm larvae may penetrate the skin but not get beyond it into the blood stream, the infective eggs of roundworms of dogs and cats, when ingested by man, may result in a more serious condition, involving various internal organs. The larvae appear to hatch from the eggs; penetrate the intestinal mucosa; enter the blood stream;

and be carried to the liver,[10,11] lungs,[1] brain,[11] heart,[12] and other organs,[1] but not be able, except in rare cases, to return to the intestine and mature. For this condition Beaver, *et al.*[13] proposed the term "visceral larva migrans" to distinguish it from the type that involves the skin primarily.

Visceral larva migrans has been found mostly in children owing to their closer contact with dogs and cats, their playing in contaminated soil, their habit of putting unwashed hands in the mouth, and, in some children, their tendency to eat dirt. As a result of these activities, embryonated eggs of various helminths may be ingested. With the increased moving of urban populations to the suburbs and an increase in pets acquired, one may expect an increase in discovered cases of visceral larva migrans, once the characteristic syndrome is more generally recognized.

The syndrome, according to Beaver, *et al.*,[13] and Heiner and Kevy,[14] is characterized by: a leukocytosis, with the white blood cell count ranging from 12,000 to 100,000; a sustained eosinophilia, ranging from 15 to 80 per cent; generally hepatomegaly; frequently splenomegaly; pneumonitis, which may lead to death in severe cases; and often an accompanying rash. Chaudhuri and Saha[15] reported that, in a volunteer infected with Toxocara canis eggs, the eosinophil count increased from 5 to 26 per cent in thirteen days and to 62 per cent on the thirtieth day. Thereafter, for several months, the count ranged from 40 to 50 per cent.

Although no records of visceral larva migrans could be found for New York, there is a possibility that unrecognized cases have occurred in this area, for the disease has been reported from nearby northern areas, as in Pennsylvania,[10] New Jersey,[1] Massachusetts,[14,16] and Canada.[17] Heiner and Kevy[14] described 3 cases in siblings in Boston and then, with a thorough knowledge of the syndrome, discovered 8 additional cases in a children's hospital during a period of seven months.

Roundworm infections are quite prevalent in dogs and cats in this area, being found in over half the puppies and in nearly 40 per cent of the cats. Defecation habits of dogs result in a wide distribution of eggs, and areas where children and dogs play tend to receive a more generous quantity of eggs. Cats generally bury feces, so that as a rule eggs are less likely to be spread. However, uncovered sandboxes attract cats, and children are often playing with a mixture of sand and feces, thus increasing the opportunities for infection.

Strongyloides stercoralis, which was mentioned previously in connection with cutaneous larva migrans, may be responsible at times for visceral larva migrans. This species has been found in lungs, brain, urinary tract, and possibly in other sites.[9]

DOG WHIPWORM (TRICHURIS VULPIS).—Trichuris vulpis is one of the most prevalent canine infections in this area and it has been reported several times from man. Embryonated eggs may be ingested in the same manner as roundworm eggs. Hall and Sonnenberg[18] reported a case in a child, and Dinulescu, *et al.*[19] found 6 per cent of 421 kennel employes in Bucharest, Roumania, infected with T. vulpis. Several years ago one of us (R.B.B.) examined a stool specimen from a patient who showed two sizes of Trichuris eggs, the smaller being T. trichiura, the human species, and the other being the size of T. vulpis, which is about 50 per cent larger. Unfortunately, it was not possible to do a follow-up study to determine whether or not both species were present. Unless eggs are measured during stool examinations, one naturally assumes that the human species is present in human stools.

DOUBLE-PORED DOG TAPEWORM (DIPYLIDIUM CANINUM).—Dipylidium caninum, a common tapeworm of dogs, cats, and other carnivores, has been found in children from many parts of the world.[16] The infection occurs when fleas containing cysticercoids are accidently ingested by a child or an infected flea is killed between the fingers, which shortly are placed in the mouth.[20]

In general, there are no symptoms and the infection is discovered when proglottises are seen in the stool or when eggs or egg capsules are found during stool examinations. Apparently single tapeworms are present in most cases, but Wong[21] reported recovering ten tapeworms from a child in Canada, and Hutchison, *et al.*[22] recovered five from a child in Mississippi.

Summary

A survey was made of helminths harbored by 1,767 adult dogs and cats from New Jersey and puppies from New York. Over half the animals had one or more species and approximately half had infections which can be transmitted to man. Hookworms, roundworms, and tapeworms in both dogs and cats and whipworms in dogs were the most prevalent infections.

The relation of the hookworms of these animals to cutaneous larva migrans and of their roundworms to visceral larva migrans is discussed. In addition, the occurrence of other dog and cat helminths in man is brought out.

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If we are ever to enjoy life, now is the time. Today should always be our most wonderful day.—THOMAS DREIER

The Changing Attitude Toward Tracheotomy

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In present-day medical practice there is a broadening attitude toward tracheotomy,[1] and as a result there is an increase in its use. The stimulus for the growing use of this old and well-established operation was the unprecedented attention given to tracheotomy in bulbar poliomyelitis. Until the past few years it was used as a means of preventing asphyxia due to obstruction by foreign bodies, inflammatory or paralytic disease in or about the larynx, or tumors of that area. Now its effectiveness is recognized in a wide range of diseased states. Thus, the possible indications have been expanded to include the categories listed in Table I. The more recently recognized indications include the following:

1. Severe trauma about the head,[2,3] neck,[4] and to the chest.[5–14]
2. Tumors or foreign bodies encroaching on the upper respiratory tract.[15]
3. Acute infections[16,17] in and about the larynx.
4. Diseases characterized by neuromuscular dysfunction, such as bulbar poliomyelitis,[18–42] tetanus,[43–50] botulism,[51–53] Guillain-Barré syndrome,[54] and myasthenia gravis.
5. Prolonged coma or convulsions due to drug poisoning, cerebral vascular accident, toxemia of pregnancy,[55–58] or other causes.
6. Following certain types of extensive operations on the head and neck.[13,59–62]
7. Congenital malformations of the larynx.[63]
8. Debilitated patients with ineffective cough and with pulmonary complications.[64–68]
9. Bilateral recurrent laryngeal nerve paralysis.
10. Postpulmonary surgery where there is a precarious pulmonary stump.[69–71]
11. Following pulmonary resectional surgery where maximum expiration is not adequate to expel secretions.[14,72]
12. Following severe burns of face and body requiring frequent and extensive skin grafting.[73]
13. To provide a channel for mechanically assisted or controlled respirations.

Pathophysiology of Airway Obstruction

The pathophysiology of airway obstruction is being elucidated.[69,71,74–77] The event leading to obstruction may be any of those listed in Table I. Once obstruction, even slight, has developed, there is increased inspiratory effort and diminished oxygenation. The tissue hypoxia increases the permeability of the alveolar membrane, and the inspiratory effort causes high intrapleural negative pressures which draw fluid from the vessels into the alveoli. The increased fluid decreases oxygenation and accelerates the process of hypoxia. The increased negative intrapulmonic pressure collapses the venous outflow of the head and thus increases intracerebral pressure. This may result in cerebral edema and decreased response of a respiratory center already burdened by carbon dioxide excess. In cases of head injury or after brain surgery, the problem is compounded since the injury itself may cause unconsciousness and obstruction and thus lead to increased cerebral edema. With the understanding of this pathophysiology, the need for early tracheotomy to avoid establishment of a vicious cycle becomes apparent.

Controlled Tracheotomy

The old concept of tracheotomy was that it constituted a measure of last resort to

TABLE I.—CLASSIFICATION OF POSSIBLE INDICATIONS FOR TRACHEOTOMY

- I. Trauma
  - A. Injury to skull and brain
  - B. Fracture of mandible or maxilla with soft tissue injury of face or pharynx
  - C. Injury to chest with multiple rib fractures
  - D. Burns or trauma to neck causing edema sufficient to obstruct the airway
- II. Tumors—malignant and benign about upper respiratory tract (pharynx and larynx)
- III. Diseases with Neuromuscular Dysfunction
  - A. Poliomyelitis
  - B. Tetanus
  - C. Botulism
  - D. Guillain-Barré syndrome
  - E. Myasthenia gravis
- IV. Prolonged Coma and Convulsions
  - A. Drugs—barbiturate and narcotic intoxication
  - B. Carbon monoxide poisoning
  - C. Cerebral vascular accident
  - D. Brain tumors
  - E. Meningitis
  - F. Encephalitis
  - G. Toxemia of pregnancy
- V. Laryngeal Obstruction or Edema
  - A. Allergic reaction
  - B. Following traumatic instrumentation
  - C. Conditions requiring an endotracheal tube for more than 36 hours
  - D. Foreign bodies
  - E. Infections about larynx
    - 1. Acute laryngotracheobronchitis, acute epiglottitis, diphtheria
    - 2. Infections about mouth
  - F. Congenital malformations of larynx—congenital laryngeal stridor, webs, cysts, paralysis of vocal cords, stenosis, lymphangioma, hemangioma
- VI. Selective Postoperative States
  - A. Major head and neck surgery
  - B. Thyroidectomy
  - C. Pulmonary resection
  - D. Neurosurgical operations
  - E. Esophagectomy
- VII. Debilitated Patients with Ineffective Cough and with Pulmonary Complications
- VIII. Prophylactic, to Facilitate Management
  - A. Severe burns of face and body requiring frequent and extensive skin grafting
  - B. Prior to certain operations about the upper airway
  - C. To administer prolonged controlled or assisted respirations
  - D. To facilitate frequent bronchoscopy

be performed when all else failed. It was not unusual for it to be done as an emergency on a struggling, asphyxiated patient. In such procedures carried out in a hospital room, home, ambulance, or emergency room, there was poor airway control, poor hemostatic control, poor visibility, and poor control of asepsis. For these reasons we are using controlled tracheotomy more and more.

A controlled tracheotomy may be performed as an emergency, elective, or prophylactic procedure. A controlled tracheotomy can be performed only when an adequate airway has been established. Once the airway is controlled, the patient may be brought to an operating room where control of bleeding, visibility, and asepsis are easier to achieve. The frequency of controlled and noncontrolled tracheotomies in our hospital is shown in Table II. It may be noted that there has been a marked increase in the number of controlled tracheotomies.

The trend in recent years has been toward using tracheotomy as an elective and often prophylactic operative procedure which is possible when employment of tracheotomy is considered early. It is easier to perform a controlled tracheotomy as an elective or prophylactic procedure since airway control is easier to obtain in such circumstances.

At Grasslands Hospital the patient with respiratory dysfunction is evaluated by a team consisting of representatives of the cardiopulmonary, otolaryngology, and anesthesiology departments and of the service to which the patient belongs, such as the medical, surgical, neurologic, or pediatric department. This team meets at specified intervals to observe the patient's progress and advises for or against tracheotomy.

The criteria for tracheotomy cannot be hard and fast. Each case is a law unto itself. No single symptom or sign constitutes an infallible reason for tracheotomy. It should be realized that the number of tracheotomies done too late is far greater than those done unnecessarily.[78] Indeed, a tracheotomy performed too late may be considered one that has been performed unnecessarily.

TABLE II.—NUMBER OF CONTROLLED* AND NONCONTROLLED TRACHEOTOMIES PERFORMED PER YEAR FOR POLIOMYELITIS AND NONPOLIOMYELITIS DISEASES

Year	Total Tracheotomies	Poliomyelitis	Non-poliomyelitis Diseases	Controlled	Non-Controlled	Per Cent controlled
1948†	8	6	2	1	7	12.5
1949	25	19	6	2	23	8
1950	15	11	4	0	15	0
1951	15	5	10	3	12	20
1952	19	11	8	1	18	5.2
1953	12	2	10	2	10	16.6
1954	26	10	16	15	11	57.6
1955	23	11	12	18	4	78.2
1956	35	4	31	32	3	91.4
1957	20	0	20	18	2	90
1958**	14	0	14	14	0	100

* Controlled tracheotomy is defined as one done in the operating room over an endotracheal tube; see text for explanation.

† September to December.

** January 1 to July 1.

TABLE III.—TRACHEOTOMIES AT GRASSLANDS HOSPITAL FROM SEPTEMBER 9, 1948, THROUGH JULY 1, 1959

	Number
Total tracheotomies	212
Total patients	206
Male	106
Female	100
Age 15 or over	163
Under age 15	43
Lived	107
Died	99
Death rate (per cent)	48.1
Time of death after tracheotomy	
Within 24 hours	23
1 to 3 days	31
3 to 7 days	18
8 to 12 days	9
Over 12 days	18

Survey of 212 Tracheotomies

The results of a survey of 212 tracheotomies performed at Grasslands Hospital from September 9, 1948, through July 1, 1958, are presented in Table III. There were 206 patients. Six patients underwent tracheotomy on two occasions. There were 163 patients fifteen years of age or older and 43 patients under fifteen years of age. The oldest patient was eighty-seven years, and the youngest was five months. Ninety-nine patients died after operation, with the period ranging from thirty minutes to three hundred and eleven days post-tracheotomy, and 107 patients lived. The over-all death rate was 48.1 per cent. All deaths were included regardless of time of occurrence. Patients were followed through their entire period of hospitalization and subsequent hospitalizations if such occurred. The time of death in relation to the time at which tracheotomy was performed is also shown in Table III.

The various types of diseases for which tracheotomy was performed together with the mortality are listed in Table IV. It should be realized that the mortality rate in many of the diseases included in this group varies from 35 per cent to as high as 80 per cent. These 206 patients represent some of the most acute pathologic conditions and most serious diseases encountered in a general hospital practice.

The number of tracheotomies performed per year for poliomyelitis and other diseases is listed in Table II. The number of controlled and noncontrolled tracheotomies per year is also indicated. In the nonpoliomyelitis group it appears that the use of tracheotomy is on the increase. There is also an apparent increase in the number of controlled tracheotomies. The number of tracheotomies together with the tracheotomy rate during the preceding nine-year period is compared with the present survey in Table V.

Positioning, Nasotracheal Aspiration, Bronchoscopy, Endotracheal Intubation, or Tracheotomy?

The respiratory tract can become ob-

TABLE IV.—DISEASE STATES FOR WHICH TRACHEOTOMY WAS PERFORMED

Disease	Number of Patients	Lived	Died	Death Rate (Per Cent)
Neuromuscular dysfunction				
Poliomyelitis	76	47	29	38.2
Tetanus	3	1	2	66.6
Guillain-Barré syndrome	7	5	2	28.6
Myasthenia gravis	2	1	1	50
Prolonged coma and convulsions				
Barbiturate poisoning	3	2	1	33.3
Cerebral vascular accident	13	4	9	69.2
Skull and brain injury	15	9	6	40.0
Encephalitis	8	4	4	50.0
Brain tumors	6	1	5	83.3
Meningitis	6	0	6	100
Tumors about upper respiratory tract				
Pharynx	5	4	1	20
Larynx	5	3	2	40
Laryngeal obstruction or edema—miscellaneous	24	19	5	20.8
conditions requiring an endotracheal tube for 36 hours or more	7	3	4	57.2
Debilitated patients with ineffective cough and pulmonary complications				
Bronchopneumonia	15	7	8	53.4
Atelectasis	5	1	4	80
Asthma	1	0	1	100
Aspiration pneumonia	1	0	1	100
Bronchogenic carcinoma	2	0	2	100
Bronchiectasis	4	1	3	75
Lung abscess and severe imphysema	4	1	3	75

TABLE V.—NUMBER OF TRACHEOTOMIES PERFORMED PER YEAR DURING PAST 19½ YEARS

Year	Number of Tracheotomies	Tracheotomy Rate (Per Cent)
1939	7	0.13
1940	6	0.12
1941	6	0.12
1942	4	0.09
1943	4	0.09
1944	2	0.05
1945	6	0.17
1946	3	0.07
1947	4	0.09
Total tracheotomies in above period—42 *Average 4.6 per year*		
1948*	8	0.18
1949	25	0.56
1950	15	0.34
1951	15	0.34
1952	19	0.45
1953	12	0.27
1954	26	0.55
1955	23	0.46
1956	35	0.70
1957	20	0.40
1958†	14	0.52
Total tracheotomies in above period—214 *Average 22.8 per year*		

* From September through December.
† From January 1 through June 30.

structed acutely or chronically in a wide variety of disease states. Action of some type must then be taken to maintain this vital lifeline. One of five methods may be chosen: (1) positioning of the body, (2) repeated nasotracheal aspiration, (3) insertion of a bronchoscope, (4) intubation with an endotracheal tube, or (5) tracheotomy.

None of these recognized means to protect the failing airway is universally preferable; they should all be used to supplement each other. Nor can any one of these five procedures duplicate the advantages of the other methods.

Positioning of the patient with upper respiratory obstruction is an art which is infrequently practiced. If careful attention is given to the maintenance of the airway by positioning of the head in hyperextension and by maintenance of the lateral or semiprone position, more drastic measures for airway maintenance may be unnecessary. Nasal or oral pharyngeal airways, in association with body positioning, are frequently all that is necessary for the recovery of an unconscious obstructed patient.

Repeated nasotracheal aspiration can keep the upper tracheobronchial tree free of secretions. It is somewhat more difficult technically than aspiration through a tracheotomy opening, and in some patients it cannot be performed readily because of anatomic obstructions. It is however the simplest procedure that can be offered a patient with secretions obstructing his airway.

The insertion of a bronchoscope will alleviate respiratory obstruction. It is possible to perform a tracheotomy over a bronchoscope, but an endotracheal tube is preferable because it is difficult to adapt equipment to the bronchoscope for assisting or controlling respirations. Bronchoscopy cannot be used to carry out aspiration of the tracheobronchial tree every fifteen to thirty minutes, while tracheotomy permits such aspiration "around the clock." It should also be appreciated that bronchoscopic aspiration is greatly facilitated when a tracheotomy is present. Anatomic anomalies in the upper respiratory tract are bypassed when the tracheotomy stoma is used.

Endotracheal intubation can cause irritation to the pharynx, larynx, and trachea, particularly when the tube is left in place for more than a short period of time.[79] If aspiration is carried out through an endotracheal tube, it is preferable to change the tube every eight to twelve hours. It appears that plastic tubes may be left in place longer. The tube must be changed because inspissated secretions accumulate at the distal orifice and can cause complete obstruction. This may occur rather rapidly in a nonhumidified atmosphere.

In the acutely obstructed patient insertion of an endotracheal tube under direct laryngoscopy seems to be the measure of choice. Assisted or controlled respirations can be provided with mask or adaptor and bag if necessary. If at a later time it becomes apparent that the patient will require an artificial airway for a matter of days, tracheotomy can be performed. Therefore, for short-term care intubation is desirable; for long-term care tracheotomy is preferable.

Endotracheal Intubation for Controlled Tracheotomy

Endotracheal intubation prior to tracheotomy is always preferable[80-82] because it permits full control of the airway. In patients with little or no respiratory dysfunction, intubation is performed in the operating room before surgery. With inadequate pulmonary ventilation due to obstruction or muscle weakness, the patient is promptly intubated on the ward or in the emergency room. Respiration may then be assisted up to the time of and through surgery if necessary.

Endotracheal intubation establishes an airway immediately if obstruction is present, and what might otherwise be a frenzied, emergency "stab" tracheotomy can be an unhurried operative procedure done under the controlled conditions of the operating room with the proper airway and adequate oxygenation and anesthesia. Intubation prevents the high negative intrathoracic pressures of an obstructed airway and thus reduces the chance of mediastinal emphysema and pneumothorax when the pretracheal fascia is incised.[69,80,83] Endotracheal intubation also makes tracheotomy technically easier for the surgeon and thus no doubt has reduced the morbidity and mortality associated with tracheotomy.

Anesthetic Management for Endotracheal Intubation

For premedication of patients with partial respiratory obstruction or weakness of the muscles of respiration, only atropine or scopolamine should be used. In patients with no respiratory dysfunction, a barbiturate, such as pentobarbital or secobarbital, may be added.

Anesthesia for endotracheal intubation in a patient with an unimpaired respiratory system may be a matter of choice. However, it is preferable that all patients with partial respiratory obstruction be intubated with topical anesthesia. General anesthesia for intubation in a partially obstructed patient may precipitate complete obstruction. Where partial respiratory obstruction exists, the administration of an ultra short-acting barbiturate may fatally depress a respiratory center already injured by carbon dioxide excess.

The technic of topical anesthesia is as follows:

Step 1: A finely nebulized topical agent is sprayed on the tongue and progressively down the oropharynx.

Step 2: Cotton pledgets moistened with a similar agent are applied to the pyriform fossae with laryngeal forceps to anesthetize the superior laryngeal nerve which is sensory to the larynx.

Step 3: The larynx is exposed with a laryngoscope, and a small quantity of topical agent is injected between the cords with a syringe and cannula. Oxygen is administered promptly by mask to prevent the hypoxia of laryngospasm or bronchospasm.

Step 4: The larynx is re-exposed, and a proper-sized, cuffed endotracheal tube is passed. In infants and small children the preceding steps are omitted. The laryngeal structures are "touched up" with applicators moistened with a topical agent prior to intubation. In older children the technic outlined for adults can be used in complete or modified form if respiratory obstruction exists.

The exact dosage of topical agent is difficult to estimate. It must be emphasized that only enough agent properly applied to cause anesthesia—and no more—should be used. The severely debilitated patient will require little, if any, and the robust healthy male will require a great deal more. The volume administered depends on the saturation of the cotton pledgets and the length of time they remain in contact with mucosa. The pledgets used should be saturated but not dripping. We use from 0.5 to 2 cc. of 10 per cent cocaine intratracheally as the only measurable amount. By prolonging the period during which topical anesthesia is applied, the chance of toxic reaction is greatly reduced.

Nitrous oxide and oxygen may be administered by mask or by nasal cannula between the four stages of topical anesthesia. This makes the procedure more tolerable and produces a retrograde amnesia in most patients. The patient expectorates between the steps of topical anesthesia to keep anesthetic absorption to a minimum. Also the application of topical anesthetic solution in stages tends to diminish the possibility of an excessive concentration in the bloodstream, thus decreasing the possibility of toxic reaction. Elderly debilitated patients as well as the comatose and semicomatose may require little if any topical anesthesia since their reflexes may be markedly depressed or absent. It is evident that when rapid resuscitation is necessary, intubation should be carried out as quickly as possible without resorting to topical anesthesia.

Anesthesia for Tracheotomy

With an assured airway the type of anesthesia may be a matter of choice in most instances. Local infiltration or general anesthesia may be used. Deep general anesthesia is never necessary. It is obviously preferable to avoid technics or drugs that may cause postanesthetic respiratory depression, such as large amounts of the ultra-short-acting barbiturates. Tracheotomy in children usually can be performed to better advantage under general anesthesia.[84]

Site of Tracheotomy

A high tracheotomy, through the second and third tracheal rings, is performed if the patient is to receive tank respirator care. Otherwise, the tracheotomy site may be through the third or fourth tracheal rings.

Size of Tracheotomy Tube

The glottic chink of the larynx of the newborn infant has a surface area of 14 sq. mm.[85]; in the adult this area has increased to 96 sq. mm.[86] The surface area of a number 6 tracheotomy tube is 48 sq. mm., only 50 per cent of the size of the normal glottic chink of the adult. Therefore, it is logical to assume that artificial tracheal airways should be chosen with a surface area approximating the normal human airway at its most constricted point, the area of the vocal cords. The largest tube that the trachea will accommodate should be selected for initial insertion.[82,87] A large-sized tracheotomy tube reduces resistance to respiration,[71] aids in carrying out artificial respiration (with proper T-tube adaptation), and facilitates over-all post-tracheotomy care.

Transfer of Endotracheal Airway Maintenance to Tracheotomy

To permit the surgeon to select the most suitable tracheotomy tube, we leave our endotracheal tube in place until it is exposed when he incises the trachea. Then under direct vision the tube is withdrawn until it is no longer visible in the incision. The tube still lies between the cords, and the patient can be ventilated while the surgeon selects and even tries out the largest and most suitably shaped tracheotomy tube. Only after the airway is assured is the endotracheal tube withdrawn from between the vocal cords. If there is any hitch in the procedure, it is always possible to use this route for respiration. After the insertion of the tracheotomy tube, anesthesia may be maintained with a T-tube slip joint adapter.[88] One end of the T tube is sealed and the other is fitted to a 12-inch length of wide-bore rubber tubing. The surgeon inserts the slip joint into the cannula of the tracheotomy tube and passes the free end of the rubber tubing through the drape opening to the anesthetist. The proper equipment connections are then made so that respirations may be assisted or controlled if necessary.

Physiologic Effects of Tracheotomy

There is more effective utilization of tidal air following tracheotomy since anatomic dead space is decreased approximately two thirds to about 50 cc.[8] This may be of benefit in diseases where tidal volume is impaired, such as multiple rib fractures and severe emphysema. Physiologic dead space is decreased by from 50 to 120 cc. following tracheotomy (60 per cent of preoperative values).[89] There is also a decreased resistance to breathing as indicated by a diminution in intrapleural pressure.[8]

Post-Tracheotomy Care

Following tracheotomy the patient still requires careful observation and good care. Indeed, his need for medical and nursing attention is increased. Cleaning and replacement of the inner tracheotomy cannula should be carried out at frequent intervals to prevent obstruction by secretions.

Davis *et al.*[90] describe the complications associated with tracheotomy. These complications include hemorrhage from incomplete hemostasis and blood vessel erosion.[4] Bleeding may produce shock. If blood enters the trachea, it may produce a chemical tracheobronchitis or obstructive blood clot. The occurrence of mediastinal emphysema and pneumothorax is uncommon and can be prevented by endotracheal intubation.[69,80,83] A hasty incision may have cut the posterior tracheal wall and caused a laceration of the esophagus.[74,77] This happens most frequently in children where the structures are small and the surgical procedure is hurried. In addition, wound infection, swelling of the neck with dislocation of the tracheostomy tube, erosion of the carina or trachea because of improperly fitting tubes, glottic stenosis, dysphonia, obstruction by a mucous plug, and a failure of laryngeal development can all occur.[90]

Suctioning.—The cough reflex, which depends on an increased intrapulmonic pressure against a closed glottis, is made less effective by tracheotomy. The trauma of improper suctioning can cause tracheobronchial ulceration and denudation of respiratory epithelium. Thus, the effectiveness of ciliary removal of secretions may be impaired. The tracheotomy tube may act as an irritant, producing tracheitis with an increase of secretions. With these possible sequelae the importance of effective, nontraumatic aspiration cannot be stressed too much. Plum and Dunning[91] have developed a method for achieving this goal.

Humidification.—With a tracheotomy air is diverted from the nose and pharynx where it is normally moistened, warmed, and cleansed. Thus, air breathed through a tracheotomy should be artifically moistened for a period of days. Exposure to a low humidity environment among other factors may lead to tracheal encrustations.[92] Adequate hydration of tracheotomized patients is also essential since dehydration increases the viscosity of tracheobronchial secretions. Humidification of air or oxygen diminishes evaporation from the mucous membrane lining of the air passages and hydrates them, thereby loosening secretions. Nonviscid secretions are more easily expelled by ciliary action or cough and are more readily aspirated.

There are effective methods[93–95] for humidifying the air or oxygen inhaled into the tracheotomy. Very high humidity can be obtained with several devices. For patients in a tank respirator an atmosphere of high humidity or increased oxygenation can be obtained conveniently with a T-tube adapter.[87] Both ends of the T tube remain unsealed. Humidification and oxygen are delivered to the patient through one arm of the T tube, and the patient exhales through the other.

Technic of Emergency Tracheotomy

In the event that a true emergency tracheotomy is required and an endotracheal intubation cannot be performed rapidly because of lack of trained personnel or anatomic deformity, then the operation known as cricothyroidotomy may be performed. A scalpel is inserted through the skin at right angles to the trachea between the cricoid and thyroid cartilages. A definite "give" will be felt when the trachea is entered, and the knife is then twisted to open a space for respiration. This emergency procedure must be supplemented later by a lower tracheotomy to avoid permanent injury to the voice structures.[69,70,77]

It is more difficult to adapt these technics to assist or to control respiration. If it is available, endotracheal intubation is preferable. Emergency cricothyroidotomy was not found necessary during the period of time covered in this report (September 9, 1948, to July 1, 1958).

Summary

1. Indications for tracheotomy are increasing. A classification of possible indications is presented.

2. Controlled tracheotomy can be achieved through control of the airway and by control of bleeding and asepsis, together with proper visibility and positioning and accessibility of the patient.

3. Tracheotomy has become safer following recognition of the fact that it is an operating room procedure.

4. Elective and prophylactic tracheotomies are now performed.

5. Anesthetic management is described.

6. The largest tracheotomy tube which the trachea will accommodate should be selected.

7. After-care following tracheotomy should include proper aspiration, change of cannulas, and adequate humidification.

8. A survey of 212 tracheotomies performed in one hospital over an eleven-year period has been reported.

9. The number of tracheotomies done too late still outnumbers those done unnecessarily.

10. The tracheotomy performed too late can be considered an unnecessary one.

Addendum.—In the period between July 1, 1958, and June 30, 1960, there were 41 additional tracheotomies performed at Grasslands Hospital that are not included in this paper. All of these tracheotomies were performed under controlled conditions. Eighteen of these patients died of their disease.

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The Treatment of Intertriginous Eruptions (Diaper Rash) and Infantile Eczemas

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TO EVALUATE properly the potential clinical usefulness of a medication for the treatment of the skin of newborn infants and young children, a long-period observation of numerous cases is highly desirable.

Prior to the availability of steroids, the treatment of intertriginous eruptions and eczemas in infants with a variety of powders, lotions, oils, and ointments was far from satisfactory. There can be little question that the introduction of topically applied steroids is a major advance in dermatotherapeutics. We have been impressed also with the clinical response to pantothenylol, a relatively new dermal agent with antipruritic[1,2] and healing[3,4] properties to which sensitization is rare.[4]

The therapeutic efficacy of a steroid appears to be affected to a great extent by the base in which it is incorporated. In a clinical study comparing topically applied hydrocortisone in 11 vehicles, Kalz and Scott[5] found that water-miscible bases are among the most generally useful. The superiority of hydrophilic bases for topical steroids in the treatment of moist skin lesions in most areas is pointed out by Stoughton[6] in his report on steroid therapy in skin disorders presented to the A.M.A. Council on Drugs.

Considering these factors, we undertook to evaluate hydrocortisone-pantothenylol in a water-miscible cream base (Pantho-F)* on intertriginous eruptions and eczemas of infants and children. This report deals with further observations to those which have been reported previously.

Our study was undertaken in two maternity hospitals with an average of 2,500 births a year and in outpatient pediatric clinics. Newborn infants were observed for intertrigo which usually involves the genitogluteal region, the axillary folds, and the tissues of the neck. In our experience, this condition occurs most frequently in infancy; however, it is seen also in children, and this series includes a small group of preteen cases.

In the newborn infants the cause of the inflammation around the genitalia and buttocks is almost invariably due to irritation from the stools and the urine. Frequent stools in this first period of life (from the second half of the first week) with redness and wetting are a common cause for intertriginous dermatitis, or diaper rash.

It is by no means always sufficient just to change and to clean the newborn infants before feeding them. A proper drying of the damp areas is required. Apart from unpleasantness to the infant, the wet surface, robbed of its upper layers of epidermis, acts as the direct cause of diaper rash.

This clinical series which we studied consisted of 93 infants and children. Of the 66 cases of intertriginous eruptions, 44 cases were treated with the hydrocortisone-pantothenylol cream and 22 cases served as comparative controls. Of the control group, 12 patients were treated with conventional cod liver oil ointments, and 10 patients were treated with zinc or other powders. There were 26 cases of infantile

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TABLE I.—Response of Dermatoses in Infants and Children to Treatment with Hydrocortisone, Pantothenylol Cream

	Hydrocortisone-Pantothenylol Cream			Controls			
Diagnosis	Total Cases	Healed Number	Healed Per Cent	Treatment	Total Cases	Healed Number	Healed Per Cent
Intertriginous eruptions	44	39	88.6	Cod liver oil ointment	12	4	33.3
(diaper rash)				Powder	10	1	10.0
Infantile eczemas	21	17	81.0	Cod liver oil ointment	5	1	20.0
Chronic dermatitis	1	0	0				
TOTAL	66	56	84.9		27	6	22.2

TABLE II.—Case Histories of Patients Treated with Hydrocortisone-Pantothenylol Cream

Case	Age	Areas of Involvement	Treatment and Results
1	18 months	History of redness and moderate swelling of the labia majora and dermal involvement of groins, occurring shortly after birth. Various ointments failed to give results. The left elbow presented an area of an eczematous-appearing lesion which we felt was dermatophytid in nature.	On April 27, 1957, cream applied three times a day. All lesions cleared in 10 days. Cream application cleared elbow involvement in 5 days. Mother remarked that for the first time in 18 months the child's groins and genitalia looked well and healthy.
2	3$^1/_2$ weeks	Diaper dermatitis over lower abdomen and both thighs of 10 days duration.	On March 30, 1957, cream applied three times a day. On April 4, 1957, condition cleared.
3	12 months	Anal pruritus with intertrigo treated 2 months with various ointments without improvement.	On May 2, 1957, cream applied three times a day. On May 9, 1957, condition cleared. Complete disappearance of all signs and symptoms in 7 days.
4	3 months	Intertrigo in both groins of 1 month's duration.	On March 21, 1957, cream applied three times a day. Condition cured in 2 weeks.
5	11 weeks	Papular eczematous-appearing rash on both cheeks and chin.	On May 16, 1957, cream applied three times a day. Complete disappearance of rash after 4 days and no recurrence 6 weeks later.
6	8 months	Contact dermatitis (dermatitis venenata) caused by plastic bib which irritated the posterior neck. Duration was 2 weeks before treatment with cream was instituted.	On June 13, 1957, cream applied three times a day. On June 20, 1957, almost complete disappearance of dermatitis.
7	3 months	Pustular lesions (7) over occipital scalp of 7 days duration.	On June 20, 1957, cream applied three times a day. On June 27, 1957, all pustules cleared. New ones appeared which were similarly treated with gratifying results.
8	5 months	Severe intertrigo in both groins of 5 days duration.	On March 28, 1957, cream applied three times a day; patient cured in 2 days.
9	4$^1/_2$ months	Fine vesicular rash resembling miliaria rubra on face of 3 weeks duration.	On May 23, 1957, cream applied three times a day. On May 30, 1957, condition had cleared. Rash disappeared completely on seventh day.
10	2$^1/_2$ months	Inflamed and crusted urinary meatus in male infant.	On May 23, 1957, cream applied several times a day. On May 30, 1957, condition had cleared. Perfect healing in 5 days.
11	8 weeks	Marked erythema of the labia majora with excoriation.	On April 15, 1957, cream applied three times a day. On April 22, 1957, no improvement; probably a local skin irritation with urine of strong am-

(*Continued*)

(*TABLE II—Continued*)

Case	Age	Areas of Involvement	Treatment and Results
			moniacal odor. Condition nonresponsive to cream, but cleared with application of aureomycin ointment and dl-methionine 50 mg. (1 capsule three times a day in formula). Case of possible methionine deficiency.
12	3 months	Dermatitis of both cheeks of 7 days duration, probably due to rubbing on bed clothes.	On March 28, 1957, cream applied three times a day. Rash disappeared after 4 days.
13	3 months	Ulcerated intertrigo of buttocks of 3 days duration.	On April 2, 1957, cream applied three times a day. On April 9, 1957, patient returned to clinic. Lesions cleared in 3 days.
14	4$^1/_2$ years	Eczema present circumorally and on cheeks since infancy.	On April 17, 1957, cream applied three times a day. On April 24, 1957, child's skin appeared perfectly normal. Chronic eczema of long standing.
15	10 years	Recurrent involvement of eczematous lesions of face, arms, and hands. This time half the palm and the small finger involved—duration from May 20, 1957, to June 22, 1957.	On June 22, 1957, cream applied three times a day. On June 26, 1957, hand appeared almost normal. This was first time eczema cleared so quickly. Usually it lingered for months. On October 3, 1957, a revisit to clinic showed no involvement and condition was excellent during entire summer.
16	5 years	Eczema present over elbow and the posterior aspect of both knees. Duration 1 year, starting May, 1956.	On May 24, 1957, cream applied three times a day. On June 17, 1957, lesion had disappeared. On July 25, 1957, condition cleared.
17	12 years	Ears were pierced for earrings. Infection set in at points of puncture. Sulfa and other antibiotic ointments failed to clear the infection of 1 month's duration.	On June 18, 1957, cream was applied three times a day. On June 22, 1957, condition cleared. Clinically we felt this was fungus and bacterial mixed infection.

The last 4 cases in the above table were of preadolescent patients with eczematous eruptions on the face and areas other than the genitalia. These cases responded well to treatment with hydrocortisone-pantothenylol cream.

eczema; in 21 cases the hydrocortisone-pantothenylol cream was applied, and in the 5 controls cod liver oil ointments were used. One case of chronic dermatitis was treated with the hydrocortisone-pantothenylol cream.

Results

An analysis of the case data tabulated in Tables I and II shows that the best results were obtained in the newborn infants and children treated with the hydrocortisone-pantothenylol cream. The cream appeared extremely effective in clearing the skin lesions, often with surprising rapidity; it proved nonsensitizing, being well tolerated in every instance without a single case of a secondary rebound. After clearing of the initial lesions, a daily application of the cream provided complete protection against further irritation and infection.

Intertriginous eruptions responded favorably to the hydrocortisone-pantothenylol cream in 88.6 per cent of patients as compared with a 33.3 per cent response of controls treated with conventional cod liver oil ointments. Of patients with eczemas, 81 per cent had healing of the lesions after treatment with the hydrocortisone-pantothenylol cream as compared with 20 per cent who had healing after cod liver oil ointment treatments and 10 per cent who had healing after powder treatments.

Comment

Intertrigo in the newborn usually affects the diaper area, although the axillary folds and the neck may be involved.

Diaper rash is caused by constant moisture and irritation from urine and stools which become more frequent from the second half of the first week of life. Infants require not only frequent changing and cleansing, but also gentle and careful drying of the areas. Strongly alkaline soaps should be avoided in washing diapers, and the diapers should be thoroughly rinsed and dried.

In our nurseries the best results were obtained when the hydrocortisone-pantothenylol cream was applied as soon as any simple redness appeared. It proved extremely effective and always prevented further irritation and infection.

In several cases the irritation was caused by ammonia produced by the action of gram-positive bacteria on the urinary urea. The addition of 50 mg. dl-methionine to two or three feedings a day for a few days cleared the ammoniacal urine, and the local application of the hydrocortisone-pantothenylol cream quickly healed the inflamed skin.

In reports on the topical use of various steroids, the studies that have been done carefully indicate that hydrocortisone is as good as, if not superior to, any of the other corticosteroids.[6,7] In dermatologic diseases of children and adults, hydrocortisone has repeatedly produced dramatic, although temporary, response.

Welsh and Ede,[8,9] O'Brasky,[10] and Kline[11] have found that when hydrocortisone in a concentration as low as 0.2 per cent is combined with a soothing and healing antieczematous agent such as pantothenylol, more rapid, more effective results are achieved than when hydrocortisone in higher concentration is used alone. More important, they have found that the progress can be maintained.

Pantothenylol exerts an antipruritic, antieczematous, and anti-inflammatory effect when incorporated in a cream with a water-miscible base. It has been observed to favor regeneration and functional recovery of damaged epithelium in dermatoses of varfous causes involving both the skin and the mucous membranes.[1]

These two dermatologic agents in combination appear to be well suited for the treatment of various eczemas, dermatoses, and inflammatory conditions affecting the delicate skin of the newborn infant. Moreover, the therapeutic response to such a combination has been reported to be greater than the response to either agent used singly.[11] An important safety factor is the relatively low percentage of hydrocortisone (0.2 per cent) in the cream under study. This obviates the possibility of systemic corticosteroid effects which Livingood, *et al.*[12] have shown can be produced when higher concentrations are applied to the skin.

Summary

Despite the many available topical agents, none has been entirely satisfactory in the treatment of intertrigo and eczemas in infants. In this study a water-miscible hydrocortisone (0.2 per cent)-pantothenylol cream (Pantho-F) proved extremely effective for these conditions.

Intertriginous eruptions cleared completely in 88.6 per cent of the infants treated with the hydrocortisone-pantothenylol cream, as compared with 33.3 per cent of a control group treated with older standard therapy. In infantile eczema healing was obtained with the hydrocortisone-pantothenylol cream in 81 per cent, whereas 20 per cent of controls treated with cod liver oil ointments showed response and only 10 per cent of controls treated with powder showed an improvement. Furthermore, continued use of the cream provided complete protection against irritation and infection. In no case was sensitization or rebound observed. In the treatment of eczemas in infancy and childhood it is important to give careful consideration to the diet, as this may be one of the causative factors.

Hydrocortisone-pantothenylol cream has proved an effective, safe, and reliable treatment for both the simple and resistant cases of infantile eczemas and intertriginous eruptions (diaper rash) of early infancy.

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RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Hypnosis in Anesthesiology

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THE role of hypnosis in anesthesiology is a relatively new one. For a better appreciation of its status a specific definition of it is necessary. The two fields are closely interrelated since all physicians who practice anesthesia also practice a form of hypnosis, either consciously or unconsciously. Furthermore, we feel that in the future this relationship will become even more interdependent. Therefore, a basic knowledge of hypnosis—when and where to apply it, how far to carry it, and when to recognize whether or not it has lost its effectiveness—is important for the present-day anesthesiologist.

After a brief account of the development of hypnosis as part of the practice of anesthesiology and of the general development of hypnosis in medical practice, the utilization of the hypnotherapeutic method in procedures requiring anesthesia will be enumerated and evaluated.

Rationale of Relationship Between Hypnosis and Anesthesiology

The practice of anesthesiology as we recognize it today is a totally different field of endeavor from that which existed a little more than a decade ago. World War II gave a tremendous emphasis to a fledgling and mostly unrecognized area of patient care. Prior to this stimulus, anesthesiology was essentially a cause and effect type of medical practice. The patient was given a drug, and if sufficient unconsciousness resulted for the surgical procedure to be accomplished, the anesthetic process was judged to be successful.

The progress of anesthesiology has kept pace with the progress of medicine. As the knowledge of pharmacology and physiology and of the nature of disease processes and their effects on the human mechanism grew, a concrete form of patient care within the specialty of anesthesia developed. The anesthesiologist became involved with and responsible for the care of the patient for that period of the patient's illness which has as its focus the surgical procedure.

This trend has come to encompass and perhaps transgress on, depending on one's viewpoint, several other medical specialties. Anesthesiologists have become respiratory physiologists, for how else could the various physiologic alterations in respiratory function which the patient has suffered and which very well might alter radically the approach to the administration of anesthesia be appreciated? Anesthesiologists have become part-time cardiologists; otherwise, how could the vagaries of the wandering pacemaker be understood and the circulatory abnormalities that are not infrequent occurrences during anesthesia be counteracted? It could be related how easy it has become for the anesthesiologist to be involved in fluid balance, blood volume studies, central nervous system pathology, endocrinology, and a myriad of physiopathologic states which could give rise to a major exacerbation during anesthesia or in the immediate postanesthetic period.

As more and better modalities for caring for patients were conceived, newer and greener fields were sought. Perhaps the last outpost in the new concept of anesthesiology, the one area that relatively few workers in the field have delved into, is the psychic approach. This deals with the field of emotional stress, that limbo of the patient that holds so much and about which so little is known. There is little understanding relative to pain perception and pain reaction. We know the pathways to the upper reaches of the central nervous system, but what occurs after that is not very definable. Why do some patients evidence no pain following major surgery and some become practically moribund after a relatively minor procedure? What determines one's pain threshold? The definitive answer is yet to be given.

As a result of advances in chemoanesthesia and with the continued search for better anesthesiologic care, it became rational for the practitioner to move into this land of the unknown via suggestion, or hypnosis. Perhaps with this modality we can add to the ultimate welfare of those patients under our care. Why hypnosis? It has been stated that hypnosis is an integral part of psychotherapy. Are anesthesiologists capable of practicing psychotherapy? This is best answered by stating that without so labeling the approach anesthesiologists have been practicing psychotherapy all along. In the modern practice of anesthesia anesthesiologists feel that rapport with the patient is of utmost importance. This rapport usually is established during preoperative visits to the patient a day or two before surgery or in the preoperative evaluation clinic that exists in some hospitals. Along with determining the patient's physical status the anesthesiologist tries to estimate the patient's emotional attitude to the impending surgery and anesthesia. The bravest of patients is afraid to be anesthetized, for in the minds of everyone this state is close to death. However, by discussing the technic, by reassuring both the patient and the patient's family, by answering the patient's various questions, by explaining the steps to be taken before "sleep" ensues and what will happen when the patient awakens, the anesthesiologist hopes to establish a more tranquil state.

It has long been taught that a patient who understands and trusts the physician who will care for him while he is in the unconscious state will receive the anesthetic service with less psychologic trauma than that which otherwise might ensue. This approach is not completely altruistic, for the patient who arrives in the operating room in a calm, relaxed state is much easier to anesthetize than one who is excited, nervous, and distraught. Furthermore, it is known that by alleviating the patient's fears and apprehensions and by promising a smooth, quiet induction of anesthesia with no possibility of "feeling pain" or "seeing anything," the amount of drugs that otherwise would be necessary to administer often is lessened.

This approach cannot be labeled hypnosis, for a true trance is not attempted. It is hoped, however, that through reassurance some of the tension which patients experience preoperatively will be alleviated. It is only a short step from this approach to the achievement of the truly interpersonal relationship that hypnosis has as its foundation. But should all anesthesiologists practice hypnosis? Should the anesthesiologist have a specific psychiatric orientation before he enters into such an interpersonal relationship with his patient? Not all anesthesiologists are desirous of developing the necessary emotional ties that hypnosis implies. For those who are, it is best that they understand what this relationship encompasses. Authorities agree that the hypnoanesthetic approach should be utilized only after a specific and constructive course in the psychodynamic limitations of hypnosis. As more and better educational facilities become available for those seeking such knowledge, more anesthesiologists who desire to add the practice of hypnosis to their armamentarium will become better equipped to do so. When properly understood and applied, hypnosis is a very desirable adjunct to the practice of anesthesiology.

History of Hypnosis

Hypnotism has existed and has been practiced under different names since the earliest times. Hypnosis was first accomplished by the medicine man. For centuries Indian fakirs and Persian magi accomplished self-induced trances by staring at precious stones, fire, and other phenomena. Four thousand years ago it was a common practice in Egypt to indulge in temple sleep or incubation. Today there exists in Egypt a sect which practices this same form of hypnosis, using eye fixation as an induction technic and veiling the whole procedure in mysticism.

However, the history of hypnosis as we understand this modality today began with Anton Mesmer in the eighteenth century. Mesmer's first treatise on the subject was *De Planetarum Influxa,* published in 1766. He wrote, "I believe that health is based on fluidum, that this fluid comes from magnets, and from astral bodies." He listed 27 prerequisites for the accomplishment of a cure. One is that the patient must be willing to get well and must cooperate fully; in other words, a rapport has to exist between the healer and the patient for a cure to be effected. In 1778 Mesmer left Vienna in disgrace, migrated to Paris, and instituted a wave of popularity for hypnosis which became the first of several such peaks in its cyclic history. However, by 1784 the French Academy of Medicine re-evaluated the status of hypnosis and found it to be wanting as a therapeutic technic. The result was the complete disintegration of Mesmer's practice.

More discerning individuals, however, were not so easily discouraged. In 1821 Dupotet and Racamoer attempted to perform surgery on a mesmerized patient with questionable success. In 1829 Cluquet removed the breast of a lady while she was somnambulistic. In 1837 Oudet began to extract teeth under mesmerism.

In 1842 a Manchester surgeon named James Braid attended an exhibition on animal magnestism. He wrote, "I have something new, I have something that is simply a physiological phenomenon." He called this phenomenon hypnosis and separated it from animal magnetism. In 1843 he published his book *Neurypnology; or, the Rationale of Nervous Sleep Considered in Relation to Animal Magnetism* in which it was stated that the state of sleep was not to be confused with animal magnetism.

John Elliotson (1791–1868), a leading physician of his time and a professor of medicine at London University, was a leader of the mesmeric movement in England. In 1837 after seeing Dupotet's demonstration he became interested in animal magnetism. He began to give his own mesmeric demonstrations and stated that this phenomenon belonged to medical science and that he could teach it to his medical students. This assertion met with great resistance by his colleagues, and in 1838 he resigned his position as the first professor of the practice of medicine at the University of London. In 1843 he published his book *Numerous Cases of Surgical Operations without Pain in the Mesmeric State.* It was in this work that the word anesthesia first was used. In the same year Elliotson began a new journal called *Zoist—A Journal of Cerebral Physiology and Mesmerism in their Applications to Human Welfare.* This journal lasted until 1855.

It was within the pages of *Zoist* that Elliotson described the operations performed under mesmeric anesthesia. According to Elliotson, the first operation under mesmeric anesthesia was performed in England in 1838. In 1842 W. Squire Ward performed a midthigh amputation under mesmerism. At this time several operations under mesmerism performed in the United States also were reported. Sydney Doane of New York removed a tumor from the neck of a mesmerized patient. Ackley at Cleveland Medical College also removed tumor from the neck of a patient under magnetized sleep. In 1845 Louis A. Dugas at the Medical College of Georgia removed the breast of a female under mesmeric sleep.

One of the most famous reports appearing in *Zoist* was the one in 1845 by James Esdaile on his experiences in India with mesmerism as an anesthetic agent. Esdaile was the chief surgeon in charge of the native hospital at Hooghly, India. From 1845 to 1851, when he left India, Esdaile performed thousands of minor and major operations under mesmeric sleep. This was a great step forward in the history of hypnosis, but for Esdaile there was no reward or public acclaim. Like Elliotson, he was ostracized by his colleagues and banished from all hospitals.

During this period chemical anesthesia began its ascendancy. The skepticism, hostility, and abuse aimed at hypnosis by the medical men of the time soon dealt a death blow to it. Men like Robert Liston, in 1846, and Crawford Long, in 1849, advanced the opinion, which was readily accepted, that chemoanesthesia was a better and safer method than hypnoanesthesia. Even in this contention, however, there was not complete agreement. In *Zoist* there were statements to the effect that many deaths had been associated with chemical anesthesia but none with hypnosis. Obviously there was no understanding of the fact that the two technics could coexist to the ultimate benefit of both.

In the 1850's events culminated in England so that mesmerism was prohibited from regular hospital practice. From 1850 until 1860, when surgery and hypnosis were ostensibly parted, hypnosis was kept alive in private institutions in sub rosa fashion. During this particularly trying time for hypnosis, J. B. Parker, a surgeon at Exeter Mesmeric Institute, was very active in the field. He successfully performed over 250 painless operations under mesmerism. From 1860 until 1891 hypnosis was held in disrepute in the medical world. However, there were several individuals who still fought to raise hypnosis to the level of academic medicine: Hippolite Bernheim (1837–1919), J. M. Charcot (1825–1893), Sigmund Freud (1860–1939), and Pierre Janet (1859–1917).

In 1891 the British Medical Association appointed a committee to investigate the phenomenon of hypnosis. In 1892 the committee presented its report, and as a result hypnosis again was accepted and was officially declared to be an integral part of medical science. However, the continuing development of chemoanesthesia from 1846 onward allowed little opportunity for proponents of hypnosis to express their views.

In 1938 Raginsky, in a paper published in the *Connecticut Medical Journal,* reevaluated the use of hypnosis in anesthesia. Soon other authors, such as Kroger and DeLee, began to report on its use in various surgical and obstetric procedures. World War II stimulated the interest of many practitioners in hypnosis, primarily because of the psychologic implications of trauma and pain. In 1957 a major milestone was passed when the Council on Mental Health of the American Medical Association began its study of hypnosis and the various implications of this practice. The Council's report in June, 1958, "The Medical Use of Hypnosis" was officially approved by the American Medical Association.

Events in the current history of hypnosis are accumulating rapidly. Undoubtedly future authors will have a greater perspective with which to assess the significance of developments in the medical application of hypnosis.

Preoperative Period

The anesthesiologist is concerned with many aspects of the preoperative phase. He must recognize and deal with the psychologic mechanisms of the patient, attempt to decrease the patient's metabolic activity, fortify the potency of certain anesthetic agents, and concern himself with such phenomena as excessive secretions and reflex stimulation.

The reaction of almost all patients who anticipate anesthesia and surgery is one which is primarily motivated by fear. Even that individual who blithely denies all concern will on further questioning reveal that his apparent sophistication is only a mask for a naturally fearful state. Schultz has classified very aptly the various fears that patients present in the preoperative period. He contends that most patients exhibit one or more of the following varieties of fear: fear of injections, of revealing secrets during the period of unconsciousness, of the surgery commencing before anesthesia has developed, of suffocation, of mutilation, of what may be found during surgery, or of never awakening.

Eckenhoff and Levy each reviewed the effects of inadequate preparation for anesthesia for surgery in children. Eckenhoff reported that 17 per cent in a series of children that he studied manifested changes due in part to inadequate preanesthetic management. He claims that these changes are of a psychologic nature and that their onset becomes apparent shortly after the child has experienced the traumatic episode of being hospitalized.

Drug therapy alone as an approach to preoperative preparation is not always satisfactory. The experience of anesthesiologists indicates that reactions to drug therapy are extremely variable and often are not predictable. Similar dosages of preoperative medication given to patients of similar physical status not infrequently will produce dissimilar end results. Kubie and Margolin studied the effects of drug therapy in relation to the process of repression, dissociation, and synthesis. Their findings underscore the general clinical experience. They state that "the action of a drug is never the single function of either the chemistry of the drug or its dosage." They identify the conscious and unconscious emotional processes which are at work in each patient as being either moderating or exacerbating factors after drug therapy.

The anesthesiologist of today becomes a very important individual in the continuum of care that the patient receives when he or she enters the hospital. This is particularly so in the preoperative phase. The referring internist and surgeon each have evaluated the status of and indulged in therapy for the about-to-be-operated individual. But it is the anesthesiologist who visits as a relatively unknown person and who in the minds of many patients represents the one person who can produce the most fear. In the preoperative visit the anesthesiologist usually sees the patient in that so-called undressed emotional state. Therefore, the anesthesiologist has the ideal opportunity to indulge in such maneuvers as he may deem indicated for the particular person and for the particular procedure.

It is at this time, at the practical beginning of anesthesiologic care, that we feel that hypnosis has a role to play. It has been our experience that the frightened, highly emotional individual can achieve a considerable degree of quiescence if properly treated with a light hypnotic trance. Marmer has accumulated extensive experience in the preoperative preparation of his patients with a hypnotic trance and reassurance during the trance on the night prior to surgery. It is surprising how effective this type of therapy may be within the brief time allotted to it. On many occasions we have created an actual acceptance of surgery in those patients who were reluctant to undergo truly necessary interventions. Raginsky has emphasized the role that hypnotherapy can play in the maintenance of the individual's personality immediately prior to an operative procedure.

In an excellent review of the effects of hospitalization on the emotional content of children Potts has written, "I have often wondered what sort of a scar, how deep and serious, is left on the heart of a child who is suddenly tossed into a hospital environment which is associated with insecurity and pain." Robertson gives a clear picture of the "settled" child, the child who no longer can tolerate further anxiety and who in later life develops that supposed lack of concern and pseudosophistication. It is our opinion that a parentectomy is possibly the worst procedure that a child undergoes in his period of hospitalization.

Betcher's approach to the frightened child requiring anesthesia for surgery is very commendable. He has reported many instances wherein severely frightened children became docile and amenable subjects following hypnotherapy. We also have had this type of experience, and we feel very strongly that children particularly are highly susceptible to hypnosis as an introductory maneuver in anesthesia. We treated hypnotically an eight-year-old girl who was subjected to repair of pulmonic stenosis. In the preoperative phase we created an acceptance of the procedure. However, we did not utilize this approach during surgery. We were able to develop amnesia in the postoperative phase and to accomplish pain relief. In the postoperative period the child did not require any analgesic drugs.

Hypnosis has the inherent ability to create an amnesic state. What better therapy for fear is there than never to remember the experience which produced it? In the preoperative phase the anesthesiologist schooled in hypnotherapy is ideally suited to serve as the "fleecy white cloud" which can transport the highly charged, keyed-up, tense patient from a destructively anxious state to a peaceful, tranquil, anesthetic level. Barker and Burgwin have shown that when given suggestions which would minimize sensory stimuli, subjects in the hypnotic state evidenced definite changes in their electroencephalograms referable to the state of light sleep.

Hypnotherapy in the preoperative phase is not only the recognition of the normal fears and the mental aberrations of the patient but also the treatment of this state by means of the hypnotic trance. What every anesthesiologist must recognize and concern himself with is the considerable time period that often is required. Hypnotherapy does not come in a vial; it cannot be ordered pro rata. Any attempt to use hypnosis, particularly in the preoperative and preanesthetic phase, must be a slow and studied approach. Keen judgment as to the suitability of a particular technic for a particular patient is necessary. A patient's question "Are you trying to hypnotize me?" can be very disconcerting and create defeat where good judgment and a proper approach might produce a successful result.

How does hypnosis serve the other requirements of the preoperative phase? It has been shown that the metabolic rate can be reduced by hypnosis as well as by pharmacologic agents. A report by Lovett Doust indicated that levels of arterial oxygen saturation were found to be related to the depth of hypnosis; the deeper the hypnosis, the greater the anoxemia. Wallis showed that under hypnosis the basal metabolic rate in his subject fell. The most extensive work in this field has been done by von Eiff. Dorcus reports that utilizing 16 subjects von Eiff demonstrated a definite decrease in the basal metabolic rate under hypnosis as compared with the basal waking state. Jenness and Wible demonstrated that under hypnosis their subjects evidenced a decrease in heart rate. The observations of Whitehorn *et al.* support this finding. Heyer showed that the blood pressure readings of his normotensive subjects were lowered under hypnosis. These observations are additional evidence of a decrease in the basal metabolic rate.

Because of its ability to diminish pain perception, in many instances hypnosis decreases the need for accessive amounts of chemoanesthetic drugs. Wolff and Goodell reported that in their subjects shallow hypnosis raised the threshold for pain by 40 per cent. Dynes investigated the effect of hypnotic analgesia on the respiratory and heart rates. On the basis of the comparative data that he obtained during trance and wakening in his patients he concluded that, contrary to the waking state, in the hypnotic trance there is little or no disturbance in the normal rate and rhythm of respiratory and cardiac activity during and following pain stimulation. In a well-controlled experiment Sears investigated selected physiologic reactions to a painful stimulus applied during hypnotic anesthesia and during the waking state. His findings indicate that the state achieved by hypnotic suggestion is superior to the waking state in reducing the body's reactivity to pain. West, Niell, and Hardy studied the hypnotic response to experimentally induced pain. They concluded that the pain threshold is raised under hypnoanesthesia and that the alteration of pain perception is related in degree to the depth of the hypnosis. Therefore, it appears that the ultimate objective of pain relief to be accomplished by an anesthetic process may be greatly assisted by the integration of hypnosis within the anesthetic technic.

Although some workers have reported that hypnosis can inhibit oral pharangeal secretions, this reaction has not been seen in our experience nor has it been authenticated by any proper investigation. We have been unable to find any evidence of work done on the relationship of hypnosis and reflex mechanisms. Our present experience would indicate that there is no relationship between the two phenomena.

Our comments are not to be construed as indicating that hypnosis can serve as the sole premedicant agent. However, we do feel that hypnosis may be extremely important as an adjunct to the other premedicant methods. Its judicious use may well serve to diminish or alleviate entirely many of the drawbacks of the narcotic, barbiturate, and ataractic drugs.

Laux evaluated the effect of preoperative hypnotic relaxation on postoperative pain in 40 urologic patients. Of his patients 34 per cent had pain relief postoperatively. Dorcus, Kirkner, Hoffman, Marmer, Bryant, and Crasilneck all report the successful preoperative use of hypnosis for the alleviation of postoperative pain. On innumerable occasions we have created via hypnotic suggestion in suitable subjects a diminution of postoperative pain. We have done this by means of posthypnotic suggestion prior to the induction of anesthesia as well as by direct suggestion in the postoperative phase. In the young age group of patients, suggestion pertaining to an early return to normal activity often is productive of a marked decrease in the quantity of pain the child experiences.

One of the well-accepted and well-established approaches to the postoperative patient is that of early ambulation. Not infrequently the success of this approach is inhibited by the patient's reluctance to cooperate. We have found hypnosis to be a very valuable adjunct for that group of patients who require a stimulant to their ambulatory regimen. Patient cooperation is increased markedly when hypnotic suggestion is used to influence the attitude toward early ambulation. This must be done carefully within the framework of their ability to indulge in such activity.

Operative Period

In spite of numerous reports on the utilization of hypnosis as a pure anesthetic agent, this approach must be considered as an infrequent one. It is conceivable that in ancient cultures hypnosis might well have produced sufficient disassociation from reality for surgical trauma to be inflicted on certain individuals. Perhaps the outstanding present-day example of that variety of psychosomatic maneuvering is the Indian ascetic who has been known to lie on a bed of nails or to indulge in similar acts of self-persecution. As a rule, however, it is an unusual circumstance that permits pure hypnoanesthesia for any considerable degree of surgical trauma. The practitioner of anesthesiology has so many and so varied an assortment of tools at his disposal that to attempt to substitute pure hypnoanesthesia for any of them is neither realistic nor within the proper province of his practice.

A review of the pertinent recent literature fails to reveal anyone who would substitute hypnoanesthesia for chemoanesthesia on an equivalent basis. Many authors, among them Kroger, Lederman, and Swett and his group, estimate that 10 per cent of their patients are suitable subjects for sufficient hypnotic depth to permit major surgery. Anderson has reported a case of common duct exploration accomplished by hypnosis alone. Mason states that 20 per cent of his patients were amenable to this approach for major surgery. Weinberg reported a herniorrhaphy that was accomplished with hypnosis alone. However, the scarcity of such reports in the current literature indicates that for general surgery hypnosis usually cannot be the sole anesthetic modality.

Our own experience must be evaluated by several standards. We have selected for the pure hypnotic approach only those patients who showed special indications for this technic. Among this group have been those who requested hypnoanesthesia and a few who were excellent subjects for any type of suggestive therapy because of obvious great fear. The surgical procedures which were accomplished in this manner ranged from gastrectomy to cyctoscopic examination in the female. In all of our efforts we have attempted to evaluate the effectiveness of hypnoanesthesia on a comparative basis with that obtainable via chemically induced anesthesia. Of necessity this evaluation must encompass not only the prime objective of better patient care but also the multiple other factors incident to the practice of anesthesiology, including such variables as the ease of administration and maintenance, predictability, time consumption, effect on surrounding personnel, and general place of the technic within the scope of modern-day surgical and operating room practice.

Our percentage of success in the complete substitution of hypnoanesthesia for chemoanesthesia has been less than the previously quoted 10 per cent. There have not been any published series of cases in which a statistical analysis would indicate that approximately 10 per cent of patients are able to withstand a surgical intervention with hypnoanesthesia as a sole modality. Therefore, it is our conclusion that the 10 per cent estimate is an often-repeated but unsubstantiated quantity and that the true percentage of successful cases is much below that figure.

A consideration of hypnosis as an adjunct to chemically induced anesthesia is productive of a much more optimistic viewpoint. Anesthesiology as practiced today has risen to such high levels that we are of the opinion that any attempt to substitute pure hypnoanesthesia for chemoanesthesia is a reflection on the abilities of the anesthesiologist. The vast majority of reporters have indicated that hypnoanesthesia should not be construed as a replacement for but rather as a very worth-while adjunct to chemically induced anesthesia. In an early article Raginsky termed the combination of the two technics as balanced anesthesia. The term subsequently has come to include many intermingled modalities in anesthetic practice.

A review of the literature on the use of hypnoanesthesia in the various medical specialties reveals a large number of interesting reports on hypnosis as an anesthetic adjunct as well as as the sole anesthetic agent. In many specialties hypnosis has been used with varying degrees of success. We feel that the incidence of success is in direct proportion to the overall motivation of the group of patients treated by each specialist. In some specialties patient motivation is clearly defined, and the end results are more carefully delineated and achieved. This has been repeatedly evidenced in our own practice.

In the field of obstetrics Kroger has been a consistent and enlightened worker. He reported the first case of a cesarean section accomplished with hypnoanesthesia alone. He has accumulated and reported on a large series of obstetric deliveries wherein hypnotically induced anesthesia was the sole pain-relieving modality. He has been an advocate of combining the use of hypnoanesthesia with other analgesic technics. Winkelstein reviewed 200 cases of routine obstetric deliveries in which he applied hypnoanesthesia. Of this group 10 to 15 per cent could not be hypnotized. He achieved total delivery with hypnosis alone in 7 per cent and reported complete failure in 31 per cent in this series. This is an informative study because, in giving the results of the utilization of the hypnotic approach in an unselected group of patients, it sheds light on how successful the technic might be if patients were screened and treated selectively. Werner states that a large percentage of his patients achieved successful end results but that many more of his subjects actively requested the hypnotic method for their obstetric anesthesia. He advocates the supplementation of other anesthetic tools in those instances wherein hypnosis is not completely productive of the relief of pain.

Abramson and Heron indicate a 100 per cent favorable response in their series of obstetric patients. However, they include in consideration all aspects of pregnancy as well as the anesthesia accomplished in the third stage of labor. In an early report DeLee stated that in his obstetric patients hypnoanesthesia diminished the amount of blood loss. This observation has not been verified by other observers in the specialty.

Our experience with the obstetric patient has varied slightly from that of other therapists since we have been third-party participants in the patient-obstetrician relationship. In our opinion our type of relationship is a slightly deterring factor because the parturient female undoubtedly develops with her obstetrician a particular kind of rapport, and we feel such rapport very often is conducive to and part of the intense interpersonal relationship necessary for the completely successful utilization of hypnoanesthesia. In the areas of analgesia, amnesia, and patient acceptance and appreciation our end results have paralleled those of other practitioners. We have discovered that pregnant women who actively desire and request hypnoanesthesia for the delivery of their children are the most suitable subjects. Those who wish to "try" the technic because of neighborly advice or a bizarre interest in the subject do not generally accomplish their objective.

Any appraisal of the value of hypnosis in obstetrics must take into account the considerable incidence of failure when hypnosis is the sole modality, and the need for a high degree of patient selectivity must be recognized. A further consideration in regard to hypnoanesthesia in obstetrics is the considerable amount of time required of the obstetrician. This drawback has been obviated to some extent by the institution of group therapy, although even group therapy requires additional prenatal visits.

A positive value of the technic is the patient's better acceptance of her entire obstetric experience.

Using hypnoanesthesia as an adjunct Kroger was able to accomplish a hysterectomy on one of his patients. We treated a forty-four-year-old female who required a subtotal gastrectomy with hypnoanesthesia as an adjunct. After adequate preparation we instituted a continuous spinal anesthesia technic and utilized hypnosis as the concomitant agent in a four-hour procedure. Spinal anesthesia for a four-hour gastrectomy is acceptable but must be combined with some other sedative maneuver. Hypnosis worked ideally in this situation.

Acute trauma is generally amenable to hypnotherapy. The patient in acute distress is desirous of any means of relief and will accept hypnosis as a pain-relieving measure more readily than someone who does not have as acute a need. The acute situation is more conducive to the immediate development of a proper rapport between the patient and the therapist. We have readily hypnotized several patients for the repair of skin lacerations shortly after the patients had been traumatized. Fracture reduction by this means has been reported by many authors. Bryant has detailed a case of multiple fracture reduction in a young female. He states that a total of 17 such procedures were accomplished without the need for any type of anesthesia other than hypnosis.

A very interesting series has been reported by Marmer showing the value of hypnoanesthesia and hypnoanalgesia for cardiac surgery. In addition to hypnosis, 8 patients received varying amounts of sedative and local anesthetic agents as well as muscle relaxants. They experienced an elevation of the pain threshold, and there was a diminution in the need for deep anesthetic planes and in the amount of postoperative distress. Marmer emphasizes the fact that all patients were markedly less tense and anxious prior to surgery. He is of the opinion that hypnosis is more effective than the socalled tranquilizing drugs in producing the quiescent state. Kelsey and Barron reported a successful result in a patient requiring skin grafting and an abnormal posture for a six-week period. A tube graft, as a replacement for the usual plaster-cast type of immobilization, was maintained in place by means of hypnotic suggestion. Crasilneck reported on the use of hypnosis in the management of patients with burns who required anesthesia for dressings and grafting. He observed better food intake, an alleviation of depression, and prolonged posture maintenance.

We treated a ten-year-old boy with hypnosis for multiple-burn dressings and for induction prior to general anesthesia for grafting. This child was thus treated on five separate occasions, each time with gratifying results. There was a definite diminution in fear for each anticipated procedure and a gratifying immediate postoperative reaction. Interestingly, the patient suffered cardiac arrest during one of the grafting procedures with subsequent complete recovery. He had complete amnesia for the entire episode, having received posthypnotic suggestion prior to each procedure.

We have performed hypnoanesthesia for cystoscopy in male as well as in female patients and have been satisfied with the end results in selected patients. We wish to emphasize that in this as well as in other procedures proper patient selection is paramount. In a case requiring transurethral prostatic resection we were successful in the induction phase, needed very little chemoanesthesia for the operative phase, and had complete success in the postoperative period regarding the need for analgesic drugs, the tolerance of catheters, and early ambulation.

The pediatric surgical patient is particularly amenable to hypnoanesthesia. The highly imaginative mind of the child is suggestible and malleable if the proper approach is utilized. Betcher has reported on hypnoanesthesia in the treatment of fractures and burns and in general preoperative care.

His technic is extremely well planned, and his end results are indicative of the opportunities for better pediatric anesthetic care. We believe that children requiring tonsillectomies are particularly suitable for the hypnotic approach. We have a large series of cases wherein we have utilized hypnotic induction prior to tonsillectomy. We are expanding our program in this respect by instituting group induction as both a time-saving and a more effective technic.

Postoperative Period

By the use of direct and posthypnotic suggestion, hypnosis is a valuable aid in the postoperative period. In the postoperative state hypnosis may be of value in the reduction of pulmonary complications by enabling the patient to cough more effectively and by assisting in better ventilation and in the elimination of nausea and vomiting. It can create greater tolerance of gastric suction tubes, catheters, and intravenous therapy. It can aid in the control of hiccups, in the movement of painful extremities or the maintenance of extremities in difficult positions for long periods of time without discomfort, in the reduction or the elimination of postoperative narcotics, and in early ambulation.

It is an accepted clinical observation that abdominal and thoracic surgery may have some degree of respiratory embarrassment as sequelae. This may be due to the presence of pain which results in the splinting of the affected side, thereby impeding effective alveolar ventilation and producing subsequent atelectasis. Owen-Flood has shown that under the influence of hypnosis, deep breathing and frequent coughing in the face of pain can be carried out. The fear of pain is eliminated, and controlled exercise in breathing can be instituted. Swett has shown that with the use of hypnosis postoperative atelectasis can be avoided. Via hypnotic suggestion the patient can breathe deeply, perform postural drainage, and remove accumulated secretions from his tracheobronchial tree, thus aiding in the prophylaxis against atelectasis.

Nausea and vomiting are recognized as being very troublesome complications in the postoperative period. They can and do occur with the best surgical and anesthetic technics, and they persist even after the utilization of all types of pharmacologic therapy. This resistance to therapy would lead one to suspect psychic orientation as a possible important etiologic factor in postoperative nausea and vomiting. As has been shown, hypnosis is an effective agent in the production of psychic sedation. Hypnosis, therefore, can do much to relieve this complication in the postoperative period. Marmer illustrates this point in a report of a patient who was admitted to the hospital for a twelfth major surgical procedure. The patient was concerned about undergoing anesthesia because of the persistent nausea and vomiting that had occurred after each of the previous eleven operative procedures. With the use of posthypnotic suggestion the patient's twelfth postoperative period was entirely free of any nausea or vomiting. We have produced postoperative amnesia, and as part of this established psychic state we have successfully suggested the complete absence of any discomfort relative to the gastrointestinal tract.

Ancillary surgical treatments of the postoperative patient, such as the instillation of nasogastric suction tubes, the insertion of catheters, and the administration of intravenous therapy, often are an integral part of good patient care. The prompt institution of such measures and their acceptance by the patient are vital to the achievement of prompt recovery. Hoffman has reported on the successful use of hypnosis in achieving these goals. The duration of postoperative complications in difficult patients was shortened because, with the aid of hypnosis, therapy could be instituted. Singer has reported a case in which hypnosis was used successfully for the insertion and maintenance of a Levin tube after all other approaches failed. We have had several similar instances wherein nasogastric tubes were maintained in place only after repeated hypnotic suggestion.

The mechanism of hiccupping is generally considered to be a reflex action. Dorcus and Kirkner have listed several methods for treating it, among which is hypnosis. They reported the successful treatment of hiccup by hypnosis in 18 patients. "The hypnotic approach utilized was to induce complete relaxation and relieve the patient of his concern about his disease and the spasm." LeCron, Fields, and Levine reported a case of postoperative hiccup due to a conversion hysteria reaction. Kirkner and West reported a case wherein the patient was refractory to all forms of treatment for his hiccup outside of surgical intervention. The hiccups were controlled successfully with hypnosis.

The therapy and the rehabilitation of the patient who has suffered severe burns is a difficult problem at best. Not only must physiologic homeostasis be maintained by fluid and electrolyte therapy, adequate pain-relieving measures, the judicious exercising of painful parts, and adequate food intake, but psychologic therapy also must be instituted. Crasilneck and his associates and Todorovic in the military service have utilized hypnosis in these spheres of activity. Through hypnotic technics better nutrition was achieved, the patient's morale was boosted, and the pain threshold was elevated so that painful extremities could be exercised properly. It was evident that the recovery time was diminished and that residual psychologic distortions were decreased.

Our experience indicates that the superficial trauma incident to the changing of dressings over burned areas may be an ideal situation for hypnosis. The indication for hypnosis in these patients is increased because of the numerous changes and the episodes of discomfort to which the patient is subjected. The administration of narcotics is the standard mode of therapy, but we feel that efforts always should be made to determine the suitability of the hypnotic technic to obviate possible addiction as well as to provide for greater emotional and physical comfort.

Hypnosis has proved to be of aid to the plastic surgeon, who often is concerned with the maintenance of difficult positions for prolonged periods of time in the postoperative period. Kelsey and Barron have reported the startling case of the use of hypnosis for the maintenance of an abnormal position by a patient for twenty-eight days without fatigue. This was accomplished entirely with posthypnotic suggestion which was reinforced periodically.

Previously it was demonstrated that hypnosis does raise the pain threshold and that it can relieve or eliminate pain completely. Most of the reports in the literature concerning the utilization of hypnosis in the various surgical specialties indicate the alleviation of postoperative pain when hypnosis is used as the anesthetic modality. In addition, there are several reports with specific reference to the use of hypnosis in the postoperative period for the alleviation of pain.

Pain Syndromes

A syndrome which has as its major component any degree of pain is always difficult to treat. This is so primarily because, even though the pathways along which painful stimuli are transmitted are well known, once these stimuli reach their destination the end results are not always predictable. There are many reports on varying pain thresholds and differences in pain perceptivity among various occupational and racial groups. LeRiche has stated that the highly emotional individual will be more reactive to painful stimuli than will the unemotional type. The integration of painful responses when they reach the sensorium is inconsistent; many authors have attempted to explain the process but none has succeeded entirely.

All anesthesiologists are aware of altered responses to pain. This is dramatically illustrated in the recovery room in the immediate postsurgical period. There frequently are 2 patients who have been subjected to equally painful surgical maneuvers, but following the return of normal sensation 1 patient will require unusually large amounts of analgesic drugs and the other will be relatively unaware of his discomfort. Beecher has conducted numerous studies on placebo effects in painful states, and his conclusions indicate the great value of the placebo as a therapeutic tool. The large number of double-blind studies on the effectiveness of analgesic agents which are being done continually attest to the large consideration that must be given to the emotional aspects in any painful situation.

In anesthesiologic practice, hypnosis may be a very useful agent in both the acute and chronic painful situation. The value of hypnotherapy in the acutely painful state occurring traumatically by either accident or design have been emphasized previously. The ability of the higher cerebral centers to block out pain perception in the acute traumatic phase is very significantly attested to by the records of World War II. There were many cases of soldiers who suffered severe injuries and often major amputations but who when first seen were unaware of any pain, their concept of the situation being one of fear. Only when a realization of their surroundings occurred did they first begin to experience any sensation of pain.

The treatment of the painful syndrome with hypnosis as the major element in the therapeutic regime has been receiving attention. Several authors have reported their results with hypnotherapy in terminal cancer. Butler treated a series of 12 cases of inoperable cancer with hypnosis alone and achieved demonstrable pain relief in 7 of the patients. Crasilneck described the technics he utilizes in the treatment of pain in patients with terminal cancer. He feels that in some such patients intensive hypnotherapy will produce appreciable results. We have treated 3 patients for pain syndromes resulting from cancer. Two of the patients were severely addicted to narcotics, and in one of these a marked diminution in narcotic requirements resulted until death supervened. One patient, a relatively young female with metastatic breast carcinoma, achieved a remarkable result over a period of four months; she no longer required any narcotics for the first two of these months and relatively little in the last two months of her illness. She was treated very intensively, being seen daily and on occasion twice daily for many weeks. Zoffer treated a case of terminal cancer in a similar manner and achieved a considerable reduction in narcotic intake.

A sixty-six-year-old male who had been subjected to an aortic bifurcation graft for occlusive peripheral vascular disease developed a severe causalgic type of leg and foot pain postoperatively. His physical signs indicated that his vascular tree had been markedly benefited by the surgical procedure. We applied suggestive therapy, and he became tolerant of his pain and accepted the degree of disability to which he was subjected as preferable to amputation. He subsequently returned to a relatively active life. Later he was hospitalized for a coronary occlusion, at which time hypnotherapy was instituted for his chest pain. However, he deteriorated rapidly, and the results were difficult to evaluate.

Hypnosis has proved to be of substantial value in the chronic neuritides. A sixty-year-old male developed an incapacitating neuralgia following an exploratory thoracotomy. His response to hypnotherapy was dramatic and complete. A forty-year-old female was treated for tic douloureux. Suggestive therapy in this instance produced an amelioration of symptoms for two months, but following this amelioration there was a complete return of symptomatology. An obese middle-aged female was treated by hypnosis for chest pain which by the process of elimination was thought to have originated from an old rib fracture; she achieved an equivocal esult.

We believe that the hypnotherapeutic approach to chronic pain should be selective. t should be applied only to those patients who are intently desirous of achieving relief. Positive motivation is extremely important in accomplishing a favorable result. Furthermore, it is our conviction that attempts to remove completely the symptom of pain via suggestion will often result in failure. We attempt to teach the patient to adjust to his level of pain. He is taught to accept the painful reflex within the scope of his activities, permitting his return to a previous routine which, if continued sufficiently, will further reduce the significance of pain as a presenting symptom. Every effort must be made to arrive at the causation of the painful syndrome. If an acceptable originating factor for the pain is not discovered, the case is not one that belongs within the scope of the armamentarium of the anesthesiologist.

Comment

The present status of hypnosis in anesthesiology must be evaluated by several standards. Not only must the accomplishments of the application of the hypnotherapeutic technic within a particular specialty be credited, but the need for that type of endeavor and whether or not present applications are satisfying that need also must be taken into account.

An anesthetic approach other than the chemotherapeutic one is necessary because very often the proper end result with chemoanesthesia alone cannot be achieved. However, hypnoanesthesia must be an adjunct, not a substitute. Undoubtedly the ultimate welfare of those patients requiring the services of an anesthesiologist is better served when hypnosis is a selective and integrated aspect of anesthesiologic care, a position which is fortified by many of the excellent reports to which we have referred. The indiscriminate use of hypnotherapy in anesthesiology is regrettable. As with any properly applied therapeutic method in any aspect of medical science, the more specific and indicated the approach, the greater the incidence of successful results.

As long as the emotional aspects of patients continue to play so large a role in the application of therapy, there will continue to be a need for a psychodynamic maneuver such as hypnoanesthesia. The anesthesiologist who desires to utilize the hypnotherapeutic technic in his practice must be schooled and well grounded in the multiple aspects that comprise this type of patient care. It is evident that this situation is becoming increasingly a reality. The initial wave of enthusiasm is reaching its peak, and after the usual disappointment occurs a level of definitive acceptance will be the outcome. Emphasis on the motivation of the patient and not on that of the therapist will hasten the arrival of this desirable situation.

Until many more aspects of the pain syndrome are elucidated, the hypnotherapeutic method in these situations is of great value. Caution and understanding of each patient is required. The many outstanding results that have been achieved attest to the value of hypnosis in the treatment of many painful conditions. If hypnosis is capable of relieving, delaying, or moderating drug addiction, which so frequently is a concomitant to the therapy of chronic pain, it must be construed as being of great value.

As the body of knowledge on hypnosis grows, so will its applications in the practice of anesthesiology. Its indications will become more precise, and its percentage of successful utilization will be higher. For the present we believe that hypnosis is a valuable adjunct to the armamentarium of the anesthesiologist and part of an increasingly better type of anesthesiologic practice.

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The real sources of joy in this life are not the results of easy tasks but of hard ones.—WILFRED GRENFELL

CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

APRIL 27, 1960

Discussed by MAX TRUBEK, M.D.

Uremia Following Paresthesias and an Unusual Skin Eruption

Case History

FURMAN M. JONES, JR., M.D.: A sixty-three-year-old white retired railroad conductor was admitted to Knickerbocker Hospital complaining of pain and swelling of both legs which had developed over the previous five weeks. During this time he also had become progressively weaker and had experienced some dizziness.

He had been in excellent health until the onset of these symptoms. The pain had begun in the calves of both legs, where it still was present and was somewhat more severe. The weakness and dizziness had accompanied the onset of the pain. He was seen by a private physician, who treated him with vitamin B_{12} and liver extract. Two weeks later he developed a painful swelling of the right ankle, and the swelling quickly spread to the level of the knee. A brownish red maculopapular eruption appeared on this leg. A few days later a similar swelling occurred in the left leg, and on this side the swelling reached the level of the groin and persisted until the time of admission. The patient also noted numbness and tingling in both legs. The pain in the calf was present at rest and was aggravated by walking. The swelling of the right leg subsided somewhat, leaving an area of reddish macules and hyperpigmentation.

The patient denied chills, fever, cough, dyspnea, or chest pain as well as urinary or bowel symptoms. There was no history of weight loss. He had no previous history of serious infection or of symptoms referable to the cardiovascular or respiratory systems. A history of allergies was denied specifically. He had a right inguinal hernia, which was managed by a truss.

On the patient's admission his temperature was 101.2 F., pulse 116, respirations 22, and blood pressure 130/70. Physical examination revealed a fairly well-developed man who appeared ill and showed evidence of recent weight loss. He was well oriented as to time, place, and person. He was pale and dehydrated but not cyanotic. Examination of the head and neck was unrevealing. The eyes reacted normally to light and accommodation without nystagmus and with normal extraocular movements. The ocular fundi showed only minimal arteriosclerotic narrowing. The tongue was dry and coated, but it did not deviate. The neck was supple, and the trachea was in the midline. There was no peripheral lymph node enlargement.

The chest was slightly hyperresonant to percussion, and the lungs were essentially clear to auscultation. The heart was definitely enlarged to the left. The heart sounds were of poor quality, and the aortic second sound was accentuated. The rhythm was regular, and there were no significant murmurs. The liver and spleen were not palpable, and there were no abdominal masses. Rectal examination gave negative findings.

The right leg was not swollen, and there was no tenderness in the right calf. There was a reddish macular eruption over the lateral malleolus of the right ankle. The left leg was swollen from the thigh to the ankle. There was pain on squeezing of the left calf, but the reaction to the test for Homans sign was negative. The left leg was warm, but there was no redness. There was no clubbing of the fingers or toes. Neurologic examination revealed impaired vibratory sense in the left leg and absent vibratory sense in the right leg, but the cranial nerves and deep tendon reflexes were intact.

The admission laboratory examination revealed a urine with a specific gravity of 1.010, 1 plus albumin, and no sugar or acetone. The sediment contained 1 to 5 white blood cells, 4 to 9 red blood cells, and 4 to 10 hyaline casts per high-power field. The hemoglobin content of the blood was 8.7 Gm. per 100 ml., and the red cell count was 2,390,000. The white cell count was 13,800 with 74 per cent polymorphonuclear leukocytes, 21 per cent lymphocytes, and 5 per cent eosinophils. The hematocrit was 27.5, and the sedimentation rate was 115 mm. per hour. The anemia was described as normocytic and hypochromic. The fasting blood sugar was 107 mg. per 100 ml., nonprotein nitrogen 61.5 mg., uric acid 5.6 mg., creatinine 4.75 mg., calcium 7.6 mg., and phosphorus 9.9 mg. The serum bilirubin was 0.45 mg., cephalin flocculation 4 plus, thymol turbidity 2.8 units, alkaline phosphatase 14.3 units, acid phosphatase 1.4 units, and cholesterol 124 mg. with 75 mg. esterified. The total protein was 6.6 Gm. per 100 ml. with 2.3 Gm. albumin and 4.3 Gm. globulin. The serum sodium was 140 mEq. per L., potassium 6.2 mEq., chlorides 99 mEq., and carbon dioxide 12.5 millimols. The bleeding and clotting times were normal. The prothrombin time was nineteen seconds (control thirteen seconds). The serum transaminase was 60 units. Two lupus erythematosus preparations were negative. The latex fixation was positive in a dilution of 1:320. The serum amylase was 62 units. The stools were 2 plus guaiac positive. The urine contained no Bence Jones protein.

A lumbar puncture revealed normal pressure and dynamics. The spinal fluid was free of cells and had 16 mg. per 100 ml. of protein. The spinal fluid and the blood gave negative serologic findings. A gastric analysis revealed hypochlorhydria. Two blood cultures gave negative results. An electrocardiogram showed sinus tachycardia at a rate of 140 with right bundle branch block. A Q wave and an RS-T elevation were seen in lead V_3.

Although many of the laboratory investigations were repeated, the only significant changes during the patient's hospital stay were an increase in the microscopic hematuria to 16 to 42 red cells per high-power field and a fall in the serum cholesterol to 68 mg. per 100 ml. with 24 mg. esterified.

A chest film showed moderate cardiac enlargement without specific chamber enlargement, no abnormal calcification, and some emphysematous changes in the upper lobes of both lungs with a suggestion of bulla formation. A flat film of the abdomen showed negative findings. Films of the dorsolumbar spine showed slight kyphosis. An upper gastrointestinal series showed a questionable "inverted 3" configuration, but this was not constant in all films. A barium enema film gave a negative result.

The patient was treated with bed rest, elevation of both lower extremities, application of warm saline compresses to both calves, and the administration of Achromycin and Dicumarol. His private physician continued the administration of vitamin B_{12} and iron. However, there was no change in his hemogram. Because of the azotemia he was treated with bicarbonate and lactate intravenously along with calcium gluconate, Amphojel, and hypertonic glucose with insulin. His urinary output was between 600 cc. and 800 cc. daily. However, his nonprotein nitrogen rose to 167 mg. and his carbon dioxide fell to 14 millimols. His general condition deteriorated; he became lethargic and confused. Neurologic examination, however, revealed no significant changes. On the tenth hospital day his temperature rose to 104 F., and he became comatose. There was no evidence of any local infection. He expired quietly later that day.

Discussion

Max Trubek, M.D.: The patient was a sixty-three-year-old retired railway conductor who was sent to the hospital because he had been suffering from pain and swelling of his legs for five weeks and had been getting progressively weaker. He denied weight loss and urinary symptoms; however, when he was examined on admission he looked as if he had lost weight, and urinalysis gave evidence of severe kidney disease.

One gets the impression of a rather stolid, uncomplaining man who was unaccustomed to being ill and who did not recognize the insidious onset of an illness that was to prove fatal. When admitted he was running a fever, but he was unaware of it. He had been given vitamin B_{12} and liver injections prior to his admission; anemia, therefore, must have been obvious. However, we are not told that it was macrocytic anemia. I suppose that his physician thought that it was something like pernicious anemia because of the association of a low hemoglobin and paresthesias. However, if we correlate the symptoms of weight loss, fever, anemia, paresthesias, and a markedly elevated sedimentation rate, we can reasonably infer that the patient was suffering from a major systemic disease. I would suspect that his illness might well have been longer than five weeks in duration.

First, I would like to consider the signs and symptoms referable to the patient's legs. The initial symptoms were pain and swelling of the right leg. This was followed by the development of an eruption on that leg. A few days later the left leg became involved, and the patient developed paresthesias. One thinks initially of thrombophlebitis, but paresthesias certainly are not characteristic solely of venous disease. He did not have diabetes and I cannot find laboratory evidence of pernicious anemia, and so I shall have to exclude from consideration two of the more common causes of peripheral neuropathy. Persistent edema of the left leg cannot be equated with a disease of a major arterial channel. The development of a maculopapular eruption that subsequently faded is not suggestive either of major arterial or of major venous disease. It might suggest a reaction to some medication, but in the protocol I see no evidence for this assumption. I can merely offer the suggestion that the signs and symptoms in his legs are consistent with but not diagnostic of a systemic vascular disease. I am not impressed with the possibility of serious neurologic disease; the only real neurologic deficit recorded was a reduced vibration sense.

Second, I should like to consider the patient's problem from the point of view of his renal disease. The urinalysis on admission showed a specific gravity of 1.010. I should like to ask if this was an isolated observation or whether or not repeated examinations showed continued failure to concentrate urine.

Dr. Jones: Several urinalyses were done. The specific gravity was never above 1.012.

Dr. Trubek: Thank you. I am glad

that the patient's urine was examined several times. One should always be cautious of diagnosing serious kidney disease on the basis of a single examination. In fact, when hyposthenuria is noted on an initial specimen, one of the most useful tests is the concentration-dilution test. It has the great advantage of being absolutely harmless and very inexpensive, and yet it affords very useful prognostic information. Returning to the objective urinary findings, microscopically there was hematuria, a few white blood cells, and a number of casts. Although these findings in themselves are not specific, when they are considered in conjunction with the elevated nonprotein nitrogen and creatinine and with the acidosis, there can be little doubt that renal parenchymal disease was present. I should like to ask if the patient's urine was cultured.

Dr. Jones: Urine cultures gave negative results on two occasions.

Dr. Trubek: Given this datum, a diagnosis of pyelonephritis would be unlikely. On admission the presence of azotemia was established, and we note a further loss of renal homeostatic function. The phosphorus was markedly elevated, and the calcium was reduced; he was in negative calcium balance. The patient also had hyperpotassemia and acidosis. At this point we can say unequivocally that he had uremia.

We are dealing, then, with a case of uremia without hypertension, a very important negative qualification. Examination of the eyegrounds showed only minimal arteriosclerotic changes, a finding which certainly is consistent with the absence of a high blood pressure of any duration or importance. The chest film showed moderate cardiac enlargement; I doubt that this enlargement was due to his kidney disease. However, I believe that the renal picture certainly is consistent with the hypothesis of some form of diffuse vascular disease even though the objective evidence is nonspecific. Whether or not a diffuse vascular lesion might explain the cardiomegaly in this patient is conjectural.

Third, I would like to consider what might have been taking place in the patient's liver. Although he was not jaundiced and had no hepatomegaly, a number of tests of liver function gave abnormal results. The alkaline phosphatase was elevated, and the cephalin flocculation test result was positive. The thymol turbidity was normal; I shall disregard this finding since tests like this are of value in arriving at a diagnosis only when they give positive results. The total cholesterol was low, but esterification was normal. The serum albumin was low, and the globulin was elevated. We are not told of any dietary deficiencies. The degree of albuminuria was not sufficient to account for the hypoalbuminemia. There also was anemia. Could it have been an iron deficiency anemia? Is it possible that there was a multiple deficiency state to account for these abnormalities? The history is suggestive but offers nothing more concrete. There is no real objective evidence to account for nutritional failure, although in practice this state may indeed be difficult to assess. There is no clinical evidence to suggest established cirrhosis. The transaminase was only at the upper limit of normal, and it certainly is evident that there was no acute hepatic disease of major importance.

How does the picture of this man's liver fit in with my underlying theme of a possible diffuse vascular disease? Neither well nor badly; it is consistent without being diagnostic. Having explored the matter to this point, I will now ask for help from the radiologist.

Jospeh M. Moynahan, M.D.: I find myself in the same position. There is nothing specific in any of the x-ray films. The pulmonary emphysema appears to be well established, but I can see no relation between it and the man's terminal disease. The moderate enlargement of the heart certainly is not diagnostic in a man of sixty-three. As for the upper gastrointestinal series, the inverted 3 configuration of the stomach was seen on only one film and was not constant. The stomach was not displaced, and the duodenal loop was not widened or distorted. The mucosa of the stomach and duodenum was normal. The barium enema film also gave a normal result. In short, I can offer no diagnostic features that would help you to come to a decision.

Dr. Trubek: I take it that you see no bony lesions that might suggest myeloma.

Dr. Moynahan: No, there are no bony lesions.

Dr. Trubek: In a man of over sixty with renal disease and an elevated globulin, one should think of myeloma. This was considered, and the test for Bence Jones protein was reported as yielding a negative result. However, the cutaneous manifestations were not unlike the hemorrhagic macules, which in myeloma are due to capillary occlusions by the abnormal globulin. In myeloma, paresthesias and motor disturbances as well as joint enlargement also may occur owing to the deposition of paramyloid around the peripheral nerves and joints. Nevertheless, it is difficult to substantiate a diagnosis of myeloma in the absence of roentgenographic evidence of bone destruction or osteoporosis, and I shall have to eliminate that possibility. By the same token, the absence of an enlarged liver or spleen militates against the possibility that paramyloid was deposited in these organs.

Could this patient have had some other obscure malignant disease? Carcinoma of the pancreas frequently is associated with thrombophlebitis and also with an elevated alkaline phosphatase even when icterus is still minimal. Some suspicion was recorded because of the presence of the inverted 3 defect, but this finding did not stand up under close scrutiny. In this respect the normal serum amylase value is indifferent as a diagnostic point, as is the normal blood sugar. The absence of abdominal or back pain precludes the clinical diagnosis of this disease. Metastatic disease in the liver might account for some of the deranged liver function test results. However, there was no pain or weight loss, and an enlarged, irregular liver was not detected. Likewise, terminal renal failure is not a component of cancer in the upper portion of the abdomen.

I will return to the patient's course: uremia without hypertension progressing to death ten days after his admission. To our knowledge the illness had a total duration of about six weeks, but the duration might have been longer. I believe that the anemia could have been secondary to the uremia. Having excluded chronic pyelonephritis on the basis of negative urine cultures and the absence of pyuria, let us consider chronic glomerulonephritis. We usually think of chronic glomerulonephritis as a slowly progressing disease marked by renal failure which first responds to treatment and then, as individual nephrons die, gradually becomes increasingly uncontrollable. However, it is not uncommon for a patient with this disease to be relatively asymptomatic, presenting himself for medical care only a month or two before death in irreversible uremia. Such patients usually complain of weakness as a prominent symptom, and they invariably are anemic. We may see these patients in the office or in the clinic and be somewhat astonished at the severity of the renal disease when the laboratory tests are reported. We are even more surprised when we stand by helplessly while they proceed to lapse into uremic coma in a short period of time and expire in spite of the most modern electrolyte and acid-base equilibrating therapy. Unlike the patient under discussion, however, this group of patients usually has well-established, although not always constant, hypertension. I would not exclude categorically the possibility of chronic glomerulonephritis on the basis of the urinary findings and the clinical course.

However, I am impelled to look further. The paresthesias and the eruption on the legs as well as the swelling that waxed and waned usually are not associated with simple chronic glomerulonephritis. They suggest a systemic disease, as does the laboratory evidence of disturbed liver function. I have considered the possibility that there may have been a diffuse vascular lesion. If this is true, polyarteritis nodosa would be the most likely one. Let us see what positive evidence can be adduced to support this idea.

Polyarteritis is a systemic collagen disease involving many organ systems. It usually is a disease occurring in individuals over fifty, is more prevalent in males, and typically is accompanied by leukocytosis and fever. A higher white count and a greater degree of eosinophilia are more characteristic. Infection often is suggested by these findings, but localizing signs are absent. This was true in our patient. The course of the disease is rather rapid, and uremia is the most frequent mode of death. Again, this applies to the case in hand. The absence of hypertension in the presence of renal disease which must have been very extensive, since it caused death in renal failure in a matter of six weeks, is unusual. The diagnosis of polyarteritis is further suggested by the presence of paresthesias. However, a more objective evidence of peripheral neuropathy would be preferable. The presence of skin lesions certainly is compatible with arteritis or vasculitis. There was no history of asthma. The presence of emphysematous bullae in the chest film in itself is not sufficient evidence of pulmonary arteriolar involvement. I am tempted to attribute the enlarged heart and the liver dysfunction in part to polyarteritis, but probably polyarteritis was not the entire cause. Given these data, I am willing to commit myself to a diagnosis of polyarteritis nodosa. I would favor this diagnosis over dermatomyositis because of the renal involvement, and I am willing to exclude systemic lupus erythematosus both because of the clinical facts and because the L.E. preparations were negative. The rapid course of the illness favors polyarteritis over the other forms of collagen disease.

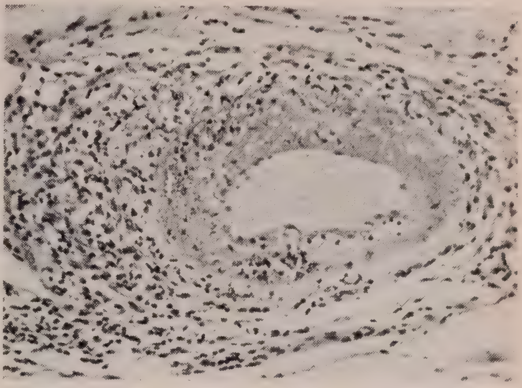

Fig. 1. Microscopic view of florid lesion of periarteritis nodosa involving a medium-sized artery in the periadrenal fat. There is fibrinoid necrosis of the media and a mixed acute exudate involving all layers of the vessel wall.

Diagnosis

Clinical.—(*1*) *Thrombophlebitis;* (*2*) *uremia secondary to collagen disease, dermatomyositis* (*?*) *or lupus* (*?*)*; and* (*3*) occult *malignant condition* (*?*)*, site not specified.*

Dr. Trubek.—(*1*) *Polyarteritis nodosa, and* (*2*) *uremia.*

Anatomic.—(*1*) *Periarteritis nodosa involving kidneys, pancreas, lungs, intestines, and adrenal glands;* (*2*) *pulmonary infarction, right lower lobe;* (*3*) *focal necroses, pancreas;* (*4*) *hemorrhages in small intestine, large intestine, and adrenal glands;* (*5*) (*uremia*)*; and* (*6*) *pulmonary emphysema, bullous, severe, both upper lobes.*

Pathologic Report

William B. Ober, M.D.: The observations at prosection were not remarkable. The heart weighed 350 Gm. and was slightly dilated with possible slight left ventricular hypertrophy. The lungs had a combined weight of 1,020 Gm. There was a moderate degree of pulmonary congestion and slight edema as well as a wedge-shaped fresh infarct at the lower angle of the right upper lobe. There also was a moderate degree of pulmonary emphysema with a few small bullae, as diagnosed roentgenographically. The liver weighed 2,700 Gm. and showed

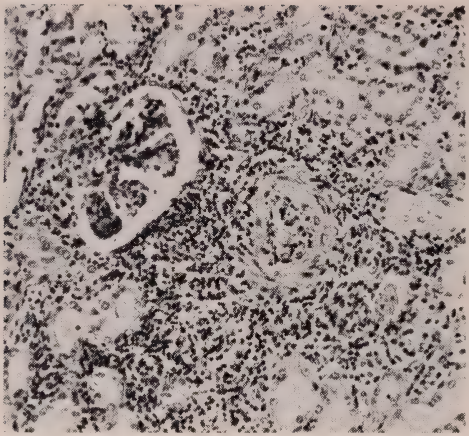

FIG. 2. Microscopic view of periarteritis nodosa involving an interlobular artery of the kidney.

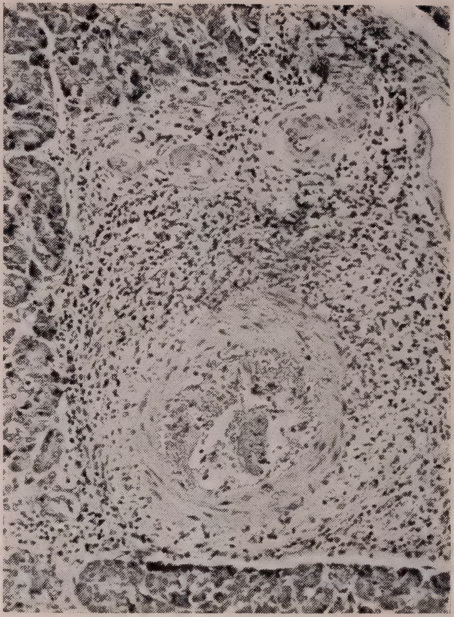

FIG. 3. Microscopic view of arterial components of a pancreatic interlobular septum showing typical arteritis with an intense exudate in the adventitia and smudgy necrosis of a nearby arteriole.

congestive changes superimposed on a fatty parenchyma without cirrhosis. I would interpret the chemical evidence of disturbed liver function without jaundice as being due to a fatty liver. The spleen and pancreas were grossly normal. There were ecchymotic patches of reasonably fresh hemorrhage in the mucosa and submucosa of the ileum and cecum, but there were no ulcers. The kidneys had a combined weight of 350 Gm. There were only a few small scars on the capsular surfaces and nothing to suggest contraction, cortical thinning, or other evidence of renal disease of long standing. A few petechiae were seen in the cortex on section, and the kidneys were diffusely dark reddish brown. A small area of hemorrhage was present in the right adrenal gland.

The principal diagnostic features were seen on microscopic examination. Characteristic lesions of periarteritis nodosa were found in the periadrenal fat (Fig. 1), which is one of the best places to look for vascular lesions in any type of collagen disease or vasculitis; the kidneys (Fig. 2); the pancreas (Fig. 3); the lungs; and the small intestine. The pulmonary infarct and the hemorrhages in the adrenal gland and the intestine were secondary to the vascular lesions. There also were focal areas of necrosis of the pancreatic parenchyma. We customarily think of periarteritis nodosa as a disease involving small- and medium-sized muscular arteries, but an occasional arteriole in the pancreas (Fig. 4) and in the periadrenal fat showed segmental smudgy necrosis. Fibrinoid necrosis and an exudative inflammatory reaction involving all layers of the arterial wall were commonly found in the florid lesions of the muscular arteries (Figs. 1, 2, and 3). The arterial lesions in the kidney showed some evidence of "healing," that is, they were not of uniform age. Organization and recanalization of the affected vessels was demonstrable (Fig. 5), and an occasional hyaline scar representing the end stage of the process could be found (Fig. 6). The renal lesions were sufficiently widespread to account for renal failure and death in uremia.

Necrotizing lesions of vessels represent an archetype of tissue reaction to injury which is common to a variety of pathogenetic backgrounds and which occurs in a variety of clinical contexts. To some extent one may separate such lesions clinically

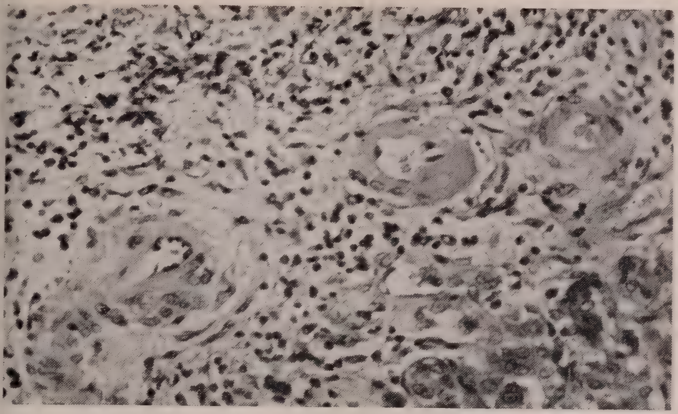

Fig. 4. Detail of Figure 3 showing three segments of the same arteriole. Both hyperplasia of the media and smudgy "hyaline" necrosis of the wall are evident.

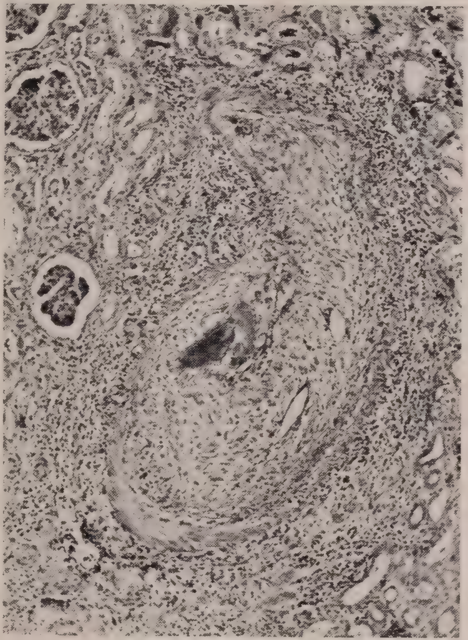

Fig. 5. Microscopic view of thrombosis, organization, and recanalization in an interlobar artery of the kidney.

and pathologically, but there is some degree of overlapping in terms of the clinical course and the pathologic features, a situation which indicates that there is a common denominator in most of the cases which display such lesions. Approximately 20 per cent of patients with periarteritis nodosa have a well-documented history of asthma.[1] In an unquantifiable proportion of other cases the vascular lesion can be traced to exposure to human or animal serum, sulfonamides, iodine, or Dilantin sodium.[2-4] Churg and Strauss[5] have described in detail the interrelationship between allergic granulomatosis, allergic angiitis, and periarteritis nodosa in patients with a history of asthma. Lesions resembling periarteritis have been reproduced in animals with the use of sulfonamides by Rich and Gregory[3] and with the use of a wide range of other antigens by other investigators. In general, the development of such lesions is thought to reflect

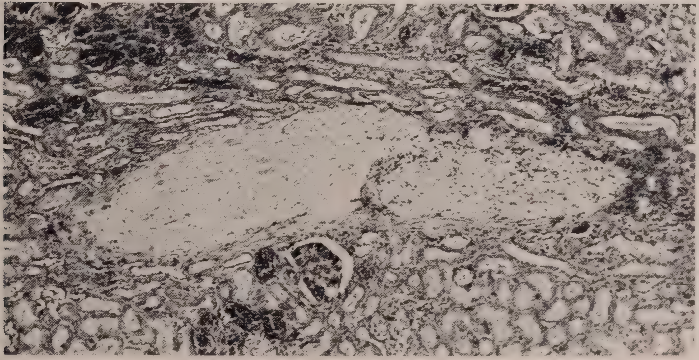

Fig. 6. Microscopic view of a hyalinized scar in the kidney, indicating a vascular lesion antedating those shown in Figures 2 and 5.

a hyperergic state.

The distribution of lesions in periarteritis nodosa in a sizable series of cases has been studied by a number of observers at the Mayo Clinic.[6–10] Renal lesions were found in 80 per cent of the cases, and in these patients death in uremia was common and hypertension was a frequent feature. However, as in the case under discussion, hypertension may not develop, particularly when the disease progresses rapidly. Gastrointestinal lesions were found in about 75 per cent of cases, and in about 25 per cent pulmonary lesions were found.

It sometimes is difficult to separate periarteritis nodosa from "allergic" vasculitis, a lesion which more commonly, although far from invariably, involves the arterioles. McCombs, Patterson, and MacMahon[11] have described a variety of syndromes associated with allergic vasculitis, namely, contact dermatitis with a systemic or id reaction, urticaria and angioneurotic edema, anaphylactoid purpura with and without thrombocytopenia, erythema nodosum, dermatomyositis, and vasculitic edema. I am tempted to consider the leg edema in our patient, edema without true thrombophlebitis, as a manifestation of systemic vasculitis. It is significant that in about 30 per cent of such cases that came to their attention the authors found allergic vasculitis to be associated with unclassified syndromes; in the unclassified cases, however, all of the patients gave clinical evidence of systemic disease. Of their 30 patients, 4 died, all with renal failure. The authors state firmly their belief that an antigen-antibody reaction can and does take place within a vessel wall and is responsible for the lesions.

Zeek and her associates[12–17] have endeavored to analyze the pathologic problem posed by necrotizing vascular disease by dividing the disease into separable categories: (1) periarteritis nodosa, (2) hypersensitivity angiitis, (3) rheumatic arteritis, (4) temporal arteritis, and (5) allergic granulomatous arteritis. They subdivide periarteritis nodosa further into two types: those lesions which are primary and those which are secondary to hypertensive disease and often associated with malignant nephrosclerosis. Rheumatoid arteritis is readily separable from the major group by virtue of its association with established rheumatoid arthritis or with other rheumatic diseases.[18] Temporal arteritis also is easily distinguishable by virtue of its anatomic location. I must confess that I find it difficult to distinguish between hypersensitivity angiitis and allergic granulomatous angiitis; it seems likely that the former is a term best applied to an acute exudative stage and the latter to a later stage of the lesion in which its granulomatous character is more clearly established.[2–4]

Zeek and her associates indicate that there is a major distinction between periarteritis nodosa of the Kussmaul-Maier type and hypersensitivity angiitis. In classic periarteritis nodosa the involved vessels are small- and medium-sized muscular arteries, and the lesions occur typically at hilar branchings of these arteries. Similar lesions are found in skeletal muscle. In hypersensitivity angiitis the involved vessels are arterioles, venules, capillaries, and occasionally small arteries. The lesions are found in the parenchymatous viscera and in the interstitial tissues and not in the skeletal muscle. A further distinction is that in any given case the lesions of periarteritis nodosa are of various ages and are associated with the development of granulation tissue and small aneurysms. In hypersensitivity angiitis the lesions in any given case are all of the same age and there is only an exudative reaction. Pulmonary lesions are not supposed to occur in classic periarteritis nodosa, but they do occur frequently in hypersensitivity angiitis.

As with any nosologic schema, there are limitations to this classification. In my own experience I have seen cases of periarteritis nodosa of the Kussmaul-Maier type involving the lungs, even with the formation of small aneurysms. In 1 case the roentgenographic picture was consistent with miliary tuberculosis, and on sectioning the lungs at autopsy the similarity to miliary granulomas was striking. Pulmonary lesions were present in the case that we are considering. Likewise, we were able to demonstrate necrotizing lesions of the arterioles, not only in the same organs in which the characteristic lesions of medium- and small-sized arteries were found but also even in the same microscopic field (Fig. 3). I have seen this phenomenon in other cases as well, and I will except the kidney from this observation since this picture in this organ could be accounted for in terms of periarteritis nodosa secondary to malignant hypertension; that is, I have seen arterial and arteriolar lesions combined in other organs: the heart, liver, gastrointestinal tract, and so on.

Of course, it could be argued that this patient had two diseases, or two forms of necrotizing angiitis: (1) the typical Kussmaul-Maier type of periarteritis nodosa and (2) superimposed hypersensitivity angiitis due to some medication, possibly liver extract. I would not like to say categorically that the patient could not have been allergic to liver extract, but I cannot find any real evidence that he was. I would like to close by saying that the day has passed, or should have passed, when we impute vaguely the term allergy to a medication without an actual clinical or laboratory demonstration of hypersensitivity.

In short, I believe that this patient had typical periarteritis nodosa and that patients with this disease also can have necrotizing arteriolar lesions and pulmonary lesions, notwithstanding statements to the contrary in the literature.

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Rest satisfied with doing well, and leave others to talk of you as they please.—PYTHAGORAS

Current Concepts in

DIABETES MELLITUS

Sponsored by the Clinical Society of the New York Diabetes Association

Editors

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Pathology

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It is currently accepted that insulin is produced by the B cells of the islets of Langerhans and that specific granules demonstrable histologically in these cells represent stored insulin or its precursor.[1] Anatomic changes in B cells are constantly present in animals with experimentally induced permanent diabetes, regardless of the method utilized to produce the disease; in human diabetes, skilled pathologists, using the best available methods, fail to find islet cell lesions of significance in at least 25 per cent of cases.[2] In the remainder, a variety of islet lesions may be encountered,[3] but the periodic occurrence of identical alterations in patients without diabetes reflects the lack of specificity of islet pathology in this disease and the absence of a clear causal relationship between the various lesions which may be present and the diabetes. These have been interpreted by some as consequences of the associated metabolic derangements, rather than as their cause.

The discovery of insulin and of antibiotics, together with increasing skill in the utilization of these and other therapeutic modalities, has virtually eliminated acute metabolic disturbances and sepsis as statistically important causes of death in the diabetic population. Correspondingly, their associated acute tissue changes have practically disappeared from autopsy material. In part, at least, because of the longer duration of life and of the diabetes, these have been largely replaced by the consequences of widespread, chronic, and eventually lethal lesions of small and large blood vessels, which today account for about 80 per cent of deaths among diabetic patients, as compared with approximately 30 per cent in the general population.

It follows that the attention of those currently concerned with the anatomic pathology of diabetes is focused especially on the pancreas and on the vascular system. It is with these aspects of the pathology of diabetes that this paper is concerned.

The Pancreas

Pancreatitis,[4] neoplasms,[5] hemochromatosis,[6] and surgical extirpation of the pancreas,[7] events which can be clearly related to the development of human diabetes, are uncommon.

HYALINIZATION OF THE ISLETS OF LANGERHANS.—The lesion most commonly encountered in diabetes is hyalinization of the islets of Langerhans.[8] Deposits of hyaline material, with or without concomitant fibrosis, are encountered in the islets in somewhat less than one half of autopsied cases. This lesion occurs most frequently in patients over fifty years of age, or in cases of mild diabetes of long duration. It is about six times more frequent in patients past age forty than in those less than age forty, and increases in frequency with age. It is rare in juvenile diabetic patients. It has been suggested that the hyaline material, which has the staining reactions of an acid mucopolysaccharide, is derived from the endothelium of islet capillaries.[9] The severity of involvement of individual islets within a given pancreas varies considerably; the degree of over-all involvement cannot be correlated with the severity of the diabetes. Hyalinization of islets is not a lesion peculiar to diabetes and may be found in varying severity, generally mild, in as many as 25 to 30 per cent of persons without clinical diabetes over age fifty,[2] particularly in the presence of pancreatic arteriosclerosis.

GLYCOGEN INFILTRATION.—Hydropic degeneration of B cells is much less frequently observed in human autopsy material but is of considerable current interest in experimental diabetes. Characterized by swelling and cytoplasmic vacuolization, this lesion used to be attributed to cellular imbibition of fluid. In 1951 Toreson[10] reported that the involved cells are filled with glycogen. This observation has been confirmed in human autopsy material and more particularly in experimental diabetes. Glycogen infiltration of B cells is an early, acute, reversible change and has been interpreted either as an insulin exhaustion phenomenon or as an example of the abnormal distribution and deposition of glycogen found in various tissues in diabetes.[11] Its incidence in human cases, while rare, is difficult to ascertain since acute cases with diabetes of short duration, in which it might be found, are seldom encountered at autopsy. Its presence is considered by Toreson as proof of diabetes. All are agreed that glycogen infiltration of the B cells is not a causative lesion of diabetes. It is not specific but highly characteristic, having been described in about 5 per cent of nondiabetic patients[12] in whom, presumably, postmortem artefacts as the cause of a simulating lesion have been excluded.

B CELL DEGRANULATION; ISLET CELL MASS; INSULIN EXTRACTABLE FROM PANCREAS.—In a large number of autopsies on diabetic patients the islets appear to be free from significant alterations. The figures range from 25 to as high as 50 per cent[13]; the former percentage was found even in cases meticulously studied currently by interested and expert pathologists using the best available technics.[2] For the most part, the normal pancreas with structurally intact islets continues to be encountered in "adult diabetes." Alterations in islet structure can be demonstrated almost without exception in "juvenile diabetes." Advances have followed a sustained attack on the problem of the normal pancreas, utilizing improved differential staining of islet cell granules by the Gomori aldehyde-fuchsin stain[14] or modifications of this stain,[15] quantitative estimates of B cell mass,[16] and measurements of amounts of insulin extractable from the pancreas.[17] In a series of 995 cases of diabetes, Bell[15] described complete to partial degranulation of B cells in all patients under age twenty, and in 79.5 per cent of those in the twenty- to forty-year-age period. In other age groups there was a progressive decrease in the number of patients with loss of granules, the phenomenon being present in only 55.6 per cent of those beyond age sixty. Apart from 2 emaciated subjects in a control group of nondiabetic patients, degranulation was found only in diabetic patients. Quantitative estimates by Maclean and Ogilvie,[16] utilizing pancreas of 30 diabetic subjects in which there was no significant fibrosis or hyalinization, revealed a reduction in the total amount of islet tissue and of B cells to very low levels in juvenile cases, and to about one half that of controls in adult diabetic patients. Further observations in young diabetic subjects,[18] undertaken to estimate the temporal succession of changes, indicated that islet size and weight, which were greater in patients dying within eight weeks of the onset of symptoms, tended to decline with the increasing duration of diabetes as estimated in patients dying from nine months to nineteen years after the onset of the disease. These studies are consonant with the finding of close agreement between intact B cell mass and granule content and the amount of insulin extractable postmortem from the pancreas.[17] The average insulin content of adult diabetic pancreases was found to be approximately one half that of nondiabetic controls, while practically none could be extracted from the pancreases of juvenile diabetic patients.[19]

A to B Cell Ratio.—The rediscovery of glucagon and the demonstration that pancreatic islet A cells are probably the site of glucagon production[1] have led to meticulous studies of the alteration from normal to the A:B cell ratio in diabetes. In most diabetic patients there is a shift in this ratio, which is most marked in juvenile diabetic patients. Quantitative correlations with islet cell mass indicate that this shift is the result of a decrease of intact B cells, rather than the result of an absolute increase in A cells.[12]

It remains to be emphasized that the qualitative and quantitative data obtained from these studies, while statistically highly significant, overlap control values insofar as patients with adult diabetes are concerned.[17] In as many as 25 per cent of cases, the pancreas in adult diabetic patients contains amounts of insulin which are within the range of normal, and have islets which are histologically normal as judged by the most precise criteria currently available. It is, therefore, noteworthy that almost without exception little or no insulin is extractable, nor B granules demonstrable, in the pancreases of juvenile diabetic patients dying shortly after the onset of diabetes, in whom the findings in experimental animals with acutely induced diabetes are recapitulated. The data furnish additional evidence that B granules represent either a precursor of insulin or insulin itself, a concept reinforced by findings obtained from electron microscopy[20] and the utilization of fluorescent antibody-staining technics.[21]

The Vascular Lesions in Diabetes

Prolongation of the survival of patients with diabetes has been followed by the emergence of what is today the major problem in this field, the consequences of the associated "degenerative vascular disease." The use of this all-inclusive designation has led to confusion, for it lumps together types of vascular disease which differ in location, appearance, and clinical significance, and, almost as certainly, in pathogenesis.[22] Thus it is frequently quoted that 94 per cent of juvenile patients suffering from diabetes of long duration have degenerative vascular disease. Referral to the original source[23] reveals that 94 per cent of such patients have calcified arteries. Currently 87.5 per cent of such patients die of cardiorenal-vascular causes, none of which bear any necessary relationship to calcified arteries.

The varieties of vascular disease concerned are better designated in more precise terms: atherosclerosis, medial calcification or Mönckeberg's sclerosis, arteriolar sclerosis, and the capillary lesions of diabetes. They affect vessels of different size and location; clinically and at autopsy they are encountered in unpredictable combinations. Except for the capillary lesions, which are specific for diabetes, the lesions of arteries and arterioles are qualitatively indistinguishable from corresponding lesions in nondiabetic persons. It is their early appearance and great severity in diabetic patients which is appalling.

ATHEROSCLEROSIS.—Atherosclerosis affects muscular and larger arteries. The process is characterized by and derives its name from the yellow cholesterol-containing lipid deposits in the intima. The disastrous consequences follow occlusion of the vascular lumens by progressive fibrosis, calcification, and thrombosis. So many reports attest to the earlier onset, greater severity, and reversal of the sex ratio in nondiabetic persons of occlusive involvement of muscular arteries, especially of the heart and lower limbs, that this statement hardly requires documentation. Occlusive coronary artery disease is currently the largest single cause of death in diabetic patients. Lethal lesions of these vessels are at least two times more frequent in diabetic males and three times more frequent in diabetic females than in their nondiabetic controls. Fatal coronary artery disease is ten times more frequent in nondiabetic subjects over age forty than in nondiabetic subjects under forty years of age, but only four times greater in incidence in similar diabetic groups; and, in diabetic subjects under age forty the incidence is ten times greater than in nondiabetic subjects of corresponding age.[24] Atherosclerotic gangrene of the lower extremities is 53 times more frequent in men with diabetes and 71 times more frequent among diabetic women, all over age forty, than in nondiabetic persons of similar age.[25] Remarkably, the over-all incidence of cerebral atherosclerosis encountered postmortem in diabetic patients does not differ significantly from that among nondiabetic individuals.[26] The findings of extensive gross atheromatous involvement with severe narrowing of the major renal artery and its main intrarenal branches is unusual in autopsies on nondiabetic subjects; it has been described as characteristic in patients with diabetic glomerulosclerosis who died from renal failure.[27]

MÖNCKEBERG'S SCLEROSIS.—Mönckeberg's sclerosis consists of calcification with or without ossification which affects and is confined to the media of muscular arteries of large and medium size, and particularly to those of the extremities. Its incidence in diabetic subjects is significantly greater than in nondiabetic subjects, strikingly so among young patients with diabetes of long duration.[23] Medial calcification does not produce vascular occlusion. It may occur as an isolated lesion without functional significance, or accompany occlusive arteriosclerosis; otherwise the two diseases appear to be unrelated. The finding clinically of Mönckeberg's sclerosis is of no value in assessing the extent of occlusive atherosclerosis.

ARTERIOLAR SCLEROSIS.—Hyaline arteriosclerosis, resembling that seen in nondiabetic patients,[28] is greater in frequency and severity in patients with diabetes, independent of coexistent hypertension. Extremely severe involvement of afferent glomerular arterioles, according to Bell,[29] is sufficiently characteristic in itself to suggest the postmortem diagnosis of diabetes. An unexplained but not uncommon observation is that of severe hyaline thickening of efferent glomerular arterioles.[30] The combination of severe afferent and efferent intimal hyalinization is strongly indicative of diabetes. While arteriolosclerosis is seen with greatest severity in the kidneys, arterioles in other organs may be affected, including in particular those of the retina,[31] pancreas,[13] peripheral nerves,[32] and lower extremities.[33] Indeed, it has been suggested that sclerosis of the arterioles of the pancreatic islets, with consequent sclerosis of contiguous capillaries and ensuing vascular insufficiency, is responsible for the hyalinization and fibrosis of the islets and for hypoinsulinism in cases with islets which appear intact in routine studies.[13] This concept is not generally accepted. The presence of large amounts of periodic-acid-Schiff-positive material in severely narrowed hyalinized arterioles of nerves, muscle, and skin of the lower extremities appears to distinguish these lesions from those in corresponding vessels in nondiabetic subjects. Analogous lesions have been described in diabetic placental arterioles.[34]

CAPILLARY LESIONS.—In contradistinction to the absence of qualitatively distinctive features of the lesions of arteries and arterioles is the practically pathognomonic significance of certain capillary lesions encountered in the renal glomeruli and in the retinas of diabetic persons. Their presence differentiates the pattern of degenerative vascular disease in diabetic patients from that in nondiabetic individuals, and from that so far demonstrated anatomically in other capillaries in patients with diabetes.[35]

The original description of the glomerular lesion by Kimmelstiel and Wilson[36] was based on morphologic observations of nodular hyaline masses in the centers of glomerular lobules and was designated as intercapillary glomerulosclerosis. Seven of 8 patients studied had diabetes, and most of them had hypertension, albuminuria, edema, and impaired renal function. Confusion subsequently ensued, in part when the concept of a characteristic diabetic renal glomerular lesion was beclouded by inclusion of lesions other than the nodular deposits originally described, and in part when the term "Kimmelstiel-Wilson syndrome" came into usage to designate a constellation of clinical findings. It became evident from subsequent studies that the complete clinical syndrome of diabetes, hypertension, albuminuria, edema, and impaired renal function was not always associated with nodular lesions, and that characteristic nodular lesions were encountered postmortem in patients in whom the syndrome was not manifest during life.[37–40]

Some clarification followed when Bell pointed out that another type of glomerulosclerosis actually occurred in the diabetic kidney, in a diffuse rather than nodular form, either alone or in conjunction with the nodular form[29]; and again, when critical attention was directed to the exudative lesion in sclerotic glomeruli of diabetic patients.[41] The nodular hyaline lesion for which the term Kimmelstiel-Wilson lesion should be reserved is an unmistakable anatomic landmark of diabetes if meticulous criteria are applied to its recognition. Diffuse glomerulosclerosis, while more common than the nodular type and of greater functional significance, and the exudative lesion, lack histologic features sufficiently characteristic to permit their differentiation quite so precisely from nonspecific glomerular alterations in the kidneys of diabetic and nondiabetic patients.

The essential feature of the Kimmelstiel-Wilson lesion is a nodular accumulation of hyaline material which appears to intervene between lumens of glomerular capillaries. The nodules may be single or multiple within a single glomerulus, and may affect few to many glomeruli. In glomeruli which are free from nodular lesions the capillary walls may be normal or diffuse glomerulosclerosis may be present. Nodules occupy the centers of glomerular lobules, consistently sparing the outer wall of the capillary loop. This axial distribution is striking and almost certainly reflects factors of histogenetic significance which are probably related to the anatomic arrangement of capillaries within the glomerular lobule. Overdistended capillaries are sometimes seen at the margins of nodules. To some observers these are analogous to the microaneurysms observed in retinal capillaries, but others interpret this as a reflection of local mechanical obstruction. We never have seen ectasia of capillaries except in the vicinity of large hyaline nodules. Nodular lesions are found in about 30 per cent of patients with long-term diabetes and represent but one aspect of renal vascular disease in diabetes. Invariably they are found in association with various degrees of arterial and arteriolar sclerosis, as is diffuse glomerulosclerosis.

Diffuse glomerulosclerosis consists of widespread circumferential hyaline thickening of capillary walls which may involve the outer loops. It may be mild to severe with corresponding degrees of narrowing of capillary lumens. It is approximately twice as common as nodular glomerulosclerosis and is frequently found in the absence of the latter. It is questionable whether or not the features characterizing diffuse glomerulosclerosis due to diabetes are, in the absence of severe afferent arteriolar sclerosis, sufficiently distinctive to permit differentiation by light microscopy from diffuse glomerulosclerosis in nondiabetic patients, or of diffuse glomerulosclerosis of other etiologies in diabetic patients.

Differences of interpretation of the precise localization of the diabetic glomerular lesion now appear to be resolved. Evidence derived from electron microscopic studies of renal biopsies clearly indicates that hyalinization, whether diffuse or nodular, is truly mural in location, involving components of the capillary wall, rather than a questionable mesangium or intercapillary spaces.[42,43] Corresponding to the diffuse lesion found by light microscopy, the earliest accumulation of hyaline is in the basement membrane proper, resulting in its great thickening in a diffuse but not entirely uniform fashion. Focal irregular deposits of hyaline, resembling and continuous with basement membrane, follow. According to Farquhar, Hopper, and Moon,[42] these are clearly extracellular, lying between adjacent endothelial cells. According to Bergstrand and Bucht,[43] endothelial cells are invaginated by hyaline masses derived from basement membrane. According to Farquhar and her associates,[42] the nodular lesion thus develops from the diffuse lesion by enlargement of the hyaline deposits, being distinguished from it only by size and shape. According to Bergstrand and Bucht,[43] the nodular lesion corresponds to the deposition of masses of hyaline material within the cytoplasm of endothelial cells and may reflect a process different from that occurring in the basement membrane proper, even though both originate from the basement membrane and are closely related.

The reports of distinctive ultraviolet absorption patterns in various diseases characterized by glomerular hyalinization are of interest in this connection. A specific pattern was detected in all glomeruli of kidneys with diabetic glomerulosclerosis, independent of the degree and type of involvement. Even histologically normal glomeruli in such kidneys revealed a characteristic absorption which according to Sommers, Crozier, and Warren,[44] "allowed identification of a kidney from a diabetic person with greater certainty and ease than by conventional methods."

It continues to be alleged that Kimmelstiel-Wilson lesions occur in diseases other than diabetes.[45] In such instances either the adequacy of the clinical investigation to detect diabetes or the adequacy of the histologic criteria used for its recognition can be questioned. One source of current confusion is the nonspecific exudative or hyaline-fibrinoid lesion which may be encountered in the kidneys of patients in the late stages of diabetes and in various renal glomerular diseases, other than diabetic glomerulosclerosis, associated with renal failure.[46] The crescentic deposits characteristic of this lesion are found within capillary lumens or in the capsular space and differ from the nodular Kimmelstiel-Wilson lesion in texture, staining reactions, location, and electron micrographic appearance. They resemble the cortisone lesions of human and rabbit kidneys[43] which have also been interpreted by some, with resultant confusion, as identical to the specific nodular lesion of the kidney of the diabetic human. A convincing replica of the latter has not been produced experimentally. Nevertheless, it is probably significant that a variety of renal glomerular lesions characterized by hyalinization have been observed in such studies.[48–50]

From evidence so far available, the factors involved in the development and progression of diabetic glomerulosclerosis are not known.[40] It appears that the diffuse lesion antedates the nodular lesion and is more closely related to the ensuing impairment of renal function than the nodular lesion. The proposition that diabetic glomerulosclerosis is caused by exogenous insulin is weakened by the observation that 11 per cent of 45 cases of diabetes from the preinsulin era studied at the Massachusetts General Hospital had nodular lesions, while 36 per cent revealed diffuse glomerulosclerosis.[51] In Bell's series of 1,465 diabetic subjects,[29] nodular lesions were found in 12.4 per cent of males and 19.4 per cent of females. When diffuse lesions were included the total incidence was 19.5 per cent for males and 30 per cent for females.

The pathologic anatomic counterpart of the characteristic punctate hemorrhage of diabetic retinopathy is a capillary microaneurysm, accompanied frequently by dense hyalinization of capillary basement membranes.[52] While there is a definite correlation between the incidence of retinal and renal capillary involvement, the lesions are not strictly comparable morphologically.[53] Nevertheless, the capillary lesions are unique with reference to their specificity for diabetes and their localization in patients with diabetes, for similar capillary disease has not hitherto been convincingly demonstrated other than in the retina and glomeruli in such patients.

The Pathologic Diagnosis of Diabetes

There are no gross anatomic changes which are specific for diabetes, and unique histologic alterations which permit the pathologist to make an unequivocal postmortem diagnosis are few.[54] The nodular Kimmelstiel-Wilson lesion is the most reliable if not the only unmistakable anatomic landmark of this disease. Glomerular capsular hyaline deposits may have similar significance,[53] as does diffuse glomerulosclerosis for those pathologists who are confident of their ability to distinguish diffuse diabetic glomerulosclerosis from other forms of diffuse glomerulosclerosis which may resemble it closely.[40] When coupled with other tissue changes, none in themselves specific for diabetes, the diagnostic value becomes enhanced. Included among these additional presumptive lesions are glycogen infiltration and degranulation of B cells, shifts in the ratio of alpha to beta cells, advanced hyalinization of islets, severe degrees of sclerosis of afferent and efferent glomerular arterioles, retinal capillary microaneurysms, massive hyaline thickening of tubular basement membranes,[53] glycogen infiltration of liver cell nuclei, and glycogen infiltration of renal tubular epithelium.[55] It is on account of the nature and distribution of these lesions that a unifying concept has been proposed linking these lesions as a reflection of varying degrees of disturbance in diabetes of polysaccharide metabolism.[3]

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(Number two in a series of articles on Current Concepts in Diabetes Mellitus)

The happiness of your life depends upon the quality of your thoughts.—Marcus Aurelius

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D.,
Secretary, Medical Education for National Defense (MEND)
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Survival in a Thermonuclear War

VI. Providing Safe Ventilation

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SINCE the radioactive contamination after a hydrogen bomb explosion will be largely in the form of a fine dust, that dust must be kept out of the shelter without interfering with adequate ventilation. The shelter must be sealed, and at the same time a constant supply of fresh, uncontaminated air must be provided. To do this requires as a minimum a hand operated blower, a special filter, and a series of metal pipes for intake and exhaust.

Air Blowers

The amount of air needed for each person will vary according to the activity of the occupants and the shelter design. Persons at rest will each need about 3 cubic feet of fresh air per minute. Moderate activity will raise the requirement to 5 cubic feet per minute, and heavy work may raise the requirement to as high as 10 cubic feet per minute. In general, it is safe to assume that no more than moderate work will be done and to plan the ventilating system on the basis of 5 cubic feet of fresh air per person per minute.

Unfortunately, to provide 5 cubic feet of fresh air per minute, it is necessary to draw more than 5 cubic feet into the shelter. The reason for this is that the fresh air is mixed with the stale air. When more fresh air is drawn in some of the fresh air is pumped out with the stale air. The extent of this mixing varies with the shape of the shelter and the location of the openings of the intake and exhaust air pipes. If these openings are close together, most of the fresh air coming in will promptly go out again. In such a situation, to get 50 cubic feet of usable fresh air into the shelter, it may be necessary to pump over 500 cubic feet of fresh air in. This of course is an impossibility in a family shelter. For this reason the intake and exhaust openings must never be close together (Fig. 1).

Even if the intake and exhaust pipes are at opposite ends of the shelter there will still be a considerable loss of fresh air through the exhaust. The amount will vary depending on the shape of the interior of the shelter. If the shelter has the form of a cube, like the reinforced concrete shelter, mixing of fresh and stale air will be very extensive. This means that the amount of fresh air lost through the exhaust will vary depending on

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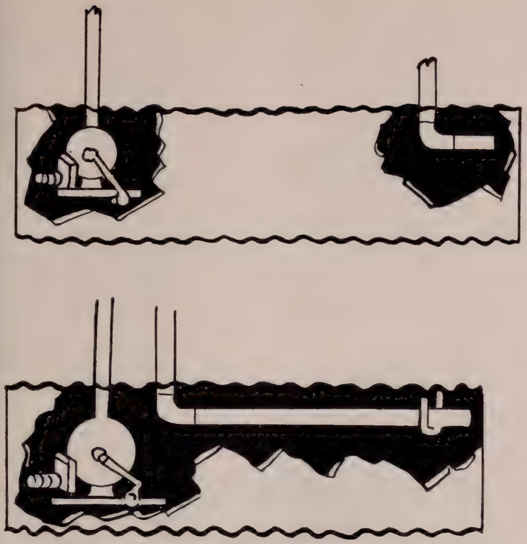

FIG. 1. Alternate arrangements of vent pipes within a shelter.

the amount already in the shelter. For example, consider a shelter containing 500 cubic feet of air. If at a particular time 250 cubic feet of fresh air are mixed with 250 cubic feet of stale air, the exhaust air will be 50 per cent stale and 50 per cent fresh. Thus, to get 50 cubic feet of usable fresh air added to the shelter contents, it will be necessary to draw in 100 cubic feet through the intake. As more and more fresh air is drawn in, a higher percentage of fresh air is wasted through the exhaust. In a shelter of this general shape it is almost impossible to get beyond a ratio of 75 per cent fresh air to 25 per cent stale air, no matter how much hand pumping of air is performed. Fortunately, this ratio is quite acceptable.

Nevertheless, it should be clear that in shelters shaped like a cube there will be an inherent inefficiency in the ventilating system. This should be compensated for by increasing the total capacity of the ventilating system. In general, it is a good idea at least to double the air supply. Accordingly, if a cube-shaped shelter is built, it is wise to have 4-inch rather than 3-inch vent pipes, a blower capable of 100 cubic feet per minute, and a filter of at least 100 cubic feet per minute capacity.

The pipe shelter with its elongated cylindrical shape is somewhat more efficient in terms of ventilation. If the intake and exhaust vents are properly located and correctly directed, mixing of fresh and stale air will be minimized. The extent of the

TABLE I.—SOURCES OF SUPPLY AND APPROXIMATE COST OF VENTILATION EQUIPMENT

Equipment	Manufacturer	Approx. Cost F.O.B. Factory (Dollars)
Hand-operated blower (Model 60-B)	Champion Blower and Forge Co., Lancaster, Pennsylvania	64
Box-type air filters		
No. 6C62-a-N2N2* size B (68CFM) in complete metal housing	Flanders Filters Inc. P.O. Box 718 Riverhead, New York	37
No. 1A-50 (50CFM) plywood frame (specify 3 inch inlet and outlet pipes)	Cambridge Filter Co. P.O. Box 1255 Syracuse 1, New York	34
1F-50 (50CFM) complete metal housing (specify 3 inch inlet and outlet pipes)	Cambridge Filter Co. P.O. Box 1255 Syracuse 1, New York	60
Outside filter	Fram Corp. Providence, Rhode Island	16
Vent flue cap for 3 inch pipe, Type C	G. C. Breidert Co. P.O. Box 1190 San Fernando, California	3.50
Activated charcoal panel adsorber for poison gas No. 7PA. (specify that it be packed extra full)	Barnebey-Cheney Co. Cassody at Eighth Columbus 19, Ohio	26

* Recommended.

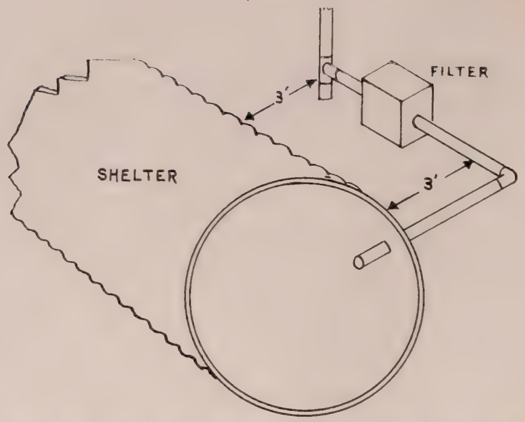

Fig. 2. The filter must be separated from the shelter by 3 feet of earth.

mixing depends on the diameter and length of the shelter. With smaller diameter shelters of considerable length, mixing is less than with larger diameter, shorter shelters.

For pipe shelters 60 inches or less in diameter, ventilation at a rate of 50 cubic feet per minute of actual fresh air intake will be quite sufficient for at least 6 adults. The model 60-B blower* (Table I) is an excellent choice. It has a capacity of 55 cubic feet per minute.

If a pipe shelter 72 inches in diameter is used, it will be wise to plan on a slightly larger blower with an approximate 75-cubic-feet-per-minute capacity. The model 60-C blower,* with a capacity of 85 cubic feet per minute, would be a good choice. It costs approximately $80.

It is important that the blower be attached to the intake system in such a way that outside air is sucked into the shelter via the center of the blower. By producing a slight positive pressure in the shelter, radioactive contamination will be kept from seeping into the shelter through cracks that have been overlooked. If there are any cracks, air will blow out through them, rather than in. From the center of the blower, a set of 3-inch vent pipes should lead to the outside of the shelter, making a right-angle turn at least 3 feet away to prevent gamma rays, which move in a straight line, from passing through the air in the vent pipe into the shelter proper.

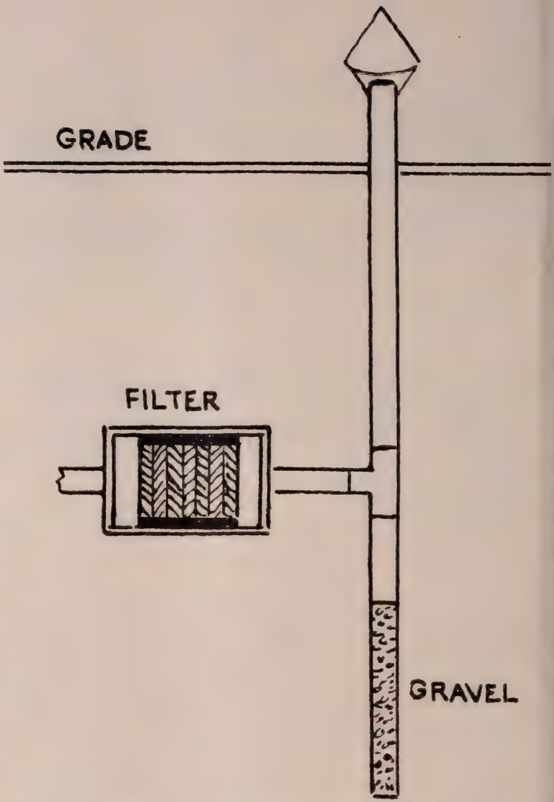

Fig. 3. Filter buried underground.

Filters

The filter should be located at least 3 feet from the shelter proper, and, if possible, at least 3 feet below ground level (Fig. 2). The filter should not be kept in the shelter itself, since it may accumulate large quantities of radioactive particles whose gamma rays would pass through the filter casing, injuring the people in the shelter. The filter is buried underground to protect it from blast and heat (Fig. 3). To be sure, this makes it impossible to clean the filter, but this is a relatively minor drawback since a good filter will function for a long time.

The Civil Defense Administration has not to my knowledge set any definite specifica-

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* Made by Champion Blower and Forge Company, Lancaster, Pennsylvania.

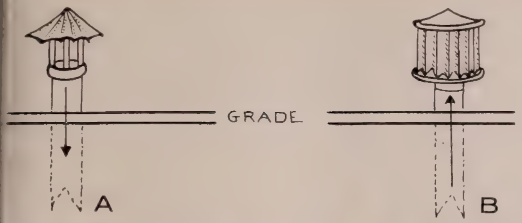

FIG. 4. Two types of vent covers. (A) Protective only. (B) Helps exhaust stale air.

tions for fallout filters. Accordingly, it seems best to choose the most efficient on the market. There are two, either of which gives better than 99.9 per cent protection, and neither is very expensive, ranging in price from $64 to about $80 each (Table I). It is essential that these filters be sealed in an airtight box, with 3-inch stainless steel hose connections at each end. It is wisest to have this done at the factory even if it costs a few dollars more.

From the filter, the intake pipe should form a T. The lower extension, about 2 feet long, is filled halfway with gravel. The upper extension should rise to about 1 foot above ground level and be covered with a plain flue cap (Fig. 4A). The T arrangement and the flue cap will minimize the danger of a heavy rain flooding and clogging the filter.

The air exhaust system also uses 3-inch diameter pipes. No blower is attached. The pipes of the exhaust system must also make a right-angle bend at least 2 feet outside the shelter and rise to a height of 1 foot above the ground. Instead of an ordinary flue cap, a special vent flue cap should be attached to the top of the exhaust pipe (Fig. 4B). When the wind blows these devices exert suction on the exhaust system; therefore, the hand-operated blower need be used less. With a wind velocity of 12 to 14 miles per hour, one of these vent flue caps can exhaust enough stale air from the shelter to make the use of the blower unnecessary. They cost only about $3.50 each (Table I). Of course, a vent flue cap must not be put on both ventilation pipes, only on the exhaust pipe.

In several of its publications, the Office of Civil and Defense Mobilization recommends another type of filter. It is a modified air filter of the type used in truck engines. It cannot be buried and must be attached to the intake pipe outside the shelter in place of a vent cap. This has certain advantages. It is somewhat cheaper and can be replaced at intervals before an attack should replacement be needed. However, this sort of filter has one major disadvantage. Since it sits over the end of the pipe outside the shelter, it is very vulnerable to any sort of blast. Its diameter is much bigger than that of the 3-inch pipe. Accordingly, in a blast it might snap off the pipe leaving the shelter with no filter. For this reason, the outside filter is not useful for a blast shelter, although it may be quite useful for a shelter which is designed to protect only against fallout.

The 3-inch vent pipes can be made either of galvanized sheet steel or of heavy plumbing steel pipe. The galvanized sheet steel pipes are light and inexpensive. They are sold by the Montgomery Ward Company, Sears Roebuck and Company, and some local hardware stores. They come in 2-foot lengths and ready-made elbows. Sections are joined together by inserting one inside the other and fastening with two or three sheet metal screws at each juncture. These sheet steel pipes are quite adequate for fallout protection. However, a strong blast wave might destroy them easily. If blast protection is desired, heavy 3-inch water pipe is needed. This pipe is quite expensive. A reasonable compromise would be to use the sheet steel pipe underground, connected to the heavy steel at a point about 3 feet below the surface. From this point, the strong pipe rises above ground. It can resist considerable blast pressure.

Within the shelter, the intake and exhaust pipes should be at opposite ends of the shelter. This will increase the efficiency of the ventilating system. The openings of both intake and exhaust pipes should be directed away from each other to increase

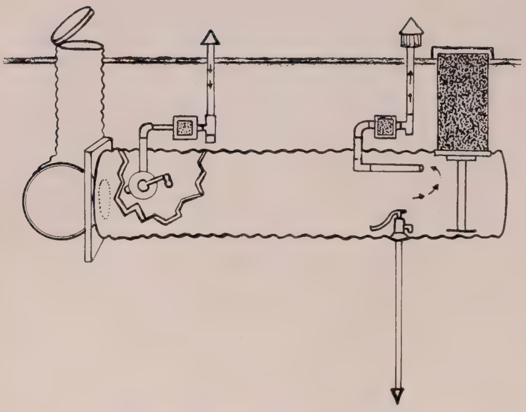

FIG. 5. A cutaway view of a completed corrugated steel shelter.

ventilation efficiency.

The radiation filter will protect against radioactive fallout, and also against most kinds of bacterial warfare agents. However, war gases can get through.

It seems unlikely that war gases will be used since they are much less effective than hydrogen bombs. However, the possibility of their use cannot be ruled out. If protection against war gases is desired, it can be obtained for an extra $25 to $30.

The best method which I have discovered is the use of a suitable activated charcoal filter. This contains the same material as an army gas mask. An appropriate model, the 7-PA Panel Adsorber, (Table I) can adsorb and render harmless enormous amounts of war gases, much more than would ever be present. This adsorber should be enclosed in an airtight box of plywood or sheet metal, with 3-inch diameter vent pipes at each end. These pipes need be only 4 inches long. The entire assembly should be inserted between the intake pipe and the blower, and all joints sealed with tape. Note that while the radiation filter must be kept outside the shelter, the activated charcoal filter is kept inside the shelter. This is done because once the war gas is adsorbed on the charcoal it is harmless.

There is one important precaution to be observed. Often the charcoal in the panel becomes packed down, leaving clear space at the top through which gas can penetrate. To avoid this, specify in ordering the panel. that it be packed extra full to avoid settling.

The charcoal filter, by increasing resistance to air flow, will reduce the amount of fresh air drawn into the shelter. Therefore, if there is no reason to suspect poison gas, the charcoal filter can be detached from the system to lessen the work of pumping in air. Someone skilled in metal work might be able to build a device which would shunt the incoming air through the charcoal or through a by-pass at the flick of a switch. However, such devices are not, to my knowledge, commercially available.

The entire ventilation system should be checked before the shelter is covered with earth and every two months thereafter. Figure 5 shows the completed shelter.

ADDENDUM.—A complete ventilation system has been developed by Flanders Filters Inc., P. O. Box 718, Riverhead, New York.

(Number six in a series on The Physician in Civil Defense)

It is better to suffer wrong than to do it, and happier to be sometimes cheated than not to trust.—SAMUEL JOHNSON

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Preoperative Hypotension Due to Positioning

CERTAIN acute circulatory disturbances may occur preoperatively. It is important to be able to determine the cause of such circulatory changes since the decision on whether or not to continue with the proposed operation is dependent on such knowledge. The following 2 case reports illustrate the development of preoperative arterial hypotension as a result of placing the patients in certain positions.

Case Reports

CASE 1.—A forty-year-old primiparous woman was scheduled for a cesarean section because of a breech presentation. No complicating anesthetic problems were noted preoperatively. For preanesthetic medication she was given by intramuscular injection 50 mg. of Demerol hydrochloride and 0.4 mg. of scopolamine. When the patient arrived in the operating room an hour later, she was noted to be stuporous and poorly responsive. Because of this cerebral depression she was given 0.5 mg. of Lorfan by intravenous injection. However, there was no change in her behavior.

A determination of the patient's arterial blood pressure while she lay supine on her back revealed that it was 70 mm. Hg systolic and 45 diastolic. After she was turned onto her side the blood pressure rose to 110/60. Turning her onto her back again caused a fall in the blood pressure to 70/45. A total of 10 mg. of ephedrine sulfate was administered intravenously without any rise in the blood pressure resulting. Once again the patient was placed on her left side, and the blood pressure returned to 120/70 while the pulse rate was 92 beats per minute.

It was decided to begin the operation with the patient lying on her side, and 1 per cent procaine for local anesthesia was used. When the surgeons began pulling the uterus, the patient experi-

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Discussed at a conference held at Bellevue Hospital, New York City, June 6, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

enced pain. She then was given nitrous oxide 3 L. per minute with oxygen 2 L. per minute by inhalation in a semiclosed system. Ten minutes later the patient become unmanageable. She was anesthetized with cyclopropane, and the baby was delivered within five minutes. During this time there had been no change in her arterial blood pressure or her pulse rate.

After the delivery of the infant the patient was turned onto her back. The blood pressure remained at 110/70 with a pulse rate of 84 beats per minute. Excessive blood loss occurred, and this caused a drop in the blood pressure to 80/50 with a pulse rate of 110 beats per minute. After a transfusion of 500 cc. of blood the blood pressure responded favorably by returning to 120/70 with a pulse rate of 90 beats per minute. Thereafter the patient did well and showed no further changes in blood pressure. The postpartum course was uneventful.

Case 2.*—A forty-three-year-old seaman was diagnosed as having a herniated nucleus pulposus in the lumbar area, and it was proposed that it be excised. He presented a history of chronic alcoholism and pulmonary tuberculosis. The tuberculosis had been treated with para-aminosalicylic acid, and at the present time it was found to be inactive.

The laboratory findings were within normal limits. The urinalysis findings were negative, the hemoglobin content in the blood was 14.5 Gm. per 100 cc., and the fasting blood sugar was 85 mg. per 100 cc. A roentgenogram of the chest showed fibrotic changes in the right apex. The cardiovascular system was within normal limits with the arterial blood pressure at 115/80 and the pulse rate at 80 beats per minute.

One hour prior to anesthesia the patient was given 12.5 mg. of chlorpromazine hydrochloride, 150 mg. of Amytal sodium, and 0.5 mg. of scopolamine by intramuscular injection. He arrived in the operating room fairly well sedated and calm. Anesthesia was induced by the intravenous injection of 200 mg. of thiopental sodium in a 2.5 per cent concentration. Then cyclopropane and oxygen were administered in a closed carbon dioxide absorption system. A total of 40 mg. of succinylcholine chloride was injected intravenously, and then under direct vision an endotracheal tube was inserted with ease.

The patient was turned onto the prone position with two rolls of sheets placed below the shoulders and the iliac crests. Because a nonexplosive technic was required, the anesthetic agent was changed to halothane (Fluothane), which was administered by means of the Fluotec machine vaporizer in a semiclosed system with nitrous oxide and oxygen each flowing at the rate of 2 L. per minute. The concentration of halothane was 0.8 per cent for a period of four minutes. At that time it was noted that the patient's blood pressure had dropped to 80/60.

Surgery was started at this point. The incision was long and deep, exposing the spinous processes of the lumbar vertebrae. Within two or three minutes after the incision was made there was an estimated blood loss of 300 cc. The concentration of halothane first was decreased to 0.3 per cent. However, when the blood pressure dropped further to 70 mm. Hg systolic and then was no longer obtainable, the halothane was discontinued completely. At this point the patient's pulse was feeble at a rate of 100 beats per minute and his respirations were shallow at a rate of 28 per minute.

The surgical process was ceased, but this did not improve the patient's situation. Five minutes later no pulse could be felt either at the radial, brachial, or carotid arteries. Shallow respiratory movements and bleeding at the site of surgery were the only vital signs present. It was decided to discontinue the operation. There was no improvement during the ten minutes required for the closure of the wound. A blood transfusion was started, and a total of 300 cc. was administered until the end of the procedure.

On turning the patient onto the supine position it was observed that the rolls of sheets had been displaced medially under the patient's abdomen. Immediately after a change in the patient's position to the supine one the patient's pulse could be felt easily at a rate of 96 beats per minute and the blood pressure was 105/85. The patient was brought to the recovery room in good condition.

Comment

Arterial hypotension due to the positioning of an anesthetized patient may occur before surgery or before the main part of the surgical procedure. The causes may be varied, but it is important to determine the cause to be able to cope with the situation.

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* Presented by Alexander Paspa, M.D., New York City.

In the first case presented the condition obviously was the vena cava, or supine hypotension, syndrome described by McRoberts.[1] McRoberts showed that in late pregnancy the uterus may obstruct the veins of the abdomen when the patient is in the supine position, causing a rise in venous pressure caudally and a fall in pressure in the right auricle. Another group of investigators reported that in a series of 160 consecutive labor patients 11.2 per cent exhibited hypotension (the systolic pressure is diminished more than 30 mm. Hg or below 80 mm. Hg) after having been in the supine position for more than five minutes.[2] This hypotension was associated with tachycardia, pallor, and sweating. This syndrome does not develop instantaneously since it depends on the pooling of blood in the lower extremities and on the exhaustion of blood from the heart and lungs. The syndrome develops only during the relaxed intervals of labor and promptly disappears with each labor pain. Apparently the uterus "rides" on the vertebral column during a contraction and cannot exert pressure posteriorly on either side of the bony ridge. Another group of investigators compared the effects of the lateral and supine positions in late pregnancy and found an incidence of 3 per cent of patients whose blood pressure diminished 30 mm. Hg systolic or more in the supine position.[3]

It was well, therefore, that in the case reported it was decided to proceed with the cesarean section while the patient was in the lateral position. When the uterus was emptied of its contents, the patient could be turned onto her back without producing arterial hypotension.

In the second case the arterial hypotension occurring after the patient was placed in the prone position can be attributed to faulty positioning, a situation which was discovered when the patient was turned onto the supine position and the rolled sheets were found lying near and pressing into the patient's abdomen. Under such conditions pressure is transmitted to the major abdominal vessels, thus obstructing their flow and causing arterial hypotension. At the same time there is increased bleeding locally in the paravertebral area. It is because of these effects that some neurosurgeons prefer to place the patient in the lateral position when doing a herniated disk excision.[4] Those who prefer the prone position are careful to place the support along the lateral parts of the patient's body, leaving the abdomen and the anterior portion of the chest free. In the second case it was well to have discontinued the operative procedure after the critical condition developed. It might have been best, had it had been thought of, to have checked the position of the rolled sheets and when they were found to be pressing into the abdomen to have replaced them properly. This might have corrected the bizarre circulatory complication and permitted the proposed operation to be carried out.

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(Number ninety-seven in a series of Clinical Anesthesia Conferences)

Personality: The name we give to our own little collection of funny habits.—Anon

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Aminophylline and Other Severe Poisonings

The following incidents were recently reported to the New York City Poison Control Center.

Incident 1

Toxic Agent	*Age*	*Sex*
Theophylline Monoethanolamine	6 years	Female

Half of the contents of a disposable rectal enema unit consisting of 37 cc. of a solution which contains 0.625 Gm. of theophylline monoethanolamine, recommended for use in bronchial asthma, was administered to the child by the family physician in his office for the relief of an asthmatic attack. He instructed the mother to administer the remainder of the contents in the evening. On the way home from the physician's office the child began to vomit blood. The physician was called, and he advised the parent not to worry, to give milk to the child, and to administer the remainder of the contents in the evening as originally prescribed. Although the child continued to vomit, the mother followed the physician's instructions. The physician was called again, and he advised that the patient be taken to a hospital.

On her admission to Kings County Hospital the following symptoms were noted: vomiting, abdominal pains, and dyspnea. The child also appeared dehydrated. The poisoning was considered severe, and the patient was treated with infusions to compensate for the loss of fluids resulting from the vomiting and also was treated symptomatically. After five days in the hospital the patient improved and was discharged.

The interviewing nurse who visited the home relates that the mother was very cooperative and gave information freely. The child was judged by the parent and the nurse to be of average intelligence and active. It was disclosed that in addition to the asthma the child also had strabismus, for which he was under the attention of an eye clinic. It is not implied that this had any relationship to the poisoning.

The previous cases of aminophylline poisoning reported to this Center were due to suppositories. This is the first reported case due to an enema. In the past we have emphasized that although aminophylline is a valuable adjunct in the treatment of bronchial asthma its use is associated with some danger and the anticipated therapeutic benefits must be weighed against the potential hazards. The vomiting, especially bloody vomitus, should be considered a danger signal calling for the discontinuance of the drug.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Aminophylline	1 year	Female

A one-year-old infant was suffering from asthmatic bronchitis and was being treated for it. The physician prescribed aminophylline suppositories, and the mother administered them as directed. Within twenty-four hours following the initiation of the therapy the child began to vomit black material and to produce tarry stools. A nurse reports that the mother rushed the child to the emergency room of a voluntary hospital, where the child was given an injection of some medication and another suppository and then was sent home with instructions to return every day for five days for an injection. Since there was no improvement in the child's condition and, as a matter of fact, since she became more lethargic and her general condition appeared to be worse than before, the mother returned with the child to the hospital on the following day. The patient again was seen in the emergency room, given another injection, examined by a pediatrician, and then sent home.

Shortly after returning from the hospital emergency room the child appeared comatose and was then taken to a municipal hospital, where she was admitted immediately to the inpatient service. On admission to the ward the patient manifested the following symptoms: nausea, vomiting, diarrhea, and coma. She was treated symptomatically as well as with blood transfusions and intravenous infusions. After eleven days in the hospital in this regimen the patient was discharged as improved. The mother was instructed to return with the child to the outpatient department for follow-ups.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Toothache Drops	5 months	Female

A medication for the alleviation of toothaches, consisting of a mixture of creosote, phenol 2 per cent, oil of cloves, oil of cassia, chloroform, and alcohol 50 per cent, was given to the patient by a two-and-a-half-year-old female sibling, who apparently had great maternal instincts, in an effort to quiet her. The mother was busily engaged in the kitchen washing clothes and was totally unaware of the occurrence. When the infant began to cry more vigorously, the mother's interest was aroused. She came into the bedroom and noted that the older sibling held the preparation in her hands and that there was reddening around the infant's mouth. Realizing what had happened, the mother immediately brought the child to Bellevue Hospital. The following symptoms were noted: nausea, vomiting, diarrhea, dyspnea, weakness, irritability, and excessive crying.

A gastric lavage with 800 cc. of normal saline was performed immediately in the emergency room, and 15 cc. of castor oil were instilled via a tube into the stomach. The nurse in the emergency room called this Center and was informed that ingestions of this type of product by adults had not had serious consequences. However, because of the clinical condition of the child, following the lavage the child was admitted to the pediatric ward.

The examination on admission to the pediatric service revealed erythema around the mouth and on the mucous membranes of the mouth and throat. The remainder of the physical examination findings were essentially negative. The laboratory findings were as follows: hemoglobin 10.3 Gm., hematocrit 39, and white blood cell count 17,400 with polymorphonuclears 33 per cent, immature polymorphonuclears 1 per cent, and lymphocytes 65 per cent. The carbon dioxide combining power was 20 mEq. seventeen hours after the ingestion. Urinalysis showed a cloudy white urine with an acid hydrogen ion concentration of 5, a trace of albumin, no sugar, and no acetone. Microscopic examination showed 5 white blood cells per high-power field, no red blood cells, and frequent fine hyaline casts. The quantity of the urine was not sufficient for a specific gravity determination.

The patient was kept without feedings and was given fluids intravenously. She was placed on Meticorten 1 mg. and Achromycin 20 mg. per kilogram of body weight. On the morning following admission the vital signs were as stable as on admission. The pulse was 140 and respirations were 30. The temperature rose to 100.4 F. The intravenous tube was removed, and feedings were begun by Levin tube. The mouth and throat showed extensive superficial necrosis of the mucosa. The blood chemistry findings were sodium 130 mEq. per L., potassium 5.1 mEq. per L., chlorides 100 mEq. per L., and blood urea nitrogen 9 mg. per 100 ml. After eleven days in the hospital the patient made a full recovery and was discharged.

This case illustrates the fact that the membranes of young infants differ significantly from those of adults and are extremely sensitive to irritating medications. Any information received from a Poison Control Center always must be evaluated and correlated with the clinical findings in an individual case.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Urine Sugar Testing Tablets	66 years	Female

This patient suffered from headaches and mistakenly took 2 copper sulfate tablets used for testing the sugar content of urine instead of 2 aspirin tablets which she had intended to take. The patient went to a hospital emergency room. Large amounts of grapefruit and orange juice were administered, and she then was sent home.

One tablet contains anhydrous cupric sulfate 0.019 grain, anhydrous sodium hydroxide 0.25 Gm., sodium bicarbonate, and citric acid. In view of the heat-producing and corrosive properties of this reagent, one questions whether or not the ingestion of this product should require admission to a hospital for a period of observation. The hazardous nature of many diagnostic agents indicates that they should not be kept in the medicine cabinet with other medications in tablet form, for this may lead to mistaken ingestions. As a matter of fact, on the basis of experience this Center strongly believes that the traditional medicine cabinet is not an appropriate place for the storage of medications and should be reserved only for cosmetic, shaving, and dental cleansing products. Severe esophageal strictures have been reported in the literature following ingestions of this urine-testing product.

INCIDENT 5

Toxic Agent	*Age*	*Sex*
Penicillin	33 years	Female

Following the ingestion of 1 tablet of oral penicillin the patient developed chills and itching which were accompanied by an episode of unconsciousness. She was taken to a hospital, where a diagnosis of acute anaphylactic shock syndrome resulting from penicillin was made. The patient was treated symptomatically, and after six days she made a complete recovery.

This case exemplifies the fact, which we have often indicated, that there is no sharp line of demarcation between incidents such as the foregoing cases and poisonings due to reactions, such as from overdoses and idiosyncratic effects. To increase our knowledge of such reactions physicians are requested to report promptly this type of "poisoning," which until now usually was not reported.

This case also emphasizes the need for caution and restraint in the prescribing of antibiotics. It is a little-known fact that hundreds of deaths have resulted from the use of antibiotics since penicillin was introduced.

INCIDENT 6

Toxic Agent	*Age*	*Sex*
Gun Cleaner	23 years	Male

The patient was bluing a rifle, and he upset the tank. He squatted to mop the floor. When he stood up, he felt dizzy for a brief moment. The preparation used for bluing the rifle contained potassium nitrate $^1/_4$ ounce, sodium nitrate $^1/_4$ ounce, mercuric chloride $^1/_2$ ounce, potassium chlorate $^1/_2$ ounce, distilled water 10 ounces, and sweet spirits of niter $^1/_2$ ounce. Since the patient became stuporous and was near collapse, he was brought to a hospital, where he remained for two days. The hospital diagnosis was postural hypotension due to a rapid change from the squatting to the standing position.

In view of the nature of the bluing preparation, particularly the presence of spirits of niter, it is suggested that the nitrite may have been an important contributory factor in the causation of the hypotension.

INCIDENT 7

Toxic Agent	*Age*	*Sex*
Methyprylon	45 years	Female

The patient ingested an unknown quantity of methyprylon, a nonbarbiturate sedative (3,3-diethyl-5-methyl-2,4-piperidinedione), at 4:00 A.M. The physician relates that when he saw the patient she was in deep coma and did not respond to pain and temperature stimuli. However, her respirations and blood pressure were good. The physician did not prescribe any treatment except for the administration of glucose and water intravenously. All symptoms subsided within twenty-four hours.

Physicians again are reminded that overdoses of nonbarbiturate sedatives may be associated with severe complications, including coma and death.

(*Number sixty-three in a series of Briefs on Accidental Chemical Poisonings*)

Thirty Thousand Americans Become Blind Each Year

Each year, nearly 30,000 Americans become blind. Of these, the great majority will be blinded by diseases associated with our increasing life-span. Leading the list of causes are senile cataract and glaucoma, which will claim 11,300 persons—or 38 per cent of the newly blind. General diseases, including vascular disease and diabetes, will account for another 6,300.

Infectious diseases, such as syphilis and ophthalmia neonatorum, once leading causes of blindness, now account for only 10 per cent of the newly blind.
—*Patterns of Disease, Parke, Davis & Company*

Pituitary Tumor, Postpartum Amenorrhea, and Galactorrhea, with Comment on Chiari-Frommel Syndrome

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(From the United Hospital, Port Chester)

Subsequent to the appearance in 1852 of a series of essays which included observations by Chiari,[1] and the publication in 1882 of a report by Frommel[2] in which patients with puerperal utero-ovarian atrophy and persistent lactation were described, the name Chiari-Frommel syndrome has appeared periodically in the literature. Today, after a dubious existence of over a century, the clinical features of that syndrome still remain to be defined, the Chiari-Frommel syndrome representing a heterogenous clinical complex. A review of the literature shows that the syndrome has been adopted in reference for both puerperal and nonpuerperal states, and it has occurred in both nulliparous and parous women. Etiologically the amenorrhea has been described as primary pituitary and primary ovarian; chronologically it has been described as primary and secondary amenorrhea. Cases have been both associated with and unassociated with pituitary tumors. Certainly the recent trend toward titling by basic pathology or clinical manifestations is preferable to the grouping together of cases, the only common feature of which is the title Chiari-Frommel syndrome.

Recently we have studied the case of a patient with a pituitary tumor, the initial clinical manifestations of which were postpartum amenorrhea and galactorrhea. A review of previous publications was made in the hope of finding an explanation of the pathogenesis of the unusual syndrome. The efforts proved to be unsuccessful. However, during this review of the literature and the study of the patient, an alternative and seemingly plausible hypothesis presented itself.

The following is a detailed account of the case.

Case Report

A thirty-seven-year-old white female, para 3, gravida 3, was seen first in October, 1958, with the chief complaints of amenorrhea and galactorrhea. Her most recent pregnancy had terminated successfully in the fall of 1954, and postpartum amenorrhea had persisted through the time of her evaluation. The delivery had been uncomplicated by shock or excessive blood loss. Although the patient had made no attempts to nurse her infant, for the four-year period since the delivery a free flow of milk had necessitated the wearing of protective pads, and the breast engorgement was a constant source of discomfort.

A normal regrowth of the shaved pubic hair occurred postdelivery. Hot flushes and symptoms of molimina were absent, and the libido remained unaltered. In spite of a decrease of food consumption, a 12-pound weight gain occurred. There had been no alteration in bowel habits, temperature tolerance, or in the general sense of well-being. The texture of the skin and hair underwent no change. Since delivery minor infection and stressful insults were incurred with no untoward results. Except for the noted weight gain and for the changes incident to a few years of aging, no significant alterations were noted in the patient's appearance. Her glove, shoe, and hat sizes remained unchanged.

During the year prior to evaluation, a gradual diastasis of all lower teeth was noted and attributed by the patient and her dentist to a realignment subsequent to a remote extraction of her posterior molar teeth. Initially during the postpartum period headaches were a daily com-

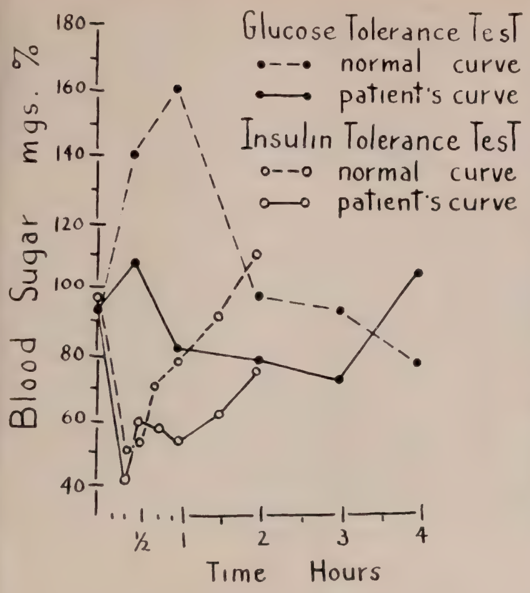

FIG. 1. Glucose tolerance test (100 Gm. sugar by mouth) and an insulin-sensitivity test (0.1 unit per kilogram weight).

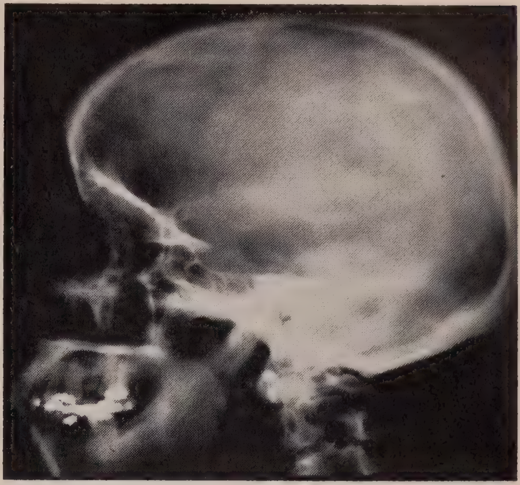

FIG. 2. X-ray film of the skull showing a slight enlargement of the sella turcica and a partial destruction of the posterior clinoid processes.

plaint, but in the fourth month the headaches disappeared spontaneously. A few months prior to the present evaluation, the headaches recurred and, as before, they were retro-orbital, awakening the patient daily in the early morning hours. Simple analgesics afforded relief. No recognized changes in visual acuity or fields of vision were noted.

The physical examination revealed a healthy, eumorphic female. Her facial features and the size and configuration of the body parts did not suggest acromegaly. Her skin and hair, both axillary and pubic, were of normal growth. Although no mandibular prominence was noted and the upper and lower jaws presented in proper apposition, diastasis of the teeth of the lower jaws was observed. A questionable macroglossia was seen. No thyromegaly was present. Cardiac and pulmonary examinations showed normal results. The breasts were enlarged and vascular, and the areolas and nipples were deeply pigmented. A free flow of milk was expressed with ease. An abdominal examination disclosed no visceromegaly. The pelvic examination revealed normal external genitalia. The vagina and cervix were normal; the fundus was retrocessed and normal in size. The adnexa showed negative results.

The laboratory examination revealed normal findings of a urinalysis and a hemogram. The serum phosphorus was 2.57 mg. per cent. The cholesterol and the protein-bound iodine were 198 mg. per cent and 5.2 micrograms per 100 ml. respectively. The 17-ketosteroids and 17-hydroxysteroid excretion was 8.8 and 3.9 mg. per twenty-four hours. The follicle-stimulating hormone was 6.6 mouse units per twenty-four hours. The glucose tolerance and insulin-sensitivity tests (Fig. 1) showed an increased carbohydrate tolerance and a minimal degree of hypoglycemic unresponsiveness. A basal temperature curve confirmed the anovulatory state. A therapeutic test with 100 mg. of progesterone in oil resulted in scant spotting. A vaginal smear showed a moderate estrogenic deficiency. An x-ray film of the skull (Fig. 2) showed a slight enlargement of the sella turcica and a partial destruction of the posterior clinoid processes.

An ophthalmologic examination showed an early superior bitemporal quadrantanopsia by a central field study. A peripheral field interpretation showed a normal reaction to a white test object, but the color field revealed a definite superior bitemporal quadrantanopsia (Fig. 3). It was the conclusion of the ophthalmologist that the findings were compatible with an enlarged pituitary tumor which had produced pressure on the inferior surface of the optic chiasma.

Initial therapy, directed at symptomatic relief of breast engorgement and galactorrhea, consisted of a course of methyl testosterone. In

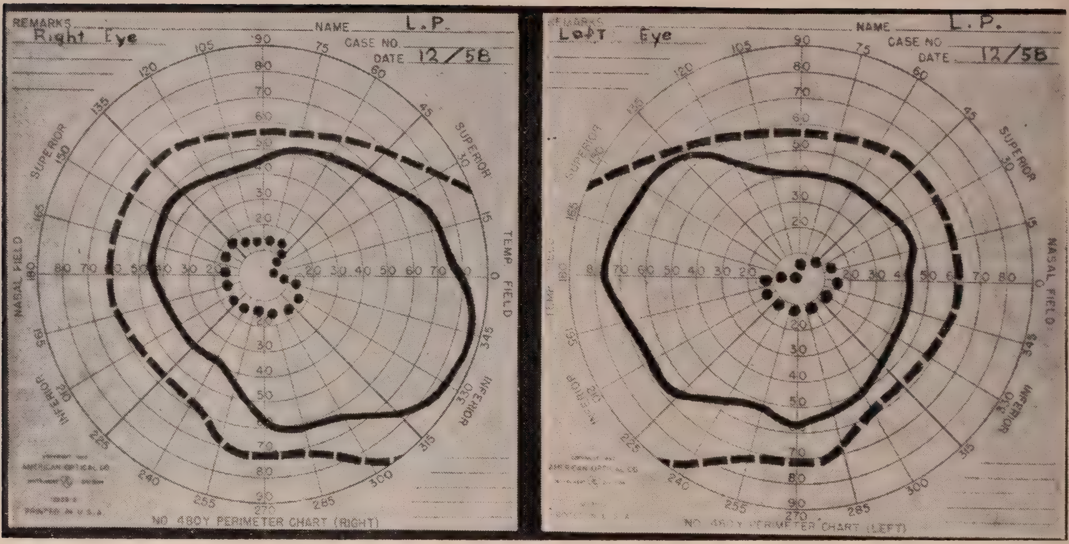

FIG. 3. A perimeter chart showing a normal perception of a white object (solid line) and a superior bitemporal quadrantanopsia on the color field study (interrupted circles).

addition to a drying and involution of the breasts, a decrease in the severity of and frequency of headaches occurred. In view of the minimal damage sustained at the beginning of therapy, the evidence of an inhibitory response of the tumor to hormone therapy, and the value of estrogens in the treatment of acromegaly, the decision was made to utilize the most conservative plan of treatment. Wishing to avoid the masculinizing effects of methyl testosterone and feeling that the ovarian hormones would inhibit the tumor similarly, treatment was instituted with a long-acting parenteral estrogenic substance. The previous satisfactory response was maintained, but an oral androgen-estrogen product was substituted owing to the appearance of profuse uterine bleeding. Close clinical, radiologic, and ophthalmologic follow-up for one year showed a satisfactory response. However, in spite of dietary restrictions, the anabolic properties of the therapy resulted in a weight gain sufficient to cause the patient to discard the therapy. A prompt rebound appearance of headaches and a further loss of vision occurred and necessitated a course of x-ray therapy. Initial exposure to radiation resulted in some progression of the visual defect, but further treatment produced a steady improvement in vision. At the time of the completion of the course of x-ray therapy a definite reversal of the trend to deterioration had been established.

Comment

Sporadic reports have appeared in the literature which share, in common with the presented case, the association of a nonacromegalic pituitary tumor with amenorrhea and galactorrhea. Krestin[3] presented case reports of 2 nonacromegalic females with pituitary tumors, amenorrhea, and galactorrhea. Hunt,[4] studying 78 women at the Mayo Clinic for postpartum amenorrhea, found 4 patients with Chiari's syndrome due to a pituitary tumor. A biopsy in 1 patient showed a chromophobe adenoma. In 8 of the 15 cases reported by Forbes *et al.*[5] evidence of pituitary tumors was found. In 3 cases chromophobe adenomas were recognized. Greenblatt, Carmona, and Hagler[6] presented 3 similar cases, and surgery undertaken in 1 case showed a cystic chromophobe tumor. Jakobovits,[7] writing in the German literature, noted amenorrhea and galactorrhea associated with a pituitary tumor in a nonacromegalic woman. The unqiue case reported by McCullagh, Alivisatos, and Schaffenburg[8] of persistent lactation in a twenty-eight-year-old male with a ballooned sella is possibly related.

Similarly additional reports of amenorrhea and galactorrhea unassociated with a pituitary tumor have appeared. Because of the high incidence of tumors in the series of Forbes *et al.*,[5] they concluded that even when no tumor was demonstrable, the syndrome of amenorrhea and galactorrhea was probably due to such a growth. A study of basophilic tumors and certain eosinophilic growths attests to the fact that the pituitary body can harbor secretory adenomas which, owing to a limited size, produce no sellar changes.

The nature of the perverted or hypersecretion responsible for the lactation is yet to be determined. Forbes *et al.*[5] felt that "the adenoma produced a hormone which either caused lactation or interfered with the production of one of the normal pituitary hormones, the presence of which inhibits lactation." Argonz and Del Castillo[9] suggested, as a basis for the syndrome, an eosinophilic growth productive of prolactin. Although the case of Greenblatt, Carmona, and Hagler[6] showed increased excretion of a lactogenic hormone, its identification was not made further. McCullagh, Alivisatos, and Schaffenburg[8] could not substantiate the presence of a trophic hormone by prolactin assays.

The intrasellar tumors which can assume a size sufficiently large to produce sellar erosion and extrasellar extension are those tumors composed of chromophobe cells, the chromophobe adenomas and those composed of eosinophilic cells, which are called the eosinophilic chromophilic tumors. According to classic dictum, the results of the growth of the chromophobe adenomas are limited to the sequential inactivation of collateral trophic activity by compression and to the appearance of neighboring symptoms incident to escape from the sella. The consequences of chromophilic growth include, in addition to the results of its secretory activity, gigantism before puberty and acromegaly after puberty. It is quite usual ultimately to see signs of pituitary insufficiency in a patient who had been acromegalic previously, the syndrome of hypo- and hyperpituitarism being referred to as dyspituitarism. It is uncommon to see the coincidental occurrence of both hypo- and hyperpituitarism, but it is not impossible. Such a mixed syndrome has been referred to by Dott and Bailey[10] as "fugitive acromegaly." Cushing[11] credited those workers with the recognition of a third type of adenoma which resulted in a variable overlapping of the symptoms attributable to hyperfunction on one hand and to hypofunction on the other. Thirteen of Dott and Bailey's[10] 162 hypophyseal adenomas were of the mixed type. Although the diagnosis of chromophobe adenoma had been made originally in all patients, the observers were puzzled by the presence of symptoms that were uncommon in the panhypopituitary state.

Bailey and Cushing[12] made a clinical and histologic correlative study of 100 adenomatous patients, dividing them into six groups ranging from typical chromophil adenomas to nongranular chromophobe adenomas. A definite relationship between the number of the eosinophilic granules in a hypophysial adenoma and the intensity of the associated acromegalic syndrome could be seen. Evidence of fugitive acromegaly was found in all 22 transitional tumors. An enlargement of single or multiple body parts, a coarsening of features, hypertrichosis, normal or exaggerated libido, excessive height, hyperhidrosis, glycosuria, increased basal metabolic rate, and diastasis of the teeth were recognized. Of their 59 patients with purely chromophobe adenomas, a trace of fugitive hyperpituitarism was noted in 3 patients.

Nurnberger and Korey,[13] studying 28 similar cases of pure chromophobe adenomas, found features suggestive of present or past acidophilic hyperfunction in 16 patients. They stated that "the usual characteristics of fugitive hyperpituitarism are much more readily identified with those of chromophobe adenoma than with those of eosinophilic adenoma." Zubrod *et al.*[14] described a patient with a pituitary tumor and amenorrhea who developed acromegaly five years later. Mogensen[15] noted acromegalic features in a female in whom a histologic examination of the removed tumor revealed no eosinophilic cells. A clinical pathologic conference at the National Institutes of Health[14] discussed a patient with classic features of acromegaly and gigantism in whom pathologic studies disclosed an adenoma containing no cytoplasmic granules. In a study of hypophysis cerebri in acromegaly, Bailey and Davidoff[16] concluded that in some cases alpha granules were present only in small numbers in scattered cells. Soffer,[17] in reference to chromophobe tumors, stated that, while most of the symptoms were those of hypopituitarism, occasional evidence of eosinophilic hyperpituitarism was observed. With the study of material stained by the relatively newer cytochemical technics, it appears that our concepts of the normal and pathologic physiology of the adenohypophysis is destined to undergo a radical change. Russfield[18] comments that "far from being inactive structures, the chromophobe adenoma are closely related to the adenoma of acromegaly."

A study of the documented cases of mixed tumors showed that the manifestations of eosinophilic hypersecretion can and do exist in a masked and limited manner. A failure to see the classic hypertrophic complex may lead understandingly to a failure to search for the individual facets of the syndrome of fugitive acromegaly. With the exception of the report by Forbes *et al.*,[5] cases of the Chiari-Frommel syndrome culled from the literature described no hyperpituitary changes. Forbes *et al.*[5] state that, although their cases were distinct from acromegaly, "suggestive evidence of increased pituitary function was found."

A study of crude pituitary preparations demonstrated their ability to increase milk production,[19] and their galactopoietic potency was found to correlate with their diabetogenic activity.[20] In view of the recognized diabetogenic activity of the growth hormone, this hormone was studied and found to have galactopoietic properties. Cushing's[21] early recognition of the appearance of hypertrophic lactating mammae in dogs, which had been given early preparations of crude growth hormone, have been confirmed by using the purified growth hormone.[22] The recognition of pathologic lactation and hyperplastic breast changes in classic acromegaly is legendary. The observations that mammary stimulation can induce somatotrophic tumors[23] and that growth hormones stimulate metastatic human breast cancer[24] and transplanted mammary carcinoma in mice[25] are all of related interest. Data published by Russfield, Reiner, and Klaus[26] concerning breast activity in 7 women with chromophobe adenomas showed anatomic or functional abnormalities in 6 women and secretory activity in 3 women past forty years. Certainly one manifestation of hyperpituitarism, whether the growth hormone is present to an excess endogenously or exogenously, is galactopoiesis.

Conclusion

It is proposed that the trophic hormone responsible for the galactorrhea in the reported case and in other related cases is the growth hormone, both associated and unassociated with demonstrable pituitary tumors and with and without additional manifestations of hyperpituitarism. Although lacking autonomous galactopoietic activity, the activity of the growth hormone is dependent on the presence of a balanced association of multiple hormones of the hypophysis and target organs. The lack of such a coordinated hormonal activity in the presence of the mixed hypopituitary and hyperpituitary state is a possible reason for the failure to see persistent lactation more frequently. It is proposed that the syndrome of the pituitary tumor, of amenorrhea, and of galactorrhea is one of the unlimited variants of the syndrome of fugitive acromegaly.

It is unnecessary and incompatible with certain observations to propose an increased production of prolactin. Early animal husbandry studies demonstrated that the galactopoietic potency of purified prolactin was not very great.[27] More recently, in women prolactin was found ineffective in increasing galactopoiesis, its activity being concerned largely with lactogenesis.[28] The name, growth hormone, was proposed as a result of its means of identification in hypophysectomized animals. This was an unfortunate misnomer, and an oversimplification which excludes the regulatory activity of the growth hormone on many body parts and processes other than growth.

Summary

A case report of a patient with a pituitary tumor has been presented, the initial clinical manifestations of which were postpartum amenorrhea and persistent galactorrhea. A review of the literature disclosed similar case reports, some associated with and some unassociated with recognized pituitary tumors. In the reported case an isolated finding of hyperpituitarism led to the belief that the patient was a case of fugitive acromegaly. Evidence for the growth hormone etiology of the pathologic secretion has been presented.

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Addendum

The postradiation reversal of the trend toward deterioration was short lived. The recurrence of headache, galactorrhea, and further compromising of visual fields led to a successful surgical intervention. The growth was a chromophobe tumor, free of any eosinophilic granules. The poor response to radiation can be explained by its cystic structure.

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Eye Injuries in Industry

Every working day 1,000 eye injuries occur in industry, according to *Patterns of Disease,* a Parke, Davis & Company publication. At least 90 per cent of industrial eye injuries are avoidable and are highly costly to industry.

The success of mandatory eye safety programs proves that most accidents are avoidable. One large Ohio plant which once had 500 to 600 eye injuries a month now has none. A large Eastern plant has saved over $1,000,000 in compensation costs.

Lipoma of the Bronchus

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(*From the Department of Surgery, Roswell Park Memorial Institute*)

Lipoma of the bronchus is a very rare lesion. A review of the world literature since 1854 reveals only 25 cases of this disease. Rokitansky[1] reported the first case of bronchial lipoma in 1854. In 1927 Kernan[2] first successfully removed a lipoma of the bronchus by bronchoscopy. A case is reported, and the literature is reviewed in an attempt to show some unusual features associated with this lesion.

Case Report

A sixty-three-year-old white male of German descent was referred to Roswell Park Memorial Institute with a nine-month history of intermittent fever and a cough productive of light yellow sputum. In March, 1958, the patient developed pneumonia and received antibiotics with some improvement. The roentgenogram of the chest at that time demonstrated atelectasis of the right lower lobe.

The past history revealed that the patient had been cyanotic following episodes of severe coughing. In addition, following severe coughing episodes, he occasionally developed syncope associated with the cyanosis.

On physical examination he appeared to be a healthy, sixty-three-year-old white man. The pertinent findings were limited to the right chest where there were diminished breath sounds and dullness over the lower one third posteriorly. A roentgenogram of the chest disclosed evidence of right lower and middle lobe atelectasis with an emphysematous right upper lobe (Fig. 1). Laboratory findings were within normal limits.

On bronchoscopy a smooth, round tumor was visualized in the right main stem bronchus at the level of the carina. Biopsy revealed normal bronchial mucosa overlying adipose tissue. Because of clinical and x-ray evidence of a destroyed right lung, thoracotomy was performed. On opening the pleural cavity, the right lower and middle lobes were found to be atelectatic. The upper lobe was emphysematous and could not be collapsed even with external pressure. No hilar lymphadenopathy was noted. A pneumonectomy was done.

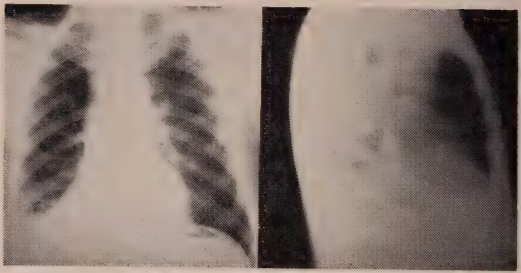

Fig. 1. Roentgenogram of chest taken on admission showing right lower and middle lobe atelectasis and emphysematous right upper lobe.

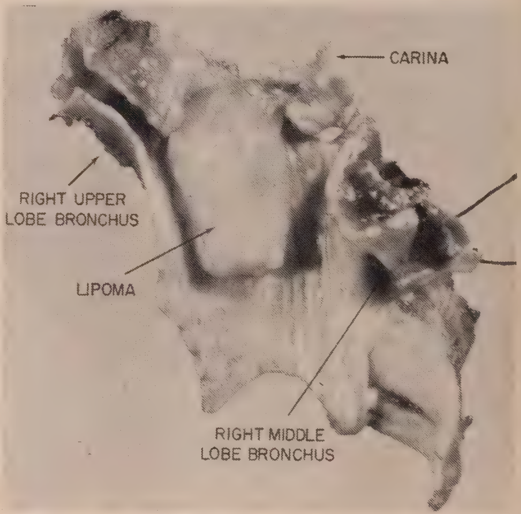

Fig. 2. Photograph of right main stem bronchus revealing preduncluated tumor attached to posterior wall proximal to origin of upper lobe bronchus. It lies in such a position that it obstructs both lower and middle lobe bronchi and partially obstructs upper lobe bronchus.

An examination of the surgical specimen revealed atelectasis and bronchiectasis of the lower and middle lobes of the right lung. The upper lobe showed marked obstructive emphysema and bronchiectasis. A pedunculated tumor attached to the posterior wall near the origin of the carina was covered by a smooth, intact mucosa (Fig. 2). The surface of the bisected mass had a core of light yellow fat.

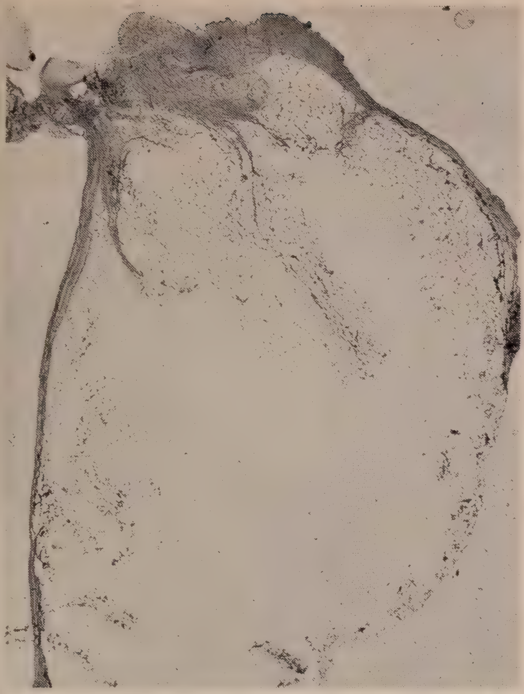

FIG. 3. Microscopic section showing core of fat with intact ciliated columnar epithelium covering surface.

Microscopic examination of the tumor revealed adult fat cells without evidence of malignancy. The mucosa was intact over the lesion (Fig. 3). The emphysema and bronchiectasis of the upper lobe were confirmed. The lower and middle lobes were atelectatic and bronchiectatic. Both conditions were obviously of long standing since in many areas fibrosis had occurred.

Comment

Watts, Clagett, and McDonald[3] have demonstrated the presence of lipoid cells in the submucosa of the bronchus. They stated that "any disturbance in the normal cell growth of these cells could produce neoplasm." It was their impression that lipoma of the bronchus probably arises from the submucosal islands of fetal mesodermal fat cells which lie dormant in the bronchus.

Symptoms associated with lipoma of the bronchus vary according to the site of the tumor and are those associated with bronchial obstruction. Physical findings also reflect the presence of bronchial obstruction and distal lung infection.

The total number of reported cases since 1854 is 25. The average age was fifty-four years, the oldest being seventy-nine years and the youngest twenty-nine years. No information was available on 4 cases. The chief complaints of these patients are shown in Table I. All of these symtoms may be associated with bronchial obstruction. The duration of symptoms varied from two days to two years with an average of nineteen months.

TABLE I.—SYMPTOMS, SITE OF ORIGIN, AND TYPE OF THERAPY USED IN LIPOMA OF THE BRONCHUS

Condition	Number of Cases
Symptom	
Cough	19
Pain	10
Fever	9
Hemoptysis	7
Site of origin of tumor*	
Left lung	
Main stem bronchus	6
Upper lobe	1
Lower lobe	6
Right lung	
Main stem bronchus	4
Upper lobe	3
Middle lobe	2
Lower lobe	1
Type of therapy used	
Excision of tumor through bronchoscope	13
Upper lobectomy	5
Pneumonectomy	1
Bronchotomy[11]	2
Phrenic crush[12]	1
Tumor found at autopsy	3

* No information concerning the location in 2 cases.[4]

Roentgenography showed atelectasis in 13, increased lung markings in 1, tuberculosis in 1, opacity of right lung in 1, and no inflammation in 9 cases.

The locations of the tumors are indicated in Table I. There does not seem to be any site of predilection.

In uncomplicated cases of lipoma of the bronchus,[5-10] the treatment of choice is removal of the tumor through the bronchoscope. However, in complicated cases with evidence of bronchiectasis, lung abscess, or emphysema, the treatment should be surgical extirpation of the lipoma and distal diseased lung. The treatment carried out in the 25 cases is summarized in Table I.

Of interest in the case reported were the syncopal attacks associated with coughing. It was apparent from the surgical specimen that the tumor could slip from the right main stem bronchus into the trachea, causing almost complete airway obstruction.

Summary

1. A case of lipoma of the bronchus is pre-

sented, and the literature is reviewed.

2. Endoscopic removal would appear to be the treatment of choice if extensive pulmonary destruction has not occurred distal to the bronchial obstruction. Otherwise, pulmonary resection is indicated.

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ANNUAL CONVENTION

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Any State Society member interested in presenting a paper before a scientific section or a general session is requested to contact the section chairman (see page 2986) or to write to Alfred P. Ingegno, M.D., Chairman, Scientific Program Subcommittee, at 27 Eighth Avenue, Brooklyn 17, New York, before October 30, 1960.

Dissecting Aneurysm of the Aorta and Serum Glutamic Oxalacetic Transaminase Activity

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It is often difficult to establish the diagnosis in a patient suffering from a dissecting aneurysm of the aorta. The confusion is due primarily to the not infrequent similarity between the symptoms and signs of this disease and those of acute myocardial infarction. Age, incidence, location of pain, fever, leukocytosis, shock, and at times electrocardiographic findings are among the features which can be similar in the two conditions.

According to our experience at the Roosevelt Hospital and that of others,[1] it has sometime been possible to make the diagnosis solely by classic signs and symptoms. Laboratory findings are occasionally helpful. In many cases, however, postmortem pathologic findings are indispensable for establishing the diagnosis. This is understandable since the manifestations of aortic dissection may be extremely varied, depending on location, direction, and extent of dissection; occurrence of re-entry; involvement of arterial roots arising from the area of dissection and resulting interference with blood supply to the organ irrigated; as well as many other factors. In acute myocardial infarction, however, clinical diagnosis is often possible without further aid, and the accuracy of diagnosis increases markedly with the information provided by the electrocardiogram and laboratory studies. Of 25 patients with proved dissecting aneurysm of the aorta treated at our hospital, the antemortem diagnosis was made correctly in 10 cases, suspected in 4 others, and incorrectly judged to be myocardial infarction in 10.[5]

The work of Karmen, Wróblewski, and La Due[3] on serum transaminase activity in disease has proved to be very helpful in establishing the diagnosis of myocardial infarction. Their original observations of increased serum glutamic oxalacetic transaminase (SGO-T) levels in patients with this disease have since been corroborated by the studies of Chinsky, Shamgranoff, and Sherry,[4] as well as others.[5]

A review of the literature yields reports of normal SGO-T activity in patients with dissecting aneurysm of the aorta[5,6] and increased SGO-T activity in 2 of 3 cases of dissection complicated by hemopericardium in which myocardial infarction or other tissue necrosis was absent.[7] In the latter report Tredway and Kemble quote Scherbel and his associates[8] who, in their study published in 1956, claim that SGO-T levels are helpful in differentiating between myocardial infarction and dissecting aneurysm.

We recently had occasion to observe a case of localized dissection of an aortic aneurysm complicated by massive hemopericardium in which very high SGO-T activity was measured. A report of this case is presented to point up the difficulty in differentiating between the two conditions at times. The high SGO-T levels in this patient suggested the presence of myocardial infarction, but postmortem examination proved that impression to be incorrect.

Case Report

A fifty-nine-year-old hotel manager was admitted to the Roosevelt Hospital on January 10, 1958. The patient reported that while at rest just prior to admission, he suddenly felt a gripping pain across the left side of his chest and abdomen and collapsed a few minutes later. Consciousness was gradually restored, and profuse diaphoresis followed.

The past history disclosed an episode of dyspnea and orthopnea twenty years previously which had been treated with digitalis and hypertension of about ten years duration.

A physical examination revealed an acutely ill, restless, ashen-cyanotic, white man who was sweating profusely. His blood pressure was 90/64 mm. Hg; pulse 90 per minute, regular and feeble; and rectal temperature 101.6 F. The heart sounds were hardly audible; no murmurs, gallop, or rub were heard. There were no signs of congestive heart failure and no increase in retromanubrial dullness. The liver was palpable 1.5 cm. below the right costal margin.

A 12-lead electrocardiogram revealed regular sinus rhythm with occasional premature atrial

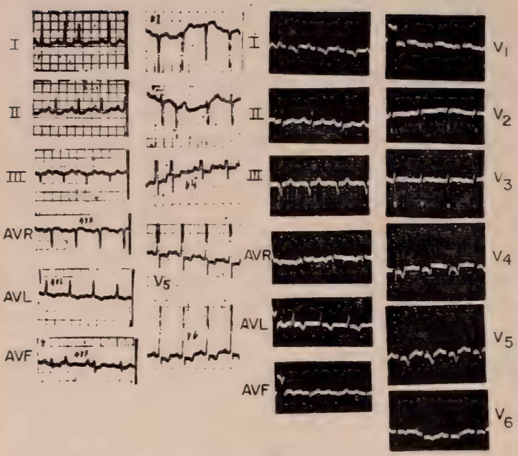

FIG. 1. (*Left*) Electrocardiogram on January 10, 1958, shows sinus tachycardia, atrial and ventricular premature contractions, evidence of myocardial damage, and digitalis effect. (*Right*) Electrocardiogram on January 11, 1958, shows changes that have occurred since the previous record suggesting myocardial ischemia; a recent anterolateral myocardial infarction cannot be excluded.

and ventricular contractions (Fig. 1). There was depression of the S-T segments in V_4, V_5, and V_6, with coving and inversion of the T waves in these leads, suggesting a recent anterolateral myocardial infarction.

Other positive laboratory findings included the following: total white blood cells 14,600 per cubic millimeter (81 per cent polymorphonuclear leukocytes); fasting blood sugar 173 mg. per cent; urea nitrogen 41 mg. per cent; and prothrombin time 17.5 seconds (control fifteen seconds). The SGO-T level on the day after admission was 2,075 units (method of Wróblewski and associates[3]). The next day the SGO-T level had fallen to 326 units, and the serum glutamic pyruvic transaminase (SGP-T) level was 354 units. The results of the serologic tests for syphilis were negative.

Although the patient's condition improved with symptomatic therapy, he experienced an episode of severe substernal pain on the fourth hospital day which was followed by a convulsion and death.

A postmortem examination revealed massive hemopericardium consisting of whole and clotted blood. The ascending aorta was uniformly dilated. On its inner surface there was an intimal tear 3 cm. above the aortic valve (Fig. 2). Gross examination and multiple sections of the aorta revealed moderate atherosclerosis, cystic medial necrosis as described by Erdheim,[9] and a medial dissection at whose upper limit the blood had torn through the aortic adventitia near the reflection of the visceral pericardium, with resulting hemopericardium (Fig. 3).

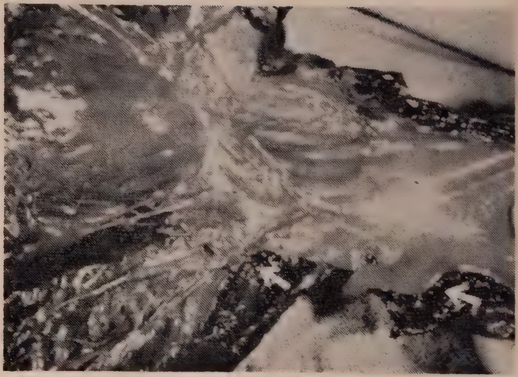

FIG. 2. Dissecting aortic aneurysm. Dissection of blood in aorta and into pericardial sac (arrows).

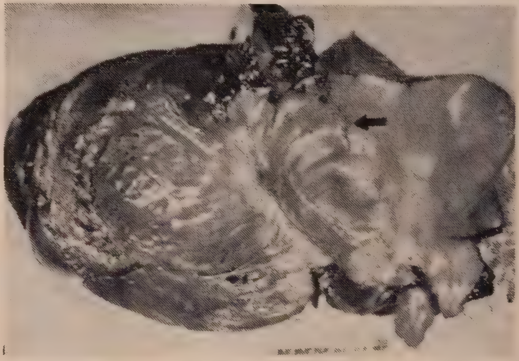

FIG. 3. Dissecting aortic aneurysm. Arrow points to intimal tear.

A detailed examination of the heart showed the coronary arteries to be patent but markedly narrowed by atheromatous plaques. Focal fibrosis was present at the apex, but there was no evidence of recent subepicardial or other myocardial infarction. The liver was uniformly enlarged and weighed 2,400 Gm.; microscopic examination indicated diffuse, central lobular congestion and some unimpressive, scattered areas of central parenchymal degeneration.

Comment

In their findings published in 1941, Cohen and Hekhuis[10] reported the presence of glutamic oxalacetic transaminase in substantial amounts in the heart, skeletal muscles, brain, kidney, liver, and red blood cells. Since that time other reports have attested to the usefulness of determinations of this enzyme in a wide variety of diseases, including myocardial infarction, cardiac arrhythmias (with ventricular rates above 160 per minute), acute rheumatic carditis, acute hepatitis, hepatic cirrhosis, obstructive jaundice, neoplastic metastases to the liver, pancreatitis, and muscle diseases.[3,4,11] Increased SGO-T activity in patients with dissecting aneurysm of the aorta has been reported only very recently.[7]

In attempting to ascertain the reason for the high SGO-T levels in some patients with dissecting aneurysm, several factors must be considered: (1) hemolysis of red blood cells in the extraluminal aortic blood and pericardial sac (whole blood hemolysates have ten times the SGO-T activity of normal sera[3]); (2) somatic muscle necrosis resulting from the interruption of blood supply through the intercostal and other aortic branches; (3) tissue necrosis due to hypotension; and (4) subepicardial muscle necrosis caused by blood in the pericardial cavity (high SGO-T levels were observed when subepicardial muscle necrosis was present in experimentally induced cases of pericarditis[12]).

The clinical, electrocardiographic, and laboratory findings in the case presented here led to an incorrect diagnosis of myocardial infarction in spite of the very high SGO-T level, which is unusual in this disease. The dissection was complicated by massive hemopericardium, but subepicardial necrosis did not occur. Necrosis of other myocardial and of skeletal muscles was absent, probably because of the location and limited extent of the dissection. The increased SGP-T value suggested some hepatocellular damage which was confirmed at autopsy. The high SGO-T level, however, which decreased in twenty-four hours, cannot be explained on the basis of the unimpressive hepatocellular damage alone. Because of the absence of any other demonstrable cause, therefore, it must be presumed that in our patient the hemolysis of the extravasated blood in the aorta and pericardial cavity was the major source of the increased SGO-T activity.

Summary

A case of dissecting aneurysm of the aorta complicated by hemopericardium has been presented in which there were unusually high levels of serum glutamic oxalacetic transaminase activity.

In this patient hemolysis of the extravasated blood in the aorta and pericardial cavity was indicated as the probable major source of the increased enzyme activity.

Increased SGO-T activity should not be considered an unequivocal basis for differentiating between dissecting aneurysm of the aorta and acute myocardial infarction since the two entities are often clinically indistinguishable.

Experience with this case illustrates some of the difficulties in establishing the diagnosis of dissecting aneurysm of the aorta before death.

ACKNOWLEDGMENT.—The authors wish to express their appreciation for the valued assistance given by Mrs. Rose M. Schweitzer, Editor for Clinical Research, and Mr. James Burch, Medical Illustrator, Roosevelt Hospital, New York City.

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NECROLOGY

Fannie Updyke Angelicola, M.D., of Elmira Heights, died on August 22 at the age of eighty-one. Dr. Angelicola graduated in 1910 from Woman's Medical College of Pennsylvania. She was a member of the Chemung County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Alexander Burns, M.D., of Wilson, died on August 1 at the age of eighty. Dr. Burns graduated in 1903 from Kentucky University Medical Department, Louisville. Retired in 1957, he had formerly been a staff physician at Lockport Memorial and Niagara Falls Memorial Hospitals. Dr. Burns was a member of the Niagara County Medical Society and the Medical Society of the State of New York.

Ethelbert Alexander Callaghan, M.D., of Brooklyn, died on August 14 at the age of seventy-one. Dr. Callaghan graduated in 1916 from Long Island College Hospital Medical School. He was an attending surgeon in otolaryngology at Brooklyn Hospital and a senior attending surgeon at Brooklyn Eye and Ear Hospital. Dr. Callaghan was a Diplomate of the American Board of Otolaryngology, a Fellow of the International College of Surgeons, and a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Rudolf Karl Robert Denig, M.D., of New York City, died at his home in Bayreuth, West Germany, on July 22 at the age of ninety-three. Dr. Denig received his medical degree from the University of Wurzburg in 1891. He was a consultant in ophthalmology at Lenox Hill Hospital. In 1909 he became professor of clinical ophthalmology at Columbia University College of Physicians and Surgeons and in 1922 and 1924 served on Nobel Prize nominating committees. Dr. Denig was a member of the Rudolf Virchow Medical Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Lance Joseph Frenkel, M.D., of Helmuth, died on January 17 at the age of fifty-seven. Dr. Frenkel received his medical degree from the University of Budapest in 1929. He was supervising psychiatrist at Gowanda State Homeopathic Hospital. Dr. Frenkel was a Member of the American Psychiatric Association and also belonged to the Buffalo Neuropsychiatric Association, the Cattaraugus County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Francis John Haley, M.D., of Buffalo, died on August 3 in Buffalo General Hospital at the age of sixty-seven. Dr. Haley graduated in 1916 from the University of Buffalo School of Medicine. For thirty-five years he had been an examining physician for the Workmen's Compensation Board.

Charles M. Hanisch, M.D., of Jamaica, died on August 6 at the age of forty-eight. Dr. Hanisch graduated in 1938 from the University of Toronto Faculty of Medicine. He was an associate in orthopedics at the Hospital for Joint Diseases and the Hospital for Joint Diseases Outpatient Department. Dr. Hanisch was a Diplomate of the American Board of Orthopedic Surgery and a member of the American Academy of Orthopaedic Surgeons, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Will Irvine Henderson, M.D., of New York City, died on August 28 at the Wickersham Hospital at the age of seventy. Dr. Henderson graduated in 1916 from the University of Toronto Faculty of Medicine. He was the owner and director of the Wickersham Hospital. Dr. Henderson was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herman Kass, M.D., of New York City, died on April 18 at the age of fifty. Dr. Kass graduated in 1939 from New York University College of Medicine. He was an assistant in the Cardiac Work Classification Unit at the Beekman-Downtown Hospital Outpatient Department. Dr. Kass was a member of the Industrial Medical Association, the American Association of Railway Surgeons, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jehiel Kling, M.D., of the Bronx, died on August 21 at his home at the age of eighty. Dr. Kling graduated in 1909 from New York University and Bellevue Hospital Medical College. From 1910 to 1950 he was a medical inspector with the Bureau of Tuberculosis of the New York City Department of Health. Dr. Kling was a founder in 1918 of the Sholem Aleichem Folks Institute, sponsors of Yiddish schools, and its president from 1919 to 1926.

Merwin Elliott Marsland, M.D., of Mamaroneck, died on September 13 in United Hospital, Port Chester, at the age of sixty-five. Dr. Marsland graduated in 1918 from Cornell University Medical College and interned at New York Hospital. Until 1957 he was chief of pediatrics at United Hospital and then became emeritus director in pediatrics there. Dr. Marsland was a member of the Westchester Academy of Medicine, the Westchester County Medical Society of which he was a former secretary and a past president, the Medical Society of the State of New York, and the American Medical Association.

Genia Ida Sakin, M.D., of New York City, died in Massachusetts General Hospital on September 12 at the age of fifty-seven. Dr. Sakin received her medical degree from the University of Berlin in 1931. During World War II she served in the United States Army Medical Corps and at the end of the war became chief of the plastic surgery sections at the ninety-seventh General Hospital, Frankfurt, Germany, and the 279th Station Hospital, Berlin. In 1956 to 1957 she visited Japan where she performed plastic surgery on some of the Hiroshima atom-bomb victims and other Japanese. In 1949 on invitation of the Greek Government she went to Greece to help soldiers deformed by war injuries and for two years served in Greek Army hospitals for which she was decorated by King Paul. In 1957 she received the Certificate of Honor of the Manila Central University for operating on many Philippine people deformed by war accidents and for demonstrating her technic at the College of Medicine. In 1956 Dr. Sakin received the Gimble Award as the most unselfish woman from the New York area in helping others. Dr. Sakin was a member of the New York County Medical Society and the Medical Society of the State of New York.

Leon L. Willner, M.D., of Beacon, died on September 12 at the age of fifty-nine. Dr. Willner received his medical degree from the University of Vienna in 1926. He was assistant director of Matteawan State Hospital and a consultant in neuropsychiatry at Highland Hospital, Beacon. Dr. Willner was a Diplomate of the American Board of Psychiatry and Neurology, a Member of the American Psychiatric Association, and a member of the Dutchess County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Prenatal Influences Play Major Role in Blindness in Children

Prenatal influences play a major role in the onset of blindness in children, according to *Patterns of Disease*, a Parke Davis & Company publication.

In one study of 4,426 blind children, it was found that about 52 per cent had been blind at birth, and many others who became blind later were affected by prenatal influences.

Infectious diseases, once the leading cause of blindness in children, now play a minor role, thanks to the increasing effectiveness of public health measures. With the decline of infectious diseases, it has become factors affecting the early development of the eye that today constitute the most important problem in preventing blindness in children.

MEDICAL NEWS

New Radiology Society Seeks Charter Members—Applications for charter membership in the American Society of Diagnostic Radiology are now being invited. Membership is open to general practitioners and internists who do, or may desire to do, some type of diagnostic radiology in their offices.

For information write to: Louis Shattuck Baer, M.D., F.A.C.P., 411 Primrose Road, Burlingame, California.

Doctors' Orchestral Society Makes Plans—Plans for the forthcoming season are now being made by the Doctors' Orchestral Society of New York. Physicians, dentists, and members of allied professions, as well as nonmedical musicians, may become members of the orchestra.

The orchestra rehearses on Thursdays, at 8:30 P.M., in the auditorium of the Stuyvesant High School, 15th Street and First Avenue, New York City. For further information contact: Benjamin A. Rosenberg, M.D., 909 President Street, Brooklyn 15, New York. Telephone NEvins 8-2370.

Free Refresher Course Held for Foreign Physicians in Buffalo—A refresher course, designed primarily for foreign medical graduates, was held at the University of Buffalo School of Medicine on September 23. Eighty persons from 26 different countries registered for the course. The University of Buffalo provided Butler Auditorium for the course and the thirty-six hours of instruction were provided free of charge by the faculty of the medical school. The Buffalo chapter of the Christian Medical Society was the sponsoring organization.

Postgraduate Week at New York Academy of Medicine—The New York Academy of Medicine will hold its fourth annual postgraduate week, "Frontiers in Medicine and Surgery," October 24 through 28, at the Academy, 2 East 103rd Street, New York City.

Registration, without fee, will be required of non-Fellows of the Academy. All physicians, including interns and residents, and those working in the allied sciences, are invited to attend all sessions.

The scientific exhibit will open at 11:00 A.M., Wednesday, October 19, and will be open daily from 10:00 A.M. to 10:00 P.M., through October 28, except for Saturday and Sunday, October 22 and 23.

For further information contact: Secretary, Postgraduate Week, The New York Academy of Medicine, 2 East 103rd Street, New York 29, New York.

Physician Returns to United States—Harry Eno, M.D., recently returned to the United States for a visit to his home in Baldwinville. Dr. Eno, seventy-nine, was one of the medical pioneers who served in Panama during the construction of the Panama Canal. He has resided in the Republic of Panama since 1905 and was chosen as the delegate from the Panama Canal Zone at the 1960 meeting of the American Medical Association, in Miami, Florida.

A family reunion was held in Dr. Eno's honor on his return to New York State. Among the guests was Chas. Murray Gratz, M.D., of New York City.

AMEF Contributions Increase—As of June 31, 1960, the receipts of the American Medical Education Foundation were 132 per cent above those through June 31, 1959—a total of $295,302 as compared with $126,912 in receipts the previous year. The 1959 figure includes one extra month because the ending of the fiscal year was changed to January 31. Forty-seven states have shown an increase over last year's figures.

State of Wisconsin Lists Job Opportunity—The State of Wisconsin has announced an opening for a physician to serve as the medical director of a state colony and training school for mentally deficient children and adults. The major responsibility of the director will be primarily administrative. The medical and nursing staff of the institution is approximately forty in number.

For further information write to: Mr. John Garstecki, Superintendent, Southern Colony and Training School, Union Grove, Wisconsin.

New Pamphlet Available to Arthritics—The Arthritis and Rheumatism Foundation has announced the publication of a new pamphlet entitled "Arthritis Quackery Today." The pamphlet offers the facts about the danger of misleading advertised arthritis products and treatments, and offers advice on what arthritis sufferers can do to protect themselves against such false claims.

Those interested in obtaining a copy of the pamphlet should write to: Public Information

Department, The Arthritis and Rheumatism Foundation, 10 Columbus Circle, New York 19, New York.

Cooperation Requested for Studies on Colon and Rectal Cancer—The cooperation of physicians is requested in studies on colon and rectal carcinoma recently initiated at the Clinical Center, National Institutes of Health, Bethesda, Maryland. Encouraging results in the treatment of gastrointestinal carcinoma have been reported using the pyrimidine analogues 5-fluorouracil and 5-fluorodeoxyuridine. However, other reports have raised the question of their effectiveness.

The Chemotherapy Service of the National Cancer Institute is conducting studies of these agents in carcinoma of the colon and rectum to better define their place in the treatment of metastatic gastrointestinal neoplasm. The side-effects of these agents may be considerable; therefore patients must be in good general condition so that they can tolerate adequate doses. Also the presence of tumor masses which can be either measured directly or demonstrated on roentgen films is necessary to determine the antitumor effect of the drugs in short trial periods.

Patients can be accepted for these studies if they are ambulatory, have normal leukocyte count and renal and hepatic function, and if they have metastases in the lung, peripheral lymph nodes (such as supraclavicular or cervical), or skin.

Referrals of such patients will be greatly appreciated. Physicians who wish to have their patients considered for study at the Institute may write or call: Clyde O. Brindley, M.D., or Paul P. Carbone, M.D., National Cancer Institute, Bethesda 14, Maryland. Telephone, OLiver 6–4000, extension 4251.

Postgraduate Course on Urinary Tract Disease—The University of Buffalo School of Medicine will present a postgraduate course on the medical and surgical aspects of urinary tract disease on Wednesday and Thursday, October 19 and 20.

For information concerning this course contact: Department of Postgraduate Education, University of Buffalo School of Medicine, 3435 Main Street, Buffalo 14, New York.

Personalities

Appointed

Irving J. Farber, M.D., Forest Hills, as consulting psychiatrist for the Brooklyn Home for Children, Forest Hills.

Relocated

Sonya Hoffman, M.D., from Ballston Spa to Schenectady. . . William Pugliese, M.D., from Tillson to the Cedar Ridge section of New Paltz.

New Offices

Michael F. Camillo, M.D., in Ithaca, for the practice of general, thoracic, and vascular surgery. . . Charles F. Elliott, M.D., in Fayetteville, for the practice of general medicine, in association with John W. Rowlingson, M.D.

Elected

Benjamin W. Carey, M.D., Pearl River, to a three-year term on the Alumni Advisory Council of Harvard Medical School. . . Joseph Greenberg, M.D., New York City, to a three-year term as a member of the board of trustees of The Society of Nuclear Medicine. . . Louis Pelner, M.D., Brooklyn, as president of the medical board of The Swedish Hospital in Brooklyn.

Speakers

J. Maxwell Chamberlain, M.D., New York City, on November 2 at the fourteenth annual postgraduate assembly of the San Diego County General Hospital, San Diego, California. . . Kurt Lange, M.D., New York City, at a special pyelonephritis symposium held in conjunction with the annual meeting of the Southern Medical Association, November 2. . . Nathaniel E. Reich, M.D., on August 1, before the staff of the Department of Cardiology at Pio Institute on the topic "Recent Advances in Heart Diseases" and on August 26 on the topic "Various Aspects of Heart Disease" before the medical faculty of the University of Rijeka, Yugoslavia.

There is no man living who cannot do more than he thinks he can.—HENRY FORD

MEDICAL MEETINGS

Fourth Annual Rose S. Liebowitz Memorial Lecture

The fourth annual Rose S. Liebowitz Memorial Lecture will be presented at 8:30 P.M., on Thursday, October 20, at The Long Island Jewish Hospital, 270–05 76th Avenue, New Hyde Park. The guest lecturer will be S. Leon Israel, M.D., professor and chairman, Department of Obstetrics and Gynecology of the Graduate School of Medicine, University of Pennsylvania. His topic will be "The Enigma of the Menopause." Louis M. Hellman, M.D., New York City, will be the discussant.

Albert Sabin to Lecture at Jewish Hospital of Brooklyn

Albert B. Sabin, M.D., Cincinnati, whose live polio vaccine was recently approved by the United States Public Health Service, will present the first in a series of lectures entitled "Significant Trends in Medicine" to be held at the Jewish Hospital of Brooklyn. Dr. Sabin will speak on "The Eradication of Poliomyelitis" in the Louria Auditorium of the Hospital at 8:30 P.M., on October 25.

For further information contact: Mr. Eli Jaffe, Director of Public Relations, The Jewish Hospital of Brooklyn, 555 Prospect Place, Brooklyn 38, New York.

Conference on Hazards of Diagnostic Radiography

A conference on the hazards of diagnostic radiography will be held at the Robbins Auditorium, Albert Einstein College of Medicine, Yeshiva University, Eastchester Road and Morris Park Avenue, New York 61, New York, on October 26, from 8:30 to 10:30 P.M. The conference will be sponsored by Albert Einstein College of Medicine of Yeshiva University, the New York Cancer Committee, and the Bronx County Chapter of the American Academy of General Practice.

Participants will be as follows: Richard C. Chamberlain, M.D., from the University of Pennsylvania, and Milton Elkin, M.D., John Evans, M.D., Seymour Romney, M.D., and Salome Waelsch, Ph.D., from Albert Einstein College of Medicine.

The New Jersey Diabetes Association

The New Jersey Diabetes Association in cooperation with the Department of Health of the State of New Jersey will present the eighth annual symposium on "Diabetes Research: Methodology and Application," at the Veterans Administration Hospital, Lyons, New Jersey, on Wednesday, October 26, from 2:00 to 5:00 P.M.

Members of the American Academy of General Practice will receive three hours of credit under category II for attendance at this symposium.

For further information contact: Arthur Krosnick, M.D., Coordinator, Diabetes Control Program, Division of Chronic Illness Control, State of New Jersey, Department of Health, Trenton 25, New Jersey.

Bronx Chapter, New York Society of Internal Medicine

The Bronx Chapter of the New York Society of Internal Medicine will hold its next meeting on November 9 at the Concourse Plaza Hotel, in the Bronx.

The program will be as follows: "Role of Electrolytes in the Clinical Course of Cardiac Failure," presented by Louis Leiter, M.D., New York City. Panel Discussion—"The Evaluation of Congenital and Acquired Heart Disease for Surgical Treatment"—Abraham Jezer, M.D., Bronx, moderator, and Alexander S. Nadas, M.D., Boston, Richard L. Varco, M.D., Minneapolis, Lawrence K. Ellis, M.D., Boston, and E. M. Papper, M.D., New York City, panelists. Panel discussion—"Newer Developments in the Treatment of Neoplastic Disease"—Maurice Lenz, M.D., New York City, moderator, and George E. Moore, M.D., Buffalo, David Karnofsky, M.D., New York City, and James R. Maxfield, M.D., Dallas, panelists.

For further information contact: Maxwell Spring, M.D., F.A.C.P., Chairman of Program Committee, Bronx Chapter, New York Society of Internal Medicine, 800 Grand Concourse, Bronx 51, New York.

State University of New York, Upstate Medical Center

The Department of Ophthalmology of the State University of New York Upstate Medical Center at Syracuse will present its eleventh annual postgraduate course in ophthalmology at the Hotel Syracuse, Syracuse, New York, Friday and Saturday, December 2 and 3.

The following physicians will lecture: Howard Naquin, M.D., Baltimore, Maryland; Raymond L. Pfeiffer, M.D., New York City, and John W.

Henderson, M.D., Ann Arbor, Michigan.

The course is limited to 60 members. Applications will be accepted in the order in which they are received. For further information concerning tuition and application write to: James L. McGraw, M.D., Department of Ophthalmology, State University of New York, Upstate Medical Center, 766 Irving Avenue, Syracuse 10, New York.

Ice Water Recommended as First Aid for Burns

Ice water was recommended recently as the best first aid measure for any burn covering up to 20 per cent of the body. Alex G. Shulman, M.D., of Los Angeles, writing in the August 27 issue of the *Journal of the American Medical Association*, said, "My experience indicates that, whatever the subsequent management may be, those patients who receive initial ice-water treatment fare better than those who do not."

Although the beneficial effect of cold in burns has been sporadically advocated for many years, he said, it has been studied seriously only in the past five years.

Dr. Shulman's investigation began eight years ago when he burned his own hand with boiling grease. "In the ensuing agonizing few minutes it seemed logical to plunge the hand into a tub of cold water," he explained.

Finding that the pain was alleviated and the burn subsequently healed more rapidly than was expected, he decided to use the same therapy for his patients. His method is to place the burned area immediately into a basin containing tap water, ice cubes, and the disinfectant, hexachlorophene. For burns of the head, neck, shoulder, chest, abdominal wall, or back, where immersion is impractical, he applies towels chilled in a bucket of ice water. The cold treatment is continued until it can be stopped without return of the pain. The period ranges from thirty minutes to five hours.

Dr. Shulman said he had treated 150 patients in this manner. Most of the burns were thermal, due to excessive heat or cold, but some were chemical and electrical burns.

"In every patient thus treated, immediate gratifying relief was expressed at once," he said. "Whereas pain ordinarily lasts twenty-four hours or more in the first-degree burn, relief in these patients was immediate, and the pain was almost totally absent by the time the patient left the office two or three hours later.

"The impression obtained from our experience is that, although the primary injurious effect of the burn has taken place, the usual inflammatory process secondary to the burn can be reduced in degree and, indeed, at times reversed by ice-water therapy. "No infections have been encountered in those patients treated within one hour of injury. The time factor between injury and treatment determines the result. This treatment should, therefore, be initiated if possible by the patient or first-aid attendant at once. This would be far more effective first-aid treatment than the usual first-aid measure of applying butter or grease which will only have to be painfully removed later by the attending physician.

MONTH IN WASHINGTON

The Federal government is offering the states liberal matching funds to provide health care for needy and near-needy persons sixty-five years of age and older.

The program, which Congress approved in the bobtailed postconvention session, is supported by the American Medical Association and allied health groups.

Congressional approval of the Federal-state program marked a victory for the medical profession and a defeat for Democratic Presidential Nominee John F. Kennedy, the AFL-CIO, and other advocates of the Social Security approach to the problem.

In a key vote on the issue, the Senate rejected by a 51 to 44 vote a Kennedy proposal that would have provided hospitalization and medical care for the aged under the Social Security system. The Kennedy plan would have required an increase in payroll taxes.

Republicans and Southern Democrats joined in the Senate to defeat the Social Security approach which was opposed vigorously by the medical profession.

After voting down the Kennedy plan and a separate proposal of the Eisenhower Administration, the Senate passed a modified version of a House-approved program. The modifications, sponsored by Sen. Robert S. Kerr (D., Okla.) and others, provided for increases in the percentage of Federal matching funds and for administrative changes designed to facilitate state participation.

Under the legislation as signed into law by President Eisenhower, (1) substantial increases are authorized in Federal grants to states to help with health care expenses of the 2.4 million persons on old age assistance rolls, and (2) Federal matching funds are offered the states to finance a new program of health care for an estimated 10 million aged persons who are not on relief but whose incomes may be inadequate to take care of all their health costs.

Start of the program was authorized for October 1 for those states where new state legislation is not required.

Administration of the program rests entirely with the states, subject to Federal approval in broad terms. It is up to each individual state whether or not it participates. Eligibility standards for beneficiaries and what health care services are provided are matters for the states to decide.

If a state so chooses, it can take care of all the health needs of an eligible beneficiary. The law authorized inpatient hospital services; skilled nursing home services; physicians' services; outpatient or clinic services; home care services; private duty nursing services; physical therapy and related services; dental services; laboratory and x-ray services; prescribed drugs, eyeglasses, dentures, and prosthetic devices; diagnostic screening and preventive services, and any other medical care or remedial care recognized under state law.

For medical expenses of persons on old age assistance rolls, the Federal government will contribute 50 to 80 per cent—with states with low per capita income getting the larger percentages of Federal aid—of an amount equal to $12 multiplied by the number of old age assistance recipients in a particular state.

The matching formula will be the same for financing the health care of the near-needy but there is no $12 limitation figure.

Health, Education, and Welfare officials estimated first-year costs of the program at $262 million—$202 million Federal and $60 million state. Annual costs are estimated to rise by the end of the fifth year to $340 million Federal and $180 million state. However, these estimates admittedly are no more than educated guesses because so much depends on state action.

It was estimated that maximum participation and a state contribution of $13.4 million would bring New York State $19.3 million in Federal matching funds in the first year of the program.

The medical-care-for-the-aged legislation was included in an omnibus measure titled "Social Security Amendments of 1960." It also eliminated the age fifty requirement for eligibility for disability insurance benefits.

The Senate knocked out of the House bill a provision that would have brought physicians under Social Security coverage.

On other legislation of interest to the medical profession:

Congress passed bills: authorizing expenditure of $10 million of counterpart funds abroad to stimulate international research; authorizing up to 15 per cent of National Institutes of Health research grants for nongovernmental medical research;

Prepared by the Washington Office of the American Medical Association, Washington, D.C.

directing a broad study of air pollution problems; requiring informative labeling on packages of hazardous substances for household use, and giving the government power to establish a tolerance on the amount of color additives that may be used in various products.

The Senate failed to act upon House-approved legislation that would have given physicians and other self-employed persons a tax break on income put into private pension plans.

Benign Lesions of the Cecum Simulating Carcinoma

The authors present 27 cases in which the possibility of carcinoma of the cecum was considered preoperatively but which were found, at operation, to be benign lesions. These cases are presented to demonstrate the various types of benign lesions that may be found in this area and the problems encountered in differentiation and management. Differentiation between a benign and malignant lesion in the cecum on the basis of physical and laboratory findings is difficult in the extreme. Congenital abnormalities, inflammatory lesions, benign tumors, defects of the ileocecal junction, and abnormalities of the appendix or inverted appendiceal have induced such benign conditions. Clinically, a diagnosis of definite or probable carcinoma was made in 16 cases and a diagnosis of possible carcinoma in 11. Twenty-two patients were given a roentgenographic examination. Here the batting average was a little better. Preoperatively the radiologist thought 12 patients had probable or definite carcinoma; 8 possible carcinoma; and 2 benign disease. A diagnosis of benign disease could not have been made in any case without surgical exploration, although in some instances it is possible to be fairly certain of the benign nature of a cecal lesion, as in lipoma. In resolving these problems, differential diagnosis must call into play the combined clinical, laboratory, and x-ray findings. When there is any doubt, surgical exploration in indicated.—*William M. Phillips, M.D., William H. ReMine, M.D., Oliver H. Beahrs, M.D., and Harold H. Scudamore, M.D., Mayo Clinic, Rochester, Minnesota, Journal of the American Medical Association, April 2, 1960*

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COURSES FOR GENERAL PRACTITIONERS

Rhinoplasty and Otoplasty
Jan. 7 to Jan. 20; Mon. to Sat., 9 to 6 p.m.
Electrocardiography
Jan. 10 to Jan. 20; 1st week—Tue. to Sat., 2nd week—Mon. to Fri., 9 to 12 n.
Recent advances in cardiovascular disease
Jan. 23 to Feb. 3; Mon. to Fri., 9 to 12 noon
Clinical Cardiology
Feb. 7 to April 11; Tue., 2 to 4 p.m.
Laboratory methods in hematology
Feb. 13 to Mar. 9; Mon. to Thur., 1 to 5 p.m.
Heart disease and circulatory dynamics
Feb. 14 to Apr. 18; Tue., 3 to 5 p.m.
Chemotherapy of infections and parasitic diseases
Mar. 7 to Mar. 23; Tue. & Thur., 4:30 to 6 p.m.
Differential diagnosis in radiology of the chest
Mar. 13 to June 5; Mon., 4:45 to 6:15 p.m.
Roentgen diagnosis of lesions of the gastrointestinal tract, gall bladder and pancreas
Mar. 13 to Mar. 21; Mon. to Fri., 2:30 to 4 p.m.
Clinical neurology
Mar. 27 to Mar. 31; Mon. to Fri., 10 to 1; 2 to 5 p.m.
Laboratory methods in blood banks
Mar. 28 to May 2; Tue., 1 to 5 p.m.
Differential diagnosis in gastrointestinal radiology
Mar. 28 to June 6; Tue., 5 to 6 p.m.
Gastroenterology
Apr. 3 to Apr. 7; Mon. to Fri., 9 to 12; 2 to 5 p.m.
Office proctology
Apr. 13 & 14; Thur. & Fri., 10 to 12; 1 to 4 p.m.

COURSES FOR SPECIALISTS

Combined course in indirect laryngoscopy and voice rehabilitation, and audiology. Note: These two courses may be taken together or as two separate courses.
Feb. 6 to Feb. 11; Mon. to Sat., 9 to 5 p.m.
Head and Neck (including Laryngeal) Surgery
Feb. 13 to Feb. 24; Mon. to Fri., 9 to 5 p.m.
The use of the Schepens' ophthalmoscope
Mar. 7 to Mar. 23; Tue. and Thur., 2 to 4 p.m.
Trans-meatal (Endaural) surgery
Mar. 27 to Apr. 7; Mon. to Fri., 9 to 6 p.m.
Histopathology of the eye
Apr. 5 to Apr. 28; Wed. and Fri., 4 to 6 p.m.
Stapes Surgery
Apr. 17 to May 5; Mon. to Fri., 9 to 6 p.m.
Radium Therapy
May 9 to June 20; Tue., 5 to 7 p.m.
Megavoltage Therapy
May 18 to June 22; Thur., 5 to 7 p.m.
Clinical Use of Radioactive Isotopes
June 5 to June 30; Mon. to Fri., 9 to 12; 1 to 5 p.m.

COURSES ON WHICH DATES ARE TO BE ARRANGED

Use of radioactive iodine
Mar. to May; Mon., Tue., Thu., Fri., 1 to 4 p.m.
Radiotherapy
A 6-month or 12-month course (full time).

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DISTRICT BRANCH MEETINGS

Medical Society of the State of New York

SECOND DISTRICT BRANCH

Wednesday and Thursday, October 26 and 27, 1960
Grossinger's, Grossinger, New York

Wednesday, October 26

Afternoon

12:00 noon—Registration

12:30 p.m.—Lunch

2:00 p.m.—Scientific Program: "Gallbladder Disease"
Abraham W. Freireich, M.D., Malverne, Director of Medicine, Meadowbrook Hospital

Evening

6:30 p.m.—Cocktail Party (courtesy of Grossinger family)

7:30 p.m.—Dinner

Introduction of Officers
Greetings: John M. Galbraith, M.D., President-Elect, Medical Society of the State of New York
Greetings: Mrs. Milton W. Kogan, President, Woman's Auxiliary to the Medical Society of the State of New York
Address: "World Medicine"
Louis H. Bauer, M.D., Secretary-General, World Medical Association

Thursday, October 27

Morning

10:00 a.m.—Business Meeting
Election of Officers

Officers—Second District Branch

President....Joseph G. Zimring, M.D., Long Beach
First Vice-President.......Charles W. Shlimbaum, M.D., Bay Shore
Second Vice-President............Paul H. Sullivan, M.D., Great Neck
Secretary....Albert M. Biglan, M.D., Central Islip
Treasurer....George C. Erickson, M.D., Hempstead

Presidents—Component County Medical Societies

Nassau.......Reginald R. Steen, M.D., Hempstead
Suffolk...Benjamin L. Feuerstein, M.D., Bay Shore

Some Statistics on Nursing

Every year 1 in 25 girls of college age is attracted to nursing as a profession, according to *Patterns of Disease*, published by Parke, Davis & Company. However, the casualty rate among trainees is high, evidence presented in the publication indicated. In 1956, for example, about 1 in 3 trainees did not complete her training.

The publication also notes that close to 5 per cent of active nurses leave the working force annually. Although marriage is often given as a reason for resignation, some 60 per cent of active nurses are married.

On why nurses leave their jobs, personal reasons rank as the commonest, accounting for 34 per cent of the reasons given. Second commonest reason is "other position accepted," accounting for 22 per cent, and third is "moving from city," accounting for 15 per cent.

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BOOKS RECEIVED

(The following books were received during the month of August, 1960)

Fractures, Dislocations and Sprains. By Philip Wiles, M.S. Octavo of 67 pages, illustrated. Boston, Little, Brown and Company, 1960. Cloth, $7.50.

Progress in Psychotherapy. Volume V. Review and Integrations. Edited by Jules H. Masserman, M.D., and J. L. Moreno, M.D. Octavo of 262 pages. New York, Grune & Stratton, 1960. Cloth, $8.50.

The Child With Mongolism. By Clemens E. Benda, M.D. Octavo of 276 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $9.50.

Surgical Errors and Safeguards. By Max Thorek, M.D. Fifth edition. Quarto of 652 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $25.

Emotional Maturity, The Development and Dynamics of Personality. By Leon J. Saul, M.D. Second edition. Octavo of 393 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $6.50.

Your Child's Care, 1001 Questions and Answers. By Harry R. Litchfield, M.D., and Leon H. Dembo, M.D. Octavo of 257 pages. Garden City, New York, Doubleday & Company, Inc., 1960. Cloth, $3.95.

Clinical Chemistry, Principles and Procedures. By Joseph S. Annino. Second edition. Octavo of 348 pages, illustrated. Boston, Little, Brown and Company, 1960. Cloth, $8.00.

The Human Blood Proteins. By Ferdinand Wuhrmann, M.D., and Charlie Wunderly, Ph.D. Translation from the third and completely revised edition by Harvey T. Adelson, M.D. Octavo of 491 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $15.75.

Cardiac Emergencies and Related Disorders. By Harold D. Levine, M.D. Octavo of 381 pages, illustrated. New York, Landsberger Medical Books, Inc., 1960. Cloth, $12.

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S. (Eng.). Thirteenth edition. Octavo of 928 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1960. Cloth, $14.50.

French's Index of Differential Diagnosis. Edited by Arthur H. Douthwaite, M.D. Eighth edition. Octavo of 1,111 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1960. Cloth, $24.

Group Processes. Transactions of the Fifth Conference, October 12, 13, 14, and 15, 1958, Princeton, N. J. Edited by Bertram Schaffner, M.D. Octavo of 196 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1960. Cloth, $4.50.

Cold Injury. Transactions of the Sixth Conference, July 6, 7, 8, 9, and 10, 1958, U. S. Army Medical Research Laboratory, Fort Knox, Ky. Edited by Steven M. Horvath, Ph.D. Octavo of 375 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1960. Cloth, $6.50.

Synopsis of Pathology. By W. A. D. Anderson, M.D. Fifth edition. Duodecimo of 876 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $9.25.

Clinical Obstetrics and Gynecology, Volume 3 Number 2. June 1960. Physiology of Pregnancy. Edited by Ernest W. Page, M.D. **Endometriosis.** Edited by Charles S. Stevenson, M.D. Octavo of 536 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Published quarterly (four numbers a year). Cloth, $18 per year.

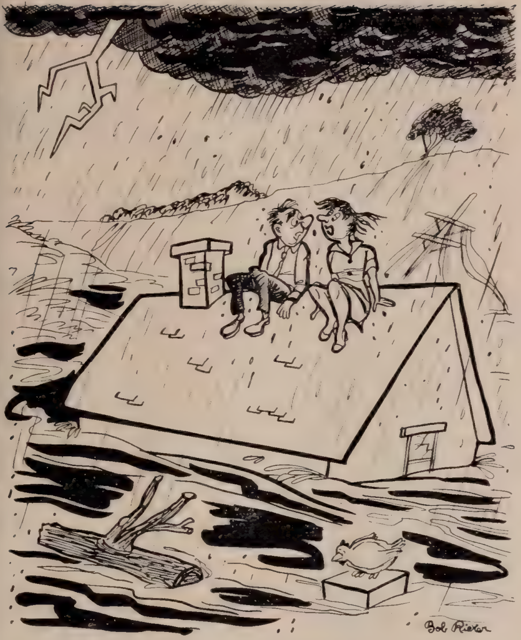
Fundamentals of Nerve Blocking. By Vincent J. Collins, M.D., with the assistance of Emery Andrew Rovenstine, M.D. Octavo of 354 pages, illustrated. Philadelphia, Lea & Febiger, 1960. Cloth, $9.50.

The Dyslipidoses. By Raul Fleischmajer, M.D. Octavo of 509 pages, illustrated. Springfield, Ill., Charles C Thomas, 1960. Cloth, $16.

Ciba Foundation Symposium on Cellular Aspects of Immunity. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Maeve O'Connor, B.A. With 117 illustrations. Octavo of 495 pages. Boston, Little, Brown and Company, 1960. Cloth, $10.50.

Surgery in the Aged. Edited by Frank Glenn, M.D., S. W. Moore, M.D., and John M. Beal, M.D. Octavo of 534 pages, illustrated. New York, The Blakiston Division, McGraw-Hill Book Company, Inc., 1960. Cloth, $17.50.

[Continued on page 3328]



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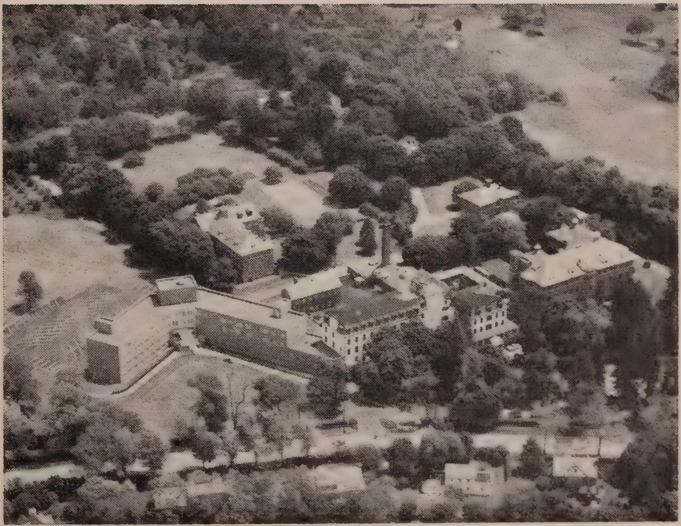


RICHARD D'ISERNIA, M.D.
Medical Director

[Continued from page 3326]

A Mount Sinai Hospital Monograph on Diagnostic Roentgenology of the Digestive Tract Without Contrast Media. By Bernard S. Wolf, M.D. Mansho T. Khilnani, M.B., and Arthur Lautkin, M.D. Quarto of 180 pages illustrated. New York, Grune & Stratton, 1960. Cloth, $8.75.

Paraplegia: A Head, A Heart, and Two Big Wheels. By Jules Saltman. Public Affairs Pamphlet No. 300. New York, Public Affairs Committee, 1960. Paper, $0.25.

BOOKS REVIEWED

Textbook of Pediatrics. Edited by Waldo E. Nelson, M.D. Seventh edition. Quarto of 1,460 pages, illustrated. Philadelphia, W. B. Saunders, 1959. Cloth, $16.50.

Medical students, general practitioners, and pediatricians will find this book the most up-to-date, complete, authoritative one-volume pediatric textbook available at the present time.

Waldo Nelson, M.D., the editor-in-chief, has had long experience in this field. He has chosen 81 pediatricians and specialists, all of whom are outstanding medical educators, to write up the particular sections or subjects in which they excel and which comprise the text.

The advance in pediatric knowledge since the last edition has made difficult the task of producing a one-volume textbook which would not be unwieldy; but the work has been accomplished well so that adequate exposition of each subject according to its practical importance has been achieved. Where some subjects of rarer occurrence have had to be pruned almost to the branch to conserve space, sufficient up-to-the-minute references have been appended to permit those who require fuller information to obtain it readily. The text is replete with illustrations, tables, and charts to aid the reader's understanding of the text.

An appendix adds drug dosages, regular and special diets, caloric food charts, normal chemical and physical values for the various body fluids. The index is sufficiently detailed and excellent.

In general pediatric discussions Nelson's Pediatric Textbook is the most widely quoted authority.—Kenneth G. Jennings

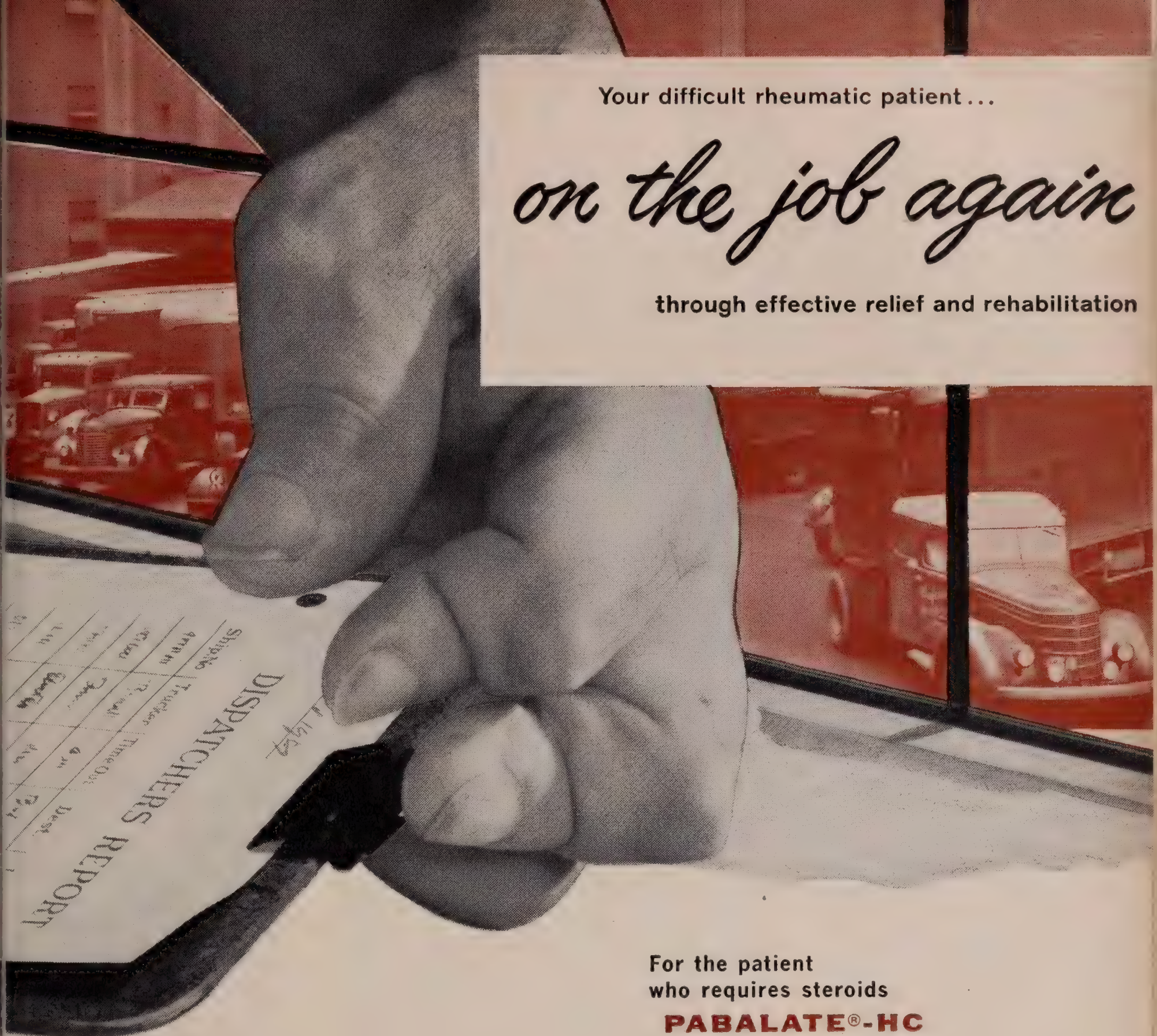
Clinical Obstetrics and Gynecology, Volume 2 Number 4. Advances in Gynecologic Surgery. Edited by S. B. Gusberg, M.D. Cesarean Section. Edited by Edwin J. De Costa, M.D. Octavo. New York, Paul B. Hoeber, Inc., 1959. Published Quarterly (four numbers a year). Cloth, $18. per year.

This volume of some 300 pages is the fourth quarterly of the second volume devoted to clinical obstetrics and gynecology. One section is devoted to a symposium on cesarean section by 12 authors, edited by Edwin J. De Costa, M.D., and the second section is a symposium on recent advances and technics in gynecologic surgery by 11 authors and edited by S. B. Gusberg, M.D.

Under cesarean section, each author covers a different phase of the topic such as indications, transabdominal technic, delivery following cesarean section, cesarean hysterectomy, supravesical extraperitoneal technic, etc. The technic is quite lucid in description and well illustrated. Although postmortem cesarean section is rarely performed, the chapter on it is nevertheless interesting and historically well documented. It adds to the well-rounded symposium on cesarean section.

The section on gynecology is a symposium on

[Continued on page 3330]



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[Continued from page 3328]

advances in gynecologic surgery. The various authors describe the operations of comparatively recent origin performed for infertility in the female, congenital anomalies of the uterus and vagina, radiotherapeutic operations in gynecology, and pelvic exenteration.

The last chapter, "The Gynecologic Examination," is a condensed version on office gynecology. It is well illustrated with photographs and while it is rather elementary for a gynecologist it is nevertheless a good review and reminder of its importance.

This, as well as the previous quarterlies, is too advanced for general practitioners; but is excellent for specialists and residents in obstetrics and gynecology.—JACOB HALPERIN

Ciba Foundation Tenth Anniversary Symposium on Significant Trends in Medical Research. Editors for the Ciba Foundation G. E. W. Wolstenholme, M.B., Cecilia M. O'Connor, B.Sc., and Maeve O'Connor, B.A. With 41 illustrations. Octavo of 356 pages. Boston, Little, Brown and Company, 1959. Cloth, $9.50.

The practice of collecting and publishing the papers in important symposia deserves the applause and commendation of every one. The present volume, comprising the tenth Anniversary Symposium of the Ciba Foundation, is an important and arresting volume. The list of contributors, who in these articles have authoritatively summed up the current directions in medical research, is a veritable medical Hall of Fame. The discussions are included and enhance the value of the original papers. In short, this volume can be recommended to every physician.—MILTON PLOTZ

Synopsis of Ear, Nose, and Throat Diseases. By Robert E. Ryan, M.D., William C. Thornell, M.D., and Hans von Leden, M.D. Duodecimo of 383 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $6.75.

The authors are, indeed, well qualified by background and experience in the field of otolaryngology and they present in this book not only a synopsis but a "complete dissertation" on problems confronting a practicing otolaryngologist. The volume is comprehensive and goes far beyond what its title suggests. Although the authors' primary objective in preparing this book has been a handy reference, its format and content have been so well designed and prepared to make it a most valuable accession to the library of not only the student and nurse but equally to practicing otologists and those engaged in speech and hearing problems—SAMUEL ZWERLING

Neoplastic Disease At Various Sites. General Editor D. W. Smithers, M.D. **Volume I, Carcinoma of the Lung.** Edited by J. R. Bignall, M.D. Octavo of 298 pages, illustrated. Edinburgh, E. & S. Livingstone, Ltd., 1958. Cloth, $10.50.

The author of this book, which is one of a series of monographs on neoplasms at individual sites, is well qualified to write on this timely subject, being Senior Lecturer of the Institute of Diseases of the chest and assistant physician at Brompton Hospital as well as research assistant at the Royal Cancer Hospital, Institute of Cancer Research. In this monograph Dr. Bignall displays a wide clinical experience which is so essential for the proper treatment of cancer in general and that of lung cancer in particular. The information presented is based on the work of several staffs of competent clinicians and researchers from a group of hospitals (postgraduate teaching hospitals in London, The Brompton and Royal Marsden Hospitals) combined to form a pool of patients with cancer of the lung, thus making it possible to gather the necessary experience in the most applicable methods of early treatment of the disease. In 292 pages, including a supplement about mortality from cancer of the lung and an appendix with pertinent statistical data on the cases studied, the author presents admirably the present knowledge of cancer of the lung. The text deals first with the mortality of lung cancer in England and Wales and lucidly covers the subjects of the causation, pathology, course, and treatment of the disease. The author reviews our present knowledge of the relationship between the industrial factors, tobacco, atmospheric pollution, nonindustrial radio activity, respiratory infection, and heredity and lung cancer. Brief but pertinent and practical data are presented on the origin and spread of the lung cancer and the laboratory diagnostic findings in this disease. The author discusses in fairly good detail the methods of investigation, site and treatment with regard to the course of the disease, covering the most recent methods of surgical, radiation, and chemotherapy. The data of each subject is studied with the aid of experts in their respective fields, surgical, medical, radiation, chemotherapeutic, statistical, photography, and bibliography.

This book has a wealth of information on lung cancer for all physicians in practice as well as in research, but especially for those in the field of lung cancer diagnosis, treatment, and research—teachers and students alike.—SILIK H. POLAYES

Roentgenologic Diagnosis in Ophthalmology. By Edward Hartmann, M.D., and Evelyn Gilles, M.D. Translated by George Z. Carter, M.D. Octavo of 375 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1959. Cloth, $15.

[Continued on page 3332]

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*Newcomer, V. D., **et al.:** A.M.A. J. Dis. Child. **99**:585, 1960.

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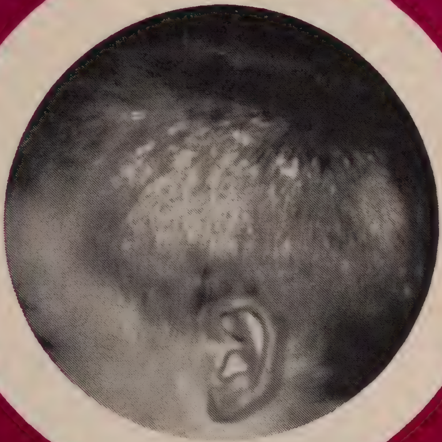

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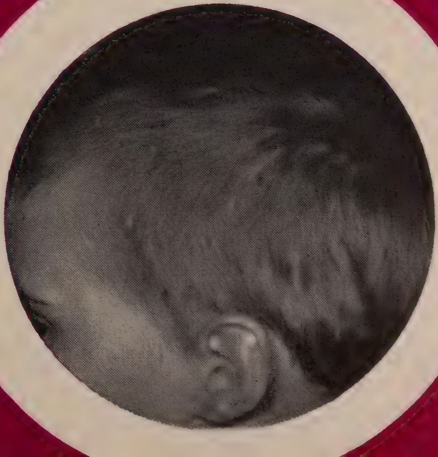

After 5 weeks' treatment with GRIFULVIN. (Photo taken 1½ months after discontinuance of medication.)

[Continued from page 3330]

This new manual on roentgenologic diagnosis in ophthalmology contains 500 beautiful photographs and descriptive drawings in its 375 pages to provide both the ophthalmologist and the roentgenologist a vivid picture of problems common to both specialties.

Various technics are described in simple language without going into unnecessary detail. The ophthalmologist unfamiliar with x-ray methods is better able to know what to look for and to better know when x-ray investigation is indicated.

The book is quite complete and yet comprehensive. Topics discussed include fractures of the orbit, intraocular foreign bodies, tumors, exophthalmos, lesions of the cervical spine, cisternography, arteriography, ventriculography, arteriography, the sella turcica, paranasal sinuses, lacrimal passages, and the optic canal.

This book should prove a necessary addition for reference needs. Being intensely practical and simple it should also serve as a graduate course for those unable to travel to teaching centers.—EMANUEL KRIMSKY

Current Therapy—1960. Edited by Howard F. Conn, M.D. Quarto of 808 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $12.

This is a valuable volume for ready reference. It is authoritative, comprehensive, well indexed, and well printed. Of course, with the rapid development of antibiotics, antihypertensives, etc., some of the material becomes obsolete even before printing. Nevertheless, the material is up to date and as current as one can wish under the circumstances.

There is a valuable section on poisons with a complete listing of poisonous substances in household items and commercial products.

The section on psychotherapy is brief but well written and full of practical suggestions for the general physician.

Because of the world-wide distribution of the volume, many diseases are covered which are, at present, of little or no concern to physicians in the United States. However, with increasing high speed travel, it is worth-while knowing how to treat smallpox, snakebite, etc.—MORRIS ZUCKERBROD

Combined Textbook of Obstetrics and Gynaecology. Edited by Dugald Baird, M.D. Sixth edition. Quarto of 936 pages, illustrated. Edinburgh, E. & S. Livingstone Ltd., (Baltimore, The Williams and Wilkins Company), 1957. Cloth, $15.

As the title implies this is a textbook that combines obstetrics and gynecology in one volume. The close association of these two branches of medicine is emphasized and because of being combined, much repetition is avoided. The format is changed from previous editions in that there are 936 pages as compared to 1,411 in the fifth edition. In spite of this, much new material is added and nothing is sacrificed.

Particularly attractive and interesting is the description of systemic conditions associated with pregnancy. To be noted further is the presentation of the complications of delivery.

The illustrations are excellent and help materially to clarify the text especially in descriptions of operative deliveries and operative gynecology. The book is to be recommended as an excellent introduction to the specialty and as a reference.—WILLIAM C. MEAGHER

Culture and Mental Health. Edited by Marvin K. Opler. Octavo of 533 pages, illustrated. New York, The Macmillan Company, 1959. Cloth, $8.75.

There is no other volume on this highly important multidisciplinary subject, the seed for which was planted in 1956 when the late T. A. C. Rennie, M.D., and others at Cornell University Medical College became convinced of the necessity for a volume of cross-cultural studies, 23 of which comprise the present volume. These were in some measure presented in 1957 at a symposium on this subject held in Chicago, Illinois, and requested by the American Anthropological Association. Many other contributions by outstanding workers in these fields were added.

It is particularly important that these pioneering studies should have a wide reading in 1960 by virtue of the fact that this is the International Mental Health Year. Really, though, this is but a springboard to furthering the realization of hopes and aspirations of decades to come in the fields of psychiatry, public health, anthropology, and sociology. The growing importance of social psychiatry understandably leads to the planning of this volume on culture and mental health. Its scope is world-wide as the contents indicate: "The American Indian (North and South)," "People of the South Pacific," "Asian Contrasts," "African Contrasts," "Anglo-American Patterns," "Modern Problems with Ethnic Groups," and a pointing-up to world perspectives. This latter chapter is expertly delineated by Dr. Margaret Mead, formerly President of the World Federation for Mental Health and currently Associate Curator of Ethnology at the American Museum of Natural History and Adjunct Professor of Anthropology at Columbia University.

It is hoped that physicians in general will activate growing interest in these pioneering studies in mental health around the world. It is trite to say that space is now annihilated. It is timely to ask:

Continued on page 3334]

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[Continued from page 3332]

"What are *you* going to do about it? What can *I* do to make this a better world?."—FREDERICK L. PATRY

Synopsis of Ophthalmology. By William H. Havener, M.D. Duodecimo of 288 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $6.75.

This is an excellent pocket-size book written for the general physician. It presents the main concepts of diagnosis and current therapy of common eye diseases. The first-aid treatment of eye injuries is emphasized. There are good chapters on glaucoma and the prevention of blindness. A glossary of common ophthalmologic terms is included.—JESSE M. LEVITT

The Essentials of Perimetry. By Howard Reed, M.B. Octavo of 192 pages, illustrated. London, Oxford University Press, 1960. Cloth, $10.50.

These are elementary lectures on perimetry given at the Royal Eye Hospital to students specializing in ophthalmology. Presented in a simplified way, this book discusses the technics of perimetry, the anatomy of the visual pathways, and the interpretation of visual field defects in terms of anatomic localization of lesions. This book serves as a good introduction to the subject and includes a bibliography for more advanced study.—JESSE M. LEVITT

Emotional Forces in the Family. Edited by Samuel Liebman, M.D. Octavo of 157 pages. Philadelphia, J B. Lippincott Company, 1959. Cloth, $5.00.

This timely book might be likened to a "summit meeting" of a number of experts in the field of analyzing and making constructive suggestions for furthering the development, control, and direction of various emotional forces in the family.

This volume is the fifth in a series assembled from lectures given at the North Shore Hospital in Winnetka, Illinois.

The physician dealing with individual members of the family nowadays realizes that an adequate understanding cannot be obtained without a thoroughgoing comprehension of all emotional forces operating from and in various members of the total family unit, and they in turn in the light of the community at large and our cultural and technical civilization secondarily.

The contents brings into focus various facets of the family development including the role of the mother, father, and children. The emotional impact of in-laws and relatives as well as the aging of the family are brought into focus. A thoroughly comprehensive, penetrating formulation is spelled out by Lawrence S. Kubie, M.D., in the final chapter, "The Disintegrating Impact of Modern Life on the Family in America and Its Explosive Repercussions." This, as well as the total volume, could stand reading and rereading by all those who believe that the family is here to stay and that it is high time we do more about capitalizing upon its constructive potentialities.—FREDERICK L. PATRY

Detoxication Mechanisms. By R. Tecwyn Williams, Ph.D. Second edition. Octavo of 796 pages, illustrated. New York, John Wiley & Sons, Inc., 1959. Cloth, $19.

The best rebuttal against objectionable promotional pharmaceutical literature is the ability to evaluate it soundly.
The alternative to prescribing drugs casually is to prescribe them knowledgeably. This book helps in that aim.

Within recent years considerably more space has been devoted in manufacturers' promotional literature to the pharmacologic aspects of the action of a given drug, with the result that physicians became more aware of the mechanism of action of a drug. In the past manufacturers' literature was largely devoted to indication.

Nonetheless, an appreciation or knowledge of drug action or its mechanism will not be gained from even elaborate presentations of manufacturers' literature in behalf of a new or an old drug. This is not due to an intrinsic deficiency in such literature but due to the fact that it must be, perforce, fragmentary. A broad survey or an over-all view is needed for which pharmacology texts serve reasonably well. But a comprehensive appreciation will come from a text devoted to the principles involved in the various metabolic conversions to which a drug is subject. How a drug acts and *why* it does so depends on what happens to it in the body, what substances act upon it, into what intermediate or end products it is converted, at the rate at which such changes take place and upon the effect of the intermediate or end products.

An excellent book detailing such information is the second edition of *Detoxication Mechanisms.* It does not mean that the metabolic conversion necessarily detoxifies a drug. The title is an unhappy choice. Drugs can also be changed into more toxic materials, as when solubility is increased. Or, toxic effects can be manifested due to unduly slow excretion hence accumulation in the tissues, or by chemical changes as when histidine loses a carboxyl group and becomes histamine. Also, the changes that drugs undergo in the body do not necessarily result in a conversion to

[Continued on page 3336]

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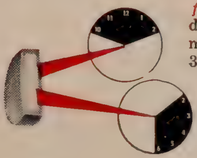

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Children 1 to 6 – ½ tsp.; *Children under 1* – ¼ tsp.

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3337

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[Continued from page 3334]

simpler compounds; many drugs are converted to more complex metabolites as by conjugation. The rate of excretion is also intimately related to the toxicity of the metabolites resulting from the metabolic conversion of a drug.

The book has two outstanding assets: (1) its immense amount of information, and (2) the manner in which the information is organized. Arranged by 20 chapters of chemical groups (aliphatic alcohols, glycols, ketones, aromatic amines, phenols, etc.), it details the metabolic conversions that various members of these groups undergo as groups or individually. In that fashion principles rather than isolated compounds are particularized and a vastly increased understanding is imparted to the reader. For example, by that method the similarity in metabolic conversion of mephenesin and propylene glycol is set forth. Though most references are to the metabolic conversion of chemicals which are not necessarily used therapeutically there is sufficient information to permit analogy to drugs. For example, how procaine is metabolized, or how inactive antibiotics (as chloramphenicol palmitate) become active in vivo, are outlined.

The various types of metabolic mechanisms by which materials undergo conversion are outlined, as conjugation with glucuronic acid, glycine, cysteine, etc., for CHO and amino acids; also, other mechanisms of transformation or conversion of drugs in the body, as by oxidation, reduction, hydrolysis, etc., are brought out and are met throughout the text.

How will this book help a physician? It will give him information on the role and fate of hundreds of substances, many of them drugs or materials from which toxic sequels occur; it delineates this information in the framework of metabolic patterns in man and other animals, including the role played by the enzyme systems. These are fundamental considerations in pharmacology.

The text, suitable for every physician who prescribes drugs, is easy to follow and does not require a particularly esoteric knowledge on the part of the medical reader.—Erwin Di Cyan

Ciba Foundation Symposium on Biochemistry of Human Genetics. Arranged jointly with The International Union of Biological Sciences. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. With 60 illustrations. Octavo of 347 pages. Boston, Little, Brown and Company, 1959. Cloth, $9.50.

This symposium, under the chairmanship of G. Mont nti of Naples, was one of those included in
h anniversary celebration of the Ciba
n. As such, and in line with the usual
rds of these symposia, it is a great credit to the chairman and the editorial board. The volume will be read with both pleasure and profit by all those interested in genetics. One would have wished that Dr. Califano's address of welcome had been translated into English for the benefit of those who do not read Italian.—Milton Plotz

Antibiotic Therapy for Staphylococcal Diseases. Edited by Henry Welch, Ph.D., and Maxwell Finland, M.D. Octavo of 208 pages, illustrated. New York, Medical Encyclopedia, Inc., 1959. Cloth, $4.50. (Antibiotics Monographs No. 12)

This book, one of the antibiotics monographs, has all the information about the antibiotics useful for the treatment of staphylococcal diseases. It gives in detail chemistry, pharmacologic, and toxic properties of each, and then demonstrates the clinical assessment of each. It should be consulted by all physicians because of the increasing frequency of this most serious bacterial infection, which has high degree of associated resistant organisms to the usual antibiotics.

A most profitable amount of information will be gained from careful reading of this monograph. It is prepared by experts in the field of antibiotics—especially those who also have considerable clinical experience of critical weight in dealing with bacterial infections.—Harold A. Lyons

Progress in Neurology and Psychiatry. Volume XIV. Edited by E. A. Spiegel, M.D. Octavo of 656 pages. New York, Grune & Stratton, 1959. Cloth, $12.

In this volume the editor presents the usual annual review in the fields of basic neurologic sciences, clinical neurology, neurosurgery, and psychiatry. Some of these reviews are little more than a brief mention of papers written; most of them, however, give a short description, results, or conclusions of papers in question. This volume as all the others in previous years is obviously directed to specialists in the field who wish to acquaint themselves with ancillary contributions which may have escaped their attention. The volume can also be used for a review of literature by investigators working on any particular subject in neurology and psychiatry.—L. P. Hinterbuchner

The Medical Clinics of North America. Chicago Number. January, 1960. Diagnosis of Incipient Disease. Joseph B. Kirsner, M.D., guest editor. Octavo. Philadelphia, W. B. Saunders Company, 1960. Published bimonthly (six numbers a year). Cloth, $18 net; paper, $15, net.

This volume attempts to alert general practitioners and specialists in the field of medicine to the

[Continued on page 3338]

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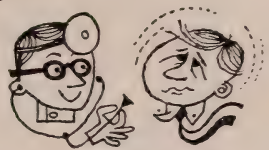

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Reference: 1. Scal, J. C.: Eye Ear Nose & Throat Month. **38**:738 (Sept.) 1959.

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[Continued from page 3336]

signs, symptoms, and laboratory aids that signal incipient disease. The emphasis is placed on early diagnosis and its obvious value to successful treatment.

Twenty-two subjects are covered. They include diseases of the heart, lungs, intestines, endocrine glands, blood, elderly patients, the mind, the nervous system, the kidney, as well as important inflammatory and viral diseases.

The contributors to the symposium number over 30 of the outstanding clinicians and teachers of medicine in the Chicago area.

The presentations are novel and interesting and of value to all interested in medicine.—JULIUS E. STOLFI

Gynecologic Endocrinology. By Gardner M. Riley, Ph.D. Octavo of 330 pages, illustrated. New York, Paul B. Hoeber, Inc., 1959. Cloth, $8.50.

This is an excellent primer and contains all the elements of a good book on endocrinology for the gynecologist. It should be appreciated by the generalist, internist, and student as well. The clinical features are equal to the average textbook of this type. No mention is made of testosterone pellets or of injection thyroxin.—BERNARD SELIGMAN

Symposium on Glaucoma. Edited by William B. Clark, M.D. Quarto of 314 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $13.50.

Seven authors have contributed to this symposium in presenting a coordinated stimulating review of our present-day knowledge of this frequent serious eye disorder. From its planned organization one would think that this book was written by one author. Following a preliminary review of the pathology and surgical anatomy and biochemistry, the reader is then presented with a pointed review of gonioscopy, tonometry and tonography, perimetry, and diagnostic and provocative tests. The problems of medical and surgical treatments and their relative merits are fully discussed. In conclusion, ample space is devoted to a round-table discussion by the different contributors to the various problems confronting the ophthalmologist.—EMANUEL KRIMSKY

The Treatment of Diabetes Mellitus. By Elliott P. Joslin, M.D., Howard F. Root, M.D., Priscilla White, M.D., and Alexander Marble, M.D. Tenth edition, revised. Octavo of 798 pages, illustrated. Philadelphia, Lea & Febiger, 1959. Cloth, $16.50.

The tenth edition of this textbook on the subject of diabetes mellitus is still the bible of comprehensive and practical knowledge in the field. The volume is in no sense as the title may suggest limited to treatment but is an historical review of all phases of the subject with succinct anecdotal references such as only a Joslin could produce.

The reviewer has always been impressed by the presence of references to the text at the foot of each page making it unnecessary for the reader to break continuity of thought by having to turn to the end of the chapter for the origin of each thought.

It is a delight to the reviewer to see the consistent adherence of this group to the need in all patients for control and strict adherence to diet. The advent of the oral hypoglycemic agents has in no sense decreased their insistence in this respect but has rather emphasized the importance of diet and the fact that "insulin is wonderful." This book represents the aggregated experience of 52,560 patients.

If every practitioner were limited on his shelves to but one book on diabetes, that book should be this time-honored encyclopedic volume.—GEORGE E. ANDERSON

Medical Department, United States Army. Surgery in World War II. Neurosurgery. Volume II. Edited by R. Glen Spurling, M.D., and Barnes Woodhall, M.D. Octavo of 705 pages, illustrated. Washington, D.C., Office of the Surgeon General, Department of the Army, 1959. Cloth, $7.00.

This second volume on neurosurgery of the Medical Department's History of Surgery in World War II is divided into two unrelated sections dealing respectively with injuries to the spinal cord and injuries of the peripheral nerves. The first section should be read by all who are interested or engaged in the care of paraplegic individuals. Though it is not a complete manual, practical aspects of management are well presented, and many pitfalls of shortsighted policy are indicated. The section on management of genitourinary problems is particularly to be commended.

The section on peripheral nerve injury is of interest from a historical standpoint and contains many tables of statistical value. However, it is repetitious and adds little to material which has been presented previously. Although the individual authors are to be complimented on their industry, compilation of their efforts has produced a section which is difficult because of its redundancies and which cannot replace other works as a reference text.—HOWARD FREEDMAN

A History of Neurology. By Walter Riese, M.D. Duodecimo of 223 pages. New York, MD Publications, 1959. Cloth, $4.00.

This is a scholarly presentation of the history of neurologic thinking from the time of Galen to the

[Continued on page 3340]

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[Continued from page 3338]

concepts of modern investigators. The origin of the various ideas about the seat of the soul attempts at classification of diseases and the roles of neuroanatomy, neurophysiology, neuropathology, and cerebral localization are discussed. It is remarkable how the thinking of the times influenced the medical philosophy of the scientist. Throughout the centuries certain beliefs came into prominence only to be discarded later and then revived. It is an interesting book which should be read by neurologists and students of the history of medicine.—Alexander Levine

Xylocaine, the Pharmacological Basis of Its Clinical Use. By Sten Wielding, M.D. Octavo of 146 pages, illustrated. Stockholm, Sweden, Almqvist & Wiksell, (Worcester Astra Pharmaceutical Products, Inc.), 1959. Cloth, 20k.

Written in English, published in Sweden, made available in the U.S. by Astra Pharmaceutical Products the makers of lidocaine (Xylocaine), is literature of high caliber distributed by a pharmaceutical firm. It consists of brief discussions of chemical and experimental pharmacologic aspects of lidocaine, a local anesthetic for nerve block, topical use, and for infiltration for both medical and dental practice.

Well indexed, the facets of anesthetic action on autonomic, central nervous, and vascular systems are noted, as well as the metabolic degradation of lidocaine. This is principally a survey of the effects on laboratory animals. But one cannot necessarily equate that with clinical effect. Though clinical data are also summarized, more clinical work—of which there is a rich literature—would be appreciated by the clinician.—Erwin Di Cyan

Antithrombotic Therapy. By Paul W. Boyles, M.D. Octavo of 131 pages, illustrated. New York, Grune & Stratton, 1959. Cloth, $5.00. (Modern Medical Monographs, 20)

Antithrombotic Therapy is a unique effort. The author has attempted to present to the clinician the important factors involved in the coagulation and anticoagulation of the blood.

The first chapter includes a concise description of the current concept of blood coagulation. The various stages of coagulation and the proteins involved are discussed, laying the groundwork for the details to follow.

Thromboplastin generation, thrombin formation, and finally fibrin formation are described. There follows a description of the generally available coagulation tests and their uses in localizing clotting defects.

The section concerned with anticoagulants is also concise, including the concept of the naturally occurring anticoagulants, the stages of coagulation in which they produce their effects, including lysis of the fibrin clot. The currently useful antithrombotic agents are enumerated and their areas of usefulness and mechanisms of action are discussed. A section is devoted to the clinical use of these agents including side effects and discussion of potentiating and inhibiting substances and conditions. Problems of long-term anticoagulant therapy and discontinuance of anticoagulants are not neglected.

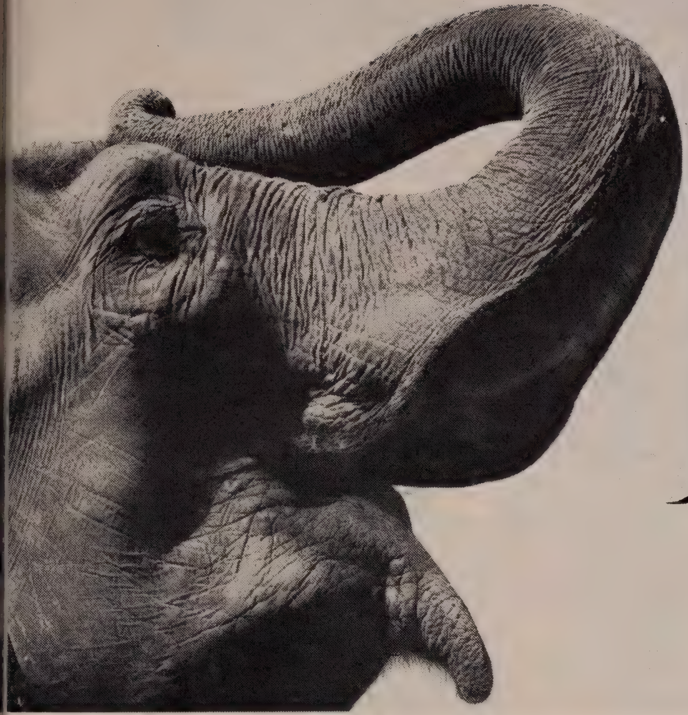
The status of anticoagulant therapy is discussed in thrombophlebitis, pulmonary embolism, acute myocardial infarction, acute arterial embolism or occlusion, and cerebral vascular disease.

The last chapter is devoted to thrombolytic therapy and the lysis of fibrin by various enzymes: trypsin, chymotrypsin, bacterial polysaccharides, streptokinase, and fibrinolysin. An addendum to the book includes a technical section describing in detail the coagulation tests discussed in the second chapter, and in addition several more "sophisticated" coagulation studies.

As Dr. Boyle himself states the book is intended for the clinician, to provide a practical understanding of the normal mechanism of blood coagulation and coagulation defects produced by antithrombotic therapy. The author is well qualified to write this monograph and does achieve his intended aim. This monograph deserves space on the clinician's book shelf.—Alan N. Morrison

Physiology of the Eye. Clinical Applications. By Francis Heed Adler, M.D. Third Edition. Quarto of 790 pages, illustrated. St. Louis, The C. V. Mosby Company, 1959. Cloth, $16.

Since publishing his first book on *Clinical Physiology of the Eye* many years ago Adler has enlarged his subject material to include the enormous experimental work in the dynamics of aqueous formation, the photochemistry of the retina, and the application of electrophysiologic technics to retinal function. Research in the field of ophthalmology has become so vast that one cannot always keep pace with newer developments. Much of this work is experimental and may or may not have subsequent permanent value. Adler does admit that "many parts of ocular physiology are still unexplored, many are still controversial, and some facts have been determined that have not yet been confirmed in the human subject." Withal, these contributions must have their impacts on others who could be stimulated to seek proved facts from hypothetic concepts.—Emanuel Krimsky



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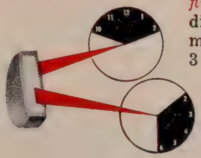

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Children 1 to 6 – ½ tsp.; *Children under 1* – ¼ tsp.

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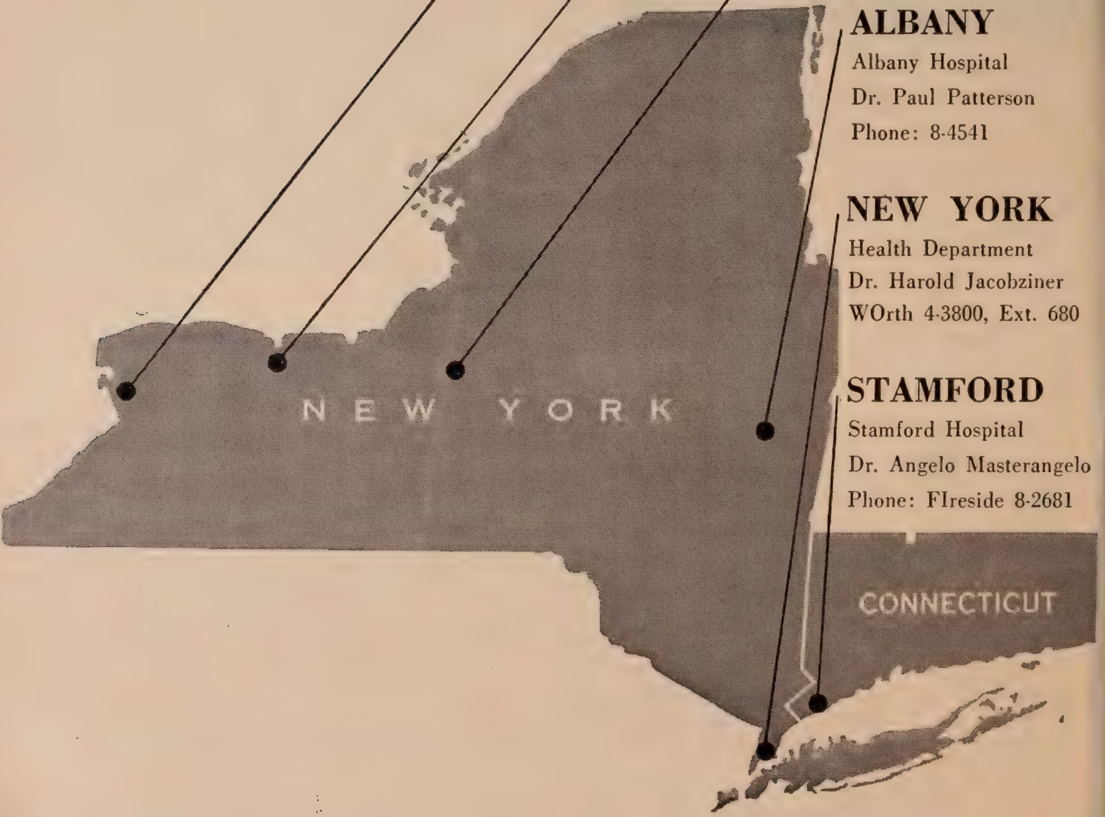

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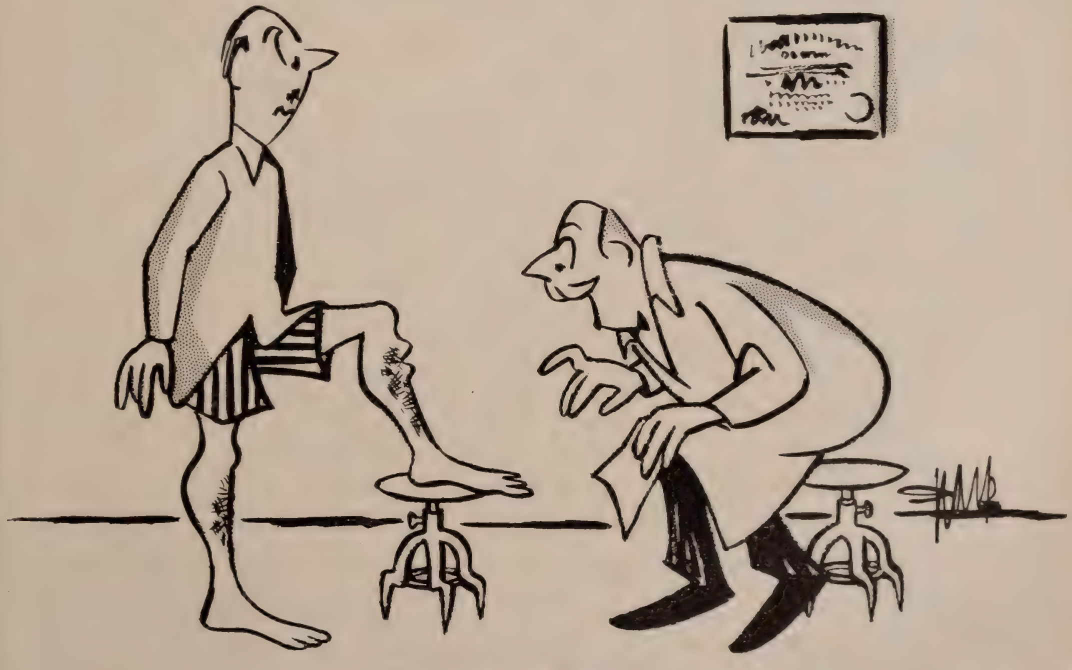

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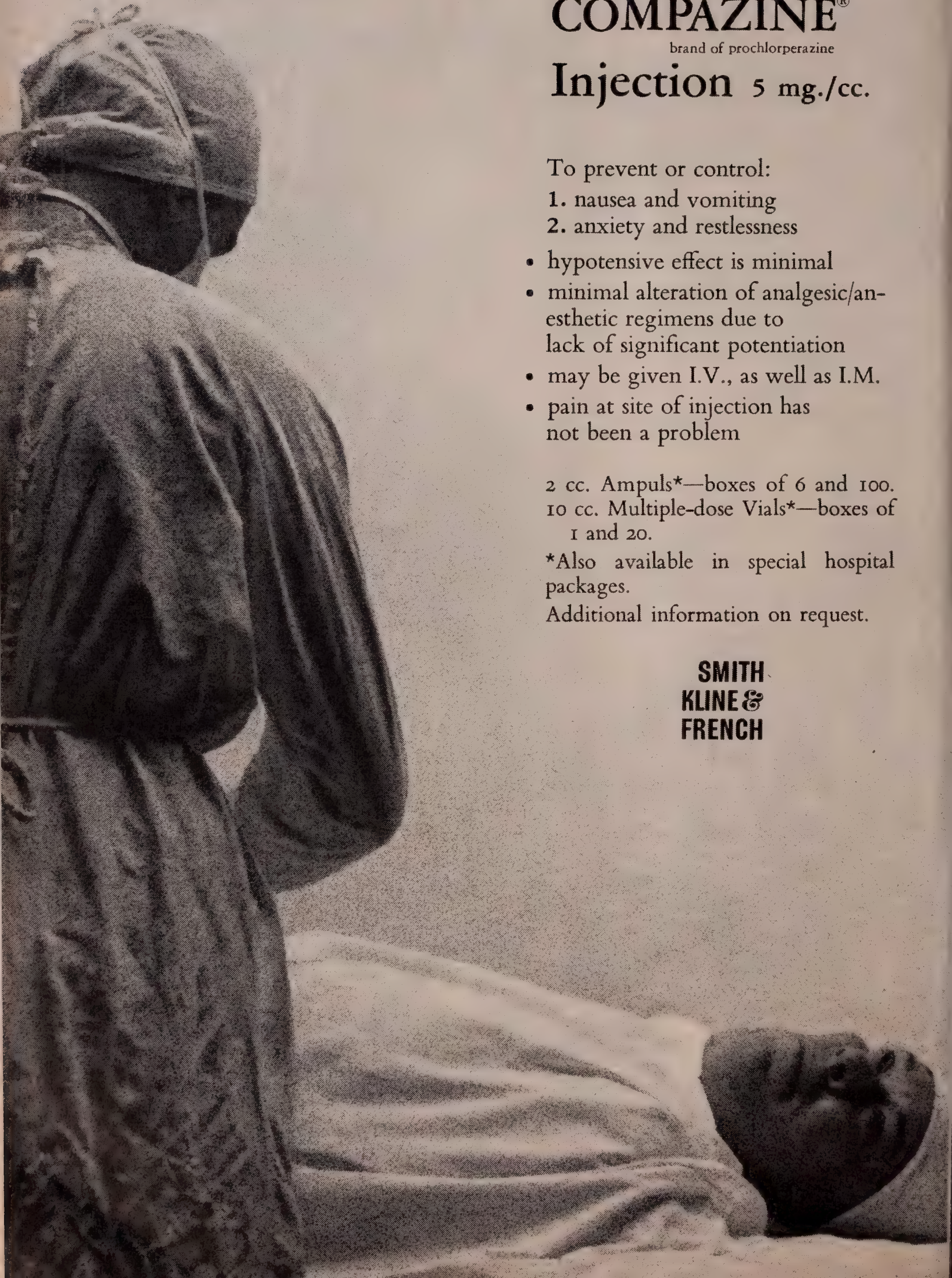

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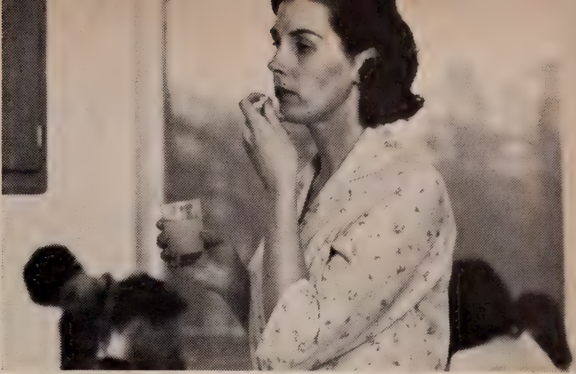

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In trichomonas vaginitis "...permanent **CURES** in 84.6%"[1] ▪ "...symptomatic and bacteriologic **CURES**" in 100%[2] ▪ "symptomatic **CURE** was obtained in 100%, and bacteriologic **CURES** in 82.5%"[3] in moniliasis "symptomatic **CURE** was effected in about 80%"[4] in mixed infections "complete symptomatic and bacteriologic **CURES** in 92%"[3] in endocervicitis 75% "were clinically and bacteriologically (as indicated by vaginal smears and cultures) **CURED**"[5]

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1.) Stoughton, R. B.: Report To The Council; Steroid Therapy In Skin Disorders, J.A.M.A. 170:1311-1315 (July 11) 1959. 2.) Goodman, H.: Concentration of Topical Medications Dispersed in Evaporating Vehicles with Particular Reference to Hydrocortisone Alcohol, Clin. Med. 6:781-784 (May) 1959.

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References: 1. Schreiner, G. E.: A.M.A. Arch. Int. M. **102**:32, 1958. 2. Freedman, L. R., and Beeson, P. B.: Yale J. Biol. & Med. **30**:406, 1958. 3. Rocha, H., et al.: Yale J. Biol. & Med. **30**:341, 1958.

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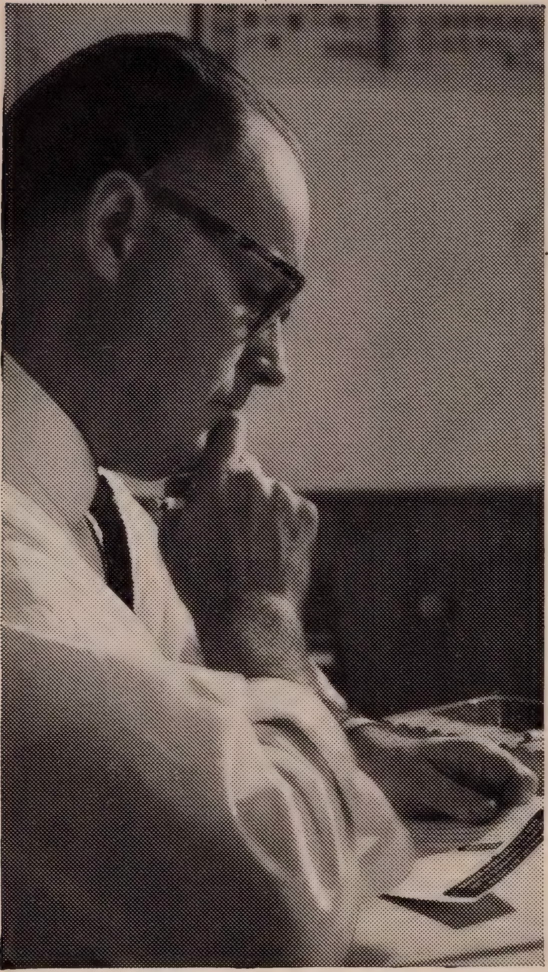

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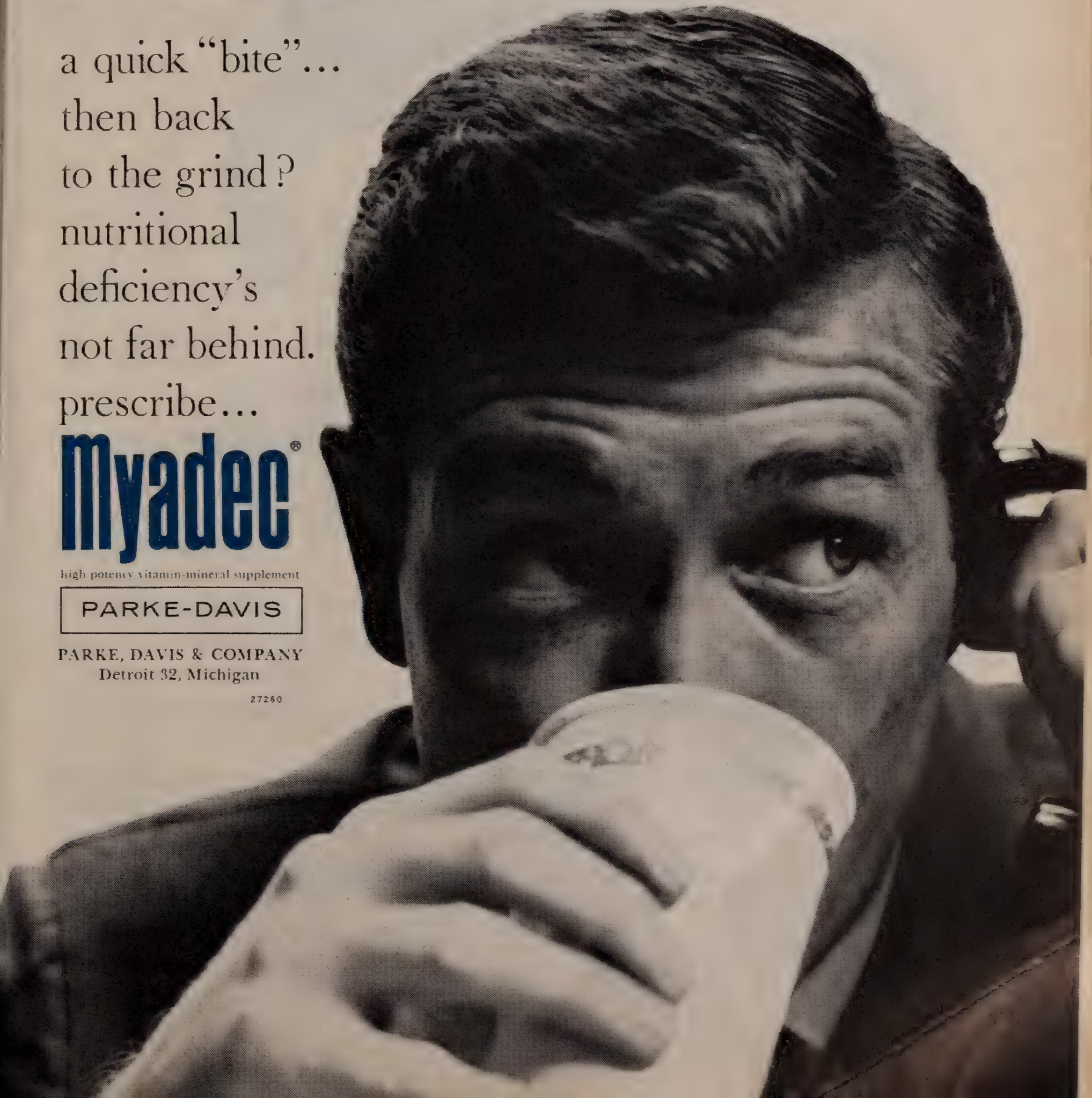

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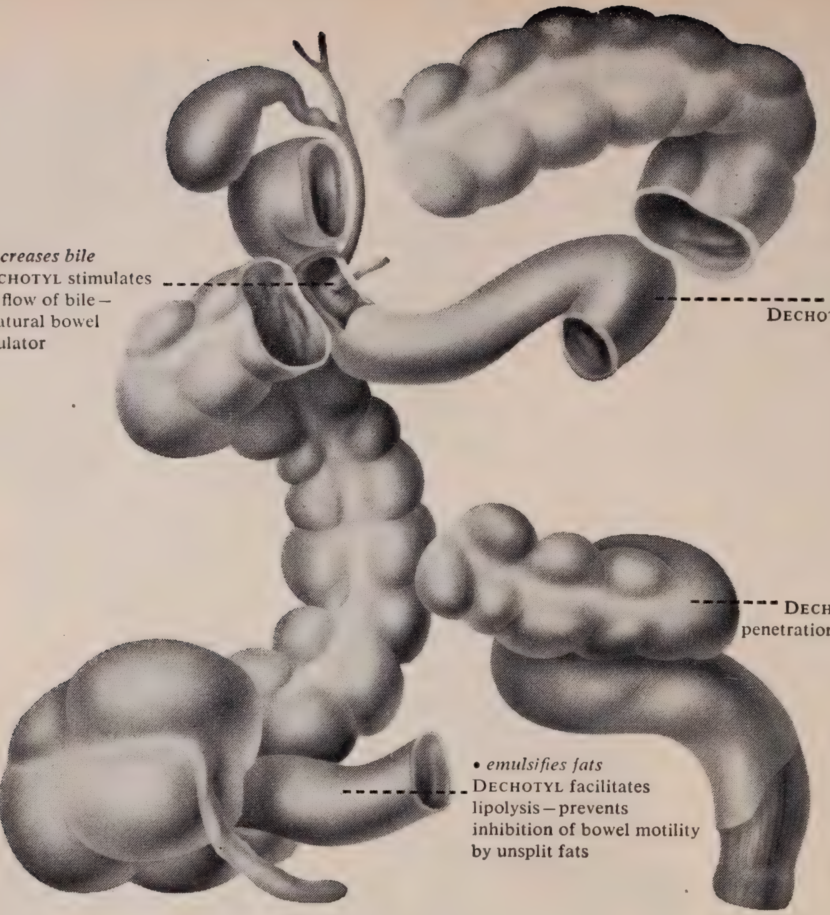

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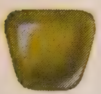

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References: 1. Hollander, J. L.: *J.A.M.A.* 172:306 (Jan. 23) 1960. 2. McGavack, T. H.: *Nebraska M. J.* 44:377 (Aug.) 1959. 3. McGavack, T. H.; Kao, K. Y. T.; Leake, D. A.; Bauer, H. G., and Berger, H. E.; *Am. J. M. Sc.* 236:720 (Dec.) 1958.

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Each AZOTREX capsule contains: TETREX® (tetracycline phosphate complex) equivalent to tetracycline HCl activity ...125 mg.; sulfamethizole...250 mg.; phenylazo-diamino-pyridine HCl ... 50 mg. **Supply:** Bottles of 24 and 100.

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Blood pressure that goes up with stress often comes down with SERPASIL®

(reserpine CIBA)

One reason that many cases of hypertension respond to Serpasil is that many cases are associated with stress. Stress situations produce stimuli which pass through the sympathetic nerves, constricting blood vessels, and increasing heart rate. Hyperactivity of the sympathetic nervous system may elevate blood pressure; if prolonged, this may produce frank hypertension. By blocking the flow of excessive stimuli to the sympathetic nervous system, Serpasil guards against stress-induced vasoconstriction, brings blood pressure down slowly and gently.

In mild to moderate hypertension, Serpasil is basic therapy, effective alone "... in about 70 per cent of cases..."*

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In all grades of hypertension, Serpasil may be used as a background agent. By permitting lower dosage of more potent antihypertensives, Serpasil minimizes the incidence and severity of their side effects.

CIBA
SUMMIT, N. J.

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955.

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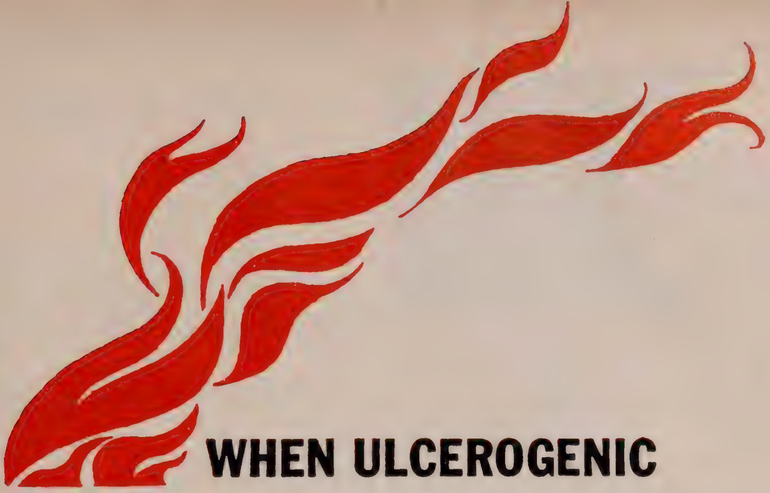
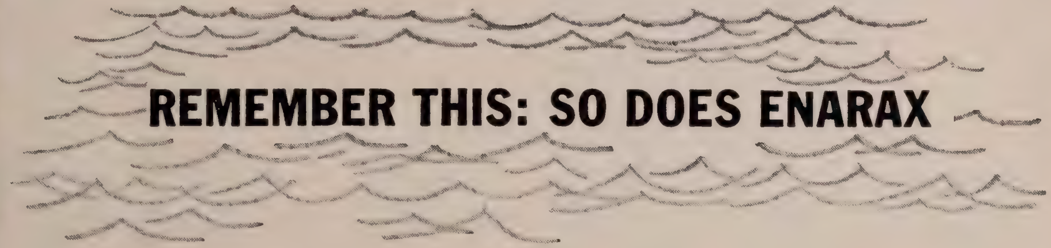


WHEN ULCEROGENIC FACTORS KEEP ON WORKING...



REMEMBER THIS: SO DOES ENARAX

Think of your patient with peptic ulcer—or G.I. dysfunction—on a typical day.

Think of the anxieties, the tensions.

Think, too, of the night: the state of his stomach emptied of food.

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supplied: In bottles of 60 black-and-white scored tablets. Prescription only.

References: 1. Steigmann, F., **et al.**: Am. J. Gastroenterol. **33**:109 (Jan.) 1960. 2. Hock, C. W.: to be published. 3. Leming, B. H., Jr.: Clin. Med. **6**:423 (Mar.) 1959. 4. Data in Roerig Medical Department Files.

†brand of hydroxyzine

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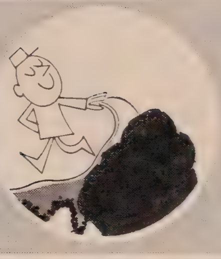
treats their acne while they wash

degreases the skin completely emulsifies and washes off excess oil from the skin.

helps remove blackheads penetrates and softens comedones, unblocks pores and facilitates removal of sebum plugs.



dries and peels the skin removes papule coverings and permits drainage of sebaceous glands.

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Fostex contains Sebulytic®,* a combination of surface-active wetting agents with remarkable antiseborrheic, keratolytic and antibacterial actions . . . enhanced by sulfur 2%, salicylic acid 2%, and hexachlorophene 1%.

*sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate and sodium dioctyl sulfosuccinate.

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Fostex Cream and Fostex Cake are interchangeable for therapeutic washing of the skin. Fostex Cream is approximately twice as drying as Fostex Cake.

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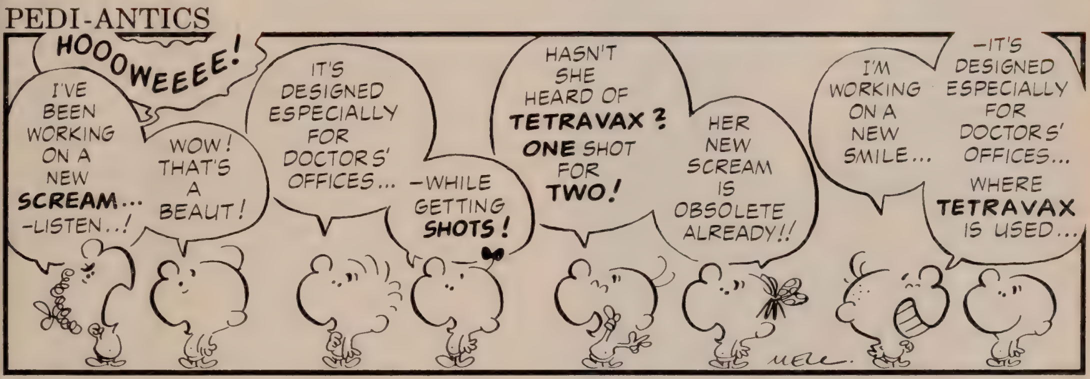
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now you can immunize against more *diseases... with* fewer *injections*

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1. Hodges, F.T.: **GP** 14:86, Nov., 1956.

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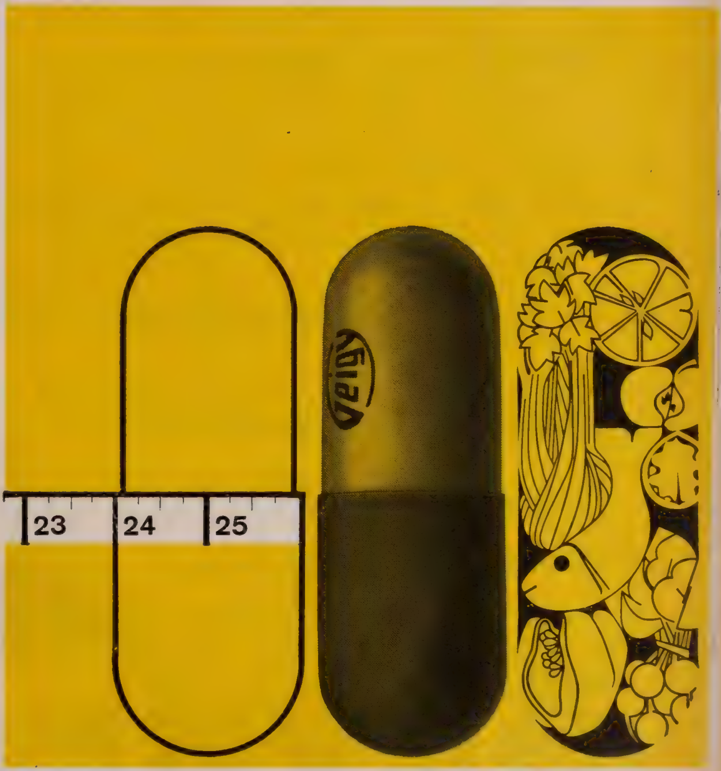

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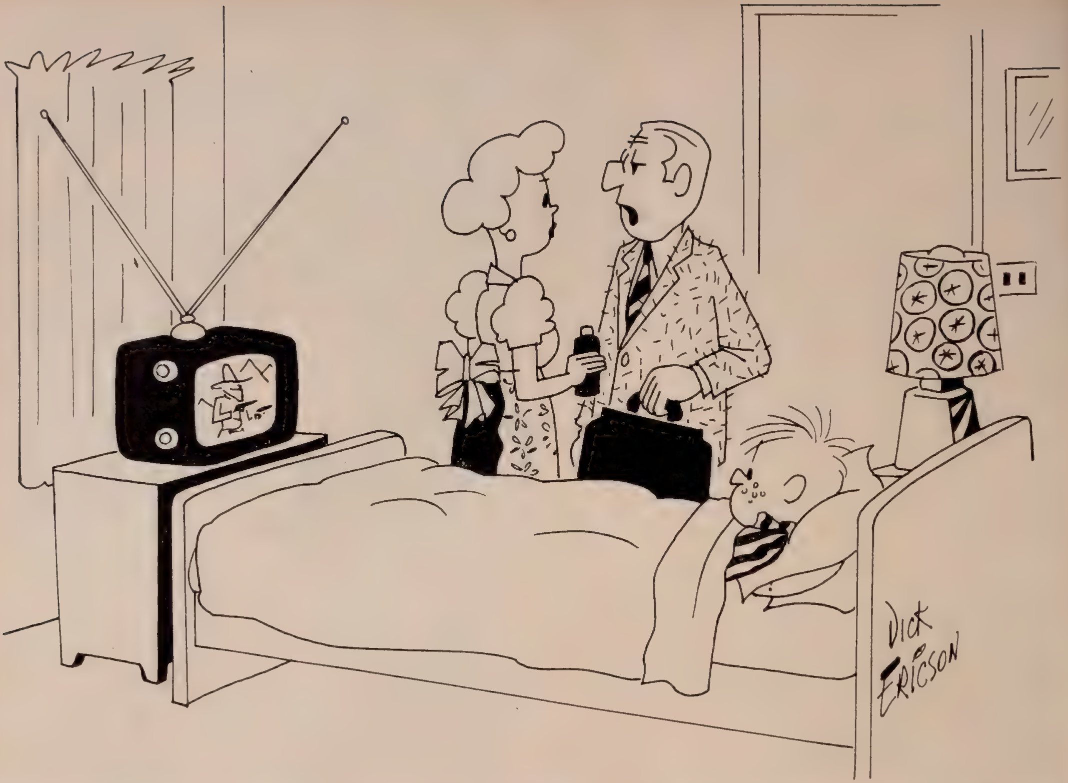

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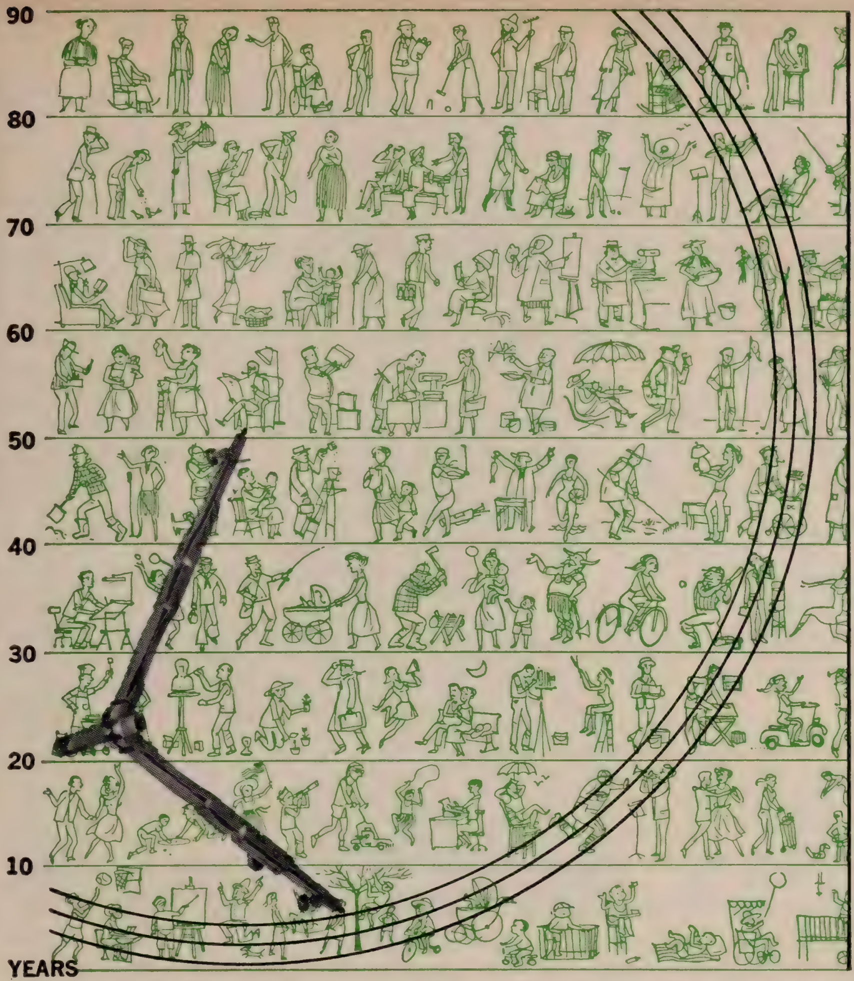

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to aid in the dietary control of serum cholesterol

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MARGARINE
scientifically formulated with pure liquid **non-hydrogenated** MAZOLA Corn Oil.

MAZOLA Margarine is an economical tablespread and serves as a solid shortening, rich in linoleic acid and low in the more saturated fatty acids – making it an ideal dietary adjunct in the management of serum cholesterol. It contains 2 to 3 times as much linoleic acid as any other margarine in the grocery store, and 5 to 8 times as much as butter. It contains no dairy or animal fats, no coconut oil, and no cholesterol.

MAZOLA Margarine is indistinguishable from other quality margarines as to taste, aroma and handling characteristics. Thus, it can be part of the regular diet for the whole family, including the hypercholesterolemic patient. The major ingredient in MAZOLA Margarine – liquid MAZOLA Corn Oil – is NOT hydrogenated, thereby preserving its rich content of linoleates.

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Oleic acid	23 Gm.
Saturated fatty acids	8 Gm.
Plant sterols (sitosterols)	215 mg.
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Vitamin A	1870 USP units
Vitamin D	250 USP units
Calories	415

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Send for free booklet:
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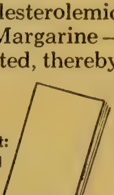

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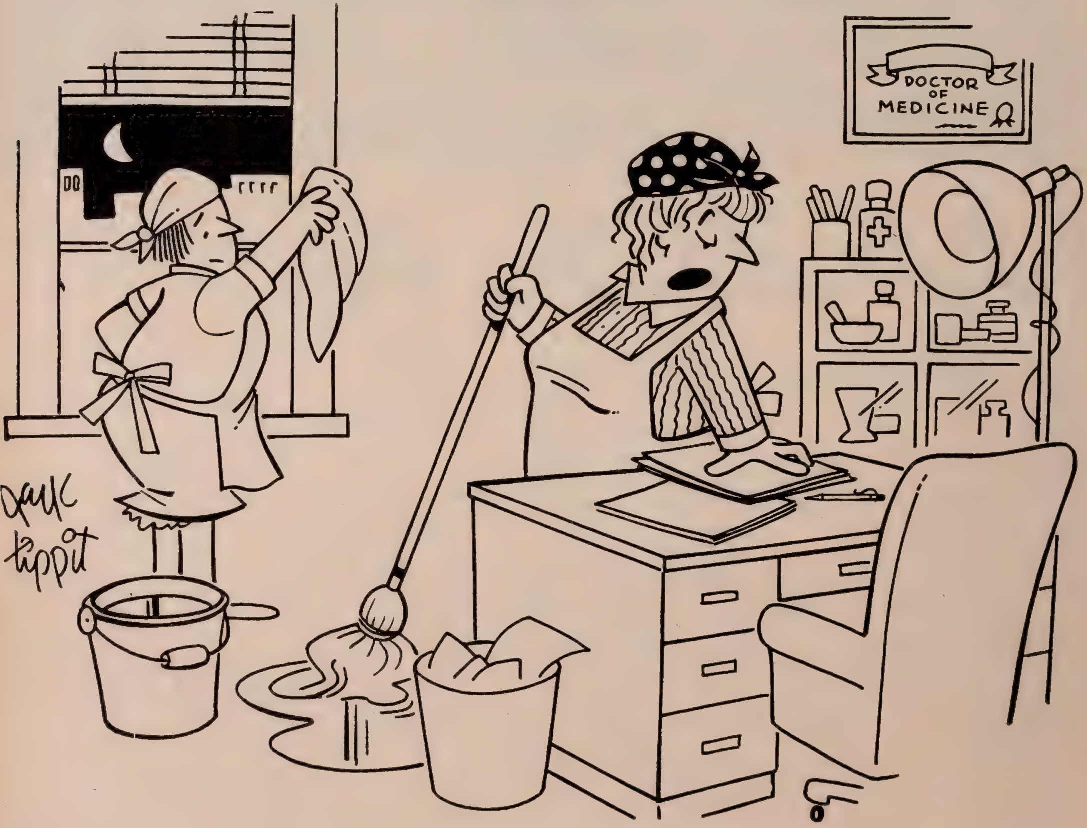

"I certainly can't agree with this diagnosis."

ven if your patient is a whip snapper*

he'll soon be riding high again, thanks to

PARAFON®

ARAFLEX® + TYLENOL®)

r muscle relaxation plus analgesia

prescribe PARAFON in low back pain—sprains—strains—rheumatic pains

Each PARAFON tablet contains:

PARAFLEX® Chlorzoxazone†	125 mg.
The low dosage skeletal muscle relaxant	
TYLENOL® Acetaminophen	300 mg.
The superior analgesic in musculoskeletal pain	

Dosage: Two tablets t.i.d. or q.i.d.

Supplied: Tablets, scored, pink, bottles of 50.

arthritis

ARAFON®

vith Prednisolone

Each PARAFON with Prednisolone tablet contains: PARAFLEX® Chlorzoxazone† 125 mg., TYLENOL® Acetaminophen 300 mg., and prednisolone 1.0 mg.

Supplied: Tablets, scored, buff colored, bottles of 36.

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Precautions: The precautions and contraindications that apply to all steroids should be kept in mind when prescribing PARAFON with Prednisolone.

McNEIL

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Philadelphia 32, Pa.

*tailman on hook-and-ladder fire engine

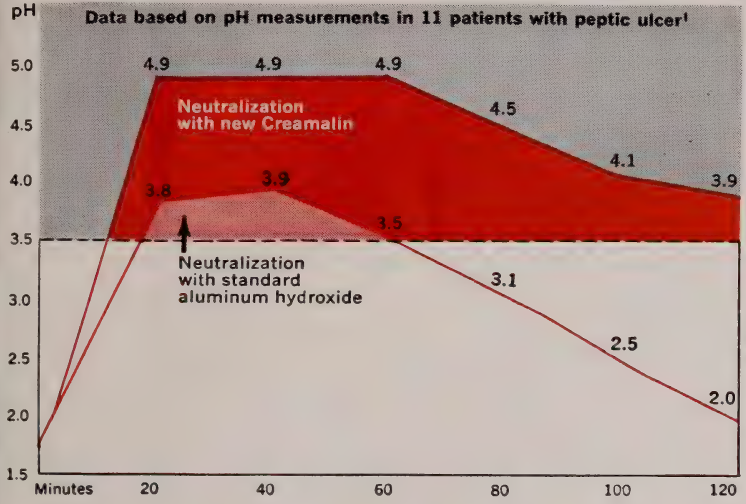
†U.S. Patent No. 2,895,877

316A60

The 1961 Annual Convention of the Medical Society of the State of New York will meet from May 8–12 in the interesting and centrally located city of Rochester. This city of internationally known cultural and scientific institutions will welcome the Society meeting for the first time in many years. It is suggested that members make early plans to attend what promises to be one of the most stimulating meetings ever held by the Society.

At the site of peptic ulcer

Following determination of basal secretion, intragastric pH was continuously determined by means of frequent readings over a two-hour period.



neutralization is much faster and twice as long with

New CREAMALIN® ANTACID TABLETS

New proof in vivo[1] of the much greater efficacy of new Creamalin tablets over standard aluminum hydroxide has now been obtained. Results of comparative tests on patients with peptic ulcer, measured by an intragastric pH electrode, show that new Creamalin neutralizes acid from 40 to 65 per cent faster than the standard preparation. This neutralization (pH 3.5 or above) is maintained for approximately one hour longer.

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Each new Creamalin antacid tablet contains 320 mg. of specially processed, highly reactive, short polymer dried aluminum hydroxide gel (stabilized with hexitol) with 75 mg. of magnesium hydroxide. Minute particles of the powder offer a vastly increased surface area for quicker and more complete acid neutralization.

Dosage: Gastric hyperacidity — from 2 to 4 tablets as necessary. Peptic ulcer or gastritis — from 2 to 4 tablets every two to four hours. Tablets may be chewed, swallowed whole with water or milk, or allowed to dissolve in the mouth. **How supplied:** Bottles of 50, 100, 200 and 1000.

[1] Data in the files of the Department of Medical Research, Winthrop Laboratories. [2] Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

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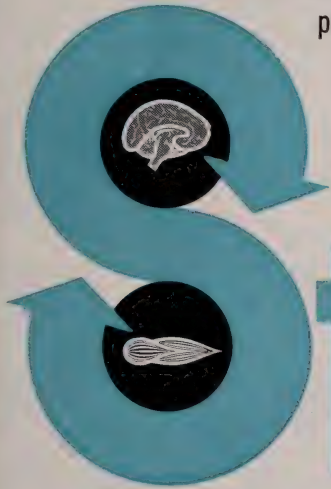

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- **a familiar spectrum of antianxiety and muscle-relaxant activity**
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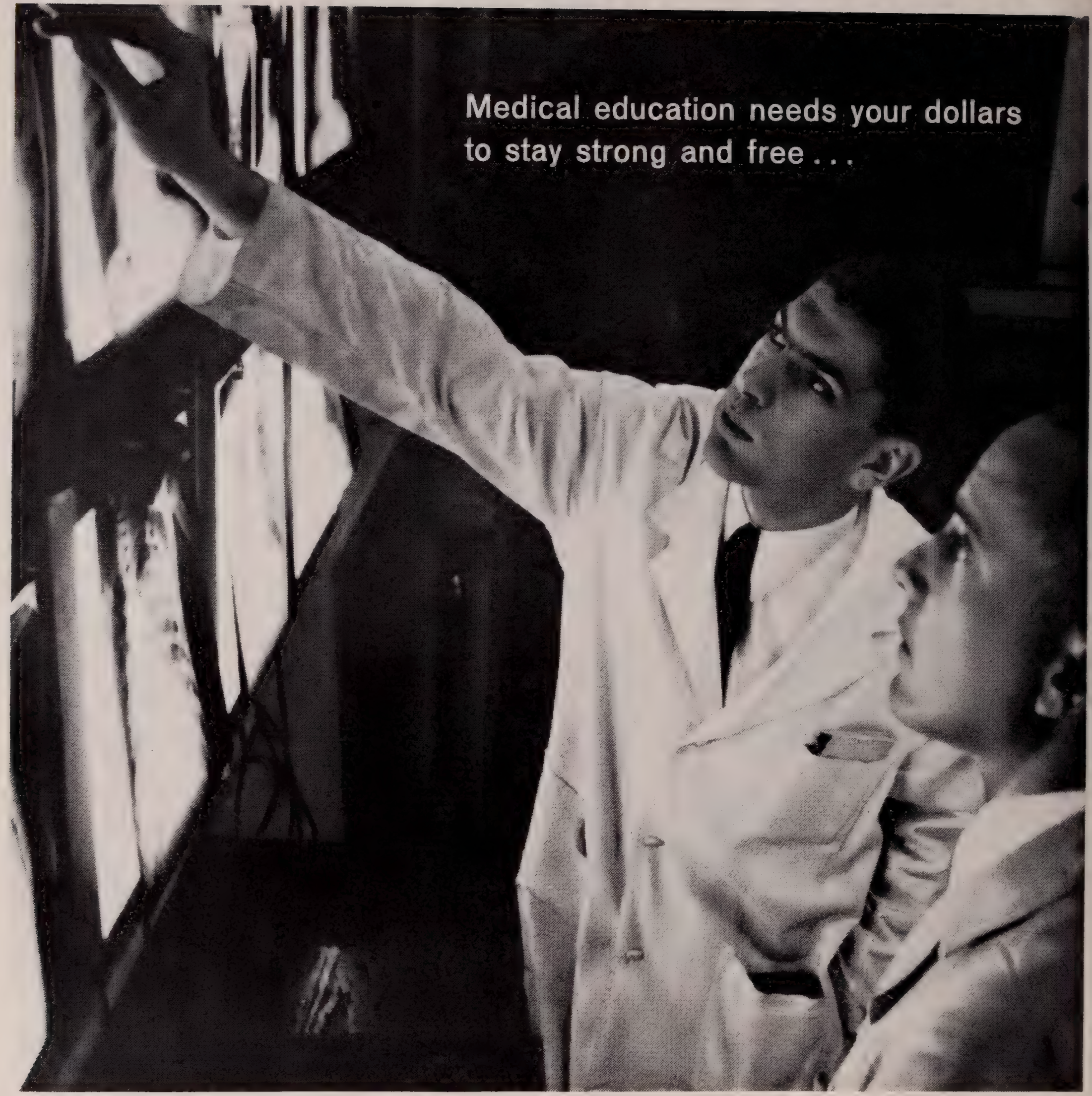
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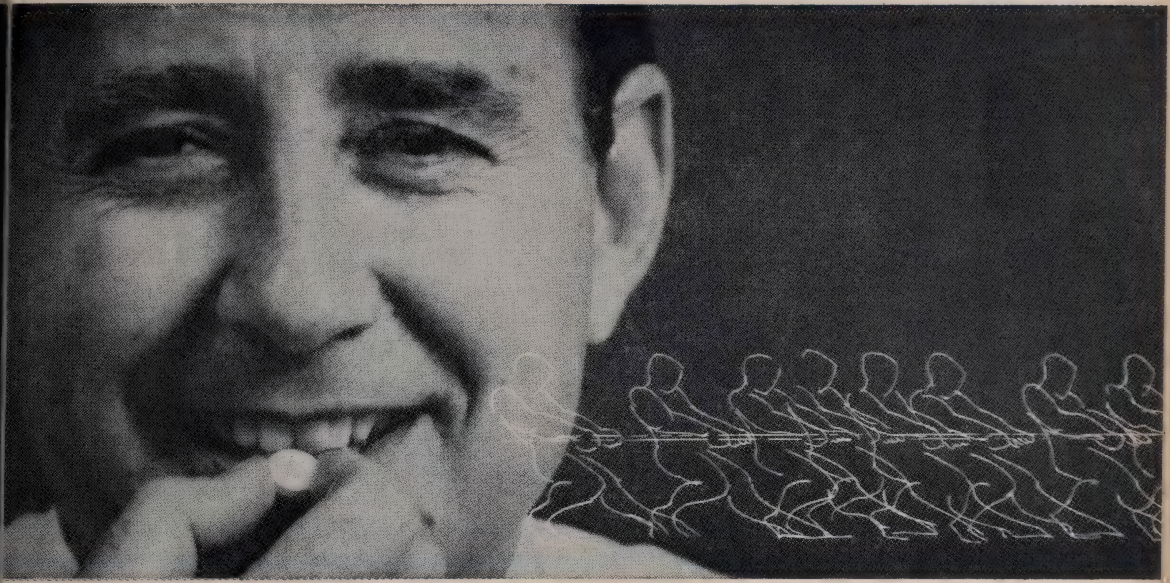

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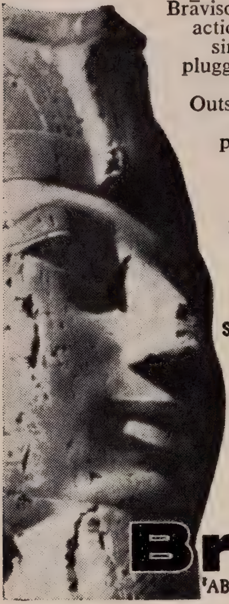

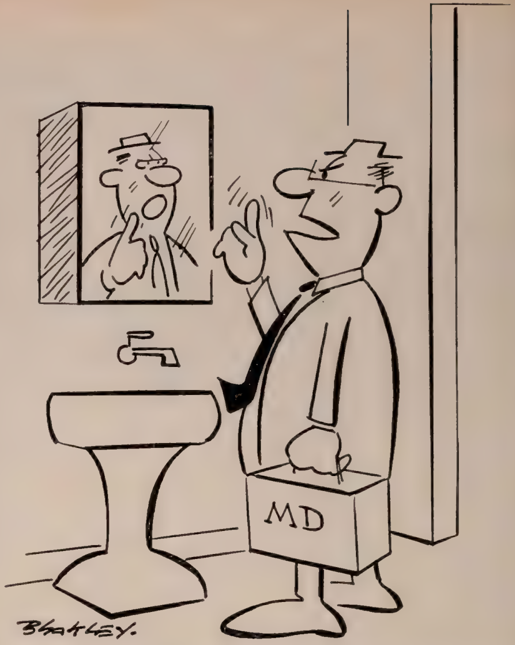

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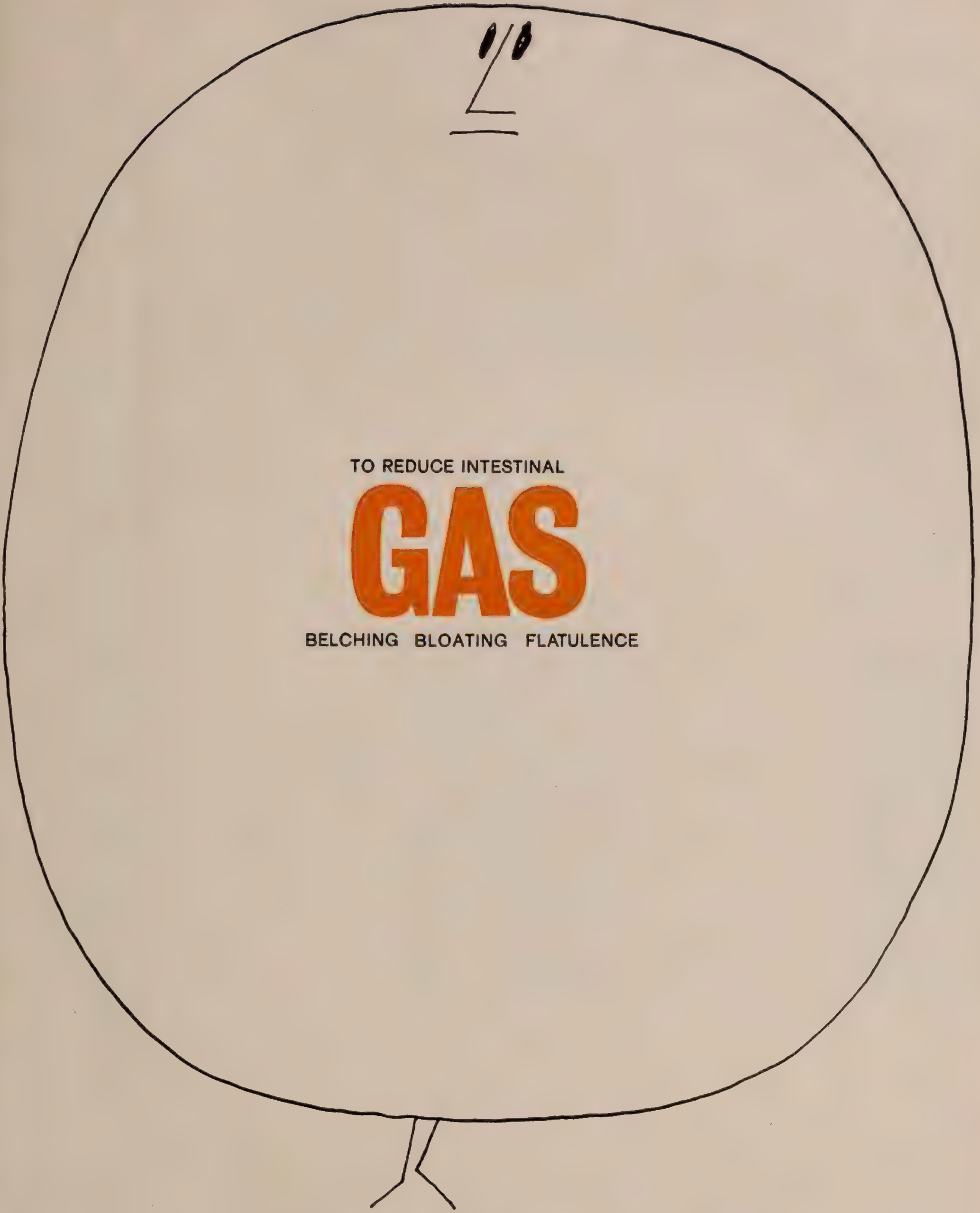
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Physicians treating the aged and the convalescent have for generations been aware of the restorative power of wine. However, it remained for recent research* to more clearly define its clinical physiological action.

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Research information on wine is available on request. Write for your copy of *"Uses of Wine in Medical Practice." Wine Advisory Board, 717 Market Street, San Francisco 3, California.

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4. Haggard, H.W., and Jellinek, E.M.: Alcohol Explored, New York, Doubleday, Doran, 1942.

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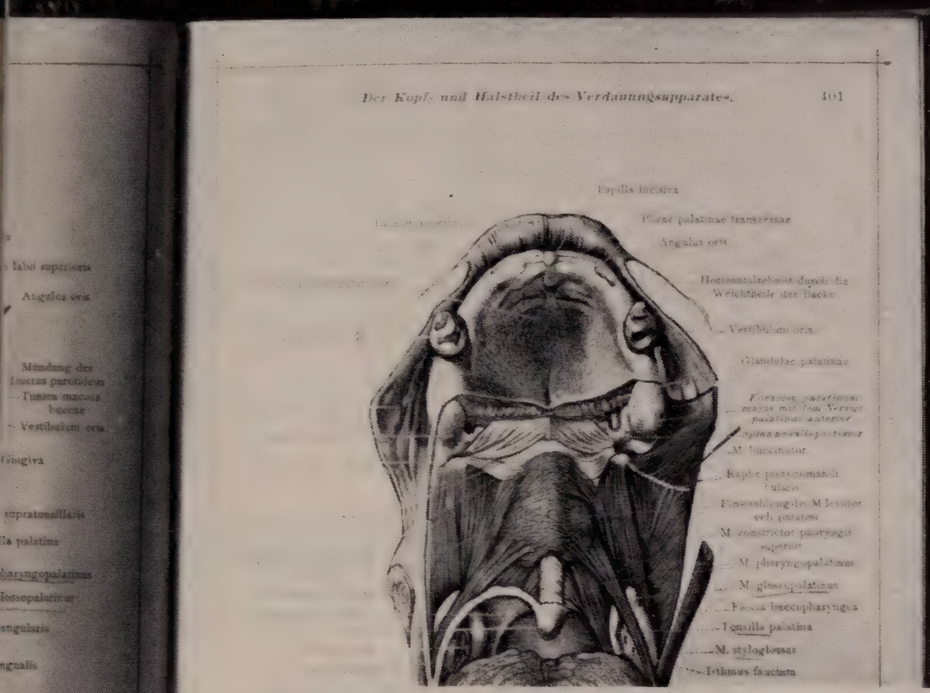
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Actual case summary from the files of Bristol Laboratories' Medical Department

ACUTE TONSILLITIS

SYNCILLIN®
250 mg. q.i.d. – 5 days

B.G. 9-year-old, white male. First seen Aug. 11, 1959 with acute tonsillitis. Illness of 3 days' duration. Beta hemolytic streptococcus extremely sensitive to SYNCILLIN cultured from the throat. Patient started on SYNCILLIN – 250 mg. q.i.d. After 5 days, the infection appeared cured and the antibiotic was discontinued. No subjective or objective evidence of side reactions.

INCREASED LIFE EXPECTANCY FOR HYPERTENSIVES

"Life expectancy seems to be the one criterion that is most reliable and least questioned as a method of evaluating treatment for patients with elevated blood pressure."[1] "It is evident that effective therapy of hypertension will prolong the life of the patient by preventing the dreaded complications of this disease in the brain, the heart and the kidneys ." "There is no doubt of the prolongation of life in group 3 and 4 (Keith-Wagener-Barker) by adequate antihypertensive treatment. Some authorities report a 50 per cent, five year survival ratio for treated patients with malignant hypertension as against a 1 per cent survival ratio for untreated patients."[2]

Evaluation based on life expectancy is extremely difficult because of the peril of maintaining an untreated control group.[1] The doctor, however, can evaluate the symptoms related to the elevated blood pressure. . . . We know that retinopathy may improve, the heart may be reduced in size, the electrocardiogram may improve and in favorable cases the blood urea nitrogen level may fall.[2] These are reasonably objective criteria on which to base one's evaluation of treatment.[1]

On the succeeding page is evidence that Unitensen included in any therapeutic regimen may improve the results in hypertension as measured by a regression of objective clinical changes in a substantial proportion of the patients treated.

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9. McCall, M. L., *et al.*: Obst. & Gynec. *6*:297, 1955.
10. Finnerty, F. A.: Am. J. Med. *17*:629, 1954.

Unlike diuretics or ganglionic blocking agents, Unitensen lowers blood pressure through widespread vasorelaxation. Normal vasomotor responses are not altered, and there is no venous pooling with resulting postural hypotension.[3-5] Through alleviation of cerebral vasospasm, Unitensen promotes cerebral blood flow and oxygen utilization.[6-9] Furthermore, Unitensen increases cardiac efficiency, improves renal function and tends to arrest the progress of vascular damage.[3,4,10]

Progress of Objective and Subjective Symptoms in Grades III and IV Hypertension Following Treatment with Unitensen and Unitensen-R

The Course of Subjective Symptoms

	Observations in Patients* Treated up to 2 Years			**Observations in Patients* Treated up to 3½ Years**		
Symptom	Number**	Improved	% Improved	Number**	Improved	% Improved
Headache	27	21	77.7	43	38	88.0
Palpitation	20	13	65.0	29	19	65.5
Angina	15	9	60.0	21	16	76.0
Dyspnea	17	8	47.0	27	14	51.0

Objective Changes Following Treatment

	Observations in Patients* Treated up to 2 Years			**Observations in Patients* Treated up to 3½ Years**		
Finding	Number**	Improved	% Improved	Number**	Improved	% Improved
Funduscopic Changes	41	24	58.5	59	38	66.0
Enlarged Heart	20	13	65.0	35	23	65.7
Abnormal ECG	37	10	27.0	45	25	55.5
Proteinuria	31	12	38.7	43	27	62.7
Nitrogen Retention	17	6	35.2	28	10	35.7

Left hand charts from Clinical Exhibit "The Ambulatory Patient with Hypertension" presented AMA Convention, San Francisco, June 22-27, 1958, by B. M. Cohen, M.D.

*All patients in this study were initially classified as Smithwick Grades III and IV.

**Expressed as the number of patients exhibiting the symptom recorded.

Right hand charts include patients previously reported who had been continuously maintained on Unitensen and Unitensen-R, plus additional patients later added to the study. From Clinical Exhibit "The Office Diagnosis and Treatment of the Patient with Hypertension" presented American Academy of General Practice, Indianapolis, March 18-19, 1959, by B. M. Cohen, M.D.

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UNITENSEN-R®

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Each cc. contains: 2.0 mg. cryptenamine (acetates) in isotonic saline

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a new class of drug
for the relief of pain and muscle tension

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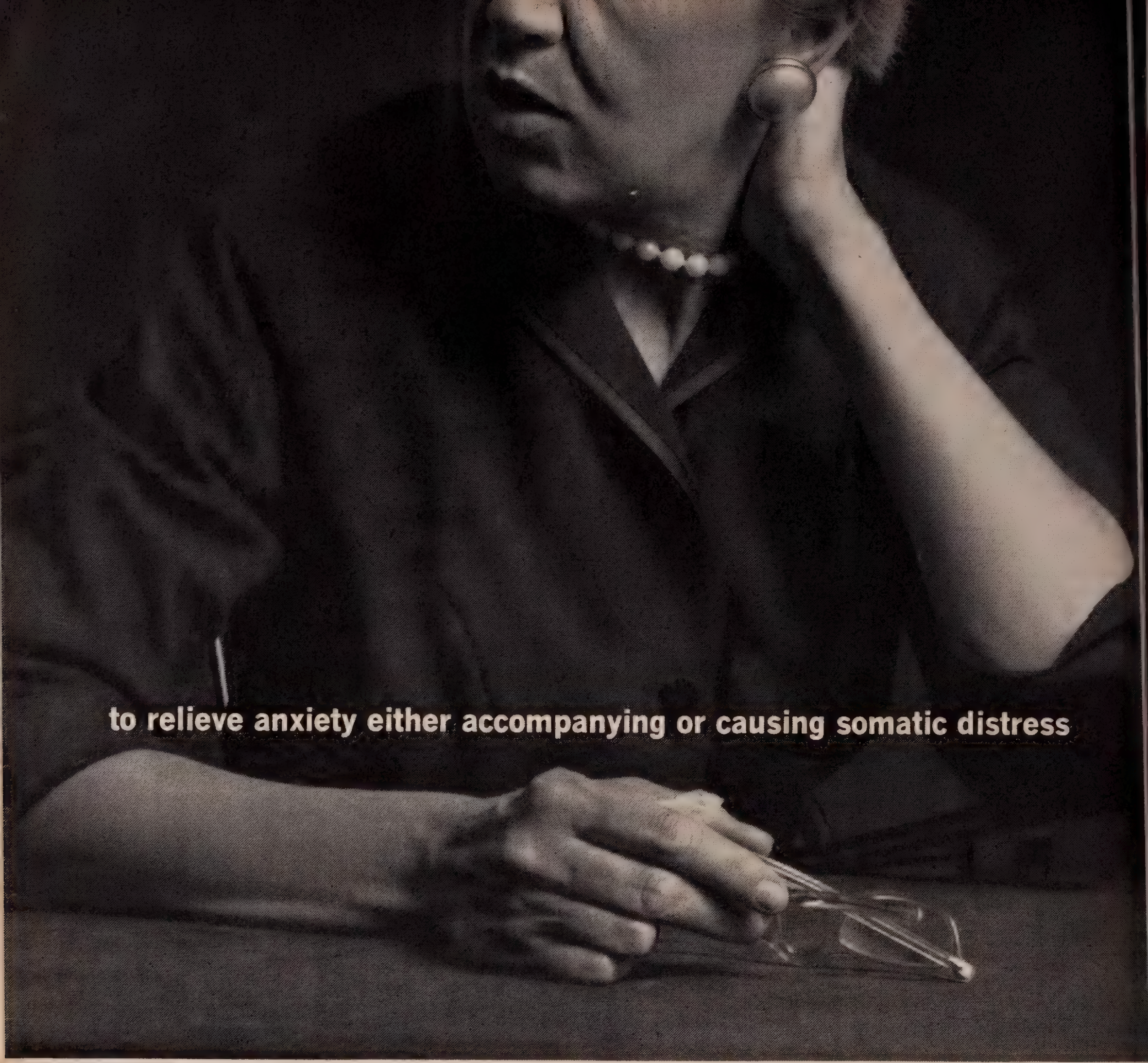
to relieve anxiety either accompanying or causing somatic distress

advantages you can expect to see with **Stelazine**®

brand of trifluoperazine

- **Prompt control of the underlying anxiety.**

Beneficial effects are often seen within 24-48 hours.

- **Amelioration of somatic symptoms.**

Marx[1] reported from his study of 43 office patients that 'Stelazine' "appeared to be effective for patients whose anxiety was associated with organic—as well as functional disorders."

- **Freedom from lethargy and drowsiness.**

Winkelman[2] observed that 'Stelazine' "produces a state approaching ataraxia without sedation which is unattainable with currently available neuroleptic agents; its freedom from lethargy and drowsiness makes ['Stelazine'] extremely well accepted by patients."

Optimal dosage: 2-4 mg. daily. Available as 1 mg. and 2 mg. tablets, in bottles of 50 and 500.
N.B.: For further information on dosage, side effects, cautions and contraindications, see available comprehensive literature, *Physicians' Desk Reference,* or your S.K.F. representative. Full information is also on file with your pharmacist.

1. Marx, F.J., in *Trifluoperazine: Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959, p. 89.
2. Winkelman, N.W., Jr.: *ibid.*, p. 78.

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In rheumatoid arthritis with serious corticoid side effects. Following profound weight loss and acute g.i. distress on prednisolone, a 45-year-old bookkeeper with a five-year history of severe arthritis was started on Decadron, 1 mg./day. Dosage was promptly reduced to 0.5 mg./day. After ten months on Decadron, she gained back eleven pounds, feels very well, and had no recurrence of stomach symptoms. She is in clinical remission.*

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*From a clinical investigator's report to Merck Sharp & Dohme.

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an antibiotic improvement designed to provide greater therapeutic effectiveness

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in a more acid-stable form assure adequate absorption even when taken with food

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Usual dosage for adults and for children over fifty pounds is 250 mg. every six hours. *Supplied* in 125 and 250-mg. Pulvules and in suspension and drops.

1. Stephens, V. C., *et al.:* J. Am. Pharm. A. (Scient. Ed.), *48:*620, 1959.
2. Salitsky, S., *et al.:* Antibiotics Annual, p. 893, 1959-1960.
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EDITORIALS

Medical Communications Day—A First

Like the man who had been writing prose all his life and never knew it, doctors have been communicating but have seldom stopped to weigh and measure their efforts. It was for this purpose that on May 14 of this year the New York State Journal of Medicine and the Metropolitan New York Chapter of the American Medical Writers Association jointly sponsored an all-day meeting. The well-attended program brought together editors, publishers, science writers, teachers, advertisers, and just plain readers for a meeting of minds. Many facets of the written word as a means of communication between doctor and doctor and between doctor and public were explored. The place and future of various audiovisual technics were discussed. Here were presented fascinating developments beyond the dream stage which will have a profound effect on postgraduate education in the medical field. The proceedings of this meeting, the first of its kind in this area, have been compiled and are here presented as a part of this issue of the Journal (see page 3473). If you would like to know how a scientific article is selected for inclusion in a medical journal, how a medical text gets to be published, how a teacher teaches, and how a reader reads, you will find many of the answers in this section.

Anyone who dips into this collection of papers on medical communications will get an interesting and we hope rewarding view of medicine's fourth estate.

Communication and Health

Today medical practitioners and research workers are suffering acutely from what may be called informational indigestion. The etiology of this disease is obvious — the tremendous volume of new information generated by research is overwhelming their capacity to digest, absorb, and utilize it. Progressive inability to "keep up" with and profit from new developments results in a syndrome that varies widely from one patient to the next. A painful sense of exhaustion and futility, like that in an agitated depression, is the most common symptom; and insidious deterioration in the quality of medical care provided by the practitioner, or decreasing productivity on the part of the research worker, is the most serious sign. As in other diseases for which a uniformly efficacious treatment is not known, many different remedies for the individual case and measures for epidemiologic control are recommended by various "authorities." Some of the suggested therapies are impractical or ignore psychologic and political realities; many have no rational basis and are little better than witches' brews. The unsatisfied and disillusioned patients commonly resort to self-treatment, such as starvation diets, which relieve the pain but accelerate the degenerative process.

Those in medicine affected by this serious malady may take spiritual comfort from knowing there are fellow sufferers in all branches of science. The incidence and severity of the disease in any given scientific field or discipline depend, in part, on how rapidly the research effort has expanded and on how long ago the major change in the rate of expansion occurred, for the latent period, before alarming manifestations of the disease occur, is considerable. Shortly before World War II, basic and applied research in the physical sciences related to national defense accelerated sharply. Medicine's turn came some time later. This difference in timing gives us in medicine a great advantage. We have an opportunity to study the course of the disease in a population similar to our own, the physical scientists; to profit from their experience in meeting the formidable challenge of a full-blown epidemic; and to learn from their mistakes.

Recently "sputnik" and other startling advances in Russian technology stimulated a searching review of the country's efforts to develop and perfect new weapons. This inquiry dramatically and publicly spotlighted serious inadequacies in the existing system for intraprofessional communication in the physical sciences—the system whereby new information, the only fruit of research, reaches those who can use it for further research or for practical application. Reams of legislative hearings attest to the cost in dollars, manpower, and time-loss of the inefficiency in the "metabolism" of information caused by these inadequacies. The outcome of this inquiry was action on a scale that, for the first time, gave some promise of achieving significant results.

In medicine, a "sputnik" has not yet come along to arouse comparable concern and stimulate concerted remedial action. The specter of compulsory, periodic re-examination for all practicing physicians evoked by Dr. Gunderson, when he was president of the American Medical Association, should have been similarly effective in uniting all our forces—medical societies, voluntary health organizations, government agencies, and pharmaceutical companies—for a coordinated attack on medicine's communication problems; but our complacency must be more imperturbable than that of physical scientists and engineers. Certainly any real or even suspected defect in the system protecting the nation's health should provoke as much concern as a weakness in national defense, and the existence of a serious flaw has been and is being suggested. Conservative critics from our own ranks are heard to say that the gap between what the practicing physician *could* and *should* know, and what he *does* know and *apply*, has never been wider than it is now. This is a strange statement in an era when the latest "miracle drug" is used even in remote rural areas. But it is in knowledge of "why," not "how-to-do-it," that we lag today more than ever before.

How can this be with an ever-increasing number of journals, postgraduate courses, and medical meetings? Is it, as some have implied, because we are lazy and would rather play golf or watch television than read journals or attend meetings? Some surveys of physicians' reading and learning habits could be interpreted in this way. If this is the answer, then compulsion appears the only solution. But perhaps some of the fault lies in the communication system that serves us. The existing main channels—the society meeting and the professional journal—developed primarily to permit practitioners to share their experience in applying the science they learned in school, and secondarily to refresh their memory on facts they might have forgotten. These channels, which once served so well, can no longer handle the load imposed by the astonishing pace of medical progress, nor can they meet some new demands being made on them.

The vast amounts of manpower and funds being poured into medical research have resulted not only in new remedies, but also in a tremendous growth of the basic knowledge on which medical practice is founded and in a rapid turn-over in what we like to consider as "facts." In the terms of the biochemist, the useful "half-life" of many facts is now measured in months rather than years or decades. Today's practitioner needs communication channels capable of *re-educating* him, and not merely refreshing his memory. Simple proliferation of the traditional media for intraprofessional medical communication cannot serve this need.

This expedient has not worked, and the rampant multiplication of journals and meetings has produced its own problem—that of too many communications but not enough communication. On the physician's desk the pile of journals he *should* read, and announcements of meetings and lectures he *should* attend, grows so rapidly, it is no surprise many practitioners despair of even trying to "keep up."

What should be done better to meet the physician's informational needs? When this question is asked, there are as many opinions as there are those who express themselves. On this subject opinions totally unsupported by solid data are often accepted and advanced as solutions by men who in other matters have stringent standards concerning what constitutes evidence. As is common when opinion is king, discussion of the problem often elicits strong emotions. The first prerequisite for success, therefore, is that we start approaching this problem with the same scientific detachment with which we would view the question of how to develop a better vaccine. This is what the physical scientists are doing. They are using research technics, including deliberate, carefully planned experiments, to explore the basic progresses of intraprofessional communication, with the aim of scientifically improving old methods of disseminating information and developing new ones.

Some of this ferment in the physical sciences is slowly spreading into the biomedical field. But thus far our effort has been grossly disproportionate to the magnitude of the problem, which, although newer, already dwarfs that of the physical scientists. We have not yet begun to mobilize the resources medicine can command and must marshal if all the information pouring from laboratories and research centers is to be translated efficiently and rapidly into better medical care for those who so generously support medical research. If even a small fraction of the effort and money now devoted to developing new information were to be expended on finding better ways to put this information to use, the rewards in terms of improved health for the nation would be truly impressive. Few other areas of endeavor in medicine promise so much for so little.—R.H.O.

Medical Society of the State of New York
District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
I	May, 1961	. . .
II	October 26 and 27, 1960	Grossinger
III & IV	September 14 and 15, 1960	Schroon Lake
V	Spring, 1960	. . .
VI	September 28, 1960	Ithaca
VII	October 13, 1960	Corning
VIII	September 29, 1960	Jamestown
IX	May, 1960	. . .

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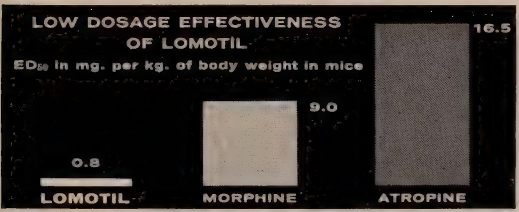

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SCIENTIFIC ARTICLES

Prolonged Use of Sodium Liothyronine

Effects on Thyroidal Parameters and Symptoms

SAMUEL U. GREENBERG, M.D., AND WINIFRED C. LOUGHLIN, M.D., NEW YORK CITY

(*From the Thyroid Clinic, University Hospital, New York University Medical Center*)

SHORTLY after the important discoveries by Gross and Pitt-Rivers in 1951[1] and in 1952[2] and of Roche, Lissitsky, and Michel[3,4] at the same time, sodium liothyronine (3,5,3′ triiodothyronine) was synthesized commercially. It has been suggested that this substance is elaborated, in vivo, at the cellular level after deiodination by a suitable enzyme, from tetraiodothyronine to triiodothyronine, and that it is the metabolically active substance at the target cellular level. It was then further postulated that it might be useful therapeutically in those hypometabolic states which do not respond to conventional sources of thyroid hormone. This concept assumed that there is a block or impairment in the conversion of the tetraiodothyronine and hence a failure of utilization or inavailability of the active hormonal principle at the cellular level.

It can be seen easily that if this concept is sound, the patient so afflicted with this cellular level block would show symptoms of hypometabolism, and this condition would be revealed in some laboratory tests notably in the basal metabolic rate and serum cholesterol levels. It is also obvious that in such patients the protein-bound iodine and the uptake by the thyroid gland of radioactive iodine would be normal, since the function of the thyroid gland and the production of thyroxine are not at fault, the defect being peripheral. This type of patient has had little or no response to desiccated thyroid but has symptoms such as fatigue, restlessness, emotional instability, vague muscle pains, headaches, dry skin, and slight intolerance to cold, with or without a low basal metabolic rate. These patients have been called variously "euthyroid hypometabolic,"[5] "non-myxedematous hypometabolic,"[6] and more loosely but more popularly, victims of the "hypometabolic syndrome"[7] or "metabolic insufficiency."[8]

Several reports of short-term studies with sodium liothyronine have been enthusiastic.[8,9] Except for special reasons[10,11] few studies have been carried out with serial parameters. The present study was conducted over a long period; serial thyroidal indexes were determined while using sodium liothyronine (T-3), a placebo, and psychic stimulants.*

Clinical Material and Methods

Fourteen patients with various thyroid diagnoses were studied for three and one-half to twenty-four months. Three cases terminated clinic care in four and one-half months or less. The remaining 11 patients were studied for periods of from nine to

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A contribution from the research department of Smith, Kline & French Laboratories, Philadelphia, Pennsylvania, helped to pay part of the cost of the laboratory studies.

* Sodium liothyronine (Cytomel) and placebo tablets were supplied by Smith, Kline & French Laboratories, Philadelphia, Pennsylvania.

TABLE 1.—RESPONSE OF PARAMETERS AND SYMPTOMS TO SODIUM LIOTHYRONINE

									Improvement		
Diagnosis	Patient	Age (Years)	Sex	Duration of Study (Months)	Radioactive Iodine Shift (Per Cent)	Gamma Protein-Bound Iodine Shift	Cholesterol Shift (Mg. Per Cent)	Basal Metabolic Rate Shift (Per Cent)	Sodium Liothyronine	Dextro-Amphetamine	Other
Hypometabolic syndrome	1	46	F	16	45 to 4	6 to 1	245 to 175	−12 to −13	†	. . .	**Placebo
	2	36	F	13	27 to 4	6.5 to 3.4	215 to 195	− 6 to + 8	*	††	. . .
	3	44	F	20.5	24 to 24	4.2 to 6.8	240 to 215	−26 to −11	. . .	***	. . .
	4	39	F	22	38 to 8	5.1 to 1.9	230 to 205	−18 to − 5	*	††	. . .
	5	34	M	12.5	28 to 8	6 to 2.8	195 to 205	−17 to − 6	*	***	***Dextro-amphetamine plus amobarbitol
	6	58	F	9	12 to 2	6.2 to 1.6	245 to 265	− 1 to − 1	*	. . .	**Dextro-amphetamine plus amobarbitol
True hypothyroid	7	45	F	24	4 to 1	1.9 to 2.6	280 to 155	−24 to +11	††	. . .	. . .
	8	55	F	12	22 to 5	2.6 to 1.7	340 to 260	− 7 to +19	††	. . .	. . .
	9	42	F	16	18 to 10	5.8 to 2	285 to 175	−23 to − 7	***	. . .	. . .
	10	68	F	12	7 to 6	2.9 to 1.4	440 to 190	−17 to + 2	††	. . .	. . .
Colloid goiter; some hypothyroid symptoms	11	38	F	4.5	39 to 56	4.1 to 3.8	. . .	−16 to +12	*	. . .	. . .
	12	27	M	3.5	. . .	3.8 to 5.1	. . .	−12 to − 8	*	. . .	. . .
Doubtful hypothyroid	13	53	F	22	11 to 2	3.2 to 1	260 to 180 to 310	− 8 to +18 to −23	**(†††)	. . .	. . .
	14	54	F	4	22 to 21	4.1 to 3.5	. . .	+18 to +16	††	. . .	. . .

* None. † Slight. ** Moderate. †† Good. *** Excellent.

††† Emergence of myxedema on withdrawal of sodium liothyronine. Facies became myxedematous, cholesterol soared to 310 mg. per cent, and the basal metabolic rate fell to minus 3 per cent.

twenty-four months, averaging eighteen months. Baseline studies of symptoms and thyroid parameters (basal metabolic rate, cholesterol, protein-bound iodine, and radioactive iodine uptake) were done, then repeated at varying intervals while the patients were on varying dosages of sodium liothyronine, the placebo, and psychic stimulants—dextro-amphetamine sulfate and dextro-amphetamine sulfate plus amobarbitol (Dexedrine sulfate and Dexamyl).

Enthusiasm and derogation were avoided sedulously by administrators of the medication. The subjects were unaware that they were participating in an experiment or exploration of a new drug. Six cases (Patients 1 through 6) fulfilled the criteria for "hypometabolic syndrome." Each of these patients complained of three or more of the following symptoms: fatigue, arthralgia, a tendency to feel cold (preferring warm weather), a feeling of numbness, forgetfulness, decreased mental acuity, dry skin, sluggishness, sleepiness, a tendency to overweight, headaches, and poor work endurance. In all these six patients, lack of energy and fatigue were major complaints. Also, all had hypometabolism before starting the study, with normal values for the other three parameters. The basal metabolic rate of Patient 1 was minus 12 before medication; the other 5 patients had initial basal metabolic rate values of from minus 17 to minus 27. Patient 6 had never taken thyroid; the other 5 patients in this group had all been treated with thyroid substance in full therapeutic doses and for adequate periods of time without any symptomatic benefit. These patients had not taken any thyroid medication for at least six months prior to the start of the study.

Four cases of true hypothyroidism (Patients 7 through 10) were included in the study, each because of a special or unusual feature. Patient 10 was included because, although her myxedema was very well controlled with desiccated thyroid for ten years as far as her indexes and subjective responses were concerned, she continued to look and act myxedematous. Another case of myxedema (Patient 9) was well controlled with desiccated thyroid as far as her indexes and objective responses were concerned, but subjectively she was not satisfied. Patient

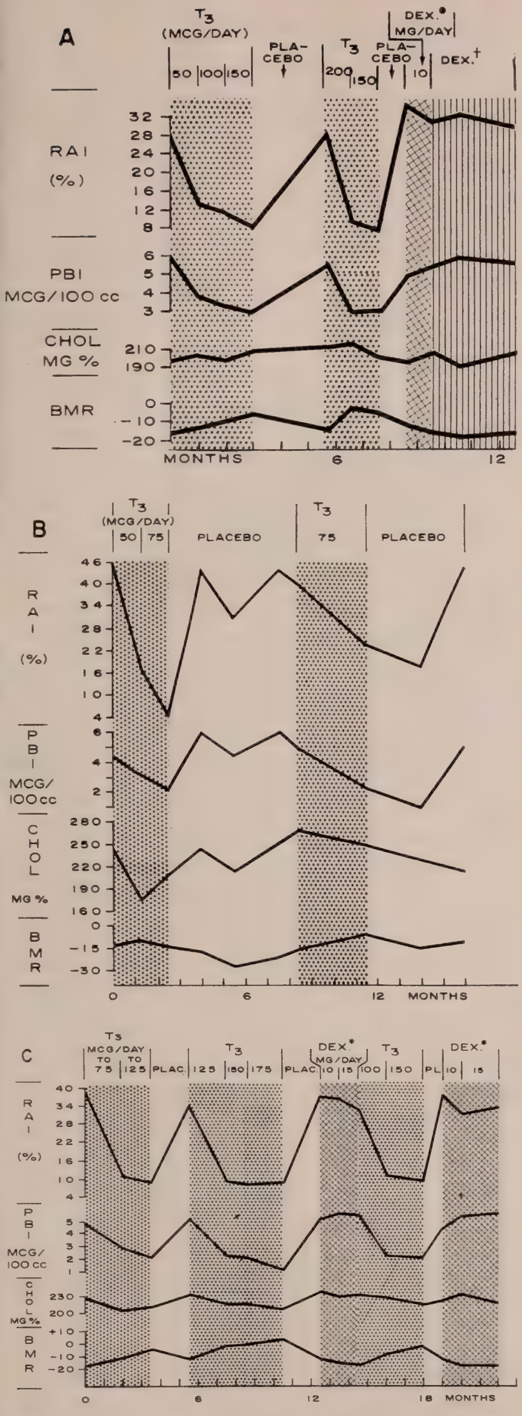

Fig. 1. Possible hypometabolic syndrome. (*A*) Patient 5. (*B*) Patient 1. (*C*) Patient 4. (* Dextro-amphetamine sulfate. † Dextro-amphetamine sulfate plus amobarbitol.)

7 gave a history of having been diagnosed as having myxedema eighteen years before. She had overtreated herself, without medical supervision, for at least three years and was taking as much as 10 grains of desiccated thyroid daily. The diagnosis was questioned because of her ability to tolerate such a large ration of thyroid, which is quite unusual in true myxedema; a thyroid-stimulating hormone test confirmed the presence of primary hypothyroidism. In these 3 cases, thyroid medication was withdrawn and was replaced by placebo tablets until clear-cut myxedema was apparent clinically and by laboratory findings; then sodium liothyronine was given. The fourth patient in this group (Patient 8), a known case of hypothyroidism, had discontinued her desiccated thyroid for over four months because she thought this medication was not making her feel well enough; she too was given sodium liothyronine.

Two cases of colloid goiter (Patients 11 and 12) were included in the study. Patient 11, a thirty-eight-year-old female, had a multinodular colloid gland with a basal metabolic rate of minus 16. Patient 12, a twenty-seven-year-old male, had a simple diffuse colloid goiter and a basal metabolic rate of minus 12. Both these patients also had some hypometabolic symptoms, but except for the basal metabolic rtae, the parameters were in the normal euthyroid range.

Two cases (post-thyroidectomy) suspected of hypothyroidism (Patients 13 and 14) were clinically doubtful, while their parameters were borderline (Patient 13) or inconsistent (Patient 14).

Results

In the course of this study 365 parameters were determined. The effects on indexes and symptoms are summarized briefly in Table I. The most consistent laboratory findings were depressions of the protein-bound iodine and radioactive iodine uptake with sodium liothyronine therapy; rebound of the indexes to normal with placebo or psychic stimulant therapy; and a lack of any significant change in these indexes when such a stimulant alone was used. Depressions of these two indexes did not occur, however, on a very low dosage of sodium liothyronine, such as 5 micrograms (Patients 8 and 10).

The response of the basal metabolic rate to sodium liothyronine therapy was not consistent; some rates remained static, others moved downward, and still others upward but none rapidly. A marked upward change occurred only on high dosage (200 micrograms). The response of the basal metabolic rate was more consistent in cases of known or suspected hypothyroidism, but it was variable and unpredictable in the cases of "hypometabolic syndrome."

Changes in serum cholesterol values were variable, but they showed a downward trend for at least 50 per cent of the time. The tendency for serum cholesterol values to become lower was seen again mainly in cases of known or suspected hypothyroidism, the most dramatic decrease occurring where the starting value was high (from 440 mg. to 190 mg. per cent in Patient 10). In the cases of "hypometabolic syndrome" the change in serum cholesterol levels was not consistent in direction and not significant in degree. Figure 1 illustrates the minor and variable changes of the basal metabolic rate and serum cholesterol in patients with the "hypometabolic syndrome." In Figure 2 are shown the more significant alterations of the basal metabolic rate and serum cholesterol in patients with true hypothyroidism in response to sodium liothyronine and to the placebo. On the other hand, these figures show the pronounced alterations of the protein-bound iodine and the radioactive iodine uptake in the "hypometabolic syndrome" where the original values are in the euthyroid range, as compared with the much smaller changes in true hypothyroidism where the starting values are low. However, the trend of these two parameters is in the same direction in both conditions.

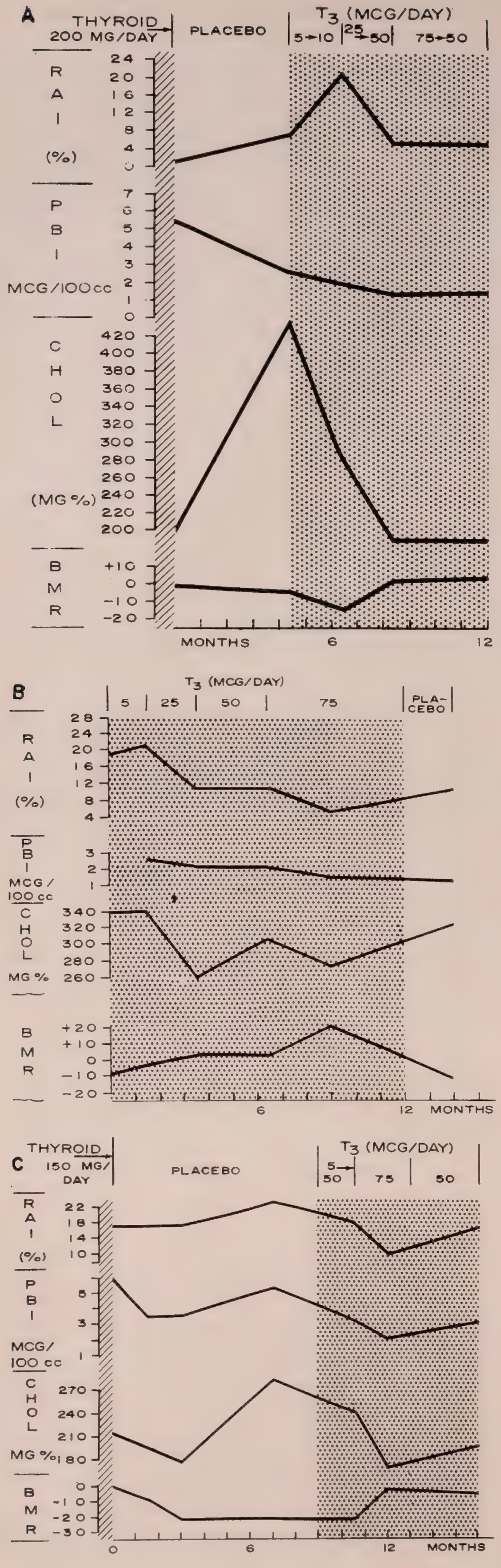

FIG. 2. True hypothryoidism (myxedema). (*A*) Patient 10. Thyroidectomy eleven years previously. (*B*) Patient 8. Severe; thyroidectomy twenty-eight years previously. (*C*) Patient 9. Thyroidectomy and treatment with radioactive iodine.

Symptomatic response to sodium liothyronine therapy was not remarkable in any instance. Symptoms of overdosage occurred in 2 cases but only at higher dosage levels. These developed in 1 case of hypothyroidism on 200 micrograms of sodium liothyronine and in an elderly patient with myxedema on 75 micrograms. There was little clinical change on low dosage levels of from 5 to 25 micrograms.

One case (Patient 11) had a colloid nodular goiter. After five months of adequate dosage of sodium liothyronine therapy there was no change in the physical aspect of the goiter, although the basal metabolic rate had increased 28 per cent with no significant change in the protein-bound iodine. A simple colloid goiter (Patient 12) decreased noticeably in size after two months of sodium liothyronine therapy without any significant change in the basal metabolic rate but with a rise in the protein-bound iodine. These results are of interest in relation to recent findings elsewhere.[11]

Two cases resembling "hypometabolic syndrome" (Patients 1 and 2) felt no different with the active substance from the way they felt with the placebo tablets. Patient 1 felt equally well on either sodium liothyronine or placebo. Patient 2 felt poorly on both sodium liothyronine and the placebo, but responded very well to dextro-amphetamine sulfate. Another case (Patient 6) did not respond to sodium liothyronine, but had an excellent response to dextro-amphetamine plus amobarbitol. A fourth case of "hypometabolic syndrome" (Patient 3) did so well on dextro-amphetamine sulfate that sodium liothyronine was never given. Two further such cases (Patients 4 and 5) showed most strikingly the depressions of protein-bound iodine and radioactive iodine uptake, slight but variable shifts in the basal metabolic rate and serum cholesterol (Fig. 1A and C), and no real symptomatic improvement on sodium liothyronine, even with the dosage as high as 200 micrograms per day. They felt just as well or at times better on the placebo. Improvement of symptoms occurred dramatically with psychic stimulants although all the indexes were the same as at the beginning of the study.

Two cases of doubtful hypothyroidism (Patients 13 and 14), with histories of thyroidectomies many years previously, were benefited symptomatically by sodium liothyronine. In Patient 13 sodium liothyronine was helpful in clarifying the diagnosis not only by the therapeutic response, but also by the fairly rapid emergence of a hypothyroid picture following the withdrawal of the drug and its replacement by the placebo. In this doubtful, borderline case, the original appearance of the patient—that is, facies, skin, and so forth—was not sufficiently diagnostic, especially because the patient had not been known before; however, the patient's appearance following the withdrawal of sodium liothyronine was diagnostically clear when compared with her appearance while on the therapy.

Four cases of true hypothyroidism following previous thyroidectomies (Patients 7 through 10) responded rather quickly in a laboratory sense (the basal metabolic rate increased and the cholesterol decreased), but clinical improvement was practically as slow as that seen under treatment with desiccated thyroid. The facial appearance of Patient 10 continued to be as myxedematous-like on sodium liothyronine therapy as it was on desiccated thyroid. All 4 patients became clinically euthyroid with sodium liothyronine; they felt and acted the same as when they were controlled with desiccated thyroid, but no better.

There were no rebounds of protein-bound iodine levels to above normal when the intake of sodium liothyronine was stopped abruptly. There were no elevations of protein-bound iodine to abnormal levels even on high dosages.

Conclusion

1. Treatment with the synthetic substance, sodium liothyronine, caused a drop

in the serum protein-bound iodine and in the radioactive iodine uptake of the gland, except with minute doses. These changes persisted as long as sodium liothyronine therapy was continued.

2. Therefore, in replacement therapy these two parameters or indexes of thyroidal function are of no value in determining the proper maintenance dosage level of sodium liothyronine. This has been mentioned elsewhere.[12,13] This possible diagnostic pitfall in patients who have been taking sodium liothyronine deserves emphasis.

3. In clearly hypothyroid states sodium liothyronine was effective. The response of symptoms, the basal metabolic rate and the serum cholesterol, was similar to that seen with desiccated thyroid therapy.

4. During the course of a long period of observation, the cases of so-called "hypometabolic syndrome" showed no significant symptomatic response or consistent alteration of the basal metabolic rate and the serum cholesterol on sodium liothyronine therapy. This type of patient responded better symptomatically to psychic stimulants.

5. In a borderline case of hypothyroidism, the administration and withdrawal of sodium liothyronine served to clarify the diagnosis.

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Cataracts

Cataract, a cloudiness of the lens inside the eye that blocks the passage of light and thus makes vision impossible, is today the single most important cause of blindness. Most cataracts are "senile" cataracts: Although their precise etiology is unknown, they are believed to be associated with the aging process and usually occur in adults, expecially those fifty-five years of age or older. But cataracts may be formed at any age, may be caused by disease or injury, or may be congenital.

Senile cataracts accounted for an estimated 16.5 per cent of all blindness in 1940. In 1950 and 1955 the proportion of blindness from this cause rose to just under 22 per cent, but in 1957 it dropped to 17.7 per cent. It accounted in 1957 for 16 per cent of all new cases of blindness in this country. Although surgical removal of the lens has been successful in the vast majority of cataract cases, cataracts associated with the aging process cannot as yet be prevented.

—*Health Information Foundation, Progress in Health Services, September, 1960*

Delirium Tremens at Meadowbrook Hospital

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(From the Department of Psychiatry, Meadowbrook Hospital)

MEADOWBROOK Hospital is a 650-bed county general hospital in Nassau County, approximately 30 miles from New York City. When first built in 1935 it served a rural area, but at present the communities it serves are predominantly suburban. Like most large public hospitals, it has a sizable number of cases of delirium tremens coming in and going out at all times. In the past seven and a half years for which records are readily available, there have been 767 cases, or approximately 8 per cent of all psychiatric admissions.

A frequent observation made on these patients by psychiatrists and attending physicians with experience in some of the large New York City hospitals is that cases of delirium tremens, as seen at Meadowbrook Hospital, are much milder and have a shorter duration than cases of delirium tremens in the larger centers, such as Bellevue Hospital and Kings County Hospital. In an attempt to check on the validity of this observation and to gain information that would serve as a springboard toward a systematic attack on the problem, a review of these cases was necessary.

Reviewing 767 cases completely is an extensive task and it is unnecessary if the cases can be sampled properly. The problem was to select a small sample that would be representative of all the cases. A preliminary statistical analysis of the record cards was made first. These cards contained the hospital number, admission and discharge dates, age, and sex of the patient. The length of stay served as an index for comparison (Table I).

TABLE I.—COMPARISON OF CASES BY LENGTH OF STAY

Days	All Cases	Per Cent	Sample	Per Cent
2 or less	30	5	...	...
3	86	11	2	10
4	117	15	2	10
5	94	12	2	10
6	87	11	1	5
7	76	10	3	15
8 or more	277	36	10	50
TOTALS	767	100	20	100

The median length of stay was six days, 7.5 for the sample. The rather large number of cases with stays over eight days consisted of those cases in which delirium tremens was complicated by some other condition requiring more prolonged hospitalization.

There were no cases under twenty years. The tendency for the complications to occur in the older patients is quite apparent, although the median age was forty-three (Table II). The usual preponderance of men seen in other series[1,2] was duplicated here (Table III).

The death rate was small compared with some other series,[1] although it was comparable to Krystal's series from the Detroit Receiving Hospital. The small number of

TABLE II.—COMPARISON OF CASES BY AGES OF PATIENTS

Age	All Cases	Per Cent	Median Length of Stay (Days)	Sample	Per Cent	Median Length of Stay (Days)
30 and under	48	6	5.5	1	5	8.0
31 to 40	253	33	5	6	30	7.5
41 to 50	274	36	5	7	35	4.5
51 to 60	140	18	5	4	20	7.5
61 and over	50	7	10	2	10	12.5
Unknown	2	...	...	...	...	...

TABLE III.—COMPARISON OF CASES BY SEX

Sex	All Cases	Per Cent	Median Length of Stay (Days)	Sample	Per Cent	Median Length of Stay (Days)
Male	687	90	6.0	20	100	7.5
Female	80	10	6.5	...	...	...
TOTALS	767			20	100	

TABLE IV.—DEATHS AND CERTIFICATIONS TO STATE HOSPITALS

Status	All Cases	Per Cent	Sample
Deaths	16	2.1	...
Certifications	5	0.6	...

TABLE V.—ASSOCIATED MEDICAL CONDITIONS IN ORDER OF FREQUENCY

Condition	Frequency	Per Cent
Cirrhosis (enlarged, palpable liver)	12	60
Hypertension	3	15
Pneumonia	2	10
Chronic brain syndrome	2	10
Bleeding varices	1	5
Suicide attempt	1	5
Urinary infection	1	5
Heart failure	1	5
Diabetes	1	5
Asthma	1	5
Cancer of palate	1	5
Portal-caval shunt	1	5

certifications to state hospitals appears to represent a local custom and policy rather than a lack of grounds for certification, since the sample shows a fairly high incidence of chronic brain syndrome in recidivists (Tables IV and V).

The majority of cases of delirium tremens were uncomplicated and uniform. The longer length of stay on the nonpsychiatric services represented, in general, the patients with complications of the condition (Tables VI and VII).

The length of stay remained constant. The increase over the years paralleled the increase in the patient load of the hospital and the population increase of the county and did not represent any change in the incidence of the disease (Table VIII).

The number of admissions in the various months and seasons was quite constant, although there was a nonsignificant trend for an increase in the summer months, and the length of stay was correspondingly shorter at these times (Tables IX and X). This is doubtless due to the practical exigencies of discharge planning which, because of the low socioeconomic nature of a great number of delirium tremens patients, makes winter discharges more formidable.

The Sample

Stratified sampling on the basis of age groups was selected to arrive at the sample of 20 cases for review. The correct proportion of cases was picked at random over the years. If a case turned out to be unsuitable, another case in the same age group was picked in the same way. About one

TABLE VI.—ADMISSIONS BY YEARS

Year	All Cases	Per Cent	Median Length of Stay (Days)	Sample	Per Cent	Median Length of Stay (Days)
1952	62	8	7	...	...	...
1953	88	12	5	...	...	...
1954	98	13	7	...	...	...
1955	119	15	6	2	10	5
1956	107	14	6	6	30	9
1957	118	16	6	4	20	7.5
1958	126	16	5.5	4	20	12
1959 (incomplete)	49	6	6	4	20	7
TOTALS	767	100		20	100	

TABLE VII.—TREATING SERVICE

Service	All Cases	Per Cent	Median Length of Stay (Days)	Sample	Per Cent	Median Length of Stay (Days)
Psychiatric	664	87	6	8	40	5.0
Nonpsychiatric (medical, contagion, and others)	103	13	10	12	60	8.5
TOTALS	767	100		20	100	

TABLE VIII.—COMPARISON OF ADMISSIONS WITH POPULATION GROWTH IN NASSAU COUNTY

Year	Population in Nassau County	Neuropsychiatric Admissions per 100,000	Delirium Tremens per 100,000
1952	830,000	103	7
1953	890,000	120	10
1954	967,000	113	10
1955	1,039,404	129	11
1956	1,117,050	129	10
1957	1,209,000	132	10
1958	1,299,705	129	10

TABLE IX.—ADMISSIONS BY MONTHS

Month	All Cases	Per Cent	Median Length of Stay (Days)
January	56	7	7
February	52	7	7
March	66	9	7.5
April	56	7	6
May	76	10	7
June	79	11	6
July	77	10	4
August	52	7	4
September	65	8	4
October	64	8	6
November	57	7	5
December	67	9	5
TOTALS	767	100	

TABLE X.—ADMISSIONS BY SEASONS

Season	All Cases	Per Cent	Median Length of Stay (Days)
Spring	198	26	7
Summer	208	27	5
Autumn	186	24	6
Winter	175	23	6.5
TOTALS	767	100	

TABLE XI.—MARITAL STATUS OF PATIENTS

Marital Status	Frequency	Per Cent
Single	6	30
Married	10	50
Separated	3	15
Divorced	1	5
TOTALS	20	100

TABLE XII.—RELIGIOUS AFFILIATIONS OF PATIENTS

Religious Affiliation	Frequency	Per Cent
Catholic	6	30
Protestant	14	70
Jewish	...	...
Totals	20	100

fourth of the cases were found to be unsuitable and had to be replaced. This was because a review of the chart showed the diagnosis to be wrong, the case properly falling into the category of acute alcoholism, incipient delirium tremens, alcolepsy, and so forth. Cases were not included unless they showed the characteristic psychosis. It can be seen that the sample is remarkably fair by comparing its sampling distribution with that of the entire group.

Other vital statistics from the sample show 13 (65 per cent) white patients and 7 (35 per cent) Negro patients, with a much higher incidence of delirium tremens in Negroes here than the incidence of Negroes in the entire county (3 per cent). This high incidence in Negroes is found in other series also.[1]

The frequency of admissions, comparing differences in marital status and religion, is shown in Tables XI and XII. The figures in Table XII undoubtedly constitute a biased estimate because of the large number of Negroes in the sample who are predominantly Protestant.

The length of time during which the patient had been alcoholic was mentioned in 10 cases. This ranged from eight to

TABLE XIII.—Objective Manifestations in Order of Frequency

Manifestations	Frequency	Per Cent
Tremors	20	100
Hallucinations	17	85
Clouding	16	80
Agitation	13	65
Delusions	13	65
Disorientation	12	60
Cirrhosis	12	60
Convulsions	6	30
Incontinence	4	20

TABLE XIV.—Laboratory Findings in Order of Frequency

Laboratory Finding	Frequency	Per Cent
Albuminuria	7	35
Glucosuria	4	20
Acetonuria	3	15
Abnormal liver function tests	3	15

TABLE XV.—Methods of Treatment

Regime	Number of Patients	Median Duration of Delirium (Days)
Sodium amytal	14	2
Phenobarbital, dilantin, and vitamins	11	2
Chlorpromazine	7	2

thirty-five years, with a median of twenty years.

Seven patients were prisoners in the prison ward. Such patients, committed usually for drunk and disorderly conduct, had developed delirium tremens while in the Nassau County jail.

The length of the prodromal period after the cessation of drinking and the onset of confusion was mentioned in 11 cases. This ranged from two to three days with a median of three days. Actual evidence of confusion, hallucinations, and delusions which constitute the delirium or psychosis proper (duration of delirium) was gleaned from the nurses' and doctors' notes. This ranged from one to ten days, with a median of two days. In the Bellevue Hospital series this duration (mean) is seven days.[3]

After this, a period of varying duration was left for observing the patient to see that he was definitely out of danger or for studying or treating him medically. This period ranged from two to eleven days, with a median of three and a half days. Temperature elevation of from one to twelve days was present in 17 of these patients, with a median duration of two and a half days. This correlates closely with the duration of the delirium (rho = .604, significant at the .01 level) and might conceivably make the most objective and reliable criterion for determining the end of the psychosis.

Fifteen of the patients had an elevated white count ranging from 7,100 to 15,500, with a median of 10,675 and a mean of 11,427. Abnormal and clinical laboratory findings in the order of frequency are shown in Tables XIII and XIV.

Associated medical conditions in the order of frequency are shown in Table V. The number of admissions for delirium tremens in each patient ranged from 1 to 13 with a median of 1. The incidence of such multiple admissions was 7 or 35 per cent.

Treatment appears to have been largely traditional and routine (Table XV). Paraldehyde, the standby in many hospitals and the beloved drug of the alcoholic patient, is seldom used in Meadowbrook Hospital. It is readily apparent that none of the routines used either alone or in combination with other methods has any advantage in shortening the duration of the psychosis.

TABLE XVI.—Median Test[4]

Relation to Median Duration of Delirium	Amytal		Phenobarbital, Dilantin, and Vitamins		Chlorpromazine		Total
	Number of Cases	Expected Frequency	Number of Cases	Expected Frequency	Number of Cases	Expected Frequency	
Above median	3	(4)	4	(3.33)	3	(2.67)	10
Below median	3	(2)	1	(1.67)	1	(1.33)	5
Totals	6		5		4		15

x^2 = 1.27, 2 d. f. = n. s.

It is apparent also that the median duration of the delirium is a very stable and reliable criterion against which to test any new therapeutic procedure (Table XVI). Any such procedure, if it causes a significant increase in the number of cases below the median or shortens this period to one day, can be reliably said to have a genuine therapeutic value. A still shorter period, however, would be impossible by definition, since the psychosis must put in an appearance before a diagnosis can be made, and this would appear as one day in the statistics.

Summary

Cases of delirium tremens at Meadowbrook Hospital are very similar to those seen elsewhere with the important exception that they appear to be milder and to last a shorter time. The exact reason for this is not known, but it probably depends on the nature of the population of the county from which the hospital draws its patients and the increased likelihood that a patient who develops delirium tremens will be hospitalized quickly. The hospital's policy has always been very liberal in this respect.

The median duration of delirium appears to be a reliable criterion to use in any evaluation of treatment procedures. It is stable, readily determined by even superficial psychiatric study, and it is remarkably constant over all the various factors that influence the course of the illness.

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Preschool Training Program for Deafened Children

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THE Conservation of Hearing Center at Albany Hospital is not only concerned with the diagnosis of deafness, its cause, and degree but also with the rehabilitation of the patient. In the case of the school-age child or the adult this task is not as complicated as it is with children ranging in age from six months to five years. As stated in the first article of this series,[1] the school-age child is recommended for one or more of the following services, depending primarily on the child's degree of deafness, age, and intellectual potential: advantageous seating in the classroom, speech reading, speech correction and auditory training, a hearing aid, a conservation of hearing class, or a school for the deaf. Children fourteen years old and older, as well as adults, are referred to the New York State Bureau of Vocational Rehabilitation in the New York State Education Department for aptitude testing, program planning, job training, and finally job placement at the conclusion of their educational and vocational training program.

Early Diagnosis Important

The child from birth to school age presents the greatest problem. At anytime from six months to three years of age, depending on the alertness and experience of the parents, the child who fails to develop speech or respond to sound stimuli is referred by a private otologist, pediatrician, or public health nurse to the Conservation of Hearing Center for evaluation. When hearing loss has been determined to be the cause of little or no speech production the child and parents are eligible for the preschool training program.

Many parents of deaf children express the feeling that the most trying times are those which lie between the diagnosis of deafness and the beginning of training. From six months to five years of age is, without question, too long a period to wait until these children become eligible for Conservation of Hearing classes. In these formative years the parents are confronted with a problem they know little about and with which they are untrained to cope. It is an established fact that a hearing deficit, if neglected, manifests itself not only in a personality problem but also in child and parent frustrations. Therefore, early detection as well as proper training and guidance are of the utmost importance.

Many schools for the deaf accept children at the age of three years on a residential basis. Some authorities feel, however, that three years is too early an age at which to separate the child from the parent. It was to close this gap, to take advantage of the maximum learning period for language development, and to offer some help to the parents that the preschool training program at the Albany Hospital Conservation of Hearing Center was first inaugurated eight years ago. The aim of the program is to instruct and guide the child and his parents from the diagnosis of deafness through the formative years until the child reaches the age when formal instruction can be started. The program at no time separates the child and the parent. Parents are required to attend training sessions with their children for the prime purpose of observing the lesson methodology and teaching technics so that similar daily lessons can be carried out in the home. It is on this basis only that a child is accepted in the preschool training program.

The deafened child must be taught many things which children with normal hearing learn automatically as a result of constant exposure to sound stimuli. The senses of sight and touch must be trained to compensate for and supplement faulty hearing. The training period is slow and tedious, often discouraging and frustrating, but progress in terms of general discipline, peer relationship, acceptance of amplification, and language stimulation is for the most part quite favorable. All deafened children, regardless of the degree of hearing loss, are brought into the program and experience the same type of training. Of course, children with greater residuals of hearing develop speech patterns more rapidly.

Basis of the Preschool Training Program

Preschool training at Albany Hospital Conservation of Hearing Center is divided into four categories: rhythm and sense training; auditory training; speech reading or lip reading; and speech and language development. Each of these categories shall be considered separately in the order in which it is introduced.

The first meeting is devoted to explaining to the parents, one or both accompanying the child, the physical setup necessary for their home teaching. A similar setup is used in the Conservation of Hearing Center. It consists of a small child's table with two children's chairs facing each other. The table is placed in front of a window. The chair facing the window is used by the teacher or parent since the light must be on the teacher's face. The chair with back to the window is used by the child. The parent is shown samples of the types of materials needed for the first few lessons.

Rhythm and Sense Training.—At the second meeting, the child has his first formal lesson. He is introduced to sound by a strong rhythm record on the auditory training unit. Initially, the sound stimuli are channeled through the speaker while the teacher and child clap in rhythm to music. Headpieces are next introduced and the speaker is shut off so that the music comes only through the ear phones. Clapping is continued. The Albany Hospital Conservation of Hearing Center has available small desk model hearing aids with individual ear molds for home use. These instruments house loudness balance controls to compensate for measured differences between ears. Once the child has been introduced to amplified sound through the speaker and headpieces the desk model unit is adjusted to the child's practical threshold of hearing. The set is loaned to the parent for a period of time until the child is ready to use his own hearing instrument. It has been observed that exposure to sound stimuli on the desk model hearing aid for several weeks has often resulted in a gain on re-audiometric evaluation. This would imply that introduction and adjustment to sound stimuli lends itself to a more reliable threshold measurement.

The staff at the Center feel very strongly that individual aids should not be placed on children until not only are they able to recognize amplified sound but also they begin to produce it. It should be emphasized that excessive amplification over too long a period of time has been known to bring about an antipathy to amplification and even to destroy what little hearing some children may have. For this reason, it is felt that amplification should be handled with extreme care and that the hearing aid should not be fitted to the child until the pure tone audiogram is accurate.

The second formal lesson introduces sense training in the form of matching colors. In succeeding lessons, the matching of objects of various sizes, shapes, and colors is presented to coordinate the kinesthetic and visual senses. Picture matching and imitation of bodily movements follow. At succeeding lessons, the child is trained to imitate lip, teeth, and tongue movements. By these steps the child progresses from recognition of gross similarities to the detection of minute differences. The main objective of this rationale is to promote a "carry-over" in terms of having the child discriminate between the various movements of the vocal organs to provide for good vowel and consonant production. Rhythm is a part of every lesson. Research has indicated that intelligibility of speech depends a great deal on the rhythmic patterns.[2]

Auditory Training and Speech Reading.—When sense training and rhythm have become an integral part of each lesson the auditory training begins. The child is taught to discriminate between sounds of various pitches. The next step involves vowel discrimination. Objects such as a hat and a horn, a boot and a ball are utilized to demonstrate this. The child is taught to discriminate between objects with similar consonant content but with different vowel components. Later, the lips are covered and sound alone is presented. Speech reading is taught in conjunction with auditory training when words, phrases, short sentences, and finally stories are incorporated into the lesson.

Speech and Language Development.—Once the child has learned to imitate bodily movements and facial expressions, lip and tongue exercises are added to develop the vocal musculature necessary for good speech production. Breath control exercises are also started. It is a matter of months and sometimes years before all this is accomplished. Usually, speech production begins with vowel imitation to produce the animal sounds. Pictures and objects are used in play situations. The parents are advised to talk constantly to the child and encourage him to vocalize at random. It is emphasized that formal speech therapy can best be handled in the school environment when the child is at the age at which he will more readily benefit from this type of instruction.

The instruction of all children is started individually with their parents. As soon as the child is able, he and his parents join another child of approximately equal age and ability. As the children mature, other children and their parents are added to the group. This is done for two reasons. First, imitation and competition with other children produce more rapid learning. In addition, the parents are helped immeasurably by sharing experiences and problems with the parents of other deafened children. All children are kept in training classes until they are of age to enter a regular class, a conservation of hearing class, or a school for the deaf, the choice depending on their degree of deafness.

This, in brief, is the program for the deafened preschool child at the Conservation of Hearing Center at Albany Hospital. You will note that the parent is an integral part of the program. It was found that in spite of the parent-teacher-child learning situation, there was a need for more help to be offered to the parent than could be given in the existing preschool training period. The last article of this series will discuss the parent education program which supplements the preschool training.

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(Number two in a series of three articles on the Conservation of Hearing Center, Albany Hospital)

We find scarcely any persons of good sense save those who agree with us.—La Rochefoucauld

Some Effects of Diuresis with Hydrochlorothiazide

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HYDROCHLOROTHIAZIDE is a new potent oral diuretic. This report deals with the use of hydrochlorothiazide in a clinical study of 26 patients with edema of varied etiologic backgrounds.

Hydrochlorothiazide, a benzene disulfonamide, differs from chlorothiazide in that the heterocyclic ring has been saturated by two hydrogen atoms. Recent studies have shown that with hydrochlorothiazide: (1) The primary effect is the inhibition of the renal tubular absorption of sodium and chloride ions, resulting in a secondary loss of water, (2) chloride excretion is greater than sodium excretion, (3) bicarbonate is not affected in any definite way, and (4) urinary loss of potassium and bicarbonate is relatively less than that seen with chlorothiazide.[1,2] After the intravenous administration of hydrochlorothiazide there often is a transient reduction of the glomerular filtration rate. Para-amino hippurate excretion has been shown to become slightly increased, indicating that the diuretic and natruretic response is essentially a tubular effect and not related to the increased glomerular filtration rate.[3]

The results of preliminary experiments indicate that on a milligram for milligram basis hydrochlorothiazide is 20 times more potent than chlorothiazide and appears to be more potent than the usual maximal dosages of parenterally administered organomercurial diuretics.[4]

Materials and Methods

In this study 28 courses of hydrochlorothiazide were administered orally in therapeutic divided doses from 100 to 200 mg. per day to 26 hospitalized patients with edema of varied causation. The clinical diagnoses of these patients are given in Table I.

TABLE I.—CLINICAL DIAGNOSES OF THE 26 PATIENTS RECEIVING HYDROCHLOROTHIAZIDE THERAPY

Diagnosis		Number of Patients
Cardiac disease		15
Hypertensive arteriosclerotic heart disease	5	
Hypertensive cardiovascular disease	2	
Arteriosclerotic heart disease	1	
Rheumatic heart disease	5	
Luetic heart disease	1	
Cor pulmonale	1	
Hepatic disease		10
Laennec's cirrhosis	9	
Uncertain	1	
Renal disease (subacute glomerulonephritis with nephrotic syndrome)		1

In addition to daily weight and blood pressure determinations, the following base-line laboratory studies were obtained for each patient: serum electrolytes, complete blood count, urinalysis, blood urea nitrogen, chest roentgenogram, and electrocardiogram. Thereafter all but the latter two studies were repeated at least weekly. Beginning at admission each patient with hepatic disease was submitted to periodic liver function tests in addition to the base-line studies.

All patients were put on a low-sodium diet. Each patient with a cardiac disease received a digitalis preparation; a few had received a mercurial injection prior to the hydrochlorothiazide therapy. Several of the patients with a hepatic disease received supplemental potassium, and all of them were given a multiple-vitamin preparation daily.

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TABLE II.—EFFECT OF HYDROCHLOROTHIAZIDE THERAPY IN 15 PATIENTS WITH CARDIAC DISEASE

	Patient			Hydrochlorothiazide Therapy		Weight (Pounds)			Blood Pressure		Blood Urea Nitrogen (Mg. per 100 Ml.)		Electrolytes (mEq. per L.)		
Case	Sex	Age (Years)	Diagnosis	Dosage (Mg. per Day)	Duration (Days)	Initial	Final	Loss	Initial	Final	Initial	During Therapy	Initial	During Therapy	Side-Effects and Comments
1	Male	51	HCVD*	200	6	197	185	12	210/140	160/110	. .	. .	104 (Serum chloride)	85	. . .
2	Female	69	HCVD	200	15	176	167	9	156/62	126/64	16	41	. . .	. . .	Concomitant genitourinary infection.
3	Male	55	RHD†	200	12	142	125	17	. . .	. . .	15	35	. . .	. . .	Blood urea nitrogen returned to 19 mg. (per 100 ml.) nineteen days after drug was discontinued. Uric acid stable at 3.6 mg. (per 100 ml.)
4	Male	65	RHD	100	19	148	117	31	. . .	. . .	. .	. .	5.1 (Serum potassium)	3.5	12 pounds of the weight loss after one paracentesis.
4		Second Course		200	6	142	127	15	. . .	. . .	. .	. .	. . .	. . .	Sodium salt of meralluride with theophylline (Mercuhydrin) 2 cc. intramuscularly in first two days of therapy.
5	Male	69	HASHD**	200	7	150	136	14	200/110	144/76	24	42	. . .	. . .	Concomitant genitourinary infection; blood urea nitrogen fluctuated.
6	Female	68	HASHD	200	6	. . .	. . .	. .	280/110	220/80	25	63	. . .	. . .	Unable to weigh patient. Blood urea nitrogen rose to 63 mg. after five days of therapy; returned to 25 mg. twenty-seven days later.
7	Male	65	HASHD	200	5	173	155	18	150/104	120/80	16	27	. . .	. . .	Serum uric acid 7.3 mg. and blood urea nitrogen 27 mg. after five days of therapy; serum uric acid 4.9 mg. and blood urea nitrogen 20 mg. seven days later.
8	Male	39	HCVD and bronchitis	100	21	222	195	27	150/110	150/100	. .	. .	. . .	. . .	Also received Serpasil.
9	Male	53	RHD	200	6	138	112	26	. . .	. . .	. .	. .	. . .	. . .	20 pounds of the weight loss in first four days of therapy.
9		Second Course		200	8	147	119	28	. . .	. .	. .	. .	. .	. . .	. . .
10	Male	70	RHD	200	9	164	136	28	160/110	130/70	32	35	6.1 (Serum potassium)	4.5	Benign prostatic hypertrophy with urinary retention.
11	Male	47	RHD	200	11	151	137	14	. . .	. . .	. .	. .	5.2 (Serum potassium)	3.7	Received 2 cc. of the meralluride salt combination on first day of therapy and supplemental potassium chloride.
12	Male	77	HASHD	100	10	123	115	8	180/100	130/90	21	41	. . .	. . .	Benign prostatic hypertrophy. Serum uric acid 5.3 with blood urea nitrogen elevation. Latter returned to 25 mg. twenty-seven days after drug was discontinued.
13	Male	69	ASHD††	200	6	194	160	34	. . .	. . .	. .	. .	. . .	. . .	Expired suddenly on eighth hospital day.
14	Male	64	LHD***	200	9	135	125	10	. . .	. . .	29	45	. . .	. . .	. . .
15	Male	59	Cor pulmonale and obesity	100	25	246	235	13	. . .	. . .	. .	. .	. . .	. . .	Also on weight reduction diet.

* Hypertensive cardiovascular disease.
† Rheumatic heart disease.
** Hypertensive arteriosclerotic heart disease.
†† Arteriosclerotic heart disease.
*** Luetic heart disease.

TABLE III.—EFFECT OF HYDROCHLOROTHIAZIDE THERAPY IN 10 MALE PATIENTS WITH LIVER DISEASE*

		Hydrochlorothiazide Therapy		Weight (Pounds)				
Case	Patient's Age (Years)	Dosage (Mg. per Day)	Duration (Days)	Initial	Final	Loss	Other Therapy	Side-Effects and Comments
1	48	200	54	171	142	29	Low-sodium diet, potassium chloride	21 pounds of the weight loss in first fourteen days of therapy.
2	58	200	10	194	177	17	Low-sodium diet, potassium chloride	Hepatic precoma. Serum chloride dropped from 142 to 129 mEq. per L. Petechial rash after ten days of therapy.
3	54	200	30	147	144	3	Low-sodium diet	Diuresis of 46 pounds with sodium salt of meralluride combination prior to therapy with hydrochlorothiazide.
4	55	100	20	143	125	18	Low-sodium and low-protein diet, potassium chloride	Required multiple blood transfusions for concomitant upper gastrointestinal bleeding.
5	45	100	32	154	141	13	Low-sodium diet	. . .
6	63	100 200	14 6	159	152	7	Low-sodium diet, potassium chloride, iron	"Dry" weight. 150 pounds.
7	37	100	14	217	171	46	Low-sodium diet, blood transfusions	Additional sixty days of drug therapy (100 mg. on alternate days) resulted in no significant weight change.
8	45	200	14	182	135	47	Low-sodium diet, blood transfusions	20 pounds of the weight loss in first four days of therapy.
9	67	100	4	139	139	0	Low-sodium diet, potassium chloride	Hepatic precoma after four days of therapy.
10	68	100	9	154	157	+ 3	Potassium chloride	No weight loss.

* Laennec's cirrhosis except Case 6, causation unknown.

Results

The results in 25 patients of this study are summarized in Tables II and III.

CARDIAC DISEASE.—All but 1 of the 15 patients with a cardiac disease (Table II) showed striking improvement after therapy, manifested by decreased dyspnea and a diminution of edema with associated weight loss. The 1 patient who did not respond (Case 6) was an obese female with hypertensive arteriosclerotic heart disease whose course could not be fully evaluated because she could not be weighed regularly. Hydrochlorothiazide was discontinued in this patient after six days of therapy, when her blood urea nitrogen rose from a pretreatment level of 25 mg. to 63 mg. per 100 ml.

A significant rise in the blood urea nitrogen was noted in 8 patients in this group (Cases 2, 3, 5–7, 10, 12, and 14), 5 of whom had marked hypertension on admission (Cases 1, 5, 6, 10, and 12). A concomitant urinary tract infection was present in 2 of the 8 patients (Cases 2 and 5), which was confirmed by urinalysis and urine culture.

Of the 7 hypertensive patients (Cases 1, 2, 5–8, and 12), 5 responded with a notable and sustained lowering of blood pressure during the course of therapy (Cases 1, 5–7, and 12). Although 3 patients with a cardiac disease had a decrease of 1.6 mEq. per L. in their serum potassium levels, these levels remained within the normal range. One patient's serum chloride fell from 104 mEq. to 85 mEq. per L. after six days of therapy (Case 1).

All of the 5 patients with rheumatic heart disease responded with significant diuresis (Cases 3, 4, and 9–11), as did the 1 patient with luetic heart disease (Case 14). One patient in the rheumatic group (Case 3) and the patient with luetic heart disease developed a substantial rise in blood urea nitrogen content while on hydrochlorothiazide. The 1 patient with cor pulmonale had a satisfactory and uneventful weight loss while on the drug (Case 15).

HEPATIC DISEASE.—In 6 of the 9 patients with Laennec's cirrhosis (Cases 1, 2, 4, 5, 7 and 8, Table III) moderate to striking diuresis was noted. The weight loss ranged from 7 to 47 pounds during the course of therapy. One patient lost 20 pounds in the first four days of therapy (Case 8). Prior to receiving hydrochlorothiazide each of the cirrhotic patients had peripheral edema as well as ascites and showed profound abnormalities in liver function tests. There was essentially no change in the liver function test findings while these patients received hydrochlorothiazide. One patient showed a significant alteration in the serum electrolyte values (Case 2).

Prephepatic coma characterized by mental confusion and/or a flapping tremor occurred in 2 of the cirrhotic patients while they were on this agent and supplemental potassium therapy (Cases 2 and 9). There was no decrease in serum potassium and there were no other clinical events, such as gastrointestinal hemorrhage or infection, associated with these episodes, which cleared within thirty-six hours after the hydrochlorothiazide was discontinued. In 1 of these patients (Case 2) the serum sodium decreased from 142 mEq. to 129 mEq. per L., and a transient generalized petechial rash appeared after ten days of therapy but subsided soon after the drug was discontinued.

None of the patients with hepatic disease was hypertensive, and no elevation of the blood urea nitrogen was noted in this group during or after therapy. The 1 patient with hepatic disease of undetermined causation (a liver biopsy prior to therapy revealed bile stasis and minimal periportal fibrosis) lost only 7 pounds after twenty days on hydrochlorothiazide (Case 6). His "dry" weight on discharge was 150 pounds.

RENAL DISEASE.—The 1 patient with subacute glomerulonephritis (confirmed by renal biopsy) and the nephrotic syndrome received hydrochlorothiazide for seventeen days. The response was difficult to evaluate since a slow gradual diuresis was apparent prior to the institution of the hydrochlorothiazide therapy. His blood urea nitrogen level fluctuated over a wide range before and after treatment. He was hypertensive on admission but not at the time the hydrochlorothiazide was given.

Comment

In this study hydrochlorothiazide at an oral dosage of 50 to 100 mg. twice a day proved to be a potent diuretic agent in the treatment of patients with edema of varied causation. Of a total of 26 patients receiving 28 courses of therapy, there was satisfactory diuresis in 14 of the 15 patients with cardiac disease and in 7 of the 10 patients with hepatic disease.

An elevation of the blood urea nitrogen was noted in 8 patients with cardiac disease, 5 of whom had hypertension on admission. Of these patients, 2 had a concomitant urinary tract infection and 1 had postrenal urinary obstruction secondary to benign prostatic hypertrophy. The rise in the blood urea nitrogen was unsustained and apparently benign. It returned to normal in each of these patients within seven to twenty-seven days after the drug was discontinued. None of the patients with hepatic disease was hypertensive, and no one in this group developed an elevated blood urea nitrogen. The significance of the rise in the level of blood urea nitrogen in patients receiving hydrochlorothiazide merits further study.

Other investigators have reported an elevation of the serum uric acid to be associated with chlorothiazide therapy.[5,6] Serial serum uric acid studies were done on 3 patients whose blood urea nitrogen rose while they were on hydrochlorothiazide therapy. In 1 patient (Case 7, Table II) the serum uric acid rose to 7.3 mg. per 100 ml. after five days of therapy, at which time the blood urea nitrogen was 27 mg. per 100 ml. Hydrochlorothiazide was discontinued, and both the blood urea nitrogen and uric acid values returned to normal in seven days. The serum uric acid levels were normal in the 2 other patients who were studied (Cases 3 and 12, Table II). None of the patients studied had a gouty diathesis. The hyperuricemia and blood urea nitrogen elevations occasionally observed in patients receiving a drug of the chlorothiazide group appear to be phenomena of different origin, the exact nature and mechanism of which is unknown at present.

A decrease in the serum potassium levels with chlorothiazide and hydrochlorothiazide therapy has been reported previously.[4,7] There was a 1.6 mEq. per L. drop in serum potassium in 3 patients in this study, but the values remained within the normal range. Supplemental potassium administration was not necessary in any of the patients with cardiac disturbances in this study. The serum chloride level decreased 19 mEq. per L. in 1 patient with a cardiac disease, and the serum sodium dropped 13 mEq. per L. in 1 patient with cirrhosis. There was no significant alteration of the serum electrolyte pattern in the remainder of the patients who were studied.

Of the 7 patients with hypertensive disease, 5 responded with a sustained and significant lowering of blood pressure. It should be noted that this decrease occurred during the period these patients were on bed rest and on a low-sodium diet and at a time when their general condition was progressively improving. In 1957 Wilkins[8] reported on the antihypertensive effects of chlorothiazide.

Two of the patients with Laennec's cirrhosis developed prehepatic coma while on hydrochlorothiazide and supplemental potassium therapy. No significant change in their serum potassium values was associated with these events. Other than occasional nausea in several patients and a transient generalized rash in 1 patient, no untoward or toxic manifestations were noted to accompany the ingestion of hydrochlorothiazide at this dosage level.

Summary

Hydrochlorothiazide at an oral dosage of 50 to 100 mg. twice a day is an effective diuretic in the treatment of patients with edema of cardiac and hepatic origin. A significant rise in the blood urea nitrogen levels was noted in 8 patients with cardiac disease, 5 of whom were hypertensive on admission. The blood urea nitrogen elevation was unsustained and apparently benign. Of the 7 patients with cardiac disease who were hypertensive, 5 responded with a significant and sustained lowering of blood pressure. One patient who developed a rise in the blood urea nitrogen level also had transient hyperuricemia. Supplemental potassium administration was not necessary in any of the patients with cardiac disease. There was no significant alteration of the serum electrolyte pattern in 24 of the 26 patients who were studied.

Two patients with Laennec's cirrhosis developed prehepatic coma while on hydrochlorothiazide and supplemental potassium therapy. Nausea in several patients and a transient generalized rash in 1 patient were the only untoward symptoms noted to accompany the administration of hydrochlorothiazide at this dosage schedule.

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No man is really happy or safe without a hobby.—SIR WILLIAM OSLER

Intra-Articular Administration of Triamcinolone Acetonide

A Preliminary Report

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THE use of intra-articular corticosteroid compounds is known to provide effective local palliation of symptoms in conditions such as osteoarthritis, rheumatoid arthritis, bursitis, and related arthrosis.[1−10] Usually relief is attained within forty-eight hours, although the effect of a single injection is often temporary, and repeated injections at weekly or monthly intervals are generally required. In osteoarthritis and in rheumatoid arthritis, intra-articular therapy may be particularly helpful. In rheumatoid arthritis intra-articular steroid therapy may also be of great value. It is not intended that intra-articular steroids be used as the basis for treatment in rheumatoid arthritis but this treatment may add greatly to the comfort of the patient under varying circumstances. In rheumatoid patients with involvement primarily of one or two joints, intra-articular therapy may obviate the need for systemic treatment. Some rheumatoid patients receiving systemic treatment may have a good response in all but one or two joints. In these cases local therapy to the resistant joints may make the use of large systemic doses of steroid unnecessary. Patients with rheumatoid arthritis, in whom systemic steroid is contraindicated, may be benefited by local therapy. In the customary dosage local instillation of steroids also has the advantage of producing negligible systemic effects.[2] In certain joints, notably the hip, larger and more frequent dosages are generally required to alleviate the symptoms.[3,4]

The effect of intra-articularly instilled steroid is temporary, and usually the injections may be given at weekly to monthly intervals. The degree of response varies, but most injected joints derive some relief. The steroids may be used successfully in most peripheral joints. The technic is not difficult. The procedure may be used with safety in the office or in an outpatient department. Administration may cause some pain which can be minimized by the use of procaine or ethyl chloride periarticularly. Some physicians prefer not to use local anesthesia after they have mastered the technic. The most frequently injected joints are the knees, shoulders, elbows, ankles, wrists, hips, and fingers. The injection of the hip joint, because of its anatomic position, is difficult and results generally are less satisfactory.

Intra-articular steroid therapy is not practical in patients with widespread rheumatoid disease. It should not be used in cases of arthritis caused by specific bacterial agents such as septic, gonorrheal, or tuberculous arthritis. Caution must be used if there is evidence of infection near the joint. There is a definite risk in the intra-articular administration of steroid. Sterile precautions must be observed just as in the performance of any other paracentesis or a lumbar puncture. The technic of intra-articular injection is available and has been described adequately. The steroid must be placed within the joint space. Often it is difficult to be sure if the needle is placed properly. As the needle advances, frequently it can be felt to pierce the joint capsule and then to advance easily with less pressure required. If there is fluid in the joint, the position of the needle is certain. If the position of the needle is uncertain, a small amount of air can be injected after first determining that a blood vessel has not been entered. If the needle is in the joint space, the air will enter freely and the palpating hand can feel the air rush into the joint. If the plunger of the syringe rebounds, the needle is not in the proper position.

While it is difficult to compare clinically the relative parenteral effectiveness of the various corticosteroids, it has been established that neither cortisone nor prednisone is especially useful by the intra-articular route, whereas the efficacy of hydrocortisone acetate, prednisolone acetate, tertiary-butylacetate, and triamcinolone[1] has been amply demonstrated. Recently a derivative of triamcinolone, identified as triamcinolone acetonide (Kenalog)* has become available for parenteral use. This report is a preliminary evaluation of triamcinolone acetonide for intra-articular therapy of several joint diseases.

Patients and Procedures

The Patients.—Sixty-one unselected patients from the Arthritis Clinic of the New York University Medical Center were given triamcinolone acetonide parenterally. The conditions treated included osteoarthritis (26 patients); rheumatoid arthritis (12 patients); acute or chronic subdeltoid bursitis (13 patients); and miscellaneous arthrosis, gout, tenosynovitis, and psoriatic arthritis (10 patients). As a rule, the patients were elderly, particularly those patients with degenerative joint disease, as is commonly observed with this condition. In patients with rheumatoid arthritis, intra-articular therapy was employed when systemic steroid therapy was contraindicated (as in 1 patient with concurrent tuberculosis), when previous oral steroid therapy was ineffective, when only one or two joints were primarily involved, or when a flare-up of symptoms was observed in specific joints.

The Medication.—A sterile aqueous suspension containing 10 mg. of triamcinolone acetonide per cubic milliliter was used. The drug was injected intra-articularly in dosages of from 5 to 20 mg., depending on the volume of suspension that the swollen joint would hold. The injection was repeated when necessary at intervals of from several days to one month. The technic has been described adequately in previous reports.[1,2]

All of these patients had been receiving intra-articular steroids prior to the use of triamcinolone acetonide. In general, they had received injections every seven to twenty-eight days. Previous therapy had been with hydrocortisone, hydrocortisone tertiary-butylacetate, and prednisolone. These three drugs had been found to be equally effective. The rheumatoid patients were stabilized in that an intra-articular injection lasted a rather specific length of time and gave a certain amount of relief of symptoms and reduction of joint swelling which were fairly consistently reproducible with repeated injections. None of the patients knew that a new drug was being substituted. The knee was the joint injected most commonly The wrist, ankle, shoulder, and the small joints of the hand were next in frequency of injection. The hip joint was injected in 1 case of osteoarthritis. For the knee, hip, and shoulder 50 mg. of drug were used. For the elbow and ankle 25 mg. were used, and smaller doses were given for the smaller joints, depending on the volume of suspension that the swollen joints could hold. All patients treated were ambulatory. Sterile precautions were maintained at all times. Rubber gloves were not used. No complications were encountered. There were no untoward reactions except for occasional local pain at the site of injection for twenty-four hours in several cases.

In 4 patients the injections were made subcutaneously: in 1 patient who had stenosing synovitis of the left thumb, the drug was injected around the involved area of the tendon.

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* Supplied by The Squibb Institute for Medical Research, New Brunswick, New Jersey.

TABLE I.—Results of Treatment with Intra-Articular Triamcinolone Acetonide

Diagnosis	Number of Patients	Grades of Improvement* I	II	III	IV
Rheumatoid arthritis	12	8	3	1	0
Osteoarthritis	26	12	7	4	3
Subdeltoid bursitis	13	10	2	1	0
Other arthroses	10	5	4	1	0

* Grade I—Complete remission.
Grade II—Major improvement, minimal residual joint signs.
Grade III—Minor improvement, joint swelling still present.
Grade IV—No improvement.

Results

Of 18 patients with osteoarthritis, 11 patients exhibited good to excellent relief of joint symptoms; a fair response was observed in 4 instances, and in 3 patients the response was poor. Five of 7 patients with rheumatoid arthritis showed marked improvement, as did 5 of 6 patients with subdeltoid bursitis, and 7 of the 10 remaining patients with various other arthroses.

Twenty-eight of the 40 patients treated (70 per cent) responded satisfactorily to parenteral administration of triamcinolone acetonide. Some evidence of improvement was observed in 6 other patients. In 2 patients with severe pain associated with Heberden's nodes, an injection of 5 mg. (0.5 cc.) of triamcinolone acetonide into the finger joint eliminated all pain and swelling completely. In 2 other patients extensive effusion into the knee joint dried completely following therapy. In contrast, subcutaneous administration was relatively ineffective in 3 of 4 patients so treated.

There were no instances of local or systemic undesirable reactions to the drug, nor was it necessary to discontinue medication in any patient. These data are summarized in Table I.

Summary

1. The therapeutic effects of triamcinolone acetonide (Kenalog) administered parenterally were evaluated in 40 clinic patients with osteoarthritis and other related arthroses.

2. Satisfactory relief of joint symptoms was observed in 28 patients (70 per cent). Some improvement occurred in 6 additional patients; thus, 85 per cent of the patients treated showed at least some response. As with other corticosteroids, most patients required repeated injections at varying intervals for sustained relief.

3. There were no local or systemic undesirable reactions to the use of triamcinolone acetonide.

4. On the basis of these preliminary observations, triamcinolone acetonide appears to be a safe, potent, and effective preparation for parenteral administration in the symptomatic relief of degenerative joint disease, rheumatoid arthritis, bursitis, and related arthroses.

5. In view of the small number of cases, no attempt has been made to compare the effectiveness of triamcinolone acetonide with other intra-articularly injected corticosteroids in this preliminary report.

Addendum

A triamcinolone acetonide suspension consisting of 50 mg. per milliliter was used in 28 cases since the completion of this study. The results were equally as good as those which we have described. The higher concentration was particularly useful in the small joints of the hands and feet where only a small amount of suspension could be instilled.

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ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Antibiotic Susceptibility of Pathogenic Microorganisms Isolated at a Large New York City Hospital in 1959

S. STANLEY SCHNEIERSON, M.D., NEW YORK CITY

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Most of the currently available antimicrobial agents were once almost 100 per cent effective against the various bacterial species within their recommended spectrum of activity at the time of their introduction to the practice of medicine. With their continued widespread and indiscriminate use, resistance to their action has developed by an increasing proportion of strains. The time required for this complication to supervene and its extent has varied with each antibiotic agent and in different locales, factors influenced no doubt by the degree of each agent's use in the community.

Where such generally sensitive species as pneumococcus, beta hemolytic streptococcus, meningococcus, and gonococcus have been involved, no serious problem in this regard has arisen, with the possible exception of beta hemolytic streptococcus, to which increasing resistance to penicillin, tetracycline, and chloromycetin has been reported.[1,2] In spite of this exception the vast majority of strains in these categories continue to remain amenable to the action of appropriate antimicrobial agents. The situation with respect to Staphylococcus aureus, Streptococcus fecalis (enterococcus), Escherichia coli, Aerobacter aerogenes, Bacillus proteus, Pseudomonas aeruginosa (Bacillus pyocyaneus), and Klebsiella pneumoniae (Friedländer's bacillus), all potential pathogens, has not been as fortunate. An increasing proportion of individual strains within these bacterial species have become resistant to the action of the once almost universally effective chemotherapeutic agents.

As a result of this situation the clinician often is faced with a difficult problem in deciding which antibiotic product to administer, especially in acute and fulminating cases in which the delay required to perform sensitivity studies may prove harmful. Under these circumstances no alternative is available but to start treatment empirically with one or a combination of drugs until the hoped-for response is elicited. To alleviate this situation a study was conducted to assess the effectiveness of the various agents against specific organisms.

Materials and Methods

Sensitivity determinations against a variety of antibiotic agents were performed on a large number of pathogenic microorganisms belonging to different bacterial species. These microorganisms were isolated during 1959 in the Diagnostic Bacteriology Laboratory of The Mount Sinai Hospital from clinical pathologic specimens obtained from actual or suspected cases of clinical infection by means of the tube dilution procedure, a more precise and more accurate method than the more commonly employed disk-agar diffusion method. Included in these tests were a number of less prevalent but nevertheless important pathogenic organisms.

To provide information as to which antimicrobial products are presently most apt to prove effective against specific bacteria, data obtained from these tests were tabulated and analyzed. By this means it is hoped to establish the relative efficacy of the currently available antibiotic agents and thereby to furnish a guide for the selection of agents to be employed in the treatment of infections caused by these microorganisms. The proportion of strains belonging to each bacterial species found sensitive to each antibiotic agent was tabulated, and the relative efficacy of the different antibiotic agents against those bacterial species that exhibited the greatest variability in sensitivity in the past were depicted graphically.

To place this survey on a practical and rational basis, the readily attainable therapeutic blood level with each chemotherapeutic compound was employed as the criterion for classifying strains as sensitive or resistant rather than selecting arbitrary amounts for this purpose, as usually is done. For nitrofurantoin the urinary concentration was employed. Strains inhibited by the following concentrations per milliliter of medium were classified as sensitive: penicillin 5 units: erythromycin and oleandomycin 1 microgram, bacitracin 2 units, tetracycline 4 micrograms, polymyxin 5 micrograms, and the remainder of the antibiotics 10 micrograms. Strains inhibited by 400 micrograms per milliliter of nitrofurantoin and by 20 mg. per 100 ml. of sulfonamides or less were also considered sensitive. Although the concentration of 400 micrograms per milliliter employed for nitrofurantoin might at first appear to be excessively high, especially when compared with the concentrations usually employed for antibiotic agents, such urinary concentrations of nitrofurantoin are readily achievable.[3,4] This is not so with antibiotic agents. Since nitrofurantoin is employed primarily for the treatment of infections of the genitourinary tract, this criterion was considered valid.

Organisms requiring amounts greater than those cited to effect their inhibition were classified as resistant. For instance, an organism which is inhibited by 10 micrograms per milliliter of tetracycline and by 10 micrograms per milliliter of chloramphenicol, such as Staph. aureus, would be classified as resistant to the former and sensitive to the latter even though it is susceptible to the same amount of both agents, since this level is readily attained with chloramphenicol but not with tetracycline.

Test Technic

The tube dilution method is the procedure routinely employed in this laboratory to test bacterial sensitivity to antibiotic agents. The composition of the assay medium, the preparation of standard antibiotic dilutions, the age and the size of the bacterial inocula under test, and the temperature and the duration of incubation, all of which exert an influence on the outcome of sensitivity determinations, are carefully standardized. The medium that is employed is one that promotes rapid bacterial multiplication. It consists of trypticase (BBL*) 7.5 Gm., phytone (BBL*) 1.3 Gm., sodium chloride 2.15 Gm., and dipotassium phosphate 1.05 Gm. per L. of distilled water and is adjusted to a pH of 7.2 after sterilization by autoclaving.

Tests are performed in 2-ml. amounts by the addition of 1 ml. of a suitable dilution of a six-hour broth culture of the organism under

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* Baltimore Biological Laboratories, Inc.

TABLE 1. - ANTIBIOTIC SENSITIVITY OF PATHOGENIC MICROORGANISMS THAT HAVE EXHIBITED GREATEST VARIABILITY, ISOLATED DURING 1959

Antibiotic		Staphylococcus aureus	Streptococcus fecalis	Escherichia coli	Aerobacter aerogenes	B.proteus	Pseudomonas aeruginosa
Bacitracin	No. Tested	13	3	-	-	-	-
	No. Sens.	10	1	-	-	-	-
	% Sens.	76.9	33.3	-	-	-	-
Chloramphenicol	No. Tested	896	95	887	1014	555	518
	No. Sens.	528	58	660	547	375	92
	% Sens.	58.9	61.1	74.4	53.9	67.6	17.8
Erythromycin	No. Tested	970	848	-	-	-	-
	No. Sens.	681	628	-	-	-	-
	% Sens.	70.2	74.1	-	-	-	-
Kanamycin	No. Tested	34	9	10	25	10	18
	No. Sens.	33	3	9	23	10	5
	% Sens.	97.1	33.3	90.0	92.0	100.0	27.8
Neomycin	No. Tested	49	117	182	215	174	222
	No. Sens.	49	47	175	193	169	204
	% Sens.	100.0	40.2	96.2	89.8	97.1	91.9
Nitrofurantoin	No. Tested	92*	673	711	343	438	292
	No. Sens.	92	670	705	321	430	27
	% Sens.	100.0	99.6	99.2	93.6	98.2	9.2
Novobiocin	No. Tested	282	8	3	6	10	11
	No. Sens.	244	3	0	0	3	0
	% Sens.	86.5	37.5	0.0	0.0	30.0	0.0
Oleandomycin	No. Tested	60	102	-	-	-	-
	No. Sens.	44	76	-	-	-	-
	% Sens.	73.3	74.5	-	-	-	-
Penicillin	No. Tested	727	28	-	-	-	-
	No. Sens.	393	18	-	-	-	-
	% Sens.	54.1	64.3	-	-	-	-
Polymyxin	No. Tested	-	-	22	19	12	31
	No. Sens.	-	-	14	11	0	13
	% Sens.	-	-	63.6	57.9	0.0	41.9
Ristocetin	No. Tested	80	-	-	-	-	-
	No. Sens.	74	-	-	-	-	-
	% Sens.	92.5	-	-	-	-	-
Streptomycin	No. Tested	26	22	45	45	6	26
	No. Sens.	8	2	29	16	4	11
	% Sens.	30.8	9.1	64.4	35.6	66.6	42.3
Sulfonamides	No. Tested	5	18	20	19	9	17
	No. Sens.	0	2	3	2	8	1
	% Sens.	0.0	11.1	15.0	10.5	88.9	5.9
Tetracycline	No. Tested	977	234	331	333	182	287
	No. Sens.	566	67	212	170	12	96
	% Sens.	57.9	28.6	64.0	51.0	6.6	33.4
Vancomycin	No. Tested	195	11	-	-	-	-
	No. Sens.	188	10	-	-	-	-
	% Sens.	96.4	90.9	-	-	-	-

* These strains were isolated from the urinary tract. 14 strains were also tested for their sensitivity to furaltadone (Altafur). All 14 were inhibited by 10mcg./ml., but only 4 of these were inhibited by the therapeutically attainable blood concentration, 3 mcg./ml.

test to a series of tubes containing varying concentrations of a standard antibiotic

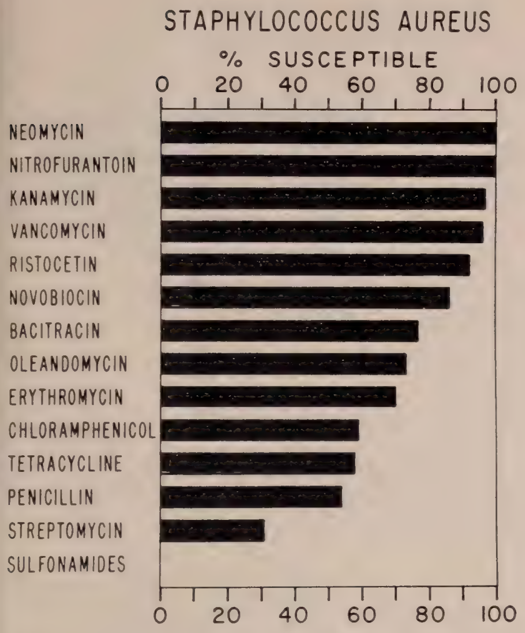

FIG. 1. Comparative susceptibility of strains of Staphylococcus aureus isolated in 1959 to different antimicrobial agents.

product in 1 ml. of the same broth. Dilutions of the preliminary six-hour broth cultures are all 10^{-6} except for pneumococcus, beta hemolytic streptococcus, and Streptococcus viridans, which are diluted 10^{-2}, and Staph. aureus and Staph. albus, which are diluted 10^{-4}. Tubes are incubated for eighteen hours at 37 C., after which time the minimum concentration of the antibiotic agent resulting in the complete visual inhibition of the standardized inoculum of the microbial strain under study is noted.

A growth control tube containing the same bacterial inoculum and 1 ml. of broth without any antibiotic is used with each determination. Because some components of the culture medium are capable of interfering with the activity of certain antibiotic products, for example, with sulfonamides, bacitracin, neomycin, and streptomycin, a dilute broth containing 3 parts of the medium that has been described and 5 parts of sterile distilled water was employed whenever microorganisms were tested against these antimicrobial agents to eliminate or minimize such interference.

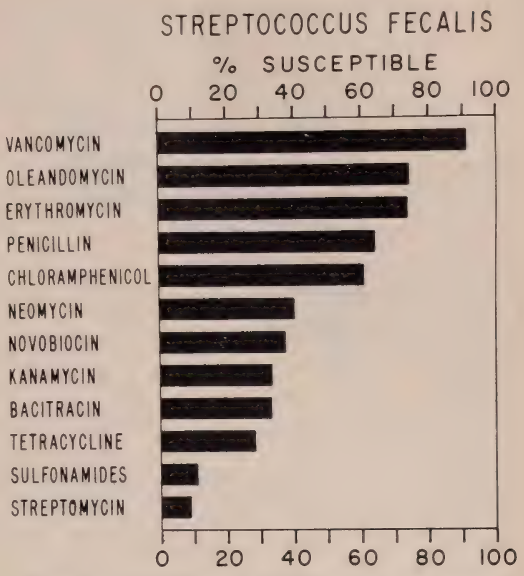

FIG. 2. Comparative susceptibility of strains of Streptococcus fecalis isolated in 1959 to different antimicrobial agents.

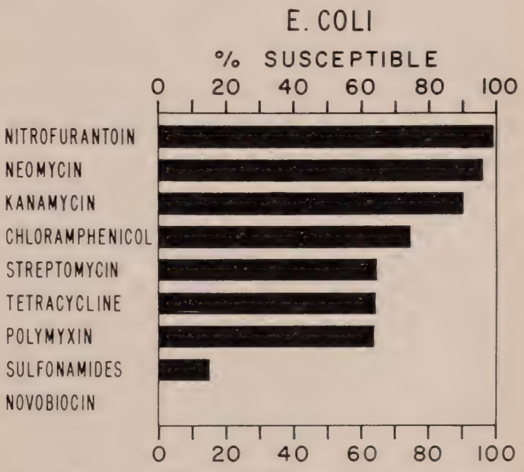

FIG. 3. Comparative susceptibility of strains of Escherichia coli isolated in 1959 to different antimicrobial agents.

Results

Susceptibility variation and increasing antibiotic resistance are particularly characteristic of a number of bacterial species of considerable pathogenic significance, namely Staph. aureus, Str. fecalis, E. coli, A. aerogenes, B. proteus, and Ps. aeruginosa. The percentage of strains of the total number of each tested found sensitive to the various

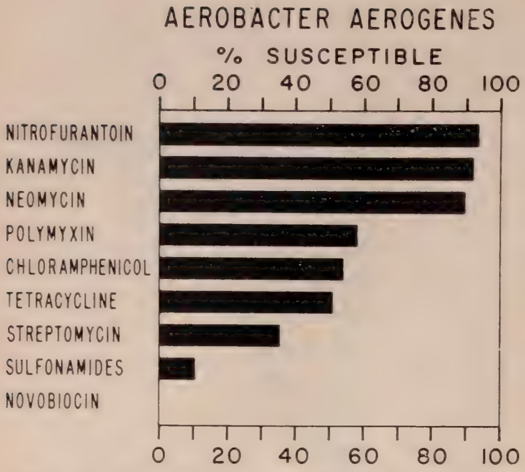

FIG. 4. Comparative susceptibility of strains of Aerobacter aerogenes isolated in 1959 to different antimicrobial agents.

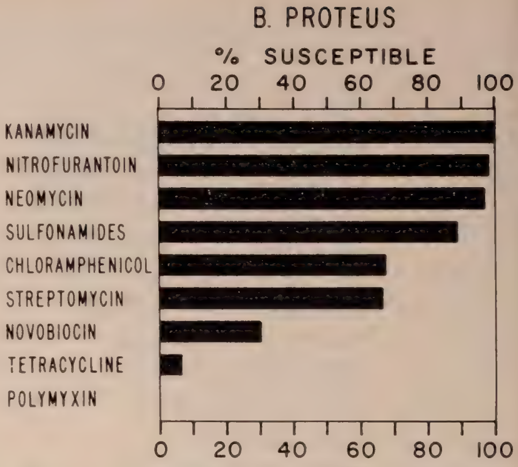

FIG. 5. Comparative susceptibility of strains of Bacillus proteus isolated in 1959 to different antimicrobial agents.

antibiotic agents ordinarily considered as being active against them is tabulated in Table I. Figures 1 to 6 depict the relative efficacy of different antibiotics against each species as indicated by the proportion of strains that were found susceptible to the action of the various antibiotics usually employed to combat infections caused by the respective organisms.

The proportion of strains of Staph. aureus (Fig. 1) currently sensitive to those antimicrobial agents that have been used most widely and for the longest period of time, namely oleandomycin (73.3 per cent), erythromycin (70.2 per cent,) chloramphenicol (58.9 per cent), tetracycline (57.9 per cent), penicillin (54.1 per cent), streptomycin (30.8 per cent), and sulfonamides (0 per cent), is lower than that to the more recently introduced antibiotic products or to those agents whose use is more limited because of the need for parenteral administration or because of a greater toxicity potential. The proportion of staphylococcal strains sensitive to the latter-day or more limited agents still remains high, for example, neomycin (100 per cent), kanamycin (97.1 per cent), vancomycin (96.4 per cent), ristocetin (92.5 per cent), novobiocin (86.5 per cent), and bacitracin (76.9 per cent). This is also the case with nitrofurantoin, which was found to be 100 per cent effective against 92 staphylococcal strains isolated from the urine. With Str. fecalis (Fig. 2) the situation is somewhat different in that neomycin (40.2 per cent), novobiocin (37.5 per cent), kanamycin (33.3 per cent), bacitracin (33.3 per cent), tetracycline (28.6 per cent), and streptomycin (9.1 per cent) were much less effective whereas erythromycin (74.1 per cent), penicillin (64.3 per cent), and chloramphenicol (61.1 per cent) were somewhat more effective against strains of this bacterial species as com-

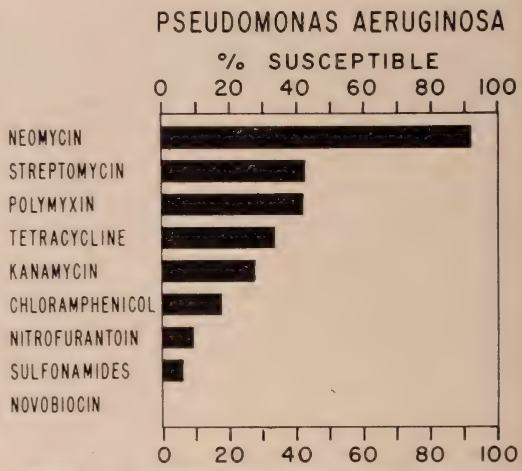

FIG. 6. Comparative susceptibility of strains of Pseudomonas aeruginosa isolated in 1959 to different antimicrobial agents.

TABLE II. - ANTIBIOTIC SENSITIVITY OF ADDITIONAL PATHOGENIC MICROORGANISMS ISOLATED DURING 1959

Antibiotic		Diplococcus pneumoniae	beta hemolytic Streptococcus	Streptococcus viridans	Salmonella	Klebsiella pneumoniae	Hemophilus influenzae
Chloramphenicol	No. Tested	12	13	10	20	12	27
	No. Sens.	12	13	8	20	9	27
	% Sens.	100.0	100.0	80.0	100.0	75.0	100.0
Erythromycin	No. Tested	47	139	34	-	-	-
	No. Sens.	47	135	31	-	-	-
	% Sens.	100.0	97.1	91.2	-	-	-
Neomycin	No. Tested	-	-	1	8	7	1
	No. Sens.	-	-	1	8	6	1
	% Sens.	-	-	100.0	100.0	85.7	100.0
Nitrofurantoin	No. Tested	-	-	-	3	10	-
	No. Sens.	-	-	-	3	10	-
	% Sens.	-	-	-	100.0	100.0	-
Penicillin	No. Tested	62	139	32	-	-	-
	No. Sens.	62	134	29	-	-	-
	% Sens.	100.0	96.4	87.8	-	-	-
Streptomycin	No. Tested	-	-	3	5	4	23
	No. Sens.	-	-	1	3	2	16
	% Sens.	-	-	33.3	60.0	50.0	69.6
Tetracycline	No. Tested	26	57	24	18	9	4
	No. Sens.	26	47	23	14	6	4
	% Sens.	100.0	82.5	95.8	77.8	66.6	100.0

pared with those of Staph. aureus.

With respect to the antibiotic sensitivity status of the enteric pathogens, the highest proportion of E. coli strains (Fig. 3) are sensitive to nitrofurantoin (99.2 per cent), neomycin (96.2 per cent), and kanamycin (90 per cent), with chloramphenicol (74.4 per cent), streptomycin (64.4 per cent), tetracycline (64.0 per cent), and polymyxin (63.6 per cent) following. Only 15 per cent of E. coli strains isolated in 1959 were found to be sensitive to sulfonamides, and none were found to be sensitive to novobiocin. The relative efficacy of the same antibiotic agents against A. aerogenes (Fig. 4) is essentially similar except that a somewhat smaller proportion of strains of A. aerogenes were found to be sensitive to the action of these antibiotics as compared with E. coli. The comparative antibiotic susceptibility status of B. proteus (Fig. 5) was also essentially similar to that of E. coli except that a much higher proportion of strains were found to be susceptible to sulfonamides (88.9 per cent) and streptomycin (66.6 per cent). However, the number of strains tested against the sulfonamides and streptomycin were too few in number for any valid conclusion in this regard to be drawn. The proportion of proteus strains that were found to be sensitive to tetracycline and polymyxin was exceedingly low, 6.6 per cent and 0 per cent respectively. Three of the ten strains tested proved to be sensitive to novobiocin, a finding which is similar to one previously reported.[5]

All of the antimicrobial agents tested with the exception of neomycin (91.9 per cent) were found to be relatively ineffective against Ps. aeruginosa (Fig. 6). Only 27.8 per cent of the pseudomonas strains tested were susceptible to kanamycin, which is considered to have a spectrum of antimicrobial activity similar to that of neomycin. These findings coincide with those of Miller, Valiant, and Frost,[6] who noted that three of five pseudomonas strains tested for susceptibility to neomycin and kanamycin were sensitive to the former but resistant to the latter. The incidence of strains susceptible to tetracycline (33.4 per cent), chloramphenicol (17.8 per cent), and nitrofurantoin (9.2 per cent) was especially low, particularly for chloramphenicol and nitrofurantoin when one considers their general effectiveness against other enteric organisms. This lack of effectiveness almost precludes the employment of these agents in the treatment of infections caused by this microorganism. It is of interest that only 41.9 per cent of pseudomonas strains were sensitive to polymyxin, the antibiotic agent particularly recommended for the treatment of infections caused by Ps. aeruginosa.

In regard to the less prevalent but nevertheless important pathogenic organisms (Table II), 100 per cent of the salmonella strains tested were susceptible to chloramphenicol and neomycin, 77.8 per cent to tetracycline, and 60 per cent to streptomycin. All K. pneumoniae strains were sensitive to nitrofurantoin, 85.7 per cent to neomycin, 75 per cent to chloramphenicol, and 66.6 per cent to tetracycline. As for Hemophilus influenzae, 100 per cent of the strains proved susceptible to chloramphenicol, but only 69.6 per cent were sensitive to streptomycin, an agent which often is recommended for the treatment of infections caused by this organism. None of the strains of Diplococcus pneumoniae proved resistant to any of the antibiotic products commonly employed against this species.

Of the beta hemolytic streptococcus strains tested, 100 per cent were sensitive to chloramphenicol, 97.1 per cent to erythromycin, and 96.4 per cent to penicillin, but only 82.5 per cent were sensitive to tetracycline, the latter finding coinciding with that of previously reported experience.[1,2] Beta hemolytic streptococci usually are considered to be universally sensitive to penicillin if they are Lancefield group A types, but, considering the fact that five strains were found resistant to penicillin, those tested may well have belonged to other Lancefield groups since such groupings are not routinely determined in our laboratory, and information in this regard therefore is not available. The Str. viridans strains tested were generally highly sensitive to erythromycin (91.2 per cent), penicillin (87.8 per cent), and tetracycline (95.8 per cent), but only 80 per cent of the strains which were recovered were sensitive to chloramphenicol.

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CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by E. R. STUDENSKI, M.D.

SEPTEMBER 19, 1959

Discussed by ROBERT TARAIL, M.D.

Hypoglycemia in Patient with Chronic Myelocytic Leukemia

Case History

A forty-year-old white male was first seen at the Roswell Park Memorial Institute two years before his death. At that time he had increasing fatigue, loss of ambition, and bouts of sweating. He developed pain on the left side which was aggravated by breathing or coughing. Physical examination showed an enlarged liver and spleen.

Before his referral to this institute a white blood cell count was 330,000 with a differential of 18 per cent myeloblasts, 22 per cent juvenile forms, 33 per cent stab cells, 8 per cent polymorphonuclear leukocytes, 3 per cent lymphocytes, 6 per cent eosinophils, 9 per cent basophils, and 1 per cent normoblasts. After his admission busulfan (Myeleran) therapy promptly reduced the peripheral leukocyte count to 18,000. Repeated administrations of busulfan at various doses maintained the leukocyte count at around 20,000 without greatly reducing the number of platelets, but the enlargement of the liver and spleen persisted. One year and nine months after the patient's initial visit his leukocyte count became elevated to 136,000 in spite of an increase in the dose of busulfan to 12 mg. per day. The platelet count continued to be normal. His hemoglobin was 9.9 Gm. per 100 ml.

Two years after the patient's initial visit he was admitted to the hospital at 11:00 A.M. in a semicomatose state. For a period of two days before admission he had complained of pain in the left side of the abdomen associated with nausea and emesis. About five hours before his admission the patient received $^1/_8$ grain of morphine intramuscularly for the relief of the pain in the abdomen. His physician stated that he had been alert before the injection. He had a cough which was productive of "dirty" sputum. There were no hemorrhagic tendencies.

Physical examination revealed a well-developed, fairly well-nourished white male who was semicomatose and who did not respond to verbal command. His blood pressure was 90/50 mm. Hg, pulse 120 beats per minute, and temperature 101 F.; his respirations were labored at 30 per minute. The tongue was dry. The funduscopic examination was not successful because the pupils were small; they were regular and equal and reacted to light. The lungs and heart were not remarkable. There was slight tenderness in the left lower quadrant.

A very large spleen filled the left half of the abdomen. There was no evidence of crepitation or a friction rub. The liver also was enlarged. There was 2 plus pitting edema of both feet. The reflexes were normal. There was no stiffness of the neck.

At 3:00 P.M. it was reported that the blood sugar was 8 mg. per 100 ml. The patient was given rapidly 50 cc. of 50 per cent glucose and 100 mg. of hydrocortisone. Then 1 L. of 10 per cent glucose in water was started at a rate of 120 drops per minute; 100 mg. of hydrocortisone was added to the infusion. The patient became apprehensive and cyanotic, and he was placed in an oxygen tent. The patient became completely comatose. His respirations became slow, and his pulse rate rose to 160 beats per minute. The electrocardiogram was normal, and a chest roentgenogram showed no abnormalities. A repeat blood sugar determination after the glucose infusion was started showed a level of 211 mg. per 100 ml. The patient expired at 5:00 P.M.

Other laboratory findings on the day of death were: hemoglobin 7.1 Gm. per 100 ml., platelet count 235,000, and leukocyte count 420,000 with a differential of 11 per cent neutrophils, 7 per cent juvenile forms, 20 per cent stab cells, 13 per cent lymphocytes, 1 per cent eosinophils, 7 per cent myelocytes, 23 per cent blast forms, and 18 per cent nucleated erythrocytes. A blood culture was sterile. The blood urea nitrogen was 27 mg. per 100 ml., serum sodium 153 mEq., potassium 7.9 mEq., carbon dioxide 15.1 millimols per L., and chloride 95 mEq. The serum bilirubin was 0.6 mg. per 100 ml. in one minute and 0.9 mg. per 100 ml. total. The uric acid was 20.8 mg. per 100 ml.

Discussion

ROBERT TARAIL, M.D.: The patient almost certainly had chronic myelocytic leukemia. I think that the reason for this conference concerns the nature of the illness on the final day of the patient's life. I, therefore, shall confine my remarks to the last two paragraphs of the protocol, from which I conclude that death resulted from hypoglycemia. Why do I assume that? Because of the extreme reduction of the blood sugar. But one may argue that the patient was given glucose and that therefore if hypoglycemia were his trouble he should have snapped out of it. However, 50 ml. of 50 per cent glucose is equivalent to 25 Gm., and we know that in certain patients with hypoglycemia not only are 25 Gm. of glucose ineffective but that even 2,500 Gm. are equally ineffective. There is a phase of hypoglycemia from which a patient cannot be aroused, a phase that is associated with irreversible central nervous system damage which is morphologically demonstrable following severe or protracted hypoglycemia. It will be interesting to learn whether or not such morphologic changes were found in this patient.

As I trace the sequence of events I think that it is clear that hypoglycemia was strongly considered only after a blood sugar of 8 mg. per 100 ml. was reported. If hypoglycemia had been suspected on clinical grounds prior to this blood sugar report, glucose probably would have been given through the same needle as that used for the blood withdrawal. This extreme reduction in blood sugar probably was carefully verified in the clinical chemistry laboratory. Both the clinician and the laboratory personnel must be critical and alert to possible errors. Under the circumstances of coma coupled with as low a blood sugar as any likely to be encountered, someone more experienced in managing hypoglycemic states would have given 100 or 150 ml., not 50 ml., of 50 per cent glucose. Just because 50 per cent glucose happens to be put up in a 50 ml. ampule is no adequate reason to give only 50 ml. I have seen many patients with hypoglycemia who do not respond to the first 50 ml. but who do respond to larger quantities given rapidly. In the presence of such an enormous reduction of blood sugar one could have anticipated a failure with the rather casual treatment that was given.

I recall from my early clinical days a patient with diabetic acidosis who under treatment in the hospital lapsed into coma following an initial improvement. Since 10 per cent glucose was being given as an intravenous infusion, I had discarded the diagnosis of hypoglycemia and suspected instead potassium deficiency. But one of my mentors would have none of this newfangled stuff. He injected 50 per cent glucose into the appropriate part of the intravenous tubing and the "potassium deficiency syndrome" cleared up miraculously.

If the patient under discussion had authentic hypoglycemia, you may wonder why he evidently did not develop any of the classic manifestations of that state, such as sweating, hunger, nervousness, or convulsions. One Sunday night not too long ago one of our residents phoned me about an elderly lady with diabetes who had been getting about 20 units of isophane (NPH) insulin daily. He said that she had lapsed into coma and that her breathing had stopped. As he was about to pronounce her dead, she began to breathe again. When I asked whether or not he had injected glucose, he replied that she had not been tremulous or sweating, had not complained of hunger, and that her skin was not flushed. I suggested that he take blood immediately for a measurement of the blood sugar level and that he then quickly inject 50 to 100 cc. of 50 per cent glucose through the needle used for taking the blood sample. She responded promptly to the glucose. The preinjection blood glucose was found to be 30 mg. per 100 ml. Thus, the course of an authentic hypoglycemic episode may include few, if any, manifestations other than coma.

At this point it may be well to review the clinical effects of hypoglycemia. Evidences that are ascribed to disturbed autonomic function include hunger, "trembling inside," flushing, pallor, sweating, chills, fainting, nausea, and tachycardia. Clinical correlates that are attributable to central nervous system disturbance are muscle weakness, spasticity with hyperreflexia, a positive Babinski sign, clonus, ocular palsies, convulsions, and petit mal. Fear, disorientation, confusion, delusions, coma, or mania are other possible effects of hypoglycemia which may be seriously misconstrued by the examining physician or by others. Because of appropriate combinations of autonomic and central effects, it is easy to imagine how patients with hypoglycemia are frequently diagnosed as having a neurosis, psychosis, brain tumor, or any of a number of neurologic syndromes. You probably have heard of instances in which people with hypoglycemia due to an overdosage of insulin were picked up by the police for being allegedly drunk.

It is my belief that as we wend our way through the differential diagnosis of hypoglycemia as it is applicable to this patient I shall be unable to arrive at an unequivocal conclusion. And, at the risk of appearing immodest, I doubt that our pathologists will come appreciably closer to a definitive diagnosis. Why do I say this? The clinicopathologic conference as a teaching exercise was apparently started by Richard Cabot, M.D., many decades ago in Boston. He is a medical hero of mine. His conferences have been continued and are published in *The New England Journal of Medicine* in the form of Case Records of the Massachusetts General Hospital. These conferences have been characterized by an interaction in which the pathologist reigns supreme. This is so because the selection of cases usually is based on some choice morphologic finding known only to the pathologist. This results in the situation in which the clinician gingerly crosses a treacherous brook in the hope that the pathologist will agree that the patient had Ebstein's disease of the heart or something similar.

The undoubted value of such excursions into obscurity is affirmed. However, our pathologists also select cases for reasons other than obscurity, and they are to be congratulated for this. For example, they have selected cases with clear-cut diagnoses but which pose challenging lessons in proper treatment. Or, as I suspect applies to this conference, cases are selected which illustrate that deciphering the enigma of an illness is a joint problem for both the morphologist and the clinician. My own opinion is that the treatment lesson and the approach to disease which transcends but includes morphologic considerations are the more fruitful kinds of clinicopathologic conferences.

Why do I say that the nature of our patient's hypoglycemia may not be apparent from the morphologic findings? If the hypoglycemia were the result of liver disease, liver damage probably would be found at autopsy. But many patients with as much or more morphologic evidence of liver damage may have had no hypoglycemia at all. Therefore, who can say cogently that the finding of liver damage proves that the hypoglycemia is hepatogenic?

Suppose we become nasty and assume that our patient received not only morphine but, inadvertently or by malicious intent, a large dose of insulin as well. Or perhaps he got no morphine but only insulin. It is true that murder or suicide by insulin have been fairly well documented in medicolegal sources. It is doubtful that the proper biochemical examinations were performed on this patient to check on the possibility of insulin administration. In a sensational case of murder by insulin poisoning a lady was found dead in the bath tub. An autopsy found no evidence of drowning. Three days later an enterprising medical examiner examined the body carefully and saw injection marks on the buttock. The tissue was excised along with a control area and a complex bioassay for insulin disclosed 84 units of insulin. The husband, who was a nurse, was tried and sentenced to life imprisonment.[1]

Certain nonendocrine, nonhypothalamic tumors may be associated with severe hypoglycemia. The removal of such a tumor may cure the hypoglycemia. There is a report of a case in which a hypoglycemic syndrome appeared to be associated with the typical features of an adenoma of the islets of Langerhans.[2] Both fasting and stimulative hypoglycemia were present and required tremendous amounts of glucose for control. At surgery the pancreas was found to be unaffected, but a huge retroperitoneal fibroma was found. Following the removal of the tumor the hypoglycemia disappeared immediately. The fibroma had the morphologic features of a "garden variety" of fibroma so that on histologic grounds one could not have predicted an association with hypoglycemia. Yet such an occasional association has been found not only with fibroma but also with sarcoma, pseudomyxoma, and other growths. There is ample evidence that leukemia, which our patient had, is a form of tumor. How would a pathologist disprove by histologic study the contention that occasional leukemic tumors, like their solid brethren, may have, in effect, a "sweet tooth" and produce hypoglycemia?

Spontaneous hypoglycemia generally is regarded as rare. Yet when it is thought of and looked for in patients with bizarre behavior and strange complaints, it is found with appreciable frequency. In the course of one year Mellinkoff and Tumulty[3] found 20 patients who appeared to be afflicted with the hepatic form of hypoglycemia. Incidentally, I was surprised to discover that more than half of their cases of hypoglycemia were associated with hepatic insufficiency resulting from the chronic passive congestion of heart failure.

Blood[4] described a group of 3 patients with peculiar postoperative hypoglycemia following major but not extensive surgery. The 3 patients developed a strange syndrome postoperatively which included the symptoms and signs of hypoglycemia. Someone was bright enough to investigate their blood sugars. Their hypoglycemias were regarded as "idiopathic."

James Holland, M.D.: This condition subsequently was found to be the result of surreptitious insulin administration by a psychopathic nurse.

Dr. Tarail: Thank you, Dr. Holland. You have cleared up for me the mystery of the nature of the hypoglycemia in these patients.

Let us now consider a systematic grouping of factors provoking hypoglycemia. A very helpful classification is that of Conn and Seltzer,[5] and anyone interested in this subject should read their paper. Dr. Conn's work has awakened considerable interest in hypoglycemic states and has paved the way for rational and successful treatment. According to them, more than 80 per cent of cases of spontaneous hypoglycemia (not occurring as the result of the administration of insulin or of other hypoglycemic agents) fall into three categories: (1)organic hyperinsulinism related to a tumor or to hypertrophy of the islets of Langerhans, (2) hepatic or hepatogenic hypoglycemia, and (3) functional hyperinsulinism or reactive hypoglycemia. The following is an adaptation of their classification of the causes of hypoglycemia:

1. Overdose of insulin or other hypoglycemic agents
*2. Organic hyperinsulinism associated with adenoma, carcinoma, or hyperplasia of islets of Langerhans
*3. Hepatic
4. Hypofunction of anterior pituitary
5. Adrenocortical insufficiency
6. Lesions of central nervous system
*7. Functional hypoglycemia or hyperinsulinism
8. Alimentary disturbance (“dumping syndrome”)
9. Renal glycosuria
10. Extreme muscular work
11. Factitious use of hypoglycemic agents
12. Inanition, starvation
13. Tumors
14. Unknown (including “idiopathic” hypoglycemias in infancy and childhood)

As stated previously, Categories 2, 3, and 7 account for the majority of cases of spontaneous hypoglycemia. Functional hyperinsulinism is represented in its mild form by late-afternoon jitters which are relieved by eating. Such patients have an exaggerated response to glucose and to carbohydrates in general. As you know, the blood sugar that is measured two to three hours after a test dose of glucose may normally dip to concentrations below fasting values. Two to three hours after a test dose of glucose patients with functional hyperinsulinism demonstrate an exaggerated fall below the fasting level associated with symptoms of hypoglycemia. These patients, therefore, are subject to a stimulative hypoglycemia; that is, hypoglycemia results from the stimulation of mechanisms for the disposal of carbohydrates provoked by glucose or by food. The two- or three-hour value of blood glucose following such stimulation may be 40 to 50 mg. per 100 ml., and these patients, unlike those in Categories 2 to 6 do not have hypoglycemia after fasting.

Hepatic hypoglycemia may be the result of almost any kind of liver disorder, ranging from intoxication with carbon tetrachloride or cincophen to primary or metastatic cancer and including such disorders as infection, cholangiolitis, hepatitis, passive congestion, cirrhosis, and Von Gierke's glycogen storage disease.

Anterior pituitary insufficiency, whether in the form of Simmonds cachexia, Sheehan's syndrome (postpartum anterior pituitary insufficiency), or cysts or tumors in or near the sella turcica, may cause hypoglycemia. Hypoglycemia also may be produced by Addison's disease, other types of reduced function of the adrenal cortex, and disorders of the central nervous system involving presumably the brain stem or hypothalamus.

Alimentary hypoglycemia is a relative of

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* The analyses performed in Dr. Sokal's laboratory revealed that the glycogen content of the muscle, heart, and tongue of the patient was below the minimum detectable by the method. In 6 other cases without clinical hypoglycemia selected at random glycogen levels at least 10 to 100 times this minimum amount were present. However, since no tissues were available from patients known to have died of insulin hypoglycemia nor from patients dying of hypoglycemia known not to be due to insulin, a definite conclusion cannot be drawn from these data.

functional hyperinsulinism. It too is a stimulative, not a fasting, hypoglycemia. Thus, following gastrointestinal surgery, such as a subtotal gastrectomy or a gastroenterostomy a dumping syndrome may ensue. An abnormally rapid and high rise in the blood sugar may take place after eating, and this rise may stimulate mechanisms for the disposal of glucose so strongly that hypoglycemic symptoms occur. I do not contend that all aspects of the dumping syndrome can be explained in this manner, but there is a hypoglycemic component in some such patients.

Dr. Holland's remark concerning secret injections of insulin brings to mind the bizarre case of a nurse who for unknown reasons surreptitiously injected insulin into herself for several years. A subtotal resection of a normal pancreas by an eminent surgeon who pioneered in pancreatic surgery was of no avail. After going from pillar to post, the patient was studied by Dr. Conn at the University of Michigan. After complex physiologic studies Dr. Conn suspected self-injection of insulin. One day while the patient was in the x-ray department a careful search of her belongings disclosed a hoard of insulin. Her physicians obligingly added typhoid vaccine to the vials of insulin. Thereafter, hypoglycemic symptoms were quickly followed by nasty chills and fever.

Prior to this conference Leon Stutzman, M.D., reminded me of the possibility that our patient may have eaten poisonous mushrooms (Amanita phalloides) before coming to the hospital. This may produce hypoglycemia, and it is doubtful that the pathologist could support or negate this possibility.

Category 13 (Tumor) refers to the "garden variety" of neoplasia of a type which we ordinarily do not relate specifically to carbohydrate metabolism. Sarcoma, fibrosarcoma, fibroma, mesothelioma, and pseudomyxoma peritonei are among the culprits which for unknown reasons occasionally may be associated with severe hypoglycemia.[6] Perhaps on rare occasions leukemic cells may alter glucose utilization so as to cause hypoglycemia. The fact that I found no reports of this occurrence in monographs on leukemia need not be an absolute deterrent to the consideration of this postulate.

Leukemia may involve the liver and may produce hypoglycemia of the hepatic type. Leukemia may cause brain damage by virtue of hemorrhage or leukemic infiltrates and thus create the possibility of hypoglycemia. It is conceivable that our patient had adenoma, cancer, or hypertrophy of the islets of Langerhans, but I prefer to think otherwise. It would be very difficult to prove or disprove that the patient was a victim of insulin administration.

Joseph Sokal, M.D.: In regard to the possibility of an iatrogenic mistake, I would say that if we assume the history to be correct but that the physician inadvertently gave an injection of insulin instead of morphine, the miotic pupils would be inconsistent. A patient dying an insulin death should have dilated pupils. This patient had constricted pupils, which would support the physician's claim that he injected morphine. Conceivably, if the patient had received insulin from someone intent on disposing of him followed by morphine from the physician, the pupils might become biotic.

Resident Physician: Would you comment on the left upper quadrant pain and on the elevation of the serum potassium?

Dr. Tarail: The abdominal pain in the left upper quadrant may have been the result of splenic infarction or perisplenitis. Both conditions occur in chronic leukemia. I am unable to explain why the serum potassium was high. That the serum sodium also was elevated tends to exclude adrenocortical failure. The high serum potassium may be that which occurs agonally. We[7] and others have described this in dying patients.

Dr. Sokal: I would like to reinforce Dr. Tarail's criticism of the way the patient was handled. This patient was on my service, and so I can do it freely. When the blood sugar report revealed 8 mg. per 100 ml., the first thing that should have been done was to obtain a second blood specimen before administering the glucose. Findings of this sort should be checked. One would assume that the laboratory has repeated the analysis of the original specimen to obviate the possibility of a technical error. However, the most important thing for a physician to do is to get a second specimen. It takes only a moment to draw blood. He then should go ahead and inject 50 per cent glucose immediately through the same needle.

In regard to the infusion, I have just reread the progress notes and find that the "rapid" infusion of 10 per cent glucose actually ran at 100 to 120 drops per minute, or at about 6 cc. per minute. This means it would take approximately three hours to administer 1 L. Why on earth an infusion at this rate is called a rapid infusion, I do not know. It seems slow to me. I agree with Dr. Tarail that a patient who has hypoglycemia needs large amounts of glucose rapidly. I think that this patient should have had one ampule (50 cc.) of 50 per cent glucose, a 10 per cent glucose infusion at a rate of 1 L. in well under an hour, and, as Dr. Tarail suggests, additional 50 per cent glucose through the tubing if the patient did not recover rapidly.

E. R. STUDENSKI, M.D.: Would you comment on your study of the agonal chemistries? Did you do glucose determinations?

DR. TARAIL: No. But we did potassium determinations, and I have mentioned the results of those. In relation to glucose, the paper on murder by insulin[1] reported a glucose concentration of 211 mg. per 100 ml. in the blood of the right side of the heart three days after death. This, of course, disturbed me in relation to the diagnosis of insulin poisoning, and it still is disturbing. After this determination they ran a series of controls, and in more than half of these individuals glucose concentrations were much higher than the patient's level of 211 mg. per 100 ml. This was attributed to the after-death breakdown of the liver glycogen and to the entry of this glucose from the liver into the blood of the right side of the heart.

Diagnoses

Clinical.—*(1) Hypoglycemia, etiology unknown, and (2) chronic myelocytic leukemia.*

Dr. Tarail.—*(1) Chronic myelocytic leukemia and (2) hypoglycemia. The hypoglycemia may have been the result of a leukemic process with a "sweet tooth," leukemic involvement of the liver, or factitious administration of insulin. Adrenocortical or anterior pituitary failure and hypothalamic hypoglycemia cannot be excluded.*

Anatomic.—*(1) Hypoglycemia, (?) secondary to hypothalamic damage, and (2) acute exacerbation of chronic myelocytic leukemia.*

Pathologic Report

DR. STUDENSKI: I think that this time the pathologists can confirm completely our clinician in everything, including all his suppositions as to what the pathologist would not find. For what we have to report is what we did not find rather than what we did find. None of the findings that can be proved definitely to be the cause of hypoglycemia were clearly present in a pattern that would lead irrevocably to the supposition that one factor was the cause of this event.

Actually the patient had leukemia in an acute exacerbation; masses of leukemic cells plugged all sorts of vessels. The liver was tremendously infiltrated and showed areas of central necrosis, possibly sufficient to cause hypoglycemia.

Second, the patient had numerous hemorrhages in the brain together with plugging of small vessels and disruption of vascular walls with an infiltration of the surrounding brain substance with leukemic cells. These lesions were present in the hypothalamic region and elsewhere so that thalamic damage may have been the cause of the hypoglycemia. In addition, the patient had as an agonal phenomenon cortical necrosis of the kidney. The adrenal also had major areas of necrosis involving large portions of the cortex.

No appreciable reaction to the necrosis was evident in either kidney or spleen; therefore, there also could have been adrenal cortical insufficiency terminally. No analysis of the injection site was performed so that the supposition that the injected material could have been insulin cannot be supported or rejected.

RESIDENT PHYSICIAN: Did you do glycogen stains on the liver and the kidney?

DR. STUDENSKI: No.

DR. SOKAL: I wonder whether or not glycogen analyses might be helpful in differentiating insulin poisoning from other causes of hypoglycemia. As you know, one of the principal actions of insulin is to increase the uptake of glucose by muscle. Some of this glucose is deposited as glycogen, and moderate doses of insulin regularly induce increases in the glycogen content of muscle. Of course, in insulin poisoning with sustained hypoglycemia other phenomena, such as epinephrine release, would supervene and perhaps reverse this effect. Nonetheless, one might expect that the final level of muscle glycogen would be higher in insulin poisoning than in fatal hypoglycemia due to other causes, since in individuals with other causes of hypoglycemia, muscle glycogen stores would have been mobilized from the very beginning of the process. Unfortunately, I know of no systematic studies on this aspect of the problem. However, I would be glad to perform glycogen analyses on tissues of this patient.

DR. STUDENSKI: We will send material to your laboratory for quantitative studies.*

WILLIAM REGELSON, M.D.: I resent the slur against mushrooms. I suggest that it be directed to toadstools.

DR. TARAIL: Were any changes that were present in the brain characteristic of hypoglycemia?

DR. STUDENSKI: The changes in the brain other than those of leukemic origin were primarily nonspecific, and, of course, the changes of hypoglycemia are nonspecific. There were no outstanding areas of cell loss or hyalinization, however, although they are reported to exist with hypoglycemia, these phenomena have been seen only in patients who have been in deep hypoglycemic coma for periods of twenty-four hours to two weeks. These changes are not seen in patients who have been in hypoglycemia for less than many hours and who have not survived for several days after the episode.[8,9]

WILFRAM HAACKE, M.D.: Would you consider the administration of morphine to a patient with undiagnosed abdominal pain to be a proper procedure?

DR. TARAIL: I think that in this instance it easily might have been assumed by the family physician that the patient had an infarcted spleen and deserved something for his pain, especially in anticipation of a long trip to Roswell Park. On the other hand, as you have implied, the administration of a strong analgesic of this sort may make it difficult for the physicians who are going to be responsible for the patient's care to make a diagnosis as to the nature of the abdominal pain.

DR. STUDENSKI: What happens to the effect of morphine in patients with leukemic involvement of the liver?

DR. TARAIL: I always thought that morphine was a satisfactory drug under these circumstances, but perhaps such patients are unable to metabolize it properly and some drug that has a nonhepatic route of metabolism might be better.

DR. STUDENSKI: Certainly one gets the impression that this patient could very well have had more of a morphine effect than might reasonably be expected from $^1/_8$ grain.

DR. SOKAL: You note that the physician was cautious and only gave an $^1/_8$ grain?

DR. STUDENSKI: Yes.

JOHN PICKREN, M.D.: Kornfeld[10] has given an excellent review of the causes of spontaneous hypoglycemia in the June 1, 1959, issue of the NEW YORK STATE JOURNAL OF MEDICINE.

Addendum

Since submission for publication a report has been found demonstrating a hypoglycemic effect by leukemic tumors in mice.[11] This observation lends credence to the idea that hypoglycemia in man may, on occasions, be the result of leukemia.

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DIABETES MELLITUS

Sponsored by the Clinical Society of the New York Diabetes Association

Editors

MAX ELLENBERG, M.D.
HAROLD RIFKIN, M.D.

Endocrine Relationships

ABBIE I. KNOWLTON, M.D., NEW YORK CITY

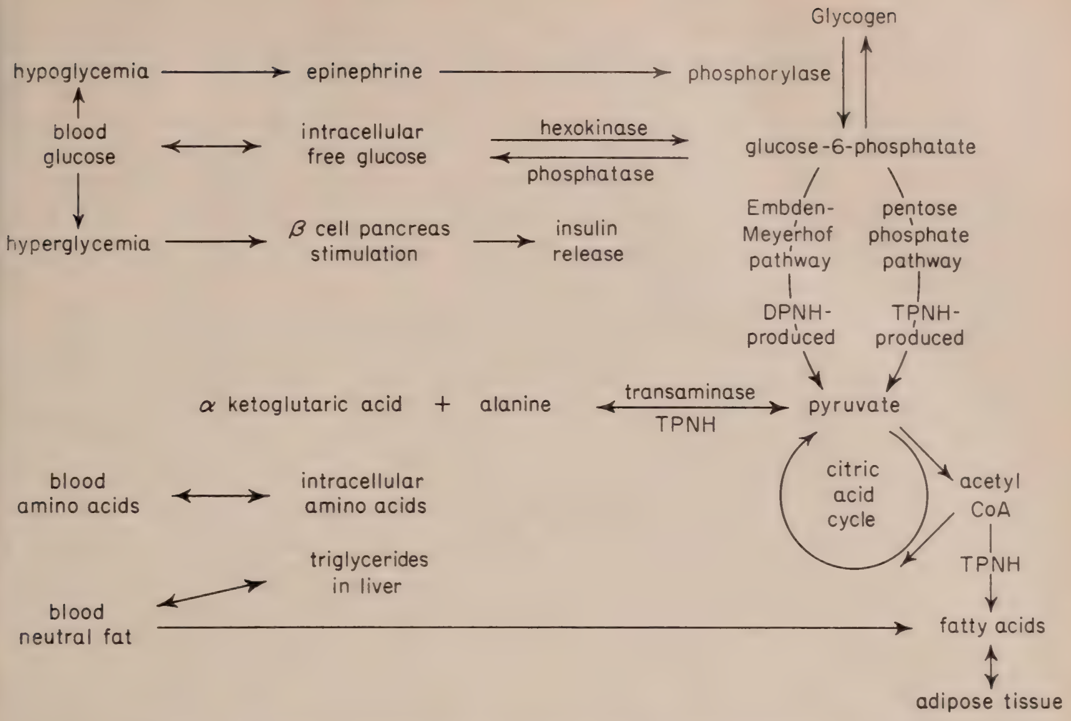
(*From the College of Physicians and Surgeons, Columbia University*)

By definition, diabetes mellitus implies abnormal endocrine function involving as it does a disturbance of the normal insulin mechanism. Investigation of endocrine dysfunction in diabetes has centered rightly on the hormones of the pancreatic islets, but fluctuations in the secretions from others of the endocrine glands can also profoundly influence carbohydrate metabolism. The important roles played by both the adrenal medullary and cortical hormones and by the anterior pituitary hormones are well known. Variations in thyroid output and in certain of the gonadal hormones may also affect the diabetic control in less clearly defined ways.

This review will discuss certain endocrine abnormalities encountered in diabetes mellitus and the manner in which an excess or a deficiency of endocrine secretions may modify the course of established diabetes.

Pancreas

Insulin.—The endocrine gland of preeminent importance in diabetes is the pancreas, more specifically, the islets of Langerhans. The condition of the islets in diabetes and their capacity to secrete insulin has been the subject of considerable study. Hartroft[1] found degeneration accompanied by degranulation of the beta cells in only 5 to 15 per cent of the pancreata of adult diabetic subjects and hyalinization in not more than 25 to 40 per cent of the pancreata of such subjects. Maclean and Ogilvie,[2] however, in even those pancreata which presented no hyalinization or significant fibrosis, found the proportion of beta cells reduced, most strikingly so in those subjects whose disease developed during the growing period. More recently these same authors[3] have examined a group of young diabetic patients ranging in age from less than one year to twenty-nine years at death, and in those in whom the disease had run an acute course with death supervening within a matter of a few weeks, the average size of the islets was greater than in a group of control subjects. In contrast, the pancreata from those patients with a more chronic disease course contained islets significantly smaller than in the controls. Wrenshall, Bogoch, and Ritchie[4] found the extractable insulin per gram of pancreatic tissue in 57 diabetic subjects was less than half the average amount


Glycogen
hypoglycemia
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hexokinase
phosphatase
glucose-6-phosphatate
Embden-Meyerhof pathway
pentose phosphate pathway
hyperglycemia
β cell pancreas stimulation
insulin release
DPNH-produced
TPNH-produced
α ketoglutaric acid + alanine
transaminase
TPNH
pyruvate
citric acid cycle
acetyl CoA
blood amino acids
intracellular amino acids
triglycerides in liver
TPNH
blood neutral fat
fatty acids
adipose tissue

FIG. 1. Schematic representation of certain steps in intermediary metabolism.

found in 61 controls. No good correlation between the amount of insulin extractable from the pancreas and the size of the daily insulin dose was noted, though the diabetic patients receiving insulin were not specifically compared with those in whom no exogenous insulin was required. Randle[5] has reviewed the available information on the insulin activity of plasma as assayed either by the blood sugar response of alloxan-diabetic hypophysectomized-adrenalectomized rats or by the glucose uptake in vitro by isolated rat diaphragms. He pointed out the deficiencies inherent in both technics, and noted that no general agreement existed among the several laboratories as to whether or not differences obtain between normal and diabetic patients. Within the past year Yalow and Berson[6] have described a precise and sensitive immunoassay for plasma insulin. These authors have made a fundamental observation that an absolute insulin deficiency cannot account for the hyperglycemia of a group of adults with diabetic glucose tolerance curves. The fasting plasma insulin levels in this group were actually higher than the levels in the control group though not significantly so. In response to a standard glucose load the former group showed a delayed rise in plasma insulin as compared with the controls but an average insulin concentration 26 per cent greater than the controls over a total two-hour period. Seven of this abnormal group had elevated fasting blood sugars as well as the diabetic response to glucose. In 5 of the 7 the pattern of response was similar to that of the series as a whole, while one showed no rise and the other a much diminished rise in plasma insulin after glucose loading.

SITES OF INSULIN ACTION.—The sites of insulin action have been more precisely defined within the last few years and bear mention here as a background against which to consider the influence of other endocrine secretions. A highly schematic representation of certain steps in the intermediary metabolism of carbohydrate, protein, and fat is outlined in Figure 1 to serve as a reference for the ensuing discussion.

Insulin Action in Muscle Tissue.—In muscle tissue the initial step in glucose metabolism involves its transport across the cell membrane. Levine and his coworkers[7] were the first to postulate an action of insulin at this step. A second step is phosphorylation of the transported glucose, a necessary preliminary to the entrance of the glucose into intracellular reactions. In a recent summary Park and Morgan[8] presented evidence that in the isolated normal muscle the transport step is the one which limits the rate at which glucose enters cellular metabolism, that is, as fast as glucose enters the cell it is phosphorylated so that free glucose does not accumulate within the cell. On the addition of insulin to the isolated muscle an immediate increase in the rate of glucose transport occurs; free glucose accumulates inside the cell indicating that phosphorylation has now become the rate-limiting step. In muscle from alloxan-diabetic animals the rate of transport of glucose into the cell is depressed, and this depression is overcome on the addition of insulin to the tissue in vitro. There is also in the diabetic muscle a depression of phosphorylation, which cannot be repaired just by the addition of insulin in vitro but which is returned to normal by pretreating the diabetic animal, from which the muscle is subsequently excised, with insulin. From this it appears that, in muscle, insulin acts at at least two steps in glucose metabolism: facilitating its entry into the cell and facilitating its conversion to a form in which it is available to the cellular economy.

Insulin Action in the Metabolism of Protein.—A quite separate and direct action of insulin on protein metabolism has been pointed out by Krahl,[9] who observed that this hormone increased the incorporation of labeled amino acids into the protein of isolated muscle tissue. This action appears to be independent of the insulin effect on carbohydrate metabolism and that it is demonstrable under conditions where the carbohydrate action would be minimal, that is, in a medium containing no added oxidizable carbohydrate. Recently Manchester and Krahl[10] have explored this insulin action further and find that it does not take place on the transport of amino acids across the cell membrane but most probably within the cell to facilitate the incorporation of amino acids into protein after these acids have been formed from the various precursors.

Insulin Action in Adipose Tissue.—Krahl[11] has pointed out that insulin increases the glucose uptake when added in vitro to adipose tissue. More recently, Winegrad and Renold[12] have observed a fourfold increase in the synthesis of fat following the addition of insulin with glucose to isolated adipose tissue, the increased lipogenesis presumably being secondary to enhanced glucose utilization. These authors also reported that adipose tissue from alloxan-diabetic animals exhibited a striking reduction in lipogenesis, a finding in keeping with similar observations of Stetten and Boxer[13] made fifteen years ago in intact diabetic animals. Langdon[14] has postulated that the synthesis of fat requires the presence of adequate supplies of reduced triphosphopyridine nucleotide which, in turn, are generated in the metabolism of glucose by the pentose-phosphate pathway. Interest has focused on whether or not insulin favors specifically the metabolism of glucose by this route rather than by the Embden-Meyerhof, or glycolytic, pathway. The availability of isotopic tracer procedures using C^{14} to tag the first and the sixth carbon atoms of glucose has made possible the determination of the relative amounts of glucose metabolized by each of these two possible routes. Winegrad and Renold,[15] utilizing this technic, have observed that in adipose tissue insulin stimulated glucose oxidation to carbon dioxide via the pentose-phosphate pathway to a much greater extent than via the glycolytic pathway. However, the increased lipogenesis which resulted drew equally on carbon atoms derived from either pathway.

Insulin Action in Liver Tissue.—In liver tissue, in contrast to muscle tissue, glucose passes across the cell membrane by simple diffusion,[16] so that in this tissue insulin appears to play no role in facilitating the entrance of glucose into the cell. Since no measurable effect of insulin has been demonstrable so far on its addition to isolated slices of liver, the exact role which the hormone plays in this tissue remains to be defined. It is well known that liver slices removed from diabetic animals have shown a much reduced rate of glucose oxidation and decreased fatty acid synthesis. While the latter has been thought the result of the limited availability of triphosphopyridine nucleotide, recent work[17] indicates it is due to a decrease in the activity of the triphosphopyridine nucleotide-specific enzyme, which catalyzes the reduction of α,β-unsaturated acyl-coenzyme A derivatives. In any event, attempts to determine if one or another pathway of glucose metabolism is specifically interfered with in diabetic liver slices have yielded conflicting results,[18,19] although it is evident that both pathways of glucose oxidation are depressed. Following a period of insulin therapy, liver slices from diabetic animals showed a return toward normal in the relative amounts metabolized by each route. Of the enzymes studied, in only one, glucose-6-phosphate dehydrogenase, which enhances a step in the pentose phosphate pathway, was the activity increased to greater than normal values by insulin treatment.[19]

Whether or not insulin exerts a direct effect on the liver in vivo has been the subject of controversy. The recent report of Madison *et al.*[20] that more than 50 per cent of radioactively labeled insulin injected intraportally is bound to liver tissue in a single transhepatic circulation suggests that the hormone may act directly on this tissue. However, in the intact animal, De Bodo *et al.*[21] were unable to demonstrate cessation of glucose production by the liver following insulin injection.

Glucagon.—The hormone glucagon, also derived from pancreatic islet tissue, was first recognized as an entity by Sutherland and Cori[22] as a factor contaminating some commercial insulins. These authors established that glucagon stimulated the conversion of glycogen to glucose in liver slices, enhancing the phosphorylase enzyme involved in this conversion. The hormone has been reported to induce a diabetic state in animals[23] and glucosuria with impaired glucose tolerance in human subjects.[24] Whether or not factors other than the increased glycogenolysis contribute to the diabetogenic action of the hormone is not currently clearly established. Salter, Davidson, and Best[25] suggest that gluconeogenesis also is increased. In the eviscerate animal little[26] or no effect[27] has been observed on peripheral utilization of glucose; in intact animals and human subjects reports are conflicting and permit of no definite conclusions at present.

What role glucagon may play in the disease diabetes mellitus is not known. Kenny[28] found widely varying values in the pancreata of 19 diabetic and 12 nondiabetic patients with no clear-cut difference existing between the two groups.

Turning from the pancreas to other of the endocrine glands, it is evident that the secretions from each may influence certain aspects of carbohydrate metabolism. In no instance do these secretions appear to initiate chemical reactions, but in many instances their modification of the rate at which existing reactions may occur affords them a major role in the body economy. Of the several endocrines, the actions of the anterior hypophysis, adrenal cortex and medulla secretions bear most directly on carbohydrate metabolism while the influence of secretions of the thyroid, gonads, and parathyroids is relatively less impressive.

The Pituitary and Adrenal Glands

It has long been established through Houssay's classical studies that ablation of the pituitary gland is followed by the development of extreme sensitivity to insulin and by an amelioration in pre-existing diabetes. Equally well known is the fact that the injection of pituitary extracts leads to hyperglycemia. The considerable reduction in the insulin requirements of diabetic patients subjected to hypophysectomy has renewed interest in this observation.[29] Steele, *et al.*[30] have observed that the injection of insulin into the hypophysectomized dog results in a greater than normal increase in the rate of glucose uptake from plasma and a less than normal release of glucose by the liver in response to the induced hypoglycemia. The nature of the increased glucose uptake has attracted the attention of many investigators. Colowick, Cori, and Slein[31] observed an inhibition of the initial phosphorylation of glucose, the hexokinase reaction (Fig. 1), by anterior pituitary and adrenal cortical extracts. This inhibition was released by the addition of insulin. These data offered a locus of action for the inhibitory action of anterior pituitary and adrenal cortical hormones but left the excessive sensitivity of the hypophysectomized animal to insulin unexplained. Recent studies of Park and Morgan[18,32] have helped to clarify this discrepancy, indicating a greater than normal rate of phosphorylation in muscle from hypophysectomized animals. When hypophysectomized rats are in addition rendered diabetic, their muscle slices exhibit a depression in glucose uptake similar to that seen in muscle from diabetic preparations with intact pituitaries. However, the addition of insulin to the former type of muscle not only increases the transport of glucose into the cell but also reveals an immediate facilitation of phosphorylation which is not seen in the latter preparation when insulin is added in vitro. The conclusions drawn from these data were that some pituitary and/or adrenal factor inhibits the phosphorylating step in the normal state and that hypophysectomy removes this normal brake. Confirmatory evidence for this was the reduction in phosphorylation to the normal rate by pretreatment of the animal with either growth hormone or hydrocortisone and to a subnormal rate by a combination of the two hormones.

Three of the anterior pituitary hormones are known to influence carbohydrate metabolism—growth hormone, prolactin, and adrenocorticotrophic hormone. Since the effects of the last of these, with very few exceptions, can be equated with the effects of the adrenal cortical steroids, the discussion will be under this latter heading.

GROWTH HORMONE.—The inhibitory effects of growth hormone on carbohydrate metabolism have been described previously. These effects are indirect in the sense that they cannot be demonstrated by the addition of the hormone to tissues in vitro but require the pretreatment of the experimental animal prior to removal of the tissues to be studied.

Young,[33] who first described the experimental production of diabetes by the administration of pituitary extracts, also noted an effect of the hormone on the pancreatic islets. The damaging action of the hormone on islet cells has been shown by Lukens and Dohan[34] to be secondary to the hyperglycemia since it was prevented by prompt treatment of the diabetic state and could even be reversed if insulin was not withheld too long after the initiation of growth hormone injections. Randle[5] has reported that he and Young noted an increase in the insulin activity of the serum in cats given growth hormone and that a similar increase has been found in the blood of acromegalic patients with or without diabetes by three separate groups of investigators. These observations are compatible with the report of Milman and Russell[35] that the acute lowering of the blood sugar which may follow the initial injection of growth hormone does not occur in the pancreatectomized animal.

A direct effect of growth hormone on protein metabolism has recently been claimed by Kostyo and Knobil[36] who have shown that the addition of growth hormone in vitro increased the incorporation of a labeled amino acid into muscle protein.

A third area in which a direct effect of growth hormone has been demonstrated is in adipose tissue. White and Engle[37] have obtained a striking increase in the nonesterified fatty acids in isolated adipose tissue following its incubation with growth hormone, indicating lipolysis, and Heimburg, Meng, and Bradley[38] have observed an increased uptake of neutral fat in isolated liver slices after the addition of growth hormone. Taken together these studies indicate that growth hormone favors mobilization of fat from the periphery and increased uptake by the liver. The magnitude of this effect has been emphasized by the studies of Raben and Hollenberg[39] in which growth hormone injections to human subjects increased the unesterified fatty acid levels by 100 per cent, the effect of a single injection persisting for a matter of hours.

These actions of growth hormone reveal some of the mechanisms which account for the reduction in total carcass fat and the increase in carcass protein, long known to occur in the growth hormone-treated animal.[40] Undoubtedly, excess growth hormone is a factor in the high incidence of diabetes seen in the acromegalic patient. Controversy has focussed on the possible influence of this hormone in diabetes mellitus with onset during the growth period. The recent findings of Maclean and Ogilvie[3] suggest that the pancreas in young diabetic patients with an acute course shows evidence of stimulation similar to that which has been seen in experimental animals during the course of growth hormone injections. Measurement of the plasma insulin in such patients would be of interest, as would determinations of growth hormone. A possible argument against the hypothesis proposed by these authors is the known complete resistance of young animals to the diabetic effect of growth hormone.

PROLACTIN.—Sinkoff and De Bodo[41] have reported that prolactin diminishes or even abolishes the exaggerated response to insulin and the secondary hypoglycemia seen in hypophysectomized dogs. This effect is independent of the adrenals.[42] What role this hormone plays in diabetes mellitus is unknown.

ADRENOCORTICOTROPHIC HORMONE; ADRENAL CORTICAL STEROIDS.—Ablation of the adrenals, like hypophysectomy, has been recognized to lead to a hypersensitivity to insulin and to a decrease both in blood sugar and in glucosuria in the diabetic animal. The several steroids secreted by the adrenals may be listed in the following order as to their capacity to influence carbohydrate metabolism: hydrocortisone, cortisone, corticosterone, aldosterone, and desoxycorticosterone. The first two listed are far more potent than the remainder; indeed, the last affects carbohydrate metabolism in therapeutic doses only indirectly by improving the general condition of the adrenalectomized animal through correction of the salt and water defects and so permitting greater food intake and better absorption. As long ago as 1940, Long, Katzin, and Fry[43] established the fact that adrenal cortical extracts increased gluconeogenesis. Recently, Beaton, Curry, and Veen[44] and also Rosen and coworkers[45,46] have established one mechanism whereby such compounds exert their gluconeogenic effect. These authors have reported that the activity of the enzyme glutamic-pyruvic transaminase (Fig. 1) in liver slices may be increased appreciably by pretreating the animal from which the liver was removed with hydrocortisone. Increased activity was noted by Rosen and his coworkers also in the pancreas and the thymus but not in muscle. This enzyme system was not affected by growth hormone, testosterone, or insulin nor did these substances interfere with the hydrocortisone effect.

Another mechanism through which gluconeogenesis may be stimulated by cortisone is through an increase in the activity of the enzyme, fructose-1, 6-diphosphatase, which enhances one of the intermediate steps in the synthesis of glucose from pyruvate via the Embden-Meyerhof pathway (Fig.1).[47]

A number of years ago Ingle[48] noted that the production of glucose in adrenal steroid-treated rats was greater than could be accounted for by gluconeogenesis and postulated that these hormones also decreased glucose utilization. The studies of Cori and of Park[8,32] have demonstrated two sites of this inhibition more precisely. Hydrocortisone, like growth hormone, tends to suppress glucose phosphorylation and under certain conditions also renders the mechanism which transports glucose across the cell membrane less sensitive to insulin acceleration.

Kerppola[49] has shown that cortisone also acts at another site in carbohydrate metabolism, reducing the activity of the enzyme phosphorylase which enhances the conversion of glycogen to glucose-6-phosphate (Fig. 1).

In addition to these several alterations measurable in tissues excised from animals treated with adrenal cortical hormones, these steroids play a role in the plasma antagonism to insulin which is present in diabetic animals. Bornstein and Park[50] found that the serum of alloxan-diabetic rats inhibited the uptake of glucose by the normal rat diaphragm. This inhibition was removed by adrenalectomy or hypophysectomy. Neither growth hormone nor cortisone alone or in combination led to a reappearance of the inhibition when added to the serum in vitro, although their combined action did restore the inhibition when the animals had been treated in vivo prior to withdrawing the serum. Vallance-Owen and Lukens[51] were able to obtain a reappearance of the inhibition in either hypophysectomized or adrenalectomized diabetic rats by hydrocortisone although not by growth hormone.

Fat Metabolism.—The role of the adrenal cortical steroids in fat metabolism is of particular interest because it is here that an extra-adrenal action of adrenocorticotrophic hormone has been demonstrated. Adrenocorticotrophic hormone has been shown to stimulate lipid mobilization in vitro when added to adipose tissue.[37] Since hydrocortisone failed to induce lipid loss in intact mice and actually inhibited fat mobilization in adrenalectomized mice,[52] it seems evident that the adrenocorticotrophic hormone action is not effected through hydrocortisone stimulation. The action of hydrocortisone noted here is in keeping with the report of Stoerk and Porter[53] that adrenalectomized rats lost adipose tissue and lost neutral fat from their livers and carcasses during starving at a much diminished rate if they were receiving cortisone.

Clinical Counterparts.—These experimental observations find their clinical counterpart in the fact that patients with Addison's disease may be subject to hypoglycemic episodes, particularly after periods of fasting, and may exhibit hypersensitivity to insulin. In Cushing's syndrome, where there is an excess of glucocorticoids, over 90 per cent of patients present with abnormal glucose tolerance tests while approximately 15 per cent have frank diabetes.[54] Prior to the availability of cortisone it was a rare sufferer of Addison's disease who was bothered by obesity while currently obesity is a problem in the management of a significant percentage of cortisone-treated patients and is a well-known characteristic of the patient with hyperadrenalism.

The role of the adrenal secretions in diabetes mellitus in the absence of frank adrenal disease has attracted considerable attention. A few years ago it was suggested that excess secretion of the adrenal steroids was a factor in the development of the vascular complications of diabetes,[55] but extensive studies by Jakobson[56] of the adrenocortical function in diabetic subjects has not afforded confirmation of this hypothesis.

In pregnancy the majority of diabetic patients show an exacerbation in the course of their underlying disease.[57] The precipitation of frank diabetes during pregnancy has been attributed by Hoet and Lukens[58] to hormonal contrainsulin factors. In pregnancy the adrenal is known to increase in size in some species. Blood levels of 17-hydroxycorticoids are elevated and the plasma response to adrenocorticotrophic hormone is greater than normal in late pregnancy,[59] although the response of the total urinary corticoids is not in excess of normal. The abnormal response in plasma levels may be partly accounted for by a delay in the clearance of hydrocortisone from the plasma. It has been suggested also that a resistance to the effects of cortisone exists in late pregnancy,[60] and there is evidence that in the pregnant state the expected increase in the glutamic transaminase enzyme in the liver does not occur in cortisone-injected animals.[61] Emphasizing a different aspect, Goodner and Freinkel[62] have suggested that changes in carbohydrate metabolism during pregnancy may reflect changes within the conceptus rather than in the mother, and have presented evidence of an insulin degrading system in rat placenta and fetus.

ADRENAL MEDULLA.—Epinephrine, furnished by the adrenal medulla, has long been recognized as a glucose-mobilizing substance. The mechanism by which this effect is achieved has been described with great precision by Sutherland and Cori.[63] Their early studies indicated increased phosphorylase activity in the presence of epinephrine. Subsequently it was shown that epinephrine favors conversion of inactive phosphorylase to the active form[64] by accelerating the formation of cyclic adenine nucleotide.[65] The end result of epinephrine action favors net glucose production by the liver. In addition, epinephrine has been shown to mobilize fat from adipose tissue in vitro.[66]

Thyroid

In the absence of diabetes the effect of fluctuations in thyroid function on carbohydrate metabolism is not impressive. The alimentary hyperglycemia and occasional glycosuria noted in hyperthyroidism have been attributed to an accelerated rate of absorption of sugar while the flat glucose tolerance curve characteristic of myxedema has been thought to be due to delayed absorption.[67] In hyperthyroidism too, liver glycogen stores are depleted. While these observations are of interest they do not afford a very complete understanding of the known clinical fact that the development of hyperthyroidism in a diabetic subject so frequently is accompanied by loss of control. In myxedema reduction in the severity of the diabetes and in the insulin requirement has been noted,[68] the mechanism for this similarly remaining poorly understood.

The Gonads: Estrogens and Progesterone

Large doses of a variety of normal and synthetic estrogens and of progesterone cause diabetes in experimental animals,[69] but these experimental findings are without an obvious clinical counterpart. Indeed, estrogen therapy has occasionally led to a reduction in insulin requirements in the diabetic patient.

Perhaps the most widespread use of estrogens and progesterone in diabetic subjects has been in the pregnant patient where the use of massive doses of these hormones has been advocated in an attempt to correct the lowered excretion values and presumed abnormally low secretion of these substances encountered in certain diabetic patients. It has been claimed that such a program of hormonal therapy during pregnancy reduces considerably the high fetal mortality characteristic of the diabetic patient. However, these claims have been challenged and arguments against the use of such a program are accumulating. The data published recently by Pedersen and Brandstrup[70] are particularly impressive. These authors, emphasizing meticulous diabetic control and early delivery but using no estrogenic hormone or progesterone, in a series of 130 patients have reported fetal mortality rates quite as low as those achieved by the proponents of massive hormone therapy.

Summary

The interrelationships of the pancreas, pituitary, adrenals, thyroid, and gonads in diabetes mellitus have been discussed briefly. Evidence continues to accumulate that the actions of hormone secretions of these glands are interdependent and modify many phases in the intermediary metabolism of protein and fat as well as of carbohydrate.

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(*Number three in a series on Current Concepts in Diabetes Mellitus*)

Psychiatrogenic Illness

Psychiatric procedures have their hazards as well as their advantages: just as the term iatrogenic refers to illness induced by medical treatment, the term psychiatrogenic may be used to describe difficulties caused or precipitated by psychiatric intervention. Illnesses of this type, about which very little appears to have been written, may be considered under three headings: (1) Interview treatment (psychotherapy); (2) Electroshock therapy; and (3) Psychiatric hospital inpatient procedures and diagnostic technics.

The delicately balanced emotional equilibrium of certain sensitive persons may be so disturbed by exploration of childhood experiences that they will be more harmed than helped. The possible precipitation of psychotic episodes by electroshock therapy has been demonstrated. Regarding hospital procedures, one hazard (among others) is the development of dependency on the protective atmosphere of a hospital so that social adjustment outside the hospital is thwarted.

—*A. H. Chapman, M.D., University of Kansas, Kansas City, Kansas, American Journal of Psychiatry, April, 1960*

NUTRITION EXCERPTS

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CORNELL UNIVERSITY

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J. H. FRYER, M.D., *Editor*

Effect of Food Processing on Nutritive Values

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IN THE minds of many people food processing has become synonymous with food sophistication, denaturation, dilution, and similar derogatory terms. A basis for this association is the knowledge that some nutrients are destroyed or removed in certain processes. The relation of beriberi in the Orient to the milling of rice and the association of dental caries with the use of sugar and refined foods in opulent societies are usually cited as specific examples in arguing the case against food processors.

But food processing is a broad term that covers many separate physical and chemical actions on a foodstuff. Although some steps are deleterious from the standpoint of nutritive value, most of these processes are designed to give the consumer a more available, more palatable diet, made up of a wide variety of wholesome foods. Through a greater variety of foods a more complete diet is usually attained.

From the nutritional standpoint the most important function of food processing is the preparation of foods with adequate keeping quality for storage and distribution to areas far removed from their origin. A second function of food processing is the labor-saving and convenience aspect. The operations preparatory to cooking, and often part of the cooking as well, have been moved from the home to the factory.

To what extent does food processing cause a loss in the nutritive value of foods beyond the unavoidable losses that result from cooking? To answer the question exhaustively we necessarily would have to consider the effect of every kind of process on every essential vitamin, mineral, amino acid, and unsaturated fatty acid. These nutrients are present in foods subjected to a large variety of processes, including canning, freezing, drying, fermenting, smoking, salting, curing, pasteurizing, concentrating, milling, baking, lyophilizing, tenderizing, and many others. Hundreds of chemical additives are used with the possibility in some instances of interactions with the nutrients.

If we limit our consideration to nutrients that are sometimes in short supply, and to those foods that contribute significant amounts of the critical nutrients, the task becomes manageable and of practical significance. From the practical standpoint, does the trend toward more completely processed foods require us to make changes in the foods we select to attain a well-balanced diet?

The Critical Vitamins

Because people in this country generally eat a varied diet, only six of the 17 known vitamins are apt to be in short supply. The critical vitamins are: vitamin C (ascorbic acid); vitamin A; vitamin D; and in the vitamin B group, thiamin, riboflavin, and niacin. To be sure of a proper diet these vitamins must be considered in the planning. The rest of the vitamins are so widely distributed that they will be included automatically in a well-balanced diet that is adequate with respect to the six critical vitamins.

Of the critical vitamins singled out, vitamin C, the B vitamins, and vitamin A are the most susceptible to damage in processing. To determine the extent and nutritional significance of the damage we will take each of these vitamins in turn, determine what foods serve as the important sources for each, and show how they may be affected in food processing.

VITAMIN C (ASCORBIC ACID).—Vitamin C is almost entirely supplied by certain fruits and vegetables. Especially good fruit sources of the vitamin are strawberries and citrus fruits. Important vegetable sources are cabbages, tomatoes, potatoes, sweet potatoes, and various greens.

Fruit and vegetable processing methods include canning, freezing, fermentation, and dehydration. Since vitamin C is susceptible to loss, either by oxidation or leaching, it is practically impossible to process foods without some loss of this vitamin. Nearly every process includes either exposure to air or water. However, the losses must be evaluated in comparison to losses that occur in the normal handling, shipping, and cooking of fresh foods.

Both oxidation and leaching can occur during washing, blanching (scalding), water cooling, brine flotation, and other processes preparatory to freezing, but during the normal respiration of fresh produce, the ascorbic acid declines and it falls abruptly when wilting occurs.

Ascorbic acid oxidase, an enzyme occurring in many fruits and vegetables, rapidly destroys vitamin C during the warming-up stage of a blanching or cooking operation. If heating is rapid, the enzyme is inactivated before significant oxidation is accomplished. In this respect an efficient commercial blanching operation may be superior to ordinary home-cooking methods.

Losses of vitamin C during frozen food storage may result from inadequate blanching temperatures for destruction of the enzyme. In canned and dehydrated foods storage losses may be catalyzed by contamination with traces of copper. Warm storage temperatures may encourage the destruction of ascorbic acid by accelerating its participation in the browning reaction.

In properly processed and stored foods losses of vitamin C are not large enough to create nutritional problems. The average destruction of vitamin C in canned citrus juice is only 3 per cent.[1] In tomato juices greater losses, averaging 33 per cent, have been reported.[2] Typical values for the retention of vitamin C during blanching of vegetables are as follows: peas, 71 per cent; asparagus, 89 per cent; kale, 56 per cent; and cabbage, 48 per cent.[3] In spite of these losses, frozen vegetables are as rich a source of the vitamin as fresh foods since comparable losses occur in home preparation of fresh vegetables.

Vitamin C is stable in frozen fruits, provided the temperature does not rise above 0 F.,[4] and is very stable in stored canned foods at ordinary storage temperatures. More than 90 per cent is retained in canned peas, orange juice, and tomatoes stored for a year.[2]

About 50 per cent of the original vitamin C of cabbage is retained after the fermentation and canning of sauerkraut.[5]

Dehydrated foods prepared by modern

methods, including preliminary blanching, sulfiting, and rapid drying, retain significant quantities of vitamin C.[6] These foods are important in military rations, and with improvements in modern processing technics are becoming more important commercially.

VITAMIN A.—Fruits and vegetables figure prominently in providing the vitamin A requirements of a well-planned diet. Three quarters of the vitamin A supply, largely in the form of its precursor, beta carotene, are supplied by yellow, red, and green fruits and vegetables. Sweet potatoes, carrots, tomatoes, peppers, peas, broccoli, spinach, citrus fruits, and apricots are all rich sources of vitamin A. This vitamin also is found in milk fat and hence in cream, cheese, and whole milk.

Vitamin A, like vitamin C, is sensitive to enzymatic oxidation and its stability in frozen storage depends also on adequate blanching. Unlike vitamin C, it is not water soluble and therefore is not subject to leaching losses in processing operations. Retention of carotene during processing is comparable to vitamin C—67 per cent in tomato juice and 77 per cent in canned peaches. There is no measurable loss of vitamin A during storage of canned peas, orange juice, and tomatoes after a year in commercial warehouses.[2]

Very little loss of carotene occurs in preparation of frozen vegetables,[4] but storage losses may be considerable if temperatures rise above 0 F. or if the material is inadequately blanched before freezing.

Although carotene is destroyed by sun drying, modern methods of dehydration preserve vitamin A activity. For example, retention of 66 to 100 per cent of carotene has been reported in the dehydration of carrots.[2] Spray-dried eggs retain 90 per cent of their original vitamin A, but this percentage may be relatively unstable on storage at 70 F. Half this amount will be lost within three months at this temperature.

THIAMIN, RIBOFLAVIN, AND NIACIN.—The "B" vitamins, widely distributed in foods, occur in vegetables, dairy products, meats, poultry, fish, eggs, and cereal. They are all subject to the leaching losses discussed for ascorbic acid. Thiamin is sensitive to destruction by heat, particularly in an alkaline medium, and thus undergoes greater losses during processing than do riboflavin and niacin. The bisulfite ion destroys thiamin by splitting the molecule to the pyrimidine and thiazole components. For this reason, the use of sulfites and sulfur dioxide are not advisable for foods that are important sources of thiamin.

Because of the wide distribution of thiamin the processes to which it is exposed are diverse. Several examples will illustrate its losses as a result of exposure to high temperatures. In the baking of bread a 5 to 9 per cent loss in thiamin occurs, but an additional loss of 12 to 24 per cent occurs on toasting[7] The retention of thiamin during canning sterilization varies from 47 per cent for corn to 89 per cent for tomatoes.[2] Losses of thiamin from frozen vegetables are less because blanching is a milder heat treatment than sterilization.[8]

In the dehydration of meats and vegetables, losses of 22 to 56 per cent of thiamin have been reported. Storage temperatures of dehydrated foods are important. For example, thiamin is fully retained in the spray drying of eggs, but it is soon destroyed at storage temperatures above 70 F.[2] Dehydrated fruits and vegetables are treated usually with sulfur dioxide, but in view of the insignificant contribution of these foods to the thiamin requirement its destruction in these foods is of little nutritional importance.

Significant losses in thiamin, riboflavin, and niacin occur during the milling of wheat and rice. This is an outstanding example of a nutritive loss suffered during a processing operation. The loss is not as nutritionally significant in the United States as it is in countries where cereals constitute the major portion of the diet. Fortunately, flour and rice enrichment have largely replaced the milling losses.

Protein

Meat, poultry, fish, and eggs supply one third of the dietary protein in this country. Dairy products are a close second, supplying one fourth of the available protein; cereals supply one fifth. Important sources of plant protein are dried beans, peas, and nuts.

The biologic value of proteins can be impaired by high temperatures. The "puffing" of cereals, accomplished by treating with steam at high pressure and then suddenly releasing the pressure, results in considerable damage to the protein. Whether or not the ill-effects of processing cause a nutritionally significant protein deficiency depends on the importance of the contribution of the particular damaged protein to the diet. For example, the protein content of the milk ordinarily used with a puffed breakfast cereal probably replaces adequately the cereal protein damaged in processing.

In general, moderate heat treatments such as those involved in home cooking and in most commercial processing operations do not alter the nutritive value of protein significantly.[9] There is no evidence that the protein of frozen foods is injured in any way.

Many different foods are subjected to heat to produce a brown color and desirable flavor. This change, called the "browning reaction" by biochemists, involves a condensation of protein and reducing sugars. The attractive qualities of broiled meat, certain breakfast cereals, French fried potatoes, toast, maple syrup, beer, whiskey, sherry, coffee, and cocoa depend in part on the browning reaction. In the case of meat and toast, the protein damaged by this reaction is limited to the surface and constitutes only a small part of the total protein. The damaged portion of the breakfast cereal is again offset by the milk's high lysine content. The remaining foods ordinarily subjected to browning are not important protein sources.

Fats and Fatty Acids

The effect of processing on essential fatty acids has received considerable discussion in recent years.[10,11] These unsaturated, readily oxidized compounds include linoleic, linolenic, and arachidonic acids. The possibility that the balance between unsaturated and saturated fats in the diet is a factor in the prevention of atherosclerosis has thrown the spotlight on an important food process, hydrogenation.

Partial hydrogenation of fats may cause a preferential destruction of essential fatty acids, although the fat can still be metabolized normally to produce calories or fat deposits. Until more facts are available, it is impossible to evaluate the nutritional effect of hydrogenation. Further research is needed to establish desirable ratios of saturated and unsaturated fats in the diet, and, until such knowledge is available, the food industry should not attempt to promote foods commercially on the basis of their fat constituents.

Improvements in the Nutritive Value of Processed Foods

The shift toward processed foods has provided the consumer with a wide variety of foods independent of season and distance from the source of supply. The availability of canned and frozen foods throughout the year insures a steady supply of ascorbic acid and vitamin A—two vitamins that often were deficient before these processing methods were popular.

Many processed foods are fortified with added nutrients. Bread, flour, corn meal, macaroni products, and white rice are enriched by the addition of thiamin, riboflavin, niacin, and iron. Calcium and vitamin D are optional ingredients. The enrichment of these products has been endorsed by the Food and Nutrition Board of the National Research Council on the grounds that substantial segments of the population require additional nutrients. There is logic in restoring to cereals the vitamins that are removed in the milling process.

The addition of vitamin D to milk and iodine to salt are also approved practices. Children have the most critical need for vitamin D, and milk, the most widely used food among children, is a logical carrier. Iodine deficiency is widespread and salt is the most widely consumed food in which iodine is stable.

Unfortunately, vitamins are added to many foods not because of a public need but to increase sales appeal. This type of fortification, of no nutritional benefit, should be discouraged.

Summary

Food processors in the United States make a genuine effort to preserve the quality of food, including its flavor, texture, color, and nutritive value. Because of the wide variety of foods made available by modern methods of freezing, canning, fermentation, and dehydration, the American diet is rich in all of the essential nutrients. With the advice of nutritionists, the deficiencies caused by certain processes, such as cereal milling, are restored by fortification. The food industry has shown itself eager to apply the new knowledge gained in research to improving the American diet.

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(*Number sixteen in a new series of Nutrition Excerpts*)

Number of Eye Banks Multiplying

The number of eye banks have multiplied within the past few years, according to *Patterns of Disease,* a Parke, Davis & Company publication. Last year six new eye banks were established, compared with only three in 1958.

The growth of these banks follows the growing use and success of corneal and vitreous transplants. Corneal transplants are successful in a high proportion of operations and utilization of vitreous material is gaining widespread acceptance.

Pledges of eyes have soared in the last few years—from 2,200 in 1956 to 43,000 in 1959. In spite of such figures, the demand for tissue and vitreous far exceeds the current supply and must be met on a waiting list basis by eye banks throughout the nation.

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D., Secretary, Medical Education for National Defense (MEND) Committee, Albany Medical College

Survival in a Thermonuclear War

VII. Comparison of Different Shelters

SOLOMON GARB, M.D.,* ALBANY, NEW YORK

Since there are many kinds of bomb shelters it may be difficult for some people to decide which is the best for a particular situation. In this article, the characteristics of many shelters will be summarized and compared. The weights are given to furnish a guide as to the amount of settling which might be expected if these shelters are placed in a basement. Also, the weight gives a rough idea of the amount of work needed. The estimates of cost of materials and probable range of contractor's fees are approximations only. There will be variations in cost in different parts of the country and even between different homes on the same street. For example, if a home is situated on a steep slope up which concrete must be taken by wheelbarrow the contractor's costs would be higher than if the house were next to a level road, allowing a portable concrete mixer to discharge concrete directly into the forms.

Type 1.—Basement shelter, sandbags, 18-inch-thick walls and roof
Protection against blast—practically none
Protection against fallout—good
Fallout radiation reduction—to about 1/40
Ventilation efficiency—fair
Weight—about 22,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$175
Probable range of contractor's fees—$500 to $750

Type 2.—Basement shelter, sandbags, 36-inch-thick walls and roof
Protection against blast—none
Protection against fallout—excellent
Fallout radiation reduction—to about 1/1,000
Ventilation efficiency—fair
Weight—About 45,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$200
Probable range of contractor's fees—$700 to $1,500

Type 3.—Basement shelter, solid concrete block, 8-inch-thick walls and roof
Protection against blast—none
Protection against fallout—good
Fallout radiation reduction—to about

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* United States Public Health Service Senior Research Fellow, SF-11.

1/12 to 1/16
Ventilation efficiency—fair
Weight—about 20,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$300
Probable range of contractor's fees—$300 to $600

TYPE 4.—Basement shelter, concrete block, 16-inch-thick walls and roof
Protection against blast—none
Protection against fallout—excellent
Fallout radiation reduction—to about 1/200
Ventilation efficiency—fair
Weight—about 40,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$500
Probable range of contractor's fees—$400 to $1,000

TYPE 5.—Basement shelter, concrete block, 20-inch-thick walls and roof
Protection against blast—none
Protection against fallout—excellent
Fallout radiation reduction—to about 1/1,000
Ventilation efficiency—fair
Weight—about 50,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$600
Probable range of contractors fees—$600 to $1,200

TYPE 6.—Basic underground shelter, reinforced poured concrete, 8-inch-thick walls, 6-inch-thick roof, covered with $2^1/_4$ feet of earth
Protection against blast—slight
Protection against fallout—excellent
Fallout radiation reduction—to about 1/1,000
Ventilation efficiency—fair
Weight—about 50,000 pounds of concrete, 25,000 pounds of earth, total 75,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$400
Probable range of contractor's fees—$2,000 to $3,000

TYPE 7.—Family fallout shelter in garage, reinforced poured concrete, 8-inch-thick walls, 20-inch-thick roof
Protection against blast—moderate
Protection against fallout—excellent
Fallout radiation reduction—to about 1/1,000
Ventilation efficiency—fair
Weight—about 69,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$400
Probable range of contractor's fees—$2,000 to $3,500

TYPE 8.—Above ground double-wall shelter
Protection against blast—none
Protection against fallout—excellent
Fallout radiation reduction—to about 1/1,000
Ventilation efficiency—fair
Weight—about 175,000 pounds
Comfort—excellent
Estimated cost of materials (including ventilation)—$700
Probable range of contractor's fees—$1,500 to $2,500

TYPE 9.—Corrugated steel pipe shelter covered with 5 feet of earth
Protection against blast—excellent
Protection against fallout—excellent
Fallout radiation reduction—to about less than 1/10,000
Ventilation efficiency—very good
Weight—steel, 2,000 to 3,000 pounds, earth cover, 50,000 pounds
Comfort—fair
Estimated cost of materials (including ventilation)—$500 to $700
Probable range of contractor's fees—$150 to $300

(Number seven in a series on the Physician in Civil Defense)

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Carbon Dioxide Retention

THE content of carbon dioxide in the breathing atmosphere affects the respiratory and cardiovascular systems. In certain individuals relatively small changes in the amount of carbon dioxide of the inspired mixture may result in unusually significant changes in the arterial blood pressure. The following case report illustrates such an instance.

Case Report

A sixty-eight-year-old Chinese male was diagnosed as having carcinoma of the rectosigmoid. It was proposed to do a resection of the involved area through an anterior abdominal approach.

The patient appeared to be debilitated. He weighed 120 pounds. Urinalysis revealed no abnormalities. His arterial blood pressure was 130 mm. Hg systolic and 80 diastolic, and his pulse rate was 90 beats per minute. The hemoglobin content of his blood was 12.5 Gm. per 100 ml.

For preanesthetic medication the patient was given 100 mg. of Amytal and 0.3 mg. of atropine by intramuscular injection. When he arrived in the operating room thirty-five minutes later, he appeared to be calm. His arterial blood pressure and pulse rate remained unchanged. Anesthesia was induced smoothly with cyclopropane and oxygen in a closed carbon dioxide absorption system utilizing a circle filter. A number 40 cuffed endotracheal tube was inserted under direct vision, and anesthesia was maintained with cyclopropane and oxygen.

The respiratory tidal volume exchange was noted to have become diminished; therefore, respiratory efforts were assisted by manual compression of the breathing bag with each inspiration. On redetermining the patient's blood pressure it was found to be elevated to 190/90

Discussed at a conference held at Bellevue Hospital, New York City, June 6, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

with a slight increase in the pulse rate to 100 beats per minute. The onset of surgery was withheld for twenty-five minutes, but the patient's blood pressure remained elevated at 190/90. The breathing atmosphere was directed through the second chamber of soda lime for carbon dioxide absorption, and at this time surgery was begun. The depth of anesthesia was lightened, and muscular relaxation was secured by means of an intravenous drip of succinylcholine chloride solution. During the next fifteen minutes there was no change in the patient's blood pressure and his pulse rate rose to 120 beats per minute.

It was suggested that perhaps the patient's tidal volume was insufficient and that there was carbon dioxide retention due to the lack of the elimination of carbon dioxide in the expiratory cycle. To test this hypothesis the manual pressure on the breathing bag was increased from 10 cm. to 30 cm. of water pressure with each of the patient's inspiratory efforts. This resulted in a diminution in both the blood pressure and the pulse rate. Ten minutes after the onset of this maneuver the patient's arterial blood pressure was 140/90 and the pulse rate was 100 beats per minute. Ten minutes later the blood pressure fell to 60/40 while the pulse rate diminished to 80 beats per minute. Along with this cardiovascular depression, apnea supervened so that artificial respirations were instituted and maintained. Diminishing the manual pressure on the breathing bag to 20 cm. of water pressure resulted in a slight rise in the blood pressure to 90/60 with a pulse rate persisting at 80 beats per minute.

These changes seemed to demonstrate cardiovascular changes due to changes in the carbon-dioxide content in the breathing atmosphere. Since the operative procedure had barely begun, it was decided to maintain physiologic alveolar pressures and respiratory tidal volumes by the use of an artificial ventilator. This was done by interposing one of the common types of ventilators so that each inspiratory cycle had 15 cm. of water pressure. Following this maneuver the arterial blood pressure and the pulse rate became stabilized at 140/90 and 84 beats per minute. The operative procedure lasted for four hours, during which time 500 ml. of whole blood were transfused as replacement therapy. During the next two weeks the patient's course was uneventful.

Comment

Hypopnea, or diminished respiratory tidal volume, produced by cyclopropane anesthesia resulted in increased carbon dioxide retention, which probably was the cause of the increase in the patient's arterial blood pressure during the first half hour of anesthesia. Manual compression of the breathing bag at each inspiratory cycle was a good means of combating the hypopnea. However, it was difficult to attain the proper physiologic regulation of the respiratory tidal volume by this means. Interposing an artificial ventilator so that a certain definite and constant pressure could be effected at each inspiratory cycle was good therapy, and it proved to be satisfactory.

It should be remembered that adequate ventilation should be maintained at all times. In some cases untoward effects of inadequate ventilation during general anesthesia become apparent in the post-anesthesia period when the re-establishment of normal respirations causes the elimination of the retained carbon dioxide and consequent significant hypotension.

(Number ninety-eight in a series of Clinical Anesthesia Conferences)

The old say "I remember when." The young say "What's the news?"—Gelett Burgess

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Quinine, Aspirin, Kerosene, and Analgesic Intoxication

The following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Quinine Sulfate	16 years	Female

The Center was consulted about the quinine ingestion in a patient in whom ophthalmologic manifestations were noted. The specific inquiry related to whether or not quinine could cause damage to the optic nerve since the patient was almost blind. The intern was informed that this was a frequent finding in cases of quinine intoxication.

The information in the hospital discharge report that was submitted to the Center indicated that the patient had vomited spontaneously prior to her admission and was in stupor when admitted and that her stomach was lavaged in the emergency room with saline. On the hospital inpatient service blood chemistry determinations revealed a blood urea nitrogen of 17 mg. and a glucose of 90 mg. per 100 ml. During her stay in the hospital the patient was treated with bed rest and was put on a regular diet; she also had a psychiatric consultation. The discharge diagnosis was an overdose of quinine.

A public health nurse visited the home and obtained the following information from the family: The patient took twenty-four 5-grain tablets of the medication in a suicidal attempt because of a quarrel with her boy friend, whom she accused of not loving her. She also took 4 to 6 tablets of methylandrostenedial, a cortisone derivative. (This medication probably was used by her mother, who was suffering from an arthritic condition.) The patient experienced some abdominal pain with nausea and vomiting. She also had drowsiness, vertigo, and tinnitus. About twenty-four hours following the ingestion the patient was discovered by her mother and was taken to a hospital. One day following the ingestion the patient was practically blind, and this condition lasted for two days. The public health nurse related that the patient was of average intelligence and active and that the family was quite cooperative in providing information. On a specific inquiry by the nurse as to whether or not the patient took the quinine as an abortifacient, it was ascertained that the patient was not pregnant.

In checking the hospital report with the public health nurse's report and the original information that we received from the inquirer, we felt that the hospital report was very incomplete and perhaps lacking in valuable medical information which would be of great interest to the medical profession. An epidemiologist therefore was sent to the hospital to elicit additional information. The history that was obtained was essentially as reported previously, except for the following additional information:

> Following the ingestion of twenty-four 5-grain capsules of quinine sulfate the patient developed amaurosis and tinnitus. The physical examination findings were essentially negative. The pupils were dilated. The patient was alert, cooperative, in no apparent distress, and well oriented. Her blood pressure was 115/50, pulse rate 90, and respirations 18. The examination of the heart, lungs, and abdomen gave negative findings. The reflexes were normal. No Babinski or Kernig signs were present. Sensorium and motor tones were intact.
>
> The hemoglobin was 12 Gm., and the white blood cell count was 11,500. The urine was negative for sugar, albumin, and acetone. The blood chemistry findings were as follows: blood urea nitrogen 17 mg. per 100 ml., carbon dioxide content 43 volumes per cent, glucose 90 mg., and chlorides 106 mg. per 100 ml. The x-ray films and electrocardiogram were negative.
>
> Course in hospital: No attempt was made to lavage the stomach or in any way to get the quinine out, perhaps because of the lapse of time. (The apparent inconsistency in the hospital discharge report to the Poison Control Center and the information obtained by the nurse that the stomach was lavaged with saline may be due to the fact that this procedure was done in the emergency room. Perhaps the information was never relayed to the inpatient service, whereas the medical record room perhaps had access to both the emergency room and the inpatient records.) The treatment was purely on a symptomatic basis.
>
> The patient's temperature at first was 100 F. and fell to 98.6 F. in twenty-four hours. Amaurosis and tinnitus continued. The patient also began to complain of abdominal pain, right lower quadrant. Acute appendicitis or ectopic pregnancy was suspected. However, an examination for pregnancy, both uterine and ectopic, gave a negative result.
>
> An eye consultation revealed amaurosis probably secondary to acute retrobulbar neuritis, etiology toxic, and in this case due to quinine. The amaurosis and tinnitus continued for several days together with the abdominal pain. On or about June 6, 1960, it began to gradually subside, and by June 12 vision was completely restored and the tinnitus had subsided. The patient at this time no longer had abdominal pain and was allowed out of bed. The patient was discharged from the hospital on June 15 as cured.

We have previously questioned the use of quinine as a home remedy for real or fancied medical purposes. At the present time it should be a prescription item.

Incident 2

Toxic Agent	*Age*	*Sex*
Old English Furniture Polish	15 months	Male

While his mother was busy cleaning the house, the baby removed the bottle of furniture polish from a dresser and swallowed some of its contents. The patient immediately vomited and became cyanotic. He was taken to a hospital emergency room, where his stomach was lavaged about fifteen minutes following the ingestion. Following the lavage the child was admitted to the inpatient service. The only symptom noted on admission was slight dyspnea. While in the hospital he developed bronchopneumonia and remained acutely ill. In spite of therapy he expired on the seventh hospital day.

Our records indicate that severe illness and death following the ingestion of furniture polish containing kerosene are not frequent and that when they do occur they apparently are due not to the inherent toxicity of the product but to the aspiration effect and the subsequent development of petroleum pneumonitis.

It may be well to cite an interesting case report of kerosene poisoning related to us by Robert L. Carr, M.D., of Lubbock, Texas, at the 1960 annual meeting of the American Medical Association, at Miami Beach, Florida. This concerned an eighteen-month-old white male child who developed coarse rales and dyspnea in about ten to fifteen minutes following the ingestion and appeared in extremis. The x-ray film taken in the emergency room revealed increased markings in the lower right lobe and bilaterally throughout both lungs. The patient was treated with antibiotics and oxygen. Then in desperation the patient was treated with a steroid preparation. The physician sat up the entire night with the patient to observe his condition and his response to the drug. Five hours following the initial dose, respiration improved markedly. By the next morning (sixteen to eighteen hours following the ingestion) the patient was still coughing but looked well, bright, and alert and was taking his food well. Within three days the x-ray picture was entirely clear, and the child was sent home as improved. An x-ray film taken three days following his discharge (or six days after the ingestion) showed complete clearing of the pneumonic process. This was the first such case reported to our Center which was treated with steroids.

It is of interest that several days later we received an issue of *The Lancet* in which a physician inquires whether or not any of the readers had had experience in treating kerosene poisoning with anti-inflammatory steroids.* He mentions that there are several references in the literature to cortical steroid therapy as being useful and life-saving in chemical pneumonic effects from oxides of nitrogen, crude oil, and aspirated stomach contents. The correspondent wonders whether or not steroid therapy deserves a try since kerosene exerts a major portion of its toxic effect through chemical pneumonitis.

We are not recommending steroid therapy for the treatment of kerosene poisoning but are merely publishing the information for the guidance of physicians who may wish to use it. On the recommendation of Horace W. Gerade, M.D., of Esso Research Laboratories, New York City, we are presently of the opinion that lavage is contraindicated in kerosene poisoning. The concomitant administration of vegetable oil by mouth is recommended.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Baby Aspirin	$2^1/_2$ years	Female

This incident was reported from out of town. The child obtained a bottle of baby aspirin and ingested twenty-five $1^1/_4$-grain tablets. Since the mother was unable to contact the family physician, she called the Poison Control Center for information on the management of the case. The mother was advised to induce vomiting and then to take the child to a nearby hospital. At the hospital the patient's stomach was lavaged about an hour and a half following the ingestion. Since the child was asymptomatic, the patient was sent home as apparently improved.

The mother was asked to fill out a report on the outcome of the case, and we believe that her report is sufficiently informative and complete to warrant publication:

> I am ashamed to say that the incident occurred through my own carelessness. I always keep the aspirin away from the children's reach because I know they like them. The baby had a cold, and I gave her 2 aspirins the night before. We had company, and because I was talking to them I put the aspirins on the kitchen counter and then took the baby to bed. When I returned to my company, I completely forgot to put the aspirins away. The next morning my oldest son woke my husband and me and said, "Betty Ann ate the baby aspirins." She had gotten up ahead of us, and we hadn't even heard her. She had climbed onto a chair and had gotten the aspirin bottle. She

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* Stopps, G. J.: Kerosene poisoning, Lancet 1 : 1298 (June 11) 1960.

had opened the so-called safety cap with her teeth. When my son woke us, we jumped up and forced her to vomit. Then I called you and then my doctor, who sent us to the hospital for a stomach wash.

May I thank you people for your help. This was not the first time I called you when I was badly frightened. In raising my three children I called many times, especially for my second son, who was always eating crazy things and drinking my perfume. Thank goodness it was never very serious things before, but just being able to call and be reassured everything would be all right meant a good deal to me. I couldn't always reach my doctor right away, and you people were always there and able to tell me what to do. You were always kind and gentle and calmed my fears greatly. I expected to be scolded for carelessness, which I deserved, but you were always understanding. Because I love my children very much and because you have helped me so often, I want to thank you all. God bless you all!"

This reply is indicative of the good public relations established by the operation of the Center. It also emphasizes the fact that a well-functioning Poison Control Center, while providing information to physicians as well as to lay persons, does not actually supplant the physician but rather supplements and enhances his services. While the parent's anxieties were allayed, the inquirer was instructed, as in all cases, to take the child immediately to the family physician or to another treatment agency.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Dextropropoxyphene Hydrochloride	27 years	Female

The patient ingested 23 analgesic capsules with suicidal intent. She vomited spontaneously. Her stomach was lavaged with saline in a hospital emergency room within a short time following the ingestion. The only physical symptom noted on admission was abdominal pain. The patient also appeared to be suffering from mental depression. No convulsions were noted. She was discharged the same day as improved.

A recent release from the National Clearinghouse for Poison Control Centers discusses convulsions as a manifestation of acute dextropropoxyphene intoxication.* The bulletin contains 2 case reports of dextropropoxyphene ingestion, one in a two-year-old boy and the other in a seventeen-year-old girl, both of whom ingested a lower dosage than our patient. Convulsions and coma were the most prominent features in the 2 cases. Although the case cited by us was associated with a higher dosage than in these 2 cases, no convulsions were manifested.

In the absence of a specific antidote for dextropropoxyphene intoxication the nalorphine antagonists have been used experimentally in animals. In a subsequent bulletin from the National Clearinghouse for Poison Control Centers (dated July, 1960) Everett Nitzke, M.D., Director of the Poison Control Center of Des Moines, Iowa, reports on the ingestion of this drug by a one-year-old girl. She ingested five capsules, or a total of 325 mg. She was found in a semicomatose state associated with dyspnea and generalized convulsions. This patient was finally treated with nalorphine, a total dose of 5 mg. given intravenously in $2^1/_2$ mg. doses. Within twenty-four hours after the first dose was administered the patient showed marked improvement. Two days following the ingestion the child appeared to be clinically well except for a mild degree of irritability. Thus, it would appear that nalorphine probably is also of value in the treatment of dextropropoxyphene intoxication in human beings.

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* Convulsions as a Manifestation of Acute Dextro Propoxyphene Intoxication, March, 1960.

(*Number sixty-four in a series of Briefs on Accidental Chemical Poisonings*)

MEDICAL CARE INSURANCE

A series of articles on health insurance prepared by the Associated Blue Shield Plans of New York State

LEONARD J. RAIDER, M.D., *Editor*

The Responsibilities of the Medical Profession in Preserving Our Freedom[*]

ROBERT R. GROS, SAN FRANCISCO, CALIFORNIA

(*Vice President, Pacific Gas and Electric Company*)

FREEDOM is never free. It is axiomatic that our American freedom was bought with blood and sweat and tears, and only thus has it been retained through the generations. But what an interesting paradox it is that the cost of freedom has remained constant in this era when the cost of everything else has kept soaring. The cost of retaining freedom continues to be, as it was from the beginning, payable only in terms of vigilance and human effort.

We dare never forget that freedom, which is so dear to buy, sells very cheaply. Freedom—political, religious, economic, moral, it does not matter what kind—exacts a price. It is very easy to dodge our responsibilities, but we cannot dodge the consequences of having dodged our responsibilities. As a layman, I have the temerity, in all friendliness, to suggest a few specific things that you can do in exercising these responsibilities.

The first and obvious one, so obvious that too many fail to heed it, is the exercise of the franchise. If you were told that you could not vote, you would complain vehemently. Yet when you *can* vote, half of you do not vote, and that is a pretty sad commentary on our American system. We get only the kind of statesmen or politicians we deserve in America.

The second is the responsibility of participation. I am not contending that each of us wants to be a worker in the vineyard of government and politics. But what excuse is there, even for a busy doctor, even for a busy business executive, not to be a well-informed, alert citizen? It is not enough for the most learned of surgeons to say, "I am so busy reading the technical journals, I am so busy practicing my profession that I have no time to worry about what is going on in government affairs." If enough doctors take that attitude, the time is inevitable when those doctors will have time to do only those things which a government bureaucracy orders them to do, instead of pursuing the free, unfettered practice of medicine. Studying the ballot proposals, analyzing the candidates—these are forms of participation and, in another context, similar to the participation that comes from willingness to serve your community. Certainly I know no better example of such willingness than the service to the community rendered gratis by the medical profession of America.

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[*] Part of a speech, "Freedom is Never Free," presented at the Annual Conference of Blue Shield Plans, held at Miami Beach, Florida, April 12 to 16, 1959. Mr. Gros received a 1960 Freedoms Foundation Award for this speech as among the nation's best speeches of 1959 in support of the American way of life.

The third responsibility, the one that gets right down to the specifics of success or failure of the voluntary prepaid insurance plans, is that all of those who believe, as we believe, in the American enterprise system have an obligation to work constantly for that system. If anybody thinks that the threat of government medicine is over, just wait and see. Those who naively believe that the fight is won are just as foolish as the patient who mistakes the temporary relief of morphine for the real cure. Such a fight is never won. The Forand bill itself poses a new ideologic and economic threat, more serious, I believe, than any of its precursors.

I believe fervently that there is a rule basic to the protection of all our freedoms, and that rule is as simple as this: The government should not do those things for the people which the people are perfectly capable of doing for themselves. The big danger, however, is that you and I, who believe in sound fiscal management and balanced budgets, enunciate this pious doctrine and assume the people embrace it. But, as a matter of fact, in America the people do not embrace it except as a platitude because in the last analysis we have raised a generation less challenged by opportunity than intrigued by security.

So it is not enough for you and me to say, "Well, the government should not do these things because they are morally wrong." We have to do something. It is to the eternal credit of the profession that you moved in under the leadership of pioneers years and years ago. At a time when you had the foresight to grasp this problem, you established a foundation for plans that have done more to keep the government from going all the way into the field of health insurance than all the preachments and demagoguery possible could have done.

I do not deny that there is a problem for those who need adequate medical care. I have nothing but praise for those who sincerely seek to raise the level of health in America. I do not ignore the fact that sudden illness can bring catastrophe to a family of moderate or even more than moderate means. To me, as an eternally potential patient, health insurance is just common sense protection against disaster. It is the best possible safeguard against personal bankruptcy. There is no longer any question in America of whether or not to get health insurance, but rather what kind to get. And the bigger question is whether America is going to continue to develop these existing voluntary programs with all their benefits to the prudent, or whether we are to cast off these gains of past experience for a pernicious system of compulsory insurance with all the waste, inefficiency, endless red tape, and the fine-print, bureaucratic rules that mean political control of medicine. Political medicine men are bad medicine men in my book.

The profession of medicine has room for putting its house in order. The challenge, I think, is very simple. To those of us who believe that except for the indigent the care of the sick is not a function of government, the challenge is to keep right on demonstrating that we can do a better job at less cost than can a wasteful, bureaucratic system.

We must recognize that good public relations consist not in what we say but rather in what we do. Bluntly, I suggest to you medical gentlemen a telling case against socialized medicine is that it destroys the traditional patient-physician relationship. But you must examine your own individual situation to be 100 per cent sure that this doctor-patient relationship still exists in your own practice. And a clear record for yourself unfortunately is not enough. The shoe may fit some other doctor in your community. His carelessness or disregard for public opinion, at a time when the profession needs and warrants public understanding and appreciation, will reflect to your disadvantage as well as his. By your Hippocratic Oath your noble profession is dedicated to the public interest. I urge you to police yourselves so that no single abuse, real or fancied, can be found in your practice to furnish ammunition to your opponents in the battle of socialized medicine.

One of the most heartening aspects of medical practice today is the increased emphasis on public relations. Certainly many of the county associations and most of your Blue Shield Plans are doing those things which build good public relations. I suggest you can do a great deal more, however—and indeed you have an increasing obligation to do so—to educate your patients that it is in their own interest not to abuse the Plans. If they do abuse them, then inevitably costs are going to have to go higher and higher.

It has been said, and said well, that all that is necessary for the forces of evil to win the world is for enough good men to do nothing. In similar vein, back in 1941 during World War II, the great novelist Somerset Maugham said, "If a nation values anything more than its freedom, it will lose that freedom. And the irony is that if the thing it values more is comfort or money, it will end up losing that, too."

In our perfectly understandable preoccupation with material success—and you cannot run health insurance plans at a loss—and in your concern with increased memberships, constantly fluid benefits, and increasing service demands, you dare not forget that the greatest stake you have today is in preserving our American freedoms. Lest my remarks sound theoretic only, let me remind you and myself that unless we *do* preserve these freedoms in the very precarious world in which we live, the climate cannot exist in which my kind of industry and your kind of profession and, indeed, the business of sound, sensible, farseeing hospital and medical health plans can flourish. They can exist only within the framework of which freedom is a fundamental and a prerequisite.

(*Number two in a series of special articles on Medical Care Insurance*)

Retrolental Fibroplasia

Retrolental fibroplasia, an eye disease characterized by the presence of fibrous tissue behind the lens, had a short but dramatic history in this country and its effects will be felt for many years. The disease was first recognized in 1941 as a distinctly new type of maldeveloped eye occurring in premature infants. Its frequency increased rapidly, and by 1950, when its etiology was still unknown, retrolental fibroplasia accounted for about half the blindness in children of preschool age. Later the link between this disease and the routine administration to premature infants of oxygen in high concentration was discovered, and this practice was discontinued.

While in 1940 retrolental fibroplasia was responsible for only 0.1 per cent of all blindness in this country, by 1950 the per cent increased to 1.0 and by 1957 to 2.4 (over 8,000 cases as of that year). However, in the latter year it was responsible for only 0.2 per cent of all new cases of blindness.—*Health Information Foundation, Progress in Health Services, September, 1960*

CASE REPORTS

Galactorrhea Following Extirpation of the Uterus and Both Ovaries

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(*From the Department of Obstetrics and Gynecology, State University of New York Downstate Medical Center, and the Kings County Hospital*)

NONPUERPERAL galactorrhea is rare. It has been reported to follow thoracic surgery.[1,2] In 1932 Ahumada and Del Castillo[3] described a syndrome characterized by hypoestrinism, absent or low follicle-stimulating hormone, amenorrhea, and galactorrhea. Another syndrome of persistent galactorrhea, amenorrhea, as well as hyperinvolution of the uterus, usually following a normal pregnancy, were described by Chiari, Brown, and Spaeth[4] and later by Frommel.[5] Galactorrhea occurs in acromegaly.[6,7] The administration of chlorpromazine or Rauwolfia[8-11] may induce galactorrhea.

There have been two previous reports[12,13] of galactorrhea following removal of the uterus and both ovaries. Because of its rarity it was felt that the report of a third case was justified.

Case Report

A twenty-eight-year-old, married, Negro nulligravida in seven years of a good marriage had not been able to become pregnant. When first seen at the Gynecologic Clinic she stated she had been treated for recurrent bouts of pelvic inflammatory disease for about ten years. For the preceding year she had suffered from constipation and urinary pressure symptoms. She denied menstrual irregularities or discharge. The menarche occurred at age thirteen, and her periods occurred every twenty-eight days, lasted three to four days, and were moderate in amount.

On admission the patient was noted to be well nourished and well developed. The breasts showed entirely negative findings. There was a moderate degree of tenderness in the suprapubic area. Pelvic examination revealed a marital introitus but otherwise normal external genitalia. The uterus was twelve weeks gestational size, firm, and multinodular. There was bilateral adnexal thickening.

On admission the hemoglobin was 11 Gm. The urinalysis showed negative results as did the serology and chest x-ray film. The Papanicolaou smear was Type 2 and showed a marked estrogen effect.

On January 22, 1959, under cyclopropane and oxygen, a total hysterectomy with bilateral salpingo-oophorectomy was performed. A large leiomyomatous uterus was noted. The tubes and ovaries were extensively involved with chronic pelvic inflammatory disease. The patient withstood the procedure well. The estimated blood loss was 1,500 cc., and she received 2,000 cc. of whole blood in transfusion.

The pathologic report revealed a uterus with multiple subserous and intramural leiomyomas and an involuting secretory endometrium. There was also bilateral salpingo-oophoritis.

The patient's postoperative course was benign, and she was discharged on the seventh postoperative day. On February 13, 1959, she was seen in the Gynecologic Clinic and reported feeling fine except for massive galactorrhea. Her brassiere was wet and was obviously too small. She stated her breasts were "huge." To convince this incredulous physician, she squeezed the nipple and ejected a stream of approximately 3 feet. The galactorrhea had begun on February 1, 1959, and persisted to March 15. The breasts were dark and enlarged. As the breasts dried, she complained of hot flashes and flushes, sweating, and nervousness, all of which were worse at night. On

February 20, 1959, the patient was scheduled for an endocrine work-up. The x-ray films of the sella turcica showed normal findings. The frog test results were negative. The Papanicolaou smear revealed a definitely diminished estrogen effect as compared with the preoperative smear. The plasma 17-hydroxycorticosteroids were 21.2 mg. per 100 ml. on April 20, 22.6 mg. per 100 ml. on April 24, and 22.1 mg. per 100 ml. on May 1. She refused to cooperate in obtaining follicle-stimulating hormone and urinary steroid levels.

On May 14, 1959, she was started on 2.5 mg. of conjugated estrogens (equine) (Premarin) daily for the "hot flashes." She obtained no relief, but when she stopped the conjugated estrogens after two weeks, a watery discharge from the breasts began, which spontaneously disappeared.

Comment

Some understanding of this problem may be obtained through a cursory review of normal lactation. It has been shown that estrogen is necessary for the growth of the mammary duct system and progesterone for full lobule alveolar development.[14] Although either progesterone or estrogen in unphysiologic doses may effect full development of the mammae, the synergism between these substances has been amply demonstrated.[15, 16]

The role of the anterior pituitary, although not completely elucidated, can be said to exert its effects in several ways. It has been demonstrated that unfractionated extract has a direct mammogenic effect in gonadectomized and adrenalectomized rats.[17] In ovariectomized and hypophysectomized rats it has been shown that estrogen, progesterone, and purified prolactin will effect lobule-alveolar growth.[18] Still more effective is crude prolactin with ACTH and somatotropin.[18, 19]

The anterior pituitary indirectly affects the breasts by way of the ovaries, thyroid, and adrenals. However, it is probable that the adrenals[17,20] and thyroid[21] do not play a decisive role in breast development.

Lactogenesis is governed by the pituitary[22] and more specifically by a constituent protein, prolactin.[23] However, the pituitary-adrenal axis has been shown to be important[24] and has led most investigators to postulate a pituitary-lactogenic hormone complex.[25]

It is generally agreed that once the breast is fully developed and primed, secretory activity begins in midpregnancy, but at term full activity supervenes, and abundant milk is produced. Various investigators have felt that estrogen inhibits lactation in the latter half of pregnancy by blocking the production of prolactin and by direct action on the secretory activity of the breast.[26] Later it was shown that estrogen may foster lactation and that the initiator of lactation at parturition is the fall in progesterone relative to estrogen.[27-30] In man small doses of estrogen are potentiated by progesterone in suppressing lactation.[31] The maintenance of lactation is felt to be dependent on the anterior pituitary or what has been aptly termed the pituitary-galactopoietic hormone complex.[25] The pituitary-adrenal[32] axis and the pituitary-thyroid[33] axis have also been shown to play important roles.

It is postulated that the stimulus to continued lactation is based on a neurohormonal arc.[34] Stimulation of the fourth, fifth, and sixth intercostal nerves and their related sympathetic nerves, which supply the glandular tissue of the breast, or the anterior and lateral cutaneous branches of the second to fifth intercostal nerves, and the supraclavicular branches of the cervical plexus, which supply the skin, send impulses to the hypothalamus whence the pituitary is activated. The pituitary-galactopoietic complex will then be produced by the anterior pituitary, and oxytocin, which controls the milk ejection reflex, will be produced by the posterior pituitary.[35]

Although much of the evidence presented is fragmentary and mainly based on observation in lower animals, a rationale for the present case can be offered. This twenty-eight-year-old nulligravida may have had her breasts primed with abnormally high or persistent circulating estrogen levels. One may postulate these high levels on the basis of her extensive leiomyomas. Leiomyomas are most active when estrogen levels are highest, that is, in the childbearing years and during pregnancy, and are often associated with hyperplasias. Regression after the menopause and after surgical and x-ray castration has often been noted. Furthermore, they have been induced in guinea pigs by the administration of estrogenic hormones.[36]

Therefore, with these high estrogen levels the stage is set. With the surgical withdrawal of estrogen, akin to the removal of the placenta, the anterior pituitary is given free play, and the primed mammae give forth milk.

Summary

A case of galactorrhea following extirpation of the uterus and both ovaries is presented. A review of normal lactation and the possible pathogenesis of the present case is presented.

450 Clarkson Avenue, Brooklyn 3

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Small opportunities are often the beginning of great enterprises.—Demosthenes

Acute Suppurative Prostatitis in the Neonatal Period

RUDOLPH C. GIANNATTASIO, M.D., MASSAPEQUA PARK, NEW YORK

(From the Mid-Island Hospital, Bethpage)

Acute suppurative prostatitis in the newborn infant is a rare occurrence. A careful review of the literature failed to reveal additional cases of this disease in the neonate.

In Campbell's* experience prostatitis has been of high incidence in young boys, but it progressed to abscess formation requiring surgical drainage in only 2 cases. Campbell's youngest patient was a twenty-eight-month-old boy who presented a classic picture of hyperacute gonorrheal prostatic abscess. On digital pressure of the prostate, the abscess ruptured into the urethra.

Case Report

A newborn white male, weighing 8 pounds and 13 ounces, was delivered in Mid-Island Hospital at Bethpage, New York on March 21, 1958. The mother, para 2, gravida 2, had had an uneventful prenatal course. Her serologic test for syphilis had shown negative results, and her Rh factor was positive. The infant was delivered with the aid of low forceps. The anesthetic agents used in the delivery were cyclopropane and nitrous oxide. The length of the entire labor was four hours and thirty-five minutes. The infant's general condition at birth was good. The cry and color were normal, and no resuscitation or respiratory stimulants were needed.

A complete physical examination on March 22, 1958, revealed no abnormalities. On March 25 the infant was examined for discharge two hours after circumcision had been performed. No abnormalities were noted. A review of the infant's hospital record at this time disclosed that his appetite, temperature, and bowel movements were all within normal limits. The infant now weighed 8 pounds and 4 ounces.

On the evening of March 25, the infant's fifth day of life and about eight hours after his circumcision, he had six loose, green, watery stools containing mucus and threads of blood. The infant was placed on a skimmed-milk diet. Roentgenograms of the chest and the abdomen indicated negative findings. The white blood count was 13,300 with 61 per cent neutrophils and 39 per cent lymphocytes. The hemoglobin was 15.2 Gm. per 100 cc. of blood.

On March 26 an enlarged tense prostate was massaged, and creamy white pus was exuded from the external meatus. A hemolytic Staphylococcus albus was cultured from the exudate. Subsequent to the massage, the infant was allowed to void in his diaper. A urine specimen was then obtained for analysis. The specimen was acid in reaction and contained no albumin acetone, or sugar. The microscopic examination showed negative results. A culture produced no growth.

On March 26 and 27 the stool cultures grew out Escherichia coli, enterococci, lactobacilli, and a staphylococcus.

On March 26 the rectal temperature rose to 101 F. The patient was placed on chloramphenicol palmitate (Chloromycetin palmitate) one-half teaspoon four times a day for the next five days. On March 29 a prostatic massage was productive of a very small amount of pus. On the following two days massages produced small amounts of clear fluid which showed negative findings for pus cells under the microscope.

The infant averaged from two to three loose green stools daily until March 31 when the chloramphenicol sodium succinate was discontinued. Ilotycin, 60 mg. three times a day, was begun and was continued until the patient's discharge. The administration of powdered protein milk in a 1 to 3 dilution was started at this time. The stools became yellow and soft in twenty-four hours.

The infant's general condition remained good throughout his illness, and he was discharged April 4, 1958, weighing 8 pounds and 2 ounces.

Comment

Since contributions on the subject of prostatic disease in male infants and boys are few, one could easily assume that the disease occurs rarely, if ever. Yet Campbell* states that, in young boys at least, there is a relatively high incidence of prostatitis. He has found that the condition is frequently associated with chronic urinary infection, chronic pyelonephritis, and infected hydronephrosis, and that it causes vesical symptoms.

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* Campbell, M.: Urology, Philadelphia and London, W. B. Saunders Co., 1954, vol. 2, p. 1568.

In the case which we have reported, the urine was normal and the prostatitis was associated with a bloody diarrhea. In examining the rectum for a lesion, the enlarged tense prostate was felt and massaged, and the pus was expressed. It is possible that the staphylococcus found in the prostatic pus was the etiologic agent for the diarrhea. However, a route of invasion from a common source or from one organ to another was not established. A clinical picture of sepsis or pyemia, which would support a concept of hematogenous spread, was not present. A lack of involvement of the urinary bladder excludes the possibility of a lymphatic route. In general, young infants with an abcess anywhere—in the ear, mastoid bone, the lung, the buttock, and so forth—frequently react with severe diarrhea.

Obstructive disease in the genitourinary tract and local anomalies such as cyst of the verumontanum and ectopic ureter were not ruled out at the time. However, the patient is now twenty-one months old and is in apparent good health. It seems unlikely that an obstruction of the urinary tract or an anomaly of sufficient magnitude to cause disease so early in life should become benign so suddenly.

Summary

A case of acute staphylococcal suppurative prostatitis in a five-day-old male infant has been described.

1130 Park Boulevard

Can a Change in the Weather Cause the Flu?

Can a change in the weather cause an epidemic of the flu? Dr. K. H. Kingdon of the General Electric Research Laboratory has found evidence that it may have a powerful influence. In a recent article in *The American Review of Respiratory Diseases* he gives a theory which links relative humidity and the spread of respiratory diseases on the basis of known physical and chemical factors. Statistics on the Asian flu epidemic of 1957 support the idea.

Dr. Kingdon's theory relates the spread of infection to the effect of humidity on thousands of tiny water droplets expelled during a sneeze. When the humidity is high, the droplets do not evaporate, so they remain relatively large and settle out of the atmosphere fairly quickly. When the humidity is somewhat lower than about 85 per cent, chemical factors resulting from rapid evaporation combine to kill or weaken the virus. In an intermediate humidity range, from about 85 to 95 per cent, the droplets are small enough to remain air-borne for a long time and chemical conditions are most favorable for the virus.

Statistics from several large cities on the Asian flu epidemic of 1957 show that large-scale epidemics did not break out as soon as the virus was widespread, but came several months later following periods in which the relative humidity had often been in the 85 to 95 per cent range. This suggests that the most favorable humidity conditions may be necessary before a respiratory infection can spread rapidly enough to reach epidemic proportions. If further studies should prove the theory correct, it may prove helpful in controlling epidemics of flu, colds, and other respiratory infections through control of humidity in schools, theaters, and other public places.

Proceedings

MEDICAL COMMUNICATIONS DAY

The Practicing Physician: Transmitter and Receiver of Medical Information

Sponsored by the New York State Journal of Medicine,
Official Publication of the Medical Society of the
State of New York
and the
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Metropolitan New York Chapter

Held at STATLER HILTON HOTEL, NEW YORK CITY MAY 14, 1960

MORNING SESSION

WILLIAM HAMMOND, M.D.,* SCARSDALE NEW YORK, *Presiding*

Introduction

WILLIAM HAMMOND, M.D.: On the occasion of this first joint meeting of the American Medical Writers' Association and the NEW YORK STATE JOURNAL OF MEDICINE, it is my pleasure to introduce to you Herbert T. Wagner, M.D., Executive Director of the Medical Society of the State of New York who will say a few words in welcome. Dr. Wagner.

HERBERT T. WAGNER, M.D., *New York City:* Thank you Dr. Hammond. Some six months ago I was having lunch in the restaurant in our office building, and I was most interested in an article I was reading in a fishing magazine. I could not help overhearing a conversation that was going on at the table next to me. The conversation was one of the original planning conferences between Miss Alvina R. Lewis, Richard H. Orr, M.D., and Robert Turell, M.D., who were talking about this program. As I love to fish, I put that magazine down reluctantly and eavesdropped most immodestly. I'm not a medical writer. I would hope that I may be a communicator, but the progress of the planning for this meeting has been fascinating. I've enjoyed having a little part of the periphery of knowing of your plans.

Certainly, on behalf of the Medical Society, it is a real pleasure to have such a cooperative activity with the Medical Writers' group. It would be presumptuous for me to take your time this morning to talk further than to say two things. One is to welcome you and to hope that this will be only the first of many times that we join hands to study to increase our knowledge and our skills, so that we may be more effective communicators; and two is to say to you that which, undoubtedly, you all know very well, that probably the greatest need of the medical profession today is to increase its effectiveness as a communicating body, individually and collectively. We must communicate among ourselves. I have heard it said here at the House of Delegates within the past week that one of the real problems is that of succinctly, authoritatively, and effectively communicating to the individual physician so that he may be the real communicator of medical affairs and medical interests to his patients and thereby to the public. Collectively, we as a profession, have been taking a bit of a lambasting from many quarters, which I think is far from deserved. I think it is largely because we have been misunderstood, and perhaps the fault is ours.

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*Assistant Editor, NEW YORK STATE JOURNAL OF MEDICINE.

Perhaps the misunderstanding is by reason of the fact that we have not adequately, and in appropriate terms, really told our story; and so there is tremendous need and a tremendous opportunity, and only good to come from such conference as this, to improve as much as possible our knowledge and our skills, so that we may communicate among ourselves and with the public; this is action.

I suppose we are promoting. If you take a look at the word promotion, two thirds of it is the word "motion," and motion is action. I shall not longer defer action at this moment. Thank you for letting me say "good morning" to you.

Panel Discussion

THE PRACTICING PHYSICIAN· TRANSMITTER OF MEDICAL INFORMATION

Chairman

ROBERT TURELL, M.D., NEW YORK CITY

Dr. Hammond: To get down to the business of the morning, which is the transmission of medical information, I would like to introduce your Chairman, Robert Turell, M.D., who is on the Associate Editorial Board of the New York State Journal of Medicine and is the man who edits the department of Recent Advances in Medicine and Surgery, which has contributed so much to the success of our Journal. Dr. Turell.

Robert Turell, M.D., *New York City:* In line with the sentiments expressed by Dr. Wagner, I shall not waste any more of your time but shall proceed to introduce our speakers of the morning.

How to get your paper published, prepared probably without the aid of a ghost writer, is a great problem, and we have a man here to tell us the story who has learned it from firsthand experience, since he is the former editor of the *United*

States Armed Forces Medical Journal as well as of *Aerospace Medicine.* At the present time he is the Director of Medical Relations of the Pharmaceutical Manufacturers Association. It is my pleasure to introduce to you Robert J. Benford, M.D.

How to Get Your Article Published in a Medical Journal

Robert J. Benford, M.D., *Washington, D.C.:*

> Dear Doctor:
>
> We regret to advise you that your manuscript, after careful review by members of our editorial board, has not been judged suitable for publication. Although your interest in this important subject is commendable, our editorial consultants expressed the opinion that your article does not bring our readers sufficient new information that is not already available in the published literature and from other sources.
>
> Sincerely yours,

This is a letter of rejection. Here is another.

> Dear Doctor:
>
> Because of a large backlog of accepted manuscripts, we regret that we cannot give consideration to early publication of your article. We are returning your manuscript in the belief that you may wish to submit it to another journal so that publication will not be delayed.
>
> Sincerely yours,

Finally, one I received a few years ago which wastes no words and is effective and final:

> Dear Doctor:
>
> We are returning your manuscript because we cannot use it.
>
> Sincerely yours,

In this year of 1960, medical communication by the written word is rapidly reaching some kind of climax. The demands on physicians' time, from all sources, are increasing. In his effort to gain the new professional knowledge required in his practice, the doctor is faced with an ever-mounting avalanche of medical information. The number of medical journals is increasing.[1,2] Scientific and professional society meetings are more numerous. The secondary or abstract and bibliography journals are growing in number and specialty. Taped recordings of the latest abstracts, digests, panels, and symposiums are available by subscription, and a playback can be installed in the physician's automobile so that he can keep learning while he is driving between house and hospital calls.

Closed-channel television programs as a part of scientific sessions at medical meetings or for simultaneous showing in selected cities are not new, but the Council on Medical Television now has extensive plans for bringing the small live medical conference to large, participating audiences on a national basis. The regional two-way FM radio conference, in which the Albany Medical College has pioneered, is an example of extending the small conference to many participants.

Medical news magazines and newspapers are competing with each other for the doctor's lighter moments. The new tabloid newspaper, *Medical Tribune*, has plans eventually to publish daily. *Medical World News* which appeared recently is, in its own words, "... especially designed to facilitate communication and easy reading ... and is written in the fast-paced, readable style of a modern general news magazine." Coming soon will be the inauguration of the "Medical Radio System," a new service of RCA-NBC, which will bring daily three fifteen-minute sponsored medical news programs to the doctor's office on a closed circuit, and will fill out the twelve-hour broadcasting day with soothing music for his waiting room.* At about the same time, a nation-wide information-by-telephone program is expected to be in operation. Each physician will be furnished with a restricted number through which calls from anywhere in the country will be relayed to a central monitor, thence to a physician highly qualified to answer the caller's query. Initially intended to provide prompt information about new drugs, especially when side-effects or general reactions have occurred, the telephone system has numerous possibilities for the extension of its services, such as providing the instant emergency information required in overdosage and poisoning. This service, according to present plans, would be furnished to the physician without cost.

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* The initiation of the program has been postponed.

All of this indicates the massive universal effort in all forms of media to cram more and more information into the doctor's working day. He is becoming ultraselective in his search for new knowledge as he samples the various media, but he has not forsaken the written word.

Brodman and Taine,[1] of the National Library of Medicine, surveyed medical serial periodicals for a three-month period in 1957 and counted 487 journals in the United States, or 23 per cent of the world's total of 3,597. A later search by others[2] brings the total to 4,828 medical periodicals. During this same three-month period, 53,975 articles were published in United States journals which is at the rate of more than 200,000 per year. "By far the largest producer of medical periodical literature, on any basis," Brodman and Taine reported, "is the United States which furnishes nearly one quarter of all the world's journals and/or articles." Germany, France, and England followed, in that order. Russia was in eighth place with 3 per cent of the world's output.

While the amount of new medical knowledge is increasing rapidly, man is still geared to an inflexible twenty-four-hour day. Waife[3] has observed that "there seems to be general agreement that medical 'literature' has reached a glut of such proportions that unless it is controlled we shall all drown in the flood . . . . The obvious evil result is that there is too much to read, and not enough time to read in." Recently, Fagin[4] stated: "Medical literature today is in a dismal state. . . we have too many journals, most journals have too many articles, and most articles have far too many words."

The busy physician may hurriedly scan the table of contents of each new journal or thumb through its pages in search of the useful information he needs. He comes to the title page of your article. If he turns the page without reading it, you may have lost him for good. He may mean to come back to you, yet he rarely does.

In writing an article designed to capture and hold this physician's attention, the author often gives little thought to his first reader, the editor. If the editor and his consultants in your field of interest are not impressed by the content and form of your efforts, a rejection is inevitable. A good story must be told well.

Reasons for Rejection.—Medical editors write letters of rejection for many reasons. Among the most common are: (1) The manuscript does not contain new knowledge or a new adaptation of present knowledge; (2) the subject is not timely or of immediate importance; (3) the discussion presented is not of sufficient interest to readers of the journal to which it was submitted; and (4) the article is poorly written. However, I suspect that often the product of an author's labors has some new but not startling information, is not entirely without timeliness, arouses the reader's interest here and there, and is fairly well written; but it still may be judged unsuitable for publication because of what I choose to call "author apathy." This is a chronic literary ailment characterized by carelessness in expression and indifference to required format. Though often fatal to authorship, it can be cured by the adoption of a broad spectrum of attention to manuscript craftsmanship.

Not long ago the editor[5] of the *Journal* *of the American Medical Association* might have been speaking of "author apathy" when he editorialized: "... Occasionally authors too show signs of irritation, and fret from the restraints caused by the establishment of certain publishing rules, believing, apparently, that freedom of the press means freedom to write as one wishes, regardless of grammar, slang, or abbreviation. There also sometimes is complaint about an article not appearing for some weeks or even several months after acceptance. Unfortunately for the author there are other papers waiting their turn for appearance in print. . . . " "Author apathy" may be pandemic for even the Russians admit the presence of this widespread affliction. Vinokurov,[6] of the U.S.S.R. Academy of Medical Sciences, recently complained that "the considerable number of errors occurring in the citation of figures in authors' manuscripts and in Soviet medical literature testify that not enough care and responsibility is assumed by writers and printers in the presentation of scientific material . . . ."

The author who takes the time to tailor his manuscript for the journal of his choice has found a short cut from the typewriter to the linotype.

The ABC's of good writing—accuracy, brevity, and clarity—are well known but not always observed. If an article possesses these qualifications it is likely to be acceptable for publication, provided, again, that the subject matter is new, timely, informative, and interesting. The editor[7] of the *Rocky Mountain Medical Journal* concludes: "We know from experience that the. . . scientific articles . . . most favorably received are those which are brief . . . (and) have a thought-inspiring introductory paragraph, a well-digested body, and a conclusion that sticks in the reader's mind."

Many illustrious authors and editors including Fishbein,[8] Hewitt,[9] Davidson,[10] and Jordan and Shepard[11] have described in detail the characteristics of the attainment of good medical writing. Their works are well known and should serve to guide the physician in matters of form and style. Numerous short articles of great value also have appeared in recent years. Yet little has been written about the importance of meeting the minimum standards of excellence established by the editor to whom you submit your manuscript. He is your first reader; maybe your last. Likewise, he will be your most critical reader because, as he wades through each paragraph, he is consciously or subconsciously weighing the value of your words for the readers of his journal. If he believes your article has merit, he may seek the appraisal and recommendations of one or more members of his advisory editorial board. Here, then, is the place to start: your first reader.

"A truly competent editor, in my judgment," Miller[12] wrote recently, "does his thinking in terms of the author and the readers . . .—not in terms of himself. His primary interest in the job, aside from his pay check, is to make sure that the author's intended meaning is conveyed accurately, efficiently, and effectively to all the readers. . . . "

DETAILS OF PREPARATION.—Usually one does not choose an editor but rather the appropriate medical periodical. The selection of the journal of your choice should be made only after you have studied several of its issues and determined in your own mind the type and length of articles it publishes. If your readers are becoming ultraselective, so must you. Next turn to the masthead and thereon or nearby will appear a statement from the editor concerning advice or suggestions to authors and contributors. Here the editor tells you how he wants you to prepare your manuscript. Though his instructions may seem trite and trivial, follow them implicitly. There are valid reasons for everything he asks. Every editor will be concerned with:

Typing.—All manuscripts must be double-spaced with margins of at least 1 inch on each side. All copy intended for publication, including footnotes and references from the literature, must also be double-spaced. This affords room on the page for minor revision and necessary directions for the printer. A good quality unlined bond paper, $8^1/_2$ by 11 inches, should be used. Always provide one original copy and the number of carbon copies requested. Be sure your full name and mailing address appear on the title page and your name is repeated on each subsequent page. Mail your manuscript flat. Never roll it.

Figures.—All illustrations in an article requiring etching or engraving are known as figures. Principally, these include photographs, photomicrographs, radiographs, diagrams, and line drawings. Some medical journals place a limit on the number of cuts which will be furnished without cost to the author. Do not exceed this number unless you express your willingness to assume the additional expense. Check carefully the instructions for the size of figures and, if they are not given, include one set of 8- by 10-inch glossy photographic prints with each copy of your manuscript. Be sure they are unmounted. Prepare a brief legend for each figure that explains what is illustrated without dependence on the text description. Avoid the use of paper clips, staples, and scotch tape which often damage photographic prints. Prepare your legends, properly numbered, on a separate sheet of paper, typed double-spaced.

On the back of each figure, preferably in an upper corner, write lightly in ink the number of the figure and your name. Never type on the back of a glossy print or write heavily with pencil, or you may be asked to furnish a replacement. Indicate the top of each photograph by an arrow and give the magnification of each photomicrograph. Faces or eyes of photographs of patients should be covered or brushed out by an artist to make identification impossible; otherwise written permission of the patient should accompany the figure. Do not include color photographs with your manuscript and expect them to be published until you have discussed the journal's policy with the editor. The cost is prohibitively high and usually must be borne by the author.

Tables.—The columns of numbers and word descriptions known as tables are used to summarize some of your data and make them more readily understandable. Be sure that the information you are endeavoring to present in your table is clear and accomplishes your purpose. Prepare a brief caption for each table that accurately describes the information it contains so that the table is understandable if separated from the rest of your article. Be accurate. Use a computing machine for all columns of figures. Carelessness in simple addition, which occurs much too frequently, creates an unfavorable impression and is unforgivable in a manuscript which purports to present accurate scientific information. The editor may wonder if an author who cannot add correctly is guilty of, perhaps, more serious clinical errors. If some of the totals or percentages in your tables are cited in the text, be sure the transference is accurate.

If you have borrowed all or part of a table from other sources, identify these sources. If you desire to include entire tables from other published works which are copyrighted, be sure you first obtain the permission of the copyright owner.

Summary.—The summary is a brief factual statement of the contents of your article, not an elongated title. Prepare it carefully and avoid a meaningless third person, past tense statement of what the author said he had presented. Tell your reader directly.

References.—A reference list should include a list of titles of articles published in the literature which the author found necessary to consult in the preparation of his article and which he recommends to his readers. Except in a review article, where the references assume the proportions of a bibliography, this list should be limited to those titles that are essential for a greater understanding of the subject presented.

References should be typed double-spaced in the style used by the journal. Use underscoring to denote italics, but avoid upper-case letters. Some journals list and number titles in the order in which each is cited by the author; others prefer to arrange them alphabetically by the last name of the senior author. Act accordingly to save someone the trouble of renumbering your list. In the text use an appropriate supranumeral and the corresponding number in the list of references.

Abbreviate the names of journals as they appear in other references in the journal of your choice, or follow the style of the *Quarterly Cumulative Index Medicus.* List the names and initials of all authors of an article, never "Smith, J. J. *et al.*" Use the first names of female authors. In books, distinguish between authors and editors, and give the inclusive pagination of your citation. Insofar as is possible, avoid the use as references of "personal communication to the author" and obscure reports which cannot readily be located by a medical librarian. If government, university, and industrial research project reports are included, be sure they are identified by title and author source, document or serial number, and date of publication.

Check and double check the accuracy of the volume, number, pagination, and dates in your journal references, as well as the names of the authors, because editors also do so. Errors in references occur so frequently that they unfortunately have become the rule rather than the exception. To be so indifferent to accuracy is always a reflection on the author.

Neatness.—Neatness in manuscript preparation should not be reserved exclusively for a high school essay. Legibility in writing is still in vogue. A teacher of a tenth grade class will consider more favorably an essay that is written in fine penmanship or on a typewriter than one which is scrawled so illegibly that he cannot decipher the student's thoughts even though the subject is ably reported. The grade the teacher records for each is a measure of his judgment of the student's ability.

There is a corollary here with the medical editor. If your manuscript is faultlessly typed and adheres completely to the details of the journal's style, the chances of its acceptance and prompt publication—provided it is also a meritorious contribution—are enhanced. When the time and effort of manuscript editors are reduced to a minimum, the saving is a premium that is credited to the author. On rare occasions, a faultlessly assembled manuscript can be processed and on its way to the printer within a day or two after its formal acceptance. Its author has a time advantage over his competitors whose papers may require days or weeks of checking, correcting, and revising. He has conquered "author apathy" and may look forward to a long and productive literary life.

Warnings.—It is too much of a temptation to close without adding a few "don'ts" that prospective authors might find profitable to consider:

1. Don't be "galley-happy." Correct your galley proofs and return them promptly to the editor. Correct only the errors made by the typesetter unless you find inaccuracies in your manuscript. This is not the time or the place to rewrite sentences or revise paragraphs in your article. Resetting new type, and dumping that which is not used, is expensive. If you insist on such changes, your vanity may possibly bring you a bill for the cost of additional composition.

2. Don't use jargon. Although perhaps acceptable in the laboratory or at the bedside, scientific slang has no place in a published article.

3. Don't get lost. After you have submitted your manuscript, be sure to keep the editor informed at all times of your whereabouts. If telephone calls, telegrams, and mail are not relayed promptly to you during absences from your office, notify the editor directly how he can reach you. Something unforeseen may arise in the review or processing of your article, and he may wish to discuss it with you at once.

4. Don't use influence. If you bring pressure on the editor through his superiors or friends, or from other sources, you may win: but you will be a marked man in the future.

5. Don't argue about style. If you do, you will usually be the loser. A successful author and editor[12] has stated: " . . . Speaking now in my capacity as an author, I will say that only once in my life have I won an argument with an editor. That was over the use of a possessive pronoun with a verbal noun, in such an expression as "I look forward to his coming." I won by stating with great finality, "The gerund always takes a possessive." He subsided because he had never heard of a gerund and wanted time out to look it up and see whether such a thing really existed or whether I had invented it on the spur of the moment. Actually if he had been an editor worth his salt, he would have replied without turning a hair, "It may be true in general that the gerund takes a possessive, but it is not true in the case of this magazine."

Conclusion.—A few suggestions have been given for overcoming "author apathy" and for getting your paper published promptly. They may reduce the number of letters of rejection addressed to you and bring a welcome communication that begins with:

> Dear Doctor:
>
> We are pleased to advise you that your article has been reviewed carefully and judged suitable for publication in our journal. Because of the excellent preparation of your manuscript and your close adherence to our style, we can assure you of its early appearance. We are hopeful you will favor us in the future with another contribution devoted to your valuable scientific observations and clinical experiences.
>
> Sincerely yours,

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Dr. Turell: Thank you, Dr. Benford. Now to tell us how to transmit medical information in the form of a medical book we have an authority in the person of the Editor and Vice President of the W. B. Saunders Company, which is supposed to be, or is, the biggest and best medical publishing house, or company, in the United States, if not in the world. I was going to say he is a doctor: which reminds me of a story of something that happened recently here in New York City during the centennial meeting celebrating the birth of Sigmund Freud. One of the famous and well-known psychiatrists here in the city started out, "Sigmoid Freund . . . " Since psychiatrists tell us that a slip of the tongue usually means something in the subconscious, that came out very well.

May I present Mr. John L. Dusseau.

In a Medical Book

John L. Dusseau, *Philadelphia, Pennsylvania:* Whenever I speak to a group of people, I am faced immediately with a momentous decision, that is: whether to wear glasses with which I can see the audience or glasses with which I can see my notes. I have never been able to determine which is the more valuable view. Because of the early hour, I have decided on this occasion to look at my notes. So farewell until my talk is finished.

I also cannot see the clock in the back of the hall, so I will call on my good friend, Robert Turell, to cough loudly at the end of fifteen minutes. If anyone in the audience coughs loudly before the end of the fifteen minutes, I will interpret this too as a signal.

One of the acknowledged roles of a second speaker is to outdo the first. Dr. Benford, I can present myself honestly as probably the only living writer who has gotten articles back stamped on the outside "Opened by mistake."

The topic "Medical Communication Through a Book" is not a defined topic. It permits me to speak of almost any aspect of the long, mysterious process of turning thoughts into words and words into print. I should therefore like to say something about book writing in medicine and about physician-writers from the point of view of a book editor.

For this purpose, I believe we shall need one or two definitions, one or two general reflections concerning a few commonly used but not precisely understood terms.

THE BOOK.—First, the book itself. What in the world is it? It is clear that we all have a common notion of the book, but the mind boggles a little at precise definition. Clearly, the book has an intellectual rather than a physical character. When the Sterling Library at Yale was built and this vast Neo-Gothic pile rose imposingly on the campus, the local gentry used to come about and observe this marvel. Finally, on its completion, the librarian posted a notice on the door. It said: "What you see before you is not the Sterling Library. The Sterling Library is inside."

The book, then, comes from within, within the writer's mind, within the reader's mind. If it is a fine book, we may say of it that it is the outward and visible sign of inward and spiritual reality.

In his fine survey of Welch's influence on modern medicine, Fleming* thus reviews the history of the teaching book. Hellenistic Alexandria saw the birth of what we now recognize as the textbook in science. It came into being as a recognition of the fact that the advance of science requires the forming of a consensus of expert opinion, a consensus intended not to repress innovation, but to create general acceptance of the current status of knowledge as a springboard for further advance. It is this notion of the necessary expert consensus and of the equal necessity of its authoritative formulation which gave rise to the textbook in the broadest meaning of that term.

Thereafter, the pursuit of the scientific consensus never ceased, and with the understanding of its necessity arose the notion of the almost sacred character of the book: the book which represents the best of which the author is capable, the considered consensus of contemporary knowledge. The book then, as it concerns us, as it concerns the reader, the writer, the editor, is the record, the organization, the explanation of scientific knowledge by an expert mind, acknowledged to be an authority, hence, an author.

Another curiously baffling word has come into our definition: science, particularly biologic science. Can we give this word anything like a satisfactory definition? Perhaps we can begin by an example of what might be called nonscience. The bishop of Ravenna, in the ninth century prepared a great history of the Church, and had this to say in his preface:

"Where I have not found any history of these bishops and have not been able by conversation with aged men, or inspection of the monuments or from any other authentic sources, to obtain information concerning them, in such a case, in order that there might not be a break in the series, I have composed the life myself, with the help of God and the prayers of the brethren."

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* Fleming, D.: William Welch and the Rise of Modern Medicine, Boston, Little, Brown & Company, 1954.

However pleasant and admirable his process of biography may be, it is not scientific biography, for the first requirement of science is that it be based on fact. Sir William Dampier has called science "the ordered knowledge of natural phenomena and the rational study of the relationships between the concepts in which these phenomena are expressed." Science then, is not merely a set of facts, but is also a way of giving unity and intelligibility to the facts of nature, so that natural phenomena may be manipulated and understood, and so that new facts may be predicted.

What then is put down, accurately, precisely, and wisely as the truth, springing from certain circumstances, will itself never change and will always have value. It is only the circumstances that will change and so create not a truer truth but a different truth. Circumstances and fashions of the mind do change.

As George Bernard Shaw has observed, the mystic, calculating the number of angels that can be accommodated on the point of a needle is now Sir Almroth Wright, computing the number of streptococci contained in a specific volume of serum. Somehow, sevens and angels are out of fashion, and billions of streptococci are all the rage. This is not to say that either calculation is ridiculous, or that either is not, within its own frame of reference, a legitimate search for truth.

Both sets of ideas stretch credulity, both rest for their acceptance on the authority of a writer. Very few of those who believe these data have seen either the angels or the streptococci. In fact, cosmology and science have both gone in and out of fashionable favor, and both at times have existed peacefully together.

THE AUTHOR.—We need but one more definition. The achievement of truth rests on the scientist, its expression rests upon the writer. Ideally, they are the same man. Here then is our picture of the author.

He must be a leader, and his influence must rest on authority, not wilfully seized or capriciously conferred, but granted to him by the scientific community. He must be able to recognize, to understand, and to synthesize a whole body of knowledge relating to the segment of science he seeks to set forth. And finally, he must be able to formulate in understandable and accurate terms the governing principles and concepts of his science. This is the author, the explainer of current truth, but truth founded, expressed, and achieved in such a way as to have the permanent value that elevates all wisely secured partial truth.

Industry.—Now I should like to particularize a little about the author. Above all, he must be industrious. He must have that capacity for sustained, incredible, man-killing work which we have all seen, and at which we must all marvel. He cannot resemble that well-known Oxford don, of whom it was said that the time he could spare from the adornment of his person, he devoted to the neglect of his duties.

Dedication.—The industry must spring in large measure from a sense of dedication, but this must be a balanced zeal, not an unreasoning fanaticism. Someone has asked: "Can history offer a more terrifying prospect than that of a band of desperate ruffians, led by a fanatic aristocrat?" "Unhappily," he answered, "it can, that of a band of Presbyterians, rising from their knees to do the will of God."

In fine, the author's sense of dedication must be a scientific avowal, not a self-confirmed appointment. It must consider facts, but be aware of the relative nature of truth.

Vanity.—The author too, must see himself and his work as going on timelessly and as overriding all usual and human difficulties. There are enough people to attend to the usual concerns of the world. Someone must attend to the writing and someone else to the delicate sensibilities, the utter unreality, and the rare endowment of the author.

One of the great author-keepers of our day was Maxwell Perkins. You probably all know Thomas Wolfe's last letter, which was written to his editor, Maxwell Perkins; but if I have time, I should still like to read it to you.

> Dear Max:
>
> I'm sneaking this against orders, but I've got a hunch and I wanted to write these words to you. I've made a long voyage and been to a strange country and I have seen the dark man very close and I don't think I was too much afraid of him. But so much of mortality still clings to me, I wanted most desperately to live and still do, and I thought about you all a thousand times and I wanted to see you all again, and there was the impossible anguish and regret of all the work I had not done, of all the work I had to do, and I know now I am just a grain of dust. I feel as if a great window has been opened on life that I did not know about before, and if I come through this, I hope to God I am a better man, and in some strange way I can't explain, I know I am a deeper and a wiser one. If I get on my feet and out of here, it will be months before I head back, but if I get on my feet, I'll come back. Whatever happens, I had this hunch and wanted to write you, and tell you no matter what happens, or has happened, I shall think about you and feel about you the way it was that Fourth of July day, three years ago, when you met me at the boat and we went out to the cafe on the river and had a drink and later went on top of the tall building, and all the strangeness and the glory and the power of life and of the city was below.
>
> Yours always, Tom

When was this strangeness and power and glory revealed to Tom Wolfe? It was disclosed when he knew that *Of Time and the River* was a success. And so, to our character of the author, we have added the last and most important ingredient, vanity. For what but vanity can possibly induce a man to try and do better what has always already been done superbly?

Comment.—I have tried to set forth something of a general picture of the book and the author to give you a final message which will not resemble the message that Colonel Benford has given you; but its lack of resemblance will be due to what I conceive to be the character of the book, as I have presented it to you.

My conviction is that there are no practical considerations in writing, and indeed, none in publishing. There is scarcely a human activity less practical than scientific writing. Any writer or any publisher who sets before himself the objective of practicality will in the end either unconsciously forsake that goal or perish by it.

My essential message to you is that your manuscript may be written in crayon on frayed celluloid shirt cuffs and submitted in a peach basket; but somehow, somewhere, some editor will fight his way through that peach basket and decipher that illegible scramble of junk and publish that awful monstrosity of a manuscript if, and this is the if that counts, if it really has something to say. Of course, all editors like neatly typed copy and beautifully drawn illustrations. These represent real virtues that all editors recognize, but the dream of every editor is not beautiful copy. It is the dream of the great book, the classic contribution. There are always more capable typists than the world needs.

There are never enough great writers, either in fiction or in science. Small as is the supply of truth, it has never been exceeded by demand.

DR. TURELL: Thank you, John. Now if the first two speakers had any real precedents to go by, the third speaker does not. He is more or less in a jungle and more or less by himself. I am referring to the next speaker, who is going to talk to you on the transmission of medical information to the public. That is a really difficult task and the one who is trying to do it, or has tried to do it, is the one who knows it best. To accomplish the next to impossible, we are fortunate enough to have with us a man who has had a lot of experience in that field. He is associate Professor of Medicine at Northwestern University. He is the Medical Editor of the *Chicago Tribune* New York News Syndicate and Editor of the *Illinois Medical Journal.* It is a pleasure and a real honor to be able to introduce to you Theodore R. Van Dellen, M.D. Dr. Van Dellen.

To the Public

Theodore R. Van Dellen M.D., *Chicago, Illinois:* The remarks Mr. Dusseau made about his glasses and seeing either his manuscript or the audience prompt me to tell you that I had that trouble many years ago, and so I bought these half glasses. All I have to do is to look down at my manuscript and then look over the glasses to see the audience.

Another story, concerned with seeing things is the one about two small boys who were walking by a nudist camp, and there was a knothole in just the right place. The taller boy was able to peek in and the smaller boy said: "What do you see?" "There are lots of people in there and they are all naked." The little fellow said: "Are there men and women?" He said: "I don't know, they don't have clothes on."

The particular title I was given for my talk puzzled me at first. I did not know whether it referred to the transmission of medical information by the practicing physician to his patients, or to the transmission of medical information via newspaper columns. I decided to take up both considerations. After all, your patients are the public too.

More than a century ago, the American Medical Association recognized the need for educating the public on matters of health, including hygiene, quarantine, and the prevention of epidemics and contagious diseases. The Association interested itself also in fighting quackery in all its forms. The objective of medicine at that time was limited to curing disease. There was little or no incentive for the practicing physician to discuss the maintenance and improvement of health, rehabilitation, or preventive medicine. Medical research was confined to fields of little interest to the public, such as physiology, bacteriology, physical diagnosis, and embryology. Lay education was confined to an occasional story on the value of baths or to suggestions in books like the *Home Physician.*

But times changed. The public became more interested in health, longevity, sanitation, and the wonder drugs. An insatiable appetite developed for medical news, which editors recognized immediately—long before the medical profession realized the situation. When a demand exists along this line, it is met by appropriate groups. Reporters and science writers were sent into the inner sanctums of research and medical centers, because editors believed the public has a right to know about any new drug, procedure, or medical discovery. Health is as vital to life, happiness, and the future as are politics, business, and industry.

This trend became more noticeable a decade ago, when every editor in the country began to be flooded with releases and copy from science writers, public relations directors, and voluntary fund-raising organizations. The volume of this type of material is increasing steadily. Everyone profited. Science writing became a profession. Fund raisers were able to collect millions to foster research and to educate the public in all phases of their particular field of interest. Medical school endowments swelled, and many hospitals doubled their bed capacity by getting the money to build new wings. Pharmaceutical companies prospered and government health agencies mushroomed.

Medical societies also jumped on the band wagon, using press releases to improve their prestige and to combat socialized medicine and the mounting criticism by the public about fees, making house calls, and the aloofness or impersonal attitude of the medical profession. But the practicing physician continued to view many of these changes with a jaundiced eye. He saw no reason to change his efforts concerning lay publicity, the premature announcement of drugs, and factors that encouraged overprescribing and self-medication. He had seen the needless anguish suffered by patients and their families from exaggerated and misleading claims of charlatans. He still believes in the adage "a little knowledge is a dangerous thing." But nothing was won, and much was lost by remaining aloof and disregarding the critics of medicine.

NEED FOR DISSEMINATION OF MEDICAL KNOWLEDGE.—We are now at the crossroads where the practicing physician must devote more of his time to the dissemination of medical information. It is my belief that lack of communication between physician and patient has become a major problem in our public relations. This applies to contacts made in the office, over the phone, and in the hospital. More and more complaints are heard such as: "My physician doesn't take the time to listen to me." It is difficult to determine whether these complaints come from a vocal minority or represent a cross section of our population.

We receive more than 170,000 letters a year, from all over the country. Many people ask for additional information on a disease, an operation, a procedure, or a drug. Some report that their physicians do not have the time to discuss their problems, whereas others are curious about their father-in-law's ailment or the little stroke that has kept the boss away from work. Letters come from women who can't pry a word out of friend husband, who is getting weekly treatments for a prostate disorder. Details are mentioned because a lack of information is not always the fault of the practicing physician.

COMMUNICATION AND EDUCATION.—*Strong Physician-Patient Relationship.*—A strong physician-patient relationship is the best safeguard against government medicine and malpractice suits. It begins with proper communication and ends with education. Some patients are not so disturbed by lack of explanation, as by lack of patience when they digress from the point or ask questions. This is due to the physician's tactlessness, irritability, or to just plain clash of personalities. It takes a good man to control the conversation, and a better man to listen until the patient has completed his history. The educational aspect comes at the end of the consultation and is needed most when a patient has a chronic ailment he must live with for the rest of his life. We don't have too much trouble with the person who has an acute ailment, such as a cold. People don't ask too much about simple problems, but with a chronic ailment it is different.

The more instruction the patient receives from the family doctor, the less help he will need from a special fund-raising association or from the local migraine or ileoptomist club. We know also that a well-informed patient is a more cooperative patient and in this respect, education is good therapy.

Other Educational Devices.—The physician who is too busy to explain orally may find other educational measures worth while. A well-informed office nurse or technician makes a good teacher, provided her ideas are in keeping with those of the physician. Other physicians prepare printed leaflets for a variety of common ailments that include practical and useful information and answer the usual questions. These leaflets take time to prepare but are invaluable additions to any plan of treatment. Another aid is a list of supplementary reading material, including books for the layman.

Properly prepared educational material saves hours of time, especially when dealing with mothers of well children, pregnant women, and victims of such chronic ailments as peptic ulcer, diabetes, multiple sclerosis, epilepsy, and arthritis. Still other physicians prepare scrapbooks on newspaper or magazine health articles and leave them in the waiting room, or lend them to the patient for further study. This plan works best in the office of a physician who specializes in one field, such as allergy, urology, or cardiology.

Educating the Individual.—Only a handful of physicians are able to practice ideal medicine. Years ago, I shared an office with Rollin T. Woodyatt, M.D., a pioneer in diabetes. He refused to see a new patient unless the patient agreed to spend three weeks in a hospital. Those who did so were given an intensive course in all phases of the disease while they were undergoing treatment. When the time was up, they had completed a postgraduate course in diabetes, including everything from the early recognition of acidosis to the number of grams of protein and fat in a 12-ounce steak. These patients were well prepared for their new life and they spent little time with Dr. Woodyatt thereafter. All of the graduates paid his fee willingly because they saw the wisdom and practical aspects of his plan. It was 90 per cent educational and 10 per cent medical. Dr. Woodyatt's clinic patients were given the same consideration.

Group Teaching.—Group teaching is another method of instructing patients. It has been used by obstetricians, neurologists, psychiatrists, and internists. The plan is not only a therapeutic procedure but also a timesaving device. Years ago, I ran the vascular clinic at the Cook County Hospital in Chicago. All the patients sat in chairs around the walls of a large room. There was no privacy and everyone could hear each other's complaints, as well as my advice. It didn't take long for the patients to realize that an injury to a bloodless toe meant gangrene and that dirty feet encouraged infection. Every patient got a liberal education in peripheral vascular disease at this open clinic.

Extent of Information.—How much information should the physician give? Someone made the remark that there is no need to educate the patient; just correct the misconceptions he picks up in reading *Life, Look,* and *Reader's Digest.*

In my opinion, most patients are satisfied with knowing the nature of their condition and what the physician is going to do about it. They want the physician to be frank and honest in the discussion, explaining in understandable language. This is not asking too much. There is no harm in admitting what is not known, and it is wiser to stress the good and to minimize the bad. The patient should be told about the remedy prescribed, its cost, and what to expect after taking the product.

SERVICE OF HEALTH COLUMN.—I try to follow this basic philosophy in writing a syndicated health column. Sometimes I write as though I were discussing a disease or procedure with an imaginary patient sitting on the other side of my desk. But more often I write for the well without discouraging the sick. This is done because a health column should be educational and of sufficient interest to catch the reader's eye. It is not intended to replace the physician and is not an instrument for medical propaganda or pharmaceutical advertising. I learned a long time ago that I was not writing for the physician, and anything that reads like a lecture to medical students, nurses, or interns is too stuffy for public consumption. A well person wants to know about diseases, how to avoid them, how to recognize them early, and what to do if one develops. Positive health measures, such as diet, exercise, and rest are stressed. We avoid sensationalism, misleading statements, and controversial material. These articles appear in family newspapers and we see to it that the subject matter does not interfere with enjoying breakfast or dinner.

Above all, I try to write with the dignity that goes with our profession. Unlike the reporter, a medical editor must utilize his background and training to evaluate his source material. In other words, I am not satisfied to write on what someone else did or said, which is true of reporting.

Writing a newspaper column is a fulltime job, and it is beset with more headaches than appear on the surface. Every week, fifty-two weeks a year, we send to the editor 7 long and 2 short articles, 32 questions and answers, and 7 health hints. This is equivalent in wordage to two books a year. The subject matter was a problem originally, but we now have enough ideas to last for months. We have never repeated an article during the fifteen years that I have conducted the column.

My staff is harassed mainly by the large volume of mail and telephone calls. If you write a column, you are going to get mail and this is the unpleasant side-reaction to educating the public via a health column.

Comment.—In my opinion, the public benefits from health education. An informed patient is a cooperative patient. On the other hand, most of our readers are healthy and see their physicians infrequently. This group read and enjoy medical topics, even though they do not understand anatomy and physiology. They have an interest in better health and demand improvements in medical care. This is the same public that continues to spend more money on tobacco and alcohol than on drugs, physicians, hospitals, and all other health services combined. The warnings about lung cancer have done more to sell filter cigarets than to stop smoking.

On the other hand, many misconceptions have been corrected. These vary from "marking the unborn child" to a vaccine that cures the common cold. A little knowledge about medicine has made many people turn to their physician for service and advice. It may be what Perrin Long, M.D., meant when he said: "The more they learn, the less they understood." On several occasions we have been told by physicians that they have seen patients with malignant conditions who were prompted to make an appointment by an article in the paper.

But we hope above all that this way of disseminating medical information will go a long way toward helping the fit stay fit as well as to encourage victims of chronic ailments to accept their handicaps and, through proper adjustment to avoid becoming disabled.

Dr. Turell: Thank you, Dr. Van Dellen. You all have been provided with a pad. If you have any questions, will you please write them out and at the conclusion of the next talk we will have someone pick up the questions for answering by the experts.

Now to go on with this morning's discussion, we next have a dicussion on how to transmit information from the practicing physician to the medical profession. It is an extremely difficult problem, for instance, to get the physician to the meeting; and unless the meeting is interesting, unless you hold your listener's attention all the time, you will either lose him at that meeting, or you will lose him for subsequent meetings. To tell us how to transmit information in very interesting, useful, and profitable ways, we have the Surgeon-in-Chief from Mount Sinai Hospital here, who is also Professor of Surgery at Columbia University: Ivan D. Baronofsky, M.D.

At a Medical Meeting

Ivan D. Baronofsky M.D., *New York City:** This subject, as Dr. Turell mentioned, is a very difficult one. I have found it extremely difficult myself, because I have had the experience of teaching young men how to present material in front of an audience, especially a medical audience, and how to keep their attention. Really, it is a matter of paying attention to details. It is not a matter of generalities.

If a man would become a real public speaker, that is one thing. I am more interested in the individual who occasionally or even more than occasionally presents a paper. I am not talking about the constant circuit speech worker who is at every meeting, and who is without a doubt a wonderful talker. I am speaking of the individual, the medical man, who has to present to his confreres a subject which he feels may be of definite value. This individual has not often presented material at national meetings, perhaps has to present his material at various meetings, and is a little scared of the whole affair. I must say that in training residents, speaking has become a very important issue, because in the formal training of residents in surgery, one of the important things that we have to do is to be sure he is able to do a certain amount of research which has to be presented at meetings.

This subject that we are discussing now is of extreme importance because meetings today are being held in very unique places. For instance, I just came back from a meeting in Miami Beach. Now they could have very well picked Juneau, Alaska. There are certain reasons why they picked Miami Beach, and there are certain reasons why they pick New York City. These areas can serve large meetings. By attending one obtains a complete view of a city, in addition to going to a meeting. This of course tires an individual out. All you have to do is to look at an audience some morning, after the first day, and you will find that the audience is either half asleep or the other half is not there. This condition is not due essentially to a tiring meeting the day before but probably to a tiring night on the town. It is therefore important to be able to interest an audience.

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I am reminded of this story. About five or six years ago a speaker, whom I am sure most of you know, a wonderful man and a wonderful speaker, was the last man on a four-day convention of the American College of Surgeons. This meeting was in the evening, we were all pretty tired, and we had seen a lot of the city. Dinner had just been finished, and we were all sleepy. The speaker's subject was thrombophlebitis. It is an important subject, and it had to be presented so that we could go home with some good information.

I am sure the speaker looked at his audience between yawns and had a sneaking suspicion that he was not going to get anywhere. He therefore started off by saying: "Well, gentlemen, I have been to a lot of meetings. Please believe me, I appreciate your feelings and I know you are kind of tired. The other day I came into my house at about eleven o'clock after being on the circuit, and as I opened the door, there was this lovely creature gliding toward me. I looked at her and thought: 'My gosh, that is my wife.' I remarked, 'Why sweetheart, what a lovely negligee you have on. It's so sexy.' Then she looked at me in utter scorn and said: 'Negligee, nothing. Them's cobwebs son; you ought to come home once in awhile.'" With that, of course, the audience awoke completely. Anything he said from then on was listened to.

Now of course this is not the ordinary practicing physician. What can the latter do to emphasize what he has to say? May I just mention some of the points that I think are important? These are very detailed. They are not philosophic, as perhaps you would like to have them, but I think they are important. I have gathered these as I have sat in an audience listening to my residents and later have corrected them. You may use them as you wish, or you may disregard them completely.

MISUSE OF LANGUAGE.—First of all, misuse of English. It is commonly stated that the physician ordinarily doesn't know how to use the English language so that an audience understands it. We have to distinguish between two types of English. One is the written word and the other is the spoken word. I have had some of the most delightful presentations made to me by individuals who made up words as they went along, and they have had a sense of projection. I could understand just exactly what they were saying, and yet I had the unfortunate, or shall I say fortunate, experience of trying to track down some of those words in the dictionary because I wanted to use them myself. There were no such words. I think this is important. I think the ability to use the right word at the right time, even though it may not be exactly correct from a grammarian's point of view, is something that very few speakers have. It should not be considered misuse. If you can say what you want to say and have the audience understand it and understand it well, that is good. I think that doctors are too often criticized for their speaking ability rather than for their writing ability.

As we heard previously, editors, who have to deal with the written word, certainly have a difficult job. They understand how badly the English language can be used. It is up to them to correct it. However, in oral presentations a different outlook must be taken.

TOASTMASTER MISCONCEPTION. — The

other idea, that a speaker must be a toastmaster, is something that I can't get out of the heads of enough of my residents. Too often they enjoy a good joke as a member of an audience, and they think that, therefore, anything they have to say must be ended or preceded by a joke. Too often the jokes fall flat.

The other day while I was viewing television, I saw George Jessel, who had been invited to be on the "Today" program. I am sure you have seen it. He was asked to mention what he considers are the things he does that make him a good toastmaster. You and I think, "Oh, Georgie just gets up there and throws a few cracks." Well, he enumerated his procedures for us. Did you know that he has cards on everything he has to say? Not only that, but also the evening before he gets on a platform, he studies very carefully the people who are to appear on the dais? By program time he has studied their habits and gotten information on them and on anything they have done that day, the day before, or perhaps even a month before. He knows what they are noted for.

He has made a very careful study of how to be an "extemporaneous" toastmaster. This is important. Just remember, Jessel is a professional. How can you be a professional by just getting up and being a toastmaster? It is not required that one be a toastmaster as far as the presentation of material is concerned.

TIMING.—Another thing that I should like to mention, and this happens all too frequently and probably will happen here, is overtiming. Nowadays, when you present a paper, instead of having a gentle little warning, a big alarm clock goes off. This is a most disconcerting thing to a speaker, and well it should be. After all, there is a certain amount of time per morning, a certain number of papers have to be presented, and these papers should be presented within their periods of time. That these speeches often run overtime is obvious.

I think that when an individual presents some material, he should have practiced that speech beforehand. This is extremely important. This is what we do with our residents: We go over each paper and go over it carefully, so that the presenter can end up on time. Closing your speech just as the bell rings is a magnificent psychologic touch. It not only makes for a good presentation, but it also makes for good listening, because if you can say everything that you have to say within a ten-minute period, you probably have given the audience the gist of the material. It is most important to come in and go out on time.

MAKING THE POINT.—An obvious necessity is to present material to the medical profession in such a way that the important points are made. A speaker may ramble on, as I have at times, without coming to a point: talking about the color of a dog's hair and the condition of a patient's scalp, when the important thing was the definite relationship or the significant correlation between a dog's hair and a human scalp. The presenter talks about two separate subjects and does not make his point. It must always be remembered too that there are human beings in the audience and as such they like to be entertained as well as taught. This is very obvious. Therefore, it is best that the salient points be made and that they be made simply.

PROJECTION.—Another thing that is very disconcerting to an audience is the feeling that a paper is being read. If you will remember the participants on this panel, you noted that each one of them came with a prepared topic. Yet you did not get the feeling that they were reading their papers, even though each one had his paper before him. The speakers gave the impression that the material was not being read. Audience projection and participation are important in the presenting of a paper. The members of the audience should feel that they are being talked to directly, not read to.

DIGESTS.—Often the physician does not realize that when a brief time limit is set, actually he does not have to, or should not have to, read an entire paper. He can merely abstract it because the paper eventually will be published in its entirety in one of the permanent medical journals. What has to be done is to abstract the paper, giving the important points. It is not necessary to detail the number of experiments, for example. A generalization can be made. Even the conclusion does not have to be complete but may also be a generalization. Too often, instead of giving an abstract, the complete paper is hurried over and the important points are missed.

INTRODUCTION.—A very important matter, and one that is not often accomplished, is a good introduction. Frequently, the introduction does not give the reasons for the paper. Nor does the presenter keep the audience alert by relating the information in the paper to them. I do not care how insignificant or basic a medical presentation is, it has definite implications as far as the human being is concerned.

ILLUSTRATIONS.—In presenting material the condition of your slides is important. I am sure you have seen instances in which a collection of good slides made the difference between a mediocre and a good presentation.

Some points to remember are: (1) Colored slides are attractive and are excellent aides. (2) Do not put too much on one slide. (3) Do not show soiled slides.

PROFESSIONAL TONE.—One thing that happens too often is that members of the medical profession, when they present a paper, tend to talk down to an audience. We all know that medical professional people, no matter how stupid you may think they are, have gone through extensive training. They have had at least four years of high school, three years of college, four years of medical school, one or two years of internship, and probably one or two years of postgraduate training. So we might say that they have had at least four years beyond high school education. Therefore, I do not believe that the profession is uneducated. As a matter of fact they are in the upper echelon of society as far as intelligence is concerned. Therefore, to talk down to these individuals is to be resented, and justifiably so. If a basic point is to be made then make it. Whether it is understood or not, the point should be made, even if it is above the heads of some members of the audience. The interested ones will make it a point to pursue the information in the literature.

MOTION PICTURES.—Finally, I should like to mention an aid that is being used more and more often, the motion picture. It is my conviction that the use of this medium of presentation will expand in the future.

CONCLUSION.—I have just presented a few of the things that I think are important insofar as the doctor of medicine presenting information to the medical profession is concerned. It is necessary to present the material properly and accurately, because the world has shrunk timewise, and most people do attend meetings. In the old days, if you attended a meeting once a year, you would be doing well. Today, it is nothing to get into a plane here this morning and be in Munich for the International Congress of Proctologists this afternoon.

Question and Answer Period

DR. TURELL: We are going to start the questions and answers. Please write out your questions and the experts will be very glad to answer them.

To start the ball rolling, I am going to ask the speakers to ask questions of one another first, and then we shall try to answer your questions. Dr. Benford will you please start. Do you have any questions to ask of the other speakers, please?

DR. BENFORD: I am not sure I have any questions, Dr. Turell, but I should like to say that being fortunate enough to have been in the lead-off position, I could relax and enjoy the other speakers possibly more than might otherwise have been the case, and I was stimulated by each one.

DR. TURELL: Thank you. Mr. Dusseau.

MR. DUSSEAU: I would like to repeat what Dr. Benford has said. I enjoyed this occasion. My words reflect at least in part a mild process of either self-education or self-abnegation that I have gone through since I first began work as an editor. I had a kind of naive idea that I could have an influence on books and on writing. I have since come to conclude that the editor has very little influence on writing. Of course there are exceptions to this, but writing seems to be either competent or incompetent. When it is competent, it is also usually self-assured, so that the editor is usually faced with two problems: self-assured work that will not tolerate tampering, or incompetent work with which no amount of tampering can achieve a good effect. In fine, I have gradually drifted into a kind of spectator role in the vast panorama of medical literature.

Dr. Turell: Thank you. Dr. Van Dellen.

Dr. Van Dellen: I was especially interested in Dr. Baronofsky's remarks because I think one of the secrets to medical writing is to educate the physician. Once we have educated the physician the editors will get better journals. We tend to hope all physicians will be polished writers, and so long as we ask for perfect papers we are going to miss many important contributions. Some of our most famous physicians cannot write; yet we wish we could get some of the material they have, because they could make important contributions. Teaching the physician at either the medical school, internship, or residency level will solve many editors' problems.

Dr. Turell: As you can see, our experts are a little bit too polite. They don't knock each other's brain out as they might and ask embarrassing questions of each other. At least they haven't yet. Dr. Baronofsky, do you have any questions or remarks to make, please?

Dr. Baronofsky: Dr. Turell, I don't see you doing much about embarrassing anybody else.

My position here is really irrelevant, immaterial, and unnecessary. You see, I am the man who throws the papers at these three eminent gentlemen. They are the editors; let me tell you, it would be foolish of me to ask questions because there are three against one here. But they have the worst job of it all, as I said. I just send the paper, and the hard work is theirs. They have to be practically all things to all men. Not only do they have to know medicine, but also they have to know English. Not only do they have to know English, but also they have to know the publisher and many things about current procedures. I have a very small part and would be a fool to ask any questions about editorializing and so forth.

I must say this, however, and this is not a question. If it weren't for these individuals, the editors, I doubt very much that the medical profession would have progressed as far as it has in the last ten years. The immensity of material that has come out during that period, medically speaking, has been unbelievable. It has been up to these men to sift this material and get it out to the medical public. I think they deserve congratulations and certainly a hand from all of us. I want to take this opportunity to thank them very much.

Dr. Turell: We have questions from the audience, and since Dr. Baronofsky implied that he is past forty and married, and since he has marching orders from his wife and has to meet her in five minutes, I shall ask him to answer his questions first.

Dr. Baronofsky: The first question is: "Dr. Baronofsky, will you tell us what some of the words are that you heard used by speakers that were really not words?"

Let's see whether I can remember some of them. How about the word "factualization?" Or take the word "pregnant" as in "pregnant thought." Then there's "momentaria" business.

Speaker from the Floor: There is one that evolved in obstetric circles. We say: "The patient was delivered pelvically."

Dr. Baronofsky: "Pelvically." There is a nice word. It is absolutely horrible English but it will be understood by a practicing physician who is sitting in an audience.

I must say this. I would not accept it, and I am sure the editors wouldn't. They would not accept it as far as writing is concerned. But orally it makes a point, and I think that is important.

Speaker from the Floor: "Her pregnancies are hard?"

Dr. Baronofsky: No, that is really a misuse.

Speaker from the Floor: We have a foreign resident who keeps saying "digitoma" when he is classifying digitalis of the heart.

Dr. Baronofsky: Here is one. It just came to me. "Digitoma" reminds me. In doing a rectal examination you do a "digitalization." That hits the point. That's proctologic, right? Words like that express a unique meaning but are not found in a dictionary, I am sure. But is there a place for them? I think there is. I hope I make myself clear. You have helped me very much.

Dr. Turell: Just to take issue with my friend, I think there is no place for jargon, so there we are. Dr. Benford, you seem to be the most popular. We have three questions for you, please.

Dr. Benford: The question is: "Please comment on the use of trade or brand names in journal articles." That is the first half of the question. The other half has some words in it I can't pronounce.

I believe that the use of generic or brand names or the basic chemical names of substances is a matter of journal preference or journal style. Some journals do and some journals don't. The use of the registered symbol seems to be diminishing. The A.M.A. publications stopped using it several years ago, and one of the reasons given was that it took too much time for the editor to determine whether or not a substance actually was registered. What the author is trying to say should be understood by the reader. If the editor does not believe the reader will understand the generic name, he will use the brand name.

This question says "to all." "With reference to clinical drug evaluation, what are special considerations favoring acceptance in what is increasingly a buyer's market?"

It is getting harder to get such an article accepted. Probably the reason is that this type of article has been subjected to criticism in the belief that the maker of the drug has underwritten the research and possibly has compromised the author, knowingly or unknowingly. I believe such an article has to stand on its own merits. I would accept such an article unless I was convinced in the beginning of its unacceptability, either on the basis of the paucity of data, a small number of patients, or a poorly planned experiment.

Dr. Turell: Dr. Benford, one more quick one.

Dr. Benford: "Any recommendations about titles of manuscript: length, elements, emphasis of drugs, subjects, and so on?"

In less than one minute, I think the way to learn to write a title of a medical article is to study the daily press. The title of an article should reveal briefly what is in the article, and it should do it in a manner that will encourage the reader to continue reading the article. Bear in mind that those readers who confine their activities only to tables of contents may read your title and nothing more. And so the title becomes, probably, the most important four, five, six, or eight words in your article.

Dr. Turell: Thank you. We will give Dr. Baronofsky two minutes to answer two questions and let him go.

Dr. Baronofsky: There are two questions that are simultaneous, and I think they can be answered simultaneously. "Why do medical students go through ten years of training without getting a course in public speaking so that they may get up and speak and they will not, as the Russians say, mumble into their beards?" "What is being done by the medical schools in teaching students, interns, and residents to write medical papers?"

I think they are both questions that have to be answered. To those who are not acquainted with what is going on, there are many moves now to change the entire medical curriculum; in fact there are some pilot medical school programs going on in various schools in the country which incorporate the four years of medical school with the college, so that there really is a six- or seven-year training program, in which the humanities, public speaking, and English are incorporated in medical school training. I think this is essential. I think eventually we will get to the point that these men will be taught the art of public speaking. Doctors are leaders in their communities, and very often they are really unable to take part in public affairs because of their fear of getting up and speaking in public. I must say, that as far as I am concerned, I give my young men, my residents, every opportunity to speak. Dr. Turell, who is a member of my staff, knows that. We make them present papers, whether they are of great significance or not. They get up in front of an audience and speak, and speak on their feet. This is as much a part of training as is learning surgical technic.

"Don't you think communications at this meeting could be improved by bringing the speakers down to the level of the audience, away from the dais, to encourage audience participation?"

I really haven't given that a lot of thought, but perhaps there is something to consider; a sort of round table. I think it is a worth-while suggestion.

"Should not all papers given at a medical meeting be written?" Of course, they all should be written. But remember, if this were all—just writing a paper and reading it off—it would be much simpler to stay at home and take these papers, mimeograph them, and send them out. You would not have to go to a meeting. But too often, a man looks just at the conclusion or the beginning of an article to get the idea and then quits. If something worth-while is to be presented, there must be a direct personal contact. The author may have the written paper in front of him, but he must make the audience feel that they are being talked to directly, that this material is valuable. The paper must be written, but the audience must also participate.

DR. TURELL: Mr. Dusseau, please.

MR. DUSSEAU: Dr. Turell asked for some embarrassing questions, and the audience has politely answered his invitation. Here is the first:

"Why does an author or a contributor to a medical text get such a trivial financial reward, 10 per cent or some fraction thereof, if his share of the job is of such great value?"

This is a real question, and one that is very difficult. I don't think I will be answering it, but I will say this. First of all, anyone who writes medical books with an eye on the return is doing a very foolish thing. He would do much better to sharpen ice skates in his cellar, in terms of return for time spent. We have never pretended to authors, nor shall we ever, that this is a lucrative way to use Sundays, holidays, nights, and mornings. It is an unlucrative way to use this time. Also, although I am not defending this small return, I think it is a commonly recognized principle of life that the return of any project is in inverse ratio to its value. No one has ever supposed that Mickey Mantle is serving a great humanitarian cause, but he does enjoy a fine reward for his work. Physicians who write have a modest return from their work, and I can simply say that that is the way it is, and it isn't likely to change.

Second question: "Since texts are commonly outdated when published, because of the rapid progress of science, why do not publishers resort more to looseleaf volumes, such as have been used for encyclopedias? Filler sheets for sale will provide a faster and cheaper method than constant need for new editions."

I would like to answer this question in four ways. First, texts are not so commonly outdated as one supposes. Actually, the average book takes no longer in processing than the average journal article. Second, the idea of looseleaf supplements is in theory wonderful. In practice, the looseleafs or supplements accumulate in a corner and are never put in their proper location within a looseleaf encyclopedia, so that they do not serve the purpose for which they are intended. My third point is that if the study and practice of medicine could catch up to the state of knowledge of ten years ago, let alone today, we would all have significantly advanced, so that this indateness is not quite as important as many people think it is. Four, it is part of the function of books to achieve a kind of scientific and intellectual plateau, so that they have in this capacity a permanent value. For instance, consider Dr. Turell's own work on *Diseases of the Colon and Anorectum.* If this book is precisely what it should be, it will have value fifty years from now, because fifty years from now the reader will be able to say: "Here is the point at which knowledge has been recapitulated," and the reader will not have to go before that point for his information.

Dr. Turell: Thank you, John. Dr. Van Dellen, please.

Dr. Van Dellen: There is a question: "How do you treat topics, on chiropractic or neuropathic medicine?"

I write a column that is called "How to Keep Well." Until the neuropaths and the chiropractors can tell me how to keep well, we are going to keep them out. That doesn't mean that I write and condemn them, I just don't say anything at all about them. I have found through the years that there is no sense in arguing with people by mail. It gets you no place. I have all I can do to write to my son in California once a week, let alone carry on a writing jag, you might say, with a hundred people every week. They will ask silly questions and have odd ideas, and I cannot spend the time answering them.

It says here: "What steps shall be taken by an interested physician who feels there is an opportunity for public service and professional development in the field of writing for the laity?" I think the physician has to go through the same pathway that any writer goes through so far as the newspaper profession is concerned. You can submit material to an editor, and if he likes it he may use it. On the other hand, it is not quite that simple. Many newspapers like to use the name of a famous physician. I suppose one of the Mayo brothers would have had no trouble at all in getting a chance to write for newspapers. The only difficulty is that many of these famous men become famous late in life. If they write a column on how to keep well and then die three or four years later, this is not good advertising for the profession. This is why I give the man who hired me some credit: At least he hired a young man.

If an editor likes the material you submit he may hire you, but don't be fooled by that. Many physicians can think up 30 or 60 very interesting topics, but that is a supply for only a month or two. So you see the job of the medical columnist is not as easy as you may suppose.

Here are some questions that I did not understand: "What is the status of digital or analogue computers versus microfilm in this matter—that is, at the Library of Congress?" The only things I could say about computers and libraries would be generalities. I attended the Board of Regents meeting of the National Medical Library recently. Half of the time was spent in discussing computers in library work. The subject is being considered and some of the machines are being used. The microfilm service also has been streamlined, and the cameras are being brought to the books instead of the books to the cameras. One of the best talks that I have heard was given by Frank B. Rogers, M.D., on computers in library work, and I hope it will be published.

Dr. Turell: Thank you, Dr. Van Dellen. In the interests of economy, I will just take a few questions and satisfy them with "yes" and "no" answers. "If an idea for a book is proposed, do you expect a complete outline, a chapter, or merely a table of contents?"

Dr. Van Dellen: A complete outline and two or three chapters.

Dr. Turell: A question to all experts: "How does one keep up with all the pertinent literature?" It's impossible. I'll answer it for all of you.

To the entire panel again: "Supposedly factual articles appear in our popular magazines, but often these contain errors in fact. What could you do about it?" Dr. Van Dellen.

Dr. Van Dellen: Each medical society should hire one man whose job it is to collect newspaper or magazine articles that say things that are contrary to the facts and to write letters from the medical society addressed to each author, with a copy to the editor. There is nothing more disconcerting than to have the editor send you a copy of a criticism. Just writing the author won't mean a thing. If the editor gets a just criticism, the author is embarrassed. If you read something you disagree with, write to the editor.

Dr. Turell: Another question: "Are we not missing the boat of getting well-written medical articles because of the fundamental lacks in our over-all education, that is in the humanities, and so on?" Yes, we are.

A question: "Is 'neurogenic bladder' jargon?" Dr. Benford, to you. Is it jargon?

Dr. Benford: I would say yes.

Dr. Turell: There is a question I can't quite make out: "How do you feel about the use of 'pathology' in the patient's pathology, for example?" I can answer this. The word "pathology" alone means nothing except as it refers to the science of pathology, which means a great deal. If you want to know something about a pathologic process, fine. Just to write the word "pathology" leaves too much in the air.

Now here we have a question that doesn't belong to us, but we are going to try to answer it anyway. "Why doesn't *World Medical Abstracts*, Fishbein, Editor, a well-written and well-edited journal, give the year of publication in bibliographic references?" We will probably have to ask Dr. Fishbein. I think with this I will turn the meeting over to Dr. Hammond.

Dr. Hammond: I would like to thank Dr. Turell, Mr. Dusseau, Dr. Van Dellen, Dr. Benford, and Dr. Baronofsky for a very fine program.

LUNCHEON SESSION

LAURANCE D. REDWAY, M.D.,* OSSINING, NEW YORK, *Presiding*

Laurance D. Redway, M.D.: We are honored today in having two guests from out of the country. The first of these whom I will now introduce to you is A. Yodice, M.D., of Buenos Aires, Argentina. He is Professor of Surgery at the University of Buenos Aires, is a most noted Argentinian, and is deserving of the title of the "Father of South American Proctology."

I am going to ask Dr. Yodice if he would say one or two words.

A. Yodice, M.D., *Buenos Aires, Argentina:* Thank you, Dr. Redway. I wish I could speak English well but for me it is difficult especially in front of very nice ladies and famous doctors. I am going to say only that I have a big feeling and I admire your country because of what you are doing and I thank the honor you gave me to be with you at this wonderful meeting.

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* Editor, New York State Journal of Medicine.

I met Dr. Turell in Brazil and after that we went together to Buenos Aires and went to the meeting. He was a honorary member of the Society in Argentina and after that he invited me to come here.

Well, I came now and I'm happy because he gave me the opportunity to meet you and to know this wonderful country. Thanks a lot for the honor you made to me.

DR. REDWAY: Next it is my pleasure to introduce to you William Arnold Conolly, M.D., of Turra Murra, New South Wales, Australia. He is President of the College of General Practice of Australia, and is now on a world tour sponsored by his government to study various methods of general practice and industrial medicine in many countries.

I will ask him if he will say a word or two. Dr. Conolly.

WILLIAM ARNOLD CONOLLY, M.D., *New South Wales, Australia:* I think your Professor of Surgery when he spoke this morning said that all doctors should be trained to express themselves and speak. Well now I speak English as she is spoken in Australia and they say we have a different accent from the Oxford accent or from the American accent.

It is a great honor for me to be here as your guest today, not for myself personally but for the body I represent. We are a new college in Australia, in our second year, and we feel in Australia that unless the family doctor is well educated and has a good approach to his medicine, then the highly medical framework will disappear. We don't have quite as much specialization in Australia as you have in the States, and I think that's a good thing, and I hope that as you become more educated in the States that you realize the value of your family doctor.

I saw Dr. Frohman in Washington last weekend and I said, "How do you find the time to keep yourself up to date on your reading and with your medical knowledge?" He said, "You come to New York next Saturday and I'll tell you how." So, here I am.

It's a great honor to be here. I've enjoyed your session this morning, and I'm looking forward to some interesting discussion this afternoon. Thank you very much.

DR. REDWAY: It is now my pleasant duty and privilege to give some honor locally where it is due and, on behalf of the cohost of this conference, I wish to express our deepest appreciation to someone who will not appear as a speaker but without whose efforts this meeting would not be possible, Miss Alvina Rich Lewis. We surely are all indebted to her for the very happy arrangements that have prevailed today.

Now, as I look about at your smiling faces, I'm tempted after having read the newspapers recently to address you as a small portion of what could be called "The Great American Conspiracy." It's not a happy thought, but it has to be taken into consideration. There are some more happy things that can be done here locally, and I'm sure you will all appreciate the efforts that have been made by Richard H. Orr, M.D., on behalf of the Metropolitan New York Chapter of the American Medical Writers' Association and also as Executive Director of the Institute for the Advancement of Medical Communication.

I am going to ask Dr. Orr if he will now take over the microphone for a few minutes.

RICHARD H. ORR, M.D., *New York City:* To the official thanks expressed by Dr. Redway, I would like to add my personal ones to Miss Lewis, who more than once saved the day during the arrangement of this program.

Now I would like to exercise the traditional privilege of a host, in this case the Metropolitan New York Chapter of the American Medical Writers' Association, and take advantage of the presence of an audience for an airing of family matters. After the date for Medical Communications Day had been set, the Chapter officers realized that it fell very close to the date for the fifth anniversary of the Chapter founding, and that this occasion would be an excellent opportunity to celebrate the birthday and to honor the efforts of those who initiated the chapter.

I will not relate the entire history of the New York Chapter, which was the first local chapter of the American Medical Writers' Association, or describe in detail the aims and activities of the national and local organizations. These details can be found elsewhere.

But I do want to relate briefly the story of the genesis of an effort that in five years has developed into a dynamic organization of almost 400 members in the metropolitan area. As evidence of its vitality, last year the Chapter held 20-some meetings of various types, began two monthly publications devoted to medical communication, and engaged in numerous other projects. All this was achieved by a mutually dependent "symbiosis" between practitioners of the health sciences and professional writers, editors, librarians, and graphic arts specialists. This multidisciplinary team is welded together by a common purpose: to improve medical communications.

Beginnings are always difficult to pinpoint, but on May 9, 1955, at Roosevelt Hospital in this city, members of the national Association who resided in the New York area met and laid plans that led to the formal establishment of the local chapter. Four individuals were the organizers of this meeting and formed the Planning Committee that nurtured further development. This foursome, whom we desire to honor today, were Mrs. Rose Schweitzer, Miss Trudy Drucker, Mrs. Florence Wey Tracy, and Mr. Myron Weiss. Two of these members still live in the New York area and are here today, Mrs. Schweitzer and Miss Drucker.

At the recommendation of the Committee on Honors and Awards, headed by Dr. Erwin Di Cyan, and on behalf of the Metropolitan New York Chapter of the American Medical Writers' Association, I would like to present to you and to the two absent members a certificate of appreciation from the chapter. The citation reads:

> The Metropolitan New York Chapter of the American Medical Writers Association expresses appreciation to a pioneering member of the Planning Committee which met on May 9, 1955, and took the first step towards realizing the concepts of a chapter in New York.

May I add my own thanks to you, Mrs. Schweitzer and Miss Drucker.

Dr. Redway: It is now my great pleasure to introduce to you our principal speaker, Dr. Joseph C. Hinsey. Dr. Hinsey holds a Ph.D. from Washington University School of Medicine and an Honorary Doctorate of Science from Northwestern, Union, and Iowa Wesleyan Colleges. He was former professor and head of the Department of Anatomy, Cornell University Medical College, and was Dean of the Cornell University Medical College, from 1942 through 1953. He is now Director of New York Hospital-Cornell Medical Center, and has been since 1953.

In 1950 he was president of the Association of American Medical Colleges. In 1958, he received the Abraham Flexner Award for distinguished service to medical education.

I'm sure that we will all be very grateful to him and that what he has to tell us will be most helpful. Dr. Hinsey.

Medical Education Needs Better Communication

Joseph C. Hinsey, Ph.D., D.Sc., *New York City:* As a medical educator and administrator, I have been very much concerned in the matter of communication. I have been impressed by how much we have failed as a teaching center in promoting understanding in our efforts to advance the standards of patient care and the health of our nation through teaching and research. It is for this reason that I welcome an opportunity to speak to a group which is devoting a day to Medical Communications.

In our institution we have had an interesting experience in the matter of the development of better communications. Several years ago, several of our younger staff members took a course in medical writing at New York University. They were so impressed by the man who had charge of this course that one of them went out and raised the money to bring him in for one year as a visiting lecturer in our institution. At the end of that year his work with the students, with the staff, with the young people around the institution, and with the old as well had found such a place in the work of our center that we made him a member of our staff. He is the head of the English department at one of the New York City schools, but he has made a very great contribution to the development of better communications in our institution. His name is Milton Zisowitz.

Much progress in presenting the problems of our medical schools has been made through the activities of such organizations as the National Fund for Medical Education. Starting in August, 1947, a group of us were able to interest some of our business friends in our problems and now in 1960 a large proportion of the nation's large corporations contribute in an unrestricted fashion to the support of all of our medical schools. The American Medical Education Foundation is the counterpart of the National Fund, representing the channel through which members of the medical profession likewise contribute. Those who give develop an interest in our progress and become our supporters. We have been trying recently to get our story to our citizens at the grass roots level by appearing at various regional meetings over the country. The work of Severinghaus, Carman, and Cadbury,[1] in their surveys of the preparation of students for the study of medicine, has contributed significantly to a better understanding between our liberal arts colleges and our universities of what the medical schools are doing. The reverse also is true: Our medical faculties have become increasingly concerned about the operations of the schools which are involved with preparation for the profession. Over the country our medical schools have undertaken programs at the local levels to describe their needs and their activities to their constituents. The watchword for these various activities must be patience. The story has to be repeated and repeated, and everyone connected with medical education and the practice of medicine must be a missionary.

Today the magic words in capturing the interest of the public and the body politic are medical research. Larger and larger support is being made available and the man on the street has been led to believe that if enough money is made available the solution for the eradication of dread diseases will be obtained. Frequently medical research is thought of in terms of dollars raised instead of as people with ideas working with proper facilities and with adequate preparation and background. Medical research has been separated from its relation to medical education and patient care in a way that may not be to the public interest in the years ahead.

When we come to consider the basic ingredients of medical research, the top priority must be given to the investigators themselves, whose intellectual attributes must include first-rate intelligence, alertness, curiosity, perseverance, thoroughness, insight, and diligence. One could go on. Other ingredients would include facilities, adequate financing to provide for necessary technical help, and methodology of the most modern and appropriate nature. The history of science illustrates so well the importance of the development of new methods. The Warburg apparatus, the Horsley-Clarke apparatus, the flame photometer, the spectrophotometer, the electron microscope, the phase microscope, the computing devices, and the oscilloscope with all of its modern improvements are all examples of advancement in method.

Certainly a sense of direction and organization are important to the advancement of research, and if I were to emphasize any one point I would certainly choose freedom—freedom to go where the leads take one. During my early days in the laboratory we did not know very much about project research. Research was done out of department funds; it was done without any date line, without any unnecessary reports; and it was done many times under great adversity. The support was not really adequate and the other two responsibilities of a medical school—patient care and teaching—were given greater emphasis. With some exceptions this state of affairs was present until approximately the time of World War II.

Emphasis on Research.—During World War II and since that time research has come into its own, and the public support available to it is something beyond the fondest imagination of any of us. I am fully aware that there are able proponents of the need for even much greater support. In the year 1957, a total of $330 millions was spent for medical research in the United States. This came from the following sources: philanthropy, $35 millions or 16 per cent; endowment, $19 millions or 6 per cent; government, $186 millions or 57 per cent; and industry, $90 millions or 21 per cent. In that year $165 millions or 50 per cent of this money was spent in university and medical school laboratories; in government laboratories, $75 millions or 23 per cent; and in industrial laboratories, $90 millions or 27 per cent. It is most significant that half of the medical research in the United States in that year was carried out in facilities furnished by our universities and medical schools. It is even more important that most of the people carrying out the research in the government and industrial laboratories have been trained in our universities and in our medical schools. The teaching centers really represent the keystone of the whole program of medical research in this country, and it is most important that the public know this fact.

The best estimates obtainable indicate that the Federal government this year is spending $3.49 billions on all medical and health-related activities, and this amount will increase $3.7 billions in the next fiscal year. In this general area, the Department of Health, Education, and Welfare is spending $1.3 billions; the Veterans Administration, $950 millions; and the Defense Department, $927 millions. Down the line come the Atomic Energy Commission with $90 millions; the Department of State, $80 millions; the Department of Agriculture, $72 millions; and the National Science Foundation, $40 millions. Then there are other departments that spend lesser sums. The Department of Health, Education, and Welfare, with its National Institutes of Health, is supporting medical research in the amount of $355 millions this year; the Atomic Energy Commission, $48.5 millions; the Department of Defense, $37.5 millions; the National Science Foundation, $27 millions; and the Veterans Administration, $21.3 millions. In the report put out by Bayne-Jones and his committee,[2] this statement is made, "The consultants believe it is conservative to project national medical research expenditures of $900 million to $1 billion per year by 1970. This is based on the assumption that the proportion of all research and development expenditure represented by medical research will remain constant at the average for the next decade at 3.8 per cent. Strong forces, outlined above, will tend to support the growth of medical research expenditures even if some other lines of research expenditures were to rise less rapidly than is projected, or decline." This report goes on to say that by 1970, "Nevertheless it would appear an additional 6,000 M.D.'s and/or Ph.D.'s will be needed beyond the supply now projected if the nation's medical research program approximates the 1970 estimates." Every survey that has been made indicates the need for many more doctors for the care of the health needs of the people in the years ahead. A consultant group reporting to the Surgeon General of the Public Health Service in 1959 has pointed out that 330,000 physicians will be needed in 1975 if we are to maintain our ratio of 141 physicians per 100,000 population. This means 3,000 more than the 7,400 graduated each year at present.

I will not take time to analyze the statistics on the need for new physicians, but I would like to discuss briefly the impact of this great expansion of research activities in our teaching centers. All of us are convinced that it is important to keep the support of our research and educational programs as diversified as is possible. We all know that in addition to the governmental sources there are many private ones, such as the voluntary foundations and such organizations as the American Cancer Society, the American Heart Association, the National Foundation, and many other foundations that contribute to our activities. It is essential that we keep this support just as broadly based as is possible. For example, it is estimated that the income from the various special interest foundations devoted to specific diseases during the year of 1959 amounted, in round numbers, to $160 millions. Of course, this was not all spent for research.

Many of us in medical education have been disappointed at the failure of some of our voluntary foundations to appreciate their responsibilities for supporting the basic programs of our medical schools which have an essential role in the development of research personnel as well as in forwarding research in their special fields of interest. After all, Enders, Weller, Robbins, Richards, Cournand, Salk, Papanicolaou, Ochoa, Kornburg, Lederburg, Du Vigneaud, Tatum, Beadle, and many other research stalwarts and their protegés owe their scientific development to university laboratories. It will be a sad day when the goose that laid the golden egg is permitted to become weak and feeble from inanition.

The Federal agencies in a like manner neglect medical education in its role in medical research. The original bill for matching funds for construction provided for teaching as well as for research facilities, but teaching was knocked out by some of the research lobbyists—even to the point that a medical library was not considered a research tool. We have not been able to get adequate reimbursement for indirect costs and the program for institutional block grants has been sidetracked for the present at least. A program for career teacher-investigator awards was modified to delete the teacher and make it a career development award. I can appreciate the political bad odor of the word "teaching," but we must not abdicate our responsibility to emphasize the fact that without adequate teaching, research will eventually die on the vine for lack of nourishment.

To be sure, some of the research funds can be diverted to support teaching, but many of us think that it is not right to do this. We should not continue to hoodwink those who supply our funds by not giving due appreciation to the inseparable nature of teaching and research. We are fully aware that many of the strongest proponents of the prevailing philosophy are members of the staffs of our universities and medical schools who are fearful that some of their research dollars will be diverted to support the basic programs in their institutions. In 1959, Dubridge[3] made this statement, "As a long time faculty member myself, I can pray fervently that both I and my faculty may be delivered from dictatorship by government faculty committees. Give me a smart administrator to deal with and I can dispense with faculty advisory committees, except when they deal with purely scientific affairs and not with administrative or fiscal matters. Scientists, when they get into government, are their own worst enemies. When they have control over activities of their colleagues, through the administration of research grants, they become autocrats of the most difficult kind." For some time, it has been very evident there has been a breakdown in communication between administration and faculty, a serious disadvantage to both parties concerned. It is reassuring to read Waterman's statement, "Irrespective of individual opinions as to the manner in which the National Science Foundation is carrying out its assigned role, it cannot be denied that the importance of science in national affairs is such as to justify the establishment of an agency dedicated to the progress of basic research and education in the sciences."[4]

TYPES OF SUPPORT.—There has been much discussion about the influence of Federal and government support and of other types of support of medical research which emphasize the project type of grant. In his report as president of the Josiah Macy Jr. Foundation, made on March 14, 1960, Willard Rappleye, M.D., had this to say, "In large part, the support of research exclusively through the project system has deprived educational institutions of a large measure of autonomy and freedom in determining the character and direction of their research activities. Furthermore, exclusive reliance on the project system does not make it possible for educational institutions to assume a position of responsibility in carrying out their role in the conduct of medical and health-related research supported through Federal funds." I think we all are convinced that the supporting agencies that are concerned with research have been eminently fair and objective in the administration of the funds which they manage. Deitrick and Berson[5] listed what they considered the hazards in project research grants. They say, "The effect on both the universities and the medical schools of supported research through project grants extends far beyond the question of finance. Such methods of support inevitably lead to direction of support by agencies outside the medical school and result in regimentation of the faculty and loss of freedom to follow their bent and their own clue to new knowledge. In carrying out project research, the investigator's freedom to pursue paths is inhibited. He is investigating 'to order' as it were. The compulsion and lack of freedom increase when he is compelled to report the results of his research to the grantor at regular intervals." Great attention has been given to try to reduce this hazard and increased freedom has been given to the investigator under most of the grants that are awarded.

Deitrick and Berson stated also that with the development of research institutes there was a tendency for the research to be isolated from the teaching programs. Many times the students in medical schools know little if anything of the research work that is being done in their own institutions. Many of the faculty members spend a larger portion of their time in research and less in the teaching function. I shall have more to say about this later.

A third danger that they listed is that with the great availability of research funds there is a tendency for an institution to be thrown out of balance by placing large funds available to one isolated field in such a manner that it interferes with the total program of the institution.

OBLIGATIONS OF MEDICAL SCHOOLS.—We all realize that it is most important for a medical school to remember the primary obligation to prepare good physicians, and this requires a well-balanced educational program. The advantages of this growth of the medical research programs are obvious and I shall spend but a short time on that, no more than to say that these programs certainly have improved the quality of patient care. We know that better teaching is done when research is pursued actively. The programs have aided in attracting worth-while personnel into our medical institutions and have increased the numbers of them that we can keep under employment. The enlargement of the medical student research program has been a national development and certainly this should help in recruiting new teachers for our medical schools and in the long run will improve markedly the quality of patient care.

One influence that has resulted from greater research support for medical schools has been that it is now possible to attract able personnel into newly established institutions and into institutions that are improving their programs. All of us have seen the development of medical schools and medical centers over the country. This has been aided materially because of the fact that if an institution can get the salary to pay an able young faculty member, he in turn can get the funds to obtain the facilities and the help he needs to carry out his research program. This has contributed to a far better distribution of research personnel over the country. It is a wonderful thing to see what the building of a medical center does in a community as far as raising the quality of patient care in that community is concerned, and certainly the medical research that is done in the medical center is one of the great contributing factors.

INHERENT DANGERS.—This amplification of research has placed a danger on us that will become devastating if something is not done to correct it. Because the government is unwilling to pay full and indirect costs for research—and the same thing holds for some of the foundations—medical schools are spending greater and greater amounts of their capital funds in support of the research program. For many years now some of us have been endeavoring to get the provision to cover completely the indirect cost, but up to this time we have failed essentially. In a recent report from the Association of American Medical Colleges this statement is made,[6] "In 1957–58 expenditures for separately budgeted research in medical schools in this country amounted to $105.5 million. According to figures recently compiled by the National Science Foundation, this sum is approximately two and one-half times greater than similar expenditures of $45.3 million in 1953–54 and six times greater than the $17.1 million spent for separately budgeted research in 1947–48. Only $3.5 million was expended for this purpose in 1940–41." This report goes on to say, "Total indirect costs of separately budgeted research, as calculated by the Blue Book formula, amounted to $22.5 million for the fiscal year of 1957–58. This represents a dollar increase over the fiscal year 1953–54 of $10.1 million. Such indirect costs are absorbed partly by the sponsoring agency and partly by the medical schools. During the same period, the contribution of the medical schools to the indirect costs of separately budgeted research increased it by $3.4 million, i.e., from $9.1 million in 1953–54 to $12.5 in 1957–58. This means that in the more recent fiscal year, the medical schools themselves invested more of their own funds by $2.5 million in covering the indirect costs of separately budgeted research than did the sponsoring agencies."

Although there is a considerable variation in the over-all average of indirect costs in our nation's medical schools, the average indirect cost is 25.1 per cent of the total research expenditures. When we realize that the government pays only 15 per cent, we can see that schools are putting their hard money into this maintenance of the research programs. If the predictions made by the Bayne-Jones report[2] should take place by 1970 and if there is no change in the present formula for allowance for indirect costs, "By 1970 the medical schools would have to invest approximately $25 million more of their own funds toward defraying indirect costs of research than they did in 1957–58." I think the result of this is obvious: Something will have to be done either to increase the percentage given for indirect costs to the medical schools, or the amount of research will necessarily have to be cut back.

NEED FOR BALANCED PROGRAM.—As a medical educator, one of my great concerns in looking ahead to the amplification and enlargement of research support is its influence in disturbing the balance in what I see as the three important obligations of a teaching center: teaching, research, and patient care. As I have indicated, in the years before World War II, research was the poor stepchild to the teaching and the patient care obligations. Today this is no longer the case. With the emphasis on research, our young staff members are inclined to neglect their responsibilities in teaching and in patient care and to give greater and greater time to the research laboratory. Some people take the attitude of "Why waste time in teaching and caring for patients when it is possible to work in the laboratory?" They see that the fellows who have long research bibliographies are the ones who are rewarded with appointments to desirable positions. They cannot see their responsibilities for serving on the admissions committee and the curriculum committee and for teaching students because, at present, the individual who goes the research route is the one who is rewarded.

Now we are beginning to reap the harvest of this attitude in that many young people are striving to obtain research professorships and they stay away from the responsibility of administering departments. The balanced career of teaching, research, and patient care no longer has the appeal that it had some time ago. One finds in searching for academic leadership that many of the most able young people are not available for the teaching appointments that come up, and if they are willing to take such appointments, they look forward to getting somebody else to do the teaching and the care of the patients. I have no quarrel with the research institute and with people who want to devote a great deal or all of their time to research; however, I do know that the future of medical education is going to require a reestablishment of a better balance between the teaching, research, and patient care. I commend for your reading a paper written by Visscher,[7] of the Minnesota faculty. There is a letter written by Goldwater,[8] which ends as follows, "The medical schools might be well-advised to give serious thought both to what is happening as well as what can happen if they continue to rely so strongly on Federal grants." In an editorial by Dock[9] one finds this statement, "Just as there are those who feel that defense can dispense with infantry (although the Russians, far poorer than we, have over 160 divisions), there are many who feel that medical schools can dispense with practicing physicians as salaried faculty members. These medical educators believe that ability to conduct investigations in biology and medicine is the essential quality for the faculty and the ability to teach and care for the sick in wards where students get their training is of less importance. Already there is such a shortage of medical teachers that hundreds of salaried posts cannot be filled, and this gap is steadily increasing. The preclinical departments, which are particularly insistent that only those engaged in productive research are fit to teach, must compete with the rapidly growing research institutes, with industry, and with the clinical departments. Increasingly these departments are headed by men who have distinguished themselves in internal medicine before being called to chairs in pathology, pharmacology, or physiology. Many of these staff members have Ph.D. degrees. This group, which has in the past provided such fine teachers, department heads, and statesmen in medical education, is increasingly drawn away from medical schools." The last sentence in his editorial is, "A sound program would permit considerable freedom in the ratios of teaching, practice, and investigation in each school and in various schools and departments and thus permit expansion of medical education based on optimal use of all persons with M.D. and Ph.D. degrees who wish to combine practice or research with teaching."

Conclusion.—I wish to emphasize that the concept of a balanced program is one of the most essential needs in the whole field of medical education. I can appreciate why many of our young people are staying away and avoiding administrative leadership, particularly in the clinical departments, because of the great load that is put on these men today by the very program of research of which I speak. The president of a great university in the East made the statement that he now knew the difference between part time and full time. His part-time people were away just part of the time and his full-time people were away all of the time. Certainly the heads of our departments spend a tremendous amount of time in the various administrative tasks which have come with the development of the residency programs and the research programs, and many times the teaching responsibilities come out at the low end of the totem pole. I have talked to medical students in institutions who have complained bitterly that they have not been able to have a student-teacher relationship with the important members of their faculties.

Recently, Dr. Aura Severinghaus, Joe R. Brown, M.D., and I were asked to prepare a statement concerning academic responsibility for one of the National Institutes of Health committees, and I quote from it:

"We consider it to be the chief objective and responsibility of those individuals who hold academic appointments in our medical schools or who serve other medical institutions in a comparable manner to (1) add to our present store of scientific knowledge, (2) integrate new discoveries with the existing body of knowledge, (3) pass on this knowledge to students who, hopefully, will become the academicians of tomorrow, and (4) suggest the early application of medical knowledge wherever it has a bearing upon the care of the sick.

"We believe that this simple statement is timely because there is not infrequently a tendency to ignore the fact that all of these components of academic responsibility are essential, are for the most part inseparable, and must be kept in balance.

"To reiterate, we believe that medical progress will be secure and hastened to the extent that we succeed in linking it to the discovery of new knowledge through research, its dissemination through teaching, and with the least possible delay its application to the betterment of patient care."

All of us would hope that, in the years ahead, the teaching centers would continue to play an important role in the development of the nation's medical research program. However, great attention must be given to seeing to it that with the enlargement of the research programs the fundamental mission of our teaching centers is not lost. Certainly the undergraduate program of medical education represents the keystone of our future health in this country as far as medical manpower is concerned.

I still hold that a member of a staff of a medical school should have a concern that he be a good teacher, an able investigator, and, if he is in the field of patient care, a good doctor. Those of you here in medical communication can perform a great service if you will help us to tell the story of the importance of balance in our programs. Of course, we need more and better research but this will depend on the all-around strength and vitality of our teaching centers.

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Panel Discussion

THE PRACTICING PHYSICIAN: RECEIVER OF MEDICAL INFORMATION

Chairman

RICHARD H. ORR, M.D., NEW YORK CITY

AFTERNOON SESSION

RICHARD H. BRASFIELD, M.D.,* NEW YORK CITY, *Presiding*

RICHARD H. BRASFIELD, M.D.: The Afternoon Session will continue with the theme we had at lunch, dealing mainly with basic problems. It will be moderated by the President of the Metropolitan New York Chapter of the American Medical Writers' Association and Executive Director of the Institute for the Advancement of Medical Communication, Richard H. Orr, M.D.

DR. ORR: We spent the morning learning how to generate and transmit information, and now this afternoon we must consider how to use and digest it. The product of so much labor has only one purpose: to communicate, to transfer information from one person to another. Therefore, the receiver is every bit as necessary as the sender. Since most of us spend much more time receiving than sending, how to increase the efficiency with which we assimilate information has greater practical importance than how to generate information faster.

If significant improvements cannot be achieved in the receiving end of the process of medical communication, the present frightening trend will continue—a trend toward sending more and more messages, for each of which there are fewer and fewer receivers. If this phenomenon of the vanishing audience continues, at some stage it ceases to be worth while for an individual with new information to attempt passing it on. Even now, it has been stated that, for the average medical paper, the time spent by author and editor in preparing it is greater than the total time given by all individuals who will ever read it. This is a sobering thought for authors who think.

We have no good quantitative data on how many physicians actually read the average medical article, but there is little reason to believe that the ratio of receivers to senders is any more favorable in medical communication than it is in another field of science for which we have some solid estimates. A recently completed study of chemists indicated that, on the average, there are only 14 readers for a written scientific communication.

Perhaps the solution is, as some suggest, to put a gag on those who desire to transmit to others something they believe is important. This could be done by establishing very stringent standards for what can be published or presented at meetings or otherwise transmitted. These standards would be enforced by official boards of review. Of course, this is exactly what most societies now try to do in a limited way, yet the number of articles and oral reports continues to increase. For this approach to produce the results its proponents desire, rigid selectivity must be combined with some plan to inhibit or stop the formation of new societies and the establishment of new journals. For many reasons, such a restrictive policy does not seem workable in a democracy, even if it were desirable. Attempting to develop ways in which practitioners can take in more information in a given time seems a less dangerous and a more promising approach.

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* Vice-President, American Medical Writers' Association, Metropolitan New York Chapter.

This afternoon is dedicated to the rescue of that unsung martyr, the receiver. There are fewer acknowledged experts on what may be called "receivermanship" than on "authormanship"; however, we have managed to find four panelists who may be able to offer practitioners assurance that something can be and is being done to help those threatened with drowning in a flood of information.

Our first speaker is truly qualified as an expert in receivermanship. He is himself convincing proof that a busy practitioner can keep up with medical progress, even when his specialty is the most demanding of all, general practice. In addition to carrying on a more than full-time practice, I. Phillips Frohman, M.D., is always engaged in numerous medical and civic activities. One example of these activities was his term as chairman of the AMA's section on General Practice. Each time I have the pleasure of talking to him, I am amazed at how he manages to be so well informed in so many areas of medicine. Today he has been asked to give you a few of his secrets.

How the Busy Practitioner Can Keep Up

I. Phillips Frohman, M.D., *Washington, D.C.:* The past fifteen years or so have been marked by a great deal of important medical research emanating from various research centers, universities, clinics, and physicians' private practices. With the emergence of this research it has been the job of the busy practitioner to continue to bring to the American public good medical care. To do this, the practicing physician must be kept in touch with this great forward march of medical science in order that he may bring the benefits of new knowledge to the service of his patients. This must be done by communications such as reading, lectures, television, scientific meetings, exhibits, pharmaceutical educational advertising, and last but not least the medical representative. Each has its respective place in the field of communications. Not every one of these will do an excellent job all the time, but for the main, most are necessary and helpful to all of us.

The modern physician must continue to acquire varying amounts and varying degrees of formal or informal instruction in the science of medical practice throughout his active professional life so that he may better aid his patients whether in his office, at the bedside in their homes, or in the hospitals.

Postgraduate Education.—It has been admitted readily by various educators that although we have the finest basic preparation for doctors in this country, the true education must begin in the postgraduate stage if the physician is to be of continual service to his people. Hour for hour and day for day there is probably more postgraduate education going on twelve months of the year than there is in the formal training in all of the medical schools in the United States. If we consider postgraduate education of a formal or informal nature conducted at the universities, the hospitals, and the clinics; add to this the multitude of journals, books, and other medical reading material; plus the annual and semiannual meetings of such medical groups as national and state societies and the general and the specialty groups, to name a few, we can readily see that these forms of communication for education add up to many times the total hours spent in four years of medical school.

The importance of this postgraduate education is self-evident. The quality of medical and surgical care we render the patient during our lives as practicing physicians is dependent on continual postgraduate study. It is important that this continual education be presented in the most accurate, concise, and understandable manner.

No other profession uses communications as much as physicians. In our present society physicians communicate with each other by means of medical journals, lectures, papers, books, and talks at professional meetings. Likewise, various professional societies of specialists or nonspecialists are part of our medical communications education system. We physicians communicate with the public either directly or indirectly through science reporters via public lectures, newspapers, television, and nonprofessional books. These are all means by which the physician can keep up as it were and, conversely, are methods by which the public may also keep abreast of what is going on in medicine.

A definition of what is meant by "keeping up" is at this point a necessary item. Keeping up may mean many things to many physicians. To the specialist it may mean reading a circumscribed amount of published material and digesting much of the small amount he reads pertaining to his particular field alone.

To the thousands of general physicians, the family doctors, keeping up may mean an entirely different thing. We family physicians deliver the babies, care for them during their growing years, and perhaps even deliver their babies when they marry. We treat the parents and grandparents and do an excellent job over-all in spite of various comments to the contrary by "nonfamily" doctors and some medical educators. To us, keeping up means much more with a wider scope of knowledge.

About three years ago medical students were addressed by a leader in one of medicine's most influential organizations. In his address this learned doctor stated that a world of even greater specialization is in store for the would-be physicians, and that this specialization is caused largely by the increasing amount of medical knowledge and the reaching of the limit of the student's absorption of such knowledge. This gentleman inferred that due to the amount of knowledge presented it would be impossible for these students even to consider the possibility that they might become family doctors or general practitioners since no physician could know all about everything in medicine. His concept of keeping up was that each physician had to have total knowledge and complete absorption of everything he saw, or heard, or read. He believed students in this age to be so microcephalic that this was impossible, and so they had better right now and here in their first day at medical school become specialist-minded! To this doctor, keeping up meant knowing all about everything if the student wished to become a general physician.

Keeping up is, of course, impossible if we mean intimately to concentrate in our minds all new things. Keeping up means an awareness of new things, new procedures, and new drugs. It is not the same as the four years of concentrated study needed in medical school to pass school or state board examinations. Here the student must know all about everything he is given to study. Keeping up for the busy practitioner, the family doctor, means reading a great deal, swallowing much, digesting some of that which has been swallowed, and ruminating, like the cow her cud, that which has not been digested for lack of time. While this is being done the practitioner must make a mental or, better still, a written note of the things helpful to him in his practice. These notations he must put in an orderly fashion so that he may become more intimately acquainted with them. When this has been accomplished and he has decided in which order to read in greater detail for complete digestion, he must then MAKE TIME for such reading. It is impossible to FIND TIME in the daily life of the busy practitioner.

While showing my exhibit on "Medical Writing and the General Physician," presented at the annual meeting of the American Medical Association and other national medical groups, the question always asked by doctors viewing the exhibit is "When do you find time to write?" My answer is simply "You don't find time, you make time." The same applies to reading or listening to lectures.

Competition for the busy practitioner's time is manyfold. The bowling team, a good football game, that insensible hawker and thief of time, television, or maybe just a cold beer with the boys at the club all steal a little time leaving less for serious medical reading. I might add that the complexity of wordage or the prolixity of the paper he intends to read may so weary the mind of the busy physician that he may soon find other diversions more relaxing and more interesting after a hard day's practice.

In the beginning when methods of communication were by sign or the spoken word, brevity was of the utmost importance. Later when writing was invented and paper became less expensive, prolixity replaced brevity.

Yes, gentlemen, competition for the doctor's time is keen. Let us make our writings simple, brief, and to the point. I might even be so presumptuous as to suggest writing medical papers with an intriguing style and making them less didactic. "Storybook" your pieces if you will. Relax the doctor's mind as he reads. Write simply with simple words. Don't browbeat him with your perfused intelligence of sesquipedalianism. By enticing him to read you help him to keep up in spite of the daily competition for his spare moments.

USEFUL JOURNALS.—It is impossible for any physician to read all the books or all the journals. For the busy general practitioner certain basic journals are extremely educational and helpful: The *Journal of the American Medical Association,* the physician's state journal, *GP*—the journal of the American Academy of General Practice—*Postgraduate Medicine, Medical Times, The American Journal of Medicine,* and the *New England Journal of Medicine,* to name a few. Perhaps, if he has a few more moments four or five other journals per month would help also.

Following these the digests or abstracts are most helpful. The physician can read many of these booklets in one hour or less and may request reprints from the authors for those papers he wishes to read in their entirety. In this way the general physician can keep abreast of what is going on in the specialty fields and find many useful methods to apply to his own busy practice. The small digests such as *Current Medical Digest, Modern Medicine, Medical Science, Medical Digest,* and others are but a few to read from cover to cover. Not all are excellent, but each will deliver a worthwhile gem in almost every issue.

Keeping up and keeping informed go hand-in-hand. The tabloids of the medical world help us greatly. *Scope, Medical News, The AMA News,* and others in this class help to bring certain types of education to the busy practitioner.

Let us not forget our friends of the pharmaceutical manufacturing industry. Their productions in the field of medical literature are important and most worth-while additions to our daily reading. Many of these booklets and pamphlets have so much excellent material that I file a great many of them for future reference.

CHOICE OF ESSENTIALS.—The most significant thought for the busy practitioner in keeping up with medical progress is to try to delineate just what he wants to keep up with. No one can keep up with everything. I suppose here lies the story of how specialists are born. The student, intern, or resident is frightened by all this nonsense about its being impossible to be a good general physician because one cannot read and know everything in every field 100 per cent. Frankly, very few specialists can do this with their own specialty. But the over-all intelligent physician can absorb a great deal about his specialty and be extremely happy in the one he chooses. He can even pass the specialty board.

The general physician must know and read a great deal about everything. If he is an all-around physician he can very well care for approximately 80 per cent of the people who visit his office, and when the occasion arises he must be intelligent enough to know when to refer to his specialist colleagues. Basically, it is most important for the general physician to understand clearly just what is most essential in his reading to aid him in his everyday practice.

MAKE YOUR SPARE MOMENTS COUNT.—I find it helpful to scan the contents pages of my journals and circle the topics listed. I then number each article in the order I wish to read it. In this manner I do not waste my time on the least important article which could very well be the first in the journal and perhaps discontinue reading before I get to the interesting and more important articles for me. This saves time. If I do not get to the least important pieces I have not had a total reading loss for that journal.

Very few busy physicians can find time to indulge in journal reading during their office hours. Thus we must make the best of it at home. I find it helpful to have my various journals on my desk at home, and two or more placed in magazine racks attached to the inside of each bathroom door within arm's reach when sitting down!

In the bedroom the night table is a very fine spot for a few more journals. Make it a habit to read for from thirty to sixty minutes every night prior to turning out your light. Three to seven hours of night reading each week add up to an abundant quantity of material at the end of the month. Try it. Get into the habit and you will find that you do not need sleeping pills or tranquilizers. You will read yourself to sleep in this allotted time.

It is well for the physician to increase his reception potential. Mentally concentrate your reading as you read. Visually omit the and's, if's, but's, at's, and the the's ad infinitum. With practice your eyes will automatically skip these words that are necessary grammatically but quite superfluous to the brain for concentrated reception and understanding of what is read. To keep up, the busy physician must read quite a bit, but above all he must select his reading material as carefully as possible.

If more medical writers would write with simplicity of style, conciseness, and brevity, it would be a great help to those who desire to read their pieces.

Medical readers should have two objectives constantly before them: (1) to keep their entire purpose for reading clear, and (2) to absorb that which is important to their everyday practice.

DIRECT MAIL ADVERTISING.—Many physicians complain about the overabundance of direct mail literature delivered daily to their offices. I believe and honestly feel that their complaints are unfounded. Much of this direct mail advertising by the pharmaceutical companies has for its main purpose, true enough, a sales pitch. But this mail can serve as postgraduate education in helping the busy doctor keep up with what's new in the drug field. The busy practicing physician must organize his approach to this overabundant mail. Don't fight it. Become psychologically attuned to the fact that it will be with you each day. Set aside about five to ten minutes without patient or phone interruption so that you may review this literature and select that with which you are not familiar and discard those pieces advertising drugs with which you are already acquainted. This procedure will diminish this pile of material immediately by one half. Now go through the rest of this mail and select that which interests you enough to take it home for reading in the quiet of your study. Save and file any attached index cards so you may have them at your fingertips for future reference. This entire weeding out and filing process will take about ten minutes.

Much of this direct mail advertising and educational material will have numerous bibliographic references. The physician interested in reading original articles pertaining to the drugs so advertised may write to the drug company or to the authors and ask for reprints. In many instances papers on the clinical investigation or research about these drugs may not yet have been published in the journals we receive, therefore this direct mail literature can be of great help in our education if we use it properly. Don't file it in your wastebasket. You will be the loser in the long run.

Medical Representatives.—The greatest medical discovery of the century would be of little value in the elimination of suffering and disease if information concerning its uses, contraindications, dosage, and availability were not made known. Only in the hands of informed physicians and an intelligent public can new drugs be of maximum benefit.

The drug manufacturer depends on the physician's professional desire to keep well informed. Each of us must choose the various channels of communication within the profession to which we can give some of our precious time and attention. Unless, in one form or another, contact between the producer of a new drug and the prescriber is made, a new drug remains merely a new chemical in the manufacturer's warehouse.

Today in this country there are more than 15,000 medical representatives calling on doctors. Many of these men are pharmacists, many have college degrees, and most of them are trained carefully by the organization they represent. Give them some of your time and educationally you will be well rewarded most of the time.

These fine gentlemen come to call on the busy practitioner either by appointment or by a catch-as-catch-can arrangement. They will wait very patiently until the good doctor can see them as his time permits. Often the medical representative will present a new drug, explaining its function, the clinical findings, and the results as outlined by various investigators. He may leave a sample of the product and some excellent literature to be read at the doctor's leisure. The representative may also discuss one or two older products to refresh our memories. He may even discuss some new usage that has recently been discovered for these older products. All of this tends to add to the busy physician's knowledge. Naturally, it is taken for granted that all that is spoken by these gentlemen will be weighed very carefully by the busy physician who must decide for himself after listening, reading, and perhaps prescribing the product for a few of his patients, just how well his clinical findings agree with the medical representative's discussion and the literature associated with any particular drug.

Summary.—The basic foundation of medical education is to develop doctors who will read, listen, observe, try, and finally evaluate the good or bad points of any product or procedure. Keeping up is merely a continuation of the basic foundation.

Keeping up for the physician means concentrated and selective reading, listening, and observing.

Keeping up requires the proper allotment of time, or the making of time, for medical reading and scientific meetings.

Keeping up means an awareness of new things in medicine.

Keeping up means a proper understanding of what the physician wishes and needs to keep up with.

Dr. Orr: Thank you, Dr. Frohman. We will postpone the discussion until after the last speaker, when I hope we will have adequate time for questions.

For someone who is on the transmitting end, it is sometimes difficult to find out whether any one is receiving and, if someone is, whether the message is coming through loud and clear. The really brave communicator risks asking a third question: How does the receiver react to my message? Speaking for the other panelists, but not for myself, I'll state that they are all brave, and so I hope you will have some good questions. Please write them down while they are fresh in your mind, and at the end of the presentations we will collect them. If possible, direct your questions to a specific panelist.

The next speaker approaches the problem from a different angle. Edward C. Rosenow, Jr., M.D., is Executive Director of the American College of Physicians. In this position, in addition to many other duties, he is responsible for a large program in postgraduate medical education. He is also one of the pioneers in new media for medical communication. In his previous position as Executive Director of the Los Angeles County Medical Society, he played an important role in starting and running Audio-Digest, which all of you recognize as a very successful experiment in using magnetic tape recordings to bring new information to practitioners. At present, he is a leader in other efforts to exploit the great potential of modern technology for improving medical communications. One of these efforts is the Council on Medical Television, where he serves on the executive committee. This organization was initiated by the Institute for the Advancement of Medical Communication. His assignment today is to review the rapid development of new media and methods for disseminating medical information and to assess the promise of these new channels for serving the practitioner. Dr. Rosenow.

New Communications Methods Promise the Practitioner Help

Edward C. Rosenow, Jr., M.D., *Philadelphia, Pennsylvania:* In discussing some of the newer communications methods, I would like first to discuss some of the problems of communication as they affect the practicing physician. It is obvious that there are many chances for the doctor to keep up with the rapid progress of medical knowledge. He may attend formal postgraduate courses; he may attend medical meetings of many kinds; it has been conservatively estimated that almost every doctor can have his choice among at least 50 important meetings in a six-month period. He has the opportunity of reading many journals; there are at least 600 journals referred to commonly, and it should not be difficult for most doctors to go over at least two or three in his own field of special interest. He also has the opportunity of getting some of his information from the detail men of pharmaceutical houses. I am not particularly impressed with the statistics which show that there are 14 million words written each week. Obviously, a doctor cannot read them all, but it is surprising how often a doctor does not even read the two or three journals one would expect him to read to keep up with his own field of interest. There must be some key which would give us the answer to why some men are motivated to keep up exceptionally well, and others not so completely.

No one knows for certain what motivates a doctor to continue his education. I am sure that at times it is a desire to keep up with his colleagues, so that he can visit intelligently with them about newer things in the literature. I suspect also that one of the most important motivating factors is the patient who comes into the doctor's office with an article clipped from *Time* magazine or from some other journal written primarily for the lay public. It will do him little good to poke fun at this information because if he does the patient will leave him soon in favor of a doctor who does take an interest in these things. When I was in practice I was quite willing to read these articles because some of the science writers for the better lay magazines are working full time to report new information, and I always felt that I was less apt to miss things by keeping track of some of this information as well. One medical association, the American Academy of General Practice, has done a very interesting thing. This association requires a certain amount of postgraduate training to maintain membership in the Academy.

I hope no one here will feel that I am supporting an argument that things learned by the spoken word are superior to what can be learned from the written word. Obviously it is not true. It is also obvious that some people learn as well or better by listening, and for some visual learning is a more satisfactory method. Certainly, most doctors learn a good deal in medical school by listening, and they practice all their lives taking histories and interpreting what they hear. So it is a little surprising when they say they can learn only by reading.

Description of Audio-Digest.—I would like now to describe a few newer communication methods. The first one with which I have had considerable personal experience is Audio-Digest. It is an abstract and review journal; in this respect it is like any other abstract service. Instead of the printed word, however, the contents are spoken and recorded on sound tape. Running the magnetic tape through a suitable tape recorder, the doctor listens to his digested material rather than reads it. On a regular subscription basis, the Audio-Digest member receives a new one-hour tape recording every two weeks. What he hears is a selected distillate of the high lights of 12 to 14 of the preceding two weeks' most significant new articles affecting his particular specialty. Incorporated with these high lights are what we call "guest lectures." These are recorded speeches of guest speakers at different medical meetings, giving practical, useful, how-to-do-it advice to practicing physicians. Some of America's finest medical and surgical teachers have taken part in these lectures.

During the past five years, Audio-Digest has grown from a single service to the general practitioner to a present total of six different tape-recorded services, namely, general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics, and anesthesiology. Estimating conservatively, a total of about 30,000 physicians hear one or more of these services. The oral journal has been accepted by the Armed Services for world-wide distribution. Many of our doctors report that after listening to their tapes they turn them over to medical missionary groups who distribute them throughout the world. There are no commercials on any of these programs. They are supported entirely by doctors' subscriptions. In this way there is a guarantee of complete freedom of opinion regarding the merits and demerits of new drugs and modalities of treatment.

Advantages of Recorded Abstracts.—Some of the advantages of such a tape-recorded journal are as follows. The spoken word for many doctors has the unique power to command and hold attention. It takes far more than italics and bold-faced type to convey a lecturer's intended expression, timing, and emphasis. This carefully preselected medical programming insures the doctor against self-selected education and substitutes what other men feel is important, thus broadening his experience. Incidentally, this system's relatively expensive subscription charge of about $75 per year makes it incumbent on the doctor to get his money's worth by listening from beginning to end. There is no easy way to jump from place to place on the tape, therefore, the programs are heard in their entirety.

Another advantage of this method is that the tape utilizes segments of time for the busy doctor. Many subscribers listen while they are driving their cars, dressing, shaving, or eating. Some play the tapes while pursuing a hobby such as woodworking or painting.

The tapes erase geographic isolation for many physicians. Through the ability to record and reproduce in quantity, the voices of the best teachers in all the great teaching centers can be brought to the most isolated doctor wherever he works. Occasionally, this medium allows the doctor to listen to heart sounds, the voice quality of a patient with Parkinson's disease, peristaltic bowel sounds, and other interesting sound effects.

A final advantage of this method is the

use of the tape as an excellent springboard for group discussion. It has been found that many groups get together for lunch or an evening and use the tapes as a point of discussion.

A similar type of medium is the journal which comes out on records called "Voice of Medicine." In many respects this is quite similar to Audio-Digest and I do not need to elaborate.

TELEVISION.—Television is the next new communication method I would like to discuss briefly. Even though the terminology, which includes closed circuit, intramural, open circuit, scrambled image, image amplification, and so forth, is confusing, television is here to stay. The great advantages are that it increases the audience, allows the audience to watch superlative technics by teachers, and offers the advantage of image amplification. This latter has been found particularly useful in dentistry, where formerly only one or two men at most could observe a fine operative procedure. With television such a procedure can be viewed by hundreds of men at the same time. It is obvious that there are many fields in medicine where this would be most useful, for example, in dermatologic discussions. Another advantage is that it brings the medical center to the doctor, although there are some who doubt that he will listen to a program at home. It should be used more to conserve faculty time, even though at present it has not seemed to conserve very much time. One final advantage is that it motivates some doctors who do not do anything else about continuing their education.

It must be remembered, however, that television so far is extremely expensive. Until open-circuit television is more acceptable to the doctor, it is somewhat limited in use. One very interesting experiment on open-circuit television is being conducted at the University of Utah College of Medicine in Salt Lake City. Incidentally, open circuit means merely that anyone can view the picture. Closed circuit, although ideal, is limited because of expense and because only certain educational television stations have this available. In closed circuit, only a certain audience can view the picture. The Utah experiment involves putting medical clinics on television at a time when the public ordinarily would not be looking at the program.

For several years the Albany Medical College has had a very interesting method of trying to expand its audience via closed-circuit radio communication. This has been tried in several other cities as well. Basically, it consists of putting on a clinic, after which doctors in connected hospitals may telephone questions to the panelists, who answer the questions over the radio. This has been most popular and not nearly as expensive as doing the same thing on television. Several of the pharmaceutical houses and one of the large radio networks have been exploring the possibility of putting on similar programs on a nationwide basis.

MOTION PICTURES.—A final word must be said about the use of motion picture films for teaching. These tend to be ignored, and yet there are many excellent films available to doctors. Incidentally, one of the problems here is merely the trouble connected with ordering the films and arranging a time to show them. With proper enthusiasm and a little promotion, I am convinced that these could furnish a very wonderful additional method of communication.

COMMENT.—In summary, I would merely like to emphasize that no one method is suitable to all doctors or to all subjects. By the enthusiastic use and development of many newer methods of communication, the doctor has every opportunity to keep up with the rapid advances in medical knowledge. Only in this way can he serve his patients adequately; only in this way can he help to keep the caliber of medical science in America at its present high level.

DR. ORR: Before we proceed, I should think that in accord with what seems to be the best practice today I should announce that all testimonials on this program are unrehearsed and unsolicited.

The next speaker can also draw from a multifaceted experience. As former Editor of the *Journal of the American Medical Association* and Director of their scientific publications, he has the advantage of years of feed-back—that's the engineer's term for back-talk—from the multitude of practitioners who read the AMA journals, or who at least receive these respected journals. Now, as President of the Pharmaceutical Manufacturers Association, he represents the industry that supports directly, or indirectly, a large portion of all the communications directed at practitioners. In addition to the pharmaceutical companies' own publications, they support indirectly, by advertising and contributions, many medical publications, films, meetings, television programs and a forthcoming service, "Medical Radio System."

Today, Austin Smith, M.D., will talk about the pharmaceutical industry's concern with meeting the needs of the practitioner for information on new methods in diagnosis and treatment. Dr. Smith.

The Pharmaceutical Industry's Concern with the Problem

Austin Smith, M.D., *Washington, D.C.*: I believe the wisest thing for me to do would be to say thank you for the privilege of being here and leave, because Dr. Frohman certainly said many things that I couldn't with good grace say about the pharmaceutical industry, and Dr. Rosenow certainly has pointed out some of the things with which doctors today are being confronted and what is being attempted to meet these problems. There is not much left for me to say. So, therefore, I will try to take less time than I had planned.

There are a number of problems which confront the medical profession that are of concern to the pharmaceutical industry. Time does not permit discussion of all of these, so I would like to draw attention to just a few. If they seem unrelated, there is good reason for it: Time just doesn't permit tying the threads that would bring all of these things together. Furthermore, I think the breadth of problems that exist today for the medical profession is so great that it would be impossible to do other than chip away and raise a few bits for discussion.

Recent Hearings.—Perhaps I might say that the best way to focus attention on my part of the discussion is to point to the recent hearings, the so-called Kefauver hearings, although I prefer to refer to these as the hearings of the Senate Sub-Committee on Anti-Trust Monopoly. These hearings did focus attention on a number of problems over which there is a great deal of confusion. Perhaps this presence of confusion, particularly that which is unnecessary, is the thing of greatest concern today both to the pharmaceutical industry and to the medical profession. I think this confusion stems from the fact that there are too few facts made generally available. There are plenty of facts to be obtained, but until recently there were comparatively few people who attempted to ferret out these facts and then utilize them.

Problems in Communication.—One of the things that the pharmaceutical industry wonders about is what kind of information should be gathered for the medical profession. Another thing of concern to it is how it should be documented. If we are to continue to have public forums, in which nonmedical individuals are to debate the merits of drugs and other things, then if for no other reason than protection for the medical profession, the subject of documentation becomes very important. A third thing is how these facts should be presented. You have heard today how facts should be gathered and how information can be presented. But stemming directly from this is another question: How should it be utilized? And then still another question occurs: How should it be preserved? And finally: Where should this information be, and how should it be replaced?

There is an amazing amount of medical information that is being replaced and should be replaced each year. The extent of this probably goes beyond our imagination, or at least best recognition. We consider the literature to be a matter of permanent record, but there is a great deal of erasure, some of which is probably good.

These are some of the questions that concern the pharmaceutical industry insofar as the doctor, the recipient of information, is concerned. One might ask if this brings up a question of whether case reports, reviews, research reports, even book reviews, or name what you will are included. As far as I am concerned, these questions apply to all areas of the printed page and to all types of presentation, visual and auditory.

Other questions that could be raised are: Who should pay for this and who really does pay for it? How much should these things cost, that is, the gathering, the presentation, the utilization, the preservation, and the replacement of information? And how does one supplement the other?

So far this afternoon, I have heard discussion of what the doctor needs, how he can use it, how he can regiment his time, and how he can use the natural curiosity with which he is born and which he normally is taught to use. I have not yet heard, though, how one supplements the other. I think, however, that the speakers assumed the members of the audience understand this. Well, I can assure you, if the members of this audience do, there are many other individuals who cannot understand, or do not understand, why we need medical journals and television, radio and TV, films, and other things. Frankly I think we need all of them for the most effective presentation of today's mass of medical information. I am not yet convinced that we all appreciate the proper role for these, or how much of each is needed (maybe at the moment there is wasteful competition), but I do believe, in time, with experience and with good judgment, this problem will be resolved.

Need for Facts.—Another problem that bothers the pharmaceutical industry in its relationship to the recipient of this information is the question of defining facts and defining fancies. There is a difference, although some of you may feel that there is no difference made at times at certain congressional hearings. Too often you will find a strange mixture of facts and fancies and a real need for a clear separation of the two. I suspect that recently the pharmaceutical industry has had a greater need for the facts, as have members of the medical profession for some time, than have most other groups in this country.

In the early forties the American Medical Association and other bodies began a critical analysis of some bills that were being proposed to provde a government-subsidized medical carei system in this country. I recall quite well what has transpired in the years since then, as there has been continuing scrutiny since those early years. In spite of this constant looking for facts, I think there is not yet a full appreciation of the real need for facts and the availability of them.

Let me mention just a couple of examples, because they are everybody's problems. One of the problems that confronts those who search the literature and in practice utilize it—you who teach students, who conduct Congressional investigations, and who try to preserve a way of life—is the confusion that sometimes arises from what appears in the literature. Very often, what appears in the literature is not a fact but simply an impression. This became quite vivid for me when I wanted to learn during the recent months what the actual cost of medical care is for the average individual, particularly for the person who is ill. I found that even though the literature makes frequent reference to the high cost of illness, or to the high cost of drugs and the high cost of hospitalization, there is very infrequent reference to the specific application of this statement to a given disease, a patient, a family, or a geographic location.

So I had to take the most obvious route, until other information is obtained by survey, and simply go to men in practice, men who are outstanding in their areas and who use drugs every day, and ask them how they treat an average patient.

Speaking of averages, this can lead to difficulty. I heard someone earlier refer to the fact that according to a survey, only 14 readers read each scientific article in the chemical field. I have a feeling that there are probably many individuals who don't read an article at all, but there are many more who read many articles. So I think that we can assume that the average readership for a scientific article is not 14 but many times that. And yet this survey while interesting can be misleading and as a result is the kind of information in the literature that needs appropriate explanation. It is well intended, but it can be misleading. This is the kind of information in the literature that I found when I was searching for the cost of medical care, something of tremendous importance to the men in practice and certainly something of importance to men in business. There were averages but few specifics. There were impressive but too few data. This then, becomes one of the major issues of the day—what to do about making certain that facts get in the literature and that there are corrections where indicated. Well, we could have Congressional hearings every day I suppose, and that would help put things in the literature; certain of the editorial writers in the medical and pharmaceutical and trade journals have made use of the information that was gathered, but I assure you from personal experience that this method is not the most pleasant way to spend every day of your life.

I would like to suggest that we do something about this problem. It would lead to the suggestion that when we see general and not obviously supported statements, we question the statements. We should ask the individual where he got this information, on what was it based. Where are the supporting facts? If they are available, they should be included in the written or oral statement, and if an observation can't be supported it should be taken out.

The industry also is worried about the statement that doctors are not keeping abreast. Frankly, I don't know whether all doctors are or not. I do know many are trying to keep abreast. I can tell you on the basis of surveys which doctors read what journals and where they read them.

I and others better informed can give you information about other things, insofar as readership habits and listening habits are concerned, but I really don't know what they mean insofar as the assimilation of the information is concerned. So when I say the industry is worried about the charge that doctors are not keeping abreast, I must say that it is my conviction, and I think that of members of the pharmaceutical industry, that the industry is not worried really about the doctors not keeping abreast, but about the charge. I personally don't know how they are keeping abreast, but I am amazed from time to time at the amount of knowledge that the medical profession tucks away when it is exposed to ideas which are useful to members of the profession as practitioners and as citizens: I am not as discouraged as some claim they are about doctors not keeping abreast. But we need information to prove I am right or wrong. Maybe some of you will have an opportunity in the months to come to help gather this information by one means or another. Dr. Orr, I know, is attempting to do this in one broad area. I think the industry would be as interested in the results of his study as would anyone else.

ACKNOWLEDGMENTS.—Another thing that the industry is worried about is the fact that some writers who appear in the medical literature are hesitant about acknowledging who has done work for them and with them and how they have participated in some of the reports that have been published. I see nothing wrong in acknowledging the fact that others have been of assistance to you, whether by way of a grant or something else. In fact I think that individuals who do much of the technical work deserve recognition; for example, technicians sometimes will make as great a contribution as the individual who actually has been closer to the patient. Yet I have sensed, over the past decade or so, a growing hesitancy, I think, for writers to acknowledge sources of help. Now I don't make a plea here for industry. It is quite immaterial to me whether or not you acknowledge help from members of the industry since I am talking about a principle. I think this is a disturbing thing, however, because as a reader I would like to know many times who really did the work in the experiment. I am not interested solely in the man whose name appears on the paper. I have had enough experience in research myself over the years to know that very often the people who do the research do not appear by name in the paper, or at least are not listed as the senior author. And yet my impression of the paper sometimes could be molded by my thoughts about who did the work. Actually, the facts presented should be sufficiently revealing and helpful, but that isn't always the case. The place the research was done, the conditions under which it was done, and the planners and participants can be important.

Research in Industry.—Another thing that bothers the industry is the growing criticism that because of the possibility of domination by commercial interests there is less opportunity for some members of industry to participate in medical papers and in scientific exhibits. I think this is unfortunate because some of the best medical brains and some of the best research brains in the country have gone to the pharmaceutical industry and elsewhere, or are doing administrative work or something equally helpful, which takes them away from the bedside, but still makes them available as an ally in the health field. I think it would be most regrettable if these able brains were forced away from research and this indirect bedside participation. It would be most regrettable, and yet the cry of commercialism is unfortunately posing that as a problem at the moment.

Reference Material.—Now quickly, two or three more things. The industry is concerned about the dearth of people interested in medical writing. The industry is concerned also about the fact that material appearing in the literature does not seem always to be readily available. I don't have an answer to that, having struggled with the *Quarterly Cumulative Index Medicus* for some time and worked with *Current Lists* in an advisory capacity for several years some time ago. I know the problems and I know that these people who are concerned with such sources of reference are aware of the problems, but this is something that I think will become increasingly important. It is to this type of reference that physicians who are in practice will turn increasingly, I believe, in the future for help. And if they don't, they will have to be spoon-fed, which in turn will, I suppose, invite some criticism.

Informing the Public.—Another thing that the industry is concerned about is the informing of the public. There obviously are mixed thoughts about this on the part of many people, but I have always felt that the public has a right to know what is going on in the medical care field. I have not thought, however, that members of the public should be so intimately informed about this that it would result in their trying to tell the doctor how to practice medicine. The public should be informed accurately, and yet there is an increasing amount of criticism about informing the public about advances in the medical care picture.

Integration of Effort.—Another thing that is of concern to the industry is the integration of effort of the various members of the health teams, something to which I could devote a good many minutes, but which I will simply mention because of lack of time. By integration I do not mean direction for all from one source but merely an exchange of information, a sharing of problems and of knowledge, and a community of spirit: more cooperation and less bickering.

Conclusion.—And finally, in too many quarters there seems to be a failure to realize that conditions change. The practice of doctors changes, of course. The kind of therapy that is available changes. Surgical technics change. The medical care that is available in hospitals is modified as circumstances justify. Too often, however, we are not vocal enough in explaining why these changes do occur, the need for them, and their importance. And so I suppose that I would just like to leave you with this thought that maybe one of the industry's greatest concerns at the moment is: How can the doctor obtain the information that he needs as a practitioner? How can he utilize this information? How can he make sure that the individuals who receive it use it wisely? And how can he make certain that that which is good is preserved and that which should be replaced is eventually replaced?

I have no answer or no solution for this problem. I could say, however, that I think the men and women in this audience can help a great deal in that respect. It is one of your prime responsibilities. Your responsibility, as I see it as a former amateur editor, is to present facts and correct errors that have appeared in the literature or elsewhere. It seems to me that when the preceding speaker said that he believed that information should be presented so that the doctor can understand it, if this means putting it in the popular vein let's do it that way.

To demonstrate this fact let me refer again to a study for the *J.A.M.A.* In 1950, when this survey was made for the *Journal of the AMA* it was done to determine what people liked and didn't like about the *Journal*, what they liked to see and what they did not like to see. One thing became apparent. Namely they wanted to read this *Journal* without effort, just as they would read a well-prepared popular journal. They wanted to be able to read without a conscious break in their efforts to read. The solution was quite simple: Use a type that is easy to read, use a type that you find increasingly in lay publications. We found also that a more simplified editorial treatment is appreciated by the physician just as much as it is by his wife or by other members of his family when they read other journals that come to their attention.

I would say, in conclusion, something that I have said before, but I will repeat for emphasis. Those who are concerned with the dissemination of information to the medical profession, or other people who work with the medical profession, have a great challenge ahead of them when they attempt to make certain that facts are set forth, that these facts are firmly implanted in the reader's mind, and that they then are used. That is why there are gimmicks and exhibits at medical meetings. I don't think that we could be accused of a circus atmosphere if from time to time we think of gimmicks in the presentation of medical literature, for the presentation of medical information to the medical profession is of fundamental importance to its work. If it helps all of us to do a better job then I am in favor of it.

Dr. Orr· Thank you Dr. Smith. One of the advantages of being a moderator, especially when one is in such fast company as the present crew, is that you get more chances at the audience than they do. However, I am going to restrain myself, except that I would like to correct a false impression, if I didn't make myself clear, and that concerns the 14 readers I mentioned in introducing this session.

I thought I hedged the statement enough. I believe it was a correct paraphrase of one conclusion of a very elegant, ingenuous, carefully done study of communication among chemists. I stated that in the field of chemistry there were 14 readers for each written scientific communication. I was careful not to say for each article published in the chemical literature. There is a significant difference. If anyone is interested in this interesting study, it was done by Dr. Russell Ackoff of the Case Institute of Technology under a grant from the National Science Foundation.

Our last speaker brings us back again to the grass roots, the practitioner. As a Councillor of the Medical Society of the State of New York, Alfred P. Ingegno, M.D., knows intimately the great difficulty that practitioners have in keeping abreast and is sensitive to their need for better information services. Since he is also Chairman of the Society's Publication Committee and of its Scientific Program Subcommittee, he is in an excellent position to help translate the practitioner's needs into action. His assignment today is to tell how the Medical Society interprets its rôle in solving the practitioner's problem. Dr. Ingegno.

The Medical Society's Concern with the Problem

Alfred P. Ingegno, M.D., *New York City:* To extend medical knowledge and advance the science and art of medicine, to promote the betterment of public health, these are among the purposes of the Medical Society of the State of New York. Similar worthy aims certainly motivate all serious medical organizations.

Even to begin to fulfill these purposes each society is at once involved, consciously or not, in a pattern of medical intercommunication. In the smaller units this may be nothing more than a simple periodic get together for informal exchanges of experiences, case presentations, or general thoughts. Or there may be a great convention, and a vast complex of bureaus, committees, councils, and publications, as is true of the AMA and some of the larger state medical societies.

However simply or complexly expressed, the basic purposes remain paramount, and a society can best measure its success in terms of how consistently its motivations find expression in the orientation and day-to-day practice of its members. This cannot be left entirely to chance.

No doubt it is true that becoming and remaining well informed in the science and art of medicine, in its broadest sense, is the individual responsibility of the physician. Nevertheless, it is also a legitimate concern of medical societies to facilitate this, to stimulate it, and to give aid in every possible way. The society can help to create and maintain the medically receptive mind, scientific curiosity in practice, and balanced judgment of scientific works. It can expose and reject the inept, the unworthy, the superstitious, and the unscientific. Further, whatever it does directly and individually can be augmented by the leadership and standards it sets for or exacts from organizations or institutions dependent on its approval.

In the Medical Society of the State of New York we have long recognized our responsibilities to our members in this area. Over the years there has been a constant striving to improve our methods and technics. Even when the Medical Society of the State of New York was founded in 1807, more than a century and a half ago, there were prizes in the form of medals to winners of essay competitions on subjects chosen by the Society. For example, the prize essay of 1825 was written by Andrew Hammersley, M.D., and was entitled "A Dissertation on the Remote and Proximate Causes of Phthisis Pulmonalis." In 1828, Alfred Y. Magell, M.D., wrote an essay on the "History, Causes and Treatment of Typhus Fever."

In his inaugural address, in 1809, Nicholas Romayne, M.D., second President of the State Medical Society, said in part: "You gentlemen, in the early establishment of this Society, have manifested a laudable disposition to favor the progress of science. Members of this institution have been directed by the by-laws to scientific researches. Literary premiums have been offered for the last year to invite investigations on the topography, geology and mineralogy of the different counties of this commonwealth and on the nature and cure of those malignant fevers which have often had such fatal effects on our people.

"Nor have the good effects of these exertions of this Society been unpromising, or unworthy of notice. Some communications have already been made, which, when the circumstances of this Society will permit them to be presented to the public, may not be found uninteresting to the legislator, the patriarch or the friend of science."

PROGRAM OF MEDICAL SOCIETY.—There are many ways an organized group of physicians can help meet the needs of its members for up-to-date medical information. In New York State we sponsor and promote programs of postgraduate education, scientific meetings, and a scientific journal, among a host of other diverse efforts. I shall refer to some aspects of these activities, characteristic of our Society; but I realize that similar patterns of effort find expression in other organizations and other places.

Postgraduate Education.—The increasing development of modern medicine makes it imperative that the practicing physician continue his medical education beyond the years of training in medical school, and some of our county medical societies, medical schools, and hospitals jointly sponsor training courses to meet this need, as for example in the Medical Society of the County of Kings.

In the Medical Society of the State of New York it has long been one of the special functions of the Public Health and Education Committee to provide speakers, singly or in groups, on request of county or other local medical societies. We are fortunate in having the cooperation of the State Department of Health to help meet the costs of travel and small honoraria for the speakers. Norman Moore, M.D., has given outstanding leadership in this program. Each year the number of subjects covered and the completeness of coverage increases. A special publication, listing available courses, speakers, and individual lectures is distributed to all county medical societies. In some of the less densely populated areas, several counties unite for postgraduate education programs with great success. This, then, is one way in which our State Medical Society strives to improve the status of its physicians as receivers of medical information.

Scientific Meetings.—Then we have our scientific meetings. Now traditionally, a medical society, particularly state or national, holds at least one scientific convention a year. As medicine has grown, with all its various specialty groupings, the number of sessions and the number of papers presented at these scientific meetings have also multiplied. In New York, our convention features general sessions which emphasize symposia and panel discussions on topics of broad interest to general practitioners as well as to specialists in several fields. We try to make these as up-to-the-minute as possible. Witness for example, the recent symposium on "Medicine in the Space Age"; and witness too the action of our House of Delegates in authorizing a Section on Space Medicine in the State Society.

In a society with a membership as large and varied as ours, it is essential that progress in the specialties receive comparable emphasis. Hence we have more than a score of section meetings, most of them well attended, where local specialists and those invited from out-of-State discuss developments in their special fields.

Much has been said about the superabundance of medical meetings. Many county societies have now abandoned scientific programs and devote their meetings to socioeconomic problems. There is an increasing trend in this direction even on state and national levels.

It is true that there has been a noticeable shift of responsibility in scientific matters to specialty societies and to hospital staff meetings and medical schools. But county and state societies and the AMA can continue to play a unique role. They are in the best position to maintain a balanced and eclectic viewpoint, to foster the doctor's over-all medical efficiency, and to continue their identification with the broadest purposes and interests of both the public and the profession.

All of us must guard against the one-sidedness and lack of awareness that is the peculiar threat of specialism. In this aspect of medical communication our county and state societies and the AMA have an especially salutary role.

SCIENTIFIC JOURNAL.—Almost before any medical organization has its first meeting and elects its first slate of officers, members are at least in the thinking stage of having a journal. It would almost seem that no medical group can be formed unless it also publishes a journal. With more than 5,000 in the world, and at least 1,500 in the United States, many people look askance at the continuous flow of new medical journals into an already overcrowded field.

For an established medical society, however, a journal acts as a twofold means of communication. It contains information concerning the society itself, its official actions, its plans, and its program. It is also a scientific publication. It preserves in written form the best of the discussions and presentations made at the society's scientific meeting. It publishes worthy scientific contributions of its members.

The important thing to remember, however, is that if the medical society publishes a journal, that journal must be of high quality. Only thus can members who receive it, usually as a benefit of dues, be informed intelligently on scientific developments and procedures. Several state medical societies have adopted the practice of publishing a bulletin or newsletter to serve as a house organ for their society information, and then have united with several other societies to publish a regional scientific journal.

In New York State, we have for the past sixty years published the NEW YORK STATE JOURNAL OF MEDICINE. Over the years this has developed from a means of recording official meetings and activities to its present philosophy. The Publication Committee of our State Medical Society and the editors join in putting into actuality a plan to make our JOURNAL a truly outstanding scientific publication. Indeed, we have been charged by the House of Delegates and the Council of our Society to exert every effort to improve our JOURNAL's appearance, to enhance the scientific importance of its content, and to widen its readership. We feel that only thus can we fulfill our responsibilities to our membership and to others to provide the best in medical information.

We hope to enlist the active cooperation of the ten fine medical centers in this State. And we plan to speed our schedule of publication of original research to help investigators interested in establishing priority for their work.

Inevitably, our editorial policy will become even more strict, our standards even more stringent. We believe we now have a good journal. We will exert every effort to make it even better.

SPECIAL PROBLEMS.—I cannot close without emphasizing another peculiar role of the medical society in its concern with the practicing physician as a receiver of accurate and useful medical information. I refer now to the Society's catalytic and synthesizing function.

Through its committees, it seeks the best and most expert talent in and out of the Society, often in cooperation with government agencies or educational institutions. It concentrates these talents on special problems of importance or urgency. It collects, sifts, and evaluates. Finally, it guides and instructs, either in specially called meetings or in specially published papers or brochures. An outstanding recent example of this was the work of the committee concerned with the serious problem of staphylococcal infection, under the chairmanship of James Greenough, M.D. Its brochure is definitive and authoritative.

From all that I have said, it should be evident that the Medical Society is indeed concerned seriously with its role in medical communication. It realizes that it must discharge its responsibilities purposefully and with intelligence and determination. By sincere and dedicated effort in this field, a medical society can make significant progress toward the realization of its high purpose to serve medicine and society.

Question and Answer Period

Dr. Orr: We have fifteen minutes for questions. If this is not enough, we can continue for an additional five minutes without interfering with the rest of the program.

I have given each of the speakers the questions directed to him to handle as best he can. They are all quite accomplished at fencing, and so don't feel too sorry for them. On this go-round each panelist will have five minutes. Dr. Ingegno, will you lead off?

Dr. Ingegno: I have a couple of questions, Mr. Chairman. "How do you feel about the Medical Society's working for better public relations?"

I feel as all of us do in the State Medical Society that this is a most important job. Obviously, we also have an important job in this field as individual doctors practicing individual medicine. But of course, we have much in the way of organized effort. As a matter of fact, unless I miss my guess, our Department of Communications, which includes Public Relations, probably takes one of the bigger bites out of the State Society budget. It is very ably staffed and much fine work is being done in many aspects under the leadership of the Council Committee headed by John C. McClintock, M.D. Of course this is not a time in which I can go into the many ways in which we try to benefit the medical profession by promoting a good public aura, a good public image of the profession and of the doctor.

Another question: "Should state journals also foster and encourage publications by medical undergraduates, as the *J.A.M.A.* stated recently they will do?"

As far as I can see, I think any editorial decision on the publication of scientific work should depend on the merit of the work and its scientific value. Whether it comes from an undergraduate or not, I think, is not particularly relevant. I do know that there is some good research work being done by undergraduates, and I certainly think that their work should be published if it's worthy of it. Of course there is an *S.A.M.A. Journal*, which is also published for the student, which would possibly be used. But as I say, I don't think the medical academic status of the submitter of an article makes as much difference as does the merit of the particular article itself.

I have here a nice note. It's not a question. It says: "May I say that I read the New York State Journal first and regularly? The others I read only if, as, and when I have time and opportunity."

Well, as Chairman of the Publication Committee, I thank you. Our editors thank you. Our State Society president, if he were here, would, I am sure, also thank you. And I could go on àd infinitum expressing our gratitude. The ratio of knocks to boosts is usually just about a million to one, you know, so that this is really a gem which I think we will frame in our State Journal office.

Before I sit down, I would like to ask Dr. Frohman what he does when he feels too dead tired at night to read.

Dr. Frohman: Well, it's very simple: I don't take vitamins, I eat everything, I work about sixteen hours a day, and I have a very nice time. I don't play golf, in fact I gave it up in 1937. It took too much time and it was a hard game. I just couldn't do anything with it. So instead, for sport now, I drive harness horses. During the season I go down to the track at about five o'clock in the morning and drive horses for about two hours, come home and have breakfast, take a shower, and go to work, which consists of a good day. I won't outline it, because it might exhaust you, but it is very nice. I think this is just clean living. I don't know. I don't smoke, I have a cocktail occasionally, and I jog my dog maybe two or three miles for exercise. Someone has said: "How long do you think you are going to keep this up?" I said, "Well, I am a young man of fifty now. I might live another twenty years." It's a lot of fun. There is plenty of time for social activities. It is just a question of organization, I think that's all.

Now I have a very nice question about the word I used: sesquipedalianism. I brought this in merely as a joke. It is a very lovely word, and whenever I am giving a talk on medical writing, on which I am no authority, I usually put three words on the blackboard. One is prolixity, one is sesquipedalianism, and the other word is obfuscate.

The next question is: "How long did it take you to develop your reading system?"

Actually it is not a system. It is something I have had to do. It was a question of survival. I wanted to go to medical school. I was a pharmacist and had practiced pharmacy for a number of years. I started in 1929 and earned two degrees; I had to work during pharmacy school. You have all heard about the Depression.

Then at medical school my problem was that, to do it, I still had to work. I worked three nights a week, on Mondays, Wednesdays, and Fridays, from six to twelve o'clock at night. I went to school all day, went right to the drugstore and worked as a pharmacist, and got home and studied from about twelve to about three in the morning. That is why I had to accumulate knowledge in three hours that it took the honor students eight hours to get. I learned that I really had to get through the material, and I really had to study. This is the thing that developed my fast reading habit.

That is how it happened. It was not a course I took at college or any place else. It was something I had to do to survive and to get my anatomy, pathology, physiology, so that I could answer the questions the professors would ask me. I was very fortunate. I was always able to pick the things they were going to ask me. It just worked out that way.

Now, I have a very good question here, and this is the last one. This says: "Physicians are often under the impression that all drug companies' promotion is concerned strictly with selling purposes; that is, they would not publish or distribute anything that had no profit-motivated message in it. How do you suppose this 'image' could be improved? For instance, do you believe a pharmaceutical company would altruistically disseminate the proceedings of this meeting or a similar symposium which did not happen to make mention of specific products? Do you believe there should be a cooperative effort on all these lines, or with a clearing house?"

I have seen many things published by drug companies that have absolutely no mention of drugs or other things. It may mention the company, and I think that is right, but I have seen many pieces of material about meetings come across my desk that have been published by drug companies. Of course, when you go out to buy a tie, there is always a selling motive to sell you a shirt with your tie. But the point is, drug companies do a lot of good, and let us not look at just the small bad things they do. Let's look at the good they do with all this material. I would miss it if it were discontinued.

Dr. Orr: Two questions were directed to me. The answer to the first one is: No, Dr. Frohman is not hyperthyroid! He just gave away his two real secrets. One is that he is a very fast reader. The importance of speed in reading is often overlooked. I would not be at all surprised if the average reading rate of physicians is relatively low. This may partially explain their difficulty in covering the literature. His second secret, which is really the ultimate secret—and I don't think he wanted it to slip out today—is the true explanation of all his energy. The truth is that he enjoys his work wholeheartedly.

The second question almost answers itself. "Since, in order to write one good paper, it is necessary to read a number of related papers, does it not increase the number of readers per communication to encourage the authors to write more communications?"

I think this is true. Authors do find time to read papers occasionally.

The last question is: "Are today's speeches to be published? If so, how can we obtain a copy?" Dr. Redway has told me that the proceedings will be transcribed and, after the usual editing process, will be published in the NEW YORK STATE JOURNAL OF MEDICINE. Dr. Smith.

DR. SMITH: I feel lost not being able to answer questions in the editorial field after having received them for a decade. And now I am a neophyte in another field.

Someone writes: "Whyever during the war did no drug company employ a lady detailer?"

I am told Dr. Frohman had one the other day. She stopped by and left something and went on her way. There may be others. I just don't know.

Another question: "In view of the competitive and partisan character of all advertisements, does the medical profession expect to receive total communication, all the facts, or does it merely expect accuracy in the selection of facts?"

Well, here I can put on two hats and I'd like to. As a former editor, I think that the advertisements in a journal, unless they are a several-page insert, should merely draw your attention to the availability of something and should not be intended as the source of the whole story. When, however, something is sent to you in the form of a brochure, I do think it should tell the whole story: actions, uses, contraindications, and signs of toxicity. Everything should be available.

Now as far as the competitive nature of the industry is concerned, my feeling is that the very nature of this competition encourages manufacturers to lean toward telling an accurate story. Those who don't soon learn the meaning of resentment by the medical profession. In this I also can speak from personal experience both from the medical standpoint and more recently from the pharmaceutical standpoint. The members of the industry are quite cognizant of signs of resentment by the medical profession. In fact, they are very sensitive to them. They have a thinner skin than many realize when it comes to the voicing of criticism by pharmacists and by physicians, and by some others today, too. I think competition encourages the complete telling of the story.

The next question: "I believe that the size of a pharmaceutical ad should be consistent in size in all three dimensions; the money saved will go to reducing the price of drugs."

Well, actually, this would not be the case. I could dismiss this question very easily by saying that really there is very little relationship between the amount of money spent in advertising and the price of a drug. When a drug is placed on the market, as a rule, there is nothing specific in the budget which provides a factor for inclusion of an advertising program for the simple reason that nobody knows whether the ads or the product will be well received and useful; whether they will supplement, replace, or be replaced by other promotional measures; or whether the product will be favorably received. Presumably experience and market tests, as well as a demonstrated need for the product will assure a market, but often unexpected responses occur. So the advertising budget, to describe it very simply, comes from reserve money in the bank, which is replaced if the item becomes reasonably profitable.

Now so far as saving some of this money is concerned, I think we can go overboard with advertisements and spend too much for example on the size of an advertisement or on color; but actually there are only pennies per prescription involved for advertising, and I don't think that the saving would be significant. It would have no practical effect on the total cost of the production of a drug. One does not have specific rules on how much is too much for promotion without which the drug would not be sold.

Next question: "We should like your views on the following—doesn't it now appear fairly certain that we must make the choice: either we tell the public all about medicine and the drug industry or our enemies will? Perhaps our reluctance to publicize our achievements is becoming impractical or even dangerous."

Well, I can say yes to this question with deep conviction because I have been making that statement on behalf of medicine for twenty years. And now I make it on behalf of industry, but at the same time really indirectly on behalf of medicine. When we talk about the cost of drugs, we are talking about the cost of medical care. When people talk about the high cost of hospital rooms or the cost of surgeons' fees or of office visits, they are talking about medical care. The critics who do this talking are really directing their attacks against all members of the health team, and this is what all of us should recognize.

The next question: "The interdependence of private practice medicine, research medicine, teaching and medicine, and the pharmaceutical industry is not challenged. Other nonmedical industries have established management or even executive trainee programs for college people, and they train these partially qualified people in the needs of that industry. Has the pharmaceutical industry considered a similar program?"

Yes, the pharmaceutical industry has favored this kind of self-improvement. In fact the Pharmaceutical Manufacturers Association (P.M.A.) has for several years sponsored a management program. I think the last three have been held in Chicago, as part of a pilot program to determine the feasibility of doing something like this. Furthermore, the P.M.A. sponsors or seeds certain other programs. For example, one thing that it has under way now, is a program for medical economists, because one of the great shortages that exists in this country is in the field of medical economics. And so the P.M.A., in an attempt to encourage others to provide these specially trained people, will provide funds for this purpose. This is now being worked out with a special advisory committee to the P.M.A. to see what can be done. The P.M.A. also has sponsored a program for the training of clinical pharmacists.

Individual members of the drug industry also have done this type of thing and supported it, either directly or through other organizations. It is something that is being done, will be done increasingly, and should be done.

Next question: "In view of the present Senate inquiry, would you please comment on any minimum standards which the P.M.A. recommends to its members for new product evaluation?"

We do not have any. P.M.A. does not have any list of procedures although, of course, a number of individuals including some associated full time with the industry have written about new drug evaluation. I think there is a general understanding by those who are qualified and wish to exercise that knowledge of what should go into the evaluation of a new drug. This is generally disseminated by members of the industry and by others as they meet from time to time, either through P.M.A. section or committee work or by other means. Furthermore, members of the industry frequently meet with various groups of qualified investigators and exchange information. At the moment, I would be inclined to say it might be difficult for a trade association to set up a minimum of standards for investigation of a drug until the laws of this country are more clearly defined in connection with antitrust activity. It seems strange that trade associations and professional associations are encouraged to raise standards and to enforce these standards by men in legislative halls, and yet when they attempt to do this, other men in the same legislative halls will accuse them of violating laws. But time, I hope, may help take care of this.

Finally: "How do pharmaceutical company chemists arrive at the names for drugs which bear no relation to their uses, ingredients, or effects on the patient? Also, why do they imprint their initials on each tablet, or capsule, letting the patient know that it is a prepared or a patented product?"

A generic name is chosen often by a firm, but sometimes it has been proposed by people active with the United States Pharmacopoeia, sometimes it has come through efforts of the World Health Organization, and sometimes from the old Council on Pharmacy and Chemistry, now the Council on Drugs of the AMA. Many have a hand in the development of these names, and I have seen many arguments over the years about the names that have been proposed and those finally arrived at. The generic name is intended where possible to indicate the chemical nature of the substance and not to suggest the therapeutic possibilities. In fact, one of the rules of the old Council on Pharmacy and Chemistry was that no name could indicate the therapeutic possibility of the drug. One of the other rules was that it should, if possible, indicate the chemical nature of the drug. That was fine when the chemical term was short, but now when it is often so long, it becomes an almost impossible challenge. And another reason, a very obvious one, of course, is that the name proposed as a generic name may already have been copyrighted as a trade name. There are some firms with good research programs that have men and women who devote their full time to searching the literature to assure that names are not in conflict with others that are already available.

The imprinting of the initial or an identifying code on tablets serves several useful purposes. I suppose one is the free advertising it offers; but, more important, it permits rapid identification by the pharmacist, physician, toxicologist, or other person who may need to identify the material quickly. The importance of this was stressed about two years ago when the chemical laboratory of the American Medical Association made a study of drugs and tablets that are available in the United States, most of them prescription items, some proprietary items, and concluded on the basis of this study that anyone, with the aid of a chart and certain physical measurements, would be able to deduce, without any chemical tests, the nature of the material under question, and that this could be done in a matter of minutes. In this way, individuals whose lives were threatened because of poisoning would have a better chance of recovery. In addition, of course, the use of an identifying sign indicates that the manufacturer thinks enough of his product and of his procedures for manufacturing to be willing to stand publicly behind his product.

Dr. Orr: Dr. Smith, we have one more question for you. It is such a good question that I don't think we should omit it. However, Dr. Rosenow has to make a train, so I am going to switch the order here a little bit and give him five minutes now.

Dr. Rosenow: I have a couple of questions. One of them is: "On what basis are the articles to be abstracted in the Audio-Digest picked?"

We have a large editorial board of volunteer doctors. Not any one of them sends us very many articles he wants abstracted, but in the aggregate we get quite a few this way; and the others are chosen by the local editorial board in Los Angeles. There are some younger men and faculty physicians in the medical schools who help us, and then we have one half-time doctor-editor who supplements the thing. We abstract from the foreign journals only indirectly, when the abstracts appear in one of our English-language journals. We haven't yet got to the point where we can translate Russian, Spanish, French, and all the others.

Concerning any danger of using Audio-

Digest in an automobile, we have the service available also in a portable type of tape recorder that can be carried in a taxi.

One question I think makes a lot of sense, and I am sure there must be some confusion in the minds of a lot of you. It says: "You say we should not talk down to an audience, but at the same time we should simplify a paper."

All I can say is that we are talking about the same thing. Making it coherent and simple doesn't mean talking down to an audience. Talking down to an audience is talking to them as though they did not know anything. There is a great difference. It's a little bit like the bedside manner of a doctor who tells all of his patients, especially middle-aged women, "Now, dear, we are going to take these pills, we are going to get all our rest, and we'll feel better." This is talking down to people, and these are not the bedside manners that I think most doctors should have. They should say "You are going to take these pills, you are going to get your rest, and maybe you will feel better." This is the same information but one is talking down and the other is simple plain English, and I think that is what we all have in mind.

I would like to tell you finally, although there may be some differences of opinion, what I read on the walls of Hunter College. There is a great motto there, and I can't quote it exactly because I didn't copy it; I tried to remember it. It's by Ralph Waldo Emerson: "We may hold different opinions at different hours, but at heart we are all dedicated to truth." With that I must leave.

Dr. Orr: Dr. Smith, you have the last question.

Dr. Smith: This is the question: "Would you care to comment on the use of generic names to reduce drug costs to the patient?"

Let me first make this statement that when we talk about generic versus trade names, we really are not talking always about generic names versus trade names but often we have in mind good quality versus poor quality. Generically named drugs are not necessarily of poor quality, nor are trade-named drugs necessarily always of the best quality. It does mean, however, that the manufacturer who puts his name and the trade name identified with him behind a product, has to stand by it or he suffers; whereas the person who simply uses a generic name, if he is a "sink" operator, can operate until the Food and Drug Administration finally catches up with him. By that time he may have made his coin and be on his way. Very often, in addition, he operates locally and since he is not in interstate commerce, there usually is no effective body to control him.

Now so far as the actual costs are concerned, which is the point to which this question is addressed, there really isn't much difference in cost. There is plenty of information within the United States, Canada, and elsewhere to show that the individual who purchases or orders a poor quality generically named drug often does not get something that is cheaper in price than the competing product with a brand name, but when he does find something that is cheaper, it very often is of an inferior quality. I have in my possession the results of a dependable study, which shows that, for a number of items that were studied, the difference in price on the average, for the generically named product and the trade-named products, was about 10 per cent; but on chemical or laboratory examination, more than 35 per cent of the generically named products were inferior. They were substandard, which meant that for a 10 per cent saving one was taking, for these drugs at least, a 35 per cent chance of getting a poor product. And I think that when one considers the cost of a drug, one has to take into consideration all the factors bearing on this question and not just the share of the money the manufacturer receives. There is a great deal of difference, if you consider this question in that light.

One additional comment on this question, and I am surprised that somebody hasn't raised this. Why is it that some drugs are sold abroad more cheaply than in the United States? The price of drugs abroad, like the prices of bread, rent, or wages, bears a direct relationship in almost every instance to the per capita income.

Dr. Orr: Dr. Rosenow did have the last word after all, because he mentioned to someone in the audience on his way out that I should correct any impression the audience might have that Audio-Digest is a profit-making organization. The only reason he can have to fear that the audience might think this is because he did such an effective job of selling. Usually we think that anything that is sold well must be commercial. This is not necessarily true. I am sure most of you know that Audio-Digest is associated with the California Medical Association and is not a profit-making organization.

The question and answer period is not really closed for I hope you will express your appreciation to the panelists in personal discussion during the social function that follows this session. I will now turn the meeting over to Dr. Brasfield.

Dr. Brasfield: I would like to thank the panelists and Dr. Orr for a very brilliant and authoritative discussion of medical communications. We all enjoyed it immensely. I am somewhat of a self-styled authority on this subject myself, because of my birthright. I know a fair amount about Jackson, corn pone and Kefauver, Jack Daniels, and yes, the uses of the Sears Roebuck catalogue and the *J.A.M.A.*

Now, one announcement. Dr. Redway would appreciate very much your written comments on this entire meeting so we can decide whether we should have similar meetings in the future. This meeting is adjourned.

Warning on Common Misuse of Potassium Permanganate Preparations

There have been a number of reports in the medical literature of serious injuries to women resulting from the misuse of potassium permanganate in an effort to induce abortion. Reports from physicians who have treated such cases show that the injuries are commonly caused by introducing tablets or crystals of potassium permanganate into the vagina. Experience with these cases shows that such use of potassium permanganate is not effective in producing abortion, but that instead the drug produces serious and painful injury to the walls of the vagina, causing ulcers, massive hemorrhage, and infection. Such dangerous and useless employment of potassium permanganate is apparently encouraged among the misinformed by the mistaken idea that the vaginal bleeding caused by the corrosive action of the drug indicates a termination of pregnancy, which it does not.

Potassium permanganate is a strong oxidizing agent, a highly caustic, tissue-destroying chemical, and a poison. There are no circumstances under which crystals and tablets of potassium permanganate constitute safe dosage forms for use in self-medication. It is the consensus of informed medical opinion that the only dosage forms of potassium permanganate known to be safe for use in self-medication are aqueous solutions containing not more than .04 per cent potassium permanganate. Such solutions are safe for use in self-medication only by external application to the skin.

In view of the very real potentiality for harmful effect, and the actual injuries caused by the misuse of potassium permanganate, the Food and Drug Administration believes that in order to protect adequately the public health potassium permanganate and potassium permanganate tablets intended for human use are drugs subject to section 503 (*b*) (1) of the Federal Food, Drug, and Cosmetic Act and should be restricted to prescription sale. Such drugs will be regarded as misbranded if at any time prior to dispensing the label fails to bear the legend, "Caution: Federal law prohibits dispensing without prescription."

—*Federal Register, August 23, 1960*

NECROLOGY

Ernest Raymond Alexander, M.D., of New York City, died on September 27 at his home at the age of sixty-eight. Dr. Alexander graduated in 1919 from the University of Vermont College of Medicine. He was an attending in dermatology at Harlem Hospital. In 1958 Dr. Alexander received Fisk University's Alumni Award. He was a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edward J. Campbell, M.D., of New York City, died on September 21 in New Rochelle Hospital at the age of sixty-eight. Dr. Campbell graduated in 1920 from the University of Iowa Medical Department. He was formerly a medical director of the New York Life Insurance Company, joining the staff in 1924, becoming assistant medical director in 1930, and medical director in 1934, retiring from this post in 1955.

Axel Knud Ericksen, M.D., of Brooklyn, died on September 27 at his home at the age of sixty-seven. Dr. Ericksen received his medical degree from the University of Copenhagen in 1922. He retired in 1959 as medical director of the Maersk Line, Danish ship company. For more than twenty years he had treated residents of the Danish Old People's Home in Brooklyn for which he received the Order of Knights of Dannebrog in 1954. Dr. Ericksen was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frederick Fischer, M.D., of Miami Beach, Florida, formerly of Brooklyn and Westbury, died on August 29 at the age of fifty-three. Dr. Fischer graduated in 1930 from New York Homeopathic Medical College and Flower Hospital.

Emilio Filiberto Iorio, M.D., of Brooklyn, died on August 30 at the age of seventy. Dr. Iorio graduated in 1913 from Columbia University College of Physicians and Surgeons. He was an adjunct in surgery at Unity Hospital. Dr. Iorio was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Samuel Kalfus, M.D., of New York City, died on August 20 at the age of forty-eight. Dr. Kalfus received his medical degree from the University of Basel in 1936 and interned at Jewish Memorial Hospital. He was an adjunct in gastroenterology at Jewish Memorial Hospital. Dr. Kalfus was an Associate Fellow of the American College of Gastroenterology and a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

James P. Kelleher, M.D., of Oneida, died on September 17 in Oneida City Hospital at the age of seventy-three. Dr. Kelleher graduated in 1910 from Tufts College Medical School. From 1942 to 1956 he was senior director of the Rome State School. Dr. Kelleher was a Diplomate of the American Board of Psychiatry and Neurology (Psychiatry), a Member of the American Psychiatric Association, and belonged also to the Utica Academy of Medicine, the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Maurice C. Landau, M.D., of Glens Falls, died at his home on September 14 at the age of fifty. Dr. Landau received his medical degree from the University of Vienna in 1933. He was an assistant attending in ophthalmology at Glens Falls Hospital and a former adjunct professor of ophthalmology and an attending in ophthalmic surgery at the Polyclinic Medical School and Hospital. Dr. Landau was a Diplomate of the American Board of Ophthalmology and a member of the American Academy of Ophthalmology and Otolaryngology, the Warren County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Arpad Lux, M.D., of Eastchester and New York City, died in Mount Vernon Hospital on September 2 at the age of sixty-four. Dr. Lux received his medical degree from the University of Vienna in 1921. He was a clinical assistant attending physician at Mount Vernon Hospital. He had served at one time as chief of the arthritic clinics at Montefiore Hospital and at the International Ladies Garment Workers Union Health Center. Dr. Lux was a member of the New York Rheumatism Association, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Julius Molnar, M.D., of New York City, died in Grand Central Hospital on September 18 at the age of sixty-three. Dr. Molnar received his medical degree from the University of Pecs in 1927. He had been a pathologist and director of the Stuyvesant-Polyclinic Laboratory and the Molnar Laboratories. Dr. Molnar was a member of the Society of American Bacteriologists, the American-Hungarian Medical Association, the New York County Medical Society, and the Medical Society of the State of New York.

Edward W. Pinkham, M.D., of Sarasota, Florida, formerly of New York City, died on August 30 at the age of ninety. Dr. Pinkham graduated in 1896 from Harvard University Medical School and interned at Boston City and Woman's Hospitals. He was a consultant in gynecology at City Hospital. Dr. Pinkham had served as an attending physician at the Metropolitan Opera House from 1925 until his retirement in 1934, served in the Spanish American War as a first lieutenant and assistant surgeon and received two Silver Stars for gallantry in action in the Philippines and also served as a physician in World War II, in charge of a hospital center at Joué-Lès-Tours, France, with the rank of colonel in the Army Medical Corps. A Fellow of the American College of Surgeons, Dr. Pinkham was a member of the New York Academy of Medicine and the New York Obstetrical Society.

Arthur Jacob Proskauer, M.D., of Forest Hills, died on August 7 at the age of eighty. Dr. Proskauer received his medical degree from the University of Halle-Wittenberg in 1905. He was a member of the Rudolf Virchow Medical Society and the New York Pathological Society.

Victor John Riley, M.D., of Buffalo, died on August 23 at the age of fifty-eight. Dr. Riley graduated in 1925 from Georgetown University School of Medicine. He was chief of surgery at Lafayette General Hospital. Dr. Riley was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William Hamilton Roper, M.D., of Albany, died on September 5 at the age of fifty-six. Dr. Roper graduated in 1930 from the University of Virginia Department of Medicine. He was a Diplomate of the American Board of Internal Medicine (Pulmonary Diseases), a Fellow of the American College of Physicians, and a Member of the American Trudeau Society (now the American Thoracic Society), and the New York Trudeau Society.

Benea B. Shich, M.D., of Brooklyn, died on June 19 at the age of fifty-seven. Dr. Shich received his medical degree from the University of Leipzig in 1928. He was a consulting psychiatrist at the Prospect Heights Hospital and supervising psychiatrist at the Brooklyn Aftercare Clinic. Dr. Shich was a Member of the American Psychiatric Association as well as a member of the Association for the Advancement of Psychotherapy, the Queens County Medical Society, and the Medical Society of the State of New York.

Malignancy of Colon and Rectum in Patients Under Twenty Years

Although malignant disease of various types is a leading cause of death in childhood (ranking third in the ten to fourteen age group), cancer of the intestinal tract in children, contrary to the situation in adults, is comparatively rare. In the past twenty-eight years at the Duke Medical Center, Durham, North Carolina, only 8 cases of tumor of the digestive tract have been seen in patients under twenty years of age; at the same time, a total of about 1,150 cases of carcinoma of the colon have been seen. In this series of 8 cases, 3 were lymphosarcomas of the cecum; 2 were colloid adenosarcoma (1 in the rectum and the other in the splenic flexure); the remaining 3 were poorly differentiated adenocarcinoma. Intestinal obstruction, bloody stools, weight loss, and presence of a mass were the clinical features. Of the 8 lesions, 7 were resected and 1 had a colostomy. Only 2 of these patients have survived.—*Mohammed Salem, M.D., and R. W. Postlethwait, M.D., Ann. of Surg., Mar., 1960*

MEDICAL NEWS

New Bone Banks Established—The establishment of two new bone banks has been announced by the Deafness Research Foundation. The new banks will be located at the Johns Hopkins Medical School (under the direction of John E. Bordley, M.D.) and at the University of Michigan School of Medicine (under the direction of Merle Lawrence, M.D.). The Foundation's bone bank program, which creates a channel through which deaf persons may will their inner ear structures to science, was established on June 30, 1960, with a pilot unit at the University of Chicago Medical School under the direction of John R. Lindsay, M.D.

As part of the Foundation's program of recognizing distinguished citizens whose personal and professional lives have been related to the field of hearing, Brigadier General David Sarnoff, Herbert Hoover, Jr., and Miss Helen Keller (in absentia), were honored with achievement awards at a luncheon given by the Foundation on September 20 in New York City.

Physician Speaks Before New Organization—Robert Turell, M.D., New York City, spoke on "Adenomas and Cancer of the Colon and Rectum," in Sao Paulo, Brazil, in September, before the newly-formed Latin American Congress. The new organization of intestinal surgeons will meet every three years in Latin America. The next meeting is expected to take place in Montevideo, Uraguay.

The conference in Sao Paulo was attended by guest physicians from the United States, France, Germany, Sweden, England, and Italy.

New Radiology Society Seeks Charter Members—Applications for charter membership in the American Society of Diagnostic Radiology are now being invited. Membership is open to general practitioners and internists who do, or may desire to do, some type of diagnostic radiology in their offices.

For information write to: Louis Shattuck Baer, M.D., F.A.C.P., 411 Primrose Road, Burlingame, California.

Goiter Association Offers Essay Prize—The American Goiter Association, Inc., again offers the Van Meter Prize Award of $300 to the essayist submitting the best manuscript of original and unpublished work concerning "Goiter—Especially its Basic Cause." The studies so submitted may relate to any aspect of the thyroid gland in all of its functions in health and disease. The award will be made at the annual meeting of the Association in the Warwick Hotel, Philadelphia, May 3 through 6, 1961.

The essays may cover either clinical or research investigations, should not exceed 3,000 words, and must be presented in English. Duplicate typewritten copies, double-spaced, should be sent to the Secretary, John C. McClintock, M D., 702 Madison Avenue, Albany 8, New York, not later than January 1, 1961.

Postgraduate Course in Congenital Heart Disease—A postgraduate course in congenital heart disease emphasizing the diagnostic aspects of the problem will be given at the St. Francis Hospital and Sanatorium, Roslyn, on Friday, November 11, and Saturday, November 12, under the direction of the Hospital staff.

The program will include discussion of the various congenital anomalies and the diagnostic problems associated with them. There will be demonstrations of diagnostic technics used in the elucidation of these problems. For further information and registration contact: Mother Mary Hildemar, F.M.M., Administrator, St. Francis Hospital and Sanatorium, Roslyn, New York.

Course in Use of Radioactive Isotopes—A four-months course in the medical uses of radioactive isotopes will be offered at the Queens Hospital Center by the Radiation Medicine Department. The course will begin on Tuesday, February 7, 1961, and will consist of weekly five-hour sessions covering lectures, laboratory exercises, and clinical management of patients. Enrollment will be limited.

For further information contact: Philip J. Kahan, Supervising Medical Superintendent, Queens Hospital Center, 82–68 164th Street, Jamaica 32, New York.

Schedule of Meetings of Northeastern New York Radiological Society—The Northeastern New York Radiological Society will meet in the Albany area on the second Wednesday of October, November, March, and April. The Society's annual meeting will be held in May or June of 1961.

The following officers were elected at a recent meeting of the Society: Everett A. Jacobs, M.D., Hudson, president; James A. Glenn, M.D., Glens

Falls, vice-president; and Lester I. Citrin, M.D., secretary-treasurer.

For information concerning the Society write to: Lester I. Citrin, M.D., St. Mary's Hospital, Troy, New York.

Medical Exhibits on Display at Downstate Medical Center—Exhibits from the collection of the Armed Forces Institute of Pathology, Bethesda, Maryland, are on display at the State University of New York Downstate Medical Center in Brooklyn.

Selected by the Medical Education for National Defense (MEND) coordinators of the New York medical schools as having special timely interest, the exhibits will travel among the five medical schools in New York City at two-week intervals until the end of March.

The titles of the exhibits and the dates they will be shown at the Downstate Medical Center are as follows: October 31 through November 7—"Medical Effects of Nuclear Weapons"; November 21 through December 5—"Small Mammal Reservoirs of Disease"; January 2 through 16—"Correlative Cellular Morphology"; January 16 through 30—"Management of Severe Burns by Modified Exposure"; January 30 through February 13—"The Treatment of Burns of the Hand"; February 27 through March 13—"Non-Penetrating Injuries of the Heart and Aorta"; and March 13 through 27—"Nuclear Weapons Effects on a Biological Specimen."

The exhibits are being shown in the main lobby of the Center's Basic Sciences Building at 450 Clarkson Avenue, Brooklyn, and are open to the public.

Blue Cross Wins Rate Increase and Initiates New Benefits—An average 33.45 per cent increase in subscription charges for Associated Hospital Service of New York (Blue Cross) providing for increased subscriber benefits and an improved method of payment to hospitals has been approved by the Superintendent of Insurance, Thomas Thacher, to become effective November 1. The change in the Associated Hospital Service rates does not affect charges by Blue Shield—United Medical Service, for coverage of surgical and medical bills.

New benefits (standard contract) will include: (1) Coverage of children from birth, including prematures, except for nursery care and circumcision. (2) Increase in the private room allowance for subscribers in member hospitals from $10 a day to an amount representing the hospital's average charge for semi-private accommodations. The allowance would be 50 per cent of that amount during the one hundred eighty-day discount period; (3) an increase from $10 to $15 in private room allowances for subscribers admitted to nonmember hospitals; and (4) coverage for mental and nervous disorders in nongovernmental hospitals up to twenty-one full-benefit days and nine discount days in any one contract year or in any single hospital stay.

Similar new benefits, including higher allowances for maternity care, will be added to the one hundred twenty-day full-benefit contract.

New Booklet Lists Health Insurance Books—The 1960 edition of "A List of Worthwhile Health Insurance Books" is now being distributed by the Health Insurance Institute.

The new publication lists a selection of books on health insurance available currently from commercial publishers or other sources, organizations with a relationship to health and the financing of medical care, and periodicals that cover health insurance.

Copies of the 26-page booklet are free on request from: Health Insurance Institute, 488 Madison Avenue, New York 22, New York.

Dr. Simon Baruch Memorial Fellowship Created—The creation of the Dr. Simon Baruch Memorial Fellowship of the World Rehabilitation Fund has been announced by Howard A. Rusk, M.D., president of the Fund.

Dr. Simon Baruch, Mr. Bernard M. Baruch's father, was a leading medical pioneer in physical medicine and the rehabilitation of disabled persons. To promote this medical specialty, Mr. Bernard M. Baruch created the Baruch Committee on Physical Medicine and Rehabilitation in 1943, with personal grants of more than two million dollars to support its work. In 1951 the committee announced it had achieved its goals and was discontinuing its activities.

The new fellowship will provide from one to three years postgraduate training in physical medicine and rehabilitation in the United States for a physician from another country.

Foreign Fellowships Offered to American Medical Students—The Association of American Medical Colleges is seeking applicants for a foreign fellowship program which gives future American doctors an opportunity to study medicine in remote areas of the world.

The program, begun last year as the Smith Kline and French Foreign Fellowships, is designed to acquaint American students with health problems not generally seen in this country, and to introduce them to physicians working where facilities are limited.

The fellowships are available to men and women who have completed their junior year of medical school; eligibility will continue through the senior year. Those who have started internships will not be eligible. Applications for 1961 grants must be

[Continued on page 3534]

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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[Continued from page 3532]

returned by December 31, 1960.

For further information write to: Association of American Medical Colleges, 2530 Ridge Avenue, Evanston, Illinois.

New Mental Health Publications Available—Paul H. Hoch, M.D., Commissioner, New York State Department of Mental Hygiene, has announced the availability of the new editions of two popular mental health publications—the "Blondie" two-year calendar (1961–1962) and the "Blondie" bookmark. The calendar and bookmark are part of the Department's series of mental health educational materials adapted from Chic Young's famous comic strip by Joe Musial, art director of King Features, in cooperation with Mrs. Margaret M. Farrar, director of the Department's Office of Mental Health Education and Information. Along with a monthly cartoon the calendar gives a reminder to practice mental health "at home, at work, at school, and at play."

Both publications are available from: Office of Mental Health Education and Information, New York State Department of Mental Hygiene, 240 State Street, Albany, New York.

Personalities

Speaker

Robert Turell, M.D., New York City, before the Medical Society of the State of Michigan on September 28, on the topic "Adenomas of the Colon and Rectum and Their Malignancy Potential."

Elected

William A. Brumfield, Jr., M.D., White Plains, re-elected president of Annual Health Conference, Inc. . . . June Jackson Christmas, M.D., New York City, as a director of The Louise Wise Service.

Awarded

Louis H. Bauer, M.D., New York City, the Paracelsus Medal by the German Medical Association in recognition of his service as Secretary General of The World Medical Association. . . Michael J. Crino, M.D., Rochester, the annual WROC-TV Merit Award for his meritorious achievement in the fields of social welfare and medicine in the Rochester community.

Appointed

Edwin M. Gold, M.D., Brooklyn, as director of the Department of Obstetrics and Gynecology at Jewish Hospital of Brooklyn. . . Milton J. Goodfriend, M.D., Bronx, as full-time director of medical education at Lebanon Hospital. . . Dudley W. Hargrave, M.D., Kingston, as associate public health physician (medical rehabilitation) with the New York State Department of Health. . . Arthur I. Holleb, M.D., New York City, as assistant clinical director at Memorial Hospital. . . Howard A. Rusk, M.D., New York City, as Deputy for Reserve Affairs to the Air Force Surgeon General. . . Ross V. Sayers, M.D., St. Albans, as vice-president of George A. Breon and Company, a division of Sterling Drug Inc. . . . Maurice L. Tainter, M.D., Rensselaer, as vice-chairman of the Sterling Drug Inc. Research Board.

An egotist is a man who talks so much about himself that he gives me no time to talk about myself.
—H. L. Wayland

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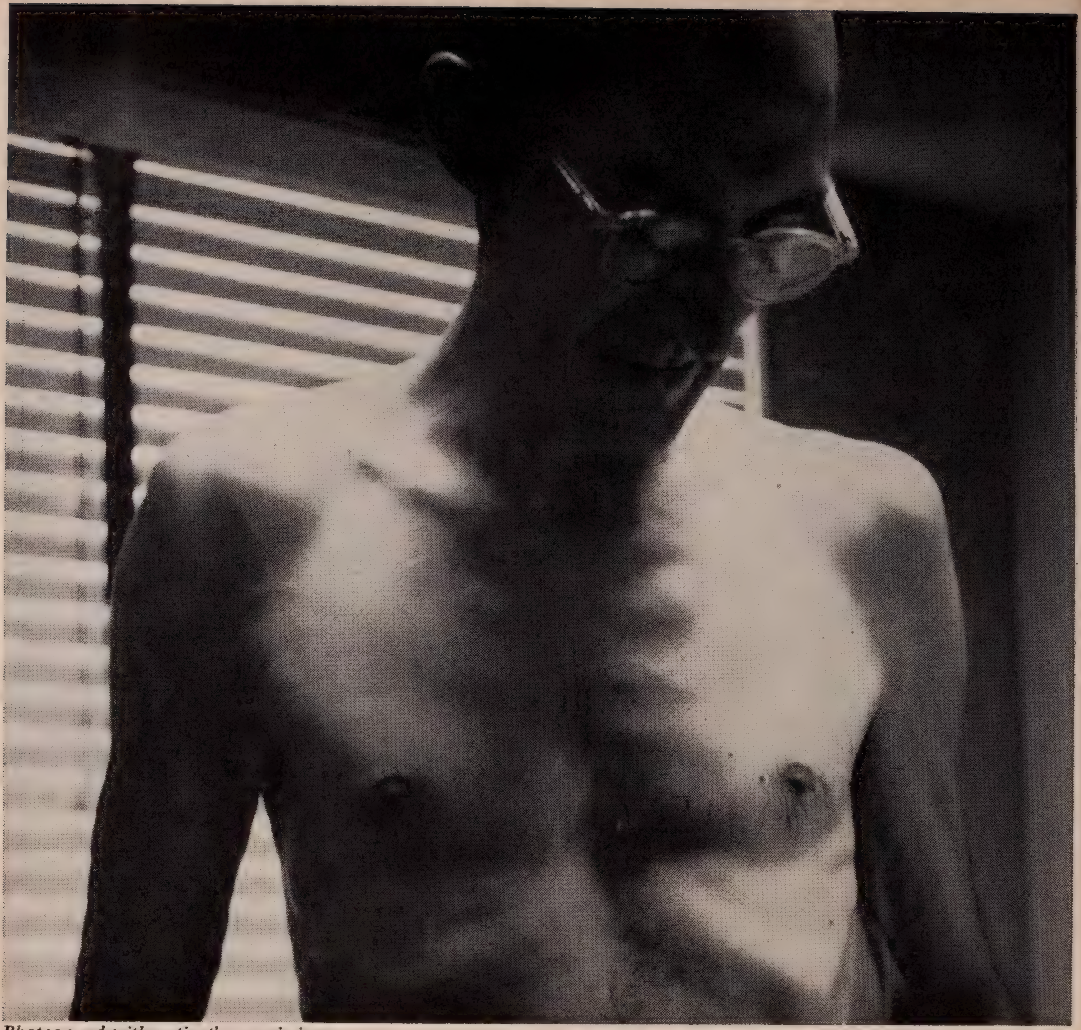

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Patient was weak and emaciated before Dianabol. R. C., age 51, weighed 160 pounds following surgery to close a perforated duodenal ulcer. His convalescence was slow and stormy, complicated by pneumonia of both lower lobes. Weak and washed out, he was considered a poor risk for further necessary surgery (cholecystectomy). Because a conventional low-fat diet and multiple-vitamin therapy failed to build up R. C. sufficiently, his physician prescribed Dianabol 5 mg. b.i.d.

Patient regains strength on Dianabol. In just two weeks R. C.'s appetite increased substantially; he had gained 9½ pounds of lean weight. His muscle tone was improved, he felt much stronger. After 4 weeks, he weighed 176 pounds. Biceps measurement increased from 10″ to 11½″. For the first time since onset of postoperative pneumonia, his chest was clear. Mr. C.'s physician reports: "He tolerated cholecystectomy very well and one week postop felt better than he has in the past 2 years."

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By promoting protein anabolism, Dianabol builds lean tissue and restores vigor in underweight, debilitated, and dispirited patients. In patients with osteoporosis Dianabol often relieves pain and increases mobility.

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Because Dianabol is an oral preparation, it spares patients the inconvenience and discomfort of parenteral drugs.

And because Dianabol is low in cost, it is particularly suitable for the aged or chronically ill patient who may require long-term anabolic therapy.

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BOOKS REVIEWED

Essentials of Orthopaedics. By Philip Wiles, M.D. Third edition. Octavo of 576 pages, illustrated. Boston, Little, Brown and Company, 1959. Cloth, $13.

This is the third edition of an already popular and eminently readable orthopedic text which has been a favorite with students, residents, and practitioners of orthopedic surgery since its first edition. The original arrangement of the book has been retained and in many respects it is unique in that it is based almost entirely on the regional approach.

An enlightened awareness on the part of the general practitioner, pediatrician, and, of necessity, the orthopedist to postural defects has been met by an introductory chapter which deals thoroughly with every aspect of this problem. The chapter on low-back pain, which follows, has been revised and brought completely up to date with detailed review of the latest thinking on this almost universal complaint. Modern concepts of disk pathology, scoliosis, and the sciatic syndrome are clearly presented. In a like manner, new material on the surgery of osteoarthritis of the hip, pain in the shoulder, arm, and hand, tendon sheath disorders, and congenital dislocation of the hip has been added. Included are many new and illuminating illustrations.

A very worth-while addendum includes references and further reading suggestions on particular subjects corresponding to the chapters as arranged in the text, so that the reader can profitably pursue a single subject in the literature without having to refer back to the text.

The book will undoubtedly retain its well-deserved popular appeal in this newest edition.—MAX S. RABINOWITZ

Clinical Management of Behavior Disorders in Children. By Harry Bakwin, M.D., and Ruth Morris Bakwin, M.D. Second edition. Quarto of 597 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $15.

In this edition the authors, both experienced pediatricians, have sought to include those observations in child psychiatry which are well documented and have been fruitful in understanding and treating both healthy and problem children.

The preliminary chapters review growth and de-

[Continued on page 3538]

[Continued from page 3537]

velopment and psychologic care of children. There then follow discussions on the care of the physically ill and handicapped, and on behavior disorders in children. Other subjects included concern problems relating to mental functioning, emotional development, and habit and training. There are specific chapters on organic disturbances with a large psychic component, antisocial behavior, and specific syndromes such as early infantile autism and schizophrenia.

At the end of each chapter there are references for those who desire to go into a subject more fully.

A reading of this book would aid a physician in acquiring a knowledge of the psychologic care of children and thus aid him for the newer and more complete pediatrics.—Stanley S. Lamm

Glaucoma, Transactions of the Fourth Conference, March 8, 9, and 10, 1959, Princeton, N.J. Edited by Frank W. Newell, M.D. Octavo of 257 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1960. Cloth, $8.00.

These discussions reflect the latest concepts of 27 of the foremost authorities on the pathogenesis of simple glaucoma. The histopathology of the trabecular meshwork and the ciliary epithelium as seen under the electron microscope is fully described, particularly in relation to glaucoma. The recently reported findings of degeneration of the trabeculae in glaucoma are discussed without agreement as to their significance. This book is a "must" for every serious student of glaucoma.—Jesse M. Levitt

Fundamentals of Child Psychiatry. By Stuart M. Finch, M.D. Octavo of 334 pages. New York, W. W. Norton & Company, Inc., 1960. Cloth, $5.95.

This book is written for the beginning student interested in the subject of child psychiatry, to serve as a broad introduction for later more specialized courses. It is based on psychoanalytic principles. The author properly points out that children are immature human beings, constantly maturing in terms of growth and development. Hence, child psychiatry cannot merely be adult psychiatry applied to children.

There are chapters on personality development; psychoneurotic personality; and psychophysiologic disorders. History taking, psychologic examination and treatment of the child are also dealt with. References, a reading list, and an index are supplied.

This reviewer would take exception to the statement that "the Rh factor is not an uncommon etiological agent" as a cause of cerebral palsy. Other minor objections are that the chapter on the handicapped child is too skimpy and that nothing is said of the newer discovery of the presence of the extra-chromosome found in mongolism.

The book is clearly written and easily readable. The chapters on parental psychopathology and the problems of the early years are presented in sensible fashion. The work fulfills its purpose as a basic elementary text for doctors, medical students, and others in related fields of child psychiatry.—Stanley S. Lamm

Your Heart: A Handbook for Laymen. By H. M. Marvin, M.D. Octavo of 335 pages. Garden City, N.Y., Doubleday & Company, Inc., 1960. Cloth, $4.50.

Here at last from the pen of the past-president of the American Heart Association is a handbook about the heart for laymen which is at once authoritative, up-to-date, and readable. Every physician who, like this reviewer, believes that the patient is a partner in the management of his disease, will welcome this book and hasten to put it into the hands of as many people as possible. There are two brief chapters describing the heart and the blood vessels followed by many chapters on clinical problems. There are sections on rehabilitation of the patient with heart disease, the electrocardiogram, x-rays in the study of the heart, and the necessity of research. Many controversial problems, currently engaging the attention of both the medical and the lay public, such as the cause of arteriosclerosis, stress and strain, anticoagulants, are tactfully presented. No doctor need fear that his patient will be unduly alarmed by reading the material here presented or that he will be given anything but sensible advice. In short, Dr. Marvin's new book is heartily recommended.—Milton Plotz

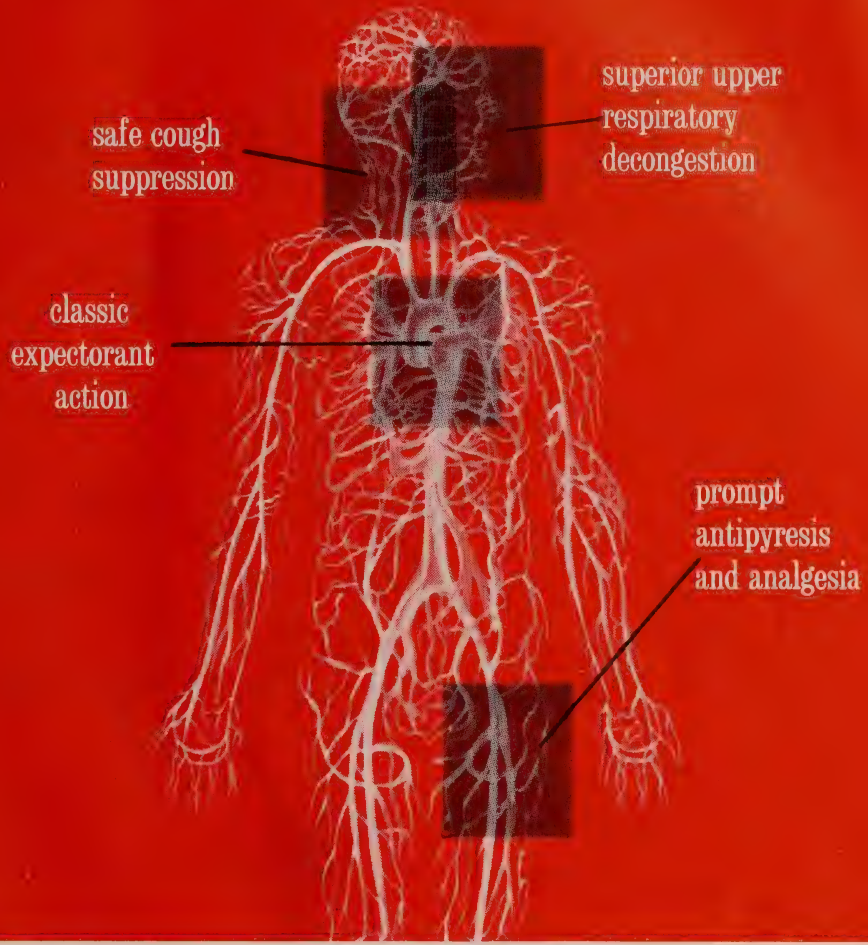
The Concise Encyclopedia of Modern Surgery. By James Hale Rutledge, M.D. Quarto of 308 pages, illustrated. Philadelphia, Chilton Company, 1960. Cloth, $8.00.

This volume of 300 pages covers a vast field—modern surgery. It is presented as a textbook for the ancillary departments that work with the surgeon. These include nurses, physiotherapists, etc.

It is written in simple language and should appeal to the layman and the curiosity seeker. It is not detailed sufficiently for the people for whom it is intended. The book is written in language for lay people, yet it contains numerous items that will confuse the average nonmedical person.

The chapter on hernia has several inaccuracies. The diagrams of the indirect hernia and the direct hernia are not clear. Even though they are diagrammatic, they do not represent the true findings.

The book is not recommended.—Alan A. Kane for relief from the total cold syndrome...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MEDICAL MEETINGS

Association for the Advancement of Psychoanalysis

The Association for the Advancement of Psychoanalysis is sponsoring a two-day symposium on "Alienation and the Search for Identity" in commemoration of the seventy-fifth anniversary of the birth of Karen Horney. The symposium will be held on Saturday and Sunday, November 5 and 6, in the Carnegie Endowment International Center in New York City.

Among the topics to be discussed are: "Alienation and the Self," "Alienation and Culture," and "Alienation and Therapy." Among the speakers will be: Drs. Kurt Goldstein, Ernest G. Schachtel, Jack L. Rubins, Joseph W. Vollmerhausen, Alexander Reid Martin, Harold Kelman, Helen M. Lynd, Charles R. Hulbeck, Bella S. Van Bark, Abraham Maslow, Frederick A. Weiss, Antonia Wenkart, Marianne H. Eckardt, Sara Sheiner, Louis E. DeRosis, and Benjamin J. Becker. Among the named discussants are: Drs. Doris V. Falk, Walter Bonime, and Silvano Arieti.

Pediatric Section, Medical Society of the County of Kings

The Pediatric Section of the Medical Society of the County of Kings will meet on November 9, at 8:30 P.M., in the Basic Science Building of the State University of New York Downstate Medical Center, at Clarkson and New York Avenues, Brooklyn.

The speaker for the evening will be Charles D. May, M.D., editor of *Pediatrics*. His topic will be "Recent Advances in Nutrition in Children." Refreshments will be served after the meeting.

Clinical Society of the New York Diabetes Association

The Clinical Society of the New York Diabetes Association, Inc., will present its eighth all-day symposium on Friday, November 11, at the Hotel New Yorker, New York City.

The morning session will deal with "Genetic Aspects of Diabetes Mellitus." The afternoon session will consist of a panel discussion on "Prediabetes and Evaluation of Diagnostic Test."

Physicians, medical students, and other professional personnel are invited to attend the program. Advance registration is required and may be made by calling or writing to: New York Diabetes Association, 104 East 40th Street, New York 16, New York, OXford 7-7760. There is no registration fee.

American College of Chest Physicians

The American College of Chest Physicians will hold its annual interim session at the Shoreham Hotel in Washington, D.C., November 26 through 28. The scientific sessions will be held on Saturday and Sunday, November 26 and 27. Monday, November 28, will be reserved for administrative sessions.

The program will include symposia on: "Congenital Bronchopulmonary Disorders," "The Role of Steroid Therapy in Chest Diseases," and "Current Therapeutic Issues." A feature of the program will be the well-known "fireside conferences" which will be held on Sunday evening, November 27.

For further information contact: American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

A.M.A. Conference of the Medical Aspects of Sports

The second national conference on the medical aspects of sports sponsored by the American Medical Association, under the auspices of the Association's Committee on the Medical Aspects of Sports, will be held in Washington, D.C., at the Statler Hotel on November 27. The conference will immediately precede the annual clinical meeting of the American Medical Association, November 28 through December 1.

Included in the program will be papers, panels, and discussions relating to training and conditioning, prevention of injuries, recognition referral and treatment of injuries, the psychology of sports participation, and other subjects.

For further information write to: Fred V. Hein, Ph.D., Secretary, Committee on the Medical Aspects of Sports, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

A.M.A. Clinical Meeting

The fourteenth clinical meeting of the American Medical Association will be held in Washington,

[Continued on page 3544]

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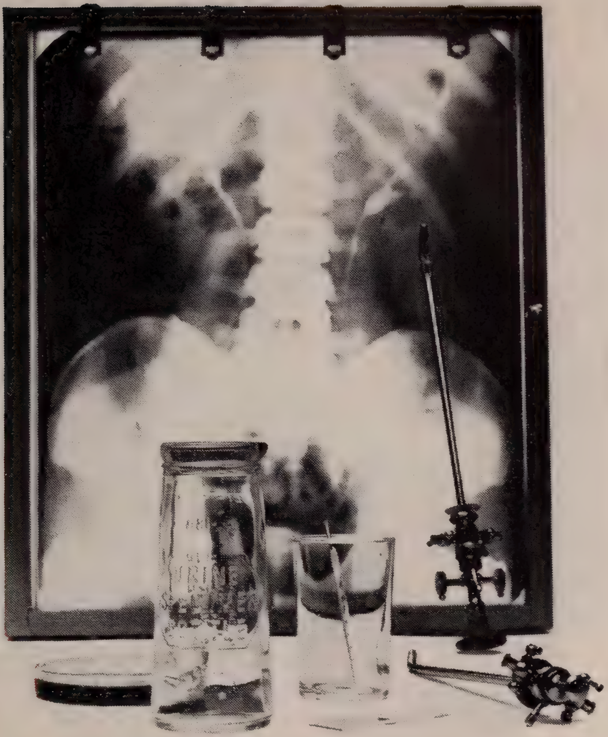

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1. Boger, W. P.; Strickland, C. S., and Gylfe, J. M.: *Antibiotic Med. & Clin. Ther.* 3:378 (Nov.) 1956.
2. Boger, W. P.: In: *Antibiotics Annual* 1958-1959, New York, Medical Encyclopedia, Inc., 1959, p. 48.
3. Sheth, U. K.; Kulkarni, B. S., and Kamath, P. G.: *Antibiotic Med. & Clin. Ther.* 5:604 (Oct.) 1958.
4. Anderson, P. C., and Wissinger, H. A.: *U. S. Armed Forces M. J.* 10:1051 (Sept.) 1959.

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[Continued from page 3542]

D.C., November 28 through December 1. The scientific program is designed to interest both family physicians and specialists. The symposia, presentations, and discussions will stress the theme, "New Developments in Old Diseases and Old Developments in New Diseases."

For further information write to: The American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

New York State Society of Anesthesiologists, Postgraduate Assembly in Anesthesiology

The fourteenth annual postgraduate assembly in anesthesiology will be held at the Hotel New Yorker, December 7 through 10. Among the speakers will be: Louis Sokoloff, M.D., chief, Section on Cerebral Metabolism, Laboratory of Clinical Science, National Institute of Mental Health, Bethesda, Maryland, and Christian J. Lambertsen, M.D., professor of pharmacology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.

Noted anesthesiologists on the program will include: Paul R. Dumke, M.D., chairman, Department of Anesthesiology, Henry Ford Hospital, Detroit, Michigan, John B. Dillon, M.D., professor of anesthesiology, University of California Medical Center, Los Angeles, California, and Douglas W. Eastwood, M.D., professor of anesthesiology, University of Virginia Medical School, Charlottesville, Virginia.

Features of the Assembly will be clinics held at various hospitals and a closed circuit television program featuring the newer advances in anesthesiology which will be shown also in Los Angeles, California, on December 9. In addition there will be luncheon conferences so that the audiences may dine and converse with the "experts."

For further information contact: Edwin J. De Polo, M.D., Secretary, the New York State Society of Anesthesiologists, Inc., 145 East 49th Street, New York 17, New York.

Mid-Winter Meeting of Academy of Psychoanalysis

The scientific sessions of the mid-winter meeting of The Academy of Psychoanalysis will be held on December 10 and 11, at the Hotel Biltmore, New York City. The theme of the first day's meeting will be "The Role of Values in the Psychoanalytic Process." The meeting on the second day will be devoted to a series of papers by members of the Academy.

For further information contact: Joseph H. Merin, M.D., Secretary, the Academy of Psychoanalysis, 125 East 65th Street, New York 21, New York.

American College of Angiology to Meet in 1961

The seventh annual meeting of the American College of Angiology will be held at the Savoy-Hilton Hotel, New York City, June 23 through June 25, 1961. The meeting will be open to all members of the medical profession, without charge. For further information contact: Alfred Halpern, Ph.D., F.A.C.A., Secretary, American College of Angiology, 11 Hampton Court, Great Neck, New York.

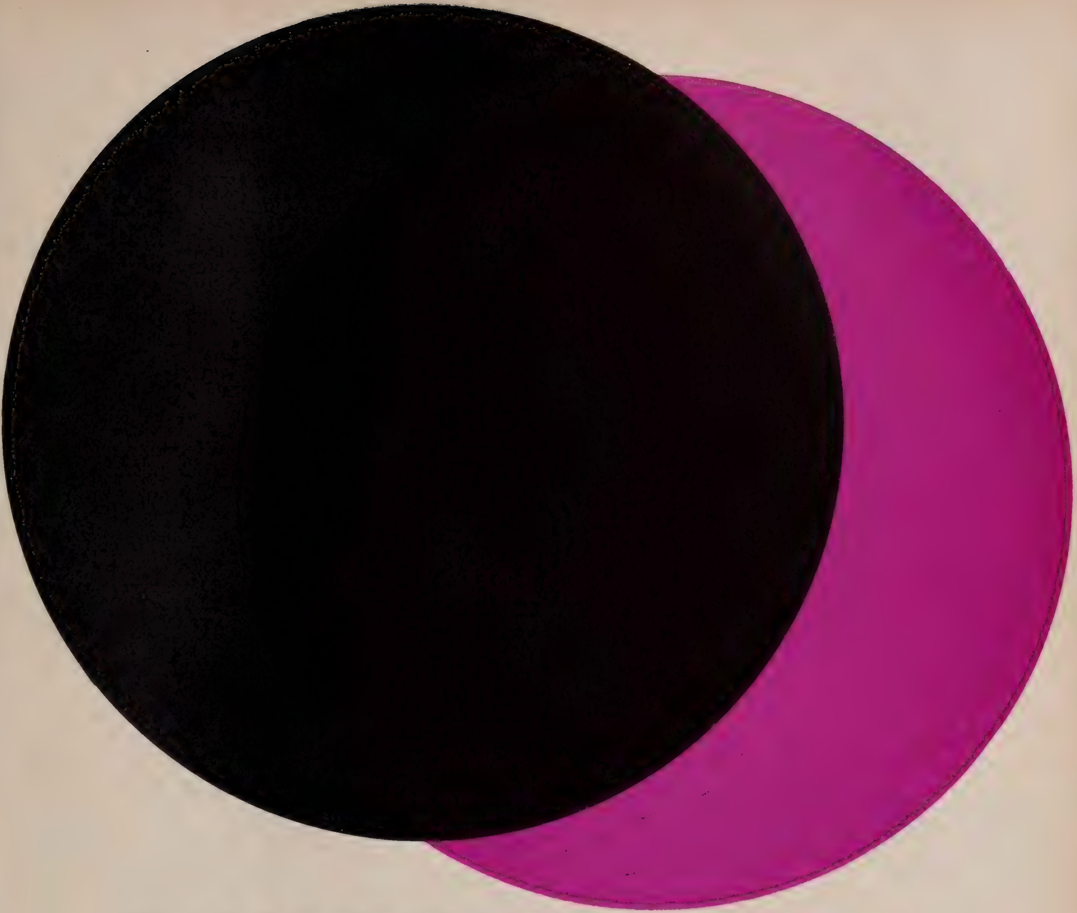
Glaucoma

Glaucoma is a major cause of blindness in the United States, responsible in 1957 for about 45,700 cases, or 13.4 per cent of the total. (This proportion has increased somewhat since 1940.) It is estimated that another 150,000 persons have become partly blind from this disease, and that about 2 per cent of the United States population forty years of age or older, has the disease and more than half of these are unaware of it.

Glaucoma is associated with the aging process and is far more common among older people. It results from excessive pressure within the eyeball. As the disease progresses, this pressure impairs the eye's blood circulation, damages the retina, and finally constricts the blood vessels supplying the optic nerve.

When this happens, the nerve ceases to function and the victim is totally blind. Glaucoma may be caused by other diseases such as diabetes or vascular conditions, however its exact etiology is unknown.

Medical or surgical management of glaucoma, preventing the onset of blindness, is possible if the disease is discovered in its early stages. However, the disease is symptomless in these stages and is thus hard to detect except with a tonometer, an instrument devised to measure intraocular pressure. Authorities agree that such a test should be part of every routine physical checkup in older persons. In addition, mass screening programs for the detection of glaucoma are being used on an ever-increasing scale and with great success.—*Health Information Foundation, Progress in Health Services, September, 1960*



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Rutin	25 mg.
Citrus Bioflavonoid Complex	25 mg.
Choline Bitartrate	50 mg.
Inositol	25 mg.
dl-Methionine	25 mg.
Vitamin K (Menadione)	1 mg.
Nucleic Acid	25 mg.
Yeast Enzymatic Hydrolysate	25 mg.
Glutamic Acid	12.5 mg.
Glycine	12.5 mg.
Cysteine HCL	12.5 mg.
Iron (from Ferrous Gluconate)	20 mg.
Manganese (from Manganese Sulfate)	1 mg.
Copper (from Copper Sulfate)	0.45 mg.
Magnesium (from Magnesium Sulfate)	1 mg.
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Woman's Auxiliary
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Fall Conference

THE Woman's Auxiliary to the Medical Society of the State of New York held its fourteenth annual Fall Conference at the U.S. Hotel Thayer, West Point, from September 25 to 28.

The purpose of the Fall Conference is to familiarize the presidents and presidents-elect with the workings and purposes of the State and county auxiliaries and to promote greater understanding and cohesiveness with the Medical Society of the State of New York and the county medical societies. When the auxiliaries work together on projects the laity receive a fuller understanding of the aims of the Auxiliary.

The program for the Conference was arranged by the State President, Mrs. Milton Kogan, and the State President-Elect, Mrs. Eugene Wolff. They were successful in presenting a well-rounded program, from which those who attended learned what was going on and the extent of different legislative issues.

The Conference started Sunday afternoon with a special board meeting for State officers and directors. Monday morning, following the regular business meeting, a panel on "Basic Public Services of a County Medical Society" was presented by Mrs. William B. Merrill, public relations chairman of the State Auxiliary, moderated by Mr. Thomas E. Walsh, regional officer for the Medical Society of the State of New York. Following this panel, Mr. Ned A. Briggs, New York State Civil Defense Director, talked on "Home Preparedness Program."

On Tuesday, Mrs. Amy Bull Crist, District Superintendent, First District, Orange County, spoke on the "Accelerated Program in Orange County" and "How to Guide in Health Careers." During the afternoon session, T. W. Newmann, Jr., M.D., medical director, Falkirk Hospital was chairman of the panel discussion on "The Psychiatric Hospital—An Integrated View," which was followed by a talk on "Citizen Participation," presented by Daniel Becker, New York State Assemblyman from the 29th District. Mr. Becker pointed out that everyone should participate actively in the affairs of government and that the Auxiliary members were in a favorable position to get more people out to vote in the coming elections.

Tuesday night a social hour was arranged by the Orange County Medical Society followed by a banquet. Among the guests at the dinner were Herbert T. Wagner, M.D., Executive Director of the Medical Society of the State of New York; Henry I. Fineberg, M.D., Past-President, Medical Society of the State of New York; Mrs. Morton Arnold, President, Woman's Auxiliary of Connecticut; and Mrs. Walter S. Penta, President, Woman's Auxiliary of Maine.

Wednesday, the last day of the Conference, Mr. George P. Farrell, Director, Bureau of Medical Care Insurance, explained "Voluntary Medical Care Plans."

Hostesses for the Fall Conference were the members of the Woman's Auxiliary to the Medical Society of Orange County.

Mrs. Paul Lipschutz, *Chairman*
Fall Conference

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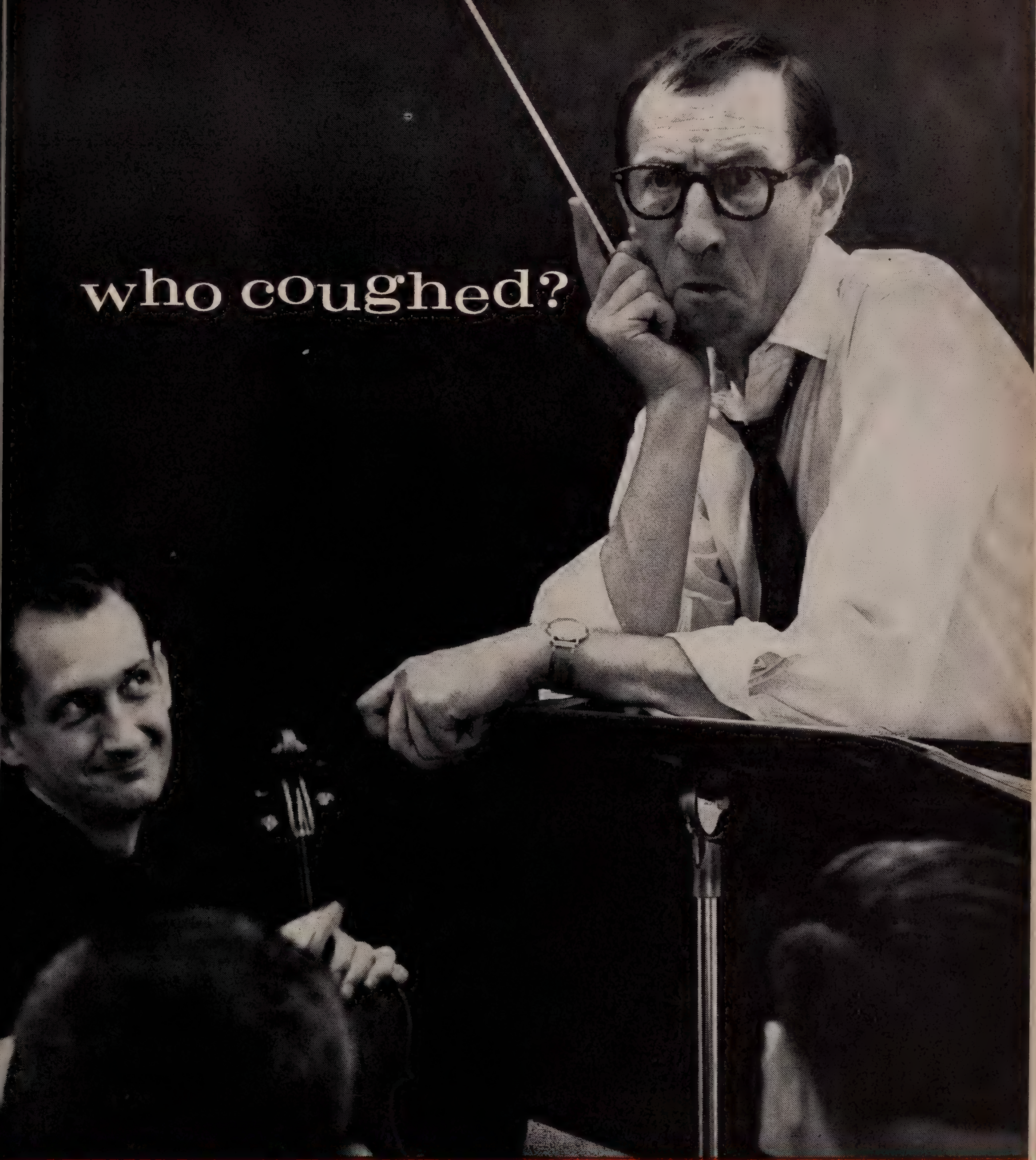
The value of a quarrel is yet to be ascertained.—Rush C. Hawkins



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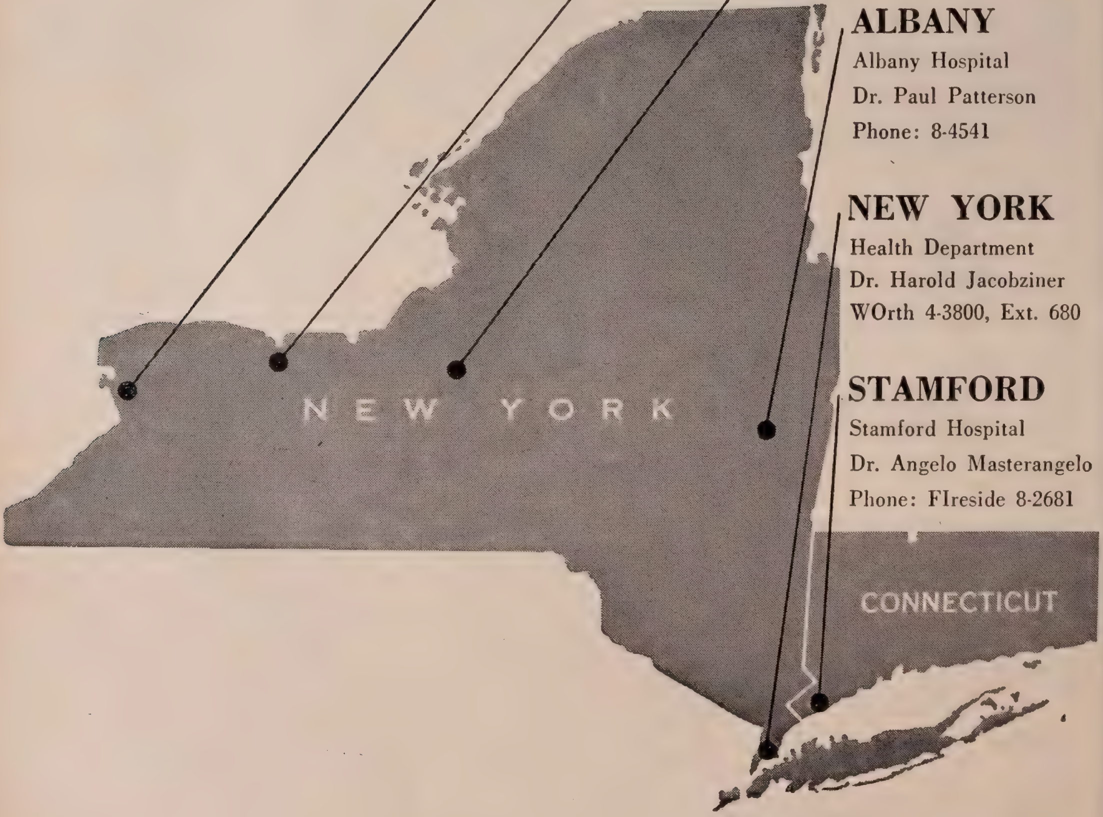

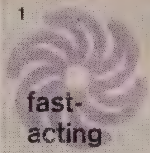
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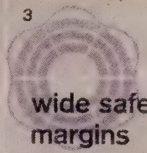
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Bronx	Leonard L. Heimoff ... Bronx	Frank La Gattuta ... Bronx	Hebert G. Cohen ... Bronx
Broome	Herbert Bandell ... Binghamton	Michael J. Maggiore ... Endicott	Judson S. Griffin ... Binghamton
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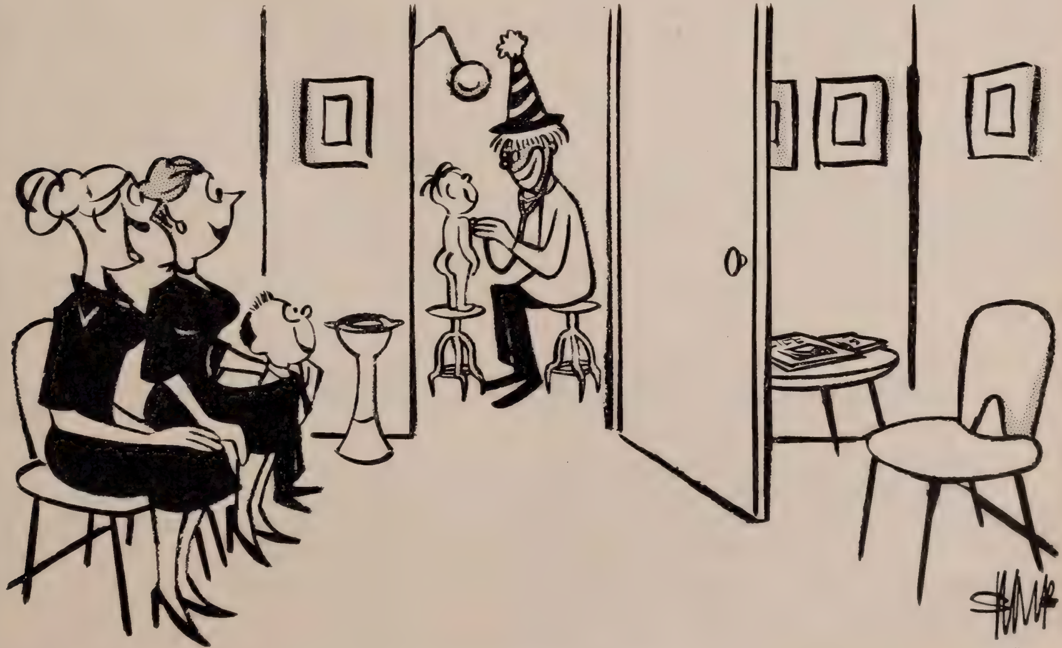

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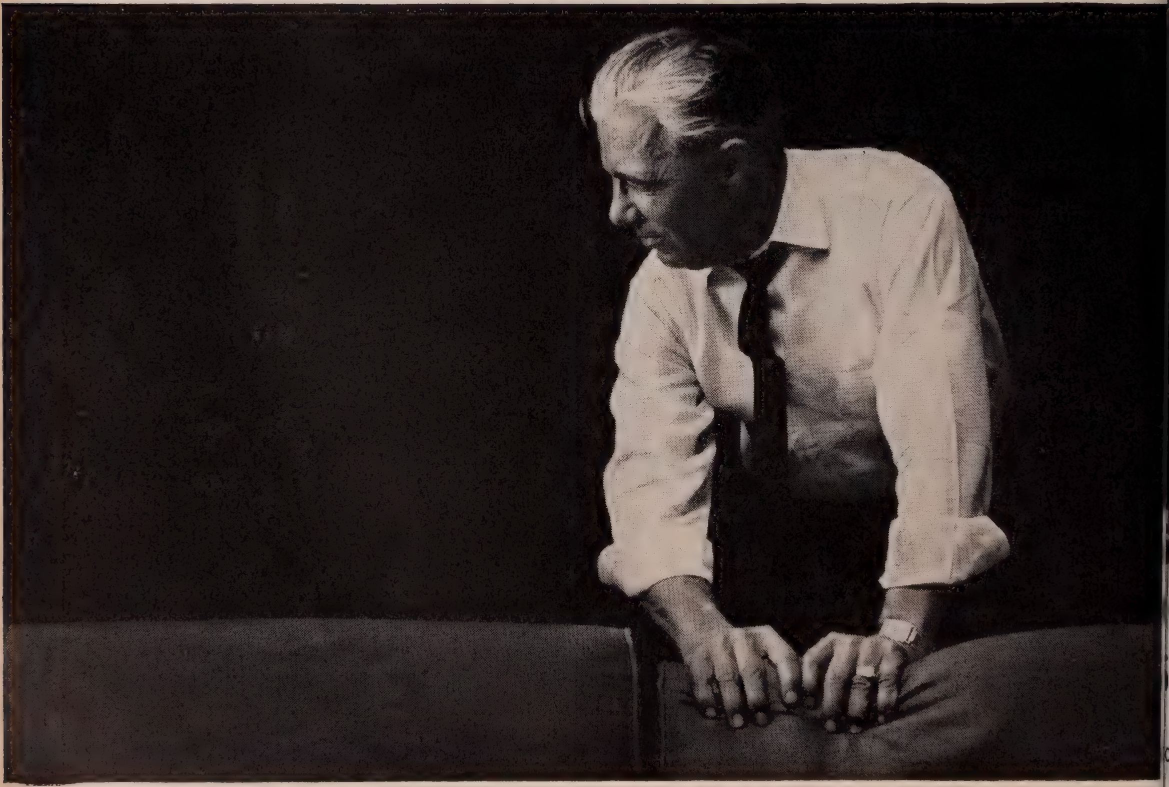

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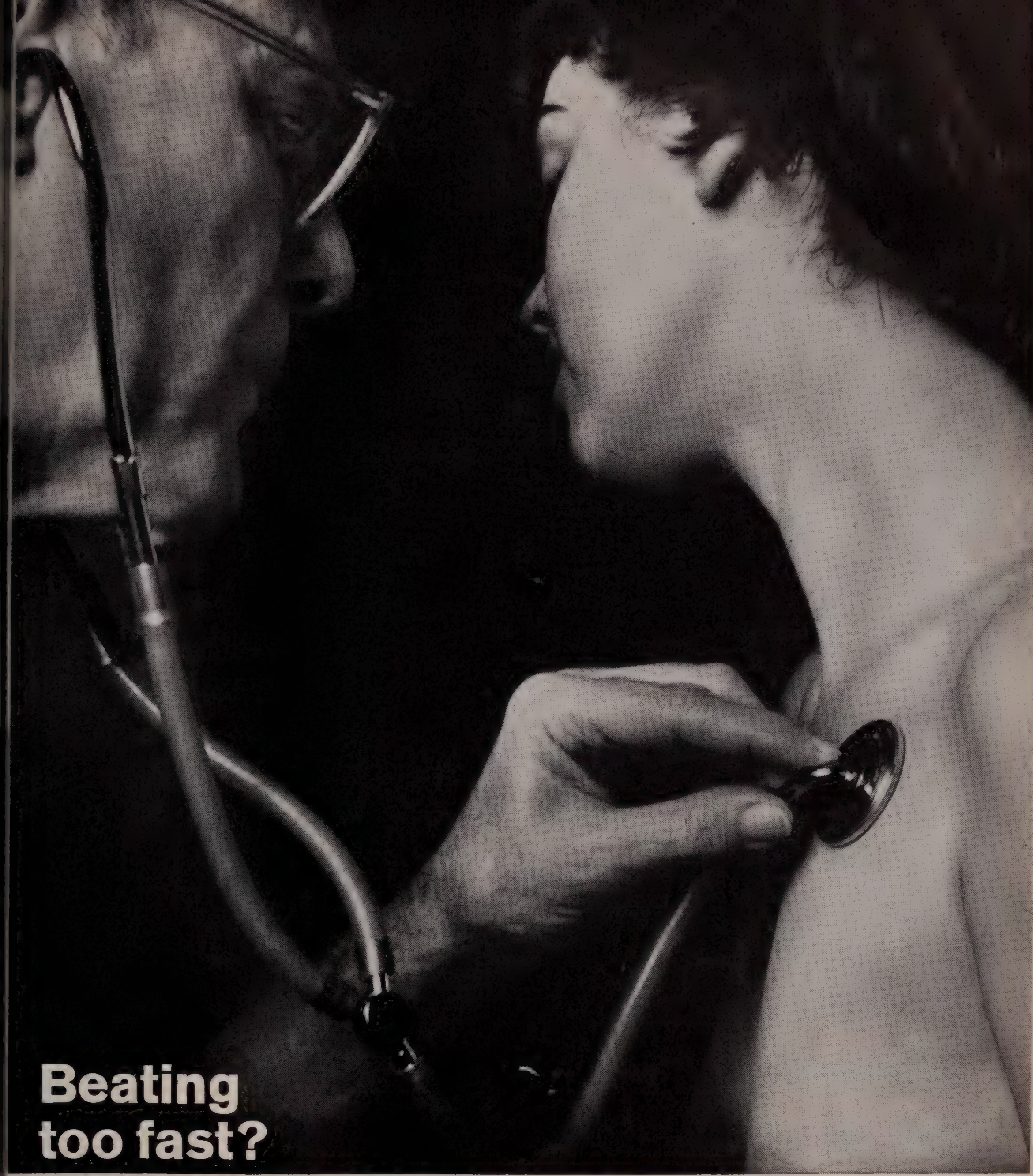

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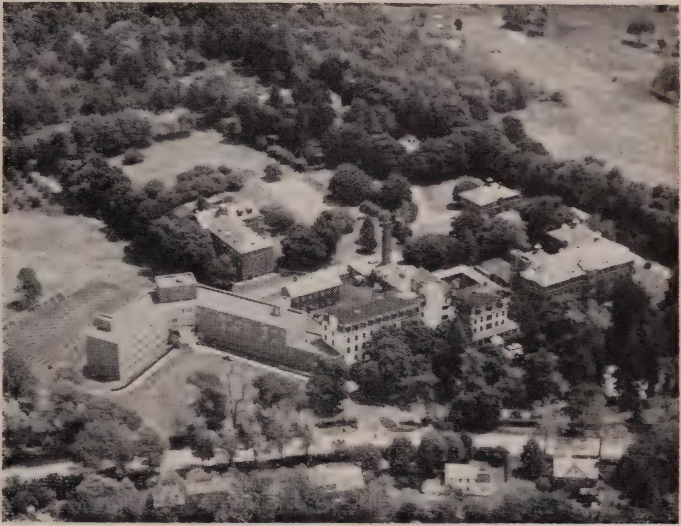

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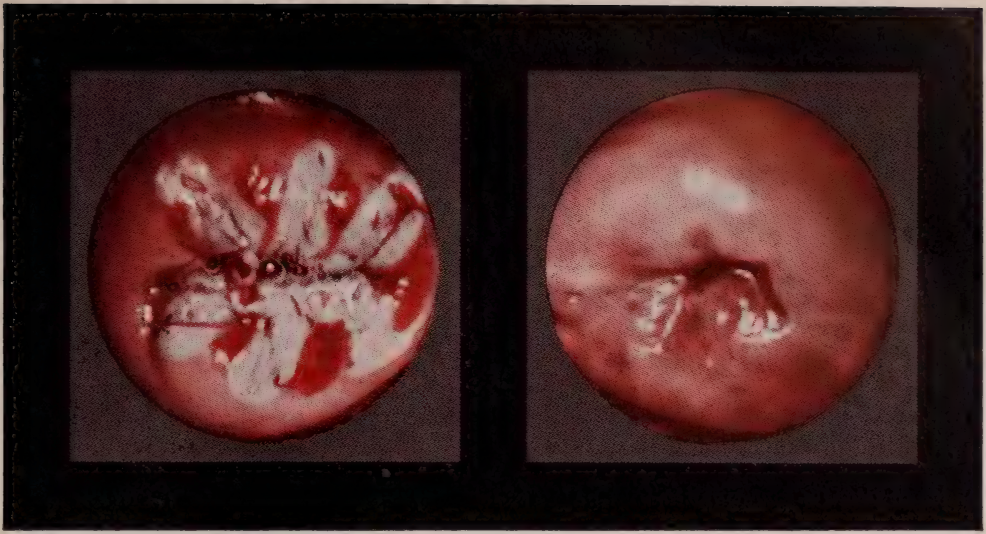

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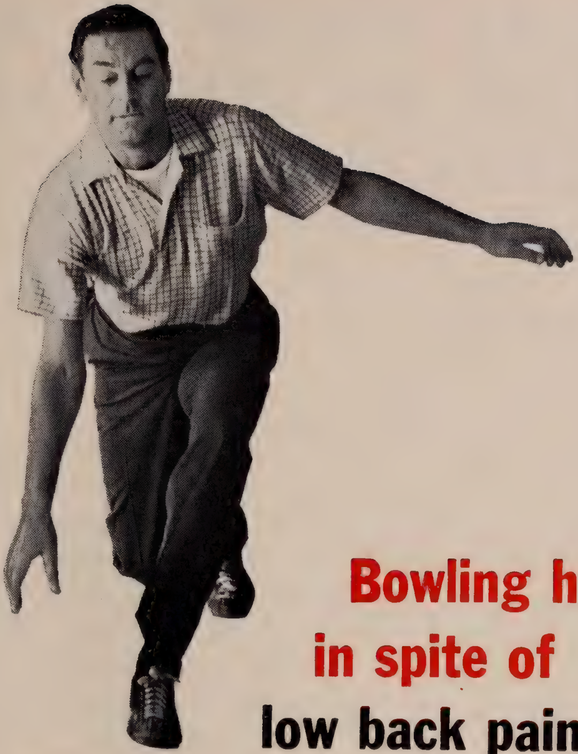

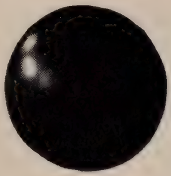

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1. Kearney, R. D.: *Current Therap. Res.* 2:127, April, 1960. **2.** Cohen, A. I.: *Current Therap. Res.* 2:374, Aug., 1960.

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(*Continued from page 3564*)

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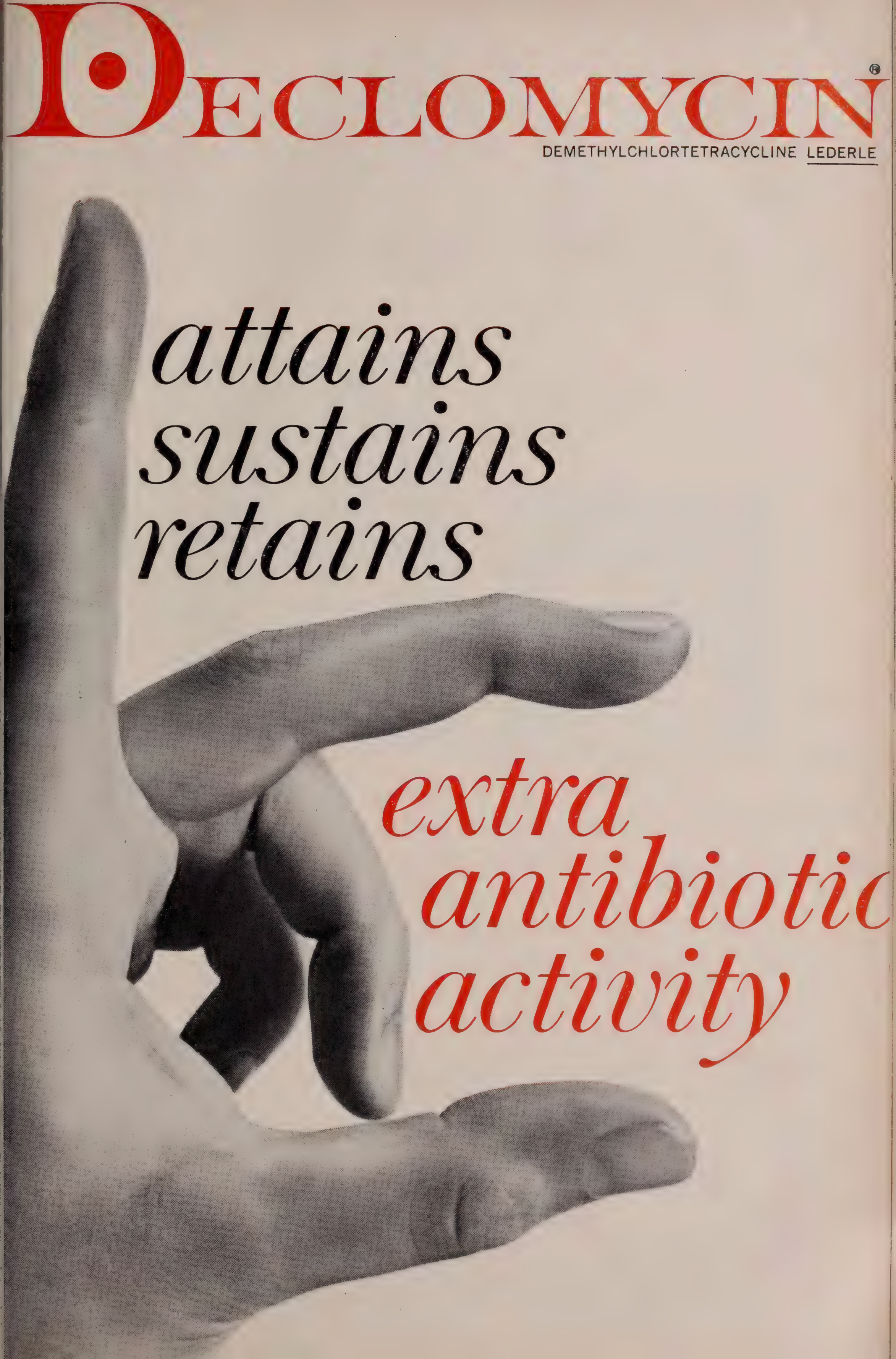

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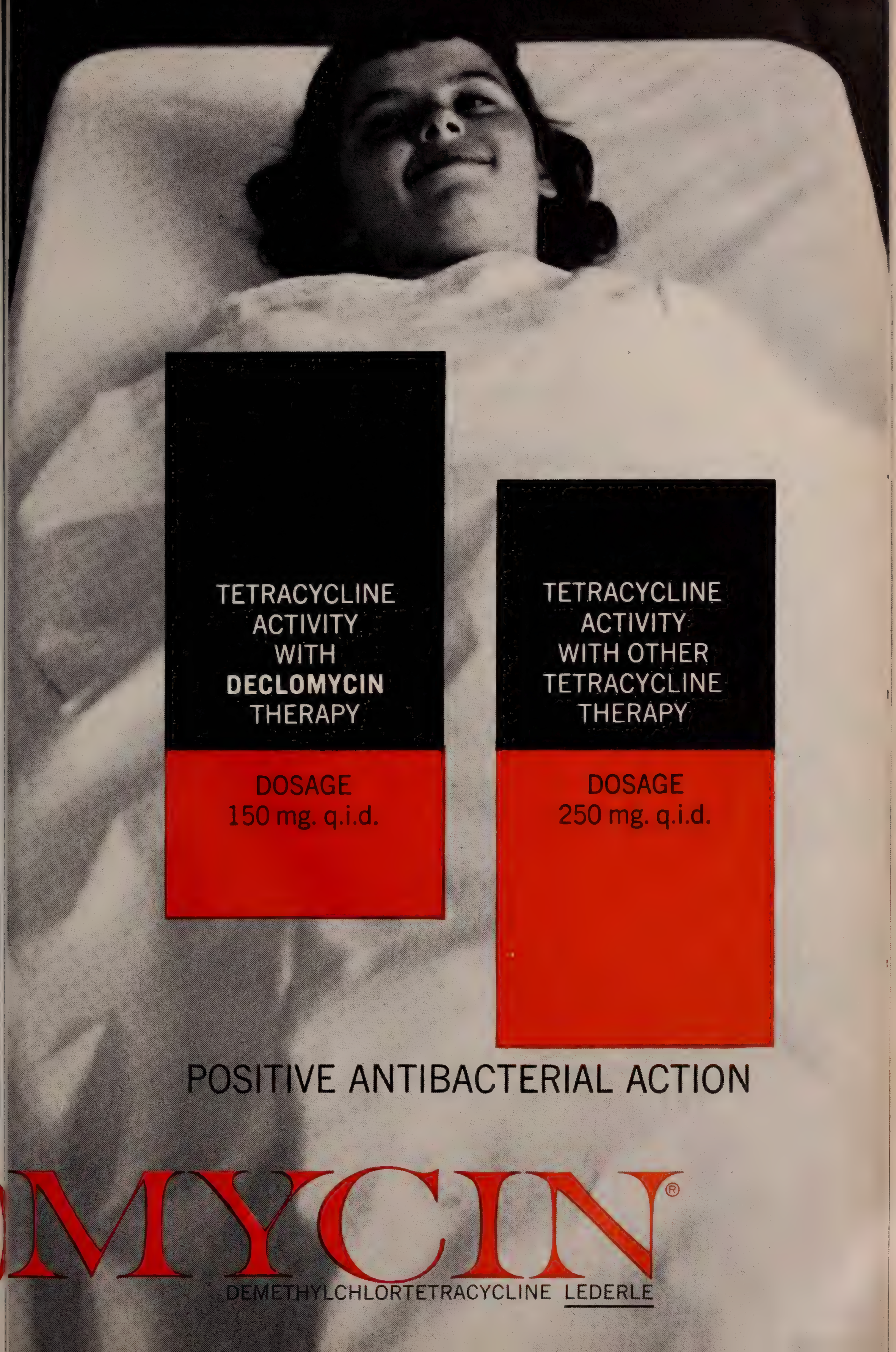

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DOSAGE 150 mg. q.i.d.

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DOSAGE 250 mg. q.i.d.

POSITIVE ANTIBACTERIAL ACTION

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DECLOMYCIN sustains, through the entire therapeutic course, the high activity levels needed to control the primary infective process and to check the onset of a complicating secondary infection at the original —or at another—site. The antibiotic suffuses through organs, tissues and fluids, and is present at therapeutic concentrations in other potentially or actually affected systems while it is acting at the primary site.

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DECLOMYCIN sustains this combined therapeutic action, in most instances, without pronounced hour-to-hour, dose-to-dose, peak-and-valley fluctuation in activity levels. This flattening-out of the activity-level oscillations which characterize other tetracyclines is attributable to two distinctive properties of DECLOMYCIN Demethylchlortetracycline—relatively high resistance to degradation within the body and a relatively low rate of renal clearance.

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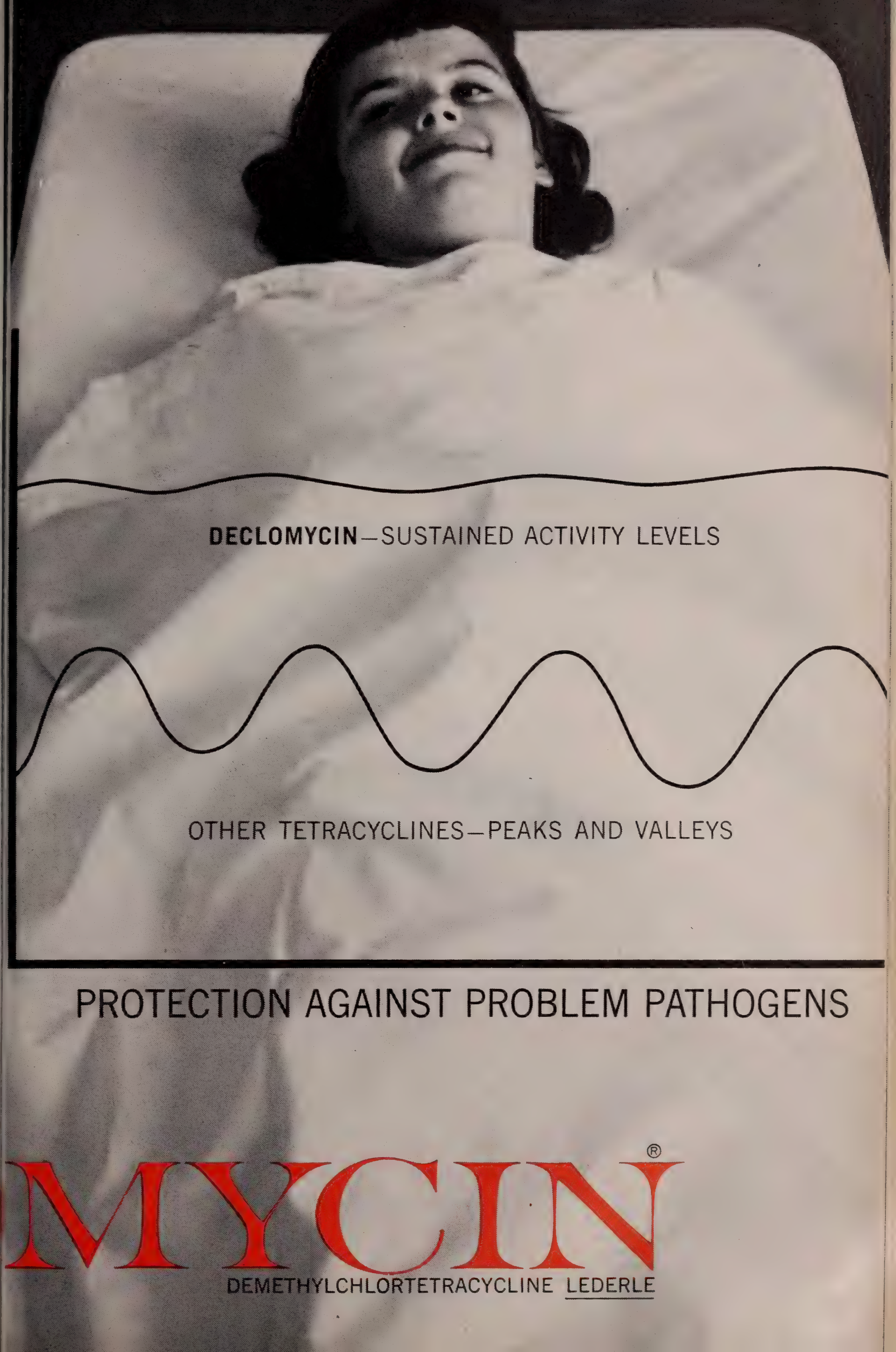
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PROTECTION AGAINST PROBLEM PATHOGENS
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DEMETHYLCHLORTETRACYCLINE LEDERLE

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DECLOMYCIN Demethylchlortetracycline retains significant tetracycline activity levels, in the majority of cases, up to 48 hours after the last dose is given. This attribute is, again, due to higher resistance to degradation and a lower renal clearance rate . . . as compared with other tetracyclines. A full, extra day of positive antibacterial action may, thus, be confidently expected. Two extra days in which measurable therapeutic levels are retained have been reported in many cases.

DECLOMYCIN thus, provides up to six days, activity on a four-day therapeutic course. Shortening of the normally indicated course is not recommended, since this may deprive the patient of the benefit of the added insurance against superinfection or recurrence provided by the longer retention of antibacterial potency. One capsule four times a day, for the average infection in the average adult, is the same as with other tetracyclines—but the *total* dosage is lower and the duration of the anti-infective action is longer.

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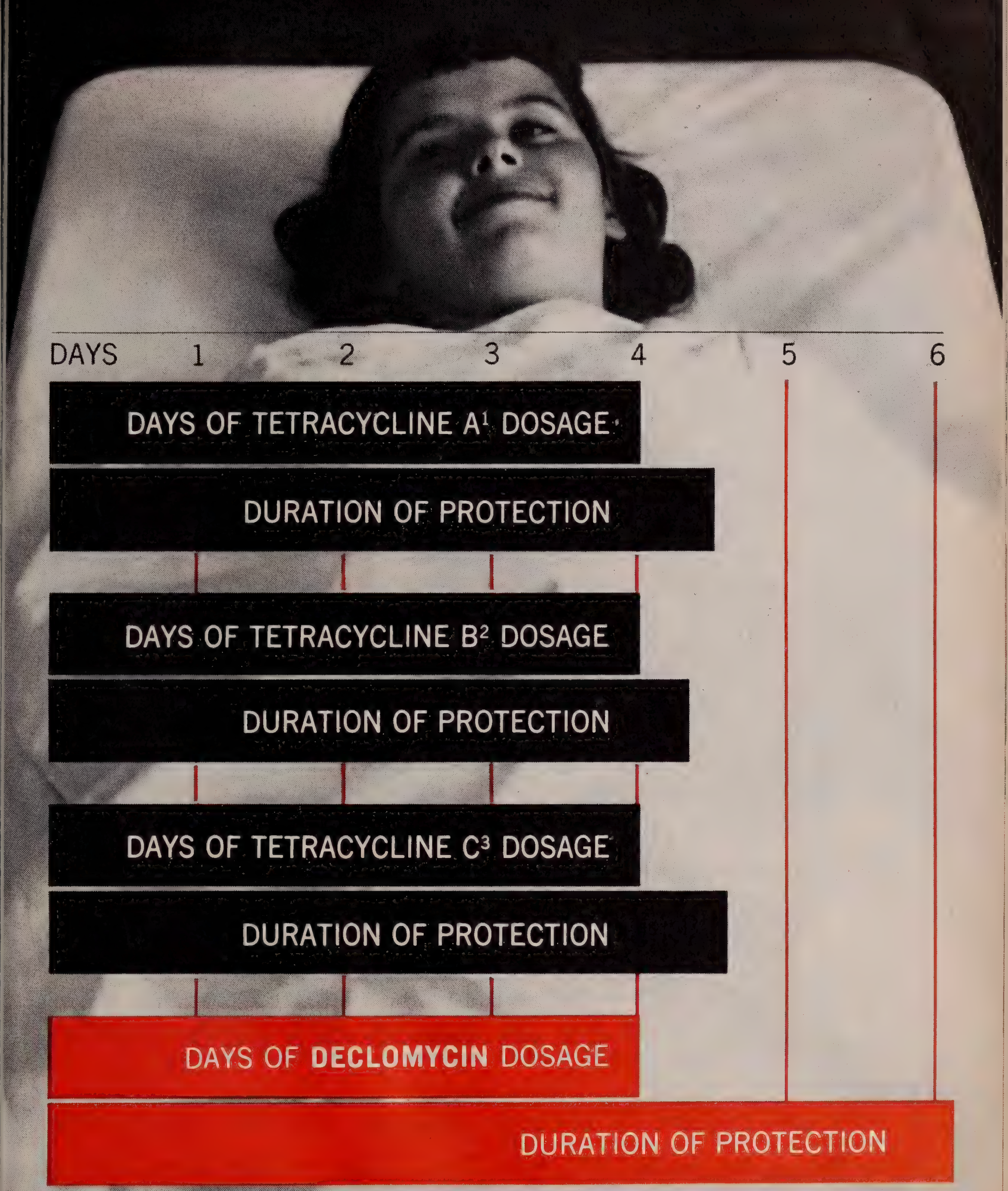

(1) Oxytetracycline. (2) Chlortetracycline. (3) Tetracycline.

PROTECTION AGAINST RECURRENCE

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- higher activity/intake ratio—positive antibacterial action
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- up to two extra days' activity—protection against recurrence

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Dosage: 1 to 2 drops (3 to 6 mg.) per pound body weight per day—divided into 4 doses.

SYRUP, 75 mg./5 cc. teaspoonful (cherry-flavored), bottles of 2 and 16 fl. oz.

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PRECAUTIONS: As with other antibiotics, DECLOMYCIN may occasionally give rise to glossitis, stomatitis, proctitis, nausea, diarrhea, vaginitis or dermatitis. A photodynamic reaction to sunlight has been observed in a few patients on DECLOMYCIN. Although reversible by discontinuing therapy, patients should avoid exposure to intense sunlight. If adverse reaction or idiosyncrasy occurs discontinue medication.

Overgrowth of nonsusceptible organisms is a possibility with DECLOMYCIN, as with other antibiotics. The patient should be kept under observation.

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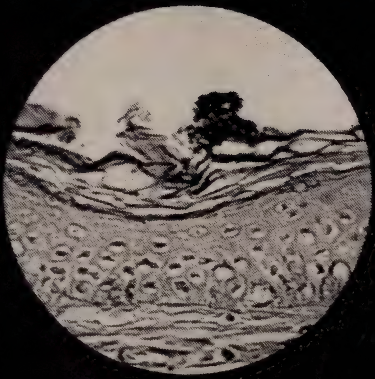
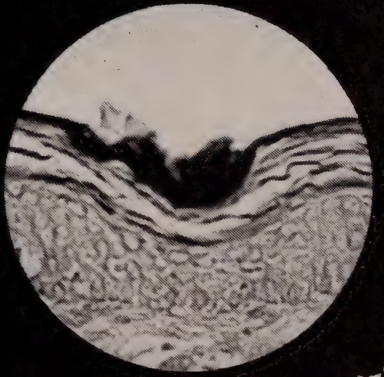
new study:

"almost universally rapidly curative"[1] *in*
infantile eczema



Biopsy section from skin stained with osmic acid after treatment for one week with placebo base shows little unsaturated oil (black stain) on the surface and practically none within the epidermis.



Biopsy section from skin stained with osmic acid after treatment with Desitin Ointment for one week shows much unsaturated oil (black stain) on the surface and also within the epidermis. Unsaturated oils are important constituents of natural emollients.

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restores unsaturates via fatty acids of external cod liver oil

Spoor finds[1] that Desitin Ointment topically replenishes unsaturated fatty acids dermally deficient[1-4] in many babies with infantile eczemas. Desitin Ointment was selected because its rich cod liver oil unsaturates resemble those naturally found in the skin.

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"almost universally rapidly curative", with great improvement or clearing of the condition in all babies in from one to five weeks.[1]

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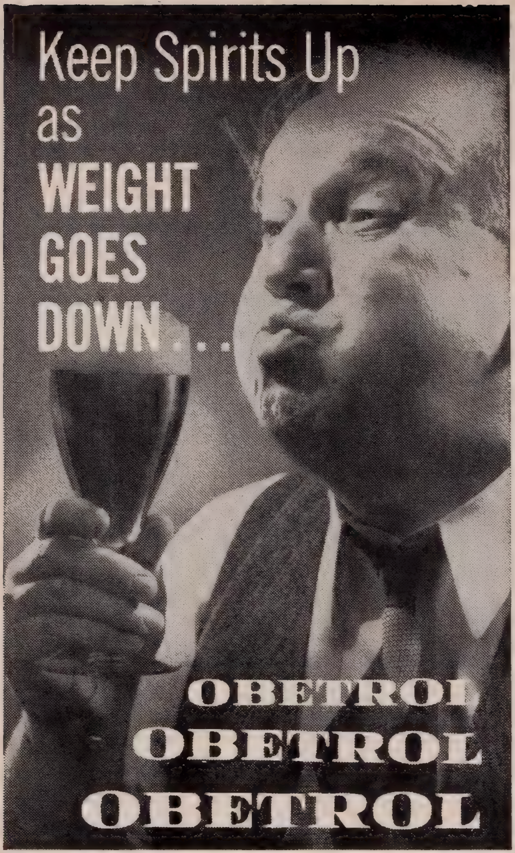
1. Spoor, H. J.: New York St. J. M. 60:2863, 1960.
2. Wiese, H. F., et al.: J. Nutrition 66:345, 1958.
3. Smith, L. W., et al.: Amer. J. Med. Sc. 237:600, 1959.
4. Nutrition Reviews 17:136, 1959.



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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

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TAO (J. B. Roerig & Company) 3697
Terfonyl (E. R. Squibb & Sons, Div. Mathieson Chemical Co.) 3695
Tetrex (Bristol Laboratories) 3579
Theragran-M (E. R. Squibb & Sons, Div. Mathieson Chemical Co.) 3715
Titralac (Riker Laboratories) 3585
Tofranil (Geigy Pharmaceutical Company) 3586
Trancopal (Winthrop Laboratories) 3561
Triaminic (Smith-Dorsey & Company, Div. the Wander Company) 3583, 3593, 3729
ULO (Riker Laboratories) 3700–3701
Urised (Chicago Pharmaceutical Company) .... 2nd cover
Ursinus (Smith-Dorsey & Company, Div. the Wander Company) 3716–3717
Valerianets-Dispert (Standard Pharmaceutical Company) 3730
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Miscellaneous

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Otard Cognac (Schenley Import Company) 3578

for acute
upper respiratory infections

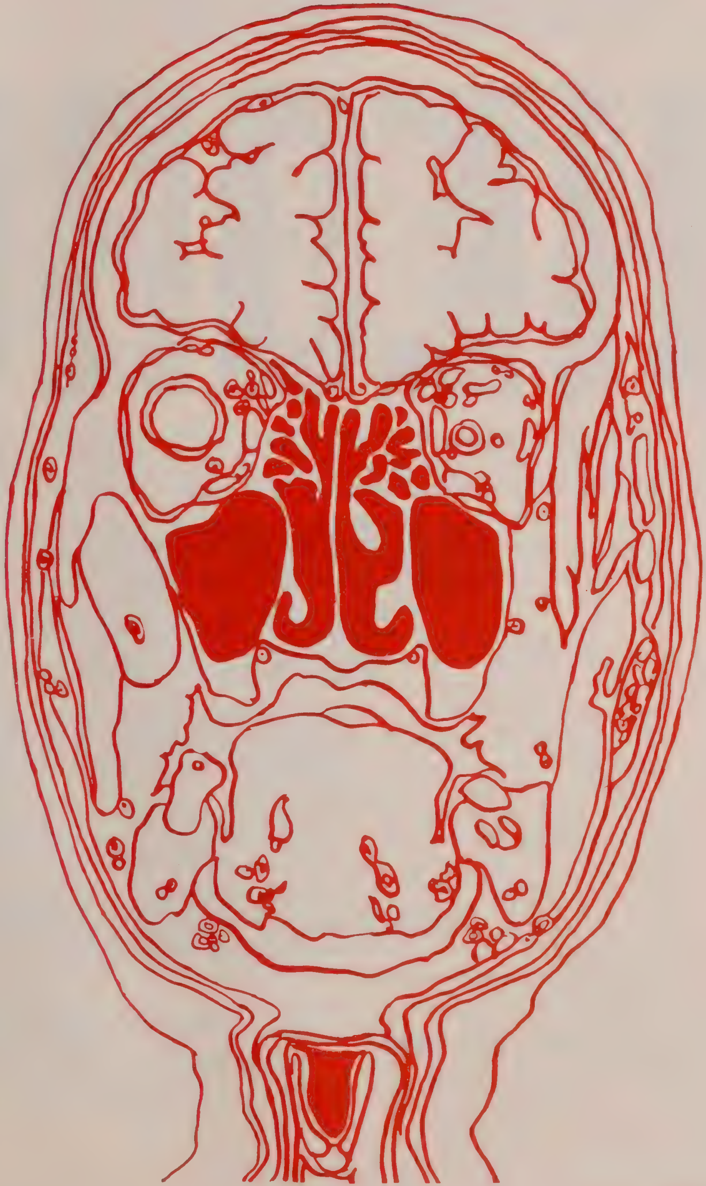
Tetrex®

capsules

The Original Tetracycline Phosphate Complex

U.S. PAT. NO. 2,791,609

effective control of pathogens...with an unsurpassed record of safety and toleranc



SUPPLY: TETREX Capsules – tetracycline phosp complex – each equivalent to 250 mg. tetracycline activity. Bottles of 16 and 100.

TETREX Syrup – tetracycline (ammonium polyphosp buffered) syrup – equivalent to 125 mg. tetracycline activity per 5 ml. teaspoonful. Bottles of 2 fl. oz. and 1

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Div. of Bristol-Myers Co.

BRISTOL TM

4,860 CULTURES...
74% SENSITIVE TO

CHLORO

In a study of the sensitivity of various clinically important bacteria to six common antibacterial substances, Goodier and Parry[1] report "...a greater proportion of the individual strains within the various genera sensitive to chloramphenicol."

Numerous other studies draw attention to the continuing sensitivity of stubborn pathogens to CHLOROMYCETIN.[2-8] For example, Modarress and co-workers observe: "The versatile chloramphenicol was useful each year."[2] Petersdorf and associates[3] state: "There has been no increase in resistance to chloramphenicol...during the past three years."

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100.

CHLOROMYCETIN is a potent therapeutic agent and, because certain blood dyscrasias have been associated with its administration, it should not be used indiscriminately or for minor infections. Furthermore, as with certain other drugs, adequate blood studies should be made when the patient requires prolonged or intermittent therapy.

References: (1) Goodier, T. E. W., & Parry, W. R.: *Lancet* 1:356, 1959. (2) Modarress, Y.; Ryan, R. J., & Francis, Sr. C.: *J. M. Soc. New Jersey* 57:168, 1960. (3) Petersdorf, R. G., *et al.*: *Arch. Int. Med.* 105:398, 1960. (4) Rebhan, A. W., & Edwards, H. E.: *Canad. M.A.J.* 82:513, 1960. (5) Bauer, A. W.; Perry, D. M., & Kirby, W. M. M.: *J.A.M.A.* 173:475, 1960. (6) Olarte, J., & de la Torre, J. A.: *Am. J. Trop. Med.* 8:324, 1959. (7) Berle, B. B., *et al.*: *New York J. Med.* 59:2383, 1959. (8) Fisher, M. W.: *Arch. Int. Med.* 105:413, 1960. 09860

PARKE, DAVIS & COMPANY
Detroit 32, Michigan

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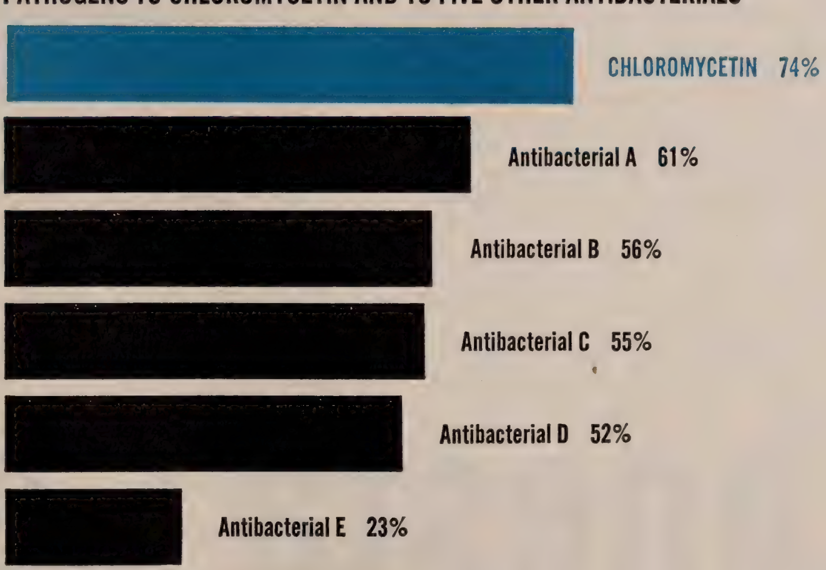
MYCETIN®

(chloramphenicol, Parke-Davis)

IN VITRO SENSITIVITY OF 4,860 GRAM-POSITIVE AND GRAM-NEGATIVE PATHOGENS TO CHLOROMYCETIN AND TO FIVE OTHER ANTIBACTERIALS*



*Adapted from Goodier & Parry[1]

IN CONTRACEPTION...

WHY IS SPEEDIER SPERMICIDAL ACTION IMPORTANT?

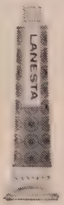
Because a swift-acting spermicide best meets the variables of spermatozoan activity.

Lanesta Gel, "...found to immobilize human spermatozoa in one-third to one-eighth the time required by five of the leading contraceptive products currently available . . ."* thus provides the *extra* margin of assurance in conception control. The accelerated action of Lanesta Gel – it kills sperm in minutes instead of hours – may well mean the difference between success and failure.

**Berberian, D. A., and Slighter, R. G.: J.A.M.A.* 168:*2257 (Dec. 27) 1958.*

In Lanesta Gel *7-chloro-4-indanol,* a new, effective, nonirritating, nonallergenic spermicide produces immediate immobilization of spermatozoa in dilution of up to 1:4,000. Spermicidal action is greatly accelerated by the addition of 10% NaCl in ionic form. Ricinoleic acid facilitates the rapid inactivation and immobilization of spermatozoa and sodium lauryl sulfate acts as a dispersing agent and spermicidal detergent.

Lanesta Gel with a diaphragm provides one of the most effective means of conception control. However, whether used with or without a diaphragm, the patient and you, doctor, can be certain that Lanesta Gel provides faster spermicidal action – plus essential diffusion and retention of the spermicidal agents in a position where they can act upon the spermatozoa.

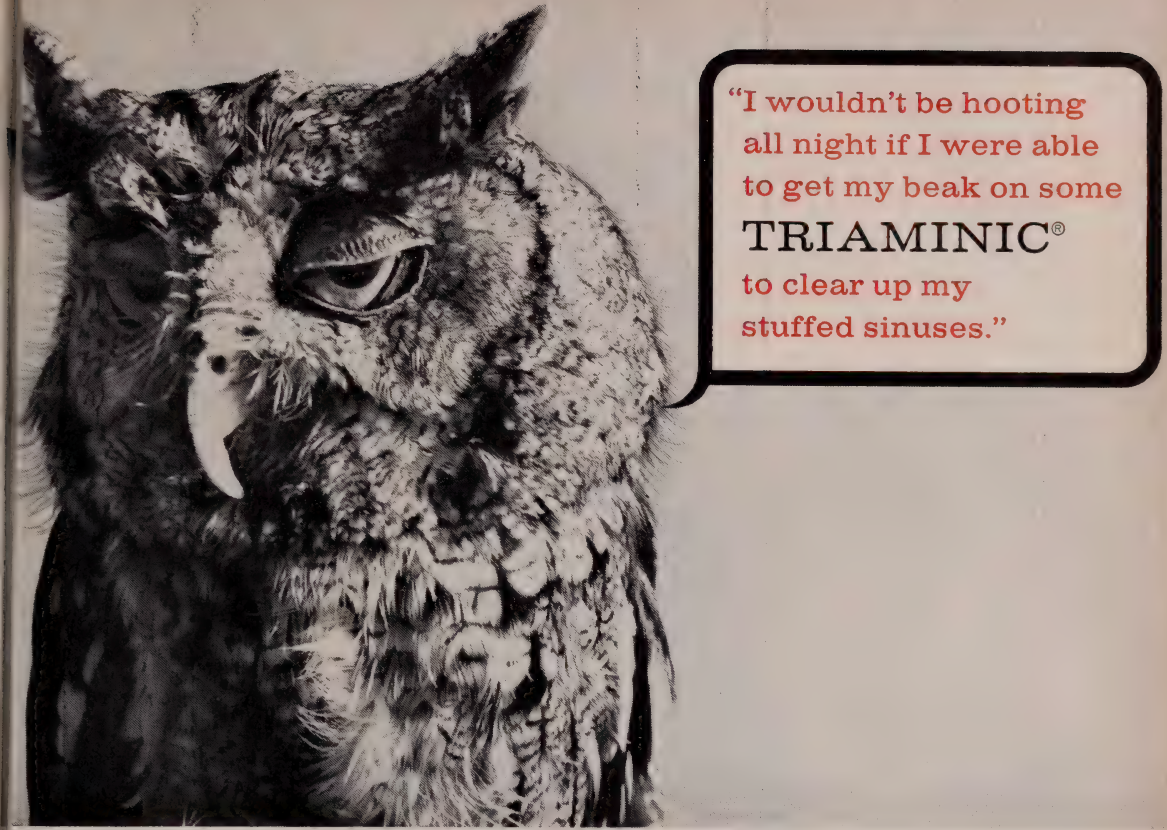


new
Lanesta® Gel

Supplied: Lanesta Exquiset . . . with diaphragm of prescribed size and type; universal introducer; Lanesta Gel, 3 oz. tube, with easy clean applicator, in an attractive purse. Lanesta Gel, 3 oz. tube with applicator; 3 oz. refill tube – available at all pharmacies.

Manufactured by Esta Medical Laboratories, Inc., Alliance, Ohio Distributed by George A. Breon & Co., New York 18, N.Y.

A product of Lanteen® research.

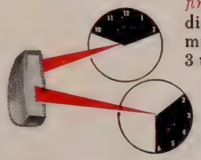

"I wouldn't be hooting all night if I were able to get my beak on some TRIAMINIC® to clear up my stuffed sinuses."

...and for humans with STUFFED-UP SINUSES...

Your patient with sinus congestion doesn't give a hoot about anything but prompt relief. And TRIAMINIC has a pharmacologically balanced formula designed to give him just that. As soon as he swallows the tablet, the medication is transported *systemically* to *all* nasal and paranasal membranes – reaching inaccessible sinus cavities where drops and sprays can never penetrate. TRIAMINIC thereby brings more complete, more effective relief without hazards of topical therapy, such as ciliary inhibition, rebound congestion, and "nose drop addiction."

Indications: nasal and paranasal congestion, sinusitis, postnasal drip, upper respiratory allergy.

Relief is prompt and prolonged because of this special timed-release action:



first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then—the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides:
½ the formulation of the Triaminic Tablet.
Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

Each tsp. (5 ml.) of Triaminic Syrup provides:
¼ the formulation of the Triaminic Tablet.
Dosage (to be administered every 3 or 4 hours):
Adults – 1 or 2 tsp.; *Children 6 to 12* – 1 tsp.;
Children 1 to 6 – ½ tsp.; *Children under 1* – ¼ tsp.

TRIAMINIC® *timed-release tablets, juvelets, and syrup*

STOP *running noses* and *open stuffed noses orally*

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

"...extraordinarily effective diuretic..."[1]

Efficacy and expanding clinical use are making Naturetin the diuretic of choice in edema and hypertension. It maintains a favorable urinary sodium-potassium excretion ratio, retains a balanced electrolyte pattern, and causes a relatively small increase in the urinary pH.[2] More potent than other diuretics, Naturetin usually provides 18-hour diuretic action with just a single 5 mg. tablet per day — economical, once-a-day dosage for the patient. Naturetin c̄ K — for added protection in those special conditions predisposing to hypokalemia and for patients on long-term therapy.

Supplied: Naturetin Tablets, 5 mg., scored, and 2.5 mg. Naturetin c̄ K (5 c̄ 500) Tablets, capsule-shaped, containing 5 mg. benzydroflumethiazide and 500 mg. potassium chloride. Naturetin c̄ K (2.5 c̄ 500) Tablets, capsule-shaped, containing 2.5 mg. benzydroflumethiazide and 500 mg. potassium chloride. For complete information consult package circular or write Professional Service Dept., Squibb, 745 Fifth Avenue, New York 22, N. Y. *References:* 1. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 5:60 (Feb.) 1960. 2. Ford, R. V.: Current Therap. Res. 2:92 (Mar.) 1960.

Naturetin Squibb Benzydroflumethiazide **Naturetin c̄ K** Squibb Benzydroflumethiazide with Potassium Chloride **SQUIBB**

'NATURETIN'® IS A SQUIBB TRADEMARK.

ANTACID THERAPY

for bedridden as well as ambulant patients

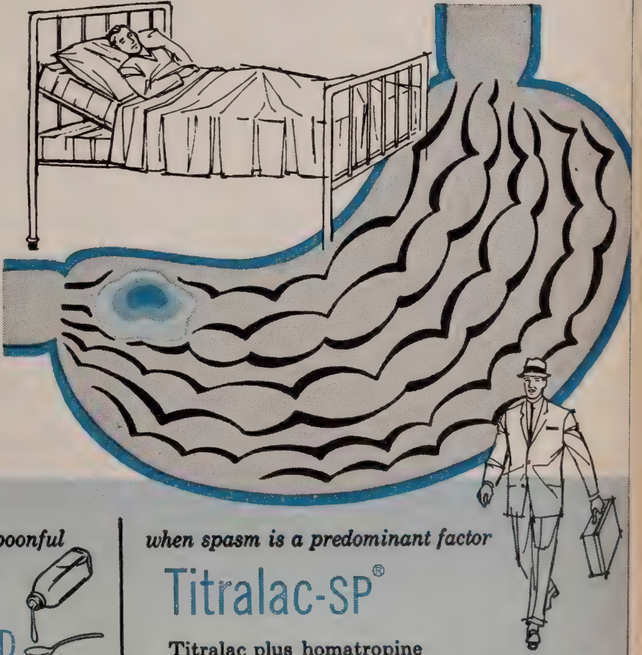
Pleasant Tasting

Titralac®

milk-like action...

no constipation or laxation...

no interference with gastrointestinal absorption...



WHENEVER an ANTACID is indicated:

- Peptic ulcer (gastric and duodenal)
- Heartburn due to dietary or alcoholic indiscretions, pregnancy
- Gastric hyperacidity associated with acute, subacute, and chronic gastritis
- Drug-induced gastric hyperacidity resulting from administration of salicylates, corticosteroids, reserpine, etc.

for on-the-go convenience

Titralac® TABLETS

Prompt prolonged action anywhere, anytime. Smooth, deliciously flavored tablets may be chewed, dissolved in mouth, or swallowed with water.

Availability: White, mint-flavored tablets, each containing glycine 0.18 Gm. and calcium carbonate 0.42 Gm. In bottles of 100.

for relief in a teaspoonful

Titralac® LIQUID

Just one teaspoonful—not ounces or tablespoonfuls. Fresh minty flavor appeals to the most finicky palate.

Availability: White, mint-flavored liquid, each teaspoonful (5 cc.) containing glycine 0.30 Gm. and calcium carbonate 0.70 Gm. In bottles of 8 fl. oz.

when spasm is a predominant factor

Titralac-SP®

Titralac plus homatropine methylbromide, for acute phases or when spasm contributes to symptom picture. Same delicious taste as Titralac tablets and liquid.

Availability: Pink, mint-flavored tablets, each containing Titralac formula plus 0.5 mg. homatropine methylbromide, bottles of 100.

Riker

Northridge, California

To restore emotional stability
during the declining years

Tofrānil®

brand of imipramine hydrochloride

Thymoleptic

New for geriatric use

Tablets of 10 mg.

Recent studies[1-3] strongly indicate underlying depression as a causative factor, and Tofrānil as an eminently successful agent, in restoring the difficult geriatric patient to a more contented frame of mind and more manageable disposition.

1. Cameron, E.: The Use of Tofrānil in the Aged, Canad. Psychiat. A. J. Special Supplement, **4**:S160, 1959. 2. Christe, P.: Indications for Tofrānil in Geriatrics, Schweiz. med. Wchnschr. **90**:586, 1960. 3. Schmied, J., and Ziegler, A.: Tofrānil in Geriatrics, Praxis **49**:472, 1960.

Also Available:

For the treatment of non-geriatric depression: Tofrānil tablets of 25 mg. and ampuls of 25 mg. in 2 cc. solution.

Geigy, Ardsley, New York

omorrow he'll need

PARAFLEX®

Chlorzoxazone*

ɔr relief of painful muscle spasm

hen unaccustomed or too vigorous exertion results in disabling sprains or strains, PARAFLEX
ings prompt relief. A proven skeletal muscle relaxant, PARAFLEX rapidly relieves pain and
ffness, improves function, and facilitates recovery. Just a single 1- or 2-tablet dose provides
ese benefits for up to 6 hours. PARAFLEX is equally effective in other musculoskeletal dis-
ders, such as myositis, whiplash injuries, low back pain, and fibrositis. Side effects are rare,
most never require discontinuance of therapy.

ɔsage: 1 to 2 tablets t.i.d. or q.i.d. *Supplied:* Scored, orange tablets, bottles of 50. Each tablet
ntains PARAFLEX Chlorzoxazone, 250 mg. *U.S. Patent No. 2,895,877

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Don't settle for "slow-power" x-ray

get a full 200-ma with your Patrician combination

When anatomical motion threatens to blur radiographs, the 200-ma Patrician can answer with extreme exposure speed, *twice* that of any 100-ma installation. Film images show improved diagnostic readability . . . retakes are fewer. And you'll find the G-E Patrician is like this in everything for radiography and fluoroscopy: built right, priced sensibly, *uncompromising* in assuring you all basic professional advantages. Full-size 81″ table . . . independent tubestand . . . shutter limiting device . . . automatic tube protection . . . counterbalanced fluoroscope, x-ray tube and Bucky . . . full-wave x-ray output.

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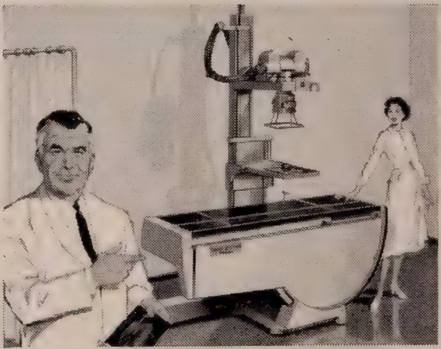

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a breathing spell from asthma

Quadrinal*

a rapid way to clear the airway

- **stops wheezing**
- **increases cough effectiveness**
- **relieves spasm**

In chronic disorders associated with obstructed respiration, the dependable antispasmodic and expectorant action of Quadrinal rapidly clears the bronchial tree. Patients breathe more easily and acute episodes of bronchospasm are often eliminated. Quadrinal is well tolerated, even on prolonged administration. The potassium iodide in Quadrinal provides an expectorant of time-tested effectiveness and safety.

Indications: Bronchial asthma, chronic bronchitis, pulmonary fibrosis, pulmonary emphysema.

Quadrinal Tablets, containing ephedrine HCl (24 mg.), phenobarbital (24 mg.), 'Phyllicin'* (theophylline-calcium salicylate) (130 mg.), **and potassium iodide** (0.3 Gm.).

Also available—
a new Quadrinal dosage form with taste-appeal for all age groups:
fruit-flavored QUADRINAL*SUSPENSION (1 teaspoonful = 1/2 Quadrinal Tablet)

KNOLL PHARMACEUTICAL COMPANY, ORANGE, NEW JERSEY

*Quadrinal, Phyllicin®

DIAPHRAGMS!

NINE REASONS WHY MORE AND MORE PHYSICIANS ARE USING THE CONTOURING Koro-Flex TRADE MARK

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Koro-Flex®
U.S. PAT. NO.
VAGINAL
(CONTOURING)
DIAPHRAGM
WITH SANITARY PLASTIC CASE
CAUTION: FEDERAL LAW RESTRICTS THIS DEVICE TO SALE BY OR ON THE ORDER OF A PHYSICIAN
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1. Reduces your fitting instruction time.
2. Patient ease of insertion—automatic placement.
3. Develops patients' confidence. Easy to use.
4. Folds behind pubic bone with suction-like action, forming an effective barrier.
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6. Locks in spermicidal lubricant—delivers it directly under and next to the os uteri.
7. Keeps its place—doesn't shift.
8. Simple to remove.
9. Aesthetically acceptable. Is most comfortable. KORO-FLEX (contouring) Diaphragms may be used where ordinary coil-spring diaphragms are indicated and for Flat rim (Mensinga)-type as well.

Recommend: KORO-FLEX Compact, the ONLY compact that provides the arcing diaphragm (60-95 mm), jelly *and* Koromex cream (trial size). *More satisfied patients result from trying both and then selecting the one best suited to physiological requirements.* Eliminates guessing. Supplied in feminine clutch-style bag with zipper closure.

Available in all prescription pharmacies.
Write for descriptive literature.
Always insist on the use of time-tested Koromex Jelly or Cream with diaphragm.

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Manufacturers of Koromex Products

CLINICAL REMISSION IN A "PROBLEM" ARTHRITIC

n rheumatoid arthritis with diabetes mellitus. A 54-year-old diabetic with a four-year history of arthritis was started on DECADRON, 0.75 mg./day, to control severe symptoms. After a year of therapy with 0.5 to 1.5 mg. daily doses of DECADRON, she has had no side effects and diabetes has not been exacerbated. She is in clinical remission.*

New convenient b.i.d. alternate dosage schedule: the degree and extent of relief provided by DECADRON allows for b.i.d. maintenance dosage in many patients with so-called "chronic" conditions. Acute manifestations should first be brought under control with a t.i.d. or q.i.d. schedule.

Supplied: As 0.75 mg. and 0.5 mg. scored, pentagon-shaped tablets in bottles of 100. Also available as Injection DECADRON Phosphate. Additional information on DECADRON is available to physicians on request. DECADRON is a trademark of Merck & Co., Inc.

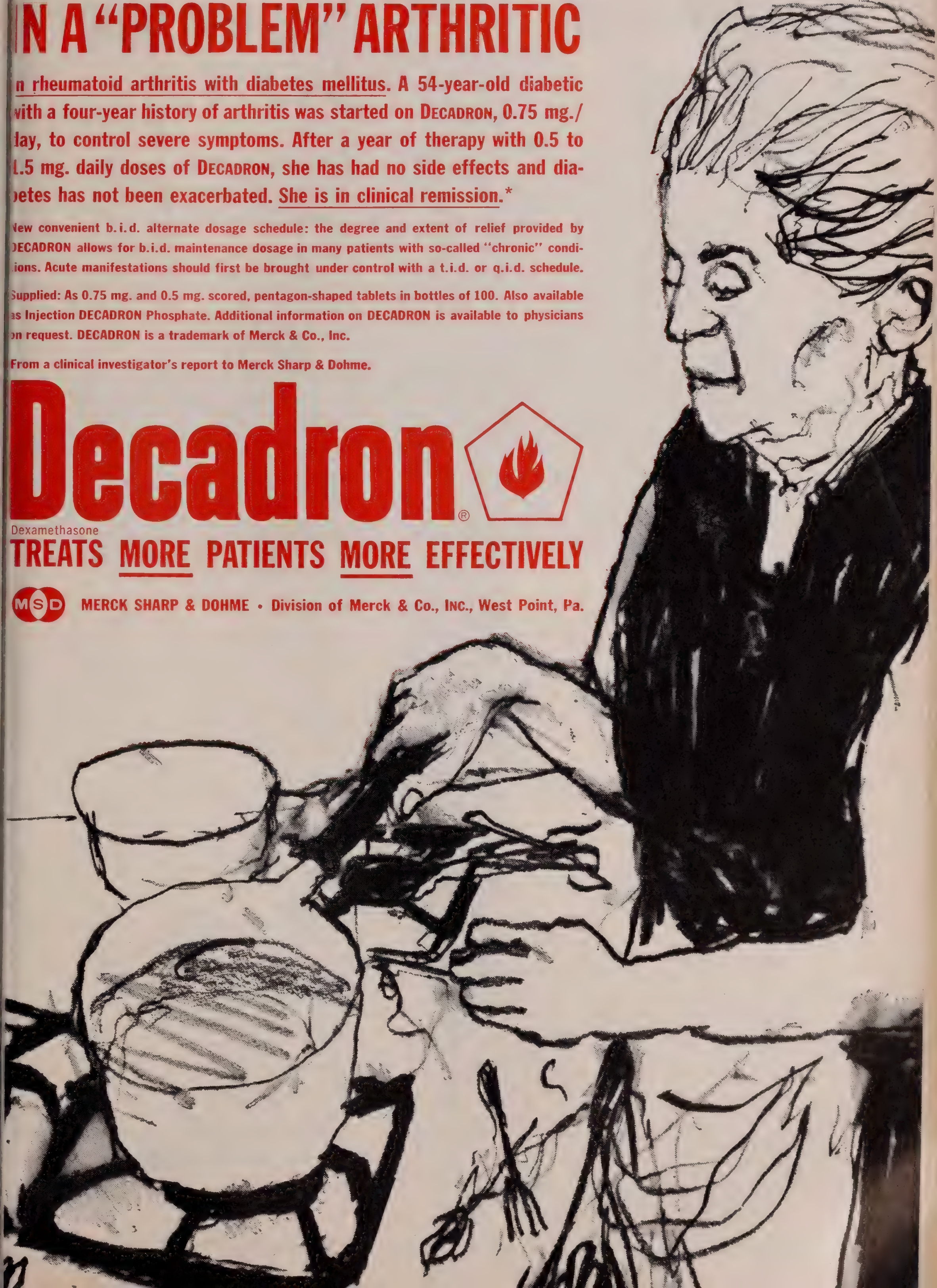
*From a clinical investigator's report to Merck Sharp & Dohme.

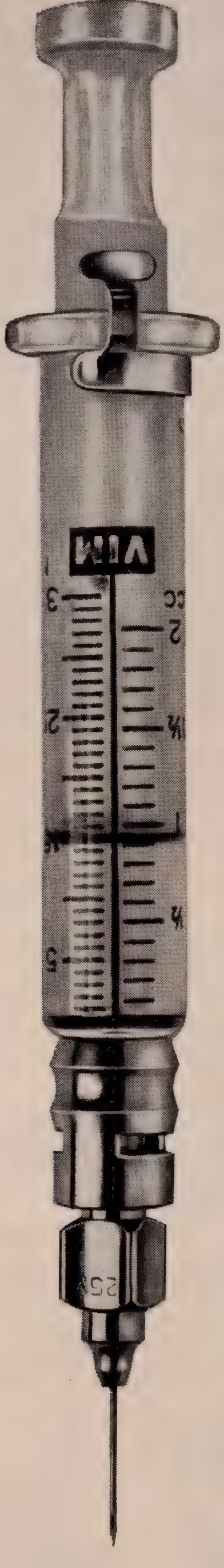
Decadron®

Dexamethasone

TREATS MORE PATIENTS MORE EFFECTIVELY

MSD MERCK SHARP & DOHME • Division of Merck & Co., INC., West Point, Pa.





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ALLERGENIC PROTEIN EXTRACT Dust (House)

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A Division of
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Pearl River, New York Lederle

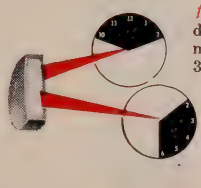
"Sometimes, I almost wish I were human so I could clear up this close-up, clogged-up nose of mine with TRIAMINIC®."

...and for humans with CLOGGED-UP NOSES...

Nasal congestion often persists with "bulldog tenacity." Nose drops and sprays often reach only the more superficial respiratory membranes and therefore fail to provide adequate relief. Furthermore, they may add to the patient's misery by producing rebound congestion, ciliary inhibition, and eventually "nose drop addiction." TRIAMINIC reaches *all* nasal and paranasal membranes *systemically* – provides more complete, longer-lasting relief while it avoids the harmful side effects associated with topical medication.

Indications: nasal and paranasal congestion, sinusitis, postnasal drip, upper respiratory allergy.

Relief is prompt and prolonged because of this special timed-release action:



first – the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then – the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides:
½ the formulation of the Triaminic Tablet.
Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

Each tsp. (5 ml.) of Triaminic Syrup provides:
¼ the formulation of the Triaminic Tablet.
Dosage (to be administered every 3 or 4 hours):
Adults – 1 or 2 tsp.; *Children 6 to 12* – 1 tsp.;
Children 1 to 6 – ½ tsp.; *Children under 1* – ¼ tsp.

TRIAMINIC® *timed-release tablets, juvelets, and syrup*

STOP *running noses* *and open stuffed noses orally*

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

benzthiazide

NaClex®

a new molecule with an unsurpassed faculty for salt excretion

A. H. Robins announces NaClex, a potent, oral, nonmercurial diuretic. NaClex is a new molecule, designated benzthiazide. Its unique chemical structure produces a "pronounced increase in diuretic potency"[1] over many older diuretics. NaClex also has antihypertensive properties, and it enhances the activity of other antihypertensive drugs.

in diuresis

salt removal is still the fundamental objective

As salt goes, so goes edema

A fundamental principle of diuresis is that "increased urine volume and loss of body weight are proportional to and the osmotic consequences of loss of ions."[2] New NaClex helps reduce edema through the application of this basic principle.

Apparently functioning in the proximal renal tubules, NaClex strictly limits the reabsorption of sodium and chloride ions. To maintain the essential, subtle balance between salt and water, the body's homeostatic mechanism reponds to this loss of ions by allowing an increased excretion of excessive extracellular water. Thus the NaClex-induced removal of salt leads directly to the reduction of edema.

How potent is benzthiazide?

Compared tablet for tablet with oral diuretics now available, NaClex is unsurpassed in potency. Milligram for milligram, it has achieved optimum diuresis in pharmacologic studies at 1/20 the dose required for chlorothiazide.

What are the major diuretic indications for NaClex?

NaClex produces diuresis, weight loss, and symptomatic improvement in edema associated with conditions such as congestive heart failure, cirrhosis of the liver, chronic renal diseases (including nephrosis), premenstrual tension, toxemia of pregnancy, and obesity. Edema of local origin and that caused by steroids may also benefit.

To what extent is NaClex useful in hypertension?

NaClex has definite antihypertensive properties, and may be used alone in mild hypertension. In severer cases it may be used with other antihypertensive drugs, potentiating them and permitting their use at lower dosage. In hypertension with associated water retention, NaClex is of twofold value. It may be prescribed for congestive heart failure as an ancillary measure to digitalis.

Is potassium excretion a problem with NaClex?

In short-term therapy, excessive potassium excretion is unlikely. In the effective dose range, potassium loss varies from ⅙ to ½ that of sodium. Naturally, the ratio of these ions depends on the rate at which excess sodium stores are depleted, and whether salt intake is restricted.

Can NaClex and mercurials be given concurrently?

Yes. When so employed, NaClex may increase the efficacy of mercurials. But NaClex alone is often effective enough to eliminate the need for parenteral mercurial administration. Also, NaClex may be effective in cases when mercurials are not.

Supply: Available in yellow, scored 50 mg. tablets.

References: 1. Ford, R. V., Cur. Therap. Res., 2:51, 1960. 2. Pitts, R. F., Am. J. Med., 24:745, 1958.

For complete dosage schedules, precautions, or other information about new NaClex, please consult basic literature, package insert, or your local Robins representative, or write to A. H. Robins Co., Inc., Richmond, Va.

A. H. ROBINS COMPANY, INC.
RICHMOND 20, VIRGINIA

an antibiotic improvement
designed to provide
greater therapeutic effectiveness

now
Pulvules®
Ilosone®
(propionyl erythromycin ester lauryl sulfate, Lilly)

in a more acid-stable form
assure adequate absorption even when taken with food

Ilosone retains 97.3 percent of its antibacterial activity after exposure to gastric juice (*p*H 1.1) for forty minutes.[1] This means there is more antibiotic available for absorption—greater therapeutic activity. Clinically, too, Ilosone has been shown[2,3] to be decisively effective in a wide variety of bacterial infections—with a reassuring record of safety.[4]

Usual dosage for adults and for children over fifty pounds is 250 mg. every six hours.
Supplied in 125 and 250-mg. Pulvules and in suspension and drops.

1. Stephens, V. C., *et al.:* J. Am. Pharm. A. (Scient. Ed.), *48:*620, 1959.
2. Salitsky, S., *et al.:* Antibiotics Annual, p. 893, 1959-1960.
3. Reichelderfer, T. E., *et al.:* Antibiotics Annual, p. 899, 1959-1960.
4. Kuder, H. V.: Clin. Pharmacol. & Therap., in press.

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EDITORIALS

Statistics Are All Very Well, But. . .

Many physicians have a curiously ambivalent attitude toward the application of statistical technics to medical practice. Statistical data are readily—often far too readily and uncritically—accepted as the basis for generalizations. Yet they are often resisted as a basis for action in an individual case. Thus a physician may agree that the administration of antibiotics in virus disease is worthless and perhaps even harmful. Yet he will prescribe tetracycline for a child with measles. The explanation for such behavior usually takes the form, "Statistics are all very well, but I'm treating patients, not numbers. Clinical judgment is much more important than a knowledge of percentages."

Yet what is the value of painstaking studies of large numbers of patients if the resultant statistics are not applied to individual cases? Progress in medicine results from the careful testing of a new hypothesis or drug, which leads to "statistics" and a new generalization (for example, "the sudden onset of crushing substernal pain strongly suggests acute coronary occlusion"; "penicillin cures pneumococcal pneumonia"), and to application of the resultant generalization in the management of future cases. If these statistics and generalizations are not applied to the treatment of individual patients, no improvement in medical practice will result.

Clinical judgment is more important than a knowledge of percentages. Of course. But what is clinical judgment? In the final analysis, clinical judgment is a system of statistical correlations, arrived at either consciously and systematically, or subconsciously and randomly. A physician may study intensively the various clinical and laboratory manifestations of disseminated lupus erythematosus. He may analyze his results with formal statistical technics and may find that the prognosis is relatively good so long as the kidneys are not involved. This leads to "clinical judgment,"—"Let's see. The urine is normal. This patient is not in danger although she seems quite ill." Another physician will announce, "This man will die despite all we do. Let's prepare the family." He may be unable to explain why he is so certain of his prognosis; it's "clinical judgment." Yet this is not extrasensory perception. This clinician has learned over many years that certain subtle physical findings are associated with impending death. He recognizes these signs even though he cannot identify them or analyze their relative importance. His prognosis is still the application to an individual case of a set of statistical data, albeit at the subconscious level.

Why is it "good clinical judgment" to perform an appendectomy on a young man whose acute illness is characterized by nausea, right lower quadrant pain, mild fever, tachycardia, tenderness and spasm near McBurney's point, and moderate leukocytosis? Because it is statistically demonstrable that (*a*) a very large percentage of such patients have acute appendicitis and (*b*) that appendectomy is good treatment for appendicitis. Why is it good clinical judgment to ambulate patients soon after abdominal surgery? A generation ago this would have been considered poor judgment. Now the statistics show that patients who get out of bed early get well faster and have fewer postoperative complications.

Medicine is a pragmatic discipline, not a doctrinal one. We use a drug not because it is "good" or "just" or "honorable," but because it is effective. When a new drug comes along which is more effective, we will abandon the old one. In medicine, the end-result justifies the means. Evaluation of the end-result is of necessity a statistical process, whether formal or informal, deliberate or subconscious. If patients could not be classified into groups and if a generalization based on experience with a group could not be applied to an individual, how would we know when to perform an appendectomy in an individual patient, when to administer a drug, or how to make a prognosis?

We should realize that the practice of medicine is governed principally by "statistics," and we should be delighted when we have good statistical data to guide our treatment of the individual patient. Our problem is not that there is too much statistics in medicine, but that there is not enough. In too many areas reliable statistics are not available. As a result, we don't really know how to treat individual patients. In such cases, we must follow our hunches and do the best we can, recording the outcome carefully and objectively so that we may eventually add our accumulated experience ("statistics") to the body of medical knowledge.

In many cases the wrong conclusions are drawn from medical statistics. A common error is generalization from a selected and biased sample of the entire population. For example, it has been commonly said that 5 to 15 per cent of all nodular goiters are malignant. This is not true. The statistics show that 5 to 15 per cent of all nodular goiters *referred for surgery and operated on* are malignant. There is now overwhelming evidence that, as one might expect, the incidence of thyroid cancer is much lower among the nodular goiters which are *not* referred for surgical removal. The error here is not in the statistics, but in the unjustified conclusion drawn from them. Such misinterpretation is no more a reason to oppose the use of statistics in medicine than is misinterpretation of a cardiac murmur a reason to discard the stethoscope. We must learn to use our tools properly. If we believe that certain statistical data are unreliable, biased, irrelevant, or not applicable to certain categories of patients, we should announce our disbelief, expose the bias, point out the irrelevancy, limit the application—but we should not evade the issue and retard progress by saying, "Statistics are all very well, but . . ."—J. E. S.

What Is Meant by Malpractice?

The United States Circuit Court of Appeals, First Circuit, in reversing a lower court judgment against a deceased physician defined the meaning of the term "malpractice" in a very interesting decision based on a rather bizarre set of facts.

The circumstances as developed at the trial were that in October, 1948, the plaintiff was visiting her son, his wife, and their two children, aged thirty months and fifteen months, who then lived in the state of Maine. While she was there, the oldest child became ill and its mother made an appointment for the physician in question to perform a physical examination of both children. The plaintiff-grandmother accompanied the children and her daughter-in-law to the physician's office. During the physicial examination the doctor, who enjoyed an excellent reputation as a physician and a specialist in pediatrics, asked whether or not the children had been vaccinated. The mother then agreed that he should vaccinate them against smallpox. The only other person in the physician's office was a receptionist in another office; there was no nurse. The doctor requested that the plaintiff-grandmother, who was holding the younger child, place her on a stool and hold her there.

The plaintiff-grandmother assumed a position at the right of the child and facing in the same direction and placed her right hand on the child's right hip and her left arm around the child's waist and her left hand at the child's left hip. The palm of each hand was against the child, the thumb grasping the child's back and the fingers extending forward.

The physician then administered a vaccination high on the child's left arm. He then dropped his hand abruptly, said, "She is through," whirled, and went into another room. The daughter-in-law described the doctor's movements as very quick and his manner as brusque. The plaintiff, after the doctor left, held out her hand and said: "Look, he stuck me." The daughter-in-law observed a puncture at the base of the index finger and blood thereabout and gave the plaintiff a cleansing tissue to place over it. The records of another physician, a Dr. Adams, who subsequently treated the plaintiff, showed that she told him that the child had moved and she, in trying to control the child, had put her arm around it and thus struck the needle which the doctor was holding.

The plaintiff was present and watched while the other child, held by its mother, was vaccinated and then left the doctor's office without mentioning her wound to him and returned home. A few days later a redness and swelling of plaintiff's hand at the base of the index finger became apparent, and this became severe and spread somewhat. After nine days she consulted Dr. Adams who found an acute infection which he later diagnosed as severe reaction to a vaccination against smallpox. She remained under his care for about a month, including a short period of hospitalization. At the time of trial she had some residual limitation in movement of her left hand and pain when these limitations were exceeded.

The plaintiff sued the deceased physician's estate, represented by a bank as executor of his estate, on the theories that he had been negligent "because he permitted the plaintiff to hold her grandchild while he was vaccinating the grandchild and did not have a nurse or skilled technician available for this purpose," or "because after he completed vaccinating the grandchild, he turned abruptly away, dropped his hand, and struck the plaintiff."

The action was begun in October, 1954, almost six years after the claimed negligence occurred, and if denominated as ordinary negligence, brought in time under the applicable Maine statutes. The defendant's contention, however, was that the action was barred by the Maine statute of limitations which said: "Actions for assault and battery, and for false imprisonment, slander, libel, and *malpractice of physicians and all others engaged in the healing arts* shall be commenced within *two years* after the cause of action accrues."

The plaintiff claimed that the two-year malpractice limitation did not apply because the plaintiff was not a patient of the deceased physician. The court, however, rejected this argument and said, among other things, that it is obvious that "negligence to a patient" is an unacceptable definition of malpractice since a doctor driving his car down the street might negligently run over a patient without being entitled to the two-year limitation period. The court then went on to say that the true distinction of "malpractice" actions must be "the especial standard of care and skill which the law imposes on a person purporting to practice the art of healing," and "it is clear that no contract is required to impose this standard."

It then concluded "that by 'malpractice' the Maine legislature meant professional conduct of a person while purporting to engage in the healing art which was negligent because it failed to satisfy the standard of professional skill of such persons in the relevant locality."

The court then pointed out that the plaintiff complained of the wound by the needle only because of the vaccine on it, and that the theories of negligence advanced by the plaintiff, as noted above, were based on allegations of professional misconduct limited to the context of medical practice. It directed reversal of the judgment against the physician's estate and ordered dismissal of the action as barred by the two-year malpractice statute of limitations. (*Merchant's National Bank* v. *Morriss,* 269 F. 2d 363).

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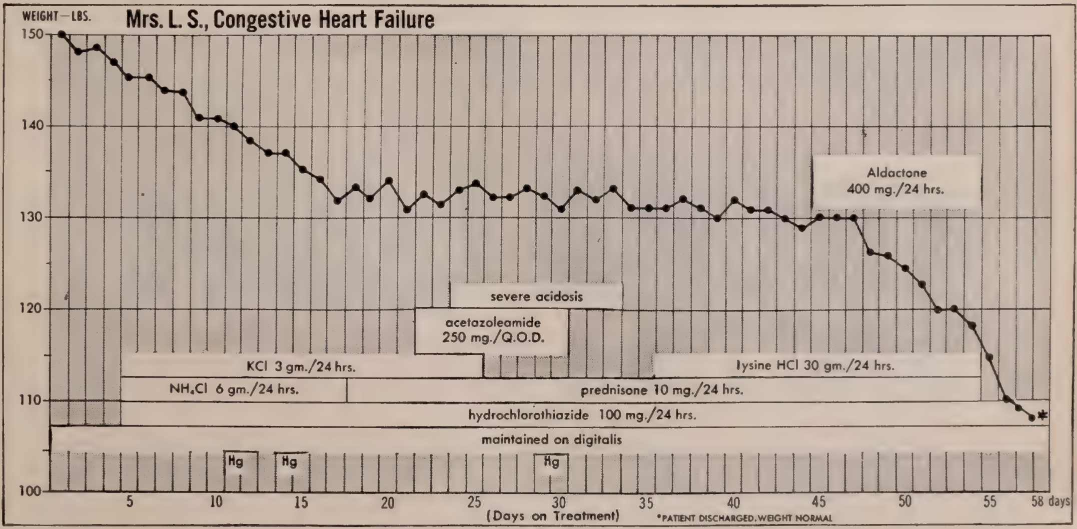

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Pitfalls in the Clinical Diagnosis of Aortic Stenosis

"Seek and Ye Shall Find"

MAXWELL L. GELFAND, M.D., NEW YORK CITY

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THE present-day advances in operative procedures for the treatment of congenital and acquired heart diseases make it mandatory for the clinician to be more exact in the recognition of the type of cardiac lesion present and to understand more fully its physiologic significance to determine whether indications for surgery exist. In most instances the factors which are extremely helpful in arriving at a diagnosis are a careful history and a thorough physical examination, including specific attention to the heart to ascertain its size; the type of rhythm; the quality and nature of the cardiac sounds; the existence of a thrill; and the presence of a murmur with its characteristic intensity, timing, and radiation. Supplemental laboratory data, comprising x-ray examinations, angiocardiographic and cardiac catheterization studies, and the electrocardiogram will complete the cardiac evaluation. Recourse to all these modalities has been rewarded by a high incidence of accurate diagnoses in nearly every type of cardiac disorder, with the exception of aortic stenosis. Necropsy studies by a number of observers, including educators, indicate that only 50 per cent of the cases of aortic stenosis are recognized during life.[1] It would therefore seem advisable at this time to examine once more the clinical manifestations and the course of the disease with the hope of improving our diagnostic acumen. It should be stated at the outset that the major difficulty in the detection of aortic stenosis is the fact that its characteristics vary with the degree of stenosis, and that at times it may exist with only minimal signs and symptoms.

Clinical Manifestations

It is agreed unanimously that aortic stenosis occurs more frequently in men than in women, in a ratio of 3 to 1.[2] The age of the patient ranges from fifty to eighty years, although in a few cases individuals in the fourth decade of life have been found to be suffering from the disease.[2] There is still some controversy as to the cause and pathologic development of stenosis and the calcification of the aortic valve.[3] At first most observers considered aortic stenosis to be arteriosclerotic in origin.[4,5] Later a rheumatic condition was implicated in over 60 per cent of the cases, even in the absence of a past history of rheumatic fever. More recently, chronic brucellosis has been suggested as an etiologic factor. There are some pathologists who feel that arteriosclerotic and rheumatic valvular lesions may be differentiated at autopsy on the basis of the distribution of the calcification. In the rheumatic lesions, they claim that the calcification of the ring extends to the free margin of the valve cusps, while in the arteriosclerotic lesions it does not proceed so far into the valvular area. Undoubtedly, there are patients in whom this valvular deformity is produced by arteriosclerosis alone, but they are certainly in the minority.[5,6] Occasionally an individual is born with such a lesion. Lues is rarely capable of producing this type of anatomic defect.[4] Aortic insufficiency accompanies aortic stenosis in about one third of the cases, and quite frequently the mitral valve is also involved. Multivalvular lesions are far from uncommon, and in these instances a past rheumatic infection can be the only causative factor. The diagnosis here is rarely missed and therefore it will not be discussed.

Most textbooks on cardiology recommend that the diagnosis of aortic stenosis be made only in the presence of the following tetrad of signs: an aortic systolic murmur, an aortic systolic thrill, an absent or diminished aortic second sound, and a pulsus parvus et tardus. Reliance on such strict criteria is probably the most important reason why aortic stenosis is not more frequently recognized during life.

Clinical Course

Generally speaking, the clinical course of aortic stenosis may be divided into two main phases, namely, the asymptomatic phase and the symptomatic phase. In the asymptomatic phase the acoustic signs of aortic stenosis are present, but there are no complaints referable to the cardiovascular system nor signs of overt heart failure. In the symptomatic phase a number of symptoms and signs exist, which many authors have enumerated in order of frequency as follows: chest pain, dyspnea, weakness, cerebral manifestations (that is, dizziness and syncope), peripheral edema, cough, weight loss, anorexia, palpitation, orthopnea, and pulmonary edema. At times a number of these symptoms and signs occur simultaneously in a single patient, but the most common combination encountered is the triad of angina, dyspnea, and effort syncope.

Chest Pain.—Chest pain may be typical of angina. Aggravated by exertion or by the injection of food, the pain radiates to the left shoulder and left arm, and relief is obtained by administering nitroglycerin. Chest pain can also be atypical, in that it is located in the chest or back and is not influenced by exertion, but at times it becomes worse after meals.[2,7–10] When the diagnosis of angina pectoris is obvious, it should be made, since many necropsy studies of aortic stenosis have indicated a high incidence of atherosclerosis of the coronary vessels with or without occlusion.[1,3] However, the latter need not always be present, since in about 25 per cent of the cases where angina existed, the coronary tree was found to be free from any involvement.[1] It would seem, therefore, that the chest pain may be due either to the disease itself or to an associated coronary atherosclerosis. When the chest pain is due to the disease itself, it may be attributed, on purely mechanical grounds, to insufficient coronary filling; when it is due to an associated coronary atherosclerosis, it is a result of myocardial ischemia on the basis of coronary sclerosis.

Cerebral Symptoms.—Cerebral symptoms deserve some comment, since they are often present in this condition, and frequently they are overlooked. Dizziness and syncope are complaints well known to most clinicians, and patients are frequently questioned about them. What is frequently ignored is the fact that definite episodes of cerebrovascular accidents with hemiplegia may occur in aortic stenosis. These episodes may be due to repeated cerebral ischemia with infarction of the brain or to an independent associated vascular thrombosis of a cerebral vessel.[1]

Acoustic and Other Signs of Importance in the Diagnosis of Aortic Stenosis

The acoustic signs of importance in aortic stenosis are the systolic murmur at the base and the intensity of the aortic second sound. Less significant, according to some observers, is the narrow pulse pressure, and least noteworthy is the mean blood pressure, which is alleged to be small unless regurgitation also exists. Additional physical signs include a basilar thrill, which may or may not be present always, depending on the loudness of the murmur, and an apical thrust indicative of left ventricular overactivity.

The Systolic Murmur.—The literature contains a considerable amount of discussion concerning both the intensity and radiation of the systolic murmur in aortic stenosis. Many authors have indicated that there is a direct relationship between the intensity of the murmur and the degree of stenosis,[2] but this does not always hold true, particularly when failure sets in.[8,11–13] The louder the murmur, the more likely is a thrill to be palpable. As a rule, the systolic murmur which is audible at the base is transmitted to the neck, but in a significant number of instances this murmur radiates to the apex where it may be more intense. A high-pitched musical or squeaking murmur heard best at the apex and radiating to the base has occasionally been observed in calcific aortic stenosis, and at times it will be detected exclusively at the apex.[14, 15]

The Diastolic Murmur.—As mentioned before, a diastolic murmur indicative of aortic incompetence may be present in about one third or more of the patients with aortic stenosis. In spite of the fact that the very definition of the term would lead one to expect a murmur, several patients have been encountered who presented no murmur but who, at necropsy, demonstrated significant aortic stenosis.[1] It must be remembered that in congestive heart failure murmurs may be considerably modified as to quality, timing, and radiation; in such instances, attempts to identify the type of valvular lesion merely on the basis of auscultation are subject to some error.[12] The diamond-shaped murmur, although considered almost specific for aortic stenosis, is by no means pathognomonic. Actually it is an ejection murmur and may also be heard in coarctation of the aorta, in pulmonic stenosis, in some ventricular septal defects, and in other conditions.[16]

The Second Aortic Sound.—The second aortic sound constitutes another controversial point deserving comment. On theoretical grounds, it seems unlikely that calcified aortic valve cusps could close with sufficient vigor to produce a second sound. Hence, it is not surprising that the early writers based their diagnosis of aortic stenosis on a diminished or absent second aortic sound. However, more recent studies, in which the postmortem material was correlated with the clinical findings, have shown clearly that this need not always be the case. There have been a number of instances where marked stenosis of the valves was revealed at autopsy, whereas during life the aortic second sound was either equal to or actually greater than the pulmonic second sound.[1,2,17,18] Thus it is now generally conceded that the intensity of the aortic second sound in itself is not indicative of the degree of stenosis or calcification of the valves, and that the diagnosis of the condition does not actually demand its absence or attenuation. The weakness or nonexistence of a second aortic sound is considered helpful in the differentiation between the murmur of calcific aortic stenosis and that either of luetic aortitis or of atheroma of the aorta. In the latter two conditions the second sound is almost always accentuated and possesses a tambour-like quality.

The Basilar Systolic Thrill.—A basilar systolic thrill, usually best demonstrated with the patient leaning forward and with the breath held in expiration, is present in the majority of cases of aortic stenosis. However, it is apparent that the thrill will depend on the intensity of the vibration within the heart, as well as on the distance of the palpating hand from the source, and this distance may be increased by a thick chest wall or by emphysema. Hence the thrill may occasionally be imperceptible, and its absence need not preclude the possibility of stenosis.[3]

Pulse Pressure.—The small pulse rising slowly to a delayed summit (pulsus parvus et tardus) which Lewis[19] considered essential for the diagnosis of aortic stenosis, is no longer so regarded by every observer.[18,20] While a narrow pulse pressure is frequently encountered, this is not always the case, since its occurrence will depend on the relative degree of stenosis and regurgitation and on the presence or absence of associated hypertension. The latter condition is very often in evidence, although at first it was thought that the two conditions, namely, calcific aortic stenosis and hypertension,[1,3,18] could not coexist.

Disturbances of Conduction.—There have been many reports on the disturbances of conduction in aortic stenosis.[1–3,18] Heart-block has been attributed to an invasion of the conducting tissue by an extension of calcification from the valve.[21] Bundle-branch block, smaller degrees of intraventricular block, and, very rarely, auricular fibrillation have also been mentioned. When auricular fibrillation is present, the prognosis is usually poor, although episodes of paroxysmal auricular fibrillation need not be so serious an omen. As a rule, these abnormalities are not too common, and their presence is not specific for the lesion itself, but rather for its basic etiologic factor or associated disease.

Cardiac Enlargement.—Cardiac enlargement is a very common clinical finding, and almost all necropsy studies have confirmed hypertrophy of the heart.[1–3,17,22] Usually electrocardiograms taken in such patients verify the presence of left ventricular hypertrophy. Other significant data observed electrocardiographically include the following: T-wave alterations, intraventricular or bundle-branch block, complete heart-block, shifting auricular pacemaker, and auricular fibrillation. These data merely prove that conduction disorders, as well as myocardial damage, may exist in aortic stenosis, but their presence offers no aid whatsoever in the final diagnosis.

Calcification of the Aortic Valves.—X-ray visualization of calcification of the aortic valves is an important aid frequently neglected in the diagnosis of aortic stenosis. In the first place, it must be remembered, according to recent demonstrations by cardiac surgeons, that the majority of patients with aortic stenosis have calcified aortic cusps, and, second, that once this fact has been ascertained, there can be little doubt as to the presence of aortic stenosis.[20,23,24]

The two methods of demonstrating intracardiac calcification are by fluoroscopic visualization and by radiographic examination. Fluoroscopic visualization is a rather tedious procedure, requiring considerable time for the accommodation of the eyes in the dark room, and it is subject to considerable error, particularly in the presence of cardiomegaly. In addition, its greatest drawback is the fact that it cannot be recorded permanently. Radiographic examination, although considerably more accurate and already in common use by many workers, has not enjoyed the recognition it deserves.[21,23-25] It is very likely that the presence of a variety of confusing shadows, such as Ghon tubercules, calcified lymph nodes, and other extracardiac densities not properly interpreted have detracted from its popularity and usefulness. To overcome this weakness, special technics with overpenetrated films and planigraphy have been introduced with added success.[20,23,25] However, these approaches are not always available in the course of a general cardiac evaluation. The author has studied many cases of aortic stenosis radiographically in the routine right lateral position and has been able to demonstrate the presence of calcification of the aortic cusps in such patients.[24] It will prove rewarding to have an awareness of the locality on which to concentrate the attention when reading a right lateral chest film. The circular area, about the size of a half dollar, with its center at the point of intersection between a vertical line bisecting the diaphragm from the anterior border of the spine to the sternum and a horizontal line bisecting the heart from the inferior border of the aortic arch to the diaphragm, is where calcification of the aortic valves will be seen in the right lateral chest position.

Prognosis

The prognosis of aortic stenosis depends on the phase of the disease. Albutt's statement in 1909,[26] "Aortic stenosis is a long disease, for life may continue under favorable circumstances until the aperture is reduced to the size of a crow quill or less," still holds true today. The importance of age for the prognosis has been stressed often, for if the condition is discovered early, the outlook may be considered good. However, many patients have been found to be in the sixth, seventh, and even eighth decades of life. The most sensitive indicator of approaching death is the presence of congestive heart failure. Once this develops, life does not continue too comfortably, and death supervenes within twelve to eighteen months despite all the newer therapeutic methods for a failing heart. Occasionally patients have survived as long as five years after the beginning of cardiac decompensation, but this is not the general rule. One such case was observed by me.

Causes of Death

The causes of death in aortic stenosis are heart failure, acute coronary occlusion, subacute bacterial endocarditis with all its complications, and unexplained factors leading to sudden exitus. The incidence of unexplained factors is anywhere from 10 to 15 per cent, and is in no way related to the degree of aortic stenosis. Death occurs precipitously, without any preliminary warning, often when the patient appears at his best. In most instances it cannot be differentiated from the sudden death that occurs in acute coronary thrombosis. At necropsy the coronary arteries in many of these patients are usually found to be intact, thus excluding thrombosis as the causative factor. A hypersensitive carotid sinus has been suggested by Marvin and Sullivan[27] as a possible explanation of the precipitous end, but many other observers disagree with this assumption. Although the mechanism of the catastrophe is far from clear, most workers feel that the marked cardiac hypertrophy which is usually present in aortic stenosis is responsible in itself for the rapid development of either ventricular fibrillation, flutter or cardiac standstill, and death.

Summary

It is therefore evident from the material presented that the clinical recognition of aortic stenosis is by no means an easy task. As a matter of fact, the diagnosis is more often overlooked than made erroneously. The often-quoted tetrad of signs previously referred to has proved to be an excellent working rule. Very often, however, the four signs do not occur simultaneously, so that strict reliance on this combination may be misleading. To improve our diagnostic acumen, we must suspect the presence of aortic stenosis whenever a significant systolic murmur is audible, either at the base or at the apex. Once we are cued to this disease, further investigations should be carried out. To help corroborate our original suspicion, we must do the following: make a careful study of the size of the heart by x-ray technic with special emphasis on the right lateral position to demonstrate calcification of the aortic cusps, complete a special review of the case history to determine the existence of symptoms of cerebral deficit or angina, and present a demonstration of the characteristic carotid pulse curve by the neck-cuff method. However, absolute confirmation of the existence of a dynamic aortic stenosis can be achieved only when the pressure within the left ventricle exceeds the systemic pressure, as determined by left-heart catheterization.

60 Gramercy Park, New York 10

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To speak kindly does not hurt the tongue.—French Proverb

Acrodermatitis Enteropathica: Another Inborn Error of Metabolism?

Follow-Up Case Reported in 1955 and Review of Recent Literature

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(From the New York University Medical Center)

In 1955, Sobel and I[1] reported a case of acrodermatitis enteropathica in an Italian boy aged four years whom we had observed since 1953.

Early Case Report

The boy presented the characteristic features of the disease, which consisted both of a cutaneous and of a gastrointestinal disturbance which were subject to simultaneous exacerbations and remissions. A most conspicuous feature was the alopecia of the scalp. The scalp had been covered with fuzzy hair since birth and had not changed essentially since then (Fig. 1). The eruption started at the age of three months with perianal and intergluteal erythema, which a few months later had extended and exacerbated into an erythematous vesiculobullous pustular eruption. It involved the gluteal area, penis, fingers, hands and forearms, toes, feet, knees, and popliteal spaces (Fig. 2 A and B). The distal phalanges were edematous and thickened, and the nails were brownish-discolored, distorted, and associated with severe paronychia. There was blepharitis, angular stomatitis, and involvement of the nasal orifices. The buccal mucosa showed reddish and white spots, and the tongue was covered with a thick white fur. During the period of exacerbation the eruption on the feet became so severe and painful that the child had difficulty in walking. In the period of remission the acute inflammation subsided gradually, and the lesions became drier, scaly, exfoliating, and psoriasiform (Fig. 3A and B). With further improvement in the general condition the lesions assumed the appearance of lichen simplex chronicus and became hyperkeratotic (Fig. 4).

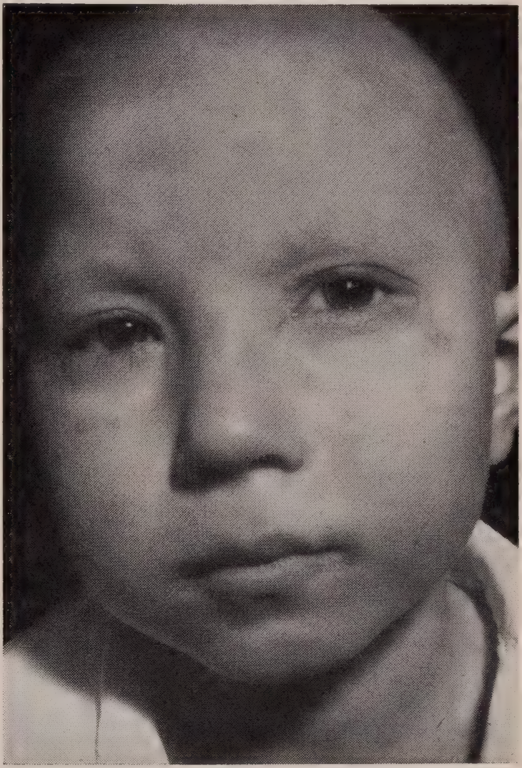

FIG. 1. Alopecia, perlèche, and blepharitis. Note sad appearance.

The gastrointestinal disturbance manifested itself at the age of six months and consisted of abdominal discomfort and diarrhea, with four or five daily bowel movements and marked anorexia. The child became apathetic and withdrawn, and his unhappy, pitiful appearance contrasted sharply with his cheerfulness during remission. Although there was considerable improvement during remission, the illness never receded completely.

Chairman's address, presented at the 154th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Dermatology and Syphilology, May 10, 1960.

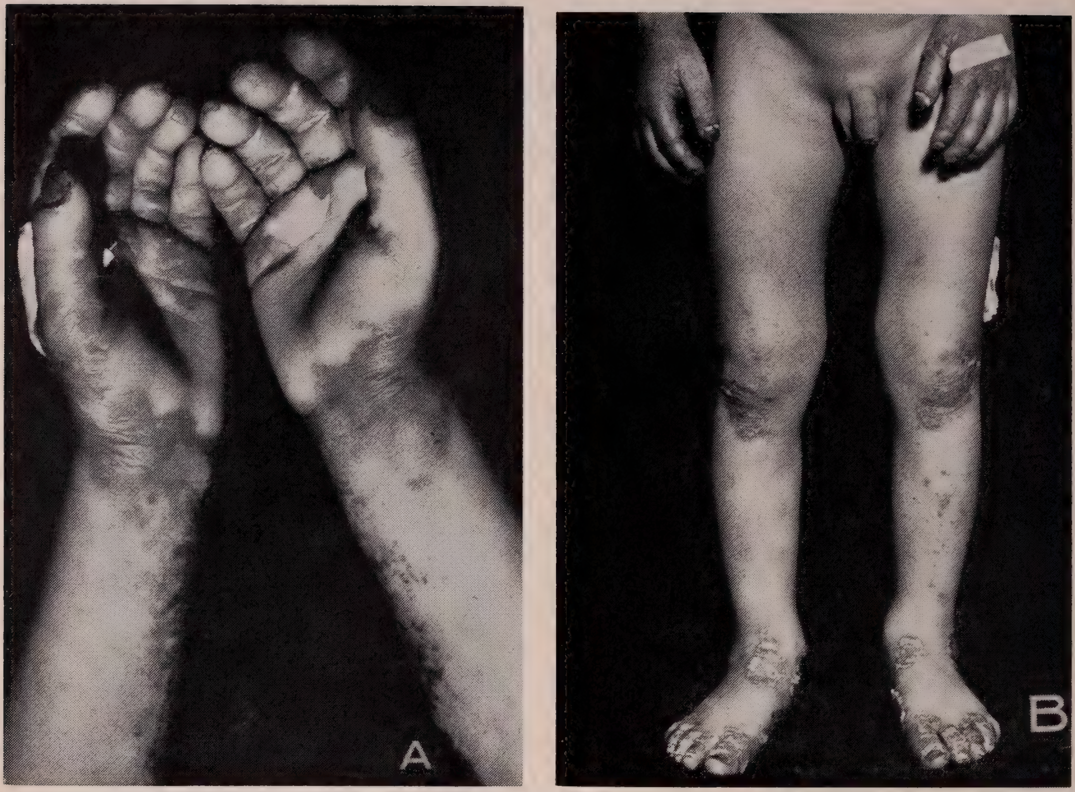

Fig. 2. Eruption in stage of exacerbation. (*A*) Note swelling of fingers. (*B*) Involvement of feet, knees, and hands.

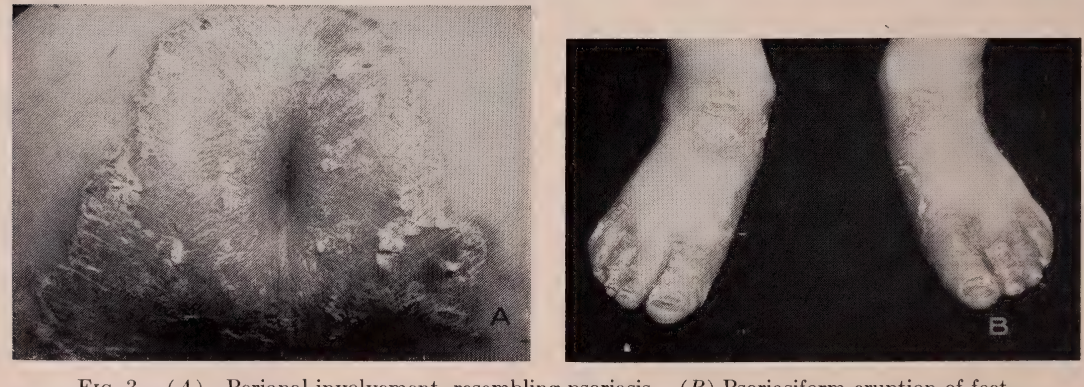

Fig. 3. (*A*) Perianal involvement, resembling psoriasis. (*B*) Psoriasiform eruption of feet.

The boy, who had lived in Italy until shortly before consulting us, had been seen by many dermatologists, who diagnosed the disease as a "rare type of cutaneous moniliasis," or as "eczematoid dermoepidermitis and aphthous stomatitis." The alopecia was considered to be unrelated to the cutaneous eruption. Treatment with potassium iodide and antimycotic agents had given only partial and temporary relief.

Laboratory studies performed at that time consisted of urine analysis; blood cell count; determinations of serum calcium, phosphorus, nonprotein nitrogen, albumin and globulin, blood sugar; glucose tolerance test; and lipid partition of blood and feces. All these tests gave normal findings. The sedimentation rate was increased to 42 mm. (normal 10 mm.). Cysts of Giardia lamblia were found in the feces, but no patho-

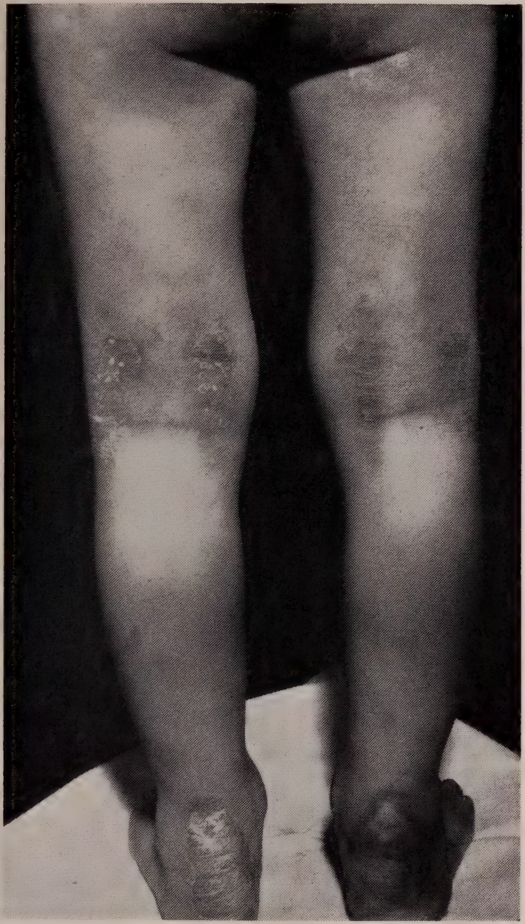

FIG. 4. Eruption in remission.

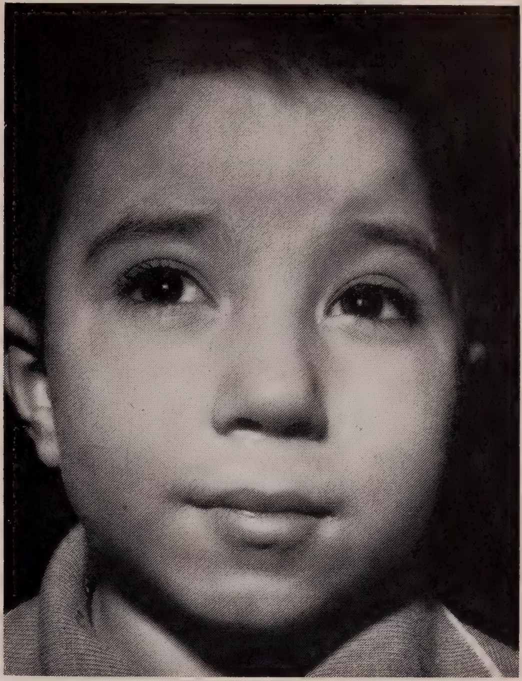

FIG. 5. Note growth of hair following administration of diiodohydroxyquinoline.

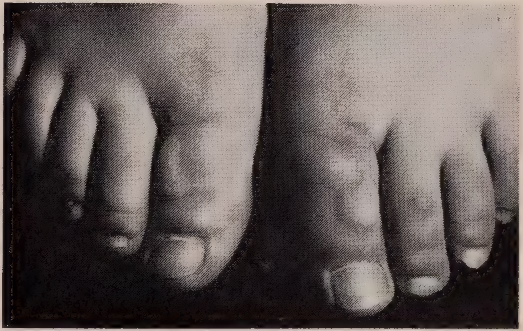

FIG. 6. Bulla on each big toe, which followed regularly a reduction in the dosage of diiodohydroxyquinoline.

genic bacteria or Candida albicans. Later examinations of the feces revealed on only one occasion a few cysts of Giardia, and on two occasions Candida albicans could be cultured.

After many kinds of medication had failed to benefit the patient, diiodohydroxyquinoline (Diodoquin) was administered and gave a dramatic response to a daily dosage of 840 mg. Not only did the cutaneous and gastrointestinal symptoms subside entirely, but also there was a complete growth of hair on the scalp (Fig. 5). When the child was seen three months after discontinuation of the use of diiodohydroxyquinoline he was still perfectly well and had gained in weight. However, soon after this the disease relapsed and administration of the drug had to be resumed.

Follow-Up of the Patient Since 1955

After that diiodohydroxyquinoline had to be administered continuously at a dosage of 840 mg. a day. Any reduction in the dosage, which was tried on numerous occasions, was followed, within one or two weeks, by a relapse in the disease. When the dosage was reduced drastically or use of the agent was discontinued entirely, the parents, alarmed by the recurrence of the eruption, particularly by the painful dermatitis of the feet, increased the dosage or resumed the administration of diiodohydroxyquinoline before they returned with the child to the clinic. On several occasions we have noticed the appearance of perianal erythema and bullae over each big toe and Achilles tendon as the first signs of recurrence of the disease (Fig. 6). On one occasion, when the drug was withheld for three weeks, sharply defined semicircular erythematovesicular plaques developed in the groins, from which Candida albicans was cultured. Marked abdominal symptoms have not been observed since our last report, owing to the fact that the medication was never discontinued for a long enough period of time to permit the disease to develop fully.

At the end of 1955, a gradual diminution in the effect of diiodohydroxyquinoline was noticed. The dosage of 840 mg. a day proved insufficient and had to be raised to 2,600 mg. to obtain complete control of the symptoms. Since then, a decrease in this dosage has resulted regularly in recurrence of the eruption. At times the agent was replaced by other drugs, namely by Mycostatin and by Sulfasuxidin, but both these drugs had to be discontinued since they were of no benefit. However, since 1959, another drug has proved to be of value equal to diiodohydroxyquinoline, namely, iodochlorhydroxyquin (Entero Vioform), the minimum required dosage of which was 750 mg. a day.

ADDITIONAL LABORATORY STUDIES.—In August, 1957, the boy was admitted to the University Hospital for further laboratory studies. These consisted of examination of the blood for amylase, lipase, lipid partition, urea nitrogen, calcium, and phosphorus and for sugar, vitamin A, and carotenoid tolerance. The feces were examined again for lipid partition and for meat fibers. All these tests gave normal findings. While doing a gastrointestinal series a duodenal ulcer was discovered, although the patient had no related symptoms. No other abnormality of the intestinal tract was noted.

The external pancreatic secretion was analyzed by William Berger, M.D., who performed a duodenal intubation. He found moderate deficiency in the secretion of lipase and possibly protease. The secretin test was unsatisfactory. The duodenal secretion was examined for Giardia lamblia, but no organisms were found.

Recently, Stephen Rothman, M.D., of the University of Chicago, was kind enough to inform me about the procedure in a test for pancreatic function by means of radioactive protein which he mentioned in a discussion on moniliasis at the Cleveland Dermatologic Society.[2] In this test I^{131}-labeled albumin is administered orally to the patient, and the urine collected during twenty-four hours is measured for the amount of excreted radioactivity, which is supposed to be a direct measure of the proteolytic function of the pancreas. Sidney Rubenfeld, M.D., was kind enough to have this test performed twice on our patient at his isotope laboratories at Bellevue Hospital. In the first test the urine was found to contain 0.3 per cent and in the second 15 per cent of the ingested radioactivity. These results indicate a marked abnormality in the state of digestion or absorption and may possibly be due to a disturbance in the proteolytic function of the pancreas. For according to Dr. Rothman,[3] the amount of ingested radioactivity which is eliminated in the urine in twenty-four hours varies in normal individuals between 25 and 75 per cent, and any amount below 25 per cent is considered definitely abnormal.

To verify the result of the radioactive albumin test, a radioactive fat test was performed. The patient was given 50 microcuries of I^{131}-labeled neutral fat, and the blood was examined for radioactivity at two-, four-, and six-hour intervals. It was found that the total radioactivity of the blood at six hours was 0.16 per cent of the ingested amount. This figure is much below that of 10 per cent which is considered a minimum normal. It indicates that the amount of fat absorbed through the wall of the intestine into the blood is abnormally low. This was confirmed by the examination of the feces which were collected during the seventy-two hours following the test meal. The radioactivity of the feces was found to be 13 per cent of the ingested amount, which is a great increase over the maximum normal of 5 per cent.

To find out whether the malabsorption is due to defective splitting of the fat, which is usually caused by pancreatic enzyme insufficiency, or due to a defect in the intestinal mucosa, a similar test was carried out with I^{131}-labeled oleic acid. In this test no radioactivity was found in the blood at two and four hours after the test meal, and only 0.2 per cent at six hours (and a total of 1 per cent at twenty-four hours), in contrast to a minimum of 10 per cent of the ingested radioactivity which is considered normal at six hours. This abnormally low radioactivity in the blood at six hours was first thought to be due to malabsorption of the oleic acid. However, examination of the feces collected during twenty-four hours revealed less than 1 per cent of radioactivity, which indicates perfect absorption of the oleic acid. The blood findings had then to be interpreted as due to rapid absorption of the oleic acid, which had entered and left the blood within two hours after the test meal, before the first blood examination was performed.

CONCLUSION.—The results of these tests, namely, the poor absorption of neutral fat and the perfect absorption of the oleic acid, led to the conclusion that we may be dealing with pancreatic enzyme insufficiency. However, the results of the examination by Henry Doubilet, M.D., at his laboratory at the New York University College of Medicine, revealed no abnormality of the excretory function of the pancreas. For the secretin test and the analysis of amylase, lipase, and the proteolytic enzymes of the pancreas gave normal findings. It was then concluded that we must be dealing with a defect in the digestion of fat due to some factor other than pancreatic enzyme insufficiency.

Review of Recent Literature

Complete knowledge of a new disease entity is obtained only after many cases have been studied as regards the clinical variation of symptoms and course and the pathologic findings, which may throw light on the pathogenesis and etiology.

Since 1955, I have found 12 additional reports or case presentations of acrodermatitis enteropathica in the literature. In addition, I was able, through the courtesy of Beatrice Kesten, M.D.,[4] of the Columbia-Presbyterian Medical Center, to study the history of 2 siblings, who were afflicted with this disease, 1 of whom had died in early infancy. These cases reiterate again and again the striking characteristic symptoms and strengthen the generally accepted view that acrodermatitis enteropathica is a definite disease entity, the pathogenesis of which requires elucidation. In reviewing these cases attention is given to special aspects which are relevant to the clinical features and pathogenesis of the disease.

VARIATION OF CLINICAL FEATURES AND RESPONSE TO THERAPY.—While the oldest patient in a previous summary of cases[5] was eleven and a half years of age, 2 patients reported recently were eighteen[6] and forty-six years[7] old respectively. The latter was a woman who suffered from a mild form of the disease, and, as in the former case, the onset had been in infancy and had continued into adult age with exacerbations and remissions. In both cases the disease apparently became milder with age.

Most of the reports confirm the controlling effect of diiodohydroxyquinoline. The lack of satisfactory response in 1 case[6] may have resulted from insufficient dosage, for the required dosage may vary in different patients and at different times in the same patient. The patient discussed by Hodgson-Jones[8] needed 2.4 Gm. a day, while in my patient 2.6 Gm. was the necessary dose. Another drug was found to be as effective as diiodohydroxyquinoline, namely, iodochlorhydroxyquin, which is reported by two authors[9,10] and was also my experience. In 1 case[10] 5,7-dichloro-8-hydroxyquinaldine (Sterosan) was not effective, and in another, benefit was obtained from chloroquine diphosphate.

So far, it seems that most patients, as in my case, require continuous administration of the drug to be free of symptoms. Lorincz[11] states that he knows of 3 unpublished cases, in which continuous administration of diiodohydroxyquinoline is required. However, according to information obtained from Dr. Rothman,[12] the patient reported by Dillaha and collaborators[5] seemed to be still well several years after the drug had been discontinued, although the parents had administered the drug from time to time when they noticed the appearance of blepharitis. The patient described by Piper[7] was still well nine months after the use of diiodohydroxyquinoline had been discontinued.

HEREDITY.—There is no doubt that acrodermatitis enteropathica is a hereditary disease with a recessive mode of transmission. In addition to our previous report, in which out of 25 cases 8 occurred in siblings and in 4 there was consanguinity of the parents, there are 6 more cases reported in siblings, namely, those described by Danbolt,[13] Vedder,[14] Sundal,[15] Kesten,[4] Piper,[7] and Lever.[16] In the case reported by Piper,[7] there was also consanguinity of the parents.

Postmortem Examinations.—In addition to the autopsy finding in the case reported by Ugland,[17] which was mentioned in the previous report as that of cystic fibrosis of the pancreas, there are added in this review the findings of 2 more postmortem examinations. In the case reported by Danbolt[13] the sibling, who died at the age of one year, had erosions of the mucosa of the sigmoid and ascending colon and fatty degeneration of liver cells. In the case given by Kesten,[4] 1 sibling died at the age of three and a half months, and postmortem examination revealed overwhelming septicemia, a lung abscess, and pneumonia due to Pseudomonas aeruginosa. The small intestine and colon showed an extremely pale thin wall, and the pancreas also was noted as being very pale.

Mycologic and Bacteriologic Findings.—The manifestation of monilia infection, which is present in the majority of cases of acrodermatitis enteropathica, is considered by most authors as only one of many features of the disease, but not of primary causative importance. Several facts which speak in favor of this view have been mentioned previously by different authors. One fact which I wish to emphasize, is the absence of monilia infection in several typical cases. In addition to the cases mentioned by Dillaha,[5] no monilia infection was present in 2 recent cases appearing in the literature[10,18] and in the case reported to me by Kesten.[4] In the latter case, no Candida albicans could be cultured from the skin lesions or feces of the 2 affected siblings. Monilia infection in acrodermatitis enteropathica must be considered a result of lowered vitality of the tissues which predisposes the patient to mycotic and bacterial infection. Thus in the case described by Hodgson-Jones[8] "frequent bouts of secondary infection" with Staphylococcus pyogenes were noted, and of the cases presented at the Eleventh International Congress of Dermatology,[6] 1 had pulmonary tuberculosis and another[18] showed in the skin and stools an "abundant growth of beta hemolytic streptococcus and Staphylococcus aureus." In the case described to me by Kesten[4] the sibling who died of sepsis had hemolytic Staphylococcus aureus and Pseudomonas aeruginosa in the blood and skin lesions.

Comment

Acrodermatitis enteropathica is to be considered a hereditary disease entity with definite clinical features, one of which is proneness to monilial and bacterial infection. At the present state of our knowledge, a definite diagnosis of acrodermatitis enteropathica is justified only when all the characteristic symptoms are present, namely, the peculiar eruption and gastrointestinal disturbance with simultaneous exacerbations and remissions, the peculiar mental state during the period of exacerbation, and the total alopecia. The patient's response to diiodohydroxyquinoline or to iodochlorhydroxyquin may also serve as a criterion of the diagnosis. A valuable differentiating point is the recessive mode of inheritance. For instance, in the case reported by Lever[16] in which 2 siblings were affected with acrodermatitis enteropathica, but a sister and the mother showed only symptoms of monilia infection and no other features of the disease, one may reject the notion that these family members had also acrodermatitis enteropathica but in a mild form. On the basis of the fact that in none of the cases reported so far is there any indication of a dominant mode of inheritance, one is justified in diagnosing the cases of the mother and of the sister as moniliasis and not as a forme fruste of acrodermatitis enteropathica. Although it is conceivable that in some cases the clinical syndrome may not be manifested fully, and we may, nevertheless, be dealing with this disease, it is preferable to make the diagnosis only when the full syndrome is manifested, as long as the basic pathogenetic factor is unknown.

The original contention of Danbolt and Closs,[19] who coined the term "acrodermatitis enteropathica," was that we are dealing primarily with some disturbance of the gastrointestinal tract which is responsible for the manifestations of the disease. This concept has been generally accepted. However, we are far from knowing the exact nature of this intestinal defect. The statement of Brandt[20] that the pathogenetic factor may possibly be a disturbance in the absorption of certain foods, particularly fats; the presence of steatorrhea in the first 2 cases described by Danbolt and Closs[19]; and the postmortem findings in the case reported by Ugland[17] direct our attention to the possibility that faulty digestion or poor absorption may be the basic underlying factor. Another report worthy of attention is that by Ilić and Lalevič[9] who found a low fat content in the blood of their patient, although the exogenous pancreatic ferments in blood and bile were normal in amount.

I believe that the study of my patient has brought us perhaps a step nearer to the elucidation of the pathogenesis of acrodermatitis enteropathica. The results of the radioactive protein and fat tests, in addition to the analysis of the pancreatic secretion by duodenal intubation and the secretin test, led us to the conclusion that we are not dealing with pancreatic enzyme insufficiency, nor with malabsorption due to a defect in the intestinal mucosa, but with a defect in digestion due to some factor other than faulty pancreatic external secretion.

These findings have, of course, to be confirmed by similar studies in other cases of acrodermatitis enteropathica. The extension of investigations in this direction may enlighten us concerning the exact nature of the digestive defect.

There is a type of malabsorption of fats and other nutrients which is also hereditary in nature, namely, celiac disease. Acrodermatitis enteropathica differs from celiac disease by clinical and pathologic features. However, like celiac disease, it may be considered another "inborn error of metabolism."[21]

Summary

A follow-up report is given on a case of acrodermatitis enteropathica that was first reported in 1955, and the recent literature is reviewed.

The role of moniliasis is discussed and facts are enumerated in favor of the view that it is one of the features of acrodermatitis enteropathica but is not of causative importance.

Tests with radioactive protein and with fat, in addition to the analysis of the pancreatic secretion, led to the conclusion that the basic pathogenetic factor in acrodermatitis enteropathica is a faulty digestion due to an unknown factor other than pancreatic enzyme insufficiency.

Like celiac disease, acrodermatitis enteropathica may be considered as another "inborn error of metabolism."

Acknowledgment.—The author acknowledges with thanks the interest and cooperation of Henry Doubilet, M.D., and Sidney Rubenfeld, M.D.

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ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

Comparative Study of Healing of Organic and Anorganic Bone Grafts

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IN THE search for an ideal bone-grafting material the induction of little host tissue reaction and the prompt acceptance of the graft by the host are some of the desired properties sought. By using anorganic bone-grafting material[1,2] and versene-decalcified bone we have attempted to elucidate the reaction of the host toward grafted bone in the healing process.

It is the aim of this study to investigate the reaction produced by these two materials, composed either of only the bone's inorganic constituents in their natural lattice or of only the organic matrix of bone.

Method

Next to the parietal bones of seven-week-old Wistar rats were grafted versenated or anorganic grafts. In each rat the periosteum was removed, and after hemostasis was accomplished the graft was held in place by 5–0 multistrand stainless steel wire. The skin was closed with 5–0 continuous silk suture. Both of these suture materials were chosen because of their relative absence of tissue reaction-producing properties.

The versene-decalcified graft was prepared from the calvaria of litter mates of the host. The periosteum was removed from the graft. Decalcification with 4 per cent dihydrogen disodium versinate, pH 4.6, was accomplished in a minimum of three days. The grafts were left in this solution until an operation was to be performed, at which time they were washed with Tyrode's solution.

The anorganic bone was prepared from human femur bone by distillation with ethylene diamine in a Soxhlet's apparatus after the method of Williams and Irvine.[3] This was kindly provided by Capt. George W. Hyatt of the Naval Medical Research Institute, Bethesda, Maryland. The anorganic bone graft was also washed with Tyrode's solution before it was inserted in the host animals.

A total of 112 animals was used, 74 implanted with anorganic grafts and 38 with versene-treated grafts. At seven, ten, fourteen, twenty-one, and twenty-eight days after implantation, the host animals were sacrificed. Twice the number were included in each of the groups grafted with anorganic bone since two different staining methods were used. Hematoxylin and eosin-stained as well as von Kossa's stained[4] sections were made of the anorganic grafted specimens. Only hematoxylin and eosin-stained sections were made of the specimens grafted with versenated bone.

For each animal, serial histologic sections of the specimen composed of host calvaria, graft, and surrounding tissues exclusive of overlying skin were made. The sections were cut in a sagittal plane. Examination was made of sections at each 450-microns interval through the specimen. Fixation was achieved with 10 per cent nitric acid.

The animals were placed on a diet of Purina Lab Chow. This contains adequate amounts of protein, calcium, phosphorus,

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Presented at the 154th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Orthopedic Surgery, May 11, 1960.

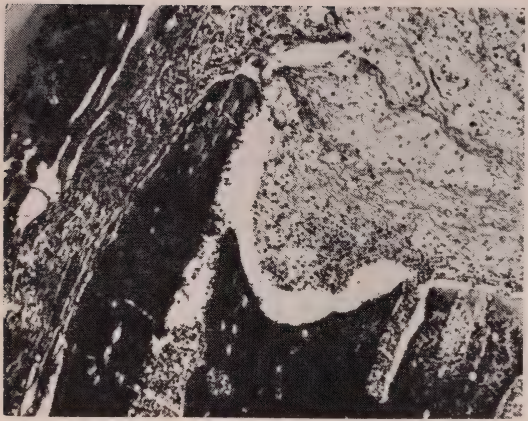

FIG. 1. Anorganic bone grafted specimen after seven days. The parietal bone is in upper left hand corner. The remaining bone is anorganic graft (von Kossa's stain × 100).

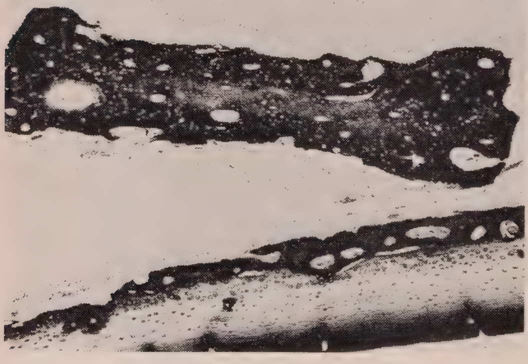

FIG. 2. Anorganic bone grafted specimen after twenty-eight days. In this and in all subsequent photographs parietal bone is on bottom while graft is above (von Kossa's stain × 43).

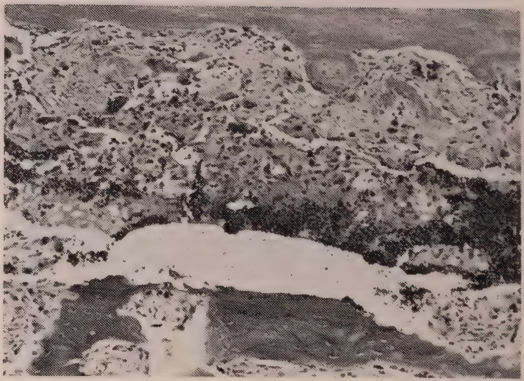

FIG. 3. Organic bone grafted specimen after seven days (hematoxylin and eosin stain × 100).

and vitamins C and D.

Ether was used as an anesthetic agent throughout. Merthiolate and alcohol were used to cleanse the skin. Clean rather than sterile technic was found to be adequate in this study.

Results

Grossly, the anorganic graft in 10 out of 74 host animals was fixed securely to the living parietal bone beneath. In the remainder, the graft was encapsulated by soft tissue and was accompanied by considerable serous exudate. The graft was intact in all cases. The graft site and wound appeared to be clean surgically.

Microscopically, at seven days the anorganic graft was surrounded closely by many polymorphonuclear cells, a few round cells, and very loose vascular connective tissue (Fig. 1). A few giant cells were also noted.

By ten days the number of polymorphonuclear cells declined. More round cells were in evidence. No osteogenesis was yet noted.

By fourteen days the surrounding connective tissue appeared to contain more fibrous elements and fewer cells.

After twenty-one days there seemed to be some lysis of the graft margins.

Finally, by twenty-eight days penetration of the interstices of the graft by fibroblasts and fibrous connective tissue was seen (Fig. 2). A rare osteoclast and many mesenchymal (osteoblast) cells were noted. The connective tissue adjacent to the graft was quite dense. Osteogenesis of the parietal bone adjacent to the anorganic graft was noted in these sections.

The versenated graft, on the other hand, appeared grossly to be well adherent to the underlying parietal bone in all cases. The amount of connective tissue encapsulating the graft was considerably less than in the case of the anorganic graft.

Microscopically, at seven days much loose fibrous connective tissue, polymorphonuclear infiltrate, and giant cell activity

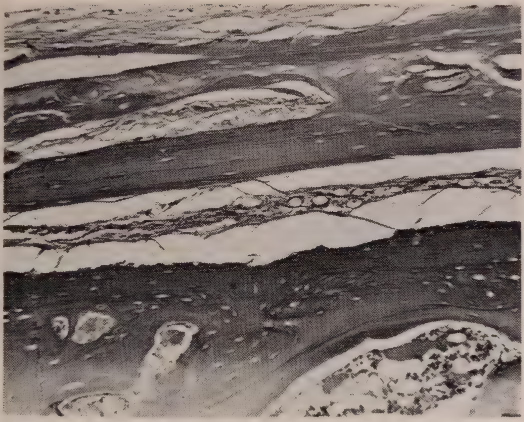

FIG. 4. Organic bone grafted specimen after ten days (hematoxylin and eosin stain × 100).

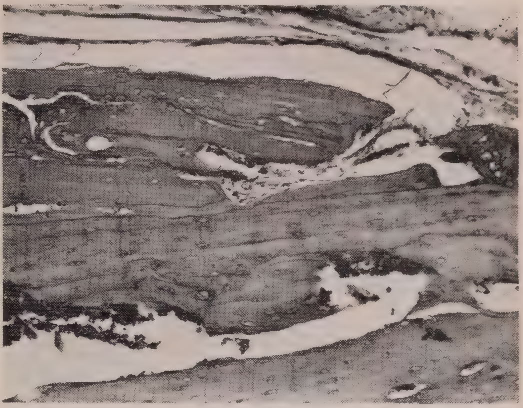

FIG. 5. Organic bone grafted specimen after twenty-one days (hematoxylin and eosin stain × 100).

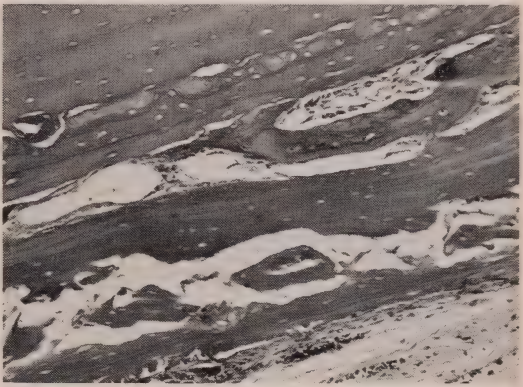

FIG. 6. Organic bone grafted specimen after twenty-eight days (hematoxylin and eosin stain × 100).

were noted (Fig. 3). Lysis of the graft margins was observed.

In ten days penetration of the graft interstices by fibroblasts was noted (Fig. 4). Giant cell activity was still present. Early osteogenic activity of the parietal bone was noted.

At fourteen days osteogenic activity of the parietal bone adjacent to the graft was much in evidence.

By twenty-one days remolding of both the graft and of the parietal bone were noted (Fig. 5), evidencing both the previous osteogenic and lytic activity mentioned.

In twenty-eight days there was apparent osseous union between the versenated graft and the parietal bone (Fig. 6). New bone formation was much in evidence. Mesenchymal cells were noted in the graft interstices. The surrounding connective tissue was not as vascular as it had been two weeks before.

Conclusion

In the case of the anorganic graft after a twenty-eight-day interval, and in the versenated graft after ten to fourteen days, osteogenic activity of the living parietal bone adjacent to the graft occurred. This may have been due to an osteogenesis-producing effect of the implanted material. By removing all the periosteum from the graft and stripping the periosteum widely from the site of transplantation, the factor of the local osteogenic activity of periosteum[5] was eliminated from this study.

It was shown that the anorganic graft material took several weeks longer than the versene-decalcified graft to be incorporated with the host bone.

Histologically, less reaction was observed about the versenated graft than around the anorganic graft. This indicates the possibility that an intermediary process appears first, either decalcification and/or a covering of the lattice by osteoid, before incorporation does occur.

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Discussion

John Manly, M.D., *Brooklyn.*—There is no unanimity of opinion as to which type of stored graft material is most satisfactory. It is, however, fairly well established that autogenous bone is superior to other types. This study is an interesting comparison of two types of bone-grafting material.

The authors seem to show fairly conclusively that the organic matrix is accepted more readily by the host animal than is the inorganic matrix. This would indicate the possible clinical value of decalcified grafts. There has not been too much work on this particular type of graft material, and this work indicates the possible clinical use of this material.

As a side light, the complex problem of the host reaction to the graft is brought up, and again there is evidence that the organic matrix is the superior material. However, the findings here are inconclusive and this in itself may warrant separate study.

Nishi *et al.** of Toho University School of Medicine, in reporting on the transplantation of heterogenic bone at the meeting of The Japanese Orthopedic Association, April, 1959, recommended the use of decalcified heterogenic bone grafts. He indicated that the organic antigens disappeared with the calcium components. The fate of the grafts in the host was essentially the same as has just been reported. Nishi *et al.* reported several instances of success in human subjects.

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* Nishi, Nikuno, and Shoji: Transplantation of heterogenous bone, abstracted, J. Bone & Joint Surg. **42A**: 543 (Apr.) 1960.

ANNUAL CONVENTION

Medical Society of the State of New York
War Memorial Auditorium, Rochester

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Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

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Medical-Legal Problems and Psychiatry

Criminal Cases

JAMES L. McCARTNEY, M.D., F.A.C.P., GARDEN CITY, NEW YORK

PSYCHIATRY is the medical specialty which has the closest contact with the law, but psychiatry is neither as pragmatic, authoritarian, or precise as the law. Frequently the psychiatrist finds himself the tool of the adversary process which is the law. Often, when the psychiatrist testifies for the defense or the prosecution, he is considered to be identified with one or the other, a purchased witness with a resultant diminution in the scientific weight of his testimony.

While a few places have provisions for the use of the impartial psychiatric expert by employing regularly a full-time psychiatric consultant, as in Massachusetts under the Briggs Law, and in Baltimore and New York City, the medical recommendations are very seldom utilized. The psychiatrist's object is not only to establish the responsibility or irresponsibility for the antisocial act, but also to determine whether or not the individual is dangerous, deterrable, and treatable medically or educationally.[1]

Psychiatric testimony may be used with a hypothetic question, or it may depend on the conclusions drawn by the psychiatric expert after a careful and detailed examination of the person in question. The psychiatrist may have to appear before the judge alone, or he may appear in the presence of a jury, but he must be prepared to defend his conclusions. A written report or deposition may be the only statement required, but in submitting such an opinion the psychiatric expert exposes himself to a subpoena for possible cross-examination.

The Insanity Plea

As early as 1724, an English court maintained that a man could not be excused from criminal guilt unless he "did not know what he was doing any more than a wilde beaste," and it took one hundred and nineteen years before the "wilde beaste" test was modified. In 1838, Isaac Ray decried the lack of concordance between stable set law and flexible-moving, hopefully progressive psychiatric knowledge, but it was not until 1843 that the McNaghten Rule was established. It was at that time that a man named McNaghten tried to assassinate the British prime minister, Sir Robert Peel, but, owing to a misaim, he killed a secretary instead. The British criminal court freed McNaghten on the grounds that he had been insane while performing the act. The House of Lords called on the court for a definition of legal insanity, and the court stated that no Englishman could be convicted of a crime if at the time he committed it "he was laboring under such defect of reason as not to know the nature or quality of the act he was doing or not to know that the act was wrong."

This rule is still the law in 47 states and specifies that there can be no defense of insanity if the individual knows the nature and quality of his act, and knows that it is morally wrong. It is evident that this McNaghten Rule is not a nineteenth century effort to isolate the psychotic offenders. Instead, this rule is an effort to pick from the mass of criminal offenders those individuals whom mental illness has rendered nondeterrable by threat of punishment, individuals for whom punishment would not serve as a salutary example in deterring others from similar antisocial behavior.

Even the addition of the relatively modern, well-established doctrine of "ir-

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Delivered at the joint meeting of the Nassau County Medical Society and the Nassau Bar Association, on April 26, 1960, Garden City, New York.

resistible impulse," as pronounced in 1929 by the Court of Appeals in the case of *Smith* v. *the United States*, did little to free the psychiatrist to assist the court. Often the court could not understand this concept, or the concept had to be bent to fit the well-laid plans of the psychotic offender, plans which are certainly far from impulsive. The irresistible impulse is the legal theory that many people first learned about in the book, *Anatomy of a Murder*, by Robert Traverse, in which the theory was used fictionally to win the acquittal of an Army officer who killed the man who had raped his wife. This theory is now the law in the Federal courts and in 14 states. The irresistible impulse has been held as an excuse for a criminal act in which the defendant was "so mentally diseased that he felt impelled to act by a power which overcame his reason and judgment and to him was irresistible."

Although the McNaghten Rule has been in force since 1843, the Durham decision in 1954 by the District of Columbia Court of Appeals allowed a plea of insanity if the existence of a mental disease could be demonstrated, and if the act was a product of that disease. As late as March 25, 1960, Judge David L. Bazelon, co-author of the Durham Rule, urged the liberalization of court procedures in criminal cases involving mental disease so that psychiatrists could testify more freely. Judge Bazelon emphasized that the rule was to avoid legalisms which compel the law to turn a deaf ear to scientific knowledge, insight, and judgment. There are those people who hail this decision as the increased use of enlightened psychiatry, while there are others who feel it could be used by skillful lawyers, employing its literal meaning, to acquit those offenders who should be punished. As a result, the decision has not been adopted in any state.

In 1959, the New York State Bar Association endorsed a new definition of criminal insanity, which would excuse a defendant if, at the time of the crime, "as a result of mental disease or defect, he lacked substantial capacity to know or to appreciate the wrongfulness of his conduct or to conform his conduct to the requirements of law." The Bar Association credits this proposal to a committee named in 1957 by the then Governor, W. Averell Harriman. The action on the proposal was continued by Governor Nelson A. Rockefeller, who has asked for recommendations on legislation by 1962. The recommendations also would make mandatory the commitment to psychiatric hospitals of persons acquitted of crimes on the grounds of mental disease or defect. In a recent speech Judge Bazelon criticized a proposal by the American Law Institute urging the declaration that the diagnosis of a psychopathic personality is not that of a mental disease. He charged that this declaration would freeze a highly questionable medical proposition into a rule of law.

Whether or not one feels that it is too dangerously vague a concept to assume that antisocial acts are the product of mental disease, one cannot help but wish that more lawyers and psychiatrists would recognize the basic truth that the external manifestations of mental disease follow no neat pattern, permitting pat legal definitions suitable for universal application, and must depend on the diagnosis by a psychiatric expert.

The American Psychiatric Association has declared that the ideal system would be one in which psychiatrists would testify as impartial experts and "friends of the court," rather than as opposing prosecution and defense witnesses. Thus, the psychiatrists would be allowed to give full expert explanations about the mental state of individuals involved in criminal acts. These individuals could be questioned by lawyers for both sides not only on matters relevant to mental disease, but also on such legal and moral, but nonmedical, topics as malice, the differences between right and wrong, and criminal intent.

The chief area of concern for the potential abuse of psychiatric testimony under such a nonstructured framework as the Durham Rule is that area which deals with the criminal responsibility of the personality pattern disturbances, sociopathic personality disturbances, and, to a lesser extent, the severe psychoneurotic reactions. Under the McNaghten Rule, persons with such a diagnosis fall into an area intermediate between relative responsibility and irresponsibility. Such persons do not qualify as irresponsible on the basis of the right and wrong test, since they know the nature, consequences, and wrongfulness of their acts. Neither do they qualify clearly as irresponsible under the irresistible impulse test, for they do not disregard entirely the nature of the surrounding circumstances in committing their acts. Psychiatrists cannot help but realize that the acts of these individuals are affected by their abnormal emotional adjustments or maladjustments. Insanity affects not only the cognitive or intellectual faculties, but also the whole personality of the patient, including both the will and the emotions. Often an insane person may know the nature and quality of his act and know that the act is wrong and forbidden by law, and yet he may commit the act as a result of the mental disease.

Cases Encountered in Thirty-Six Years

The first medical-legal case that I encountered was in 1924, when I was asked to examine a man who was arrested for writing pornographic letters to a congressman's secretary. He was obviously a sociopathic personality, but he certainly knew the nature and quality of his acts. Also, that same year I was asked to examine a doctor who killed another man in a schizophrenic fugue owing to an irresistible impulse. Since that time, I have frequently been called on to examine prisoners or offenders against the law under various circumstances as a private practitioner; while working with the city, county, or state governments; or in the services.[2-4]

After examining over 6,360 of these cases, 18 of which involved the charge of murder, I made the following diagnoses: Only 36.2 per cent of the offenders were normal, while 9.8 per cent were suffering from mental deficiency, 4.5 per cent had disorders caused by impairment of brain tissue function, and 2.7 per cent had psychoneurotic reactions which were causative factors. On the other hand, 6.3 per cent of the offenders had psychotic reactions that prevented normal control of their behavior, 3.95 per cent had personality pattern disturbances which had to be taken into consideration in evaluating their antisocial acts, and 36.55 per cent had sociopathic personality disturbances which made each individual an offender and yet in no way prevented him from knowing "the nature and quality of his act."

Shortly after World War II, the District Attorney, who at that time was James N. Gehrig, invited me to act as consultant to his office, as did also the Probation Department and individual attorneys. For the next fifteen years, sometimes at unusual and irregular hours, I was asked to examine offenders of every kind including men, women, and children. Almost every offense was involved, from truancy and incorrigible behavior to nonsupport, petit larceny, sex deviation, and murder. Besides the psychiatric examination and a complete neurologic examination, often it was necessary to do psychometric tests, Rorschach tests, or electroencephalograms.

In 1 case, the district attorney requested me to try to determine if a prisoner was lying when he made a voluntary confession. In some cases, as a result of examination, the person did not go to trial, but was either sent to a psychiatric hospital or put on probation and required to undergo psychiatric treatment. Mr. Gehrig emphasized that in every case I should simply give my findings and diagnoses, but I should never advise the judge as to the disposition of the defendant, for the bench was jealous of this prerogative.

At one time the Veterans Administration referred to me an ex-Marine sergeant whom I considered to be homicidal, who would not cooperate in treatment, and whose family would not consider his commitment. I spoke to the district attorney who told me that he could take no action until the man committed an unlawful act. Four months later the veteran bashed his newborn child's head against the concrete walk, and then he was committed to a state hospital. A number of years previously I had examined another young man in prison for petit larceny, had concluded that he was definitely homicidal, and had advised that he should not be released. The parole board released him in a year, and about a year later he raped and murdered a well-known New York matron. His defense attorney subpoenaed my testimony in the prisoner's defense, but the prisoner was sent to the electric chair.

When Mr. Gehrig was appointed Judge of the Children's Court, he continued to use me as a consultant to his office, particularly during a three-month murder trial which was known as the Lonely Hearts Case, at which I had been requested to be in almost daily attendance. The issues in this trial depended clearly on the psychiatric testimony, and the prosecuting attorneys constantly requested my psychiatric advice in the matter.

The Testimony

I have never had a presiding judge require me to abuse a psychiatric confidence. I have testified on the sides both of the prosecution and of the defense, depending on my findings in each case which determined whether or not I had adequate grounds to give testimony. In 2 cases I was requested by the State to examine a murder suspect, but after the examination I told the district attorney that the prisoner had a defense, and therefore I was excused from testifying. Later the defense attorney subpoenaed me to testify for the defendant. In a suspected rape case I was retained by the family to examine the prisoner who had been committed to the state hospital for the criminally insane, and I found the patient nonpsychotic. It required two habeas corpus hearings, with much testimony and cross-examination, before the patient was released.

Unfortunately, many physicians on the witness stand allow themselves to be confused by the cross-examination, and sometimes they are angered by the questions put to them by the attorneys. Once they have lost their composure, they may very well have lost their case. If the expert witness is not fully prepared on the case and is not convinced that his conclusions are right, he would do well to refrain from public appearance, for he is almost certain to be placed in an embarrassing position by his adversary.

The defendant in a court of law is a person like everyone else, except that he has been caught. The practice of psychiatry has shown clearly that all persons are potential offenders, and that all persons are emotionally or mentally sick to some degree. The criminal person is simply the person who has, perhaps momentarily, lost control and has been apprehended. Some persons are more antisocial than others, and some lack more self-control. Similarly, some patients are more ill than others; some are more nearly normal, but some are more grossly deranged. There is no set standard, and each individual has to be considered as an entity physically, socially, intellectually, and psychiatrically. Until such time as each offender against the law is considered a sick person, there will be a miscarriage of justice.

Summary

Of over 6,000 prisoners examined, only 36 per cent were diagnosed as psychologically normal. Almost 20 per cent of the prisoners definitely had a psychiatric defense for their antisocial behavior, and the remaining 44 per cent of them had personality disturbances which could be the basis for debate in court. It is this latter half which causes "the battle of experts."

The adversary process is the law in civilian courts, and in most states the psychiatrist is bound by the McNaghten Rule, which finds little support in modern psychiatry. The psychiatrist is further limited by the rules of evidence that prevent the presentation of what may be the reasons for his opinion. Thus the psychiatric testimony has to be presented for blind acceptance by understandably skeptical jurors. Here is where the differences of opinion between the testifying psychiatrists may cause a miscarriage of justice.

In civilian practice the arguments over the McNaghten or Durham Rules obscure the basic usefulness of psychiatric testimony in understanding the criminal mind, whether sane or insane. Many feel that psychiatric opinion is most useful in the disposition of the offender. Guilt or innocence is a legal matter. The utilization of the ever-expanding psychiatric knowledge would be made more rapidly available to the courts if the emphasis were shifted from a debate over this or that rule for determination of insanity, a term without psychiatric meaning, to the understanding of the basis of the individual's behavior and his deterrability from crime or susceptibility to treatment.

223 STEWART AVENUE

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Medical Society of the State of New York
District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
I	May, 1961	. . .
II	October 26 and 27, 1960	Grossinger
III & IV	September 14 and 15, 1960	Schroon Lake
V	Spring, 1960	. . .
VI	September 28, 1960	Ithaca
VII	October 13, 1960	Corning
VIII	September 29, 1960	Jamestown
IX	May, 1960	. . .

Community Mental Health Problems and Services

WALTER E. BOEK, PH.D., ALBANY, AND SARA YURKON, R.N., WATERTOWN, NEW YORK

(From the New York State Department of Health and the Watertown District of the New York State Department of Health)

EDITOR'S NOTE.—*During 1958 two interview surveys were carried on by citizen groups in cooperation with local health officers and the State Health Department. One of these was in Montgomery County and the other in Southern Jefferson County. This is the fifth and last of a series of short articles on the findings.**

THE feeling by some citizens that mental health services are needed in their communities has resulted in considerable discussion of this problem in many areas and in the establishment of mental health boards in 26 of New York's 57 upstate and Long Island counties.

The interest in providing local mental health services was stimulated by a New York State act, the 1954 Community Mental Health Services Act, that provides for a permanent system of State aid to local units of government for the support of these services. The purpose of this act is to encourage the development of prevention, rehabilitation, and treatment services by means of new community mental health programs and the improvement and expansion of existing community services.† State aid is provided to the extent of 50 per cent of the amount expended for: (1) outpatient psychiatric clinics, (2) inpatient psychiatric services in general hospitals, (3) psychiatric rehabilitation services for persons suffering from psychiatric disorders, and (4) consultant and educational services furnished by qualified mental health personnel under the jurisdiction and supervision of the Mental Health Board to schools, courts, health and welfare agencies, and other appropriate agencies or groups.

Interview Survey

To provide some information about citizens' experience with, knowledge of, and attitudes toward mental health, several questions on this topic were asked of the 667 persons who were interviewed in a cross-section sample of Montgomery and Southern Jefferson counties. These questions were asked in an effort to determine the kinds of behavior which are deemed sufficiently deviant to be considered as constituting mental problems as well as the types of people who are considered to be in need of psychiatric assistance. With this method it was not possible to measure the extent of the problem from a clinical evaluative standpoint. The replies to this line of questioning are analyzed in this paper.

Recognition of Mental Illness

The first inquiry about mental health in the interview was preceded by the statement and question:

> There are indications that some adults with mental health problems live in our county. Some of these people have relatively minor problems which they are able to handle by themselves. Others need help from someone who can understand their problems. Do you happen to know about anyone in this community who has what might be thought of as a mental health problem?

Of the 667 respondents, 13 per cent said they knew someone in their area who had such a problem. The proportion of inter-

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* The other articles appeared in the May 1 (**59**: 1783), Aug. 15 (**59**: 3065), Sept. 15 (**59**: 3403), 1959, and Oct. 1 (**60**: 3068), 1960, issues of the JOURNAL.

† New York State Department of Mental Hygiene: New York State's Program for Community Mental Health Services, Albany, (May) 1956.

TABLE I.—Replies to Question Whether or Not Interviewee Knew Anyone in Community with a Mental Health Problem According to Social Class Level of Respondents

Social Class*	Number	Per Cent Yes	No	Do Not Know
I and II	45	29	53	18
III	127	15	76	9
IV	319	13	78	9
V	146	10	76	14
Total	637†	13	77	10

* From high (I) to low (V).

† 29 other respondents not rated by social class level, and 1 person in Class IV did not respond to question.

viewees classifying the behavior of one or more persons in this manner was directly related to the social class level of the interviewees,* as shown in Table I. Nearly 3 out of 10 in the highest stratum responded positively while only 1 out of 10 in the lowest stratum did. It suggests either that people in the higher strata knew more about these types of illnesses and were more willing to label them mental conditions and/or that those in the lower strata were more tolerant of deviant behavior. From a treatment standpoint it might mean that those with a higher standard of living would be more willing to seek medical care while those living in poorer circumstances might accept and tolerate unusual behavior in themselves, their families, and their neighbors without feeling that anything should be done about it.

A comparison of replies according to where the respondents live showed that 16 per cent of those from villages, 14 per cent of those from rural towns, and 8 per cent of the city residents reported knowing someone with a mental health disorder. These differences were too small to be statistically significant, as were those for religion (15 per cent of the Protestant respondents and 9 per cent of the Catholic respondents knew someone with a mental health problem). Both urbanity and religious characteristics are associated with social class since in this study a higher proportion of those in the upper social class strata lived in rural areas and in villages and more of the Protestant interviewees lived in rural areas or in villages.

Behavior Considered Aberrant

Individuals who were eccentric, queer, childish, senile, depressed, confused melancholy, extremely nervous, restless, disillusioned, or worried were regarded as having mental health problems by those who were interviewed. Alcoholism or excessive drinking also was mentioned several times. Mental retardation, recognized as a problem, was described in a number of ways, such as: "a physically large child, but mentally retarded and rough," "plays with toy cars and does not take on responsibilities or do any chores," "You can't understand a word he says, and he acts illiterate and doesn't look bright," "Her mind isn't developed for her age," "has a low IQ," "has a speech impediment and is mentally retarded," "The person is stupid, disagreeable, ugly, and has lost interest," "The boy is approximately twenty and is very slow and awkward and never had average intelligence," and "There are two teen-age girls with mentalities of not over four years."

Other individuals were put in the mental health problem category because of sexual problems, expressed in terms of "sexual molestation," "a male who is too interested in little girls," "He chases girls and frightens children," and a "mentally deficient sex pervert."

Unusual behavior of other types also caused individuals to be classified as having a mental problem. Descriptive remarks such as these were made: "The person is extra nervous and rebellious with a tendency to tantrums," "borders on a split personality," "She can do her own housework but she wants to avoid people," "He hates himself and everyone else," "The person is temperamental and depressed," "He is confused and hears voices because of his elderly age," "The woman is a chronic worrier that her husband will send her to State hospital," and "She is a hypochondriac and needs to forget herself."

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* Based on an education-occupation scale. For an extensive analysis of methods of measuring social class see: Boek, W. E., Lawson, E. D., Yankauer, A., and Sussman, M. B.: Social Class, Maternal Health and Child Care. Albany, New York State Department of Health, 1957, p. 31.

Other actions of people considered to be mentally ill which were specified were: "She sits quietly as if thinking since her bereavement," "The person thinks funny things," and "He has been dominated to the point where he can't think for himself." A teacher said, "Welfare children are always a problem. They are moved from home to home. They have no love and have to live under the threat of being moved if they are not good."

Handling of Problem

After the interviewee described the type of behavior of the persons they considered to be mentally ill, they were asked what had been done about the condition. According to the respondents, nothing had been done for one third of the individuals considered to have mental health problems. For the remainder treatment in a State institution was the most common type of treatment that was mentioned. A number of these individuals were being treated on an outpatient basis. Local physicians were caring for and advising others, and a few went to psychiatrists or private institutions. Neighbors had reported the behavior of some of these individuals to the local health department or welfare department. At least 2 individuals had been arrested and fined. One woman said that she was concerned about a child who she felt should be given out for adoption by the parents so that it would have a better environment.

The question as to whether or not anything else should have been done for those considered mentally ill elicited many seemingly constructive suggestions, for example: "Yes, they should consult their doctor and have the doctor talk to the person to get him to realize what his behavior is doing to his health," "The boy should have learned a trade but his mother wouldn't permit him to go. Nothing can be done for the girl," and "There should be some type of counseling." Educational programs were suggested, such as: "There should be added schooling, added that is at her level" and "The school should help finance special schooling." One respondent stated that a job would be the therapy needed for one woman. A number of individuals felt that the afflicted person should have been put in an institution where he could have been taken care of or could have been treated. In one instance it was reported that a child's real parents were interfering with the foster parents. One interviewee suggested the establishment of a mental health organization in the local area as one way to handle the problem.

Citizen Knowledge and Evaluation of Community Mental Health Services

There was a strong direct relationship between the social class level and the proportion of families in which the interviewee knew about mental health services in the community. Over one half of the top group as compared with about one fourth of the bottom group stated that some services were available.

Clinics was the most frequently mentioned service. The clinics to which reference was made were generally those run by the State Department of Mental Hygiene in which people discharged from the hospital were treated along with a few other patients. Public health nurses and other health department services were cited by a few families, and special services in schools were cited by others. Practicing physicians were considered to provide mental health services in both counties. The Jefferson County Mental Health Association was mentioned as a service, as was a family counseling service. Montgomery County did not have a county mental health board. However, in Jefferson County there was such a board which operated a full-time clinic.

When asked about the adequacy of available mental health services, over one half of the interviewees felt that they did not know enough about any of the services to give an opinion. The rest were about equally divided in considering these services to be adequate, fairly adequate, and inadequate. Rural citizens were less willing to give an opinion than city or village dwellers, probably because fewer services were available in rural areas and dwellers therefore would not have much experience with them.

Only about 1 out of 4 responded positively to the question: "Considering your attitude regarding mental health, what suggestions do you have for improving these services?" This low response seems to indicate that people are not very familiar with what might be done to help people who have mental illness. The most common suggestion of those who ventured suggestions was additional clinics. Comments like these were made: "There should be a clinic that comes to town regularly on certain days," "They should take the services to the people," and "There should be a clinic in the city." The establishment of a local mental health board was suggested by some.

A greater number of physicians and other personnel to diagnose and treat this kind of health problem was also suggested: "We need a good psychiatrist for this area," "We need more trained psychiatrists, psychologists, and psychiatric social workers in clinics and in schools," "More psychologists, more nurses, more volunteers are needed," "We could use more people in the field; you wait so long for an appointment," "More people should be working on these problems in a small community."

Increased publicity and public education were other ideas that were mentioned for improving the local mental health services: "Better education is needed; individuals should know more about it," "People don't realize mental illness is a sickness," "There should be more publicity to acquaint people with it; people should know about symptoms before things start," and "Families who have these problems should be contacted; they should be told where help can be obtained."

According to a few people who mentioned funds directly, more money was needed or the costs were too high. One person said, "We spent $40 at the clinic and we gave $14 to a local physician and $10 to another physician only to find out that our child was nervous." "The cost is too high. The government should provide funds," said another. One person felt that part of the hospital should be used for mentally disturbed individuals since the State hospital is too crowded.

Other comments were: "There is not enough supervision for released mental patients," "The mentally slow should be separated from the others," and "The problem lies with ministers since it is a condition in people's minds."

Conclusion

A number of conclusions seem to be indicated by the findings in these two surveys. First, the incidence of people with mental problems or with symptoms of such difficulties is significant. Second, the lack of means for providing treatment in these communities is evident as well as the inadequate knowledge about mental illness which would lead people to seek qualified medical treatment. Also, local physicians who are not psychiatrists give considerable amounts of guidance to people with problems.

Because a sufficient number of citizens consider mental disturbances to be a serious problem in their areas, there is a general demand for more services and for a program of education. Consideration of this feeling of need is warranted by the medical profession, the voluntary agencies, and the government.

A laugh is worth a hundred groans in any market.—CHARLES LAMB

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Chemotherapy of Urinary Tract Infections

Past and Current

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It is becoming increasingly obvious that unsuspected urinary tract infections may be responsible for many cases of cardiovascular disease and the fact of urinary tract infection may remain undetected until the patient undergoes autopsy. A variety of criteria as to what constitutes urinary tract infection have been proposed, but the index of suspicion should by all means be much increased in all patients who run elevated sedimentation rates, low grade fevers, or manifest diminution in renal concentrating capacity even in the absence of obvious urinary findings. It cannot be overemphasized that a blocked kidney can contribute little or nothing to the urinary findings and that long-standing minor degrees of obstruction can result in complete loss of function of a kidney without pain. More frequent utilization of the intravenous pyelogram for the detection of structural abnormalities in the urinary tract should be urged now that radiologists are aware of convenient shielding procedures for the gonads that may have induced hesitancy in some individuals heretofore.

Experimental work has proved abundantly that transitory obstructions of either the renal venous system or the ureter can result in one-sided chronic pyelonephritis in many animals, and there is little reason to think that man is immune from this. Typical relapsing chronic pyelonephritis can be reproduced in rats by the combined administration of small quantities of corticoids and inadequate antibiotic therapy.[1] It is to be expected that the majority of patients on steroid therapy and with foreign bodies—whether indwelling catheters, stones, or genitourinary tumors—will prove to have concomitant urinary tract infection more than half the time.

While efforts to show that quantitative bacterial contamination of the urinary tract is endogenous or exogenous are all to be encouraged, the assumption that poor technic is responsible for contamination is not a well-warranted one and in specific instances has been shown to be totally untrue. Studies in our hands have shown that instruments can be used in patients over long periods of time without the introduction of significant infection. With up-to-date cystoscopic operating facilities, with or without the use of adjuncts in direct antisepsis,[2] infection rates can be shown to be well below 1 per cent. Many common sense applications of standard technics utilized with ruthless logic and a modicum of patience will go far to make this possible.

General Approach to Chemotherapy

The essence of the proper management of chemotherapy of genitourinary tract infections is an accurate diagnosis. The exact anatomic location of the lesion; the nature of the infecting pathogen; the source and route of infection; the duration of the infection; previous chemotherapy; and associated findings such as obstruction, tumor, calculus, diverticulum, stricture, hypertrophy of the prostate, over-all resistance of the patient, susceptibility of the pathogen to chemotherapy, and foci of infection in the patient should all be known. Long before the Pasteurian era of modern bacteriology, the treating physician and/or surgeon followed one principal dogma in the management of infection: Avicena stated that "pus or/and piss should come out." Although infection of the urinary tract can take place in the absence of obstruction to the downward flow of urine, in the presence of stagnation of urine the chances of infection are great because the urine is an excellent medium for the growth of the common pathogens. The mechanical drainage of urine due to gravity plus the peristaltic wave in the pelvis and ureters also help in washing away the bacteria which might otherwise set up inflammation and infection.

Causes of Infection.—In the presence of obstruction infection of the urinary tract should be suspected, and therefore the urine should be cultured and examined for albumin, pus cells, erythrocytes, and casts. In the absence of obstruction, the clinician should take a detailed clinical history including the status of the urinary system. He should determine if there is infection, its duration, and an exact identification of the pathogen or pathogens by a microbiologic survey of the urine. In case the patient had had previous chemotherapy or has had a chronic infection, the chances are that we are dealing with a drug-resistant pathogen or pathogens. In case the infection is acute, the probability is that the pathogen is drug-sensitive and hence the management is quite simple. On the other hand, in chronic infections, the chances of finding a drug-sensitive pathogen is uncommon because previous chemotherapy may already have eliminated such sensitive organisms. Repeated chemotherapy may produce resistant mutant strains among mutable microorganisms. Unfortunately, micrococcus, enterococcus, Aerobacter, Klebsiella, and Proteus are quite mutable, while pneumonococcus, Streptococcus pyogenes, Shigella, Salmonella, Escherichia, Brucella, Pasteurella, and so on, are usually devoid of mutagenicity.[3–6]

How Pathogen Reaches Urinary Tract.—Small numbers of bacteria reach the kidneys via the blood stream. Most of these are filtered or excreted by the nephron in the urine and eventually reach the exterior. Occasionally, for reasons we are only dimly beginning to comprehend, the bacteria become lodged in the tissues and start an infection or inflammation. The hematogenous route may show initially an interstitial nephritis, pyelitis, or pyelonephritis.

The medulla is more susceptible to infection than the cortex when the bacteria are introduced directly into these sites. Possibly the production of ammonia by the medulla which increases the alkalinity of the tissues thus lowers the resistance of medulla to infection.[7–10] Or the bacteria may be lodged in the wall of the bladder, prostate, or in any part of the genitourinary tract. Since the urine is a rich culture medium, multiplication or growth in the lumen of the viscus helps to promote or spread the infection. Naturally the cellular and humoral defenses of the body will try to limit and eliminate the infection in the wall or parenchyma of the organ, but the outcome of the infection will depend on the resistance of the host, the virulence or pathogenicity of the invader, the stagnation of the urine, and the chemotherapy used. Despite the most careful aseptic procedures, infection of the bladder can result from catheterization which may lead eventually to pyelonephritis. Asymptomatic bacteriuria can follow instrumentation, and here an ascending pathway of infection may play just as important a role as the hematogenous route. Acute nonobstructive pyelonephritis is almost exclusively a disease of the female. Moreover, pyelonephritis is more likely to be a complication of obstruction of the lower tract than of the ureters. When infections develop subsequent to instrumentation, drug-resistant urea splitters are often the pathogens. Chemoprophylaxis may be of limited value in frequent instrumentation, but it usually fails where there are indwelling catheters,[8] unless continuous antisepsis is utilized.[11] Among the patients without bacteriuria at the time of initial catheterization 29 per cent of the control group and 11 per cent of the treated group had bacteriuria at the second catheterization seventy-two hours after delivery. Among the patients with significant bacteriuria at the time of initial catheterization, 4 per cent of the control group and 11 per cent of the treated group were sterile at the second catheterization. The value of prophylactic chemotherapy in reducing the risk of introducing urinary tract infection at the time of instrumentation would appear to be established. In addition, successful immediate eradication of significant bacteriuria has been achieved.[12]

In a study of 162 private female patients who had multiple urethral instrumentation, neither catheterization nor instrumentation when performed correctly were found to be dangerous procedures which foster urinary tract infection but rather are important and simple diagnostic tools and practical therapeutic adjuncts in the management of many urologic infections.[2]

Retention or indwelling catheters, calculi, strictures, a large obstructing prostate, and diverticuli are added hazards. Catheters left in the bladder for days provoke bacteriuria, probably in the film of exudate that forms in the urethra in response to the presence of the catheter. Rinsing the bladder constantly with 0.25 per cent acetic acid which lowers the pH to 5 or less and in patients with bacterial counts of less than 100,000 per milliliter prevented contamination.[10,11] We believe this procedure is not satisfactory in patients with mutable pathogens and would prefer to treat the catheter materials with antibacterial agents. Chronic infection eventually will lead to fibrosis and contracture of the viscus. In the case of pyelonephritis, it may eventually lead to reduced renal function, increased resistance in the renal blood vessel bed, and thus to hypertension. In the bladder it may result in reduced capacity and in the urethra or ureter, to strictures.

A classic case of urinary schistosomiasis caused by Schistosoma haematobium, for instance, is that the adult worms living in the blood vessels of the urinary tract deposit their ova in the wall or parenchyma of the viscus. While trying to find their way into the lumen of the organ, the ova damage the tissues, thus paving the way to infection, calculus formation, and even papillomatous or neoplastic changes.

SIGNIFICANCE OF OBTAINING POSITIVE CULTURE RESULTS FROM URINE.—In our experience, the finding or isolation of gram-negative rods and gram-positive cocci, such as micrococcus, enterococcus, and Streptococcus pyogenes, in urine obtained in midstream from a male and in catheterized urine from a female constitutes a positive or abnormal finding. The number of bacteria may vary from person to person and from time to time in the same patient. In the presence of other pathologic evidence in the urine in the form of albumin, pus cells with or without special characteristics, erythrocytes, and/or casts, the presence of the bacteria mentioned may be considered as true pathogens and not as contaminants. Gaffkya tetragena, Sarcina lutea, and aerobic spore-forming rods are usually saprophytic and should be considered contaminants.[13] We do not consider that under 100,000 bacteria per milliliter of urine is contamination and that above 100,000 bacteria is infection.[11,14]

We believe in quantitation, but once urine is collected under as sterile conditions as possible, the clinical findings should be correlated with the pathologic findings in the urine and, above all, with the nature of bacteria isolated in the urine.[15]

CHANGES PRESENT IN URINARY TRACT PRIMARY TO OR ASSOCIATED WITH INFEC-

TABLE I.—Enzyme Profile of Pathogens

Profile Number	Urease	Citrase	Nitrofurazone	Sulfisoxazole	Tetracycline	Chloramphenicol	Erythromycin	Penicillin Plus Streptomycin
1	++++	...						
Proteus columbiensis	...	+	R	R	R	R	R	R
P. vulgaris	...	...						
P. rettgeri	...	...						
P. mirabilis	...	...						
P. OX-2	...	...						
2	++++	...						
P. morgani	...	−	R	S	R	R	R	R
Micrococcus (69 per cent)	....	−	R	S/R	S/R	S/R	S	S/R
3	++	...						
Aerobacter	...	+	R	R	R	R	R	R
Klebsiella	...	...	R	S	S	S	S/R	R
Pseudomonas (77 per cent)	...	...	R	R	R	S/R	R	R
4	−/+	...						
P. OX-19	...	−/+	...	...	...	...	...	...
P. OX-K	...	...	...	...	...	...	...	...
5	—							
P. inconstans	...	−/+	...	...	...	...	...	...
6	−	...						
Pseudomonas (23 per cent)	...	++++	R	R	R	S/R	R	R
Alcaligenes	...	...	R	S	S	R	R	S
Salmonella	...	...	R	S	S	S	R	S/R
Vibrio cholerae	...	...	S/R	S	S	S	S	S
Escherichia (freundi, intermedia)	...	...	...	...	...	...	...	...
7	−	...						
Escherichia (coli, aurescens)	...	−	S/R	S/R	S	S	R	R
Eberthella	...	...	R	S/R	S	S	R	S/R
Salmonella (paratyphi, pullorum, gallinarum)	...	...	R	R	S	S	R	S
Vibrio El Tor	...	...	...	...	...	...	...	...
Micrococcus (31 per cent)	...	...	R	S/R	S/R	S/R	S	S/R
Enterococcus	...	...	S/R	S	S	S	S	S
Streptococcus pyogenes	...	...	S/R	S	S	S	S	S
Shigella	...	...	S/R	S	S	S	S/R	S/R
Pneumococcus	...	...	..	...	...	...	...	...

SYMBOLS: + productive; − nonproductive; R = resistant; S = sensitive.

TION.—Obstruction often is a precursor of infection. Calculi may be caused by as well as cause obstruction and infection. The bacteria which split urea (urease positive) such as Proteus, Aerobacter, Klebsiella, Pseudomonas, and micrococcus often cause calculus disease.[15–17] The mucoproteins in the urine may be altered by the bacteria, thus disturbing the balance which exists between the crystalloids and colloids in the urine and hence the precipitation of dissolved crystalloids about mucus or bacteria. The role of citrate destruction in causing calculi is probably important and yet it has not been as well explored as could be desired.

How to Assess the Threat of a Given Infection.—On the basis of urease and citrase enzyme production by the pathogenic bacteria on standard media such as Bacto urea (Difco), Simmon's citrate (Difco), and synthetic media (Columbia University 1959), that is, urea citrate media, urea media, and citrate media, seven profiles have been presently identified (Table I). Primarily urinary pathogens are in Profiles 1, 2, 3, 6, and 7. Profile 1 actually produces urease and citrase and includes most of the genus Proteus. Profile 2 produces only urease and includes P. morgani and 69 per cent of micrococcus. Profile 3 includes the Aerobacter-Klebsiella group and 77 per cent Pseudomonas. This group produces urease, under aerobic conditions, and citrase. Profile 4 may or may not produce urease or citrase (P. OX-19 and P. OX-K), and Profile 5 (P. inconstants) fails to produce urease, but may or may not produce citrase; but these two profiles are not important in genitourinary infections.[15-17] Profile 6 produces only citrate and includes Alcaligenes, 23 per cent Pseudomonas, an occasional Escherichia (E. freundi and E. intermedia), most of the Salmonella group, and Vibrio cholerae. Profile 7 produces neither urease or citrate, and includes most of Escherichia, 31 per cent micrococcus, enterococcus, Streptococcus pyogenes (Lancefield A), Eberthella, S. paratyphi, S. pullorum, S. gallinarum, and V. El Tor.

PORTION OF URINARY TRACT INVOLVED.—The anatomic location of the infection is essential from the clinical diagnostic and surgical points of view. Lesions of the upper urinary tract are important in relation to renal function particularly when there is pyelonephritis or interstitial nephritis. From a purely chemotherapeutic point of view, it is immaterial whether the patient has a perinephric abscess or pyelonephritis or has urethritis or infection of the lower urinary tract on the other end of the urinary system. The therapy depends on the choice of the drug in relation to the sensitivity pattern of the pathogen and the success of free drainage through surgical intervention, if this is necessary.

BLOOD VERSUS URINE LEVELS OF DRUGS.—In urinary tract infections once the drug has passed the renal tubule, where the threshold fractions are absorbed, sooner or later it will be voided in the urine. If the drug is bacteriostatic, it will stop the further multiplication of the pathogens. On the other hand, if it is bactericidal it will kill the pathogens. Thus if we have high concentration of the drug we shall have a more pronounced effect. But does this help control the infection? Probably not, because the urine containing the drug will be eliminated shortly. Superficial contact of the drug with the mucosa of the bladder or pelvis will have very little effect because there is very slight permeation of the drug into the deeper layers of mucosa, submucosa, and muscularis where the pathogens may be hiding. Consequently, a high tissue level is essential in controlling urinary tract infections, rather than high urine or blood levels. Thus, ideally we should have high drug levels in the tissues and in the urine so that the intruder is attacked from two directions.

Nitrofurantoin (Furadantin) gives high urine levels, but no blood or tissue levels. The sulfonamides give high blood and urine levels. Examples of agents which produce high urine levels are sulfisoxazole (Gantrisin), sulfisomidine (Elkosin), sulfamethizole (Thiosulfil), and sulfacetamide. High blood levels are produced by sulfadimethoxine (Madribon) and sulfamethoxypyridazine (Kynex or Midicel). Sulfadiazine gives steady blood and urine levels. Tetracycline gives low (2 to 4 micrograms per milliliter) blood levels, chloramphenicol gives higher (15 to 18 micrograms per milliliter) blood levels, while both give very high urinary levels. Penicillin gives rise to rather low blood levels (up to 1.6 units per milliliter, although 0.03 unit per milliliter is considered satisfactory for penicillin-sensitive bacteria) but very high urinary levels. Streptomycin gives rise to adequate blood and urine levels.

Very often the drugs are classified on the basis of bacteriostatic and bactericidal effect. For example, the bactericidal drugs are penicillin, streptomycin, neomycin, bacitracin, cycloserine (Seromycin), kanamycin, polymyxin, and viomycin. Bacteriostatic drugs are tetracycline, chloramphenicol, erythromycin (Ilotycin glucoheptonate or Erythrocin lactobionate), novobiocin sodium, oleandomycin (Matromycin), and vancomycin. The sulfonamides and nitrofurantoin are bacteriostatic. It should be realized that bacteriostatic drugs in high concentration

TABLE II.—Incidence of Bacteria in Urinary Tract Infections in 1949 in St. Louis

Bacteria	Per Cent
A. aerogenes	7.5
E. coli	26.6
P. aeruginosa	10.0
M. pyogenes aureus	8.0
Streptococcus	8.0
P. vulgaris	4.0

are also bactericidal.[18–22] In the animal host, it makes no difference whether or not the drug is bactericidal or bacteriostatic. The defenses of the host are the final judges in eliminating the pathogens which have been brought under the influence of the chemotherapeutic agent.

When two bactericidal antibiotics are combined, there is a synergistic effect. On the other hand, combining bactericidal drugs with bacteriostatic drugs or a combination of bacteriostatic drugs may result either in synergism, summation, or depression of antibacterial properties.[21–24]

Although the present trend is to use not more than one antibacterial agent at a time, yet combinations are permissible in case we can demonstrate synergism in vitro against the pathogen. In one hospital, we observed a patient who was given seven antibiotics at one time and unfortunately they were all given parenterally. The total daily quantity of the drugs was 20 Gm. Naturally, the patient cannot tolerate all this foreign matter because the detoxifying mechanisms of the liver and the excretory functions of the kidneys are below par. Probably overmedication rather than infection killed this patient. The wise and conservative procedure is to use the drugs consecutively rather than simultaneously or synchronously.

Choice of Chemotherapeutic Agent.—In acute infections of the urinary tract or in patients who previously have had no therapy for infections the choice is easy to make. Almost any drug will give a satisfactory response since the question of drug resistance is of minor importance. Although routine urinalysis and culture is ideal, such patients may be treated safely without laboratory help, x-ray, or cystoscopic investigations. Forcing fluids to flush the urinary tract, administration of alkalies with tincture of Hyoscyamus or phenylazo-diamino-pyridine hydrochloride (Pyridium) or to relieve the burning and frequency, and any antibacterial agent such as a sulfonamide, nitrofurantoin, methenamine mandelate (Mandelamine), or penicillin plus streptomycin injections or one of the tetracyclines will clear the infection. In chronic, repeated, or recurrent infections thorough urologic, roentgenologic, and laboratory examinations are absolutely essential. The choice of the drug depends on the enzyme profile and the drug sensitivity pattern of the pathogen.[15] The disk method of determining drug sensitivity is crude and occasionally dangerously misleading. In serious infections,

TABLE III.—Bacterial Flora in Chronic and Acute Infections of the Urinary Tract in 1957

	Chronic or Recurring Infections		Acute Infections or New Cases	
Bacteria	Number of Cultures	Incidence (Per Cent)	Number of Cultures	Incidence (Per Cent)
Aerobacter aerogenes	277	...	60	...
	108	39.0	30	14.2
Escherichia coli	38	13.7	16	12.6
Micrococcus pyogenes aureus	32	11.5	16	12.6
Bacillus proteus	45	16.3	21	16.6
Pseudomonas aeruginosa	27	9.7	6	8.0
Enterococcus	20	7.2	27	21.1
Gaffkya tetragena	4	1.4	7	5.5
Klebsiella pneumoniae	2	0.7	0	...
Diphtheroids	0	...	8	6.3
Streptococcus viridans	0	...	2	1.5
Streptococcus nonhemolyticus	0	...	3	2.3
Paracolon	0	...	2	1.5
Alcaligenes faecalis	1	0.3	0	...

TABLE IV.—URINE CULTURE FROM 661 PATIENTS DURING 1959 AT COLUMBIA-PRESBYTERIAN MEDICAL CENTER*

Bacteria	Cultures Obtained Primary	Secondary	Total
Aerobacter aerogenes	70	5	75
Escherichia coli	41	15	56
B. proteus columbiensis B. proteus morganii B. proteus inconstans	70	6	76
Pseudomonas aeruginosa	29	2	31
Alcaligenes faecalis	2	0	2
Klebsiella pneumoniae	8	0	8
Gram-negative rods	7	4	11
Diphtheroids	4	6	10
B. subtilis	2	4	6
Micrococcus	77	75	152
Enterococcus	52	31	83
Streptococcus nonhemolyticus	4	5	9
Streptococcus pyogenes	1	2	3
G. tetrogens	4	1	5
C. albicans	0	1	1
TOTALS	371	157	528

* 661 patients grew 528 organisms; 225 had sterile urine. Only 371 positive cultures were obtained with the usual technic. Secondary culture method yielded an additional 157 organisms (157/528) of which the large majority were pathogenes.

tube dilution methods should be used, and with the increase in automation they should be less tedious and expensive. In carrying out the tube dilution technic, the concentration of the bacteria in the inoculum is absolutely vital for obtaining reliable data. In our experience for all antibiotics and nitrofurantoin, the dilution of the culture should be 10^{-3}, but for sulfonamides the dilution must be 10^{-11} to 10^{-14}.

CHANGING PATTERN OF FLORA OF URINARY TRACT.—Table II shows that in 1949[25] the commonest pathogen was E. coli. Table III shows that in 1957 A. aerogenes became the dominating pathogen in chronic infections and enterococcus in acute infections in our locale. Table IV (1959)[26] shows that micrococcus and enterococcus are now the most prevalent pathogens. Table V shows the incidence of gram-rod bacteremias in the 1952 to 1957 period.[3] During this period A. aerogenes bacteriuria had a very high mortality rate. Fortunately, with a better selection of drugs and with specific combating of endotoxin shock we have been able to reduce markedly the mortality in aerogenesis.[27]

Chemotherapy of Specific Bacterial Infections

MICROCOCCAL INFECTIONS.—Micrococci encountered among patients in hospitals are commonly resistant to drugs, while those isolated from patients in rural areas are still sensitive. In case the patient has a sensitive micrococcus, any antibiotic or antibacterial agent will control the infection effectively. Penicillin plus streptomycin or sulfadiazine are drugs of choice if we are dealing with sensitive micrococci which have not been exposed to chemotherapy and whose origin is not a "hospital pool." Unfortunately, about 85 per cent of micrococci are penicillin- or sulfa-resistant. In our experience, about 60 per cent of micrococci are sensitive either to erythromycin or to novobiocin sodium, about 50 per cent to penicillin plus streptomycin, about 35 per cent to chloramphenicol, and 25 per cent to the tetracyclines. Nitrofurantoin

TABLE V.—GRAM-NEGATIVE ROD BACTEREMIA AMONG 74 PATIENTS DURING THE FIVE-YEAR PERIOD 1952 TO 1957

	Dead*		Alive		Total		
	Children	Adults	Children	Adults	Children	Adults	Both
Escherichia coli	0	11	5	13	5	24	29
Aerobacter aerogenes	1	5	0	4	1	9	10
Salmonella sp.	0	1	11	0	11	1	12
Bacillus proteus	1	3	0	3	1	6	7
Alcaligenes faecalis	1	0	0	1	1	1	2
Pseudomonas aeruginosa	2	1	0	1	2	2	4
Hemophilus influenzae	0	0	7	0	7	0	7
Klebsiella pneumoniae	0	0	0	1	0	1	1
Pseudomonas aeruginosa and Escherichia coli	1	0	0	0	1	0	1
Gram-negative rod	1	0	0	0	1	0	1

* Mortality rate, 28 of 74 patients (37.8 per cent).

and oleandomycin are occasionally effective against this group.[28] At the Antibiotics Symposium in Washington, D.C., in 1959, Kirby stated: "I would say then, to make an analogy, that although vancomycin and ristocetin are quite good, I would consider vancomycin the Cadillac, ristocetin the Oldsmobile, erythromycin the Pontiac, novobiocin the Chevrolet, and kanamycin the Ford."[29] We have had no clinical experience with vancomycin or ristocetin, both of which have to be used parenterally, but in vitro sensitivity studies indicate that micrococci are very sensitive to vancomycin, and this experience has been borne out in vivo here. Kanamycin is fairly active both in vitro and in vivo.

Micrococcus is a very mutable pathogen. It can mutate and develop resistance up to 50,000 units per milliliter of penicillin in vitro through exposure to increased increments of the drug.[4] The clinician should keep in mind the fact that inadequate use of a drug or improper dosage of the effective drug may give rise to clinical disaster in the form of superinfection such as enterocolitis, bacteremia, and pneumonia. Once this chain of events starts in a given locale, it may give rise to micrococcal epidemics among infants, children, and surgical patients.

Streptococcal Infections.—Infections due to S. pyogenes (Lancefield A) are managed easily by the proper use of the chemotherapeutic agent or agents. The metabolic structure is such that drug resistance is very rarely encountered. Practically all strains are still sensitive to sulfonamides, penicillin, tetracyclines, and chloramphenicol and even to erythromycin, novobiocin, streptomycin, and kanamycin. Pneumococcus is similarly nonmutagenic and drug-sensitive.

Infections caused by alpha and gamma streptococci are harder to manage. Many drug-resistant types or strains are encountered; erythromycin, novobiocin sodium, and chloramphenicol are among the most effective agents. Other strains may be quite sensitive to penicillin, tetracyclines, vancomycin, kanamycin, the sulfonamides, and nitrofurantoin.

Infections caused by enterococci may be quite serious and difficult to manage. In our experience we have found that erythromycin and penicillin plus streptomycin are the drugs of choice, with chloramphenicol next in line. About 25 to 30 per cent of these infections are sensitive to the tetracyclines. Kanamycin, vancomycin, and the sulfonamides are less effective, although strains sensitive to all therapeutic agents may occur. Since this pathogen is easily mutated, it is essential that the proper and effective drug as selected by the tube dilution sensitivity method should be used in optimum amounts and that the infection be thoroughly eradicated.

Pseudomonas Infections.—All strains of Pseudomonas are citrase producers, and 77 per cent produce urease.[15,16] Sulfonamides are effective in about 25 per cent of cases. Occasionally, a strain may be sensitive to penicillin plus streptomycin or kanamycin. In general the strains are drug-resistant. In our experience with 40 patients,[30] the drug of choice in this infection is colistin (Colymycin). Most strains obtained from hospital cases are sensitive to 0.78 to 0.09 microgram per milliliter, while some strains are sensitive to 1.56 micrograms per milliliter. It is administered intravenously, or intramuscularly, with a daily dose of 30 mg. The toxic side-effects are rare and should be watched for. After four injections of 30 mg. colistin, 1 patient developed a rash, some decrease in hearing, and paresthesia in the tongue and face.

Aerobacter Infections.—Initially kanamycin cured all Aerobacter infections in our service[6]; however, there has been a steady decline in the effectiveness of this drug, so that at present Aerobacter has become resistant to this drug. We anticipate that within from six to twelve months all Aerobacter strains will become resistant. At the time this paper was written, of five strains of Aerobacter, three were sensitive to

TABLE VI.—Tube Dilution Sensitivity Test on 108 Aerobacter Aerogenes Cultures Obtained from Chronic Urinary Tract Infections

Drugs	Very Resistant	Resistant	Sensitive	Very Sensitive
Nitrofurantoin	97 of 108	9 of 108	1 of 108	1 of 108
Sulfadiazine	69 of 91	12 of 91	2 of 91	8 of 91
Sulfisoxazole	55 of 65	4 of 65	2 of 65	4 of 65
Sulfamethizole	10 of 10	0 of 10	0 of 10	0 of 10
Tetracycline	93 of 108	7 of 108	3 of 108	5 of 108
Chloramphenicol	66 of 108	16 of 108	17 of 108	9 of 108
Erythromycin	99 of 103	3 of 103	0 of 103	1 of 103
Novobiocin	56 of 67	11 of 67	0 of 67	0 of 67
Penicillin plus streptomycin	84 of 100	8 of 100	6 of 100	2 of 100
Streptomycin	95 of 104	2 of 104	4 of 104	3 of 104
Oleandomycin	18 of 20	0 of 20	0 of 20	2 of 20

Very resistant organisms required more than 12.5 micrograms of units per milliliter antibiotic or nitrofurantoin, and more than 5 mg. per milliliter sulfonamide.

Resistant organisms required 3.125 to 6.25 mg. or units per milliliter antibiotic or nitrofurantoin, and 1.25 to 2.5 mg. per milliliter sulfonamide.

Sensitive organisms required 0.78 to 1.56 mg. or units per milliliter antibiotic or nitrofurantoin, and 0.31 to 0.62 milligram per milliliter sulfonamide.

Very sensitive organisms required less than 0.78 microgram or unit per milliliter antibiotic or nitrofurantoin and less than 0.31 mg. per milliliter sulfonamide.

colistin at from 0.09 to 0.78 microgram per milliliter, but the other two strains were extremely resistant to colistin.[30] Excluding these two recent additives in our armamentarium of chemotherapy, about 25 per cent of Aerobacter infections are sensitive to chloramphenicol; 10 per cent are sensitive to tetracyclines, sulfonamides, or streptomycin; and an occasional strain may be sensitive to nitrofurantoin, novobiocin sodium, erythromycin, and even oleandomycin (Table VI).

Aerobacter is a urea-splitter and utilizes the carbon of the citrate radical.[17] It is highly mutable in vitro. It can be made resistant to 3.5 mg. per milliliter of tetracycline. In view of the nature of its nucleoproteins, chemotherapy should be well planned as to the drug of choice and optimum therapeutic dose. Urease-blocking agents are being studied both in vitro and in vivo.

The seriousness of this infection in the urinary tract is such that no surgical interference should be attempted on the urinary tract in the presence of this pathogen unless it is properly controlled, otherwise bacteremia with fatal outcome may follow.

Escherichia Infections.—Escherichia is nonmutagenic and does not produce either urease or citrase[17] although it can exist with glucose and nitrate as its only energy sources. This genus is quite vulnerable to chemotherapeutic, antibiotic, and antibacterial agents. Tetracyclines, chloramphenicol, streptomycin, sulfonamides, nitrofurantoin, methenamine mandelate, and so forth, are very effective in suppressing and eliminating this pathogen. E. freundi and E. aurescens can utilize citrate.[15]

Klebsiella Pneumoniae.—There is no biochemical method of distinguishing Klebsiella from Aerobacter. Some microbiologists prefer to use the name Klebsiella aerogenes and claim that the ones recovered from the urinary tract are A. aerogenes and those isolated from the respiratory passages are K. pneumoniae. Both produce urease and citrase. We believe that continuing to distinguish A. aerogenes from K. pneumoniae is useful because when specimens of the former are isolated from patients they are found to be resistant to chemotherapy, whereas 34 strains of K. pneumoniae obtained from various laboratories were uniformly sensitive to many antibiotics and/or antibacterial agents. Since the enzyme profile and sugar fermentation reactions of Klebsiella and Aerobacter are the same, our criterion of differentiation is based on the characteristic mucoid or stringy nature of Klebsiella colonies.

At times Aerobacter colonies may be somewhat mucoid, but they lack the spinbarkeit of complex carbohydrate formed by Klebsiella. A few Klebsiella that we obtained from the patients were equally resistant to drugs, although the standard laboratory strains were sensitive. The chemotherapy of Klebsiella is similar to that of Aerobacter. We have not studied the mutability of this genus.

ALCALIGENES INFECTIONS.—Alcaligenes is rarely found in clinical infections. It is urease-negative and citrase-positive, and therefore the therapeutic management should not be difficult. Tetracyclines, chloramphenicol, neomycin, and streptomycin are the most effective agents.

PROTEUS INFECTIONS.—Proteus is a very heterogenous group enzymatically.[15–17] In the enzyme profile of bacteria, Proteus is represented in four groups. In Group I, P. columbiensis (P. vulgaris, P. rettgeri, P. mirabilis, and P.OX-2) produces urease and citrase. In Group II is P. morgani which produces only urease. In Group IV P. OX-19 and OX-K may or may not produce urease and/or citrase. In Group V is P. inconstans which does not produce urease but produces citrase. This is a very mutable group, and the drug resistance varies directly with the enzyme production. P. columbiensis is very resistant to chemotherapy, but P. morgani is less resistant while the OX group, which have been test tube microorganisms since 1916 and are used in the Weil-Felix agglutination test in rickettsial infections are drug-sensitive. We suspect that even these bacteria if they are subjected to human passage and antibacterial agents can become drug-resistant.

In spite of the fact that we are dealing with a very highly mutable group possessing highly complex and organized enzyme systems, we have to treat patients infected with B. proteus. There is no rule of thumb in Proteus infections. Probably the first line of offense is sulfonamides and the next choice is streptomycin and/or chloramphenicol. Occasionally we may run into strains which may be sensitive to kanamycin and erythromycin. Apparently tetracyclines, colymycin, and nitrofurantoin are ineffective. A combination of effective drugs should be given only in desperation backed up with careful, combined, in vitro tube dilution information.

In vitro studies indicate that certain drugs or chemicals can block the production of urease by the genus Proteus.[15,16,31] The advantage of this finding is utilized in the clinical management of Proteus infections of the urinary tract, with or without the accompanying struvite renal stones.[16] Certain mercurials, namely chlormerodrin and related compounds, occasionally can render a drug-resistant Proteus drug-sensitive, thereby facilitating the antibacterial action of the chemotherapeutic agent. Clinically these patients are given 2 to 4 chlormerodrin tablets daily and then are given the drug therapy based on subsequent sensitivity studies. At present we are studying various methods of administering the enzyme-blocking agent or agents and antibacterial drugs.

ENZYME-BLOCKING APPROACH TO CHEMOTHERAPY.—In vitro studies indicate that organic mercurials change the morphology and physiology of the bacteria.[16,31,32] They block the production of urease and to a lesser extent of citrase. Such pathogens may become more or less drug-sensitive. We have treated patients with struvite kidney stones with infections due to urea splitters and have been able uniformly to acidify the urine with chlormerodrin followed by renewed antibacterial chemotherapy. Twelve of 20 patients developed sterile urine. Some patients were given 4 tablets of chlormerodrin daily for four days. More than 50 per cent were cured of the infection, but 20 per cent subsequently were reinfected with Pseudomonas against which chlormerodrin is much less effective.

DONOVANIA INFECTIONS.—Granuloma inguinale caused by Donovania granulomatis is a rather rare condition. Ulcerative lesions may extend from external genitalia to the urethra. The response to tetracycline, chloramphenicol, and antimony salts is dramatic.

Rare genitourologic complications occur in brucellosis, tularemia, and typhoid. In these conditions, tetracycline or chloramphicol is specific.

Hemophilus ducreyi infections respond readily to tetracyclines and chloramphenicol.

Neisseria gonorrhoeae infections respond to penicillin and sulfonamides in about 90 per cent of cases. Tetracycline and chloramphenicol are somewhat more effective.

Pleuropneumonia-Like Organism Infections.—This incidence of pleuropneumonia-like organisms in the healthy lower genital trace of women can be as high as 17 per cent. It has also been found in the genital tracts of infants and of the aged, but the greatest incidence is in persons of from fifteen to forty years of age. It is more common among married people. Prior penicillin therapy may result in an increased incidence of pleuropneumonia-like organisms in the genital trace. Cultures from the cervix show negative findings. Inflammatory conditions of the genital tract appear to be associated with a much higher incidence of pleuropneumonia-like organisms. The mode of venereal transmission of these organisms is still not known. The low pH of the vagina and the high incidence of Doderlein's bacillus is associated with negative findings on cultures. It is less frequently encountered in male urethra, but in a series of chronic prostatitis cases in our hands, inclusion bodies in ureteral scrapings gave invariably positive results. There is a definite relationship between uveitis, conjunctivitis, and pleuropneumonia-like organisms. These organisms have been cultured from Reiter's disease, lupus erythematosus, the vagina in normal pregnancy, rheumatoid arthritis, and ankylosing spondylitis. Pleuropneumonia-like organisms in man may be pathogenic or parasitic without being associated with pathologic lesions. They are more pathogenic to cattle, sheep, dogs, cats, and rodents than to man. Mycoplasma mycoides occurs in goats, M. bovigenitalium occurs in the genital trace of male and female cattle, M. agalactiae causes contagious agalactia of sheep and goats, M. spumans is isolated from the vagina and semen of dogs, M. canis and M. maculosum occur in the genital tract and throat of dogs, M. hyorhinis is found in the nasal cavity of swine, M. pulmonis is found in normal and diseased lungs of rats, M. arthritis in tissues of infected rats, M. neurolyticum in normal and diseased tissues of mice, M. gallinarum in the upper respiratory tract of fowl, and M. hominis is frequently found as an inhabitant of human genital and rectal mucosa. The etiologic implications of these organisms in nongonorrheal urethritis and in other inflammatory conditions of the lower genital tract are still unknown. M. salivarium is isolated from human saliva, M. fermentans is found in ulcerative genital lesions associated with spirilla, Vincent organisms, and also in the normal genital mucosa. M. laidlawii is recovered from sewage, manure, and soil.[33]

Are Pleuropneumonia-Like Organisms of Bacterial Origin or Are They an Independent Group?—There are certain similarities between pleuropneumonia-like organisms, L forms of bacteria, and those subjected to organic mercurials. L forms occur in bacteria which are exposed to penicillin, high salt concentration, and high phosphate. L forms are reversible to the bacterial forms. Pleuropneumonia-like organisms are gram-negative, stain poorly with bacterial dyes, but stain well with Giemsa's stain. They are nonmotile.

Pleuropneumonia-like organisms or M. hominis Type 1 is not pathogenic to mice, but Type 2 produces local abscesses in mice when it is injected subcutaneously. They are completely resistant to sulfonamides, penicillin, and erythromycin; moderately sensitive to streptomycin; and highly sensitive to tetracyclines and chloramphenicol.[33]

Viral infections of the urinary tract include the Miyagawanella group (lymphopathia venereum), herpes, mumps, and inclusion blennorrhea. Interstitial cystitis may be a viral condition. Lymphopathia venereum and inclusion blennorrhea respond favorably to tetracyclines and chloramphenicol. Other viral infections do not have specific chemotherapy. In the management of strictures of the urethra, lymphopathia venereum and gonorrhea should always be considered.

Rickettsial infections or lesions of the testis are complications during the course of the typhus group of diseases. Chloramphenicol and tetracyclines with corticoids are very effective in rickettsial infections.

Common fungal infections[34] which are caused by Canadida albicans may be primary or secondary, a superinfection resulting from antibiotic therapy. Nystatin is specific in candidiasis. It can be applied locally, but if the infection is extensive it should be administered parenterally. Rarely Sporotrichum, Blastomyces, Cryptococcus, Histoplasma, and Coccidioides may extend to the genitourinary system. Amphotericin B should be used in these drastic deep mycoses.

Endamoeba histolytica may extend to the lower genitourinary tract from the adjoining rectoanal region. Them anagement is that of amebiasis, namely chiniofon, diiodohydroxyquin (Diodoquin), tetracycline, chloroquine, p-ureido benzenearsonic acid (Carbasone), and even emetine hydrochloride.

Trichomonal infections are usually secondary to vaginitis in the female, but in the male they may be primary.[35] Trichomonal cystitis among females and prostatitis in males are not uncommon. There is no specific treatment. In the female, unless vaginitis is controlled, it is not feasible to eliminate Trichomonas from the urinary tract. Diiodohydroxyquin (Floraquin), p-ureidobenzenearsonic acid, or bismuth glycolylarsanilate (Milibis) suppositories may be tried. Douching with vinegar is the household remedy. Irrigation with and application of a trichomonacide (Vagisec) is the most satisfactory treatment in the female patient. There is no drug which can be used to treat the urinary complications in the female and male. It should be realized that about 46 per cent of females have this flagellate and about 9 per cent of normal healthy males. Prevention should be the best therapy, and therefore precautions should be taken not to acquire the infection during coitus.

Treatment of Genitourinary Tuberculosis

Long-term multiple drug chemotheraphy has been effective in controlling genitourinary tuberculosis of all types. The best results have been achieved with two continuous years of triple-drug therapy. The first successful triple-drug regimen consisted of isoniazid 100 mg. three times daily, sodium para-aminosalicylic acid 5 Gm. three times daily, and streptomycin 1 Gm. twice weekly. More recently good results have been obtained using cycloserine 250 mg. twice daily, isoniazid 100 mg. three times daily, and sodium para-aminosalicylic acid 5 Gm. three times daily. This latter regimen has the advantage that all drugs are given by mouth and that all drugs are given daily. It should be recognized that two years of treatment with two drugs such as isoniazid and sodium para-aminosalicylic acid, in the same dosage, are almost as effective as the three-drug regimen. If patients will tolerate only two drugs, these should be given with the expectation of satisfactory results in almost all cases. Results with chemotherapy of advanced cavitary lesions have been so good that nephrectomy has been practiced less and less for the treatment of kidney tuberculosis. The only indications for nephrectomy would be severe secondary infection with fever or pain, or uncontrollable tuberculosis. These complications occur very infrequently. In the rare case of failure of chemotherapy with the drugs mentioned, additional drugs have become available for retreatment.

Some examples of these are kanamycin, which can be given at the rate of 1 Gm. twice weekly with only a moderate chance of deafness (although giving this drug daily runs a high risk of deafness if it is continued for the long period necessary in treating tuberculosis). Viomycin can be given at the rate of 2 Gm. twice weekly, in place of streptomycin, and pyrazinamide can be given by mouth for short periods and is effective when combined with isoniazid. A high rate of liver toxicity is a serious and frequent complication, however, which restricts the use of this drug to desperation situations.

Prostatic and epididymal tuberculosis usually respond just as well to chemotherapy as do renal lesions. It is desirable to place the patient on semiambulatory bed rest throughout the first six months of treatment, to give therapeutic vitamin therapy throughout the treatment, and to administer pyridoxine hydrochloride in the dosage of 50 mg. twice daily throughout the treatment, to counteract the neurotoxicity of isoniazid. Still newer drugs such as thioamide and thiocarbanidin are now being tested to determine their effectiveness and usefulness in this program. Patients under treatment for genitourinary tuberculosis must have an intravenous pyelogram taken every four months during treatment to watch for evidences of structures of the ureter, which sometimes develop more rapidly during treatment. These can be dilated cystoscopically if they are found. Local irrigations of the bladder can be done with either neomycin solution or monoxychlorosene (Chlorpactin solution) for the cleansing of local tuberculous ulcerations in the bladder at the onset of chemotherapy.[36-42]

Antituberculosis drugs should never be used singly but always in combination, and treatment should not be interrupted during the two-year course if dependable results are to be obtained.

Drugs Used in Urologic Practice (Table VII)

Penicillin plus Streptomycin[21,22]: Procaine penicillin 600,000 units plus streptomycin 0.5 Gm. daily or twice daily by intramuscular injection for a week or until the patient is afebrile.

Potassium Penicillin: From 1 to 10 million units daily added to infusion of saline or glucose. A synthetic penicillin (Syncillin)[43] in 0.125 to 0.250-Gm. doses three times daily gives adequate blood levels when given orally. It is claimed that penicillinase is not destructive on this form of penicillin, is less allergenic, and is more antibacterial than its parent form.

Tetracycline, Oxytetracycline, Chlortetracycline, and Demethylchlortetracycline[19,44-46]: The latter in 150 mg. capsules while the rest in 250-mg. capsules. Four to six capsules daily for from five to seven days or until the patient is afebrile. Sixty-seven clinical strains of various pathogenic bacteria recently isolated from patients at the Columbia-Presbyterian Medical Center and tested for sensitivity to tetracycline and demethylchlortetracycline by the tube dilution method revealed no difference in the sensitivity pattern among 28 organisms, while 20 were more sensitive to tetracycline than to demethylchlorotetracycline, and 19 were more sensitive to demethylchlortetracycline. In case the pathogens were more sensitive to demethylchlortetracycline than to tetracycline, the difference was one to two tubes; however, if they were more sensitive to tetracycline than to demethylchlortetracycline, the difference was one to five tubes. It should also be borne in mind that demethylchlortetracycline gives about three times higher blood levels (expressed in tetracycline equivalents) than tetracycline. For intramuscular use, tetracycline or oxytetracycline 250 mg. two times daily. For intravenous use, 500 mg. tetracycline, oxytetracycline, or chlortetracycline in 500 ml. saline or glucose no more than twice daily.

Chloramphenicol: 250-mg. capsule, four to six times daily, for from five to seven days, or until the patient is afebrile. Before administering the drug, red and white blood cell counts should be done and repeated every other day during the course of therapy. Frequent use of the drug should be discouraged. In our experience in 1959, we had 2 cases of agranulocytosis and aplastic anemia with death and 3 cases of neutropenia. Intramuscularly 250 mg. once or twice a day and

TABLE VII.—Serum and Urine Levels of Common Antibiotics

Drugs	Daily Dose	Levels	
		Serum	Urine
Penicillin procaine G	400,000 units (intramuscular)	0.5 to 2 units ml.	60 to 80 per cent excreted
plus	plus		
Streptomycin sulfate	500 mg. (intramuscular)	18 to 20 μg. per ml.	20 to 70 per cent excreted
Synthetic penicillin	125 to 250 × 3 (oral)	2 to 3.5 units per ml.	. . .
Streptomycin or dihydrostreptomycin	500 to 1,000 mg. (intramuscular)	18 to 20 μg. per ml.	20 to 70 per cent excreted
Tetracycline Oxytetracycline	250 mg. × 6 (oral) 100 to 250 mg. (intramuscular) 250 to 500 mg. (intravenous infusion)	2 to 3 μg. per ml. 2 to 3 μg. per ml. 2 to 3 μg. per ml.	100 to 300 μg. per ml. 100 to 300 μg. per ml. 100 to 300 μg. per ml.
Chlortetracycline	250 mg. × 6 (oral)	2 to 3 μg. per ml.	100 to 300 μg. per ml.
Demethylchlortetracycline	150 mg. × 6 (oral)	2 to 3 times tetracycline equivalent	100 to 200 μg. per ml.
Chloramphenicol	250 mg. × 4 to 6 (oral) 500 mg. (intravenous infusion) 250 mg. (intramuscular)	12 to 18 μg. per ml.	200 to 250 μg. per ml.
Erythromycin	250 mg. × 4 (oral)	0.5 to 0.75 μg. per ml.	. . .
Novobiocin sodium	250 to 500 mg. (intravenous infusion)	10 to 20 μg. per ml.	. . .
Oleandomycin and tricetyloleandomycin (TAO)	250 mg. × 4 (oral)	. . .	. . .
Kanamycin	500 mg. × 2 (intramuscular)	6.3 μg. per ml.	. . .
Cycloserine	250 mg. × 2 (oral)	25 to 30 μg. per ml.	. . .
Colistin	30 mg. × 3 (intramuscular)	5 μg. per ml.	. . .
Neomycin sulfate	250 mg. × 4 (oral)	. . .	. . .
Polymyxin	50 mg. (intramuscular)	. . .	. . .
Bacitracin	50,000 to 100,000 units (intramuscular)	. . .	. . .
Viomycin sulfate	500 mg. (intramuscular)	. . .	. . .
Vancomycin	500 mg. (intravenous infusion)	. . .	. . .
Ristocetin	500 mg. (intravenous infusion)	. . .	. . .
Nystatin	50,000 units × 2 (oral)	. . .	. . .
Amphotericin B	50 mg. (intravenous infusion)	. . .	. . .

intravenously in 500- to 1,000-mg. infusion as chloramphenicol succinate.[19, 21, 22, 47]

Erythromycin[19]: 250-mg. tablets, four to six times daily for a week. Intravenously 250 to 1,000 mg. in infusion.

Novobiocin[48]: 250-mg. capsules four to six times daily for a week.

Kanamycin[6, 49–51]: 500 mg. intramuscularly twice a day for five days.

Cycloserine[52, 53]: 240 mg. twice daily by mouth for a week or much longer in acid-fast infections.

Colistin[30, 54]: 30 mg. intramuscularly three times a day for a week.

Nitrofurantoin[21, 22, 55]: 100 mg. four times daily for seven days.

Furaltadone (Altafur)[56]: One 250-mg. tablet three to four times daily for from five to seven days. Whereas nitrofurantoin gives no measurable blood levels, furaltadone gives blood levels of 2 to 3 gamma per milliliter.

Methenamine mandelate[21, 22]: Equal amounts of methanamine and mandelic acid. Two $^{1}/_{2}$-Gm. tablets three to five times daily for from three to seven days.

Sulfadiazine[21, 22]: One Gm. three to five times daily for from five to seven days.

Sulfacetamide,[21, 22] Sulfisoxazole, Sulfamethizole, and Sulfisomidine: Give very high urinary sulfonamide levels. Sulfamethizole is acetylated 7 per cent, sulfisomidine 10 per cent, sulfacetamide 15 per cent, and sulfisoxazole 27 per cent. One Gm. three to four times daily for from five to seven days. Sulfonamides which have a slow excretion rate were introduced in the past two or three years. Of sulfamethoxypyridazine and sulfadimethoxine, the former is acetylated 27 per cent while the latter about 20 per cent. These drugs are used in 0.5 Gm. twice a day the first day, and thereafter 0.5 Gm. daily for a week to ten days. Sulfamethoxypyridazine is somewhat toxic and should be used only under strict supervision.

Phenylazo-diamino-pyridinehydrochloride[21,22]: 0.1 Gm. three times a day for from seven to ten days. Induces prompt analgesic effect on the mucous membrane of the lower urinary tract thus relieving the symptoms of pain, burning, urgency, and frequency. It should be used with caution in the presence of renal dysfunction such as hematuria, albuminuria, and casts.

Isoniazid[36,38,39,42]: 100 mg. tablets, three times daily for two years. Pyridoxine hydrochloride to prevent the occurrence of neuritis.

Para-Aminosalicylic Acid[36,38,39,42]: 5 Gm. three times daily for two years.

Streptomycin[36,38,39,42]: One Gm. once or twice a week for two years for tuberculosis.

Toxic Side-Effects of Drugs Used in Chemotherapy

Penicillin[19–22,34,35]: Skin allergies, pruritis, anaphylaxis, superinfection, enterocolitis, and diarrheas.

Streptomycin[19,21,22]: Skin allergies, albuminuria, and liver damage. Renal dysfunction particularly in lesions of the kidneys; involvement of cochlear and vestibular nerves.

Tetracyclines[19,21,22]: Nausea, vomiting, superinfection, enterocolitis, diarrheas, proctitis, and rarely skin allergies. Photosensitization with demethylchlortetracycline.

Chloramphenicol[21,22,47]: Nausea, vomiting, neutropenia, agranulocytosis, aplastic anemia, thrombycytopenia, and pancytopenia. In the past two years we had 2 cases where this drug was used, and there was the possibility of blood dyscrasia being precipitated by it.

Erythromycin and Novobiocin[19,21,22]: Nontoxic drugs. They are rarely associated with superinfection. The skin sensitivity is more frequent with novobiocin than with erythromycin.

Oleandomycin and Triacetyloleandomycin (TAO)[57]: Nontoxic except for occasional skin rashes.

Neomycin[19,21,22]: Orally or locally may sensitize the patient. Systemically it may be neuro- and nephrotoxic.

Kanamycin[49]: Skin allergies; involvement of hearing and renal dysfunction in people with heaviness of hearing or renal dysfunction.

Cycloserine[57]: Neurotoxicity included hyperreflexia, mental confusion, dizziness, and convulsions.

Colistin[30,54,58,59]: In about 30 cases we treated, 1 patient developed a rash with paresthesias of the face and tongue following 30 mg. four times, intramuscularly. Nephrotoxicity has been reported among infants.

Polymyxin[19,21,22]: Orally nontoxic. Systemically is neuro- and nephrotoxic.

Bacitracin[19,21,22]: Orally nontoxic. Systemically is neuro-, nephro-, and hepatotoxic.

Soluble, absorbably sulfonamides such as sulfadiazine, sulfisoxazole, sulfamethizole, sulfisomidine, and sulfacetamide are quite safe when they are used in moderate doses of 3 to 6 Gm. daily. The toxic manifestations become apparent if there is impaired renal function, dehydration, or loss of alkalis from the system. In the presence of renal lesion, the dose of the sulfonamides should be reduced. The toxic effects include nausea, vomiting, cyanosis, acute psychosis, peripheral neuritis, toxic hepatitis, hemolytic anemia, granulocytopenia, hematuria, crystalluria, oliguria, anuria, anemia, uremia, photosensitization, fever, rashes, periarthritis, and nodosa.[19,21,22]

With slowly excreted sulfonamides such as sulfamethoxypyridazine and sulfadimethoxine when 0.5 to 1 Gm. daily is the therapeutic dose, the presence of renal dysfunction may give rise to serious complications. We have had no trouble with sulfadimethoxine, however our experience with sulfamethoxypyridazine is very limited. In the literature there are reports of deaths following the use of sulfamethoxypyridazine, due to aplastic anemia, hypersensitivity, myocarditis, focal hepatitis, thrombocytopenia, leukopenia, erythema multiforme, and milder side-effects such as skin rashes.[60–72]

Nitrofurantoin[21,22] may cause nausea and vomiting. In human beings it has not caused depression of spermatogenesis: however, it may be responsible for a hemolytic phenomenon in patients whose erythrocytes may be defective in certain enzymes.

Furaltadone, a recently introduced nitrofurazone, may have the following toxic side-effects: diplopia, paresis of the ocular muscles, nystagmus, blurring of the vision, diminished auditory acuity, peripheral neuritis, dysphagia, slurred speech, difficulty in phonation, thrombocytopenic purpura, neutropenia, hemolytic anemia, gastric bleeding, nausea, vomiting, and maculopapular skin rashes. In individuals indulging in alcohol, the administration of this drug may cause erythema, urticaria, dyspnea, a sense of severe constriction of the chest, tachycardia, hypotension, bronchospasm, arthralgia, and facial edema which can be avoided by abstaining from alcohol.

Para-aminosalicylic acid [21, 22] rarely causes severe toxic reactions such as agranulocytosis, allergic reactions, crystalluria, nausea, vomiting, hepatitis, prolongation of prothrombin time, or suppression of thyroid activity. However, flatulence, moderate nausea, and loose stools are common with para-aminosalicylic acid. Sodium para-aminosalicyclic acid has fewer side-effects. Isoniazid may cause convulsions, constipation, liver injury, difficulty in starting micturation, orthostatic hypotension, eosinophilia, albuminuria, anemia, insomnia, vertigo, and euphoria.

Phenylazo-diamino-pyridine hydrochloride is a drug used purely for its tranquilizing or analgesic effect on the mucosa of the lower urinary tract. It may give rise to renal irritation particularly when the kidneys are already damaged.

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CLINICOPATHOLOGIC CONFERENCE

KNICKERBOCKER HOSPITAL

NEW YORK CITY

Conducted by MICHAEL S. BRUNO, M.D., *and*
WILLIAM B. OBER, M.D.

MARCH 30, 1960

Discussed by ELMER S. GAIS, M.D.

Recurrent Ascites in the Presence of Hepatocellular Damage

Case History

FURMAN M. JONES, JR., M.D.: A fifty-three-year-old Yugoslavian-born woman was admitted to Knickerbocker Hospital because of anorexia and progressive enlargement of the abdomen of two weeks duration. Three weeks previously she had had an episode of epistaxis which was severe enough to necessitate nasal packs and injections of vitamin K. At that time she was found to have high blood pressure. Reserpine (Serpasil) was prescribed, and she was placed on a low-salt diet. However, at about this time she developed insidious and progressive fatigue, malaise, and weakness. Her appetite, which had been excellent previously, diminished sharply, and she developed mild dyspnea on exertion. Two weeks before admission she noticed that her abdomen was becoming larger and that her feet were swelling. She also noticed a dull, heavy sensation in the right upper quadrant of the abdomen, but there was no pain. Associated with these symptoms was the onset of persistent indigestion and nausea. The nausea occurred after eating and was associated with excessive flatulence. She became somewhat constipated, but there was no change in color, caliber, or consistency of the stools. Shortly after admission she noticed that her urine was becoming darker and that her output had decreased.

The patient denied any past history of liver or gallbladder disease. There was no history of abnormal bleeding or of renal or cardiac disturbances. She admitted to drinking wine and beer occasionally but not to excess. She denied exposure to known liver toxins. A diagnosis of pernicious anemia had been made in 1955 on the basis of studies of the peripheral blood and marrow. At that time she had achlorhydria. She was treated with vitamin B_{12} with good results, and had received injections of this medication to within four weeks of her admission.

Physical examination revealed a well-developed, well-nourished woman who did not appear to be acutely ill. Her temperature was 98.9 F., pulse 106 and regular, respirations 18, and blood pressure 140/100. The skin was warm and slightly dry and revealed no petechiae, ecchymoses, spider angiomas, or palmar erythema. She was slightly icteric. An examination of the head and neck was unrevealing, but the scleras were icteric. The chest was symmetrical with no increase in the anteroposterior diameter. There was dullness at both lung bases with poor breath sounds and scattered dry inspiratory rales. The heart was not enlarged; there were no murmurs, rubs, or gallop. The abdomen was distended but not tender. There was moderate dilatation of the superficial veins. The liver and spleen were not palpable. There was generalized dullness to percussion in all quadrants, and a fluid wave was elicited readily. No abnormal masses were felt. Pelvic and rectal examination gave normal findings. There was 2 plus pitting edema of the legs. A neurologic examination gave normal results.

The urine had a specific gravity of 1.013, a trace of sugar, no albumin, 3 plus bile, and 1 to 2 white blood cells per high-power field sediment. It was positive for urobilinogen in a 1:5 dilution. The hemoglobin was 15.1 Gm. per 100 ml., and the white cell count was 12,500 with 75 per cent polymorphonuclear leukocytes, 24 per cent lymphocytes, and 1 per cent monocytes. The sedimentation rate was 38 mm. per hour. The platelet count was 150,000, reticulocyte count 0.9 per cent, bleeding time one minute and fifty seconds, clotting time three minutes and forty-five seconds, prothrombin time 18.8 seconds (control 13.2 seconds). A smear of the peripheral blood showed slight hypochromia and slight anisocytosis and poikilocytosis. A serologic examination gave negative findings. The stools gave a 2 plus guaiac reaction for occult blood. The fasting blood sugar was 111 mg. per 100 ml., nonprotein nitrogen 32.5 mg., cholesterol 184 mg. with 41 per cent esterified, serum bilirubin 7.4 mg. with 5 mg. direct and 2.4 mg. indirect, and total protein 6.5 Gm. with 3.3 Gm. albumin and 3.2 Gm. globulin. The thymol turbidity was 12 units, alkaline phosphatase 10 units, cephalin flocculation 4 plus, and transaminase 1,070 units. The serum sodium was 130 mEq. per L., potassium 4.8 mEq., chlorides 89 mEq., and carbon dioxide 29 millimols. A chest x-ray film showed bilateral elevation of the diaphragm and platelike atelectasis in the lower portions of both lungs but otherwise gave a normal picture.

On admission the patient was given a diet high in carbohydrate and protein but low in fat. She was treated with Mercuhydrin, Diuril, and Achromycin. Chloral hydrate was used for sedation. The day after admission 1,200 cc. of yellow, slightly turbid fluid were removed from the abdomen. The fluid had a specific gravity of 1.006, protein 0.9 Gm. per 100 ml., and a few white cells. A cell block gave a negative result for tumor cells. The patient's clinical condition remained stable for a few days, and her appetite seemed to improve. However, she reaccumulated fluid in her abdomen, and the edema of her lower extremities remained unchanged. Ten days after admission steroid therapy was begun and potassium chloride was given. The serum transaminase decreased to 600 units, but the serum bilirubin level did not change appreciably. However, the jaundice increased, but not deeply. Toward the end of the second week of hospitalization the nausea and dyspepsia returned, and her ascites became greater and more uncomfortable. On the fifteenth hospital day she became confused and disoriented.

The white cell count rose to 21,000 with 87 per cent polymorphonuclear leukocytes, but the patient was not febrile. At this time the serum bilirubin was 8.8 mg. per 100 ml. with 6.7 mg. direct and 2.1 mg. indirect. The cholesterol had risen to 242 mg. per 100 ml. with 64 per cent esterified. The alkaline phosphatase had risen to 15 units. The prothrombin time was 21 seconds (control 13 seconds) although vitamin K had been administered frequently since admission. Other laboratory values were unchanged. No tremor or liver flap was present in association with the change in the patient's mental status. Protein was withdrawn from the diet, and neomycin and Glutavene were administered. A few days later paracentesis was repeated, and 2,000 cc. of fluid were withdrawn. Its specific gravity was 1007, and it had a protein of 0.6 Gm. per 100 ml. and 7,500 white blood cells per cubic millimeter. The following day she had an abrupt onset of hematemesis. In spite of Blakemore intubation she continued to bleed, and on the twenty-first hospital day she expired in shock.

Discussion

Elmer S. Gais, M.D.: When I am requested to discuss a case such as this one and am faced with the task of evolving a logical conclusion from the complex of events and observations that are presented in the protocol, I am reminded of the attempts of some neurophysiologists to describe human mentation in terms of a logical thinking machine in which the mind is supposed to function in some respects like an automatic computer. Such a comparison is fallacious, for although an electronic computer can perform remarkable tasks and exhibit retention, rejection, and recall, it cannot initiate action or profit from experience without external intervention. It can do only what it is programmed to do. Most important, although it has abilities to do many things, it cannot understand them. Therefore, it cannot be said to be intelligent. It is an idiosavant. The answers which appear on the tape of an electronic computer may be yes, no, or even perhaps, a perhaps which is statistically more or less likely to be correct.

Such, I fear, is the type of mentation that I find myself about to indulge in. Real intelligence usually eventuates only after the prosector has shown the causative facts and, particularly, when static fact can be correlated with a dynamic interpretation of those alterations in function which we call disease. Within this limitation I shall attempt to act as little like a computer as possible, but I am afraid you will notice similarities which are inescapable in the attempt to deduce cause from effects.

Let me begin by saying that the over-all picture presented in this case is that of a diffuse hepatic disease, or hepatic parenchymal failure. My succeeding efforts will be to classify this liver failure into a recognizable category, and later, if time permits, I hope to be able to amplify effects from causes. The sequence of events in this case seems very significant. Three weeks before admission the patient had a nosebleed, which was so severe that it required packing and a vitamin K analogue such as menadione sodium bisulfate was administered. Could the analogue have exhibited the hepatotoxicity which has been ascribed to this chemical in infantile kernicterus when given to the mother before delivery? Menadione is known to interfere with glucuronide transferase and to inhibit bilirubin conjugation in congenital hyperbilirubinemia in so-called Gunn rats. It is the indirect-reacting bilirubin which is elevated in these children and in genetically conditioned rats. Although such a disturbance is unlikely in an adult, I am looking for a hepatotoxic factor somewhere in the patient's history. Or, was the epistaxis incidental to the newly discovered hypertension? And could the hypertension and/or the drugs used to treat it be factors in the subsequent illness? Reserpine seems very unlikely as a hepatotoxin. But were other agents used which might have produced so-called allergic cholangiolitis with cholestasis? I am afraid that I cannot answer this definitely, but the subsequent picture exhibits much too severe a degree of parenchymal damage to be considered as one of these varieties of cholestasis.

We are told, however, that the patient had a documented case of pernicious anemia for five years preceding her admission. She had been receiving vitamin B_{12} parenterally until the time she became sick. This immediately arouses the suspicion of Type B viral hepatitis transmitted by a syringe or a needle, the so-called homologous serum jaundice. Pernicious anemia per se does not produce liver damage to the degree exhibited in this patient. Histologically in untreated cases there might be some centrilobular necrosis due to relative anoxia, but we are told that our patient's anemia was well controlled. In the adult other hemolytic anemias in the absence of crises or shock produce little hepatocellular damage other than a moderate degree of cholestasis, siderosis, or damage from pigment calculi. The exception, of course, is sickle cell anemia, which can produce severe liver damage, probably from the thromboses which are characteristic of this disease. However, this patient did not have any evidence of hemolysis, nor was her jaundice acholuric. Achlorhydria was present. Carcinoma of the stomach is somewhat more prevalent in individuals with pernicious anemia with achylia than in the general population. I shall keep in mind the possibility that the patient had a relatively silent carcinoma of the gastric fundus.

Now let us consider the sequence of events. First, there was anorexia and a swelling of the abdomen due to ascites; also there was edema of the legs. Weakness, easy fatigability, and malaise developed shortly thereafter, and then they were followed by symptoms more easily referable to the liver—heaviness in the right upper quadrant of the abdomen, nausea, flatulence, and dark urine. This early development of ascites and fluid retention is startling to me. Without debating the theories of ascites formation, we know that it is unusual for ascites to form so promptly, even if the water- and sodium-retaining mechanisms that operate in hepatocellular damage are called into action. I would be more comfortable if a venous or a lymphatic venous obstructive mechanism producing portal hypertension, either old or new, intrahepatic or extrahepatic, could be demonstrated. In fact, the possibility that this might be an example of the Budd-Chiari syndrome suggested itself at first glance. However, thrombosis of the hepatic veins, either primary endophlebitis or thrombosis secondary to polycythemia or a new growth, follows an entirely different clinical course. The result is either an abrupt shocklike state or a milder form of liver damage than in this case, progressing to fibrous scarring. Hepatomegaly and venous distention, accompanied by rapidly developing ascites, are the most common causes. Portal vein thrombosis is a frequent complication. This is not the picture here.

Therefore, we must look for an intra- or extrahepatic source for the portal hypertension. Nothing in the protocol helps very much. Perhaps there was underlying and undiagnosed cirrhosis of the liver. Perhaps the pernicious anemia was really a macrocytic anemia caused by liver disease of long standing. It seems to me that such a state would have been suspected if there were any earlier clinical findings. The absence of hepatomegaly seems to eliminate a hepatoma as a possibility. The laboratory test results are not consistent with extrahepatic biliary obstruction and seem to rule out a neoplasm of the bile duct system. Again, my suspicion of metastatic liver disease is aroused by the fact that carcinoma of the stomach is more usual in achylic pernicious anemia. Also, there is slight hyperglycemia and glycosuria, and these states could accompany a pancreatic neoplasm or pancreatitis. However, these possibilities are purely speculative. There is no substantive evidence for neoplastic disease in this patient.

I can find no evidence for portal vein thrombosis. The absence of splenic enlargement, a condition which must have been looked for by several examiners after the paracenteses, is most telling. Another negative observation is the absence of clay-colored or even light-colored stools; this almost surely eliminates extrahepatic obstruction as the cause of the jaundice.

Thus we are led to consider those features of the case which epitomize hepatic parenchymal damage. All the data fit well into the picture of severe, albeit somewhat prolonged or recurrent, hepatic failure. The nature and progression of the symptoms are supported by the laboratory data. Most of the data in the protocol are obvious and need no explanation. The low cholesterol esterification always suggests severe parenchymal damage. Yet the total cholesterol and the percentage of esters rose on the fifteenth hospital day—after the patient had been ill for at least five weeks—concomitant with a rise in alkaline phosphatase. To me this bespeaks a cholestatic element superimposed on the primary disorder. Most likely it is intrahepatic and is represented histologically by bile thrombi. Also at this time the leukocytosis increased and mental deterioration set in. The other laboratory determinations were essentially unchanged at that time. The prothrombin time remained prolonged, and occult blood was in the stool. The immediate cause of death was an abrupt hematemesis. This does not necessarily mean esophageal varices, for which we have no definite evidence; a considerable number of such patients bleed profusely from tiny erosions of the gastric or duodenal mucosa. In the absence of more than the slight evidence of collateral circulation furnished by the moderately distended superficial veins, it is more likely that such was the cause of hematemesis in this patient.

If we had been told of or could reasonably suspect pre-existing hepatic fibrosis, the total picture would be the one that bedevils clinicians when a cirrhotic or precirrhotic patient exhibits signs of advancing parenchymal failure. In the temperate zones this usually is the result of a bout of alcohol plus malnutrition of a specific or nonspecific infection. The resulting picture often resembles obstructive jaundice, and some observers call it "binge drinker's liver." Again, the old confuser, a hepatoma arising in a cirrhotic liver, enters the picture. With a hard, nodular liver enlarged by fresh fatty metamorphosis the findings are often confusing. Two facts may be helpful. A rise in alkaline phosphatase out of proportion to changes in other liver function test results and a rise in serum acid mucoprotein, which in acute hepatic failure usually is depressed, are suggestive of an expanding lesion. A biopsy will furnish an answer if the tumor is hit with the aspirating needle.

The syndrome of so-called florid cirrhosis is quite similar to the picture in this case. In this syndrome rapidly advancing fibrosis is imposed on a fatty liver exhibiting cellular degeneration of a nonspecific type, which often is difficult to diagnose histologically. A high gamma globulin may help in distinguishing this condition. Edema and ascites usually develop rapidly. At first glance, florid cirrhosis seemed a distinct diagnostic possibility for our patient. However, there is no real evidence for malnutrition or previous liver damage. We must perforce eliminate exposure to hepatotoxins, which may range from alloxan to xylidine, the most usual being the halogenated hydrocarbons, since such exposure is denied. Renal involvement is not indicated in the protocol; its absence argues against organic toxins such as these and infectious agents such as Leptospira.

This leaves us to consider the infectious agents. The most usual is viral hepatitis. Epidemic hepatitis is due to Type A, and homologous serum jaundice is due to Type B. In view of the history of monthly injections of vitamin B_{12} I have a strong suspicion that we are dealing with Type B. In general, the Type B virus is more likely to produce massive or submassive hepatic necrosis than Type A. Most of the cases of infectious hepatitis that are caused by the Type A virus are mild and self-limiting. Most of these patients recover from the acute illness; the mortality is low. However, the severity of the disease is greater with the Type B virus; complications are more frequent, and the mortality is higher. If this proves to be a case of viral hepatitis, which I think is most probable, it is not unlikely that the mental symptoms were caused by organic brain damage histologically manifested by perivascular cuffing rather than by the effects of ammonia or some other toxic substance.

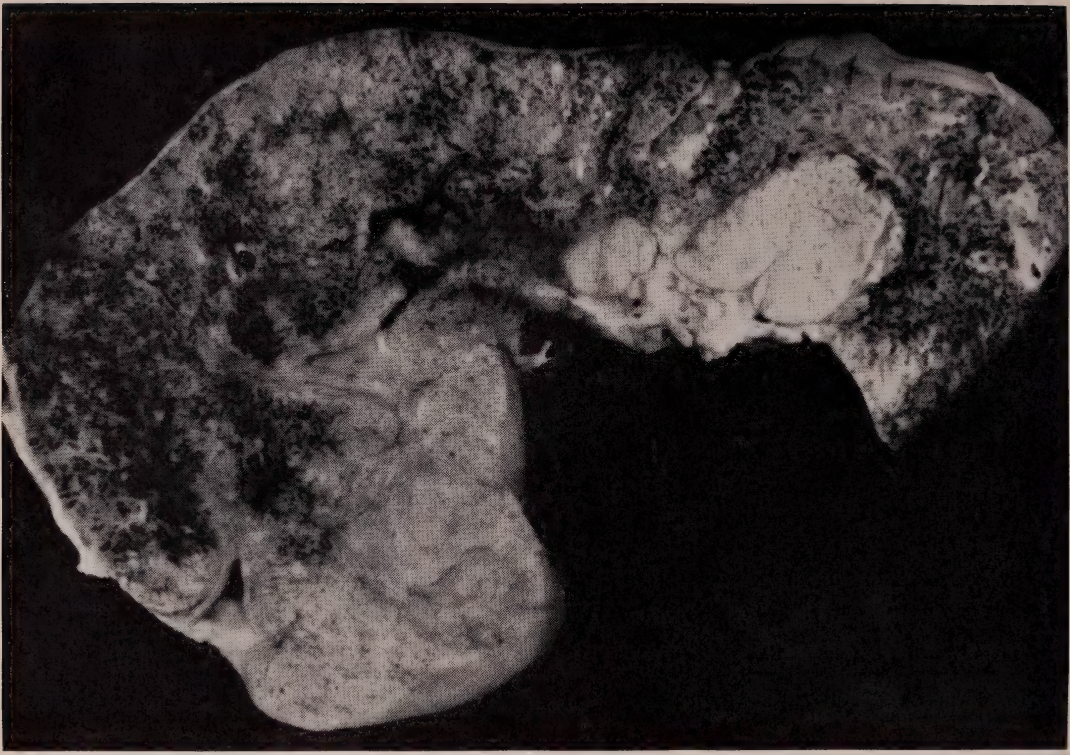

FIG. 1. Cut surface of liver showing extensive necrosis of right and left lobes with spared areas in the inferior portion.

The duration of the illness was about six weeks. I think that the first symptom was the episode of epistaxis three weeks before the patient's admission. The anicteric phase, which can be variable, was prolonged, and the febrile phase, which often is present, was absent as far as we can tell. The progress of her disease leads me to believe that this case falls into the subacute massive necrosis group of viral hepatitides in which the transition toward fibrosis occurs, with cholestasis, cholangiolitis, and endophlebitis present histologically in addition to the diffuse cellular degeneration. The transition toward fibrosis with its consequent portal hypertension is the extra factor which explains the ascites and edema. You will note how closely this state resembles florid cirrhosis. In fact, it demands careful histopathologic study to distinguish between the two and to distinguish both from toxic, noninfectious hepatitis.

As a matter of fact, all types of hepatic necrosis must be a complex of toxic and trophic (nutrile or metabolic) factors. All toxic substances, whether organic, inorganic, or infectious, in the last analysis must exert their effects on the fundamental activities of the cellular enzyme systems. It is simply an indication of our present ignorance to attempt to differentiate between toxic and trophic actions. Some day we will reach the stage of knowledge in which we will classify these diseases in terms reflecting the cellular level of damage.

Diagnoses

Clinical.—*Postnecrotic cirrhosis of liver (acute yellow atrophy).*

Dr. Gais.— (*1*) *Viral hepatitis, severe, with cholestasis, cholangiolitis, and endophlebitis;* (*2*) *gastrointestinal hemorrhage from esophageal varices* (*?*) *or gastrointestinal erosions* (*?*); *and* (*3*) *ascites, recurrent.*

Anatomic.—(*1*) *Acute viral hepatitis, massive, with extensive hepatic necrosis;* (*2*)

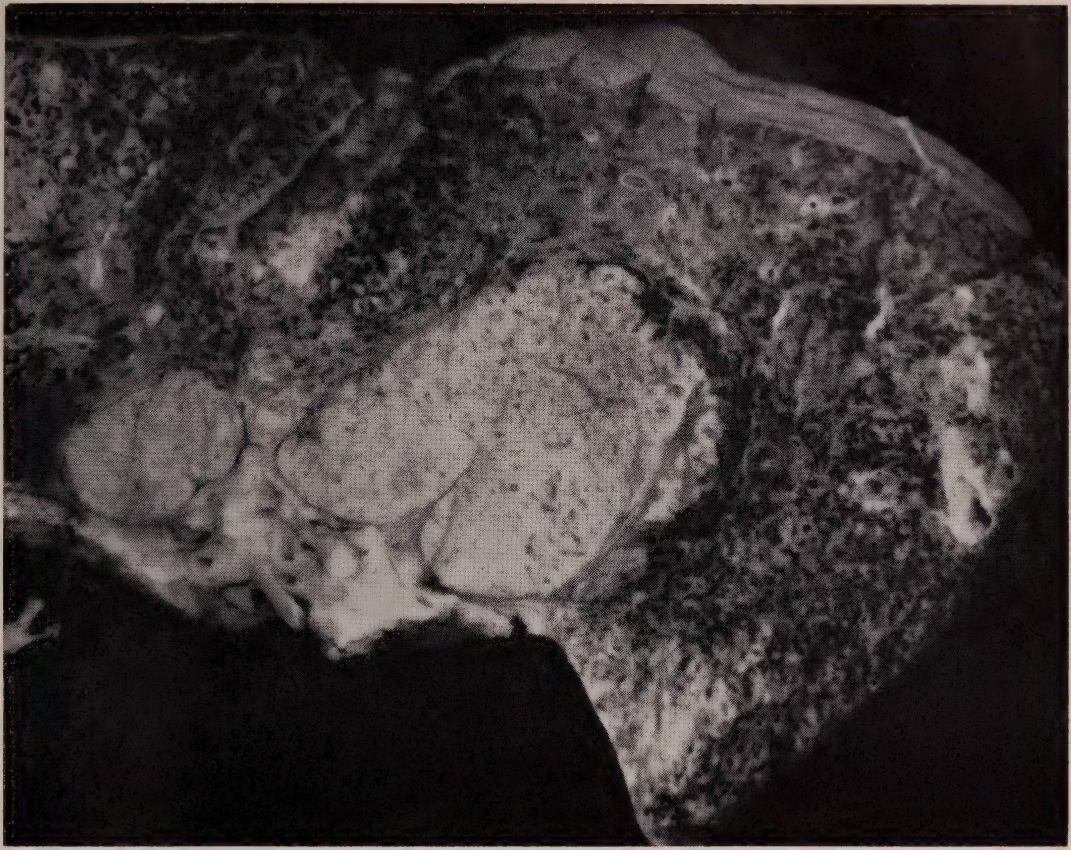

FIG. 2. Detail of Figure 1 showing collapse of necrotic liver parenchyma with small areas of intense congestion and petechial hemorrhage. The circumscription of the spared areas suggests irregular nodular regeneration, but there was no fibrous tissue between them and the necrotic parenchyma.

esophageal varices, ruptured; (*3*) *gastrointestinal hemorrhage, terminal, 1,000 cc.;* (*4*) *ascites, recurrent, 4,000 cc.*

Pathologic Report

WILLIAM B. OBER, M.D.: At autopsy there were 4,000 cc. of ascitic fluid. The gastrointestinal tract contained about a liter of fresh and clotted blood which had come from esophageal varices. The liver weighed 1,150 Gm. The capsule was wrinkled, but there was no nodularity. The liver was soft, friable, and yellowish with blotchy reddish areas. On section most of the liver was evidently necrotic with confluent areas of congestion and hemorrhage disrupting most of the parenchymatous architecture. The inferior portions of the right and left lobe contained spared areas which, although soft and yellowish, had a preserved architecture and no hemorrhagic streaks (Figs. 1 and 2). These areas were sharply demarcated from the almost mushy parenchyma nearby and gave the gross impression of being almost separate nodules.

However, microscopic examination disclosed no such line of demarcation. In fact, the same process was evident in necrotic as in the so-called spared areas, only a quantitative difference being visible. The lesion was diffuse and consisted of extensive necrosis with the disappearance of parenchymatous cells and complete disruption of the lobular architecture (Fig. 3). Patches of hemorrhage were common, but the lighter areas consisted of homogenization of necrotic tissue and condensation of stroma. Scattered clumps of remaining liver cells and

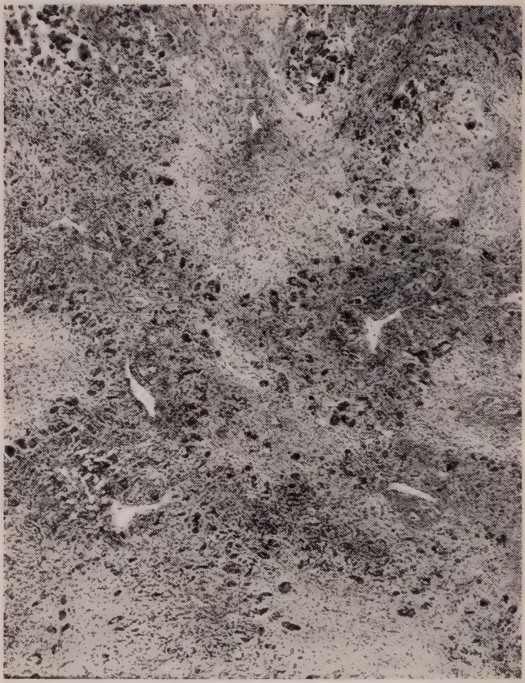

FIG. 3. Low-power view of liver showing extensive necrosis of parenchyma with complete devastation of lobular architecture.

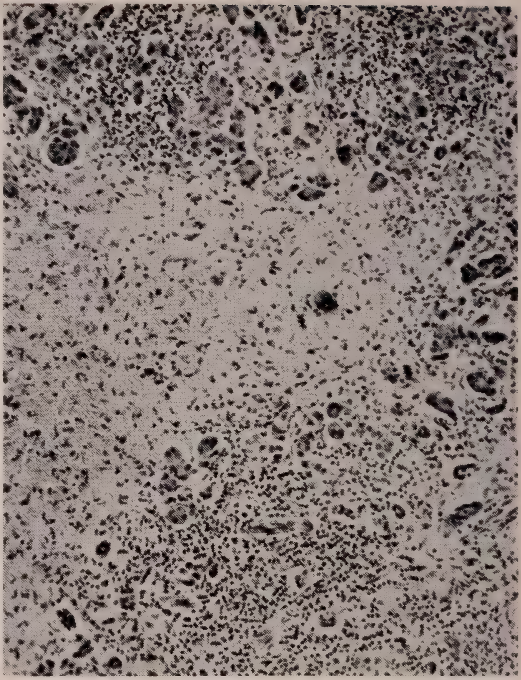

FIG. 4. Medium-power view of liver showing infiltrate of lymphocytes and mononuclear cells, scattered clumps of dying liver cells, and a few spared bile ductules.

bile ductules were surrounded by an infiltrate of lymphocytes and mononuclear cells (Fig. 4); neutrophils were a rarity. Occasional bile thrombi were seen, confirming Dr. Gais's inference that an element of cholestasis had supervened. In some areas the broad zones of condensed stroma suggested fibrosis, but aniline blue stains for collagen dispelled this suspicion. There was no actual fibrosis; the occasional collagen fibers that were demonstrated were those of pre-existing collagen. In some microscopic fields, islands of less evidently necrotic liver cells, separated by collapsed, condensed stroma, giving the artefactitious appearance of regenerating lobules, were seen (Fig. 5). Actually, the cells in these islands were badly damaged if not actually necrobiotic. It is easy to visualize how such broad bands of condensed stroma might lead to the coarse, irregular nodularity of postnecrotic cirrhosis if recovery were to take place (healed acute yellow atrophy). Silver impregnations for reticulum show how the reticulum stroma is condensed both between partly preserved lobules and in broad areas of necrosis; presumably these fibers serve as the lattice for collagenization in the healing phase (Figs. 6, 7, and 8). In short, the picture is that of massive hepatic necrosis due to viral hepatitis. This lesion is described best by Lucké,[1] who studied it in military personnel, as fatal epidemic hepatitis. On morphologic grounds it is not distinguishable from serum hepatitis (needle jaundice).

It is of some clinical importance to recognize the fact that esophageal varices and ascites can occur in the absence of hepatic fibrosis. In our patient there was not time for cirrhosis to develop; yet there was significant portal hypertension. Although the incubation period for either Type A or Type B viral hepatitis is variable, there is no reason to believe that this patient was ill for more than six weeks.

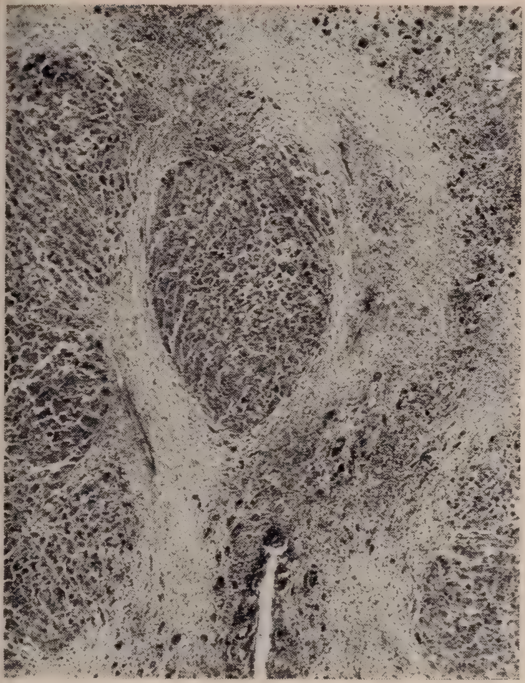

Fig. 5. Low-power view of liver at boundary between grossly necrotic area and spared area showing sequestration of aggregate of damaged liver cells simulating a regenerating lobule. There was no collagen between the "lobule" and the liver parenchyma below.

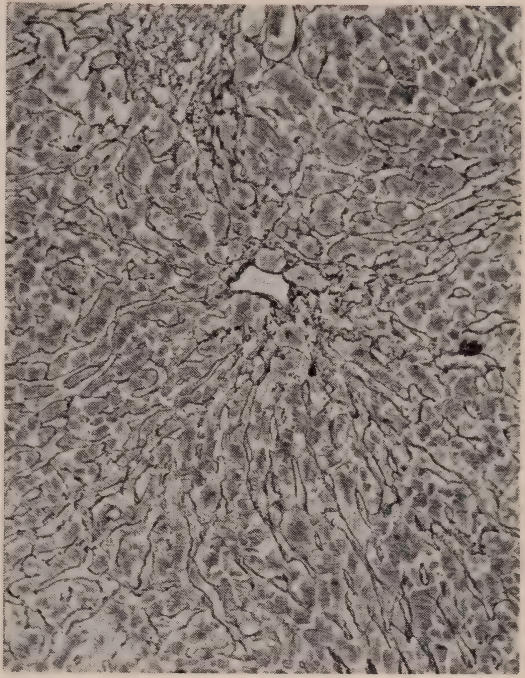

Fig. 6. Medium-power view of reticulum stain of a spared area showing preservation of parenchymal trabeculae and reticulum about a central vein.

It is possible, however, that the actual infection may have occurred even six months prior to her initial symptoms. Lucké divided the clinical course of his 125 cases into three stages: (1) the preicteric stage, usually seven days or less, (2) the icteric stage, usually lasting three to four weeks, and (3) the terminal stage, usually less than ten days. In his series the average duration of the illness before death ensued was about six weeks, and the terminal episode usually consisted of hepatic failure and symptoms referable to the central nervous system. Ascites, usually a rather large volume, over 2 L., was present in 60 per cent of his cases. He described a peculiar type of sloughing ulceration of the lower one third of the esophagus, a process which often is indistinguishable on gross inspection from postmortem autolysis but which on microscopic examination is disclosed as consisting of numerous small, linear erosions with the epithelium denuded and the presence of an acute inflammatory reaction. This lesion was not present in the case under discussion. The esophageal varices were typical, and the only areas of denudation and inflammation in the mucosa were due to the rupture of small varices.

Dr. Gais: As I remarked earlier in the discussion, the appearance of ascites and edema in an otherwise usual case of massive hepatic necrosis requires explanation. This led to the consideration of the various types of pathologic condition in the liver in which ascites occurs rapidly. I purposely avoided discussing the biochemical and humoral factors leading to fluid retention in this degree of liver failure. But such factors do exist and would be operative in other cases of this nature which do not exhibit ascites, edema, and esophageal varices. Thus, I concluded that the temporal factor was of importance; that some degree of endophlebitis, fibrosis, and regeneration with

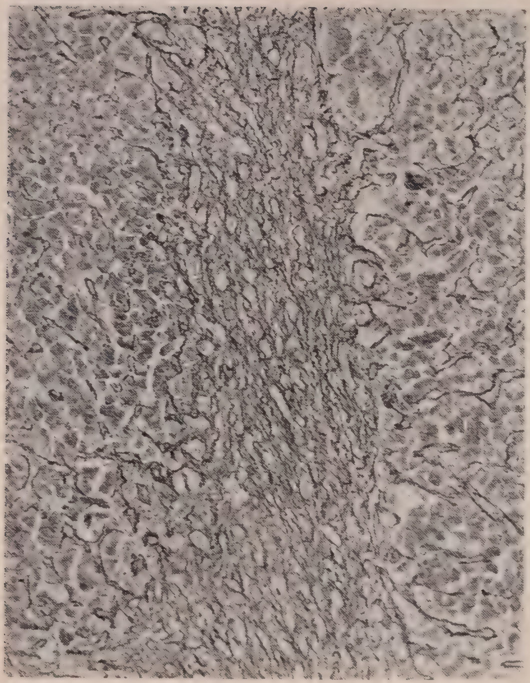

FIG. 7. Medium-power view of reticulum stain showing collapse and condensation of interlobular reticulum fibrils. Parenchymal tissue on either side was damaged but had not undergone clearing and disappearance.

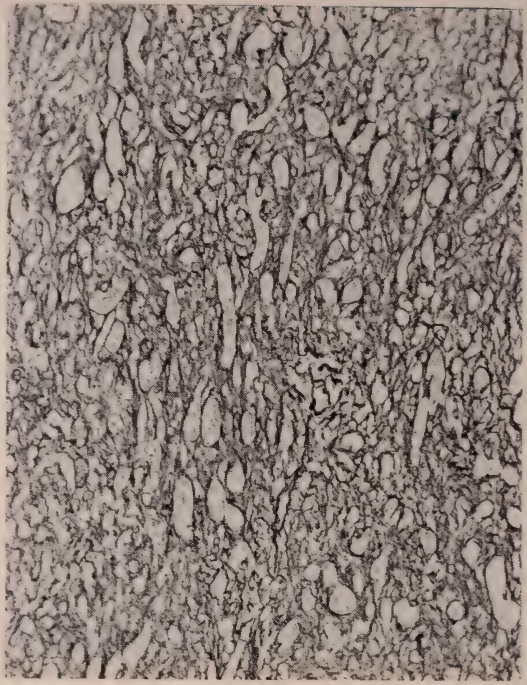

FIG. 8. Medium-power view of reticulum stain of an area of diffuse necrosis showing complete collapse of parenchyma and condensation of reticulum. It is easy to visualize subsequent development and topography of broad bands of collagen in patients who survive.

nodular compression of the portal circulation probably existed; and that this case fell into the prolonged or recurrent submassive necrotic type of viral hepatitis, the patient dying in an early stage preceding postnecrotic cirrhosis.

In the light of Dr. Ober's observations we must seek to explain how portal hypertension can develop in the absence of hepatic fibrosis. When massive necrosis occurs with the destruction of extensive areas of the lobular parenchyma, the sinusoidal circulation is essentially lost and intrahepatic hemodynamic gradients are disturbed. Popper and Schaffner[2] point out the fact that as septa form, some of the sinusoids become incorporated within the new septa and some of them widen and assume the appearance of veins. This vascular modification occurs irrespective of whether or not the septa start in areas of collapse following massive or submassive necrosis or as an aggregation of collagenous membranes around necroses or fat accumulations. In other words, even in the absence of fibrosis certain sinusoids may expand and take on the appearance of veins. Popper and Schaffner develop this idea by stating that these channels, having lost contact with liver cells, become short cuts between branches of the portal vein and tributaries of the hepatic vein shunting blood so as to bypass the parenchyma or its remains. In addition, these newly formed channels no longer equilibrate the difference between the blood pressures in the hepatic arteries and the portal veins but rather act as short anastomoses between the two vascular systems of the liver. Ergo, the pressure in the hepatic artery and its branches can be reflected in the pressure of the branches of the portal vein and will be transmitted to the main portal trunk. The consequences are ascites and esophageal varices.

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ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. ANGRIST, M.D., *Chairman*
Committee on Prize Essays

Current Concepts in

DIABETES MELLITUS

Sponsored by the Clinical Society of the New York Diabetes Association

Editors

MAX ELLENBERG, M.D.
HAROLD RIFKIN, M.D.

Insulin Inhibitors and Insulin Resistance

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(From the Radioisotope Service, Veterans Administration Hospital)

HOMEOSTATIC regulation of physiologic functions generally involves a proper balance of opposing forces. Although it is necessary frequently for the scale to teeter one way or the other to satisfy body requirements in acute situations, counter-regulatory adjustments usually are provided to insure a rapid restoration of balance. Such a well-regulated mechanism for the maintenance of homeostasis and for appropriate response to acute change is nowhere better illustrated than in the control of blood sugar concentration. An integral part of this mechanism is the secretion of insulin in response to hyperglycemia. However, if serious sequelae are to be avoided, it is equally important that there be no prolongation of insulin effect once the blood sugar has returned to normal levels.

Insulinase

For the damping of insulin action a very potent physiologic insulin antagonist has been provided in the form of an insulin-degrading enzyme. This enzyme, termed "insulinase" by Mirsky,[1] who established its role in insulin metabolism, is present in most tissues of the body, but in particularly high concentration in the liver and kidneys,[2] and is responsible for the rapid degradation of circulating insulin. Elgee, Williams, and Lee[3] have shown by the analysis of tissues that insulin-I^{131} is quickly concentrated in certain organs including those mainly responsible for its degradation, and the rapid accumulation of insulin-I^{131} by the liver and kidneys has been demonstrated also in vivo with external counting technics.[4] There is little doubt that insulinase is responsible for the very short life span of plasma insulin in vivo; in man, half of the circulating insulin is degraded in about thirty-five minutes.[4] From experiments with various insulin dose levels in animals[5] and in man[4] it appears that this rate of destruction is not diminished even at insulin concentrations far exceeding the physiologic range. In vitro studies with liver insulinase by Mirsky[2,6] and others[7,8] have shown that this system is not saturated except at relatively tremendous concentrations of insulin.

It has been suggested[9] that excessive insulinase action or the deficiency of a normally occurring insulinase inhibitor might be an etiologic factor in some cases of diabetes mellitus. However, this hypothesis is not supported by observations indicating a normal rate of insulin-I[131] degradation in untreated diabetic subjects.[4] Furthermore, as shown by Bornstein and Lawrence,[10] plasma insulin concentrations in diabetic subjects not subject to ketosis may be in the normal range and these findings have been confirmed and extended in more recent investigations demonstrating normal or higher than normal concentrations of circulating insulin following glucose administration in subjects with early maturity-onset diabetes[11,12] and in diabetic subjects sensitive to tolbutamide.[13] These observations, as well as the marked differences in sensitivity to exogenous insulin exhibited in various endocrinopathic states, have stimulated the search for a different kind of insulin antagonist, one that inhibits the action of insulin on tissues. In studies directed toward this end, the excised rat diaphragm has been the preparation most frequently employed for the detection of plasma insulin inhibitors.

Plasma Insulin Inhibitors of Nonimmune Origin

The choice of the rat diaphragm to demonstrate the effects of insulin in in vitro studies stems from the observations of Gemmill[14] that glucose uptake by isolated rat hemidiaphragm is augmented by insulin and of Stadie *et al.*[15] that the glycogen content of this muscle is increased by brief exposure to insulin (0.1 unit per milliliter) prior to incubation in glucose solution.

Bornstein and Park[16] had observed a lower glucose uptake by diaphragms incubated in the serums of alloxan-diabetic rats than in the serums of normal rats and concluded that these differences were due to an insulin inhibitor in the serums of diabetic animals rather than to the presence of insulin in normal serum, since adrenalectomy or hypophysectomy of the diabetic serum donors restored glucose uptake to normal. The inhibitor could be destroyed by repeated freezing and thawing of the serum and was recovered in the lipoprotein fraction. These findings were confirmed by Hendley, Bregman, and Krahl.[17] More recently, Baird and Bornstein[18] have reported the presence of a serum factor in normal subjects as well as in insulin-resistant and noninsulin-resistant diabetic subjects which is capable of inhibiting glucose uptake by the diaphragm in the absence of added insulin. Whereas this factor resisted an insulin-extraction procedure using a mixture of organic solvents, an insulin-antagonist present in the crude serums of insulin-resistant subjects was no longer present in the extracted serum. However, these inhibitors have not been characterized sufficiently to permit proper evaluation of their clinical significance. Vallance-Owen and Lukens[19] have observed a factor in the serum of pancreatectomized cats that inhibits the action of 0.001 unit of insulin per milliliter on glucose uptake by the rat diaphragm but does not influence glucose uptake in the absence of added insulin. Hypophysectomy or adrenalectomy prevented the appearance of the inhibitory factor in the pancreatectomized animals, and treatment of pancreatectomized and adrenalectomized animals with gluco-corticoids resulted in the appearance of the inhibitory factor. The inhibitory factor of Vallance-Owen and Lukens was further distinguishable from the inhibitor of Bornstein and Park in being stable to repeated freezing and thawing. Vallance-Owen, Hurlock, and Please[20] have reported also an insulin-inhibitory factor in the serum of poorly controlled (but not ketotic) human diabetic subjects, some of whom had never been treated with insulin.[19]

Using the Stadie technic,[15] Field and Stetten[21] have studied a serum insulin antagonist appearing in certain patients during the stage of acute diabetic acidosis and disappearing within a few hours following the institution of insulin therapy. This factor is a nonlipoprotein component of the alpha globulins and is stable to freezing and thawing[22] and to the action of trypsin,[23] but is destroyed by chymotrypsin[23] and by heating at 100 C.[22] Using the same technic, Marsh and Haugaard[24] had earlier reported insulin inhibition by serums from normal patients and mild diabetic subjects but much more insulin inhibition by serums from three severely insulin-resistant patients. However, in contrast to the serum inhibitor of Field and Stetten, which was equally effective whether the diaphragm was exposed to the serum before, after, or at the same time as exposure to insulin, the inhibitor of Marsh and Haugaard was demonstrable only when the diaphragm was exposed first to serum and then to insulin. It was suggested that the serum antagonist might be an insulin antibody.

Unfortunately, results obtained with the rat diaphragm method have not been duplicated frequently in different laboratories perhaps because of the use of different technics and different animal species. For example, Vallance-Owen and Lukens working with cats[19] did not report the factor described by Bornstein and Park[16] in rat serums, and Groen *et al.*[25] studying glucose uptake by the diaphragm, were unable to demonstrate insulin antagonism in the serums of depancreatized dogs or to find evidence of insulin antagonists in the serums of human subjects in diabetic coma. Furthermore, the dilution of plasma or serum appears to increase appreciably the endogenous serum insulin-like activity exhibited in the rat diaphragm[26,27] or the rat epididymal fat pad[28,29] and has been ascribed to a greater effect of dilution on serum insulin-inhibitors (supposedly present in all serums) than on the endogenous insulin itself.[27,28] Such a dilution effect would be anticipated if the plasma inhibitor reacted reversibly to form a complex with insulin according to the law of mass action. However, no such complex has been demonstrated and insulin added to normal serum in vitro is recovered quantitatively in most studies[19,30,31] but not in all.[32] Finally, it must be recognized that glucose uptake by tissues is influenced by many factors other than the concentration of insulin; as one example it may be noted that epinephrine inhibits the effect of insulin on glucose uptake by the diaphragm[33] but, like insulin, increases glucose uptake by adipose tissue.[34]

With the exception of the insulin antagonist of Marsh and Haugaard,[24] which may have been an insulin antibody, and that of Field and Stetten,[21–23] the insulin inhibitors described have been reported not only in cases exhibiting insulin resistance, but also frequently in cases exhibiting normal serums.

Insulin Resistance and Insulin Antibody

Although the generally accepted criterion for insulin resistance is the persistent requirement of more than 200 units of insulin per day, this restriction appears to be too arbitrary in view of the much lower needs of totally depancreatized normal subjects,[35] and it would seem reasonable to suspect some degree of insulin resistance whenever requirements exceed about 100 units per day. The phenomenon of clinical insulin resistance, though not common, is not as rare as had once been supposed. In 1950, Smelo[36] was able to collect a total of only 54 cases of insulin resistance from the English literature and, in 10 of these cases, associated insulin allergy suggested that immune mechanisms played a causative role in the resistance to insulin. Yet, over the past four years, our laboratory has studied the serums of 19 patients with clinical resistance, 14 of whom required more than 200 units per day, and all of whom exhibited high circulating concentrations of insulin antibodies. Lerman[37] had earlier expressed the opinion that the cause of insulin resistance is attributable to the formation of insulin antibodies in most cases. Since our experience is in agreement with this opinion, the remainder of this discussion is limited to a consideration of immunity mechanisms in insulin resistance.

Immunity Mechanisms in Insulin Resistance

Because of the rarity of overt insulin immunity and the difficulty frequently experienced by investigators in demonstrating insulin antibodies,[38] in the past it has been suggested that insulin is not antigenic.[39] However, even in the older literature, evidence for the antigenicity of insulin was not lacking. Insulin sensitization in guinea pigs had been demonstrated by means of the Schultz-Dale technic or by anaphylactic reaction in several laboratories[40–43] and by the presence of complement-fixing antibodies.[43,44] Furthermore, evidence for insulin-neutralizing antibodies in man was established by Lowell[45] and Lerman[38] who showed that the serums of certain insulin-resistant human subjects could protect mice from the hypoglycemic effects of insulin. Subsequently, Moloney and Coval[46] demonstrated that guinea pigs could be immunized regularly with crystalline beef or pork insulin and that insulin antiserums from these animals were capable not only of neutralizing various other animal insulins obtained from extracts of pancreas but also of inducing diabetes in mice by neutralizing endogenous mouse insulin. Evidence for the production of insulin antibodies in immunized animals and in human subjects requiring large amounts of insulin was presented also by Arquilla and Stavitsky[47] employing insulin-sensitized red blood cells.

The existence of circulating antibodies to insulin in noninsulin-resistant human subjects remained unsuspected for years for the reason that the immunologic methods in use were not sufficiently sensitive for the detection of low concentrations of antibody. With the application of radioisotope technics it became possible to identify very small amounts of nonprecipitating insulin-antibody complexes by means of paper chromatography, zone electrophoresis, and ultracentrifugation.[4] Paper chromatography is the simplest of these technics and by the analysis of serum or plasma to which I^{131}-labeled insulin has been added, the presence of insulin-binding antibodies may be clearly demonstrated. Insulin-I^{131} added to nonimmune serum is adsorbed to the paper and remains at the site of application.[4] In contrast, insulin-I^{131} added to the serum of insulin-treated subjects migrates, in whole or in part, with the serum proteins; on paper or starch-block electrophoresis, the zone of migration is just in advance of the gamma globulins.[4,48]

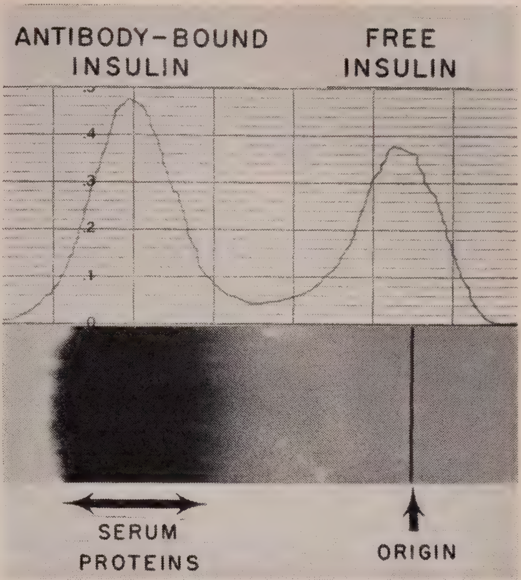

Fig. 1. Radiochromatoelectrophoretogram of Antiserum-Insulin I^{131} Mixture. In nonimmune serums all the radioactive insulin is "free" and remains at the origin. In antiserum-insulin mixtures in which the concentration of antibody is higher and/or the concentration of insulin is lower, all of the insulin-I^{131} would be located in the "bound" region.

When the concentrations of insulin and antibody are such that only a fraction of the insulin-I^{131} is bound to antibody, paper chromatoelectrophoresis reveals two radioactive peaks, one representing "free" insulin which is adsorbed to the paper at the origin, the other representing antibody-bound insulin which has traveled with the serum proteins (Fig. 1).

Insulin-antibody complexes in man exhibit an electrophoretic mobility corresponding to the inter-gamma-beta globulin region in most cases.[48] The same mobility is observed in guinea pig antiserums but in rabbits the complexes migrate primarily with the gamma globulins.[49] Insulin neutralizing antibodies in the serums of insulin-resistant human subjects have been recovered with the gamma globulins after salt fractionation[50,51] or starch electrophoresis[52] but as with ethanol fractionation,[48] it is difficult to avoid some contamination with beta globulin in the gamma globulin fraction separated by these methods.

In addition to the methods already described for the demonstration of antibody binding of insulin-I^{131}, precipitation of insulin I^{131}-antibody complexes with rabbit anti-human globulin serum[53] or with cold ethanol-salt mixtures[54] has been described. Furthermore, it seems probable that the insulin-binding antibody is the same antibody responsible for a number of other immunologic manifestations, particularly insulin neutralization,[55,56] red cell hemagglutination, and blocking of skin sensitivity,[57] all of which are consistent with the presence of non-precipitating antigen-antibody complexes. However, there is evidence that the skin-sensitizing antibody[57] is different from the blocking antibody and it is possible that the precipitating antibody described by Moloney and Aprile[58] in a single horse serum represents yet another distinct variety. That the latter was an antibody to insulin and not to contaminating proteins was proved by the recovery of hormonally active insulin following the dissociation of the precipitated complexes with acid.

The presence of insulin-binding antibodies explains the difference in behavior of injected insulin-I^{131} in insulin-treated and non-insulin-treated (control) subjects. Since insulin is a relatively small protein molecule and can normally pass readily through the capillary wall, insulin-I^{131} escapes rapidly from the circulation of control subjects whence it is rapidly degraded as described previously. However, in the circulation of insulin-treated subjects insulin-I^{131} becomes bound to antibody; the large size of the insulin-antibody complex restricts its passage through the capillary wall, escape of insulin from the blood stream is delayed, and there is a prolonged retention of insulin-I^{131} in the blood stream of such patients. Moreover, it has been demonstrated that insulin bound to antibody is not subject to the degradative action of liver insulinase in vitro.[8] It may therefore be concluded that, should insulin-antibody complexes gain entry into extravascular spaces, the bound insulin would not only be protected from the degrading action of insulinase but also would likely be restricted from access to tissue cells and hence from exercise of hormonal activity. However, insulin-antibody complexes undergo spontaneous dissociation[4,59–61] and free insulin released in this manner then becomes available to cells. Thus, the initial binding of insulin and the subsequent dissociation of insulin-antibody complexes may lead to delayed reactions.[59,61–63]

TABLE I.—Insulin Dosage and Insulin-Binding Capacities of Antiserums in Insulin-Resistant Patients

Patient Numbers	Insulin Dose (Units Per Day)	Binding Capacity (Units of Plasma Per L.)
1	120	57
2	480	60
3	200	70
4	300	85
5	300	>100
6	250	105
7	150	106
8	190	122
9	300	140
10	500	180
11	145	195
12	150	210
13	800	210
14	700	250
15	500	500
16 (5 years old)	700	1,250
17	4,800 (units in previous 48 hours)	270
18	20,000 (units previous week)	750
19	14,000 (units previous day)	4,700

Virtually all insulin-treated subjects, diabetic or nondiabetic, show the presence of insulin-binding antibodies after a few weeks of therapy, but in the vast majority, the insulin-binding capacities of serum antibody do not exceed 10 units of insulin per L.[4,59–61,63] Since in these subjects the circulating antibody is saturated by relatively small amounts of insulin, and insulin in excess is free to exert its hormonal influence, a significant increase in insulin requirements is not to be expected.[4] However, in insulin-resistant subjects, insulin-binding capacities are much greater[55,59–61,63,64] and range from 60 to 750 units of plasma per L. and higher on occasion (Table I). In such cases relatively enormous doses of insulin may be required to exceed the antibody-combining capacity and to allow for an effective concentration of free insulin. As noted previously, insulin which is complexed to antibody may eventually dissociate therefrom and exert an hormonal action, but a significant fraction of the insulin-antibody complexes may be removed from the circulation and degraded by specific immunologic mechanisms operative in the elimination of soluble antigen-antibody complexes,[65] without the insulin ever having been released in the free form. Thus a continued high insulin requirement is maintained. In general, patients taking the largest amounts of insulin (Table I) exhibited the highest antibody concentrations but there is not a strict correlation between antibody concentration and insulin dosage other than that both are high. The lack of a proportional increase in insulin dose with antibody concentration is related to several factors: (1) Insulin dosage is not necessarily identical with insulin requirements since the degree of control is often quite variable; (2) human insulin is bound to antibody to a much lesser extent than animal insulins,[55,66] and, in patients capable of supplying insulin from their own pancreas, the endogenous output may contribute significantly to the total useful insulin; (3) differences in the rates of formation and dissociation of insulin-antibody complexes in different serums[61] will result in a variable effectiveness of the same insulin dose even at the same antibody concentration; (4) the rate of specific immunologic elimination of soluble antigen-antibody complexes may vary among different patients; and (5) finally, the possibility that other insulin antagonists contribute to the insulin resistance cannot be excluded.

Other significant clinical phenomena are interpretable also in terms of the insulin-antibody reaction. For example, it is observed on occasion that an insulin-resistant patient requiring enormous dosages of insulin to control keto-acidosis during an acute episode may, for a period of several days thereafter, experience repeated hypoglycemic reactions in the absence of further insulin therapy. This course of events can be explained by the trapping of large amounts of insulin in insulin-antibody complexes and the subsequent slow release of insulin from dissociating complexes which provide the tissues with a continuous supply of insulin sufficient to induce reactions once the blood sugar has been reduced to normal levels.

Conclusion

The treatment of insulin resistance is not completely satisfactory. Approximately half the patients will show a significant reduction in insulin requirement following treatment with adrenocortical steroids and Morse[67] has found an accompanying decrease in insulin-antibody concentrations in two such cases, paralleling the experience of the authors in several other patients. The time sequence of response in these cases is consistent with the interpretation that the steroids inhibit the rate of insulin-antibody synthesis. In a few cases which have come to our attention phenethylbiguanide (DBI) appeared to have a beneficial effect but a possible relationship to the immune mechanism has not been adequately investigated.

The reader is referred to a recent review by De Bodo and Altszuler[68] for a discussion of hormonal factors that influence the effects of insulin and alter the response to insulin.

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(*Number four in a series on Current Concepts in Diabetes Mellitus*)

The greatest, the most important of the arts is living.—ALDOUS HUXLEY

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D., Secretary, Medical Education for National Defense (MEND) Committee, Albany Medical College

Survival in a Thermonuclear War

VIII. Basic Dietary Supplies and Equipment for Shelters

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The Office of Civil and Defense Mobilization recommends that each shelter contain food and water supplies for fourteen days. It appears from available evidence that this amount may prove totally inadequate. In the event that a mass area attack takes place, almost all food stocks above ground either will be destroyed, or will be so badly contaminated that they cannot be eaten for some time. Our transportation system will be completely broken down, with railroads nonfunctional and most truck routes destroyed or blocked. Even if food were available how could it be transported? Farm animals will almost all be killed by radiation. The fields will be badly contaminated, so that few farmers will risk death to plant a new crop for several months. This country has over 2 billion bushels of surplus grain. However, no one apparently has had the foresight to store it below ground, in caves, and so forth, so that much of it will be covered with radioactive fallout. After a period of six months to one year, the natural decay of that fallout will be such that the grain will be edible, but until that time provision must be made to store enough food to keep a family alive and healthy for at least a six-month period.

In recommending that a six-months supply of food be stored in the shelter, it is not suggested that it will be necessary to stay in the shelter for that period. Indeed in over 90 per cent of cases it will be safe to leave the shelter within one to two weeks after the attack. However, food must be stored in the shelter because food supplies above ground may remain contaminated by alpha and beta emitters for months after an attack. The food in the shelter would then save the family from starvation.

Water

Water is less of a problem than food because well water, filtered through many feet of sand, will have little contamination. Furthermore, even contaminated water can be purified by distillation or by ion exchange resins.

A WELL WITHIN THE SHELTER.—In many cases, it is practical to supply a well within the shelter itself. A $1^1/_2$-inch diameter well point is driven into the ground to the water level, and an old fashioned hand pump is attached. Thus, a constant supply of relatively pure water is assured, subject to monitoring for unexpected radiation. The cost of such a well seldom exceeds $35. It is not always feasible, however. The soil must be sandy and the water level within 20 feet of the floor of the shelter. The well should be driven before the shelter is covered with earth. Even with a well, some pure water must be stored in case the well becomes contaminated.

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Water in a shelter should usually be used for drinking only and should be rationed. No harm will come to healthy persons on reasonably restricted water rations, even if they feel thirsty. A suggested amount is 2 quarts of water per day per person over five years of age. The shelter itself should contain at least a thirty-day supply. This comes to 60 quarts, or 2 cubic feet per person.

STORAGE.—Storage must be in large containers. If quart bottles are used, 3 to 4 cubic feet of valuable space will be wasted. It is best to use containers holding at least 5 gallons (20 quarts) each. Government surplus tanks of 5-, 10-, or 20-gallon capacity are excellent and quite cheap. Be sure they are not cadmium plated, since cadmium is a deadly poison. Additional water for another three months may be stored outside the shelter, with strong plastic garden hose bringing it to the shelter. One or more large tanks of the type used for hot water heaters is obtained, and all openings but two are securely capped. These two openings, one on the top and one on the bottom, are connected to lengths of good quality plastic garden hose by adapters obtained from any plumbing supply company. Both hose ends should be within the shelter, connected to a nozzle. The empty tank is buried near the shelter and covered with earth. The tank is then filled by means of the hose and the nozzle is closed. The second hose length is needed to allow air to replace the water withdrawn.

The water does not require the same degree of protection as human beings. Water is not made unfit by any known amount of radiation reaching it from outside. Only if the radioactive contaminants get into the water itself is the water dangerous. Thus, a steel tank with no leaks gives complete protection to water. The suggestion that the water tanks be buried is made to minimize the danger of flying missiles breaking the tank.

It is usually possible to pick up old hot water tanks of 20- to 50-gallon capacity at junkyards and wreckers. They make excellent storage tanks. When more than one tank is used, each one should have separate hoses running into the shelter.

Food

PROBLEMS IN CHOOSING FOOD FOR STORAGE.—The storage of food presents a more complex problem. It will seldom be possible to store in a shelter sufficient supplies of the varied foods to which Americans are accustomed. We usually think of food in terms of dollars or calories per pound. However, in a shelter the major limiting factor is space, or cubage. Thus, we must think of food in terms of calories per cubic foot. In Table I are listed the calories per cubic foot of some representative foods. Fortunately, there are many foods which are concentrated enough to provide the fats, carbohydrates, and proteins needed for life without taking up excess space. Pure fat contains up to 232,000 calories per cubic foot if suitably packaged. Pure granulated sugar contains about 99,000 calories per cubic foot.

In a shelter where relatively little activity will be performed, a reasonable allowance for an adult is 2,000 calories per day. Thus, a cubic foot of fat provides enough calories for 116 man days, while a cubic foot of sugar provides calories for about 50 man days. In considering the space taken by foods, certain points must be kept in mind. The foods which are poor choices for storage in a shelter are those which spoil easily or take up lots of space because they contain large quantities of indigestible roughage or air.

TABLE I.—Selected Foods of High Nutrient Value and Long Storage Life

Kind	Water (Per Cent)	Protein (Per Cent)	Important Vitamins and Minerals	Calories as Purchased (Per Cubic Foot)	Average Retail Price Per 1,000 Calories (Dollars)	Approximate Storage Life*
Sugars						
Granulated	0	0	0	90,000	0.07	1 year
Cubes or tablets	0	0	0	99,000	0.10	1 year
Honey (round $2^1/_2$ pound can)	20	1	0	73,000	0.24	1 to 5 years
Oils & Fats						
Corn or cottonseed (round bottle)	0	0	0	132,000	0.09	1 to 5 years
Corn or cottonseed (rectangular gallon can)	0	0	0	196,000	0.08	1 to 5 years
Grains						
Wheat flour (unbaked)	12	11	Niacin Thiamin Riboflavin	54,000	0.06	6 months
Rice (precooked)	7	9	Niacin Thiamin	38,000	0.28	6 months
Corn meal (cylindrical container)	12	9	Niacin	46,000	0.07	6 months
Corn meal (rectangular container)	12	9	Niacin	58,000	0.07	6 months
Baked Goods						
New England brown bread (canned)	44	5	. . .	26,000	0.25	1 to 5 years
Cracker meal (rectangular container)	5	9	. . .	60,000	0.19	6 months to 1 year
Royal Lunch milk crackers (1 pound box)	5	7	. . .	27,000	0.20	6 months
Fig Newtons	13	3	. . .	41,000	0.30	6 months
Lorna Doone shortbread	3	7	. . .	42,000	0.33	6 months
Milk						
Evaporated (can)	74	7	Calcium	28,000	0.23	1 to 5 years
Sweetened condensed (can)	27	8	Calcium	86,000	0.18	1 to 5 years
Nonfat dry milk (not instant)	3	36	Calcium	41,000	0.19	6 months to 1 year
Dried Fruits						
Prunes, wax wrapped	24	2	. . .	44,000	0.29	1 year
Raisins	24	2	. . .	58,000	0.22	1 year
Dates, pitted	20	2	. . .	45,000	0.30	1 year
Figs	24	4	. . .	75,000	0.50	1 year
Meats (Canned)						
Corned beef	59	25	. . .	51,000	0.55	1 to 5 years
Roast beef	59	25	. . .	51,000	0.57	1 to 5 years
Ham (small can)	50	22	. . .	56,000	0.88	1 to 5 years
Corned beef hash (Armour)	65	9	. . .	40,000	0.41	1 to 5 years
Potted meat food product (Armour)	65	12	. . .	37,000	0.56	1 to 5 years
Beans						
Baked beans (can)	76	6	. . .	22,000	0.22	1 to 5 years
Pork and beans	70	6	. . .	25,000	0.22	1 to 5 years
Fish						
Sardines in oil	47	21	Niacin	58,000	0.38	1 to 5 years
Tuna in oil	52	24	Niacin	61,000	0.49	1 to 5 years
Salmon	65	20	Niacin	26,000	1.32	1 to 5 years
Spreads						
Peanut butter	2	26	Niacin	83,000	0.18	1 to 5 years
Jams, marmalades	28	0	0	68,000	0.31	1 to 5 years
Other						
Peanut brittle (in compact bars)	2	8	Niacin	60,000	0.33	1 year

* Storage life based on careful packing in plastic to protect from moisture.

Most green vegetables have excessive amounts of indigestible cellulose. Bread of the usual type is so fluffed with air that it has only about 12,600 calories per cubic foot, while flour has about 78,000 calories per cubic foot. Many crackers also contain

TABLE II.—Suggested Six-Month Food Supply for One Person in Shelter

Food	Net Weight (Pounds)	Cubic Feet (Approximate)	Calories	Estimated Retail Cost (Dollars)
Sugar	20	0.34	35,000	2.45
Corn oil	15 (2 gallons)	0.30	59,000	4.72
Flour	40	1.00	66,000	3.96
Corn meal	20	0.50	33,000	2.31
Cracker meal	10	0.32	19,000	3.61
Cookies (see Table I)	20	0.50	19,000	4.92
Sweetened condensed milk	20	0.34	29,000	5.22
Dried fruits (see Table I)	10	0.20	11,000	3.63
Meats (see Table I)	20	0.41	18,000	12.00
Beans	50	1.27	28,000	6.16
Sardines and tuna fish	10	0.22	13,000	5.87
Peanut butter	8	0.25	21,000	3.74
Jams and marmalade	8	0.14	10,000	2.98
Peanut brittle	5	0.16	10,000	3.30
Canned vegetables, assorted	15	0.61	2,000	3.00
Canned citrus fruit juice	20	0.81	4,000	5.10
Totals	291	7.37	377,000	72.97

large amounts of air, and so their caloric value is only about 24,000 calories per cubic foot. An exception to these principles may be made for canned fruit juices. Although they have a very low caloric value per cubic foot, they are made bulky with water, not air. Since water must be stored anyway, it is a good idea to have relatively large amounts of canned fruit juices, which are calculated as part of the water, rather than the food allowance. Similar principles apply to all canned foods which are liquid in consistency, including soups, condensed milk, and syrups. However, if these other liquids are stored, the plain water stored should not be reduced by more than one half. In calculating the space taken by canned foods it must be realized that space is wasted because cans are round, rather than rectangular in shape. Thus, the figures for calories per cubic foot in Table I have already been corrected for this difference and express the values as calories per cubic foot of shelter space used, rather than as calories per cubic foot of enclosed can.

With the exception of the liquid foods mentioned, it is best to store foods which contain at least 40,000 calories per cubic foot, equal to 20 man days per cubic foot.

Since proteins are also needed, protein content is given for the foods in the table.

Cooking.—Cooking will not be practical for some time. Although many foods usually are not eaten uncooked, in emergencies they can be, and are nutritious. Wheat flour, for example when mixed with water or other fluids such as the juices and oils remaining in cans, is digested and utilized at 70 per cent efficiency. Thus, while baked flour contains up to 78,000 calories per cubic foot, raw flour provides only 54,000 calories per cubic foot. This is, nevertheless, substantially more than 40,000 calories per cubic foot, so flour is a good item for storage.

Spoilage.—It is important also to restrict food storage to those foodstuffs which do not spoil easily. Canned goods, of course, keep very well. Sugar, flour, and similar items will keep well if polyethylene is wrapped around the original package to keep out excessive moisture. In Table I only items which keep well in storage are listed. In Table II are listed the food supplies per person for shelter storage, to be modified according to individual tastes and needs. If the family includes infants, special foods should be stored also. The retail costs of the foods listed in Table I are presented simply as a guide to buying. They represent an average of current prices in large chain grocery stores. By purchasing directly from a wholesale grocer in carton lots, it should be possible to save a substantial portion of these costs. Since the food will be available whether an attack comes or not, it should not be considered merely as an expenditure for shelter, but also as an advance purchase.

FUTURE SUPPLIES.—It may be prudent also to take some additional precautions to avoid future starvation. A secondary supply of basic, inexpensive staples can be stored in a partially protected area. Included should be sugar, corn oil, and wheat flour. These foods should be purchased in unopened cartons, each carton wrapped with a double layer of polyethylene, and all openings in the wrapping sealed with tape. The cartons can then be stored in a basement closet or corner. If an attack comes, some houses will be completely destroyed but at least 90 per cent should be left standing, and although radioactive particles may fall on the cartons, they will not penetrate the polyethylene. Therefore, after emerging from the shelter, the occupants can remove the polyethylene and have available an additional six-months supply of safe food. Foods which need cooking can be stored in the secondary reserve. The suggested amounts per person are: sugar, 40 pounds; corn oil, 4 gallons; and wheat flour, 100 pounds. This will supply food for an additional six months at a cost of less than $25.

In many cases, it will be worth while to store the food in the shelter for a relatively limited time only, before an attack. For example, if a particular food has a shelf life of about twelve months, the date of purchase is written on the carton and after six months a new carton is bought and put in the shelter, and the old carton is brought into the house and used up for current needs.

VITAMINS AND OTHER DIETARY SUPPLEMENTS.—Since vitamins will not be present in sufficient quantities in the stored food, supplements will be required. It is best to store two types of vitamin tablets—vitamin C and multiple vitamin tablets.

Vitamin C.—Vitamin C is especially important in a postbombing situation, and should be available at a minimum ration of 100 mg. per person per day. The high-quality product made by the better firms specializing in prescription products will not lose any appreciable potency for several years. The stored vitamin C should be enough for two years (about 700 tablets per person). Not only will this vitamin be needed while in the shelter, but also it will be needed probably for over a year thereafter. It is presumed that most survivors will have to live on stored food found in warehouses and on surplus government grain. These foods have practically no vitamin C.

Multiple Vitamins.—Since there will also be deficiencies of the other vitamins, multiple vitamin capsules, containing the recommended amounts of vitamins A, B, and D should also be stored in the shelter. A years supply for each person is a reasonable amount. In purchasing these vitamins, it is best to buy the high-quality products made by the pharmaceutical firms which specialize in medications sold on prescription. It is best to avoid the cheaper quality vitamin pills which are advertised extensively on television or in newspapers. Although multiple vitamins also contain vitamin C, there is no harm in having a small surplus of this very important vitamin.

Calcium.—Another dietary supplement which should be stored in the shelter is calcium. It can be stored in bulk, in the form of one of its soluble salts, rather than in pills or capsules. The calcium salts should not be taken while in the shelter, or while eating stored, uncontaminated food. Under these circumstances calcium is useless and perhaps harmful. Instead, it should be saved for the time when all the stored food is consumed. At that time, the only food available outside may still be contaminated with radioactive strontium which would probably be quite dangerous. However, if a little calcium salt is mixed with the strontium-containing food, the body retains some calcium and eliminates more strontium. The exact amount of calcium salt needed per person per day will depend on several factors. Probably it will be possible to get expert opinion on this matter after emerging from the shelter. However, the above-ground supplies of calcium might be destroyed or contaminated by that time, and so health and perhaps survival may depend on stored calcium.[1] In the absence of expert opinion, each adult should take 1 Gm. of calcium salt three times a day, with each meal of food which may be contaminated with radioactive strontium. Children should receive proportionally smaller amounts.

About 5 pounds of purified calcium salts obtained from a pharmacy can be stored, and also 50 to 100 pounds of the impure calcium chloride used in special cement mixes or on tennis courts. This material is inexpensive—about four cents a pound. It may be life insurance for years to come. It will take up water from the air, so the unopened sack should be sealed in a large polyethylene bag.

Waste Disposal

Since the shelter may be the only home available for weeks, it must be furnished with some provisions for waste disposal. These provisions need not be elaborate, but they should reduce as much as possible the chance for contamination by human excreta.

A urinal may be made by sinking a 4-inch diameter vent pipe at least 6 feet below the floor of the shelter at a slant. The pipe is filled with gravel.

A satisfactory chemical toilet can be obtained for about $16.* It should be installed with a 3-inch vent pipe extending to the outside of the shelter. A simple filter, such as Fiberglas should be installed near the top of the vent pipe to prevent back-eddies of air from bringing radioactive contamination into the shelter.

Another type of toilet is made of aluminum and uses disposable plastic bags.† It is relatively inexpensive, about $9.50, and since it folds up, may prove to be useful where space is limited. If one is purchased, extra disposable bags should also be bought.

In the event that a toilet is not included in the shelter, cruder means of waste disposal will be needed. The excreta should be placed in small polyethylene bags which are then sealed. These bags may be kept in the shelter until it is safe to take them out for burial.

If a bucket is used as a toilet, it must have a tight fitting lid, and a disinfectant must be used.

Radiation Meter

A good radiation measuring instrument is essential in a postattack situation. A few such instruments are available throughout the State, but not nearly enough. It would be advisable for professional personnel such as physicians to have them, but there is no provision for their supply by government agencies, except to high schools. Accordingly, it seems advisable to consider the personal purchase of such an instrument.

Selection of such an instrument should be made with caution. The geiger counters offered for sale by mail-order houses and recommended for prospectors will have little value for civil defense. If they have beta windows (for measuring beta rays), they may be useful for detecting contamination of food and water. However, they are far too sensitive to gamma rays to be useful in the presence of radioactive fallout. Most of them have a maximum reading of 3 to 50 milliroentgens. However, after an attack the important ranges are 5 to 50, or 5 to 500 roentgens, over a thousand times as much. An attempt to use these geiger counters to measure fallout radiation is the equivalent of trying to weigh a truck with a postage scale. There are some instruments which will measure radiation in the roentgen range. The Federal Civil Defense Administration has designated them by the code numbers CDV-710 and CDV-720. The CDV-710 is a good general instrument. One can be purchased for $70.* Extra batteries should, of course, be stored.

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* Model 42GT6505K sold by Sears Roebuck and Company, Philadelphia, Pennsylvania.

† Sold by Goldbergs, 202–04 Market Street, Philadelphia 6, Pennsylvania.

Other Items

In addition, it is advisable to store other items in shelters. Included should be: extra clothing and shoes; blankets; sewing kits; safety matches; flashlights and batteries; books and parlor games; a transistor radio with extra batteries; tools; cooking utensils (basic minimum), these will be used after leaving shelter; soap; detergent capable of removing radioactive contamination; can openers; polyethylene sheet 4-mil thick, about 300 square feet; and basic medications and first aid supplies.

Departure from Shelter

A major problem will be the decision as to when to leave the shelter. The answer depends on the extent of the initial radioactivity. If the explosion occurs within a few miles of the shelter, the initial radioactivity may be so high that it will be advisable to remain in the shelter for two months. In almost all cases, however, it will be safe to leave the shelter in two weeks. If the initial radiation is relatively low, a one-week stay in the shelter will be sufficient. Since all exposure is cumulative for life, it seems best to avoid exposure as much as possible. Except in the most acute emergency, no one should leave a shelter when the outside radioactivity is greater than 10 roentgens per hour. Children should be kept inside the shelter until the outside radioactivity is very low.

In the event that the bomb burst has been close by and the contamination is extremely heavy, the outside radiation may be several roentgen units per hour even after many months have passed and the food supply is practically exhausted. Under such circumstances, the wisest course will be to leave the shelter at dawn, carrying a three- or four-day ration of food and water, and to try to get as far away from the bomb crater as possible.

TABLE III.—PERMISSIBLE LEVELS OF WATER CONTAMINATION[2]

Probable Number of Days Contaminated Water Must Be Used	Maximum Beta and Gamma Activity* (Disintegrations Per Second) (Per Cubic Centimeter)	(Per Teaspoonful)
10	3,000	12,000
20	1,500	6,000
30	1,000	4,000
40	800	3,200

* Measurements are to be made with an instrument capable of detecting beta rays. The measurements must be taken in an area in which the background radiation is less than 50 counts per minute. Usually, this can be done by taking a small sample of water into the shelter and performing the measurement there.

After leaving the shelter, it may be found that all food and water show some contamination. Canned food is safe if the can is washed off thoroughly. Water is safe if distilled. If undistilled water must be used, it can be considered reasonably safe if its radioactivity has been checked by competent civil defense teams with adequate instruments, which can measure beta radiation (Table III).

If ordinary food is not available, most prepared animal feeds, if uncontaminated, can be eaten for a long period. However, alfalfa leaf meal should not be eaten in amounts greater than one third of an ounce a day.

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* Manufactured and sold by the Victoreen Instrument Company, 5806 Hough Avenue, Cleveland, Ohio.

(*Number eight in a series on the Physician in Civil Defense*)

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Circulatory Depression Following Endotracheal Extubation

The fact that varying degrees and durations of hypoxia occurring during anesthetic management may lead to serious consequences is well known. Even apparent minor degrees of oxygen lack may affect some individuals adversely. The simple procedure of removing an endotracheal tube at the end of anesthesia may initiate a series of complicating events with sequelae that may be reflected in the postoperative period. The following case report is illustrative of what can occur following extubation, and it depicts problems to be expected and their management.

Case Report

A sixty-three-year-old male was admitted to a hospital with the chief complaint of persistent vomiting of undigested food for seven days. His past history revealed that he had a duodenal ulcer for the last seven years. Two years prior to his admission he had undergone a resection of the colon for obstructive carcinoma. In the same year he developed hemiplegia due to thrombosis of the middle cerebral artery.

Physical examination showed a thin male weighing 106 pounds in no acute distress. His heart and lungs essentially were normal on percussion and auscultation. An electrocardiogram showed minor T-wave changes. A roentgenogram showed a normal chest. The arterial blood pressure and pulse rate were within normal ranges. The laboratory findings were normal. Because of the obstructive duodenal ulcer it was proposed to do a subtotal gastrectomy.

Preoperative medication consisted of meperidine hydrochloride 50 mg. and atropine 0.3 mg. administered intramuscularly ninety minutes prior to the induction of anesthesia. On the patient's arrival in the operating room his

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Discussed at a conference held at Bellevue Hospital, New York City, June 6, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

arterial blood pressure was 130 mm. Hg systolic and 60 diastolic. His pulse rate was 68 beats per minute with a regular rhythm. Anesthesia was induced by the intravenous injection of 160 mg. of thiopental sodium in a 0.4 per cent concentration. Anesthesia then was maintained with cyclopropane and oxygen in a closed carbon dioxide absorption system.

Orotracheal intubation was performed under direct vision after a slow intravenous drip of succinylcholine chloride in a 0.2 per cent concentration was instituted. Following intubation the patient's blood pressure diminished to 100/50 and his pulse rate slowed to 44 beats per minute. The intravenous injection of 0.2 mg. of atropine restored the blood pressure and the pulse rate to preanesthetic levels. Anesthesia was maintained with cyclopropane and "top" ether vapor. Muscular relaxation was obtained by means of the intravenous drip of succinylcholine chloride. Except for a short episode of premature ventricular contractions, surgery and anesthesia proceeded uneventfully. The surgeon was informed of the occurrence of premature ventricular contractions and he decided to limit the operative procedure to a gastroenterostomy.

At the end of the operation, just as the last skin stitch was being inserted, the patient's endotracheal tube was removed. Immediately following this maneuver a mild laryngeal spasm developed. Oxygen was administered immediately by means of a mask. The patient's blood pressure at this time was found to have fallen to 80/75. About one minute later neither pulse nor blood pressure could be obtained. The apical heart beat could not be elicited either by palpation or by auscultation. The intravenous administration of 10 mg. of Vasoxyl followed by 25 mg. of ephedrine was without effect in restoring active circulation. The surgeon started a left thoracotomy skin incision. Bleeding was noted in the incision, and the patient reacted to the stimulus by moving his hands. The patient's blood pressure now was found to be 80/60, and his pulse rate was 78 beats per minute. Thereafter, the blood pressure rose slowly to normal levels. The entire episode lasted about two minutes. During this time the patient had never become apneic.

The patient was transferred to the recovery room. On his arrival there the blood pressure was 130/80 and the pulse rate was 88 beats per minute with a regular rhythm. He appeared to be alert and to react well. An electrocardiogram taken soon afterward revealed myocardial ischemia. The hemoglobin in the blood was determined to be 13.2 Gm. per 100 ml., and blood chemistries were within normal ranges.

Early the following morning the patient's blood pressure again fell to 80/50. This hypotensive episode was followed by a generalized convulsion which lasted about two minutes. Oxygen by mask was administered, and the patient recovered completely. Eight hours later the patient again had a convulsive seizure of the same duration and character. He recovered but seemed disoriented at times for the following four days. Thereafter, recovery was good and apparently complete.

Comment

The results of extubation in this case were serious since it led to laryngospasm, hypoxia, arterial hypotension, and temporary cardiac arrest which required an incision preparatory to thoracotomy. The management was good since the patient recovered, but certain instructive points may be indicated.

It has been shown that tracheal stimulation during endotracheal intubation may result in circulatory disturbances.[1] Similar circulatory reflexes have been described as occurring when the endotracheal tube is removed at the end of surgical anesthesia.[2] In fact, at the latter period, as was demonstrated in this case report, the reflexes may be more intense since the effect of minimizing them by preanesthetic drugs has become dissipated.

In the case presented it was noted that immediately following intubation the patient's arterial blood pressure had diminished from 130/60 to 100/50 while his pulse rate slowed from 68 to 44 beats per minute. Immediately following extubation the circulatory changes were even more intense. There was a fall in blood pressure to 80/75, a state which was followed shortly thereafter by an unobtainable pulse and blood pressure. The circulatory depression following intubation responded favorably to the intravenous administration of atropine, and the more intense depression following extubation ultimately responded to the intravenous administration of adrenergic drugs.

Such beneficial pharmacologic reactions would indicate that vagal stimulation might have been a factor in this case. Although vagovagal reflexes due to the stimulation of the vagal nerve endings in the trachea and resulting in cardiac vagal stimulation were found to be the exception during endotracheal intubation,[1] their occurrence has been observed.[3,4] They may be expected with greater frequency in patients with a pathologic condition involving hyperactive vagal function such as gastroduodenal hyperactivity, as in the case presented. Following the circulatory reaction that was observed after the intubation and which responded so favorably to intravenously administered atropine it would have been well to have reinjected intravenously a dose of atropine just prior to the tracheal irritation incident to the endotracheal extubation, since the preoperative dose of atropine had worn off.

This complication may be minimized also by gentle handling of the patient during extubation, performing the extubation during deeper planes of anesthesia, or performing the extubation after the patient is awake. If laryngeal spasm does occur, positive pressure with oxygen, intravenously administered succinylcholine chloride (to relax the striated muscles of the larynx), or the insertion of a large bore needle into the trachea have been recommended.[5]

Many feel that if extubation in light planes of anesthesia renders the patient susceptible to serious cardiac reflex disturbances, the prompt return to consciousness after surgery to minimize postoperative morbidity should be sacrificed in favor of cardiac safety. Others deny that the cardiac dangers of extubation during light anesthesia are serious.[2] However, they do recommend ventilation with 100 per cent oxygen prior to endotracheal manipulations. They claim that in the absence of anoxia cardiac reflex disturbances during endotracheal manipulations are infrequent and transient. Others strongly recommend the use of succinylcholine chloride during endotracheal extubation to avoid laryngeal spasm, bucking, a decrease in oxygen saturation in pulmonary respiration, and associated electrocardiographic changes.[6]

In the absence of a history of previous convulsions in the patient under discussion, those occurring in the postoperative period might be attributed to cerebral hypoxia incurred during extubation. It was fortunate that recovery apparently was complete.

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(*Number ninety-nine in a series of Clinical Anesthesia Conferences*)

Man prefers to believe what he prefers to be true.—FRANCIS BACON

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

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Digitoxin and Naphthalene Intoxications

THE following incidents were reported recently to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Digitoxin	80 years	Male

The patient was reported to have ingested fifty digitoxin tablets (0.1 mg. each) several hours prior to his admission to the hospital. He had never been ill, but about two to three weeks earlier he had become anorexic. He was seen by a physician, who prescribed digitoxin. The patient and his wife, who do not read or understand English very well, decided that instead of taking one tablet a day, as directed, he would take the entire fifty tablets at once so that he could become better faster.

On his admission to the hospital the physical examination yielded essentially negative findings. The patient was alert, comfortable, and cooperative. His temperature was 97.4 F., pulse rate 94, respirations 24, and blood pressure 210/90. Blood chemistry determinations showed a sedimentation rate of 50 mm. per hour and a hematocrit of 40. The white blood cell count was 6,400 with polymorphonuclears plus 2 per cent, lymphocytes 14 per cent, and monocytes 4 per cent. A urinalysis was not done.

Several hours following the patient's admission the blood pressure diminished to 150/84 and the pulse rate slowed to 52. However, within twenty-four hours following admission the patient suddenly died. The clinical diagnosis as well as the cause of death was digitoxin poisoning. The autopsy findings were as follows: left ventricular failure due to arteriosclerotic heart disease with digitalis overdosage and coronary occlusion with myocardial infarction anterior (old).

The symptoms, diagnosis, and treatment of digitoxin poisoning are discussed in the next case report.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Digitoxin	59 years	Male

A fifty-nine-year-old physician ingested 150 10-mg. digitoxin tablets in a suicidal attempt. Three hours following the ingestion he apparently reconsidered his action and, deeming it unwise, called for medical assistance. He was admitted to a hospital, where his stomach was lavaged. No digitoxin tablets were recovered, and the patient exhibited no symptoms. On admission to the inpatient service after his stomach was lavaged, the patient was rational, conscious, and symptom-free. However, he expired shortly afterward. The necropsy findings are as yet unavailable. Prior to his death there was no time to perform an electrocardiogram.

Usually, an asymptomatic period lasting for from several minutes to several hours may follow a single ingestion of a toxic dose of digitoxin. One of the first complaints is a loss of appetite, nausea, vomiting (which is difficult, perhaps impossible, to control), salivation, abdominal pain, and discomfort. Diarrhea also may be present. Headache, weakness, drowsiness without coma, and neuritic pains also have been reported. Paresthesias also may be present as well as aphasia, disorientation, hallucinations, and delirium. Infrequently convulsions occur. All forms of visual disturbance may be present. Death usually results from ventricular fibrillation.

There is no specific antidote for digitalis intoxication. If a diagnosis is made promptly following the ingestion, gastric lavage may be of value. The treatment is essentially symptomatic and supportive. The central nervous system signs of irritability and restlessness may be controlled by the administration of sedative drugs, to be repeated as indicated. Dehydration and electrolyte imbalance should be corrected by means of fluids and electrolytes administered intravenously. It has been suggested that disturbances in the heart rate may be helped by the following drugs: atropine, potassium salts, magnesium salts, quinidine, and procaine amide. Moderately large doses of atropine sulfate (2 mg. for an adult) are suggested to block the effect of the exaggerated vagal tone.

There is no conclusive evidence that atropine has a beneficial effect on the complications of digitoxin poisoning. The administration of potassium salts in amounts of from 2 to 10 Gm. in divided doses taken as a 25 per cent aqueous solution diluted with milk has been recommended. In some instances the solution may be given intravenously. However, this mode of administration may be fraught with danger and should not be used as a routine measure.

In the July 15, 1960, issue of *Medical World News* there is a report on digitalis intoxication with reference to the use of potassium. The report relates to the work of Charles Fisch, M.D., of the Indianapolis General Hospital at the Indiana University School of Medicine.*

> The present concept, he [Dr. Fisch] stresses, is that potassium abolishes the toxic abnormality of heart rhythm—an important problem in routine digitalization, especially among elderly, debilitated or potassium-depleted patients. But potassium has other effects. For one thing, it can cause atrioventricular block. "In the treatment of ectopic rhythm in the presence of abnormal A-V conduction, potassium should be given with caution. The conduction defect is not abolished by potassium but may be worsened by it," Dr. Fisch told the American College of Cardiology. "If you give potassium to abolish ectopic rhythm, you aggravate the conduction defect.
>
> "If A-V conduction defects are the sole manifestation of digitalis intoxication, potassium would seem to be contraindicated. If the patient has a severe arrhythmia, cautious administration of potassium is imperative, with careful observation of its effects on A-V conduction. Potassium will depress ectopic rhythms before it significantly depresses A-V conduction. There seems to be a safety margin. . ."

The report also states that in all the experiments which Dr. Fisch conducted the amount of potassium needed to produce a block was very much reduced after digitoxin intoxication.

In view of the absence of specific therapy and the gravity of the situation, one wonders whether or not dialysis may be profitably employed in cases of massive overdoses even though the patient may appear to be symptom-free.

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* Digitalis intoxication: caution in therapy, Medical World News 1: 6 (July 15) 1960.

INCIDENT 3

Toxic Agent	*Age*	*Sex*
Moth Ball	$1^{1}/_{2}$ years	Female

The child obtained the naphthalene (moth ball) from a dresser drawer and ingested it. She immediately vomited spontaneously and complained of abdominal pain. When the mother discovered what had happened, she took the child to a hospital. The child was admitted and observed for two days. The only symptoms noted in the hospital were abdominal pain, nausea, and vomiting. The patient made a complete recovery.

We are happy to report a continuing absence of serious sequelae in cases of naphthalene poisoning reported to this Center. The great variation in symptoms following naphtha ingestions may be accounted for by the premise that naphthalene is among the group of chemicals for which genetic factors exert a prominent influence.

INCIDENT 4

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	17 months	Male
	$2^{1}/_{2}$ years	Female

The children obtained the oil of wintergreen from the grandmother's room while the parents were entertaining guests in the living room. The father found the children and noted oil of wintergreen on their clothes, beds, hands, and faces. He immediately washed their eyes and hands and gave them 2 glasses of a solution of bicarbonate of soda to induce vomiting. However, the children did not vomit, and the father then took them to an emergency room in a nearby hospital.

The stomachs of both children were lavaged with sodium bicarbonate, and both children were then admitted to the inpatient service for observation. The only symptom noted on admission was redness on the faces of both children. No salicylates were detected in the gastric contents of either child on two occasions, although the father's estimate was that each child had ingested approximately 1 ounce of oil of wintergreen. The children were treated symptomatically and discharged on the third day following admission as cured.

TABLE I.—POISONINGS ABOUT WHICH INFORMATION WAS REQUESTED OVER A RECENT WEEKEND*

Product†	Patient Age**	Patient Sex
U-Blow-It bubble soap	$2^{1}/_{2}$	M
Gasoline (small amount)	26	M
Oil paint (small amount)	15 months	M
Drano (lye)	$3^{1}/_{2}$	M
Aspirin, baby	2	M
Prochlorperazine	24	F
Barbiturates	40	F
Barbiturates	18	F
Barbiturates	35	M
Heroin	18	M
Heroin	25	M
Lestoil (detergent)	2	F
Lestoil	30	M
Pentobarbital	30	F
A.P.C. and methapyrilene hydrochloride	18	F
Butabarbital sodium-belladonna elixir	$2^{1}/_{2}$	M
Bath salts	26	F
Sage air refresher	$1^{1}/_{2}$	F
Aspirin	33	F
Benzine	13 months	F
Nail polish	20 months	M
Scraping from color movie film	4	F
Tide (detergent)	5 months	F
Ajax scouring powder	17 months	F
Rubbing alcohol	49	F
Aspirin	26	F
Fuller pest spray	32	F
Duco cement	15 months	M
Aluminum paint (small amount)	1	M
Johnson's Pride (furniture polish)	18 months	M
Borax	$5^{1}/_{2}$	M
Oil of wintergreen	$2^{1}/_{2}$	F
Secobarbital	27	F
Formaldehyde and isopropylamine	25	M
Insecticide	Child	F
Tetanus toxoid (5 cc. injected instead of 0.5 cc.)	Unknown	M
Pesticide ($^{1}/_{2}$ cup)	22	M
Citronella	10 months	F
Methapyrilene	24	F
Rose-X ammonia	1	M
Narcotics	30	M
Calamine lotion	44	F
Unknown drugs	29	F

* Minor events, on which complete information is unavailable, not included.

† Ingestion unless other mode of occurrence is indicated.

** In years unless months is indicated.

The good results obtained in this case are undoubtedly related to the prompt therapy instituted at home.

(*Number sixty-five in a series of Briefs on Accidental Chemical Poisonings*)

CASE REPORTS

The Value of Routine Health Examinations in Industry

Four Specific Chest Cases

KARL PICKARD, M.D., F.A.C.P., NEW YORK CITY

(*From the Central Medical Group of Brooklyn, Brooklyn, and the Downtown Medical Center, New York City*)

ALTHOUGH there has been a great advance in the interest shown by industry in medical programs for employes, there is still considerable resistance to the establishment of such programs, particularly in small industrial firms. The personnel manager of a large business or the businessman heading a small business easily understands the need of emergency medical attention for an injury or for an acute illness that occurs during the working day. Unfortunately, the personnel manager has little interest in a preventive health program unless some tragedy occurs in his own plant.

The need for an over-all medical program is a great one. Such a program should include pre-employment examinations, annual physical examinations, executive employe examinations, and a "sick call session" for all employes. Some businesses fear the possibility of losing so-called good prospective employes who may refuse to be examined by a company doctor. There is also the objection of employes to the annual physical examination because they fear such an examination might jeopardize their job advancement. Top executives are fearful that the corporation will become involved in their health problems. Such fears are not well founded when one considers all of the advantages that may accrue if a program involving early detection of disease is established.

A recent experience with one company which decided to have 20 of its top executives undergo a routine annual physical examination, including a complete history and physical examination, a sigmoidoscopy, a urinalysis, a complete blood count, a determination of the sedimentation rate, a stool examination, a blood sugar determination, a chest x-ray, and an electrocardiogram, confirms the opinion that there was a definite need for such examinations, and that the examinations were of a definite value to the company itself because of the findings. The examined men were all of Japanese extraction. They had been in the United States for periods ranging from three months to about four years, working for a company in New York whose home office was in Japan. The men's ages varied from twenty-seven to fifty-four years. Some of the men were living alone in rooming houses; others were here with their families. None of the men had any complaints whatsoever when they appeared for the examinations. Some of them had had illnesses in their homeland which had been "cured."

Case Reports

CASE 1.—A fifty-four-year-old male was first seen by me on July 3, 1958. Aside from a relative hypertension which was noted at times, a tapeworm infestation twenty-five years ago and again in June, 1958, which had been treated successfully with two series of antiparisitic drugs, and an appendectomy in 1948, he had had no serious illnesses. His appetite was good. His weight had been maintained for years at a normal figure. His bowel movements were normal. He slept well, with no nocturia or night sweats. He was married and had two children, and his family was quite healthy. There was no evidence of any familial disease in his parents or in the siblings.

The patient's height was 67 inches, his weight was 146 pounds, his blood pressure was 150/96, and his pulse was 78 and regular. The physical examination showed completely negative results,

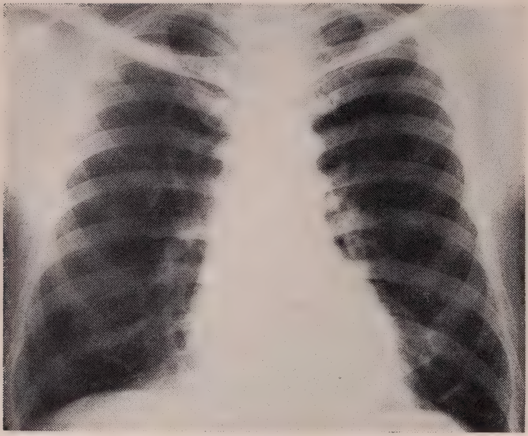

FIG. 1. *Case 1.*—X-ray film of the chest showing infiltration of the right lung.

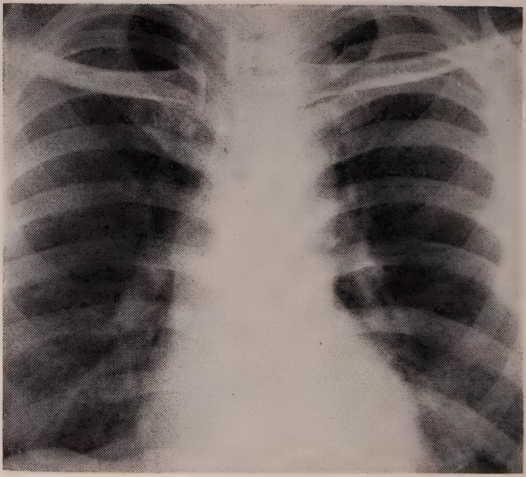

FIG. 2. *Case 1.*—X-ray film of the chest showing normal findings.

except for some small round scars over the posterior chest wall, which had been produced by "burns" and were similar to scars resulting from cupping. These scars had been made when he had physical therapy for a questionable pneumonitis about ten years prior to my examination. The patient's investigation from a laboratory and cardiographic standpoint indicated completely negative results. The x-ray film of his chest, however, revealed a small demarcated soft infiltration at the periphery of the apex of the right lung at the level of the third interspace (Fig. 1). An x-ray study made in December, 1956, in Japan, (Fig. 2) had been considered as showing normal results.

Because of this coin lesion found in the right apex, the patient was hospitalized on July 11, 1958. He was first treated with antitubercular medication consisting of streptomycin and para-aminosalicylic acid. Preoperatively, his chemical studies were all within normal limits. His sputa and gastric washings all indicated findings negative for acid-fast bacilli and neoplastic cells. His urine cultures showed negative results and showed no fungi or parasites. The chest x-ray films confirmed the original diagnosis of a coin lesion in the right upper lobe, and tomogram studies located this lesion in the posterior apical segment of the right upper lobe. An intravenous pyelogram was also done to rule out the possibility of a primary renal malignancy. This pyelogram showed a normal kidney and renal tract. Hematologic studies were also within normal limits.

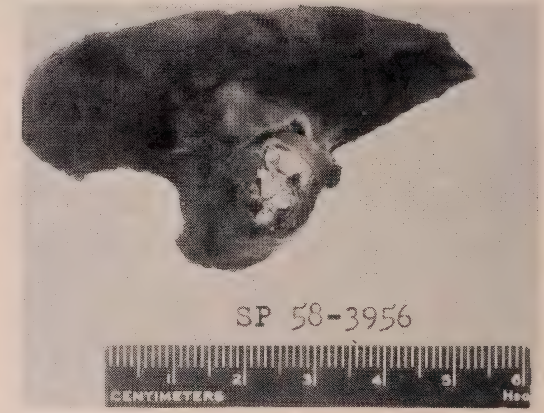

FIG. 3. *Case 1.*—A pathologic specimen depicting tuberculoma.

At operation, performed by Philip Crastnopol, M.D., a puckered, 2.5-cm. infiltration in the posterior segment of the right upper lobe was found. This infiltration extended to the periphery of the lung. The rest of the right lung was normal to palpation. There was an absence of inflammatory reaction in the mediastinal structures, and no mediastinal nodes were present.

The lung was retracted downward. The lesion was resected over clamps, including a margin of lung for 1 cm. along its periphery. A frozen section examination revealed a granulomatous lesion. Accordingly, the lung parenchyma was then reapproximated behind the clamps. Hemostasis and air leaks were readily controlled. One tube was placed in the apex of the chest, and another tube was placed in the base and was connected under water. The pathologic specimen (Fig. 3) proved to be a tuberculoma.

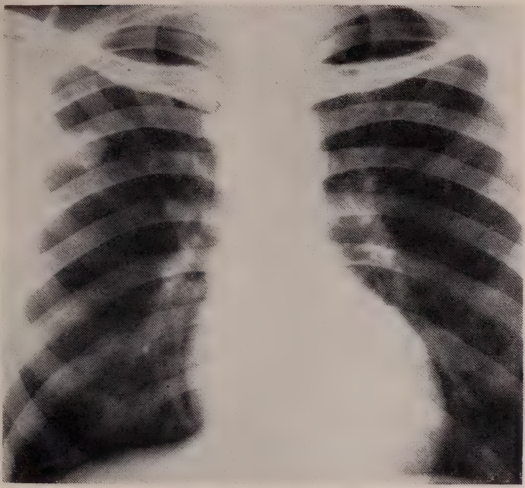

FIG. 4. *Case 2.*—X-ray film of the chest showing infiltration of the right upper lobe.

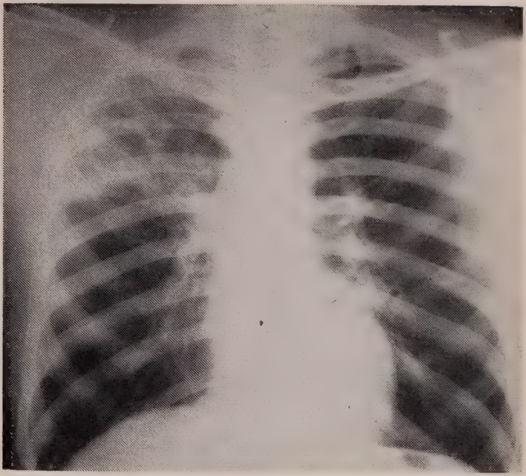

FIG. 5. *Case 2.*—X-ray film of the chest showing infiltrations of the right upper lobe with a large cavity between the third and fifth ribs.

The patient made an uneventful recovery and was discharged twelve days postoperatively. He returned to his usual business within a month and has been well ever since. Subsequent x-ray studies of the chest reveal a well-aerated right lung.

CASE 2.—A thirty-five-year-old male had been treated for a pulmonary tuberculosis five years before I first saw him on June 30, 1958. This treatment had been on an ambulatory basis for about two years, and two and one-half years ago, when he first came to the United States, he was told that the condition had been arrested. A review of an x-ray film taken in 1955 showed a soft infiltration at the base of the right upper lobe (Fig. 4). Aside from a loss of about 10 pounds during the six-month period prior to my first encounter with him, the patient had no complaints. His appetite was good, he slept well, and he had no night sweats. Except for the mentioned pulmonary tuberculosis, he had had no serious illnesses or operations in the past. He was married, had two children, and his family was quite healthy. There was no evidence of any familial diseases in the parents or the siblings.

The patient's height was 67 inches, his weight was 127 pounds, his blood pressure was 118/70, and his pulse was 76. He showed a slight pallor, but the remainder of his examination indicated negative findings. The laboratory and cardiographic examinations indicated normal results, except for a hemoglobin of 11 Gm. An x-ray film of his chest revealed soft and hard infiltrations of the right upper lobe with a large thick-walled cavity between the third and fifth ribs (Fig. 5). The sputum showed negative findings on smear and on culture. The purified protein derivative of 0.00002 indicated positive results.

The patient was started on antituberculous therapy including streptomycin intramuscularly and para-aminosalicylic acid orally. This medication was continued for about three weeks prior to his return to Japan where he was to undergo further medical management and subsequent surgery.

CASE 3.—A thirty-five-year-old male had been healthy all his life except for an episode of pulmonary tuberculosis which was first discovered eight years prior to his first visit to me on July 3, 1958. He had received pneumothorax therapy for about one month and had been declared an arrested case two years following the inception of the disease. The result of an x-ray study in August, 1957, was considered as pulmonary tuberculosis in an arrested state (Fig. 6). Shortly after this episode, the patient came to the United States. During the past year he had been gaining weight steadily and had had no complaints. He slept well and had no night sweats. He was married and had two children. His family was still in Japan, apparently in good health. There was no history of tuberculosis in his parents or in the siblings.

The patient's height was 67 inches, his weight was 166 pounds, his blood pressure was 152/94, and his pulse was 78. His entire examination

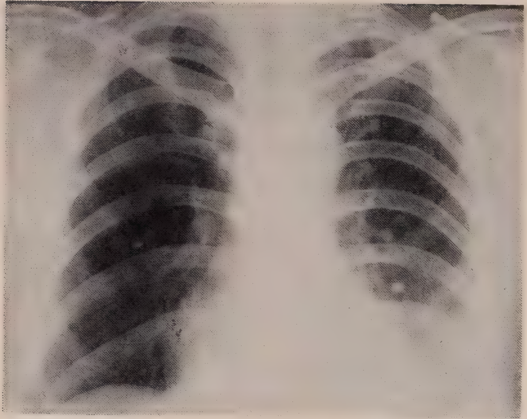

Fig. 6. *Case 3.*—X-ray film of the chest showing pulmonary tuberculosis in an arrested state.

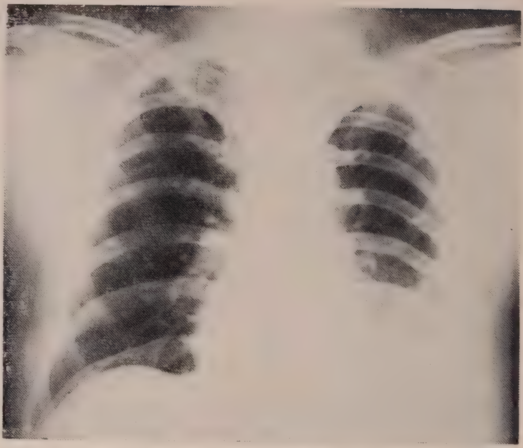

Fig. 7. *Case 3.*—X-ray film of the chest showing a thickening of the pleura in the left lower lung area.

showed negative results. His laboratory and electrocardiographic studies were all within normal limits. X-ray studies of the chest showed numerous healed calcific hilar nodes and bilateral hard and soft infiltrations in the apices. There was a definite evidence of a thickening of the pleura in the left lower lung area which had been present on the previous film (Fig. 7). A sputum examination and culture proved to have positive results for acid-fast bacilli. The patient was first treated at home with streptomycin intramuscularly and para-aminosalicylic acid orally. He was then hospitalized for about four weeks. During his stay in the hospital he had had only one positive Gaffky scale test result in all of his studies. His weight had been maintained, and he was symptom-free. The patient was discharged from the hospital and returned to Japan for further treatment as an ambulatory patient.

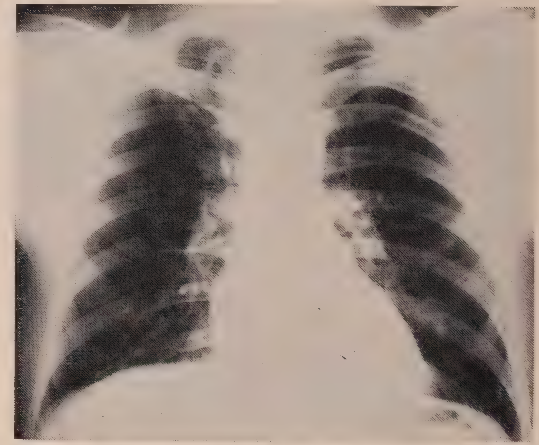

Fig. 8. *Case 4.*—X-ray film of the chest showing several soft densities in the right apex with a small area of apical thickening.

Case 4.—A thirty-seven-year-old male was first seen by me on June 26, 1958. About fifteen years previously he was found to have a disturbance at the top of the right lung. This condition was discovered during a routine school examination. The patient did not remember any definite therapy. He had never been very sick. His weight had been constant for a number of years. His appetite was good, he slept well, and he had no night sweats. He was married, had two children, and his family was healthy. There was no familial disease in his parents or in the siblings.

The patient's height was 70 inches, his weight was 159 pounds, his blood pressure was 114/70, and his pulse was 70. His entire examination showed negative findings. Laboratory and cardiographic investigations showed normal results. An x-ray film of the chest revealed several soft densities in the right apex with a small area of apical thickening (Fig. 8). An x-ray study done in 1956, prior to his entering this country, was considered within normal limits. Sputum examinations showed negative findings for acid-fast bacilli.

Because of the questionable lesion in the right apex, his past history, and the concomitant findings in several other members of the firm for which he worked, the patient was started on streptomycin and para-aminosalicylic acid as an ambulatory patient and allowed to continue with his work. Subsequent studies continued to show negative results. He developed vertigo,

TABLE I.—Cases in which the Nodule Was Not Calcified, Not Presumed to be Metastatic, and Not Known to be Stable for Two Years or More

Classification	Explored	Not Explored	Total Cases
Bronchogenic carcinoma	61	19	80
Bronchial adenoma	10	. . .	10
Metastatic neoplasm	1	. . .	1
Total proved malignant	72	19	91
Granuloma	45	2	47
Hamartoma	11	. . .	11
Cyst	4	. . .	4
Mesothelioma	4	. . .	4
Neurofibroma	2	. . .	2
Lipoma	1	. . .	1
Chronic inflammation	4	. . .	4
Total proved benign	71	2	73
Patient declined recommended exploration		23	23
Exploration not recommended for medical reasons		26	26
Other		58	58
Total not proved	. . .	107	107
Grand Total	143	128	271

Reprinted from The Journal of the American Medical Association.[2]

and the streptomycin was discontinued and replaced with isoniazid orally. Therapy is still being continued.

Comment

There is no question that these cases, with four positive findings in a routine periodic executive examination program involving 20 people, show a much higher percentage of positive findings than ordinary experience indicates. The results of the examinations in this one company were chosen to demonstrate the great dividend that can be returned on an initial investment which this company made in its health program for its executives. A recent article by Martin and Hanley[1] discusses in greater length similar dividends which can accrue by routine health examinations.

The value of the examinations to this company can be measured in several ways. One of its top executives was able to return to work shortly after an operation for a condition which might have gone on to much greater severity and morbidity. The second executive, although he returned to Japan for further therapy, was diagnosed early enough for the initiation of treatment before he became too ill and before he became infectious and dangerous to his fellow workers. The two remaining executives were probably saved from a progressively downhill course in their illness, and were able to resume partial activity. The company itself has been given reassurance as to the health of its executives.

It might be pertinent to mention here that ready cooperation was available from the Health Department of the City of New York and from the immigration authorities. It would be unfair from such a small study to draw conclusions as to whether or not sufficient investigation had been undertaken prior to the entry into this country by these patients.

Good and Wilson,[2] in a study of 705 cases of solitary circumscribed pulmonary nodules, showed that practically 50 per cent of the nodules excised were malignant (Table I). Our first case showed an isolated tuberculoma at operation.

Prickman *et al.*[3] discussed the importance of routine annual physical examinations and the enlargement of programs to include therapeutic follow-up of medical advice. Our own cases certainly prove this point.

Summary

Four cases have been discussed which were discovered to have positive chest findings in the routine examinations of 20 executives in a single industry.

A plea is made for more cooperation on the part of management in establishing medical programs for industry.

233 Broadway, New York 7

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Treatment of Solitary Nonparasitic Cyst of the Liver

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(From the Surgical Service, Coney Island Hospital, Brooklyn)

THE occurrence of solitary nonparasitic cysts of the liver is a rare entity and of sufficient interest to warrant the reporting of each case. Several comprehensive reviews have been published, covering single or small series of occurrences.[1-4] Approximately 250 cases have been reported to date.

The following case report is concerned with a huge solitary nonparasitic cyst of the liver, replacing the major portion of the hepatic parenchyma, in a two-year-old child. Because of the considerable size of the cyst and its intrahepatic position, the treatment of choice, complete extirpation, was considered to be too hazardous. The cyst was therefore managed by marsupialization and external drainage. Of particular interest in this case was the failure of treatment by external drainage alone, which is not too infrequent with this method, and subsequent success through the additional use of a sclerosing agent that had heretofore never been used for the management of this condition.

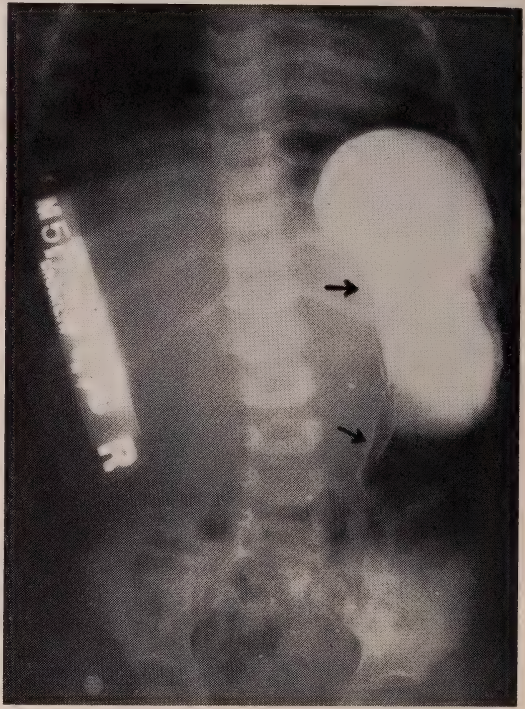

FIG. 1. Gastrointestinal series showing lateral displacement of the stomach by the cyst.

Case Report

A two-year-old white male was admitted to the Coney Island Hospital on May 15, 1956, with the complaint of increasing abdominal distention over a three-month period. This child was born and had lived exclusively in New York City. He had had no previous significant illness, and the family history was noncontributory.

A physical examination indicated essentially negative results except for the abdominal findings. The abdomen presented a uniformly soft, nontender distention of the entire right side from the costal margin to the iliac crest, extending across the midline into the left hypochondrium. On percussion, dullness was elicited over the entire mass, no fluid wave or shifting dullness was noted.

The results from a hemogram, urinalysis, fasting blood sugar, and all routine blood studies were within normal limits. The complement fixation tests for Echinococcus and amoeba also indicated negative results. The gastrointestinal series showed that the stomach was displaced to the left and anteriorly by an extrinsic mass (Figs. 1 and 2). Intravenous and retrograde pyelography revealed normal configuration of the urinary outflow tracts with some displacement downward and medially of the right renal pelvis and calyces.

During the child's hospital stay, it was observed that his abdominal mass was increasing slowly in size. The clinical impression was that a progressively enlarging cyst of the liver was involved. A laparotomy was performed on June 7, 1956. A huge unilocular cyst was found to be replacing the entire right lobe of the liver. The cyst was opened, and resulted in the evacuation of 2,500 cc. of clear, yellow-tinged, nonviscous fluid. The wall of the cyst averaged 5 mm. in thickness and was covered by a pale

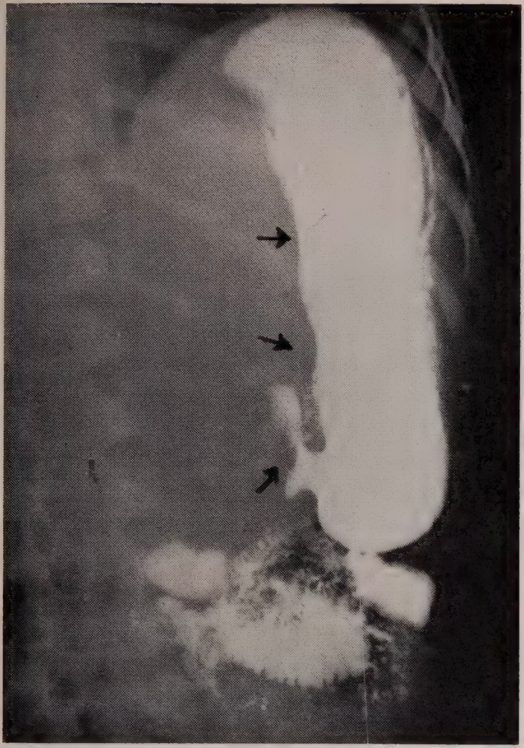

FIG. 2. Anterior displacement of the stomach in a lateral view.

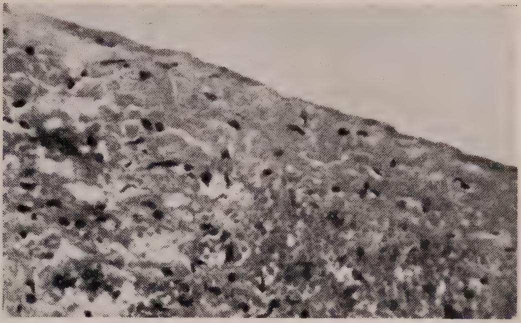

FIG. 3. Photomicrograph showing a section of the cyst wall covered by an inner flattened epithelial lining.

brownish-grey velvety lining on its inner surface. External drainage by marsupialization was performed. An analysis of the evacuated fluid revealed a protein content of 308 mg. per cent and no cellular or bile components. Smear and culture did not yield any bacteria, fungi, or parasites.

The pathology report (by Harold Fink, M.D.) of the cyst wall was as follows:

Gross specimen consisted of a piece of tissue measuring 1.2 by 0.6 by 0.3 cm. It was firm and rubbery in consistency. Microscopic sections of the cyst wall consisted of fibrous connective tissue containing numerous dilated endothelial-lined spaces filled with erythrocytes (Fig. 3). The diagnosis was: cyst wall, liver, indeterminate origin.

Postoperatively, the cyst drainage was irregular, ranging between 100 and 500 cc. daily. Following anorexia and loss of weight the child's general condition deteriorated slowly. By July 31, 1956, about seven weeks after drainage had been started, it became obvious that no spontaneous remission could be expected. On this date, 5 cc. of a 5 per cent sodium morrhuate solution were injected into the cyst cavity by means of a Foley catheter and allowed to remain for twelve hours. The solution was tolerated with no untoward reaction, and the amount was gradually increased to 50 cc. It was instilled daily at 8:00 A.M. and left in until 8:00 P.M., allowing the contents to drain over a twelve-hour period.

Periodic bacteriologic cultures and sensitivity tests were obtained, and appropriate antibiotic solutions, neomycin and terramycin, were added to the sodium morrhuate instillations. Following the institution of this regimen on August 1, 1956, the drainage diminished gradually and ceased on August 22, 1956, and instillations were continued for one additional week thereafter. The indwelling tube was then removed, and the wound was allowed to heal. A regression of the cyst cavity was followed roentgenographically by periodic instillations of an opaque contrast medium (hypaque) into the cyst cavity (Figs. 4, 5, and 6).

The patient was discharged from the hospital on September 19, 1956, fully recovered and with a well-healed wound. He was seen periodically in a follow-up clinic for two years, during which time he exhibited no abdominal findings, was gaining weight and was developing normally.

Comment

The clinical picture in this case follows the usual pattern of solitary nonparasitic hepatic cysts, and it is characterized by a relative absence of symptoms. Nonparasitic cysts of the liver unlike parasitic cysts, apparently develop under low tension[5] and they cause symptoms only when they become large enough to displace the adjacent organs. In the case presented here

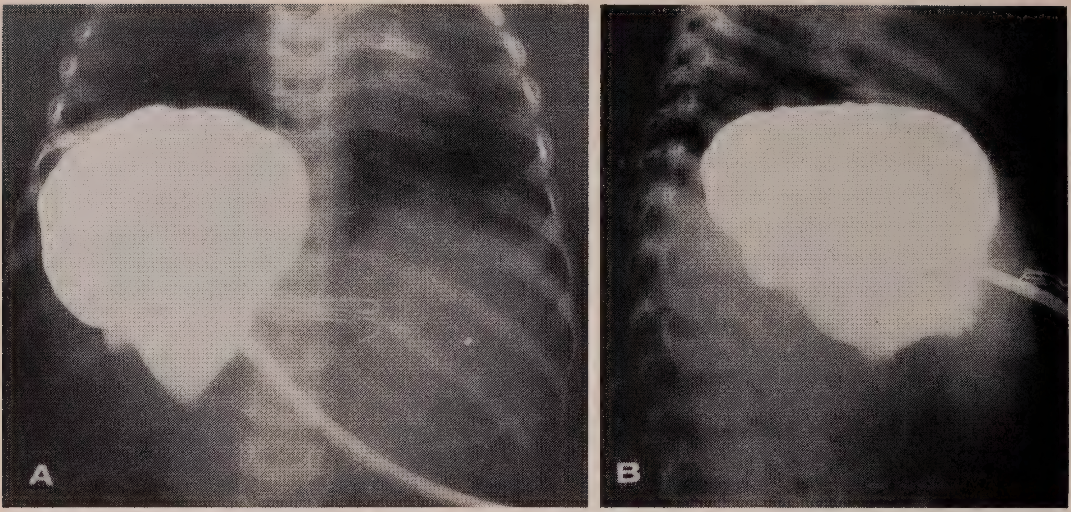

Fig. 4. Outline of the cyst cavity by means of an aqueous contrast medium (hypaque) prior to sodium morrhuate instillation; (*A*) anterior view and (*B*) lateral view.

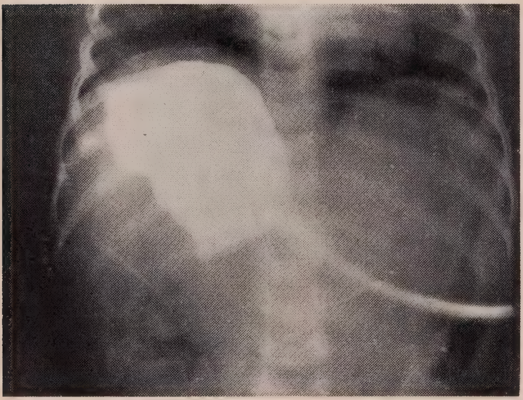

Fig. 5. Interval roentgenogram of the cyst cavity on the seventeenth day of treatment with sodium morrhuate.

it is interesting to note that the liver function levels remained within normal ranges throughout the preoperative and postoperative stages, despite the considerable amount of liver parenchyma displaced by the cyst. This is not inconsistent with opinion of Pack and his group[6,7] who maintain that the entire right lobe of the liver, equivalent to 80 per cent of the weight of the liver, can be resected without causing any significant abnormality in the liver functions or hepatic insufficiency, and without endangering the life of an otherwise normally functioning organism.

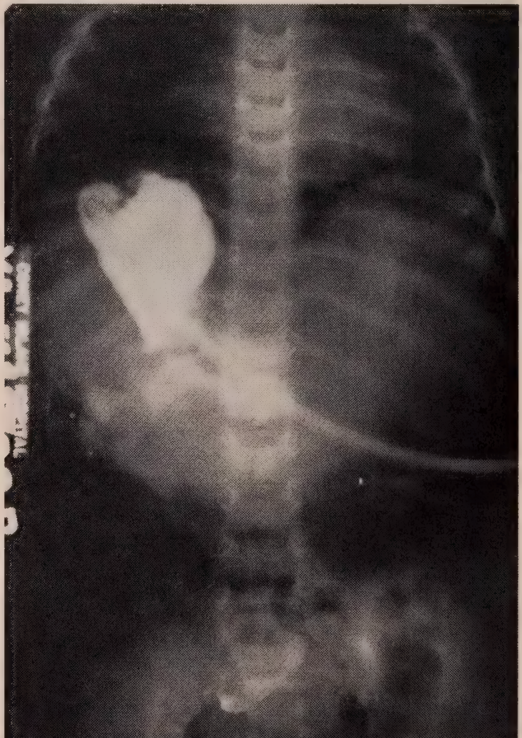

Fig. 6. Roentgenogram of the cyst cavity on the twenty-third day of treatment. Drainage had ceased completely one day before.

The literature discloses the use of single instillations of formaldehyde, Zenker's solution, Carnoy's solution, silver nitrate, and others in an attempt to destroy the secretory lining of the cyst wall. The solitary nonparasitic cyst, according to one of the more prevailing theories,[8] is congenital in nature and of biliary origin. The inherent possibility of a communication between the intrahepatic bile ducts and the cyst cavity therefore demands great caution in using a sclerosing substance. When a relentless, copious, and debilitating drainage made such a use imperative, it was decided to resort to sodium morrhuate. Sodium morrhuate is a less drastic agent than others, and it can be tolerated better if repeated instillations are necessary because of the magnitude of the cyst. An obvious communication between the cyst cavity and the biliary tree was also excluded by means of an instillation of an aqueous contrast medium (hypaque) under moderate pressure (Fig. 4).

Summary

Only 250 cases of solitary nonparasitic cysts of the liver have been reported in the literature to date.

In the case presented here sodium morrhuate was used successfully together with external drainage. According to published reports, this sclerosing agent has heretofore never been used for the management of a nonparasitic cyst of the liver.

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Indications for Cesarean Section

Although indications for cesarean section do not differ materially today from those of some forty years ago, there has been a shift in the frequency with which they are encountered. In recent years, says Edwin J. DeCosta, M.D., Passavant Hospital, Chicago, relatively more cesarean sections are done primarily for the welfare of the baby and fewer because of chronic maternal diseases. Certain abnormal conditions such as pelvic deformities have decreased in number, so that despite a more liberal attitude insofar as indications are concerned as well as added safety, the actual incidence of primary cesarean section has changed very little.

A study of many cases gathered from the current literature revealed present indications distributed as follows: (1) cephalopelvic disproportion, 35 per cent; (2) uterine dysfunction, 15 per cent; (3) placenta previa, 12 per cent; (4) malposition and malpresentation, 7 per cent; (5) toxemia, 7 per cent; (6) abruptio placentae, 6 per cent; (7) fetal distress, 6 per cent; (8) prolapsed cord, 2 per cent; (9) diabetes, 2 per cent; (10) previous pelvic surgery, 2 per cent; (11) soft tissue dystocia (cervical scars, neoplasm), 2 per cent; (12) miscellaneous (bad obstetric history, erythroblastosis, and other conditions, each less than 1 per cent), 4 per cent.

Some diseases for which cesarean section was indicated have disappeared or decreased in incidence: osteomalacia, rickets, tuberculosis of the bones, and so forth. Others, such as severe heart disease, renal disease, and pulmonary disease are no longer considered indications, although new diseases have appeared to take their place, such as diabetes and erythroblastosis. Hence, the over-all incidence of primary cesarean section has remained fairly constant.

—Chicago Medical Society Bulletin, February 27, 1960

Simultaneous Jaundice and Hematemesis Due to Duodenal and Marginal Ulcers

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GASTROINTESTINAL bleeding and jaundice are not uncommon in patients who have gastrointestinal cancer. However, this symptom complex is quite rare when it is caused by separate benign ulcers of the gut.[1,2]

Case Report

A sixty-eight-year-old white male was admitted to the Memorial Hospital on December 30, 1957, complaining of itching skin. Six weeks previously he had developed a dull aching, right upper quadrant pain associated with heartburn, anorexia, slight nausea, and slowly progressive icterus of the skin and sclerae. The stools had become acholic and the urine had become dark. There was a moderate generalized pruritus. The patient had had no chills or fever. His weight loss was 6 pounds.

In 1922 a gastrojejunostomy for a bleeding duodenal ulcer had been performed at another institution. On September 27, 1956, at Memorial Hospital, a midhumeral amputation with axillary dissection had been performed (by George T. Pack, M.D.) for a recurrent sarcoma of the right forearm. A pathologic study of the extremity revealed an extensive sarcoma throughout the musculature of the proximal third, right forearm. The axillary nodes did not contain a tumor. A systemic review of symptoms was not remarkable.

A physical examination revealed a well-developed, fairly well-nourished white male who was icteric. During the examination, scratching of the trunk by the patient was observed. His sensorium was clear and he was in no pain. There was no local or generalized glandular enlargement. The eye, ear, nose, and throat examination was not remarkable. The lungs were clear to percussion and auscultation. There was no enlargement, arrhythmia, or murmur of the heart. The abdomen was slightly protuberant and soft with a slight tenderness to deep pressure in the right hypochondrium. The liver edge was smooth, and it was located three fingerbreadths below the right costal arch. The spleen was not felt. A right paramesial upper abdominal scar and appendectomy scar were noted. The right arm had been amputated at the level of the midhumerus. There was no palpable recurrence in the stump or in the axilla.

The initial impression was obstructive jaundice due to a metastatic sarcoma of the liver. After one week of symptomatic treatment, the patient's appetite improved, the liver became less tender and receded slightly, the jaundice decreased, the stools became brown, and the urine had a normal color. The serum bilirubin changed from 9 to 5.2 mg. per cent. However, the alkaline phosphatase increased from 20.3 to 43.8 mg. per cent. A gastrointestinal series revealed a functional gastrojejunostomy with deformity of the duodenal bulb. X-ray films of the chest did not reveal any metastasis.

On January 19, the patient developed a moderately severe, persistent epigastric pain, "just like my old ulcer." He was placed on an ulcer diet with Pro-Banthine, antispasmodics, and antacids. One week later he vomited approximately 100 cc. of dark red blood. His blood pressure dropped to 100/70. Dark and bright red blood were found in the stool. An examination of the abdomen revealed a slight distention and an increasing tenderness over the right hypochondrium. The hemoglobin dropped from 12.3 Gm. on admission to 9.9 Gm., with a normal differential. The blood urea nitrogen was 11 mg. per cent, and the phosphorus was 2.9 mg. per cent. The thymol turbidity was 5.2 units. The cephalin flocculation was 2 plus in twenty-four hours and 4 plus in forty-eight hours. The total protein was 6.7 Gm. per cent. The serum amylase was 63 units and the transaminase was 143 units. The urea nitrogen was 7.9 mg. per cent; calcium, 9.6 mg. per cent; phosphorus, 2.7 mg. per cent; and total bilirubin, 0.9 mg. per cent. The patient received two pints of blood within twelve hours, and he improved dramatically.

A cholecystogram was attempted in spite of a slight jaundice, but it did not reveal any evidence of concentration in the gallbladder. A repeat gastrointestinal series and a barium enema indicated normal results except for a slight deformity of the duodenal bulb.

Because of continued bleeding, a laparotomy was performed which revealed a 0.5 cm. ulcer of the duodenum penetrating through the serosa and surrounded by marked edema of the common duct. The gallbladder appeared to be normal. Green bile could be expressed from the papilla of Vater. A 1.5 cm. bleeding marginal ulcer on the posterior wall of the gastrojejunal anastomosis was also found. The liver appeared to be moderately swollen and icteric, without evidence of metastasis. There were no enlarged hilar nodes. No other evidence of intra-abdominal disease was noted.

A Hofmeister type 75 per cent gastric resection was performed including the marginal ulcer plus a proximal jejunojejunostomy. The duodenal ulcer was excised except for its base which remained on the common duct.

The postoperative course was uneventful. A pathologic study revealed a classical gastrojejunal ulcer which was the source of the bleeding and a duodenal ulcer which caused the jaundice. After two weeks the patient was discharged in good condition.

When last seen in March, 1960, the patient had gained 15 pounds in weight, had no pain, and was eating three meals a day.

Comment

This is another example of a patient who had a cancer which was successfully treated and who subsequently developed jaundice and gastrointestinal bleeding due to two benign ulcers of the gastrointestinal tract. It adds support to the philosophy that "cancer isn't cancer until proved by biopsy." Also, another strike is placed against the use of gastrojejunostomy in the treatment of peptic ulcer disease.

Summary

We have presented a report of a simultaneous development of obstructive jaundice due to a duodenal ulcer and bleeding due to a marginal ulcer in a patient who had previously been treated successfully for a sarcoma of the arm.

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Medical Society of the State of New York

ANNUAL CONVENTIONS

1961	May 8 to 12	Rochester
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SPECIAL ARTICLE

An Approach to Health Insurance Information

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(Chairman, New York State Professional Relations Committee of the Health Insurance Council)

If there is one thing that is constant in this world, it is paradoxically that the world is forever changing. In all the affairs of men there is a perpetual shifting of the scenes and circumstances surrounding everyday life. In accident and health insurance this has been particularly true over the years.

Each year the population of this country grows.

Each year medicine advances further toward more and better care for more people. The progress in technics, procedures, and drugs has naturally brought about an increase in medical care and hospital costs.

Each year more and more groups are seeking ways to protect themselves financially against this rising tide.

Each year there has been increasing pressure on Federal and State legislatures demanding that this or that be done with respect to health care financing. In New York State alone there were 193 accident and health bills placed before the legislature at its 1959 session.

In the midst of this changing scene stand the providers of health care and those who furnish the different methods used by the public to help pay for it. As a result not only must the modern physician know medicine, but he must also be familiar with the many forms of financial mechanisms which are being increasingly utilized to pay for his services.

The insurance industry, foreseeing the doctor's approaching dilemma, took a direct step to help him. In 1946 eight insurance associations whose membership provide about 90 per cent of the accident and health insurance in the country written by insurance carriers came together and formed a federation called the Health Insurance Council. This Council's mission was then and is now to be a ready and willing source of information on health insurance subjects. It was and is meant to be also a vehicle through which mutual problems may be discussed and, we hope, resolved with experts ready and willing to help the interested individual or society.

As the problems of medical care and its financing have continued to grow and the very foundations of the voluntary system tremble under the onslaught of changing conditions and new approaches, medicine and insurance have begun to realize how dependent they are on each other. Thus, a broader organization has become necessary if successful two-way communication is to flourish.

David B. Allman, M.D., president of the American Medical Association in 1957, sounded a vibrant call for action in an address delivered to the health insurance industry at the annual meeting of the Health Insurance Association of America, when he declared, after speaking of major medical expense insurance: "I am convinced that the vast majority of physicians will cooperate wholeheartedly in the sense of maintaining equitable fees so that your promotion of this type of insurance will not be impeded. I am equally convinced, however, that your industry must step up markedly your program of physician relations. You cannot expect physicians to understand fully the relations between fees and the saleability of major medical insurance. Like the General Electric Company, which adopted a deductible type policy, you must discuss frankly with practicing physicians and their local medical societies the needs and objectives of this type of insurance. Such a program of professional relations takes money and personnel, but I urge you to undertake it."

This challenge has been accepted by the insurance industry. Committees composed of insurance company representatives have been organized in each state throughout the country. Their mission is "to seek out the doctor at the grass roots and to help and inform him in all health insurance matters and in turn to be informed of the physician's concerns with health insurance."

New York State is a large area. Its size is 47,944 square miles, and its medical society's membership of nearly 25,000 is reportedly the third largest of its kind in the world. For any organization to reach a public of this size spread over so much ground is a real problem. How is the Health Insurance Council doing it in New York? The New York Professional Relations Committee has been formed, composed of representatives from a number of insurance companies doing business in New York State. I am the chairman of this committee. Two subcommittees have been formed; one, the Medical Relations Subcommittee, chaired by Paul I. Robinson, M.D., assistant to the chief medical director of the Metropolitan Life Insurance Company. The second, the Hospital Relations Subcommittee, is under the chairmanship of Mr. Raymond C. Williams, director of accident and sickness insurance for the Mutual Life Insurance Company of New York. The other members of the state committee, for example, are doctors, claims representatives, and underwriters and division managers, whose combined experience provides a cross section of knowledge on different aspects of the health insurance field.

In order that the state committee's activities may be brought to all sections of the State, regional committees have been established, covering areas comparable to those of the district branches of the Medical Society of the State of New York. These regional committees, located in Albany, Syracuse, Binghamton, Buffalo, Westchester, Nassau, and Suffolk Counties and Metropolitan New York, at present are chaired by members of the state committee. Through this organization the physician in New York State is assured of:

1. A local point of contact with a majority of the health insurance industry.
2. A point of contact constantly ready to discuss the doctors' problems when they arise.
3. A point of contact which has the facility of recourse to the main policy-making committees of the Council when it is needed.
4. A point of contact which has an abundance of informational material available for the doctor on request.

All of these Health Insurance Council committees anxiously seek opportunities to meet with the medical profession at all levels. The state committee has already had successful meetings with the Medical Society of the State of New York's Committee on Economics when John C. McClintock, M.D., was chairman of that group and more recently under the able direction of Waring Willis, M.D. These meetings helped to clarify many points of contention and have helped to increase mutual understanding of each other's efforts to attain their goals. They have served to introduce and eventually distribute to nearly 25,000 members of the New York State Society the simplified physicians' claim forms which the Health Insurance Council developed in cooperation with the American Medical Association. It was through these meetings that the Council's New York Professional Relations Committee received encouragement to approach the practicing physician in the State. It was also as a result of the relations built up at these meetings that the state committee was able to exhibit its educational material at the Medical Society's last three annual meetings. The relations between the Medical Society of the State of New York and the Health Insurance Council's State committees have been superb, and for this we are most thankful.

Bolstered by this fine spirit of helpfulness, the New York State Professional Relations Committee has been guiding its regional committees in their operations at the ground floor of medicine.

Already representatives of the regional committees throughout the State have met with their counterparts in medicine in many counties. These men have brought to medicine in various areas insurance knowledge and have helped to clarify many questions on which differing opinions have been held. In some counties physicians have discussed topics pertinent to local medical economic problems, as well as those of a general nature. In some counties medical societies' members have invited Council representatives to participate at their general meetings.

Several counties have encouraged health insurance representatives to present articles to their journals for publication. In all cases these discussions have been held to seek ways in which the industry and medicine may work together more closely. In all areas where insurance personnel have visited individual physicians, they have been most cordially received. Where they have participated in society meetings, they have enjoyed the complete attention of their audiences.

Indications of this type can only portend a more comprehensive understanding of each other's problems which ultimately should contribute to the strengthening of the voluntary system of medicine and the voluntary financing of medical services. In the over-all, this will, we believe accrue to the benefit of the public.

As a physician, I realize how limited your free time is today. However, I do want to encourage you and your associates to participate in discussions in these areas of medical economics at your county society and district branch meetings. These issues are vital not only to ourselves but to the public in general.

Some Facts About Ulcers

More than 2.4 million Americans have ulcers, and nearly three times as many men have ulcers as do women, the Health Insurance Institute has reported.

Some 1,771,000 men have some form of peptic ulcer, including gastric, duodenal, and gastrojejunal ulcers, compared with 669,000 women, the Institute reported for the first time data from the U.S. National Health Survey on the prevalence of ulcers.

Reports indicate, said the Institute, that ulcers are four times as common among Americans now as they were in the 1930's.

A National Health Survey in 1935-1936 showed that less than three out of every 1,000 persons in the population had an ulcer. The latest survey, covering the 1957-1959 period, disclosed that 14 out of every 1,000 persons in the civilian population were so afflicted. However, this seeming quadrupling of the ulcer rate has been attributed in part to more accurate methods of diagnosis through wider use of x-ray equipment.

Other statistics, said the Institute, strengthen the impression that the prevalence rate of ulcers has quadrupled. Over a twenty-year span, the rate of hospital admissions for ulcers has grown from 0.4 admissions per 1,000 persons per year to 1.7 admissions. Three out of ten of these admissions had their ulcers treated surgically.

Ulcers were most prevalent among men in the age group thirty-five to forty-four where 42.5 of every 1,000 males were found to have ulcers. The highest prevalence for females was in the age group forty-five to fifty-four, where the rate was 17.5 for every 1,000 women.

The frequency of ulcers among men declined after age forty-five but in every age group the prevalence rate for women was less than half that among men.

In responding to the survey, 85 per cent of the persons with ulcers said they had no limitation of normal activity as a result of the disease. The 15 per cent who were limited because of the condition were divided into 11.7 per cent who were limited in outside activities or in amount or kind of major activity, and 3.3 per cent who were completely unable to carry on major activity.

Some 24 per cent of the persons with ulcers spent a day or more in bed because of the ulcer in the past year, and about two-thirds of these persons actually spent seven or more days in bed.

Ulcers caused their victims to lose an estimated total of 12 million days from work during an average year. This means that based on the usual work year of 245 days, that on an average work day 49,000 persons are absent from their jobs because of ulcers.

NECROLOGY

Dominic Battaglia, M.D., of Johnstown, died on August 21 in St. Mary's Hospital at the age of fifty-two. Dr. Battaglia graduated in 1933 from Albany Medical College. He was an attending in anesthesiology at St. Mary's Hospital, Amsterdam, and Amsterdam City Hospital. Dr. Battaglia was a Fellow of the American College of Anesthesiologists and a member of the American Society of Anesthesiologists, Inc., the Fulton County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph Battaglia, M.D., of Lynbrook, died at his home on October 6 at the age of fifty-nine. Dr. Battaglia graduated in 1924 from Long Island College Hospital Medical School. He was director emeritus of pediatrics at St. John's Hospital, an attending in pediatrics at Bethany Deaconess Hospital, and a consultant in pediatrics at St. Giles Hospital and Kings County Hospital Center. Dr. Battaglia, an assistant professor of pediatrics at Long Island College of Medicine from 1945 to 1953, was a Licentiate of the American Board of Pediatrics and a member of the American Academy of Pediatrics, the Brooklyn Academy of Pediatrics, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Judson Murl Burt, M.D., of Caledonia, died on September 2 at the age of eighty-five. Dr. Burt graduated in 1902 from the University of Buffalo School of Medicine. He was on the staff of the Genesee Memorial Hospital in Batavia. Dr. Burt was a member of the American Academy of General Practice, the Livingston County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Milton Chapman, M.D., of Rochester, died on September 22 in Genesee Hospital at the age of seventy-nine. Dr. Chapman graduated in 1905 from Cornell University Medical College. He served during World War I with the Army Medical Corps in France. Until his retirement in 1958 he was an attending in surgery at Genesee Hospital and at the time of his death was a consultant in surgery there. Dr. Chapman was a Fellow of the American College of Surgeons and a member of the Rochester Academy of Medicine, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Henry E. Clarke, M.D., of Glens Falls, died on September 17 at the age of eighty-five. Dr. Clarke graduated in 1898 from Columbia University College of Physicians and Surgeons. He had been an honorary consultant on the staff of the Glens Falls Hospital. A former coroner for Warren County, Dr. Clarke was the first Glens Falls health officer, a past president of the Warren County Medical Society, and president of the Glens Falls Home for Aged Women. Dr. Clarke was a Diplomate of the American Board of Internal Medicine and a member of the Warren County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Herbert A. Cochrane, M.D., of New Brighton, Staten Island, died in St. Vincent's Hospital on September 17 at the age of seventy-one. Dr. Cochrane graduated in 1913 from Queens University Faculty of Medicine, Kingston, Ontario. He was a consulting physician and former chief of the medical staff at St. Vincent's Hospital and an honorary consultant on the Communicable Disease Service at Sea View Hospital. Twice president of the Richmond County Medical Society, Dr. Cochrane was a member also of the Medical Society of the State of New York and the American Medical Association.

Harold Post Denniston, M.D., of Ithaca, died on July 8 at the age of seventy-six. Dr. Denniston graduated in 1913 from Columbia University College of Physicians and Surgeons and interned at New York Post-Graduate Hospital (now University Hospital). He was an honorary member of the staff at Tompkins County Memorial Hospital. Dr. Denniston was a member of the Tompkins County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Wallace Benjamin Dukeshire, M.D., of Brooklyn, died on September 23 in Lutheran Medical Center at the age of sixty-eight. Dr. Dukeshire graduated in 1916 from Long Island College Hospital Medical School and interned at Norwegian Lutheran Deaconess Home and Hospital (now Lutheran Medical Center). Dr. Dukeshire was a Fellow of the American College of Surgeons and a member of the Brooklyn Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Strother Gaines, 2nd, M.D., of New York City, died on October 8 at his home at the age of eighty-one. Dr. Gaines graduated in 1903 from New York Homeopathic Medical College and Flower Hospital. A former professor and surgeon at the New York Ophthalmic Hospital as well as a member of the New York City Department of Health, he was appointed examiner of lunacy for the State in 1910. Dr. Gaines was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

John Gerald Hart, M.D., of Rochester, died on September 5 at the age of seventy-one. Dr. Hart graduated in 1917 from the University of Buffalo School of Medicine. He was an attending physician at Park Avenue Hospital and president of the staff in 1947. Dr. Hart was a member of the Rochester Academy of Medicine, the Rochester Pathological Society and had served as president in 1955, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Seymour Lewis Homrighouse, M.D., of Amsterdam, died on September 15 at Amsterdam City Hospital at the age of seventy-seven. Dr. Homrighouse graduated in 1906 from Syracuse University College of Medicine. He was an honorary member of the staff of Amsterdam City and St. Mary's Hospitals. Dr. Homrighouse was a member of the American Academy of General Practice, the Montgomery County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Helen Mayes McEvoy, M.D., of Brooklyn, died in University Hospital, San Francisco, on September 5 at the age of forty-one. Dr. McEvoy graduated in 1949 from Long Island College of Medicine and interned at Ellis Hospital in Schenectady. She was a junior assistant in pediatrics at Methodist Hospital of Brooklyn. Dr. McEvoy was a member of the Industrial Medical Association, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

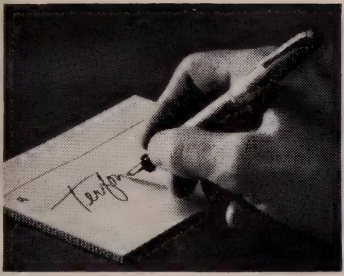
Earl Dorland Osborne, M.D., of Buffalo, died on July 23 at the age of sixty-five. Dr. Osborne graduated in 1919 from the University of Michigan School of Medicine. He was chief of dermatology and syphilology at Edward J. Meyer Memorial and Buffalo General Hospitals as well as a past president of the Medical Board of Buffalo General Hospital, an attending in dermatology and syphilology at Children's Hospital, and a consultant in dermatology at J. N. Adam Memorial Hospital in Perrysburg. For thirty-four years he was professor of dermatology at the University of Buffalo School of Medicine, retiring from this post in 1959. He was secretary general for the International Congress of Dermatologists as well as chairman of the committee making arrangements for the 1961 convention of the Congress, and a past president of the American Dermatological Society, the Buffalo Chapter of the American Cancer Society, and the Buffalo Academy of Medicine. Dr. Osborne was a Diplomate of the American Board of Dermatology, Inc., and a member of the American Dermatological Association, the American Academy of Dermatology and Syphilology, the Buffalo Academy of Medicine, the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

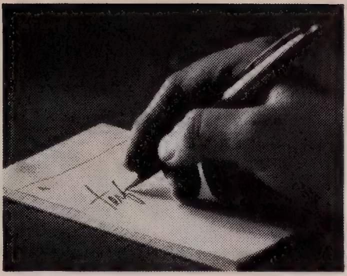
Francis Ottaviano, M.D., of New York City, died on October 4 at Columbus Hospital at the age of sixty-six. Dr. Ottaviano received his medical degree from the University of Rome in 1920 and interned at St. Vincent's Hospital. He was an associate attending in surgery at Columbus Hospital. Dr. Ottaviano was a Fellow of the International College of Surgeons and a member of the Morgagni Medical Society of New York, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

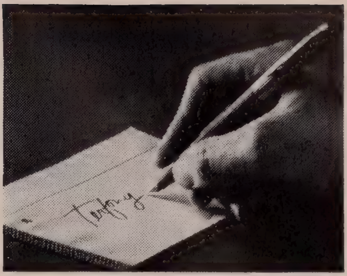
Eda Louise Priest, M.D., of New York City, died on July 26 at her home at the age of fifty-four. Dr. Priest graduated in 1936 from the University of Oregon School of Medicine. She was an attending in adolescent psychiatry at Roosevelt Hospital and an attending in psychiatry at Roosevelt Hospital Outpatient Department. Dr. Priest was a Fellow of the American Psychiatric Association and a member of the New York Society for Clinical Psychiatry, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Burton L. Rockwell, M.D., of Oriskany Falls, died on September 23 at his home at the age of seventy-six. Dr. Rockwell graduated in 1909 from Wayne State University College of Medicine,

[Continued on page 3696]







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[Continued from page 3694]

Detroit. He had formerly served as health officer for the towns of Augusta and Madison. Dr. Rockwell was a member of the Oneida County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Nathan Roos, M.D., of New York City, died on September 23 at the age of seventy-five. Dr. Roos received his medical degree from the University of Munich in 1913. He was a member of the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

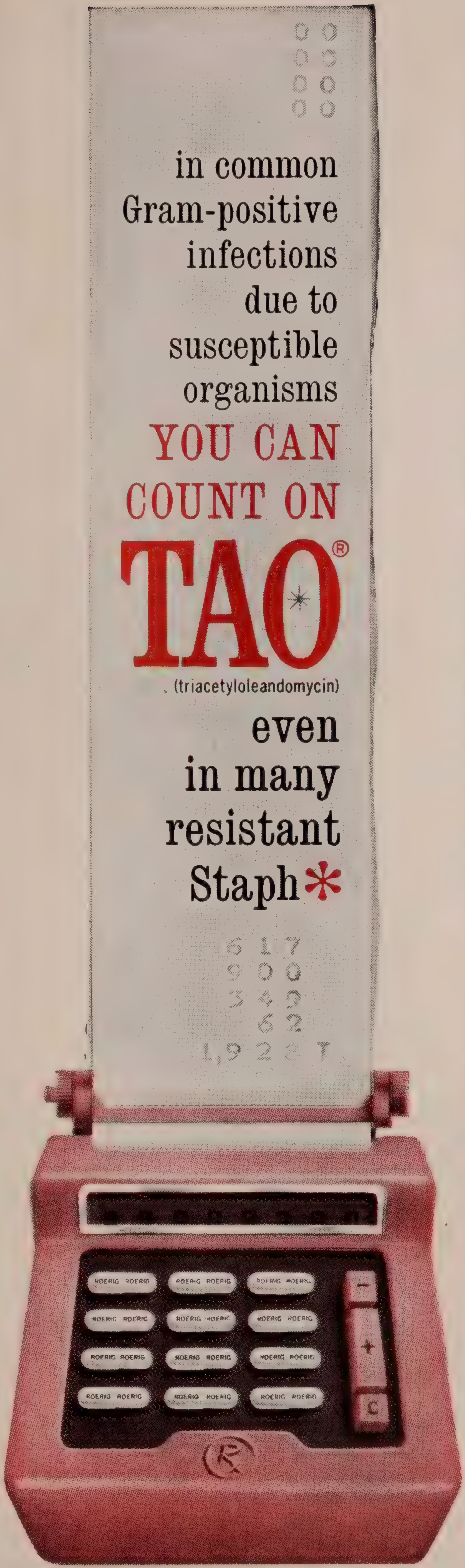
Drahomir Ruzicka, M.D., of Jackson Heights, retired, died at his home on September 30 at the age of ninety. Dr. Ruzicka graduated in 1891 from New York University School of Medicine.

William Schlein, M.D., of Brooklyn, died on September 24 at the Long Island Jewish Hospital at the age of sixty-three. Dr. Schlein graduated in 1921 from Long Island College Hospital Medical School. He was chief of radiology at the Veterans Administration Hospital, Brooklyn. Dr. Schlein was a Diplomate of the American Board of Radiology (Diagnostic Radiology), a Member of the American College of Radiology, and also held membership in the Radiological Society of North America, Inc.

Millard Joel Schweidel, M.D., of Brooklyn, died on September 22 at the age of thirty-four. Dr. Schweidel graduated in 1949 from Columbia University College of Physicians and Surgeons and interned at Kings County Hospital and Veterans Administration Hospital, Brooklyn. He was a member of the American Society of Anesthesiologists, Inc., the New York State Society of Anesthesiologists, the Queens County Medical Society, and the Medical Society of the State of New York.

Maurice Arthur Sher, M.D., of Brooklyn, died on September 14 at the age of sixty-two. Dr. Sher graduated in 1921 from New York University and Bellevue Hospital Medical College. He was director of otolaryngology at Coney Island Hospital. Dr. Sher was a Diplomate of the American Board of Otolaryngology, a Fellow of the International College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Prejudice is a great timesaver. It enables you to form opinions without bothering to get the facts.—Robert Quillen



1,928 published cases in the two years since TAO was released for general use show:

94.3% effectiveness in respiratory infections (617 cases including tonsillitis, staphylococcal and streptococcal pharyngitis, bronchitis, infectious asthma, bronchopneumonia, lobar pneumonia, bronchiectasis, lung abscess, otitis.) **You can count on TAO.**

92% effectiveness in skin and soft tissue infections (900 cases including pyoderma, impetigo, acne, infected skin disorders, wounds, incisions and burns, furunculosis, abscess, cellulitis, chronic ulcer, adenitis.) **You can count on TAO.**

87.1% effectiveness in genitourinary infections (349 cases including urethritis, cystitis, pyelitis, pyelonephritis, orchitis, pelvic inflammation, acute gonococcal urethritis, lymphogranuloma venereum.) **You can count on TAO.**

75.8% effectiveness in diverse infections (62 cases including fever of undetermined origin, peritoneal abscess, osteitis, periarthritis, septic arthritis, staphylococcal enterocolitis, gastroenteritis, carriers of staphylococci.) **You can count on TAO.**

95.6% of 1,928 cases free of side effects—in the remaining 4.4%, reactions were chiefly mild gastrointestinal disturbances which seldom necessitated discontinuance of therapy.

*In 884 of 1,928 cases the causative organisms were mostly staphylococci. The majority of clinical isolates were found to be resistant to at least one of the commonly used antibiotics and many patients had failed to respond to previous therapy with one or more antibiotics.

TAO proved 93.4% effective in these 884 cases.

Complete bibliography available on request.

DOSAGE: varies according to severity of infection. Usual adult dose—250 to 500 mg. q.i.d. Usual pediatric dose: 3-5 mg./lb. body weight every 6 hours.

NOTE: In some children, when TAO was administered at considerably higher than therapeutic levels for extended periods, transient-jaundice and other indications of liver dysfunction have been noted. A rapid and complete return to normal occurred when TAO was withdrawn.

SUPPLY: TAO CAPSULES—250 mg. and 125 mg., bottles of 60. TAO ORAL SUSPENSION—125 mg. per 5 cc. when reconstituted, palatable cherry flavor, 60 cc. bottles. TAO PEDIATRIC DROPS—100 mg. per cc. when reconstituted, flavorful; special calibrated dropper, 10 cc. bottles. INTRAMUSCULAR or INTRAVENOUS—10 cc. vials, as oleandomycin phosphate.

OTHER TAO FORMULATIONS ALSO AVAILABLE: TAO®-AC (Tao, analgesic, antihistaminic compound) capsules, bottles of 36. TAOMID® (Tao with Triple Sulfas)—tablets, bottles of 60. Oral Suspension—60 cc. bottles.

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MEDICAL NEWS

Third District Branch Elects Officers—The Third District Branch of the Medical Society of the State of New York elected officers in September to hold office from May, 1961, to May, 1963. They are as follows: Eugene F. Galvin, M.D., Rosendale, president; Henry J. Noerling, M.D., Valatie, first vice-president; Marshall Quandt, M.D., Waterford, second vice-president; Frances E. Vosburgh, M.D., Albany, secretary and treasurer; and Lee R. Tompkins, M.D., Liberty, delegate.

International Psychosomatic Seminars Cruise—The World Medical Association and the American Psychiatric Association will sponsor a series of international psychosomatic seminars during the winter of 1962. The seminars will be conducted by James L. McCartney, M.D., Garden City, as part of a cruise which will visit more than 20 ports of call.

For further information concerning the cruise contact: James L. McCartney, M.D., 223 Stewart Avenue, Garden City, New York.

Two-Way Radio Conferences Begin Sixth Year—Albany Medical College's two-way radio medical conference network, a unique and effective method of providing postgraduate education for physicians, began its sixth season in October with a record number of 30 hospitals in four northeastern states taking part.

The radio conferences were conceived by the medical college to combat the time and travel factors that prevent busy physicians from attending medical meetings. The programs present up-to-date information on a variety of medical and surgical topics. They are broadcast three times a week, twenty-four weeks a year, October through March, via WAMC, Albany Medical College's 10,000-watt FM radio station. The two-way aspect of the programs is made possible by the fact that each hospital in the network is equipped with a portable radio transmitter which enables physicians to ask questions of the experts.

The conferences utilize the teaching services of faculty members from Albany Medical College of Union University, the University of Vermont College of Medicine, Yale University School of Medicine, and—in collaboration with the Postgraduate Medical Institute of the Massachusetts Medical Society—Boston University School of Medicine, Harvard Medical School, and Tufts University School of Medicine.

The following is a list of the hospitals in New York State which participate in the programs: *Albany*, Veterans Administration Hospital; *Amsterdam*, Amsterdam City Hospital and St. Mary's Hospital; *Castle Point*, Veterans Administration Hospital; *Glens Falls*, Glens Falls Hospital; *Herkimer*, Herkimer Memorial Hospital; *Kingston*, Benedictine Hospital; *Little Falls*, Little Falls Hospital; *Middletown*, E. Horton Memorial Hospital; *Monticello*, Hamilton Avenue Hospital; *Poughkeepsie*, St. Francis Hospital and Vassar Brothers Hospital; *Rome*, Oneida County Hospital; *Saranac Lake*, General Hospital; *Schenectady*, Ellis Hospital, Glenridge Hospital, and St. Clare's Hospital; *Sunmount*, Veterans Administration Hospital; *Troy*, Leonard Hospital, Samaritan Hospital, and St. Mary's Hospital; *Utica*, Faxton Hospital.

Moreno Institute Moves to New Headquarters—The Moreno Institute, formerly at 101 Park Avenue, New York City, has announced that it has moved to new headquarters at 236 West 78th Street (near Broadway corner). The new telephone number of the Institute is ENdicott 2–6165.

First Emil A. Gutheil, M.D., Memorial Conference—The first Emil A. Gutheil, M.D., Memorial Conference of the Association for the Advancement of Psychotherapy, Inc., was held on October 30 in New York City. The conference, which marked the beginning of an annual series of scientific meetings pertaining to psychotherapy, was named in honor of one of the founders of the Association.

Essay Contest on Chest Diseases—The American College of Chest Physicians announces that it is accepting applications for its twelfth annual essay contest. Three cash awards are offered, a first prize of $500, a second prize of $300, and a third prize of $200.

The contest is open to undergraduate medical students throughout the world. Essays may be written on any phase of the diagnosis and treatment of chest diseases (cardiovascular or pul-

[Continued on page 3702]

a book is to look at

buttons are to keep people warm

cats are so you can have kittens

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Redisol (Cyanocobalamin, crystalline vitamin B_{12}) often stimulates children's appetites with consequent weight gain. Tiny **Redisol Tablets** (25, 50, 100, 250 mcg.) dissolve instantly in the mouth, on food or in liquids. Also available: cherry-flavored **Redisol Elixir** (5 mcg. per 5-cc. teaspoonful); **Redisol Injectable,** cyanocobalamin injection USP (30 and 100 mcg. per cc., 10-cc. vials and 1000 mcg. per cc. in 1, 5 and 10-cc. vials).

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cough suppressant action	equal to	narcotics	Though it reaches peak action somewhat more slowly, the cough-suppressant power of ULO is fully as great as that of narcotics.
duration of action	greater than	narcotics	After reaching peak action, ULO maintains its maximal cough-suppressant effect undiminished for 4 to 8 hours.
side actions	less than	narcotics	ULO is free from the limitations and undesirable side effects of narcotics...no constipation...no nausea...no gastric irritation...no appetite suppression...no tolerance development...no respiratory depression...no drowsiness.

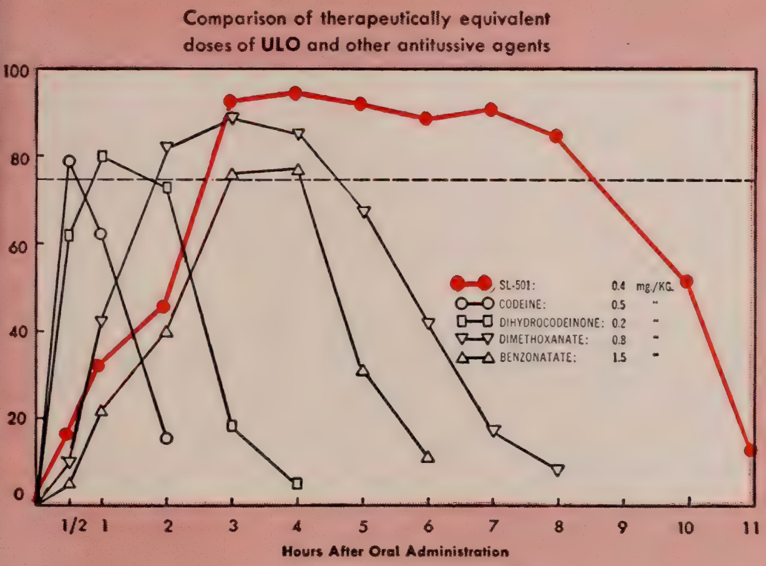
gators, 46 of whom were chest physicians.

Diagnostic Category	Number of Patients	Results: Good to Excellent	Fair	Poor	Not Specified
Upper Respiratory Infection	521	357	88	57	19
Bronchitis	398	309	42	38	9
Pneumonia	53	44	4	5	0
Postnasal Drip	48	32	9	3	4
Tracheobronchitis	32	23	4	3	2
Croup	14	10	2	2	0
Pleurisy	12	11	0	1	0
Total Patients	**1078**	**786**	**149**	**109**	**34**
Total Patients Benefited		**86.2%**			

Indications

Upper respiratory infections
Common cold
Influenza
Pneumonia
Bronchitis
Tracheitis
Laryngitis
Croup
Pertussis
Pleurisy

4 to 8 hour sustained cough suppression



Mean per cent inhibition of cough in dogs following oral administration of therapeutically equivalent doses of ULO (SL-501) and other antitussive agents. The horizontal dotted line represents threshold of maximum effectiveness, arbitrarily taken at 75 per cent suppression of counted coughs. Note that the duration of maximum effectiveness of a single dose of ULO is 6 hours, 24 times as long as that of codeine. Peak effectiveness of ULO is not reached until 2 or 3 hours after administration, but the maximum antitussive action lasts at least 6 hours.

Chen, J. Y.; Biller, H. F., and Montgomery, E. G., Jr.: J. Pharmacol. & Exper. Therap. *128*:384, 1960.

Safety

There are no known contraindications. Side effects occur only occasionally and have been mild. Nausea and dizziness have occurred infrequently, vomiting and drowsiness rarely.

Dosage:

Adults: 25 mg. (1 teaspoonful) 3 or 4 times daily as required;

Children: 6 to 12 years of age—12.5 to 25 mg. (½ to 1 teaspoonful) 3 or 4 times daily as required;

2 to 6 years of age—12.5 mg. (½ teaspoonful) 3 or 4 times daily as required.

Availability

ULO Syrup, 25 mg. per 5 cc. (teaspoonful), in bottles of 12 fluid ounces.

Riker

Northridge, California

[Continued from page 3698]

monary). Entries must be received prior to April 1, 1961.

For application and further information write to: American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

New Association for Study of Headache—The recently organized American Association for the Study of Headache has announced that it will welcome applications for membership from any physician, specialist, or general practitioner who is interested in the study of headache.

For further information write to: Bayard T. Horton, M.D., Secretary, The American Association for the Study of Headache, Mayo Clinic, Rochester, Minnesota.

Examination Forms Approved by Internists—The American Society of Internal Medicine recently approved and recommended for use a history form and a physical examination form. The forms were developed by the Society's Committee on Forms, a subcommittee of the Medical Services Committee, and were designed for more rapid, efficient, and thorough recording of the patient's history.

Physicians interested in obtaining samples of the forms and further information should write to: Lewis T. Bullock, M.D., Chairman, Committee on Forms, American Society of Internal Medicine, 350 Post Street, San Francisco 8, California.

Personalities

Honored

Ade T. Milhorat, M.D., New York City, by the Manhattan Chapter of the Muscular Dystrophy Associations of America for his pioneering research in neuromuscular disorders.

Speakers

Matthew Brody, M.D., Brooklyn, before the seventh annual convention of the Academy of Psychosomatic Medicine in Philadelphia on October 16. . .Nathaniel E. Reich, M.D., Brooklyn, in a panel discussion on "Chest Pain—Somatic and Psychic Factors" at the seventh annual meeting of the Academy of Psychosomatic Medicine in Philadelphia on October 15. . .Leo Spira, M.D., Elmhurst, on the results of a four-month study of the coexistence of signs and symptoms of chronic fluorine poisoning and those symptoms encountered in patients suffering from mental illness, before the staff of the prefectural mental hospital, Yukyuso, in Nagaoka, Niigata-ken, Japan, and on the same subject at Niigata University and at a meeting of the Nagaoka Branch of the Rotary Club.

Awarded

Leona Baumgartner, M.D., New York City, Commissioner of Health for the City of New York, a citation honoring her as "woman of the year" from the New York City Branch of the American Association of University Women. . .Lydia G. Giberson, M.D., New York City, an Outstanding Professional Woman of the Year award from the Business and Professional Women's Clubs of New York. . .Jerome Glaser, M.D., Rochester, a scroll from the Section on Allergy of the American Academy of Pediatrics for his outstanding work in the field of pediatric allergy. . .Howard A. Rusk, M.D., New York City, the Hundred Year Association's annual Gold Medal award, and the 1960 Gold Medal award of The New York Personnel and Guidance Association. . .Irving S. Wright, M.D., New York City, a 1960 Albert Lasker Award from the American Heart Association for his work in the field of anticoagulant therapy for coronary thrombosis.

Appointed

Howard Norvin Cooper, M.D., New York City, as deputy medical director of the New York City Community Mental Health Board. . .Harold T. Fuerst, M.D., Kew Gardens, as director of the Bureau of Preventable Diseases of the Department of Health of the City of New York. . .Rustin McIntosh, M.D., New York City, as a special consultant on child health for the City of New York Department of Health. . .Kenneth L. Stratton, M.D., Flushing, as medical director of the York Telephone Company's Manhattan-Bronx-Westchester territory.

Elected

Albert M. Betcher, M.D., New York City, as treasurer, Moses H. Krakow, M.D., Bronx, as treasurer emeritus, and E. M. Papper, M.D., New York City, as second vice-president of the American Society of Anesthesiologists. . .M. Murray Peshkin, M.D., New York City, as treasurer, and Maury D. Sanger, M.D., Brooklyn, as president-elect, of the Academy of Psychosomatic Medicine. . .Ray E. Trussell, M.D., New York City, to the board of directors of Associated Hospital Service of New York.

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- spasm of skeletal muscle

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- An analgesic component—aspirin—whose pain-relieving effect is markedly enhanced by Robaxin, and which has added value as an anti-inflammatory and anti-rheumatic agent.... (5 gr.) 325 mg.

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Also available: ROBAXIN Injectable, 1.0 Gm. in 10-cc ampul. ROBAXIN Tablets, 0.5 Gm. (white, scored) in bottles of 50 and 500.

... or when anxiety accompanies pain and spasm: **ROBAXISAL®-PH** (Robaxin® with Phenaphen®). Sedative-enhanced analgesic and skeletal muscle relaxant. Each two white-and-green laminated ROBAXISAL-PH tablets contain: methocarbamol 800 mg., plus the equivalent of one Phenaphen capsule (phenacetin 194 mg., acetylsalicylic acid 162 mg., hyoscyamine sulfate 0.031 mg., and ¼ gr. phenobarbital 16.2 mg.). Bottles of 100 and 500.

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MEDICAL MEETINGS

Seventh Annual Series of Bahamas Conferences

The following is a schedule of the seventh annual series of Bahamas Conferences to be held in Nassau, B.W.I., during the coming months: Tenth Medical Conference—November 30, 1960, to December 10, 1960; Third Surgical Conference—December 28, 1960, to January 7, 1961; Conference on Hypertension—January 8, 1961, to January 14, 1961; Third Serendipity Conference—January 22, 1961, to January 28, 1961; Second Allergy Conference—February 9, 1960, to February 15, 1961; Eleventh Medical Conference—April 3, 1961, to April 15, 1961; and Conference on Internal Medicine—April 30, 1961, to May 6, 1961.

For further information concerning these conferences write to: Mr. Irvin M. Wechsler, Executive Director, Bahamas Conferences, P. O. Box 1454, Nassau, B.W.I.

A.M.A. Council on Foods and Nutrition

A symposium on clinical nutrition sponsored by the Council on Foods and Nutrition of the American Medical Association, in cooperation with the Medical Society of the District of Columbia, will be held in Washington, D.C., on November 30.

For further information contact: Miss Sandra L. Brodie, Nutritionist, Council on Foods and Nutrition, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

Medical Staff Meeting at Manhattan General Hospital

The Medical Board of the Manhattan General Hospital invites all interested physicians to a medical staff meeting on Thursday, December 1, at 8:00 P.M., in the auditorium of the hospital at 307 Second Avenue, New York City.

The theme of the meeting will be "What Are the Problems of Medical Care Today?" The speakers are as follows: Leonard J. Raider, M.D., New York City, vice-president of medical affairs, United Medical Service and Blue Shield; Morris Brand, M.D., New York City, medical director of the Sidney Hillman Health Association; Bernard J. Pisani, M.D., New York City, president of the Medical Society of the County of New York; and Mr. Harry Sesan, vice-president of Associated Hospital Service of New York. Frank P. Guidotti, M.D., medical director of the New York Hotel Trades Council and Hotel Association of New York City Health Center, will serve as chairman of the meeting.

Following the presentations the forum will be open to questions from the audience.

For further information contact: Mr. Charles A. Togut, Associate Executive Director, Manhattan General Hospital, 307 Second Avenue, New York 3, New York. ORegon 7-2300.

Dr. Albert L. Levy Lecture

The Dr. Albert L. Levy Lecture will be given in the auditorium of the Jewish Memorial Hospital, Broadway and 196th Street, New York City, on Tuesday, December 6, at 8:30 P.M. The lecture will be delivered by Henry L. Jaffe, M.D., director of laboratories and pathology, Hospital for Joint Disease, New York City. His topic will be "Degenerative Arthritis: Roentgenographic and Pathologic Correlations."

New York State Society of Industrial Medicine

The New York State Society of Industrial Medicine, Inc., will hold its annual meeting on December 7, at the New York University Club, 123 West 43rd Street, New York City. The schedule of the meeting is as follows: Business meeting—5:30 to 6:16 P.M.; speaker—6:15 to 7:00 P.M.; cocktails—7:00 to 8:00 P.M.; and dinner—8:00 P.M.

Guest speaker will be Marvin K. Opler, Ph.D., who will speak on the topic "Industrial Societies and the Changing Role of Doctors." The meeting is open only to members of the society and their wives.

Academy of Psychoanalysis

The Academy of Psychoanalysis will hold its midwinter meeting on December 10 and 11 at the Hotel Biltmore, New York City. The theme of the meeting is "The Role of Values in the Psychoanalytic Process."

The program on Saturday, December 10, is as follows: "Values, Maturation and Health"—A. H. Maslow, Ph.D., Waltham, Massachusetts, discussed by Franz Alexander, M.D., Beverly Hills, California; "Values, Identity and the Psychoanalytic Process"—Marianne H. Eckhardt, M.D.,

[Continued on page 3708]

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1. Weissberg, G.: Clin. Med., June 1960.

2. Spoor, H. J.: N. Y. St. J. Med., Oct. 15, 1958.

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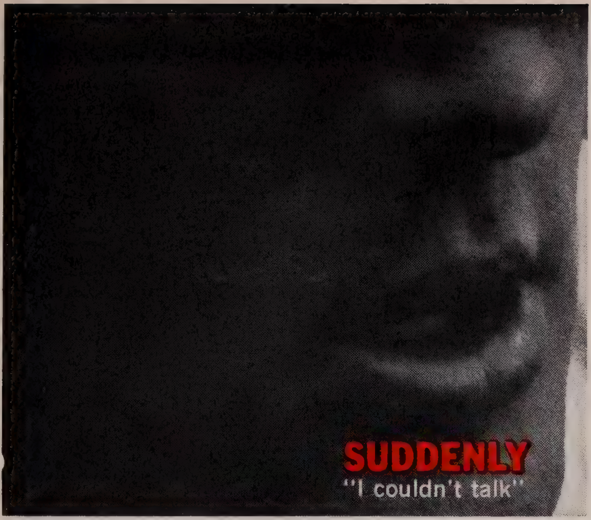
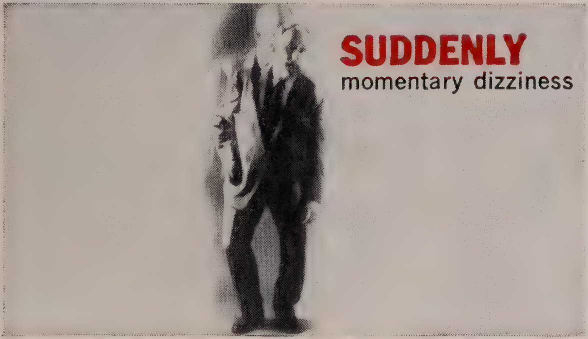

SUDDENLY
"I couldn't talk"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References: 1. Alvarez, W. C.: The New Physician 6:42, 1957. 2. Little Strokes, Hope through Research, Publication 689, United States Department of Health, National Institute of Neurological Diseases and Blindness, 1959. 3. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953. 4. Martin, G. J. (Ed.): Hesperidin and Ascorbic Acid, New York, S. Karger, 1955.

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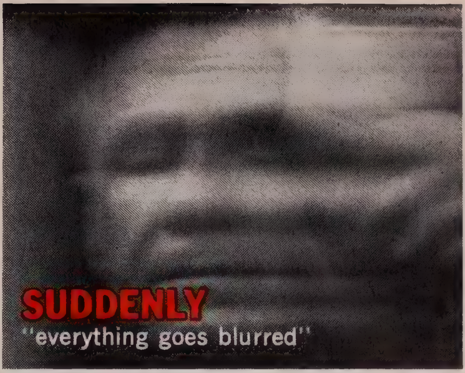
SUDDENLY
"everything goes blurred"

SUDDENLY
she finds herself
dropping things

[Continued from page 3704]

Bethesda, Maryland, discussed by John A. P. Millet, M.D., New York City; "Values, Truth and Psychoanalysis"—John R. Reid, Ph.D., Baltimore, Maryland, discussed by Iago Galdston, M.D., New York City; "Value Differences Between Patient and Psychoanalyst"—Janet MacKenzie Rioch, M.D., New York City, discussed by Viola W. Bernard, M.D., New York City.

The program on Sunday, December 11, is as follows: "Volition and Value: A Study Based on Catatonic Schizophrenia"—Silvano Arieti, M.D., New York City, discussed by Alberta Szalita, M.D., New York City; "Depression and Ego Ideal in a Competitive Society"—Henry B. Richardson, M.D., New York City, discussed by Walter Bonime, M.D., New York City; "Identity"—Paul Chodoff, M.D., Washington, D.C., discussed by Montague Ullman, M.D., New York City; "Values in the Psychotherapy of Artists"—Lawrence John Hatterer, M.D., New York City, discussed by Harry B. Lee, M.D., Chicago, Illinois; "A Re-evaluation of Some Aspects of Femininity Through a Study of Menstruation: A Preliminary Report"—Natalie Shainess, M.D., New York City, discussed by Irving Bieber, M.D., New York City.

For further information write to: Joseph H. Merin, M.D., Secretary, The Academy of Psychoanalysis, 125 East 65th Street, New York 21, New York.

Bronx Pediatric Society

The Bronx Pediatric Society will meet at Morrisania City Hospital, 168th Street and Gerard Avenue, Bronx, on Wednesday, December 14, at 8:30 P.M. Edmund P. Fowler, M.D., of the College of Physicians and Surgeons, Columbia University, will present the James Harkins Memorial Lecture, entitled "Problems in Pediatric Otology."

For further information contact the society's secretary: David L. Milliken, M.D., 1212 Grand Concourse, Bronx 56, New York.

American Association for the Advancement of Science

The Committee on Cosmetics of the American Medical Association in cooperation with the American Association for the Advancement of Science will present a one-day symposium entitled "The Scientist's Contribution to the Safe Use of Cosmetics." The program will be presented before the Pharmacy Section at the American Association for the Advancement of Science's one hundred and twenty-seventh annual meeting in New York City, December 29.

Among the New York City physicians who will participate are Marion B. Sulzberger, M.D., and Howard T. Behrman, M.D.

Further information may be obtained by writing to: Dr. Joseph B. Jerome, Acting Secretary, Committee on Cosmetics, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

The International Fertility Association

A sectional meeting on "Fertility and Sterility of North, Central, and South America," sponsored by the International Fertility Association, will be held at the Hotel El Presidente, Acapulco, Mexico, January 28 through 31, 1961.

For further information contact: Maxwell Roland, M.D., Treasurer, International Fertility Association, 109–23 71st Road, Forest Hills, New York.

Twelfth Annual Venereal Disease Symposium

The American Venereal Disease Association and the Public Health Service of the U.S. Department of Health, Education, and Welfare will sponsor jointly a symposium on venereal disease which will be held at the Hotel New Yorker, New York City, April 13 and 14, 1961.

Physicians wishing to present a scientific paper on a subject related to venereal disease should mail preliminary abstracts before November 25 to: William J. Brown, M.D., Program Committee Chairman, Venereal Disease Branch, Communicable Disease Center, Atlanta 22, Georgia.

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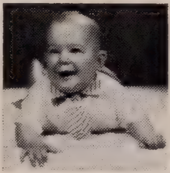
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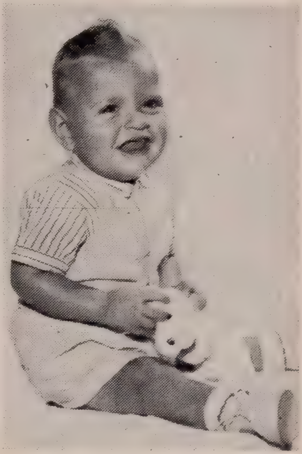
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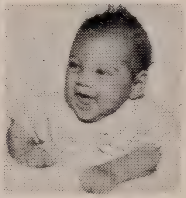
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NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Appointed—Hideshige Imai, M.D., as an instructor, Department of Pathology.

Class of 1964—The class of 1964 is represented by 37 colleges and universities. The 64-member class is composed of students from Union College, Wesleyan University, Middletown, Connecticut, Rensselaer Polytechnic Institute, Cornell University, Albany College of Pharmacy, University of Rochester, University of Massachusetts, Williams College, Amherst College, Hofstra College, and the College of the City of New York.

Promoted—Victor N. Tomkins, M.D., assistant commissioner of health for the State Health Department, from associate professor to professor of pathology; from instructor to assistant professor, David W. Sinton, M.D., in pathology (neuropathology); Larry J. O'Brien, Ph.D., in physiology; and William R. Stoll, Ph.D., in pharmacology; Walter A. Osinski, director of the Community Mental Health Board of Albany County, from assistant professor to associate clinical professor of psychiatry; Antonio Boba, M.D., in anesthesiology; John J. Garrett, M.D., in medicine, William Haddon, Jr., M.D., in community health (epidemiology), Robert C. Hays, M.D., in obstetrics and gynecology, and George M. Warner, M.D., in community health (medical care), to assistant professor; advanced to assistant clinical professorships are: John H. P. Holden, M.D., in surgery; Leon W. Lussier, M.D., in psychiatry; Ward F. Tibbitts, M.D., in surgery, and George L. Tully, M.D., in obstetrics and gynecology.

New Sub-Departments—Renal disease, John E. Kiley, M.D., director, and rheumatology, Curtland C. Brown, Jr., M.D., director, have been created within the Department of Medicine and will function as such in the Albany Hospital.

Teaching Conferences—Abraham M. Rabiner, M.D., recently retired as professor of neurology, State University of New York Downstate Medical Center, participated in the first in a series of teaching conferences for the current academic year in September. Dr. Rabiner, who graduated from the College in 1916, will devote his entire time to teaching in the Albany Medical Center's resident and medical student training program in neurology.

Two-Way Radio Medical Conferences—The two-way radio medical conferences were begun on October 4. The first conference was on "Therapeutic Suggestions—Activities of the Albany Medical Center Formulary Committee" and John J. A. Lyons, M.D., associate professor of medicine and microbiology, and Solomon Garb, M.D., associate professor of pharmacology, were the participants.

Clinical Congress, American College of Surgeons—Participants from the College at the annual clinical congress of the American College of Surgeons were: Albert F. Peters, senior, who read a paper on "Autonomic Influences on Portal Pressure" which was coauthored by Robert Granger, a third-year student and Samuel R. Powers, Jr., M.D., professor of surgery; Charles Eckert, M.D., professor and chairman of surgery, presented a paper on "The Differentiation Between Intrahepatic and Extrahepatic Jaundice" and served as chairman of a postgraduate course on "Diseases of the Liver, Biliary Tract, and Pancreas," and Samuel R. Powers, Jr., M.D., and C. Stuart Welch, M.D., professors of surgery, served as panel members of the postgraduate course; Thomas F. Frawley, M.D., professor of medicine and chairman, Sub-Department of Endocrinology and Metabolism, addressed the congress on technics used to interpret the function of insulin-producing cells in the pancreas; John J. Cincotti, M.D., assistant professor of surgery, described a surgical method of treating patients with cirrhosis and coauthors with Dr. Cincotti were Harold F. Welch, M.D., John H. Carter, M.D., James H. Cleary, M.D., Antonio Boba, M.D., and John A. Nelson, M.D.; Edward Sharkey, M.D., assistant professor of surgery, served as a panelist on a postgraduate course on burns and associated complications.

Albert Einstein College of Medicine

Human Heredity Clinic—The first Human Heredity Clinic to be conducted in a major metropolitan area has been established at the College through

[Continued on page 3712]

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Reference: 1. Scal, J. C.: Eye Ear Nose & Throat Month. **38**:738 (Sept.) 1959.

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[Continued from page 3710]

funds awarded by the Research Council of the New York City Department of Health. Dr. Salome Gluecksohn-Waelsch, professor of anatomy (genetics) is the chairman of the center.

Research Programs—The Public Health Service of the National Institutes of Health has awarded $57,000 for an exploratory study on relationship between weather conditions and air pollution and health, behavior, sickness and death in New York City. Leonard Greenburg, M.D., former commissioner of air pollution of the City will conduct the study.

Also from the National Foundation for a simultaneous research on arthritis and birth defects by Dr. Alex B. Novikoff, research professor, Department of Pathology, and associates, an award of $21,086.

Columbia University College of Physicians and Surgeons

Opening Exercises—Opening exercises for the 1960 to 1961 academic year were held on September 13. William B. Seaman, M.D., professor of radiology, told the first year medical class of 120 that compassion and human understanding are two major qualities that a physician must have. H. Houston Merritt, M.D., dean of the faculty of medicine, also spoke briefly at the ceremony.

New York University Medical Center

Second International Meeting of Forensic Pathology and Medicine—The Second International Meeting on Forensic Pathology and Medicine was held at the New York University Medical Center from September 18 through 21. Sir Sydney Smith, professor emeritus of forensic medicine, University of Edinburgh, Scotland, received the New York University Medal at a ceremony held between sessions of the Conference. Sir Smith is one of the world's foremost authorities on the scientific investigation of sudden, suspicious, or violent death and achieved world-wide distinction in the practice of forensic medicine during his tenure as Principal Medico-Legal Expert for the Egyptian Government and later as professor of forensic medicine at the University of Edinburgh.

Visiting Professor—Dr. Christopher B. Wynn Parry, Squadron Leader, British Royal Air Force, visiting lecturer, delivered the third Louis J. Horowitz Lecture on September 27. Dr. Parry is the senior specialist in physical medicine in the Royal Air Force.

State University of New York Downstate Medical Center

Appointments—Rudolf Theodoor van Dam, M.D., of Amsterdam University, Holland, as visiting professor of physiology for 1960 to 1961. Other appointments are: Jerome Silverman, M.D., clinical assistant professor of psychiatry; Rudolf Singer, M.D., clinical assistant professor of otolaryngology; Arnold Fenton, M.D., clinical assistant professor of obstetrics and gynecology; and Patricia Heely, M.D., lecturer in environmental medicine and community health. Two new department heads are: Ludwig W. Eichna, M.D., formerly professor of medicine at New York University College of Medicine, professor and chairman, Department of Medicine, and I. Charles Kaufman, M.D., formerly associate professor of psychiatry, Boston University School of Medicine, professor and chairman, Department of Psychiatry.

Special Honors Scholarships—Five new medical students of the class of 1964 were the recipients of Honors Scholarships which range up to $1,000 a year for four years provided the recipient maintains a high level of academic grades. These were Gerald Allan Acker, David Allen Howitt, Robert I. Oberhand, Philip Charney, and Theodore H. Weinstein. Recipients of New York State Scholarships, based on an annual competitive examination are: Robert Blatt, Richard S. Epstein, Gerald L. Levinson, George B. Salzberg, and Robert L. Seaver. Two members of the class who were among the ten Negro college students in the country to receive four-year medical scholarships from the Alfred P. Sloan Foundation and the National Medical Fellowships, Inc., of Chicago, are Walter H. Bradshaw and Theodore V. Francois. Other scholarships holders are: Ina Gilbert from the Educational Foundation for Jewish Girls; David L. Grossman from the Max Danzis Foundation; Nancy V. Gwon the Jonas Salk Scholarship award; Geraldine Ann

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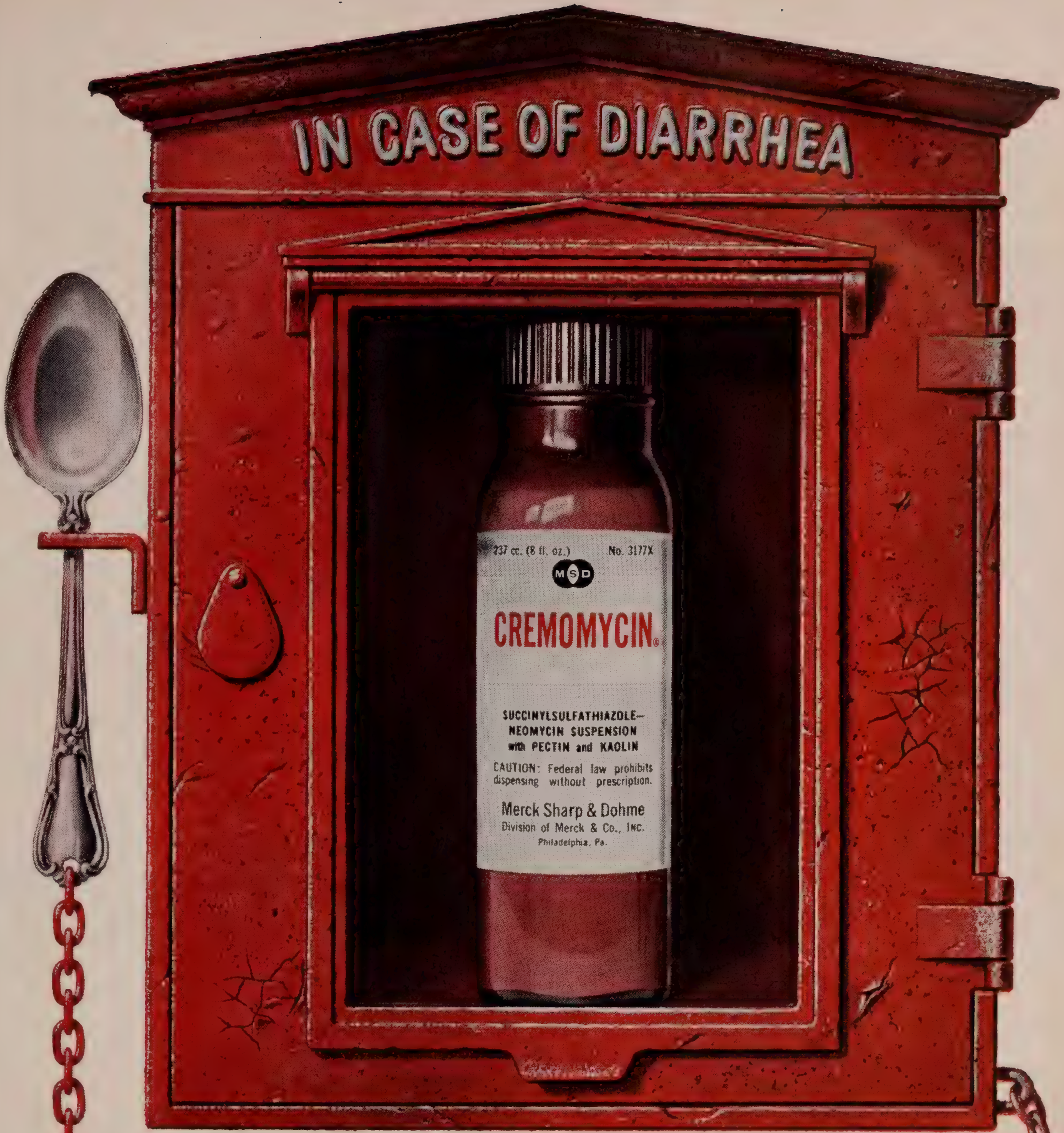
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[Continued from page 3712]

Heathwood, the Joseph Collins Foundation; David W. Kinne, a South Oaks Medical scholarship; Judith M. Rubenstein, a Bryn Mawr Grant for Medical School; and Joseph E. Schwartz. a Y.M.H.A. Scholarship.

Grants—Grants in the amount of $687,861 have been received since June 1, 1960, by the faculty members. The Health Research Council of the City of New York, awarded $6,900 for a special project in postgraduate student elective time; 7 grants amounting to $163,878 were awarded by the National Institutes of Health to the Departments of Medicine, Pathology, Rehabilitation, Surgery, Ophthalmology and Otolaryngology to finance training programs for graduate and undergraduate students; and 36 grants were awarded to investigators in 13 departments by the National Institutes of Health, the Health Research Council of the City of New York, the Arthritis and Rheumatism Foundation, the Department of the Army, the National Vitamin Foundation, the New York Heart Association, the Office of Vocational Rehabilitation, and several drug companies. Twenty-five of the research grants are renewals of projects already in progress and 11 are for new research.

Three Faculty Members on Sabbatical Leave in Europe—Three members of the faculty have recently begun sabbatical leaves in connection with research in their special fields of interest.

Clarence Dennis, M.D., professor and chairman, Department of Surgery, is in Stockholm, Sweden, where he will spend a year working with Dr. Clarence Crafoord, of the Karolinska Institute, on problems of extracorporeal circulation. Robert Austrian, M.D., professor of medicine, is in Paris, France, where he will spend a year working in the laboratories of the Pasteur Institute in the field of bacterial genetics. Herman Witkin, M.D., professor of psychiatry, is on a six months' sabbatical leave. He plans to visit laboratories and clinical facilities engaged in work bearing on his research in the field of perception-personality relationships to obtain first-hand familiarity with new procedures not yet reported in the literature.

State University of New York Upstate Medical Center

New and Renewed Research Grants—Research grants received by the staff are: $154,225 to Charles W. Lloyd, M.D., professor, Department of Obstetrics, from the U.S. Public Health Service and $3,500 from Parke, Davis and Company; Dr. Charles F. Reed, assistant professor, Department of Psychiatry (Psychology), $10,102, also from the U.S. Public Health Service; Dr. Walter R. Spofford, Department of Anatomy, and Dr. David B. Peakeall, Surrey, England, $28,000 from the National Science Foundation; $9,982 for J. A. Abildskov, M.D., associate professor, Department of Medicine, from the U.S. Public Health Service which also awarded grants to William H. Bergstrom, M.D., associate professor, Department of Pediatrics, $8,612; Dr. Richard J. Doisy, assistant professor, Department of Biochemistry, $6,399; Harry A. Feldman, M.D., chairman, Department of Preventive Medicine, $18,895, $24,849, $11,040, and $8,285 and from the National Society for the Prevention of Blindness, Inc., $6,000. Edward C. Hughes, M.D., chairman, Department of Obstetrics, $22,080 from the U.S. Public Service and $11,361 from the Rosamond Gifford Charitable Corporation. Other grants from the U.S. Public Health Service are: $6,319 to David B. Jones, M.D., associate professor, Department of Pathology; $8,625 to Dr. Charles N. Remy, assistant professor, Department of Biochemistry; $9,228 to Dr. Raymond E. Vanderlinde, assistant professor, and Dr. W. W. Westerfeld, chairman, Department of Biochemistry; William J. Waters, M.D., and Dr. Raymond Vanderlinde, $15,247, Department of Pediatrics, and Dr. Ibert C. Wells, associate professor, Department of Biochemistry, $10,$69.

Freshman Class—Eighty-two freshmen were registered at the College in Syracuse for the 1960 to 1961 academic year.

Memorial Lecture—The twelfth annual Richard H. Hutchings Memorial Lecture was delivered on October 3 by Alvin I. Goldfarb, M.D. Dr. Hutchings was an early participant in the psychoanalytic movement in this country.

University of Rochester School of Medicine and Dentistry

Appointed—Lee B. Lusted, M.D., associate professor of radiology, has been named chairman of a National Institutes of Health Advisory Committee on Computers in Research. Dr. Lusted will counsel on the numerous biomedical computer grant applications and advise Dr. James A. Shannon, director, National Institutes of Health, on the role that N.I.H. should play in support of research involving the use of computers.

Unrestricted Grant—An unrestricted grant has been awarded by the Josiah Macy, Jr. Foundation to stabilize the teacher-research staff. The grant is payable at the rate of $50,000 a year for three years.

in infectious disease[17,22,30]
in arthritis[18,19,20]
in hepatic disease[2,3,4,5]
in malabsorption syndrome[1,2,6]
in degenerative disease[6,7,19,20]
in cardiac disease[21,28,29,38]
in dermatitis[24]
in peptic ulcer[8,21]
in neuroses & psychiatric disorders[25]
in diabetes mellitus[31,32,33]
in alcoholism[9,11,35,37]
in ulcerative colitis[10,14]
in osteoporosis[13,14]
in pancreatitis
in female climacteric[12]

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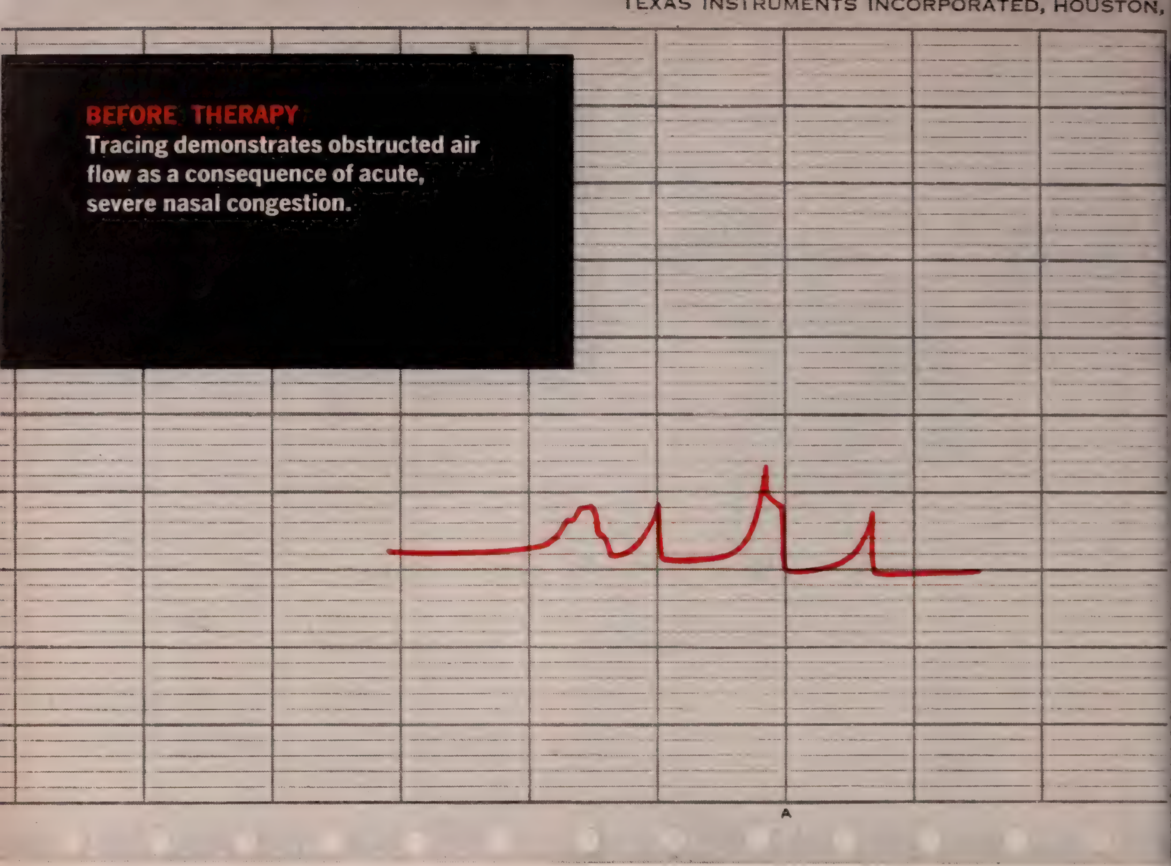
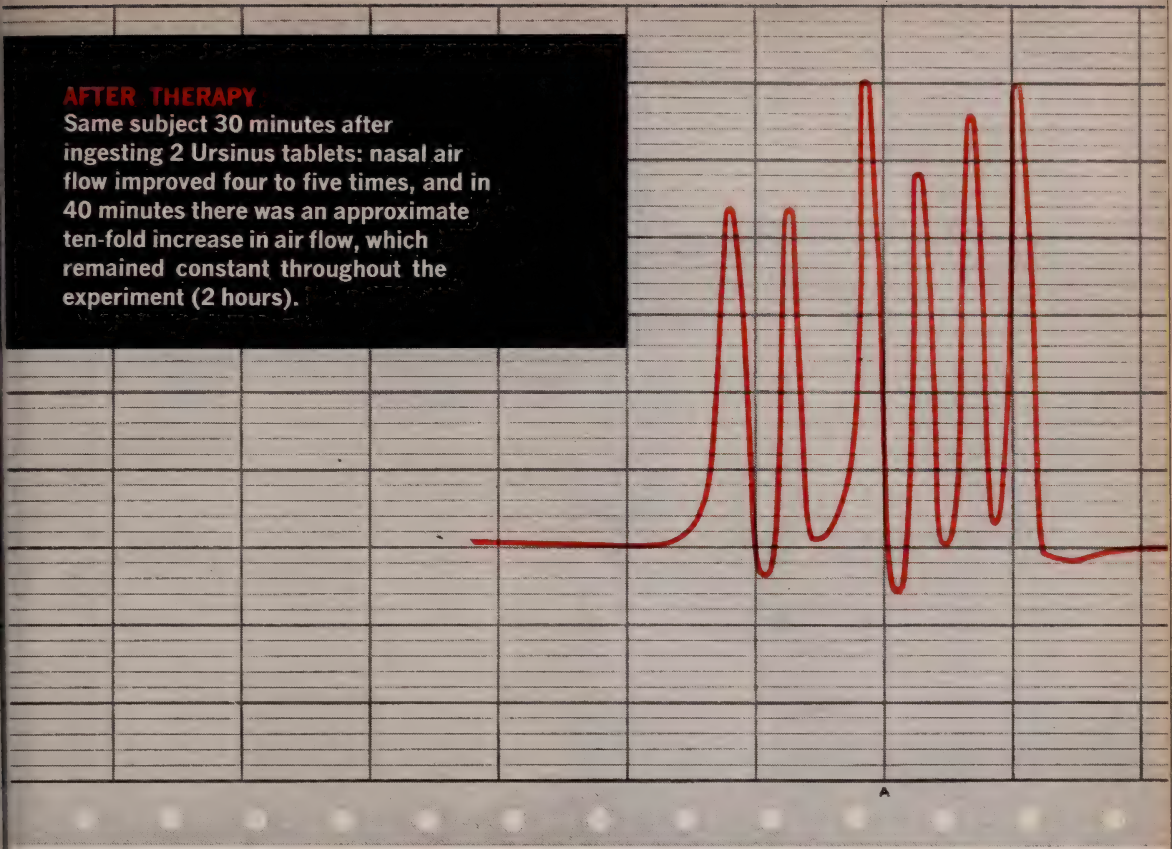


BEFORE THERAPY
Tracing demonstrates obstructed air flow as a consequence of acute, severe nasal congestion.

URSINUS®

Photo shows use of electronic rhinograph, a new technique to measure air flow and response to decongestant therapy, using same subject as control.

SMITH-DORSEY – a division of The WANDER COMPANY, LINCOLN, NEBRASKA



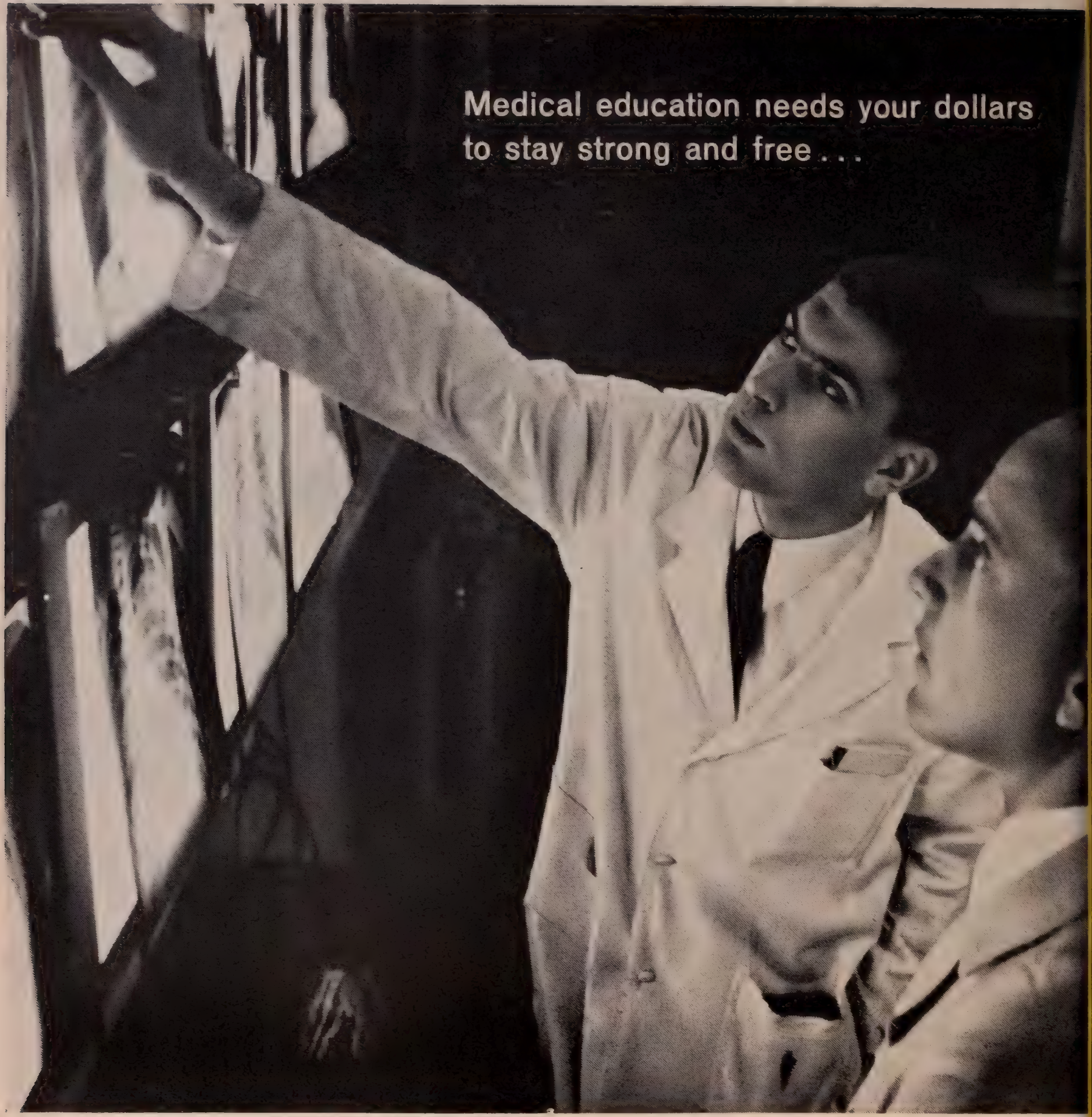
AFTER THERAPY
Same subject 30 minutes after ingesting 2 Ursinus tablets: nasal air flow improved four to five times, and in 40 minutes there was an approximate ten-fold increase in air flow, which remained constant throughout the experiment (2 hours).

for SINUSITIS

DECONGESTS PARANASAL SINUSES, TREATS UNDERLYING CAUSE OF PAIN AND PRESSURE

As an oral decongestant with antiallergic and antiinflammatory action, URSINUS shrinks edematous-congested turbinates, opens obstructed ostia, re-establishes sinus drainage and nasal patency. Pain, produced by pressure from retained sinus secretions and engorged turbinates, is promptly and effectively relieved over a prolonged period of time.

Each URSINUS Inlay-Tab contains: phenylpropanolamine HCl, 25 mg.; pheniramine maleate, 12.5 mg.; pyrilamine maleate 12.5 mg.; Calurin® (calcium acetylsalicylate carbamide, equiv. to aspirin 300 mg.) Dose: 1 or 2 tablets every 4 to 6 hours. Supplied in bottles of 100 URSINUS tablets.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anticholinergic
KEEPS
THE STOMACH
FREE OF PAIN

tranquilizer
KEEPS
THE MIND OFF
THE STOMACH

Milpath acts quickly to suppress hypermotility, hypersecretion, pain and spasm, and to allay anxiety and tension with minimal side effects.

AVAILABLE IN TWO POTENCIES:

Milpath-400 – Yellow, scored tablets of 400 mg. Miltown (meprobamate) and 25 mg. tridihexethyl chloride. Bottle of 50.

Dosage: 1 tablet t.i.d. at mealtime and 2 at bedtime.

Milpath-200 – Yellow, coated tablets of 200 mg. Miltown (meprobamate) and 25 mg. tridihexethyl chloride. Bottle of 50.

Dosage: 1 or 2 tablets t.i.d. at mealtime and 2 at bedtime.

Milpath®

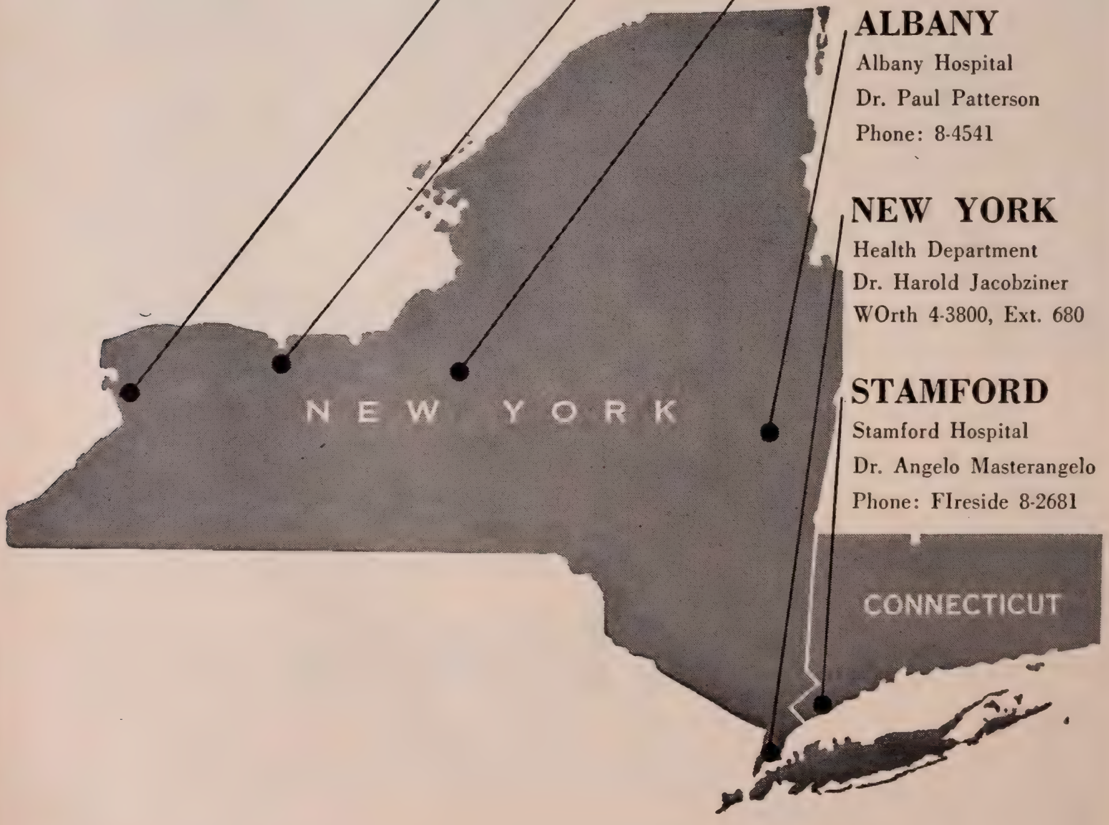
®Miltown +*anticholinergic*

WALLACE LABORATORIES *New Brunswick, N. J.*

POISON CONTROL CENTERS

on call twenty-four hours a day

Advice on all poisoning problems available at your nearest center.



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Dr. Charles Lobeck
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Phone: GRanite 6-3166

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WOrth 4-3800, Ext. 680

STAMFORD
Stamford Hospital
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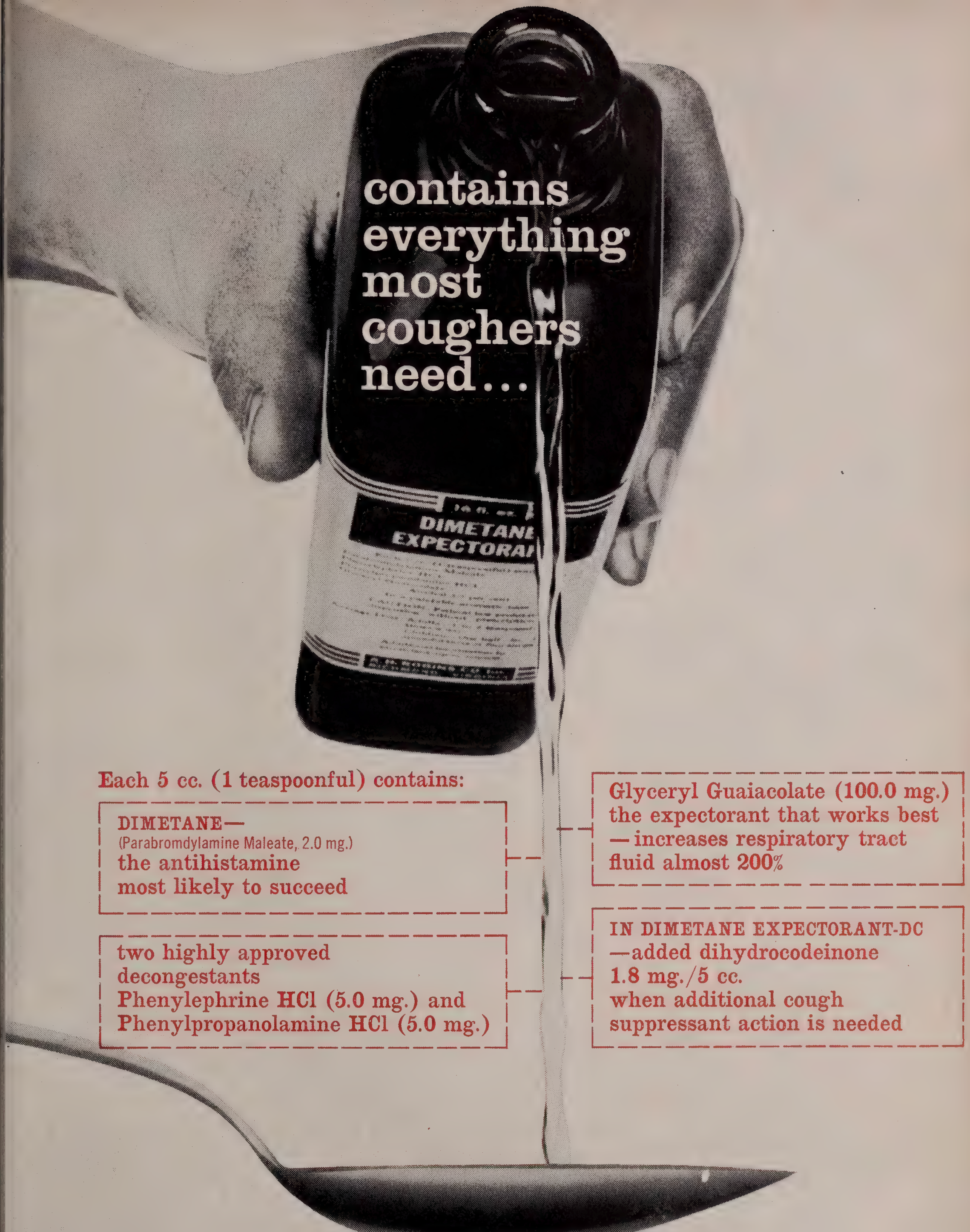
Phone: FIreside 8-2681


contains
everything
most
coughers
need...
DIMETANE
EXPECTORANT

Each 5 cc. (1 teaspoonful) contains:

DIMETANE—
(Parabromdylamine Maleate, 2.0 mg.)
the antihistamine
most likely to succeed

two highly approved
decongestants
Phenylephrine HCl (5.0 mg.) and
Phenylpropanolamine HCl (5.0 mg.)

Glyceryl Guaiacolate (100.0 mg.)
the expectorant that works best
—increases respiratory tract
fluid almost 200%

IN DIMETANE EXPECTORANT-DC
—added dihydrocodeinone
1.8 mg./5 cc.
when additional cough
suppressant action is needed

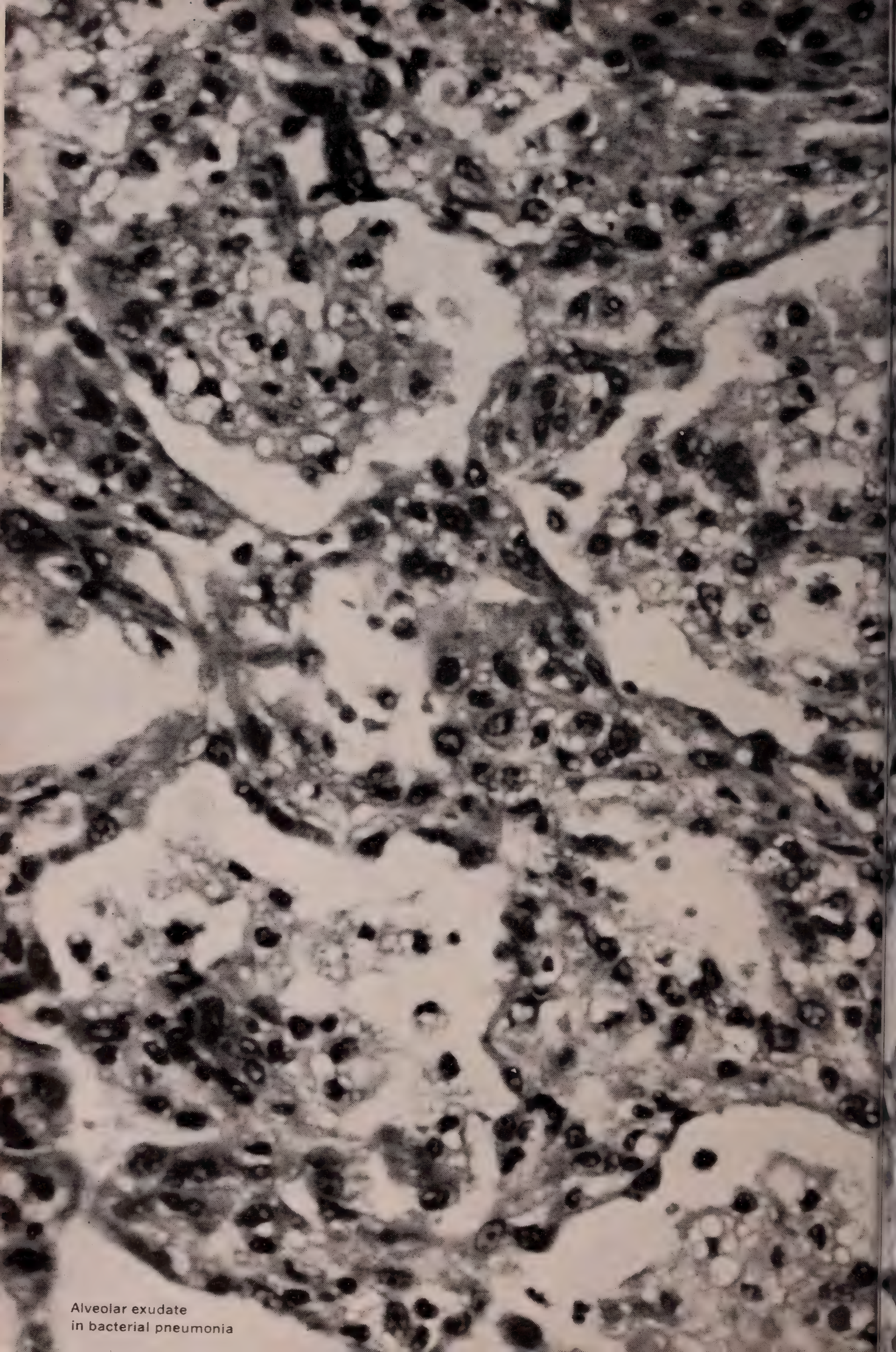
for less frequent, more productive cough

DIMETANE® EXPECTORANT

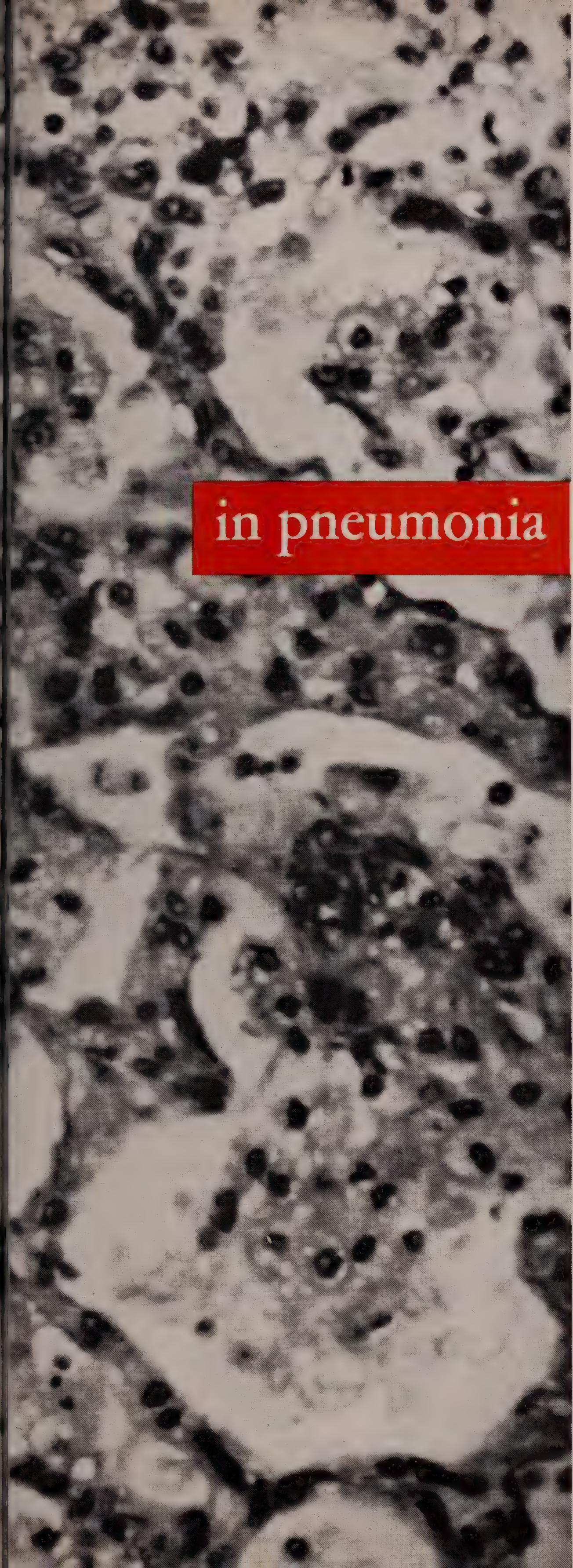
DIMETANE® EXPECTORANT-DC

Robins

A. H. ROBINS CO., INC., RICHMOND 20, VIRGINIA



Alveolar exudate
in bacterial pneumonia



Therapeutic confidence

Panalba is effective against more than 30 commonly encountered pathogens including staphylococci resistant to other antibiotics. Right from the start, prescribing it gives you a high degree of assurance of obtaining the desired anti-infective action in this as in a wide variety of bacterial diseases.

Supplied: Capsules, each containing Panmycin* Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,* as novobiocin sodium, in bottles of 16 and 100.

*Trademark, Reg. U.S. Pat. Off.

The Upjohn Compa
Kalamazoo, Michig

Upjohn

Panalba*

your broad-spectrum
antibiotic of *first* resort

A
logical
prescription for
overweight patients

anorectic-ataractic

BAMADEX®

meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets

meprobamate **plus** d-amphetamine... depresses appetite... elevates mood... eases tensions of dieting... **without** overstimulation, insomnia or barbiturate hangover.

Dosage: One tablet one-half to one hour before each meal.

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in very special cases
a very superior brandy...
specify

★ ★ ★
HENNESSY
COGNAC BRANDY

84 Proof | Schieffelin & Co., New York

massages pain away in musculoskeletal involvements[1]

GER-O-FOAM
(aerosol foam)

relieves pain, spasm; improves function increases tolerance to exercise

GER-O-FOAM's exclusive formula provides for the first time deeply absorbed analgesic-anesthetic agents in aerosol form — to permeate and anesthetize sensory nerve endings.

Relief in minutes, lasting for hours in... rheumatoid arthritis, osteoarthritis, muscle sprain, fibromyositis, low back pain... even in chronic intractable cases.

GER-O-FOAM combines: Methyl salicylate 30%, benzocaine 3%, in a neutralized emulsion base, permitting fast penetration through the stratum corneum.

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Bellerose, New York

Pioneers in Geriatric Research

[1] Gordon, E. E. and Haas, A.: Industrial Medicine & Surgery 28:217, 1959.

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nulti-system disease
HYPERTENSION

SALUTENSIN™

Hydroflumethiazide • Reserpine • Protoveratrine A

An integrated multi-therapeutic antihypertensive, that combines in balanced proportions three clinically proven antihypertensives.

In each **SALUTENSIN** Tablet:

Saluron® (hydroflumethiazide)— a saluretic-antihypertensive	50 mg.
Reserpine—a tranquilizing drug with peripheral vasorelaxant effects	0.125 mg.
Protoveratrine A—a centrally mediated vasorelaxant	0.2 mg.

Comprehensive information on dosage and precautions in official package circular or available on request.

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Officers—County Medical Societies—1960

TOTAL MEMBERSHIP AS OF OCTOBER 1, 1960—25,129

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Chautauqua...	Alfred D. Heinemann ....Dunkirk	Joseph V. Karnes.........Dunkirk	C. Otto Lindbeck.......Jamestown
Chemung.....	Robert E. Good............Elmira	Frank V. Hertzog..........Elmira	James A. Mark............Elmira
Chenango.....	Primitivo T. Cruz........Norwich	Paul J. Christenson.......Norwich	Paul J. Christenson.......Norwich
Clinton.......	Dean H. Wheeler......Plattsburgh	Harold Singer.........Plattsburgh	William L. Ladue......Plattsburgh
Columbia.....	Thomas C. Seymour.......Hudson	Roger C. Bliss............Hudson	Roger C. Bliss............Hudson
Cortland......	William J. McAuliffe......Cortland	Theodore I. Jacobus......Cortland	Lewis H. Berk...........Cortland
Delaware.....	Harold W. Hayne..........Sidney	Marvin Huyck............Walton	Marvin Huyck............Walton
Dutchcss.....	Barbara B. Stimson...Poughkeepsie	James K. Keeley.....Poughkeepsie	Philip V. Buckley....Poughkeepsie
Erie..........	Kenneth H. Eckert........Buffalo	Helen Toskov.............Buffalo	Francis W. O'Donnell .....Buffalo
Essex........	Rudolph J. Martin....Ticonderoga	George G. Hart.......Lake Placid	Harold J. Harris.........Westport
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Fulton........	Samuel L. Russell......Gloversville	James E. Zullo........Gloversville	William H. Raymond Johnstown
Genesee......	Myron E. Williams........Batavia	Sawyer A. Glidden........Batavia	Emil Kimaid..............Le Roy
Greene.......	Jerome Gerber............Catskill	John A. Vosburgh.......Coxsackie	Mahlon H. Atkinson.......Catskill
Herkimer.....	Daniel C. Shaughnessy...Herkimer	Arthur H. Applegate......Mohawk	Arthur H. Applegate......Mohawk
Jefferson.....	James C. Crossley......Watertown	Charles A. Prudhon....Watertown	Charles A. Prudhon ..Watertown
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Lewis........	William S. Reed..........Lowville	Allan S. Ellis.........Port Leyden	Allan S. Ellis.........Port Leyden
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Niagara......	Courtland Van DeusenNiagara Falls	William C. Niesen....Niagara Falls	Glenn E. Jones......Niagara Falls
Oneida.......	Irving Cramer..............Utica	Gerald Segal................Utica	Vincent de Lalla, Jr..........Utica
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Orange.......	John D. Van Zandt...Tuxedo Park	Earl C. Waterbury......Newburgh	Earl C. Waterbury......Newburgh
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Suffolk.......	Benjamin L. Feuerstein..Bay Shore	Jesse W. Mahoney......Patchogue	John J. Murphy........Bay Shore
Sullivan......	Lester Lipson..........Monticello	Alan R. Fried....Livingston Manor	Alan R. Fried....Livingston Manor
Tioga........	Henry Kaine.............Spencer	George F. Pritchard........Owego	George F. Pritchard........Owego
Tompkins.....	Noah J. Kassman..........Ithaca	Robert Broad..............Ithaca	R. Wendell Davis..........Ithaca
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Wayne.......	Jacob Sirkin..............Newark	Vincent J. DeRisio........Newark	Vincent J. DeRisio........Newark
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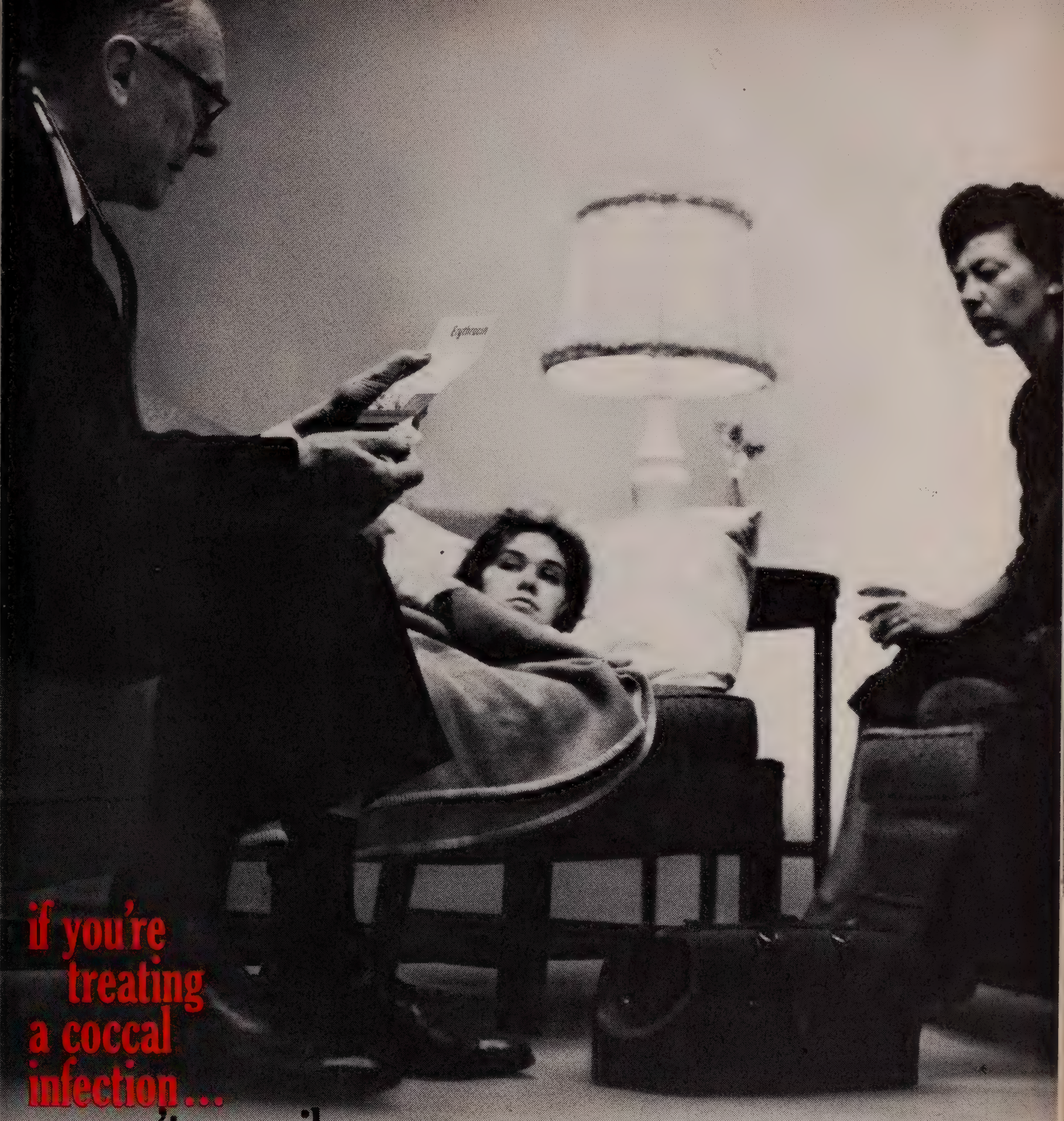


if you're treating a coccal infection... you can't prescribe a more effective antibiotic than

ERYTHROCIN

Erythromycin, Abbott

How much "spectrum" do you need in treating an infection? Clearly you want an antibiotic that will show the greatest activity against the offending organisms *and the least activity against non-pathogenic gastro-intestinal flora.*

Weigh these criteria – and make this comparison – when treating your next coccal infection. Erythrocin is a medium-spectrum antibiotic, notably effective against gram-positive organisms. In this it comes close to being a "specific" for coccal infections–*which means it is delivering a high degree of activity against the majority of common infection-producing bacteria.*

And against many of the troublesome "staph" strains – a group which shows increasing resistance to penicillin and certain other antibiotics – Erythrocin continues to provide bactericidal activity. Yet, as potent as Erythrocin is, *it rarely has a disturbing effect on normal gastro-intestinal flora.* Comes in easy-to-swallow Filmtabs®, 100 and 250 mg. Usual adult dose is 250 mg. every six hours. Children, in proportion to age and weight. Won't you try Erythrocin?

®Filmtab–Film-sealed tablets, Abbott.

011297

this hypertensive patient prefers Singoserp... and so does his physician

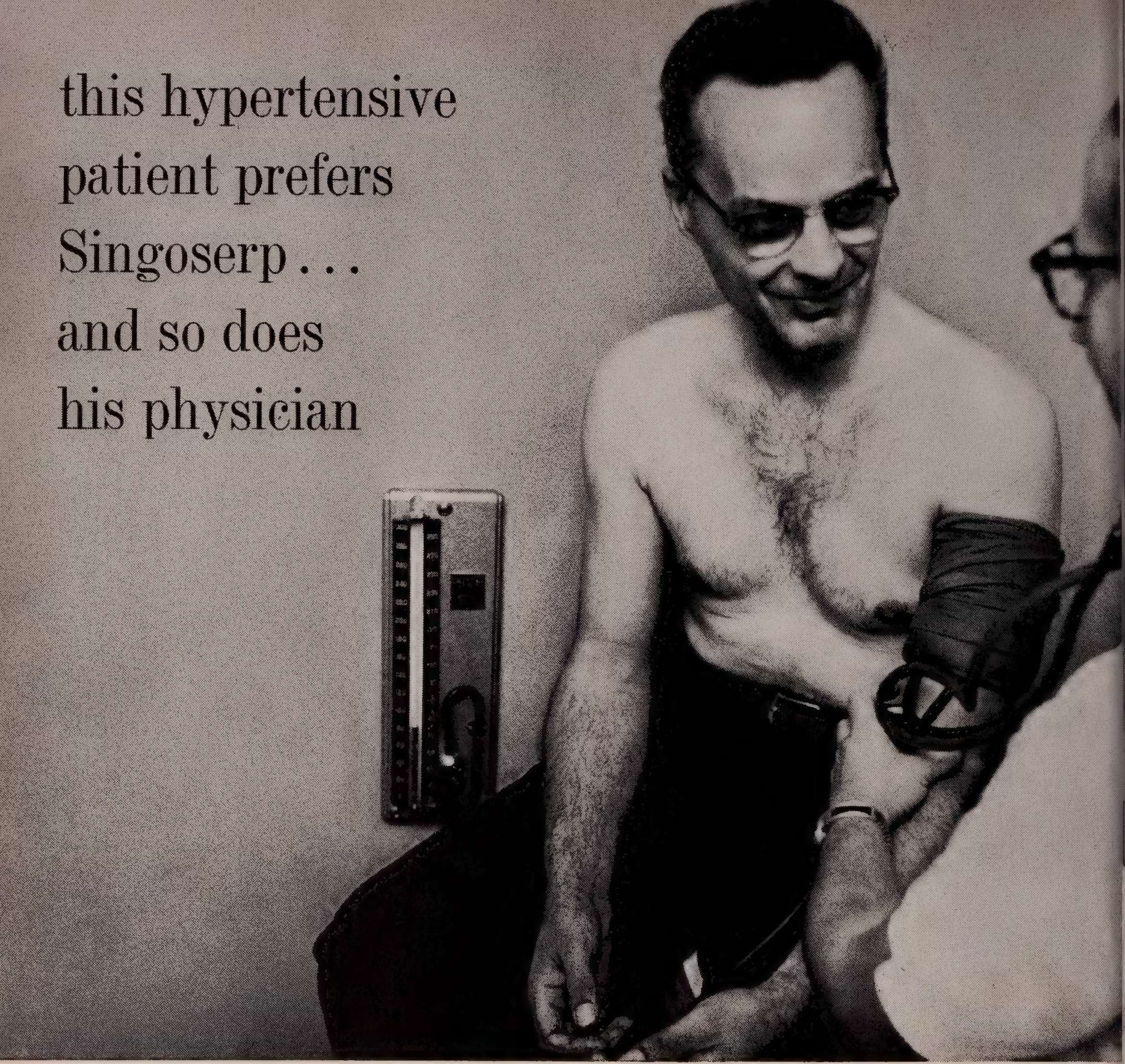


Photo used with patient's permission.

Patient's comment: "The other drug [whole root rauwolfia] made me feel lazy. I just didn't feel in the mood to make my calls. My nose used to get stuffed up, too. This new pill [Singoserp] doesn't give me any trouble at all."

Clinician's report: J. M., a salesman, had a 16-year history of hypertension. Blood pressure at first examination was 190/100 mm. Hg. Whole root rauwolfia lowered pressure to 140/80—but side effects were intolerable. Singoserp 0.5 mg. daily, further reduced pressure to 130/80 and eliminated all drug symptoms.

Many hypertensive patients and their physicians prefer Singoserp® because it usually lowers blood pressure without rauwolfia side effects

---

SUPPLIED: Singoserp **Tablets,** 1 mg. (white, scored). Also available: Singoserp®-Esidrix® **Tablets** #2 (white), each containing 1 mg. Singoserp and 25 mg. Esidrix; Singoserp®-Esidrix® **Tablets** #1 (white), each containing 0.5 mg. Singoserp and 25 mg. Esidrix. **Complete information sent on request.**

Singoserp® (syrosingopine CIBA)
Singoserp®-Esidrix® (syrosingopine and hydrochlorothiazide CIBA)

CIBA

"Sometimes, when I have a running nose, I'd like to clear it with

TRIAMINIC®

just to check out that systemic absorption business.

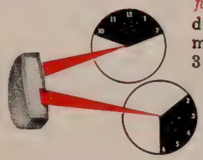
Reaches all nasal and paranasal membranes. huh?"

...and for humans with RUNNING NOSES...

You can't reach the entire nasal and paranasal mucosa by putting medication in a man's nostrils – any more than you could by trying to pour it down an elephant's trunk. TRIAMINIC, by contrast, reaches *all* respiratory membranes *systemically* to provide more effective, longer-lasting relief. And TRIAMINIC avoids topical medication hazards such as ciliary inhibition, rebound congestion, and "nose drop addiction."

Indications: nasal and paranasal congestion, sinusitis, postnasal drip, upper respiratory allergy.

Relief is prompt and prolonged because of this special timed-release action:



first—the outer layer dissolves within minutes to produce 3 to 4 hours of relief

then—the core disintegrates to give 3 to 4 *more* hours of relief

Each Triaminic timed-release Tablet provides:

Phenylpropanolamine HCl	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Dosage: 1 tablet in the morning, midafternoon and at bedtime. In postnasal drip, 1 tablet at bedtime is usually sufficient.

Each timed-release Triaminic Juvelet® provides:
½ the formulation of the Triaminic Tablet.
Dosage: 1 Juvelet in the morning, midafternoon and at bedtime.

Each tsp. (5 ml.) of Triaminic Syrup provides:
¼ the formulation of the Triaminic Tablet.
Dosage (to be administered every 3 or 4 hours):
Adults – 1 or 2 tsp.; *Children 6 to 12* – 1 tsp.;
Children 1 to 6 – ½ tsp.; *Children under 1* – ¼ tsp.

TRIAMINIC®

timed-release tablets, juvelets, and syrup

STOP *running noses* *and open stuffed noses orally*

SMITH-DORSEY • a division of The Wander Company • Lincoln, Nebraska

BAMADEX®

meprobamate 400 mg., with d-amphetamine sulfate 5 mg., Tablets

A logical combination for appetite suppression

meprobamate **plus** d-amphetamine…suppresses appetite…elevates mood…reduces tension…**without** insomnia, overstimulation or barbiturate hangover.

anorectic-ataractic

Dosage: One tablet one-half to one hour before each meal.

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LOGICAL NEW DERMATOLOGICAL HELPS

solve the mystery of Acne Therapy

Brāvisol has a gentle, graded abrasive action that attacks the acne lesion simply and directly. Helps open plugged pores, reduce postules and blackheads, control oiliness. Outstanding success on thousands of acne cases. Brāsivol (pat. pend.) contains: mild abrasive (Al_2O_3), hexachlorophene 1%, drying soap-and-detergent base.

Write for samples and literature.

STIEFEL®

Logical Dermatologicals—since 1847

Stiefel Laboratories, Inc. Oak Hill, N.Y.

Canada: Winley-Morris Co., Ltd., Montreal 29

Fine
Medium
Rough

3 grades permit gradual increase of abrasive action as acne improves. Also, Brāsivol Base (abrasive free), starter therapy for the more acute cases.

Brāsivol®

ABRASION THERAPY FOR ACNE

in certain countries Brāsivol available as DENCO-BRAS™

Change of Address

Notices should be sent to the circulation office. 750 Third Avenue, New York 17, New York. Old and new address should be included as well as a statement whether or not change is permanent. Six weeks is required to effect a change of address.

FOR GASTRO-INTESTINAL DYSFUNCTION AND ANTI-FLATULENT EFFECTS IN FERMENTATION

EUCARBON®

Each tablet contains: Extract of Rhubarb, Senna, Precipitated Sulfur, Peppermint Oil and Fennel Oil, in a highly activated charcoal base.
Action and Uses: Mild laxative, adsorbent and carminative. For use in indigestion, hyperacidity, bloating and flatulence. An excellent detoxifying substance with a wide range of uses in dermatology.
Doses: 1 or 2 tablets daily ½ hr. after meals — Supply: Tins of 100.

"Sedation & Euphoria for Nervous, Irritable Patients"

VALERIANETS-DISPERT®

Each Chocolate Coated Tab. Contains Ext. of Valerian (highly concentrated) 0.05 gm. dispergentized. Tastless, Odorless, Non-Depressant, Non-Habit forming, Indicated in cases of nervous excitement, depressive states, menopausal molimena, insomnia.

"A modernized method of preparing Burow's Solution U.S.P. XIV"

PRESTO-BORO®

POWDER IN ENVELOPES OR TABLETS

(Alum. Sulfate and Calc. Acetate). For use as an astringent and topical wet dressing, treatment of swellings, inflammations, sprains.

AVAILABLE AT ALL PHARMACIES

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Canandaigua, N Y.
Founded 1855

Individual psychotherapy, occupational and recreational programs, shock therapy, selected cases of alcoholism and addiction accepted.

Geriatric patients given special consideration.

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EVENING COURSES IN LAB. & X-RAY AVAILABLE
Our 10-months day course includes intensive training in laboratory techniques, E.K.G. and B.M.R. X-ray and medical stenography and typing.
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For nervous, mental, drug and alcoholic patients. The sanitarium is beautifully located in a private park of ten acres. Attractive cottages, scientifically air-conditioned. Modern facilities for shock treatment. Occupational therapy and recreational activities. Doctors may direct the treatment. Rates and illustrated booklet gladly sent on request.

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Telephone: **Kingsbridge 9-8440**

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EST. 1930 Dr. Walter A. Thompson, F.A.P.A., *Clinical Director*
Westchester County Katonah, N. Y. Tel: Central 2-3155

A psychiatric hospital, offering individual treatment. Psychoanalytically oriented. Pharmacological and electro therapeutic methods. Rate: Commence at $125.00 per week.

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Dr. Wender — 59 East 79 St. — Mon., Wed., Fri., — BU 8-0580
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Five Acres of Pinewooded Grounds
SENILE—AGED
Non-sectarian, dietary laws observed
Medical Director, O. L. Friedman, M.D., Q.P.
HOLBROOK, L. I. N. Y. Office; TRafalgar 7-2666

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A Modern
Psychiatric Hospital Unit
Selected drug and alcohol problems accepted
Rates Moderate
Eugene N. Boudreau, M.D., *Psychiatrist*
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658 West Onondaga Street
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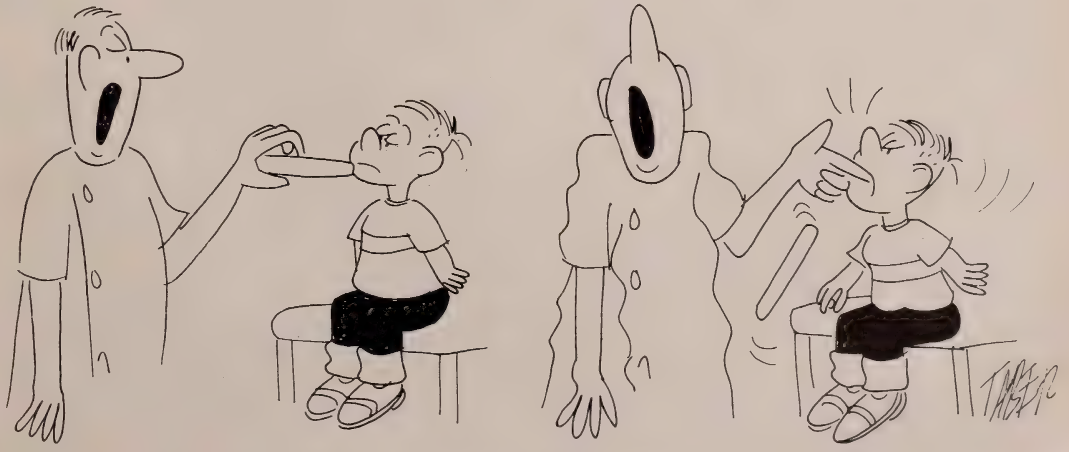

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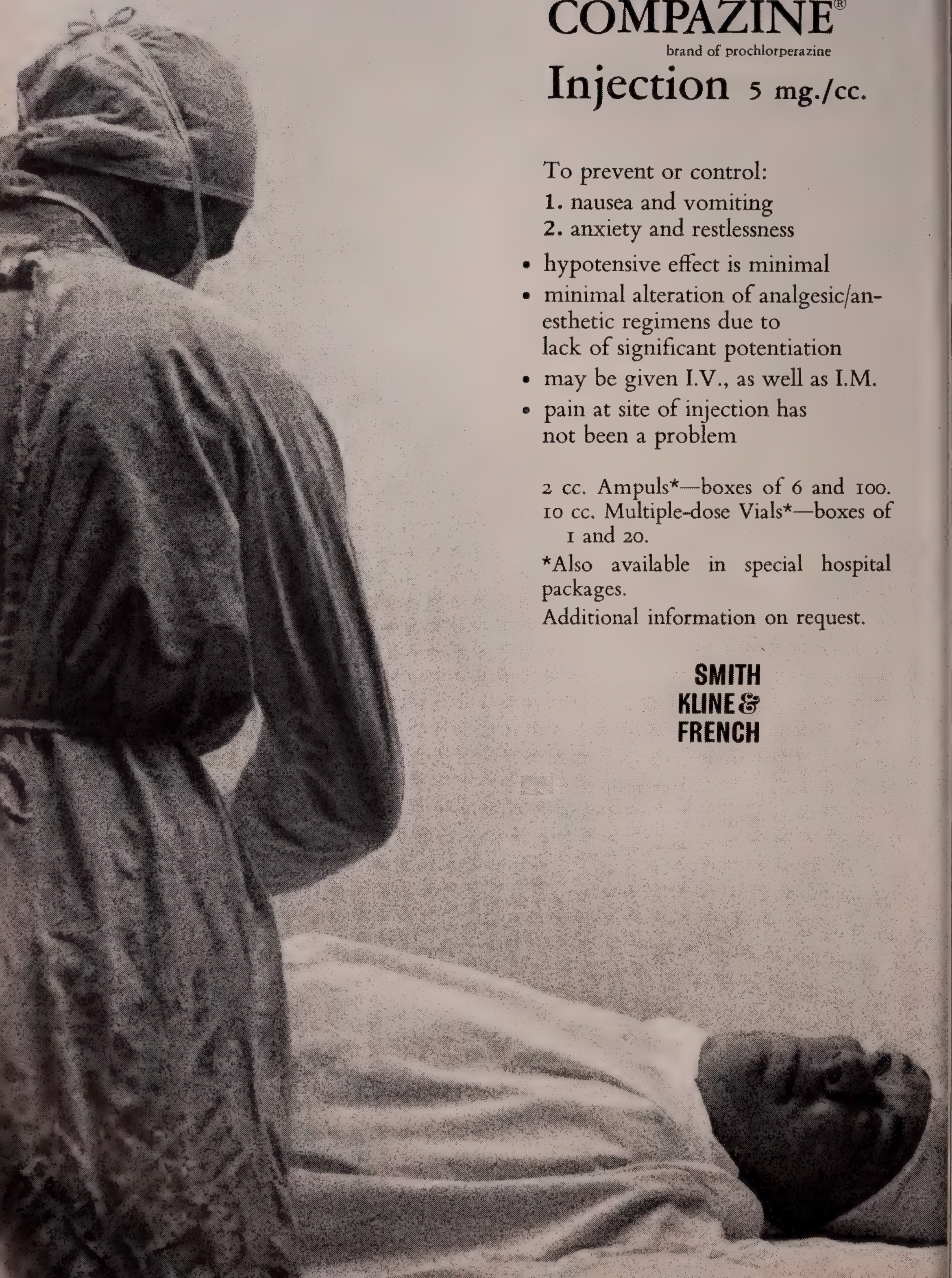

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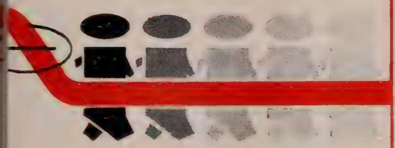

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1960–1961

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CONSISTENTLY GOOD
CLINICAL RESULTS
IN TRICHOMONAL
AND MONILIAL VAGINITIS

TRICOFURON IMPROVED (Suppositories and Powder) cured 143 of 161 patients with vaginitis due to Trichomonas vaginalis, Candida (Monilia) albicans, or both. "Almost immediate symptomatic improvement was noted with the first insufflation."

Criteria for cure: freedom from infecting organisms as well as symptoms on repeated examinations during a three-month follow-up. This cure rate of 88.8% is "surprisingly similar" to results reported by earlier investigators.

Coolidge, C. W.; Glisson, C. S., and Smith, A. S.:
J.M.A. Georgia **48**:167, 1959.

TRICOFURON®
IMPROVED

2-step treatment brings swift relief,
eradicates stubborn trichomonads,
Candida (Monilia) albicans,
Hemophilus vaginalis

1. POWDER for weekly insufflation in your office. MICOFUR®, brand of nifuroxime, 0.5% and FUROXONE®, brand of furazolidone, 0.1% in an acidic water-dispersible base.

2. SUPPOSITORIES for continued home use —1st week one suppository in the morning and one on retiring. After 1st week, one suppository at night may suffice.

Continue use of suppositories during menses. Treatment should be continued throughout a complete menstrual cycle and for several days thereafter. MICOFUR 0.375% and FUROXONE 0.25% in a water-miscible base.

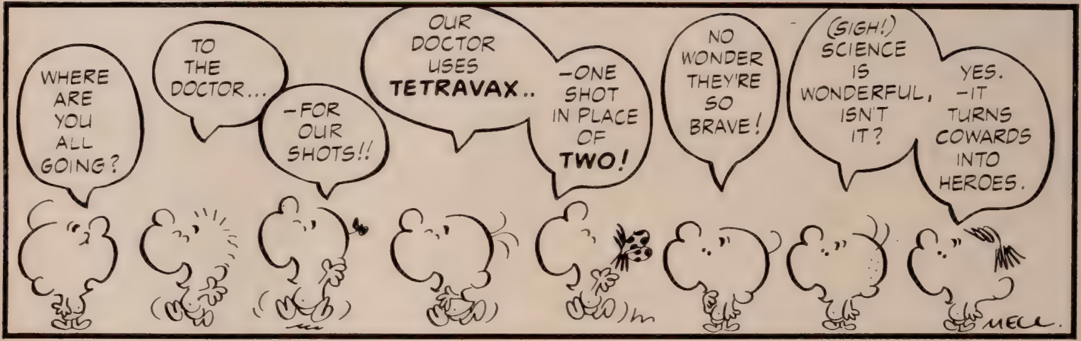
Rx new box of 24 suppositories with applicator
for more practical and economical therapy.
Also available:
box of 12 suppositories with applicator.

NITROFURANS—a *unique* class of antimicrobials
EATON LABORATORIES, NORWICH, NEW YORK

FOR SIMULTANEOUS IMMUNIZATION AGAINST 4 DISEASES:

Poliomyelitis-Diphtheria-Pertussis-Tetanus

PEDI-ANTICS


WHERE ARE YOU ALL GOING?
TO THE DOCTOR...
-FOR OUR SHOTS!!
OUR DOCTOR USES TETRAVAX..
-ONE SHOT IN PLACE OF TWO!
NO WONDER THEY'RE SO BRAVE!
(SIGH!) SCIENCE IS WONDERFUL, ISN'T IT?
YES. -IT TURNS COWARDS INTO HEROES.
MELL

TETRAVAX®

DIPHTHERIA AND TETANUS TOXOIDS WITH PERTUSSIS AND POLIOMYELITIS VACCINES

now you can immunize against more diseases...with fewer injections

Dose: 1 cc.
Supplied: 9 cc. vials in *clear plastic* cartons. Package circular and material in vial can be examined without damaging carton. Expiration date is on vial for checking even if carton is discarded.

For additional information, write Professional Services, Merck Sharp & Dohme, West Point, Pa.

TETRAVAX IS A TRADEMARK OF MERCK & CO., INC.

MSD MERCK SHARP & DOHME, DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

outstanding nutritional research achievement

Cross section, atherosclerotic artery

to aid in the dietary control of serum cholesterol

MAZOLA®

MARGARINE
scientifically formulated with pure liquid **non-hydrogenated** MAZOLA Corn Oil.

MAZOLA Margarine is an economical tablespread and serves as a solid shortening, rich in linoleic acid and low in the more saturated fatty acids – making it an ideal dietary adjunct in the management of serum cholesterol. It contains 2 to 3 times as much linoleic acid as any other margarine in the grocery store, and 5 to 8 times as much as butter. It contains no dairy or animal fats, no coconut oil, and no cholesterol.

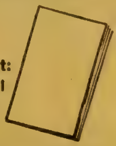
MAZOLA Margarine is indistinguishable from other quality margarines as to taste, aroma and handling characteristics. Thus, it can be part of the regular diet for the whole family, including the hypercholesterolemic patient. The major ingredient in MAZOLA Margarine – liquid MAZOLA Corn Oil – is NOT hydrogenated, thereby preserving its rich content of linoleates.

Two ounces or 56.8 Gm. (4 tablespoons) of MAZOLA Margarine supply:

Linoleic acid	12 Gm.
Oleic acid	23 Gm.
Saturated fatty acids	8 Gm.
Plant sterols (sitosterols)	215 mg.
Natural tocopherols	30 mg.
Vitamin A	1870 USP units
Vitamin D	250 USP units
Calories	415

Available in the refrigerator sections of grocery stores in the same general price range as other premium quality margarines, in 1-lb. packages (four ¼ lb. sticks).

Send for free booklet:
"Recent Advances in the Dietary Control of Hypercholesterolemia."



BEST FOODS • Division of Corn Products Co., NEW YORK 22, N.Y.

Blood pressure that goes up with stress often comes down with SERPASIL®

(reserpine CIBA)

One reason that many cases of hypertension respond to Serpasil is that many cases are associated with stress. Stress situations produce stimuli which pass through the sympathetic nerves, constricting blood vessels, and increasing heart rate. Hyperactivity of the sympathetic nervous system may elevate blood pressure; if prolonged, this may produce frank hypertension. By blocking the flow of excessive stimuli to the sympathetic nervous system, Serpasil guards against stress-induced vasoconstriction, brings blood pressure down slowly and gently.

In mild to moderate hypertension, Serpasil is basic therapy, effective alone "...in about 70 per cent of cases..."*

In severe hypertension, Serpasil is valuable as a primer. By adjusting the patient to the physiologic setting of lower pressure, it smooths the way for more potent antihypertensives.

In all grades of hypertension, Serpasil may be used as a background agent. By permitting lower dosage of more potent antihypertensives, Serpasil minimizes the incidence and severity of their side effects.

CIBA
SUMMIT, N. J.

*Coan, J. P., McAlpine, J. C., and Boone, J. A.: J. South Carolina M. A. 51:417 (Dec.) 1955. /2830MB

Complete information available on request.

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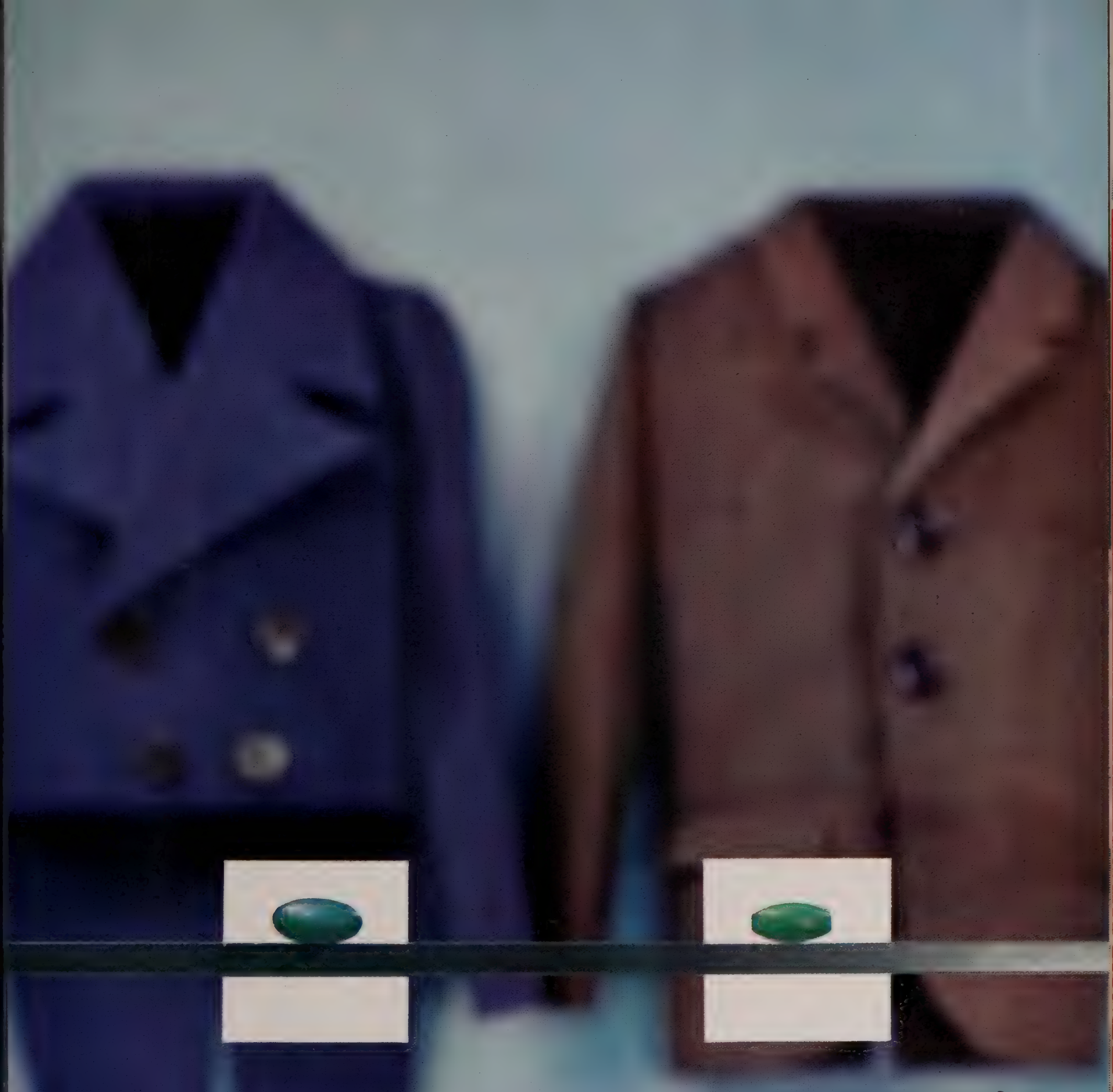

Note the two tablets on the shelf above. Left, old-style sugar-coated Dayalets-M®. Right, the same formula, but **Filmtab-coated**—potency's assured, but old-style bulk is cut 30%.

ON COATS:

STYLES CHANGE IN VITAMINS, TOO

Coat styles change—whether it's a blazer or a B-complex vitamin. Not long ago, for instance, "Vitamins by Abbott" were dressed up with a new-style coating—*Filmtab®*.

The most obvious result was a marked reduction in tablet size—up to 30% in some products. The tablets themselves were brilliant in a variety of rainbow colors. They wouldn't chip or stick together in the bottle. All vitamin tastes and odors—gone.

Such were the aesthetic gains. Behind these, a significant pharmaceutical advance: with Filmtab, deterioration is slowed to an irreducible minimum, because the coating process is essentially a water-free procedure.

Finally—the most important—Filmtab guarantees that the content of each tablet matches the formula printed on the label. While the person taking the vitamins may not worry much about rigid stability, Abbott does. *Assures* it, through Filmtab.

In short, Filmtab's a name that stands for quality, stability, potency. The very best in vitamin coatings. Filmtab doesn't add a penny to the cost. And it's a name found *only* on

VITAMINS by ABBOTT

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009033A

DAYALETS
OPTILETS
OPTILETS
DAYTEENS
SUR-BEX
DAYALETS-M
Abbott

NEWEST
NUTRITIONAL
PRODUCT
FROM ABBOTT

To meet special nutritional needs of growing teenagers…

Filmtab® DAYTEENS

TRADEMARK

- RICH IN IRON, CALCIUM, VITAMINS—IMPORTANT FACTORS FOR THE GROWTH YEARS
- FILMTAB-COATED TO CUT SIZE AND ASSURE FULL POTENCY
- HANDSOME TABLE BOTTLES AT NO EXTRA COST (100-SIZE)
- ALSO SUPPLIED IN BOTTLES OF 250 AND 1000.

NOW, DAYTEENS JOINS THE COMPLETE LINE OF QUALITY VITAMINS BY ABBOTT:

FILMTAB
DAYALETS®
Table bottles of 100
Bottles of 50 and 250

FILMTAB
DAYALETS-M®
Apothecary bottles
of 100 and 250

Extra potent maintenance formulas—ideal for the "nutritionally run-down"

FILMTAB
OPTILETS®

FILMTAB
OPTILETS-M®
Table bottles of
30 and 100
Bottles of 1000

Therapeutic formulas for more severe deficiencies—illness, infection, etc.

FILMTAB
SUR-BEX® with C
Table bottle of 60
Bottles of 100,
500 and 1000

Therapeutic formula of the essential B-complex plus C, for convalescence, stress, post-surgery, etc.

EACH DAYTEENS FILMTAB® REPRESENTS:

Vitamin A	(5000 units) 1.5 mg.
Vitamin D	(1000 units) 25 mcg.
Thiamine Mononitrate (B_1)	2 mg.
Riboflavin (B_2)	2 mg.
Nicotinamide	20 mg.
Pyridoxine Hydrochloride	0.5 mg.
Vitamin B_{12} (as cobalamin concentrate)	2 mcg.
Calcium Pantothenate	5 mg.
Ascorbic Acid (C)	50 mg.
Iron (as sulfate)	10 mg.
Copper (as sulfate)	0.15 mg.
Iodine (as calcium iodate)	0.1 mg.
Manganese (as sulfate)	0.05 mg.
Magnesium (as oxide)	0.15 mg.
Calcium (as phosphate)	250 mg.
Phosphorus (as calcium phosphate)	193 mg.

VITAMINS by ABBOTT

®FILMTAB—FILM-SEALED TABLETS, ABBOTT

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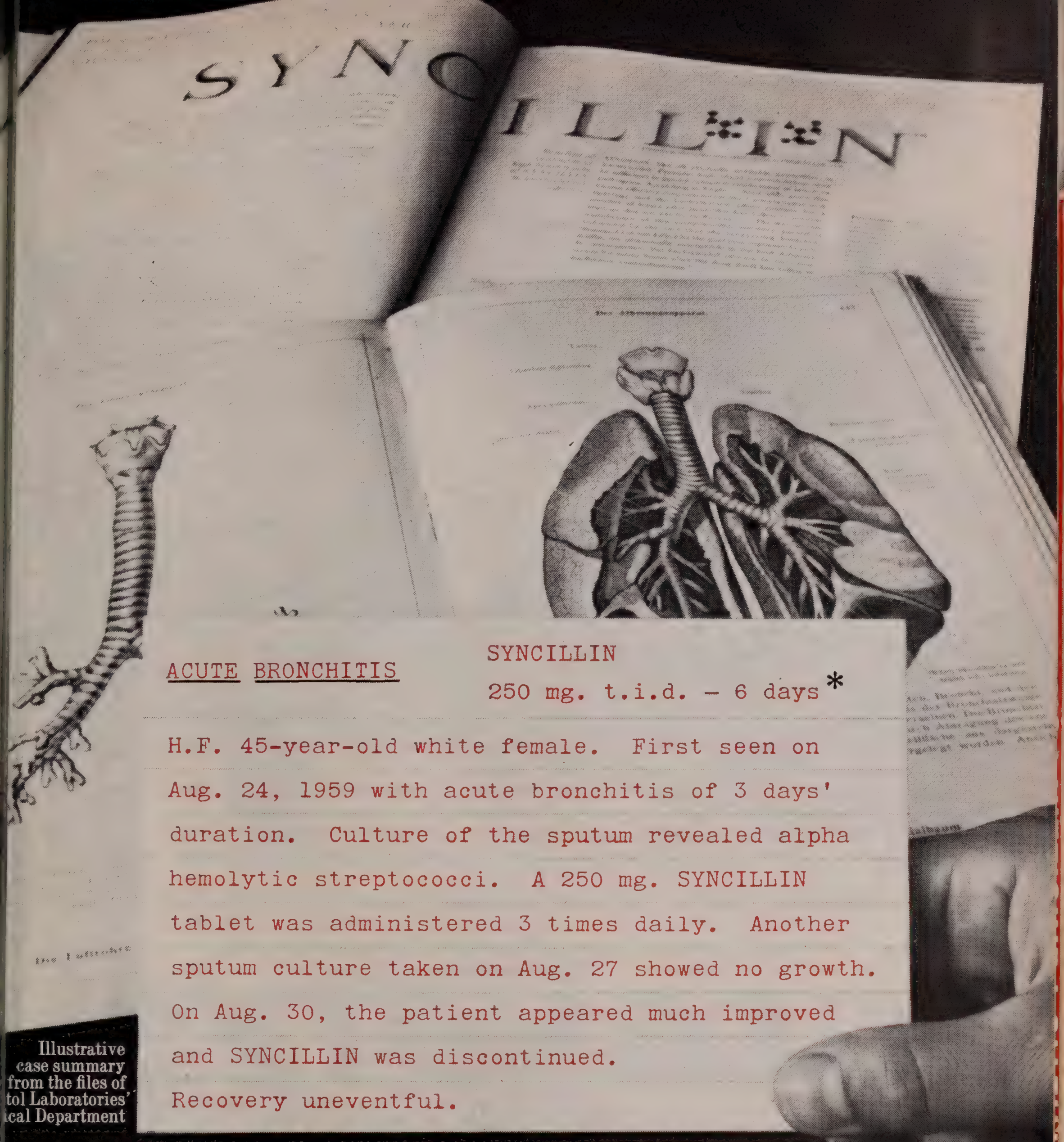
ABBOTT



ACUTE BRONCHITIS

SYNCILLIN
250 mg. t.i.d. - 6 days*

H.F. 45-year-old white female. First seen on Aug. 24, 1959 with acute bronchitis of 3 days' duration. Culture of the sputum revealed alpha hemolytic streptococci. A 250 mg. SYNCILLIN tablet was administered 3 times daily. Another sputum culture taken on Aug. 27 showed no growth. On Aug. 30, the patient appeared much improved and SYNCILLIN was discontinued. Recovery uneventful.

Illustrative
case summary
from the files of
tol Laboratories'
ical Department

THE ORIGINAL phenethicillin

SYNCILLIN®

(phenoxyethyl penicillin potassium)

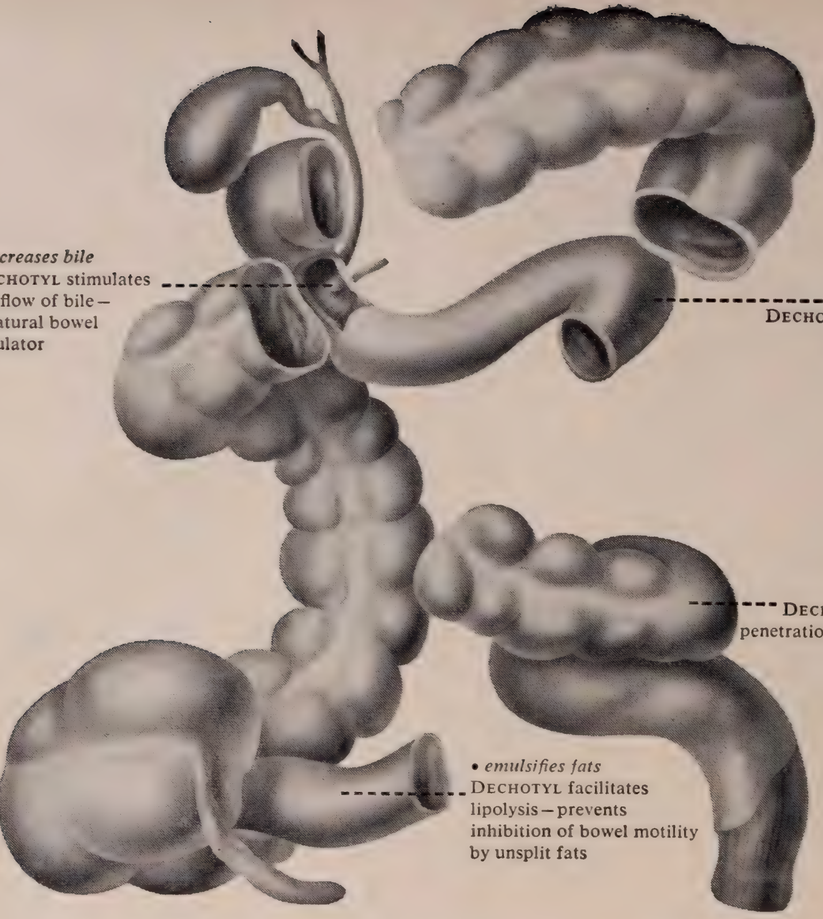
FIRST SYNTHESIZED AND MADE AVAILABLE BY BRISTOL LABORATORIES

A dosage form to meet the individual requirements of patients of all ages in home, office, clinic, and hospital:
Syncillin Tablets – 250 mg. (400,000 units)... Syncillin Tablets – 125 mg. (200,000 units)
Syncillin for Oral Solution – 60 ml. bottles – when reconstituted, 125 mg. (200,000 units) per 5 ml.
Syncillin Pediatric Drops – 1.5 Gm. bottles. Calibrated dropper delivers 125 mg. (200,000 units)

*Streptococcal infections should be treated for at least 10 days to prevent the development of rheumatic fever and as prophylaxis against bacterial endocarditis in susceptible patients.

Complete information on indications, dosage and precautions is included in the circular accompanying each package.

BRISTOL LABORATORIES, Div. of Bristol-Myers Co., SYRACUSE, N.Y.



• *increases bile*
DECHOTYL stimulates the flow of bile – a natural bowel regulator

• *improves motility*
DECHOTYL gently stimulates intestinal peristalsis

• *softens feces*
DECHOTYL expedites fluid penetration into bowel contents

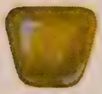
• *emulsifies fats*
DECHOTYL facilitates lipolysis – prevents inhibition of bowel motility by unsplit fats

helps free your patient from both... constipation and laxatives

DECHOTYL®

TRABLETS*

well tolerated...gentle transition to normal bowel function



Recommended to help convert the patient – naturally and gradually – to healthy bowel habits. Regimens of one week or more are suggested to assure maintenance of normal rhythm and to avoid the repetition of either laxative abuse or constipation.

Average adult dose: Two TRABLETS at bedtime as needed or as directed by a physician. *Action usually is gradual, and some patients may need 1 or 2* TRABLETS *3 or 4 times daily.*

Contraindications: Biliary tract obstruction; acute hepatitis.

DECHOTYL TRABLETS provide 200 mg. DECHOLIN,® (dehydrocholic acid, AMES), 50 mg. desoxycholic acid, and 50 mg. dioctyl sodium sulfosuccinate, in each trapezoid-shaped, yellow TRABLET. Bottles of 100.

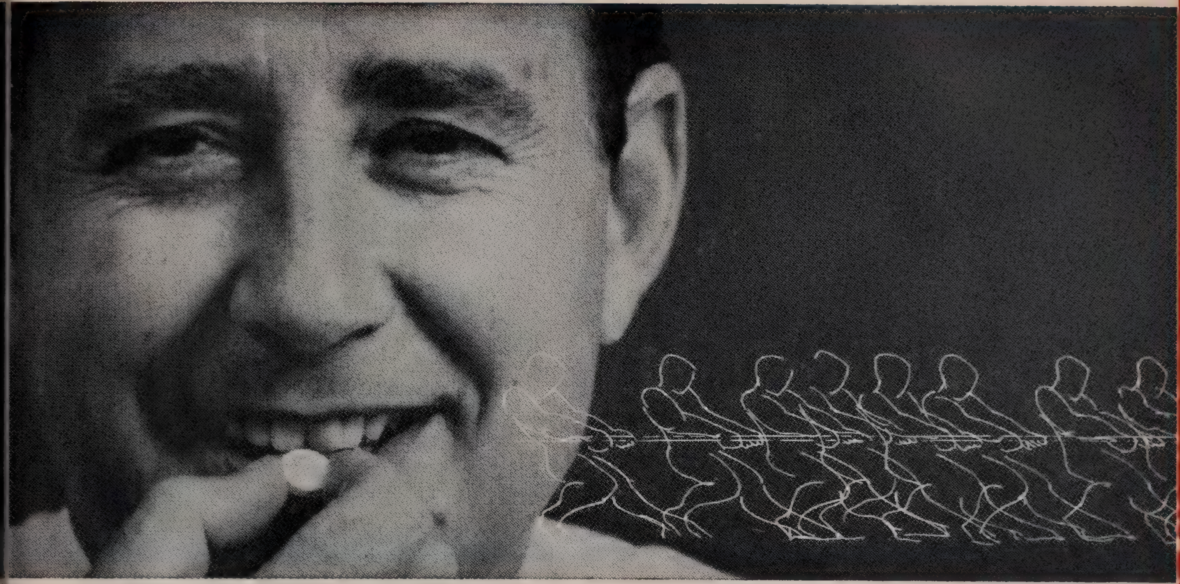
*AMES T.M. for trapezoid-shaped tablet.

84160

AMES
COMPANY, INC
Elkhart • Indiana
Toronto • Canada

in antacid therapy...

patient cooperation is half the battle



Are you chancing unsatisfactory results because the patient doesn't like the taste of the antacid you have prescribed? Assure patient cooperation. Prescribe the antacid which assures patient acceptance through its excellent palatability.

Palatable

'Margel'

unsurpassed in performance
unequalled in palatability

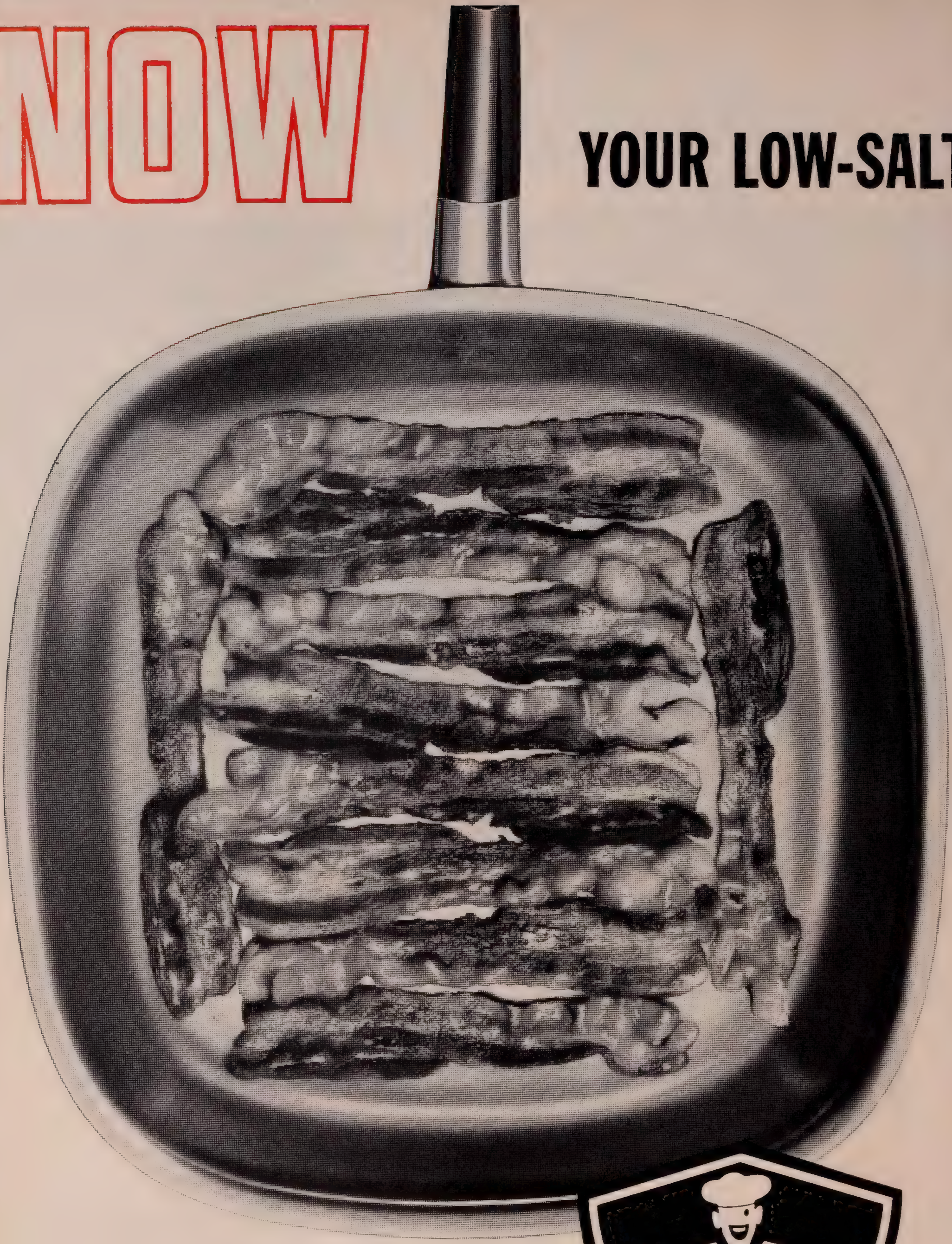
antacid suspension/tablets

MARGEL is a highly palatable formulation of four antacids: selected aluminum hydroxides, magnesium hydroxide, magnesium trisilicate and calcium carbonate. Balanced to be non-constipating; formulated to be non-chalky. Write for a sample and see for yourself.

Supplied: Margel Suspension — bottles of 12 fluid ounces. Margel Tablets — boxes of 96. **Dosage:** SUSPENSION: 1 tablespoonful 20 minutes after meals and on retiring. May be taken with milk if desired. TABLETS: 2 or more tablets 20 minutes after meals and on retiring. May be chewed or allowed to dissolve slowly in the mouth.

MRT *M. R. Thompson, Inc.* CRANFORD, N. J.

NOW YOUR LOW-SALT



MERKEL

MERKEL Meat-etic brand Bacon is processed by an exclusive Merkel formula. Process Patent Number: 2,955,042.

U. S.
GOVT. INSP.
EST. 464

PATIENTS MAY ENJOY BACON AGAIN!

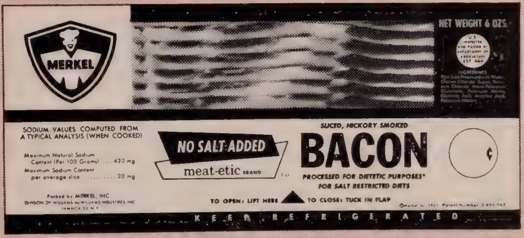
MERKEL meat-etic BRAND Bacon with NO SALT ADDED

All the EYE-APPEAL, AROMA, TASTE of regular bacon ...yet less than ¼ the sodium of regular bacon!

A clinical study[1] comparing the new Merkel low-sodium Bacon with regular bacon has just been made by three investigators at one of New York City's leading hospitals. Results indicate that many people who are denied bacon due to the necessity of low sodium intake, can again enjoy the favorite meat. Note the quantitative analysis which indicates sodium content has been reduced from 96 mg. per slice to only 20 mg. or less. Palatability[2] of Merkel no-salt-added Bacon was gratifyingly high and there were no side effects.

COMPOSITION OF REGULAR AND MERKEL MEAT-ETIC BRAND BACON

	Regular Bacon (Per Slice)	Merkel No-Salt-Added Meat-etic Bacon (Per Slice)
SODIUM	**96 mg.**	**20 mg. (max.)**
POTASSIUM	16 mg.	80 mg.
CHLORIDE	142 mg.	82 mg.
CALCIUM	4 mg.	4 mg.
PHOSPHORUS	1.7 mg.	1.7 mg.
IRON	0.19 mg.	0.19 mg.
CHOLINE		161 mg.


MERKEL
NET WEIGHT 6 OZS.
U.S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE EST 464
INGREDIENTS
SODIUM VALUES COMPUTED FROM A TYPICAL ANALYSIS (WHEN COOKED)
Maximum Natural Sodium Content (Per 100 Grams) ... 420 mg
Maximum Sodium Content per average slice .... 20 mg
Packed by MERKEL, INC
DIVISION OF WILLIAMS-McWILLIAMS INDUSTRIES INC
JAMAICA 33 N.Y.
NO SALT ADDED
meat-etic BRAND
SLICED, HICKORY SMOKED
BACON
PROCESSED FOR DIETETIC PURPOSES*
FOR SALT RESTRICTED DIETS
¢
TO OPEN: LIFT HERE
TO CLOSE: TUCK IN FLAP
KEEP REFRIGERATED

This revolutionary new bacon is processed under strict government inspection and may be obtained at leading food stores in 6- and 12-oz. packages.

For detailed analysis of Merkel Meat-etic brand Bacon, just address a card to MERKEL, INC., 94-11 Sutphin Boulevard, Jamaica, Long Island.

(1) Di Pillo, F., Hoffman, I., and Edson, J. N.: N. Y. State J. Med., in press.

(2) Enthusiastic acceptance by 96% of noncardiac patients and 90% of cardiac patients.

Fostex®
treats their acne while they wash

degreases the skin
completely emulsifies and washes off excess oil from the skin.

helps remove blackheads
penetrates and softens comedones, unblocks pores and facilitates removal of sebum plugs.

dries and peels the skin
removes papule coverings and permits drainage of sebaceous glands.

Patients like Fostex because it is so easy to use. They simply wash acne skin 2 to 4 times a day with Fostex Cream or Fostex Cake, instead of using soap.

Fostex contains Sebulytic®,* a combination of surface-active wetting agents with remarkable antiseborrheic, keratolytic and antibacterial actions . . . enhanced by sulfur 2%, salicylic acid 2%, and hexachlorophene 1%.

*sodium lauryl sulfoacetate, sodium alkyl aryl polyether sulfonate and sodium dioctyl sulfosuccinate.

Fostex is available in two forms

FOSTEX CREAM
in 4.5 oz. jars

Fostex Cream and Fostex Cake are interchangeable for therapeutic washing of the skin. Fostex Cream is approximately twice as drying as Fostex Cake.

FOSTEX CAKE
in bar form

Fostex Cream is also used as a therapeutic shampoo in dandruff and oily scalp.

Write for samples
WESTWOOD PHARMACEUTICALS
Buffalo 13, New York

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Now—Fro

Fleischmann's Ma

First Unsalte

Made from 100% Gold

- Wonderful for sodium-
  of sodium per 100 gra
- Contains polyunsatura
  partially hydrogenated
- Delicious flavor like t
- Fresh-Frozen—availa

Fleischmann's Margarine was the first to make available the benefits of 100% corn oil with the lightly salted flavor preferred by so many.

Now, Fleischmann's has also perfected a new unsalted margarine for patients on low-sodium diets, and for those who simply prefer the sweet taste of an unsalted spread. It's new Fleischmann's Sweet (Unsalted) Margarine, also made from 100% corn oil, with a linoleic acid content three times higher than regular margarines and ten times higher than the high-priced spread.

Smooth, Fresh Flavor Preserved By Exclusive Fresh-Frozen Process!

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SPECIFICALLY FOR
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sodium dimethoxyphenyl penicillin
FOR INJECTION

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ACTIVITY IN THE PRESENCE OF
STAPHYLOCOCCAL PENICILLINASE
WHICH INACTIVATES
OTHER PENICILLINS

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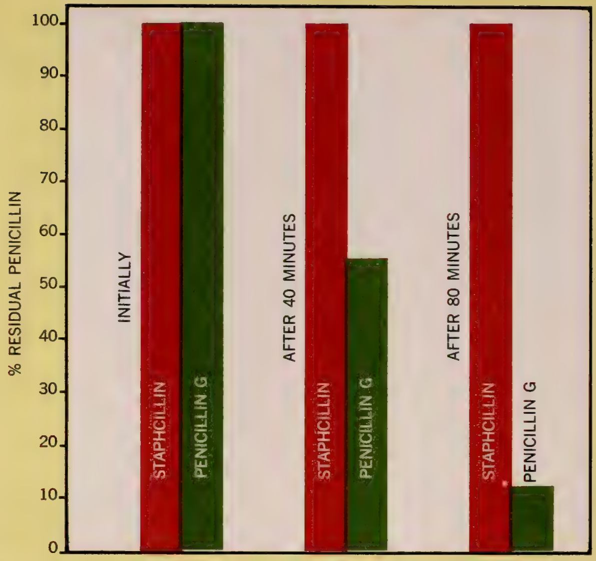
UNIQUE SYNTHETIC "STAPH-CIDAL" PENICILLIN



In the presence of staphylococcal penicillinase, Staphcillin remained active and retained its antibacterial action. By contrast, penicillin G was rapidly destroyed in the same period of time. *(After Gourevitch et al., to be published)*

Specifically for "resistant" staph...

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sodium dimethoxyphenyl penicillin
FOR INJECTION

The failure of staphylococcal infections to respond to penicillin therapy is attributed to the penicillin-destroying enzyme, penicillinase, produced by the invading staphylococcus.

Unlike other penicillins:

1 Staphcillin is effective because it retains its antibacterial activity despite the presence of staphylococcal penicillinase.

2 The clinical effectiveness of Staphcillin has been confirmed by dramatic results in a wide variety of infections due to "resistant" staphylococci, many of which were serious and life-threatening.

Like other penicillins:

Staphcillin has no significant systemic toxicity. It is well tolerated locally, and pain or irritation at the injection site is comparable to that following the injection of penicillin G. *In occasional cases, typical penicillin reactions may be experienced.*

PROFESSIONAL INFORMATION SERVICE—The attached Official Package Circular provides complete information on the indications, dosage, and precautions for the use of Staphcillin. If you desire additional information concerning clinical experiences with Staphcillin, the Medical Department of Bristol Laboratories is at your service. You may direct your inquiries via collect telephone call to New York, PLaza 7-7061, or by mail to Medical Department, Bristol Laboratories, 630 Fifth Ave., N. Y. 20, N. Y.

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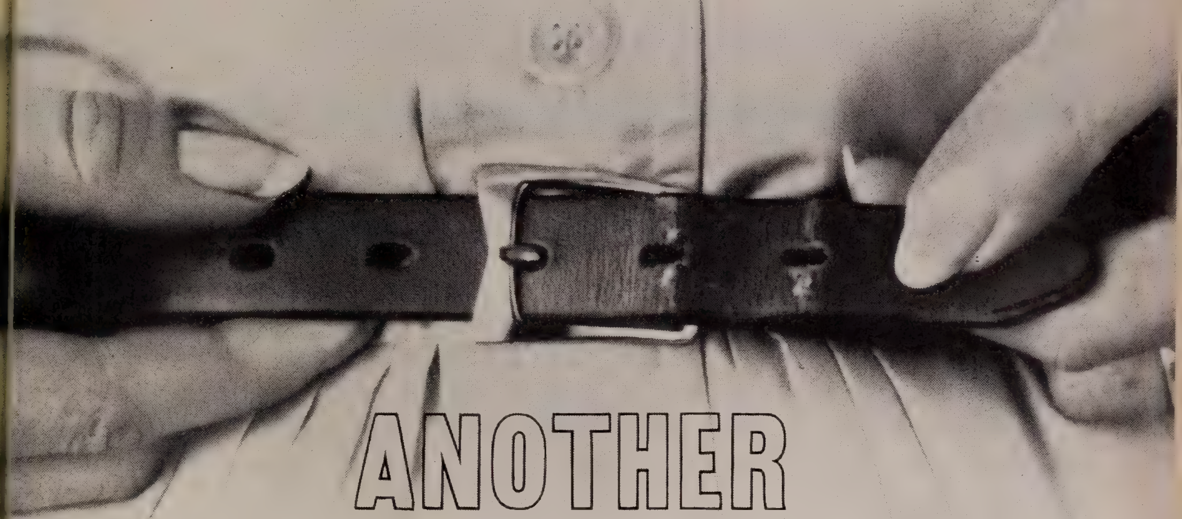

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INCREASED LIFE EXPECTANCY FOR HYPERTENSIVES

"Life expectancy seems to be the one criterion that is most reliable and least questioned as a method of evaluating treatment for patients with elevated blood pressure."[1] "It is evident that effective therapy of hypertension will prolong the life of the patient by preventing the dreaded complications of this disease in the brain, the heart and the kidneys ." "There is no doubt of the prolongation of life in group 3 and 4 (Keith-Wagener-Barker) by adequate antihypertensive treatment. Some authorities report a 50 per cent, five year survival ratio for treated patients with malignant hypertension as against a 1 per cent survival ratio for untreated patients."[2]

Evaluation based on life expectancy is extremely difficult because of the peril of maintaining an untreated control group.[1] The doctor, however, can evaluate the symptoms related to the elevated blood pressure. . . . We know that retinopathy may improve, the heart may be reduced in size, the electrocardiogram may improve and in favorable cases the blood urea nitrogen level may fall.[2] These are reasonably objective criteria on which to base one's evaluation of treatment.[1]

On the succeeding page is evidence that Unitensen included in any therapeutic regimen may improve the results in hypertension as measured by a regression of objective clinical changes in a substantial proportion of the patients treated.

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Unlike diuretics or ganglionic blocking agents, Unitensen lowers blood pressure through widespread vasorelaxation. Normal vasomotor responses are not altered, and there is no venous pooling with resulting postural hypotension.[3-5] Through alleviation of cerebral vasospasm, Unitensen promotes cerebral blood flow and oxygen utilization.[6-9] Furthermore, Unitensen increases cardiac efficiency, improves renal function and tends to arrest the progress of vascular damage.[3, 4, 10]

Progress of Objective and Subjective Symptoms in Grades III and IV Hypertension Following Treatment with Unitensen and Unitensen-R

The Course of Subjective Symptoms

	Observations in Patients* Treated up to 2 Years			**Observations in Patients* Treated up to 3½ Years**		
Symptom	Number**	Improved	% Improved	Number**	Improved	% Improved
Headache	27	21	77.7	43	38	88.0
Palpitation	20	13	65.0	29	19	65.5
Angina	15	9	60.0	21	16	76.0
Dyspnea	17	8	47.0	27	14	51.0

Objective Changes Following Treatment

	Observations in Patients* Treated up to 2 Years			**Observations in Patients* Treated up to 3½ Years**		
Finding	Number**	Improved	% Improved	Number**	Improved	% Improved
Funduscopic Changes	41	24	58.5	59	38	66.0
Enlarged Heart	20	13	65.0	35	23	65.7
Abnormal ECG	37	10	27.0	45	25	55.5
Proteinuria	31	12	38.7	43	27	62.7
Nitrogen Retention	17	6	35.2	28	10	35.7

Left hand charts from Clinical Exhibit "The Ambulatory Patient with Hypertension" presented AMA Convention, San Francisco, June 22-27, 1958, by B. M. Cohen, M.D.

*All patients in this study were initially classified as Smithwick Grades III and IV.

**Expressed as the number of patients exhibiting the symptom recorded.

Right hand charts include patients previously reported who had been continuously maintained on Unitensen and Unitensen-R, plus additional patients later added to the study. From Clinical Exhibit "The Office Diagnosis and Treatment of the Patient with Hypertension" presented American Academy of General Practice, Indianapolis, March 18-19, 1959, by B. M. Cohen, M.D.

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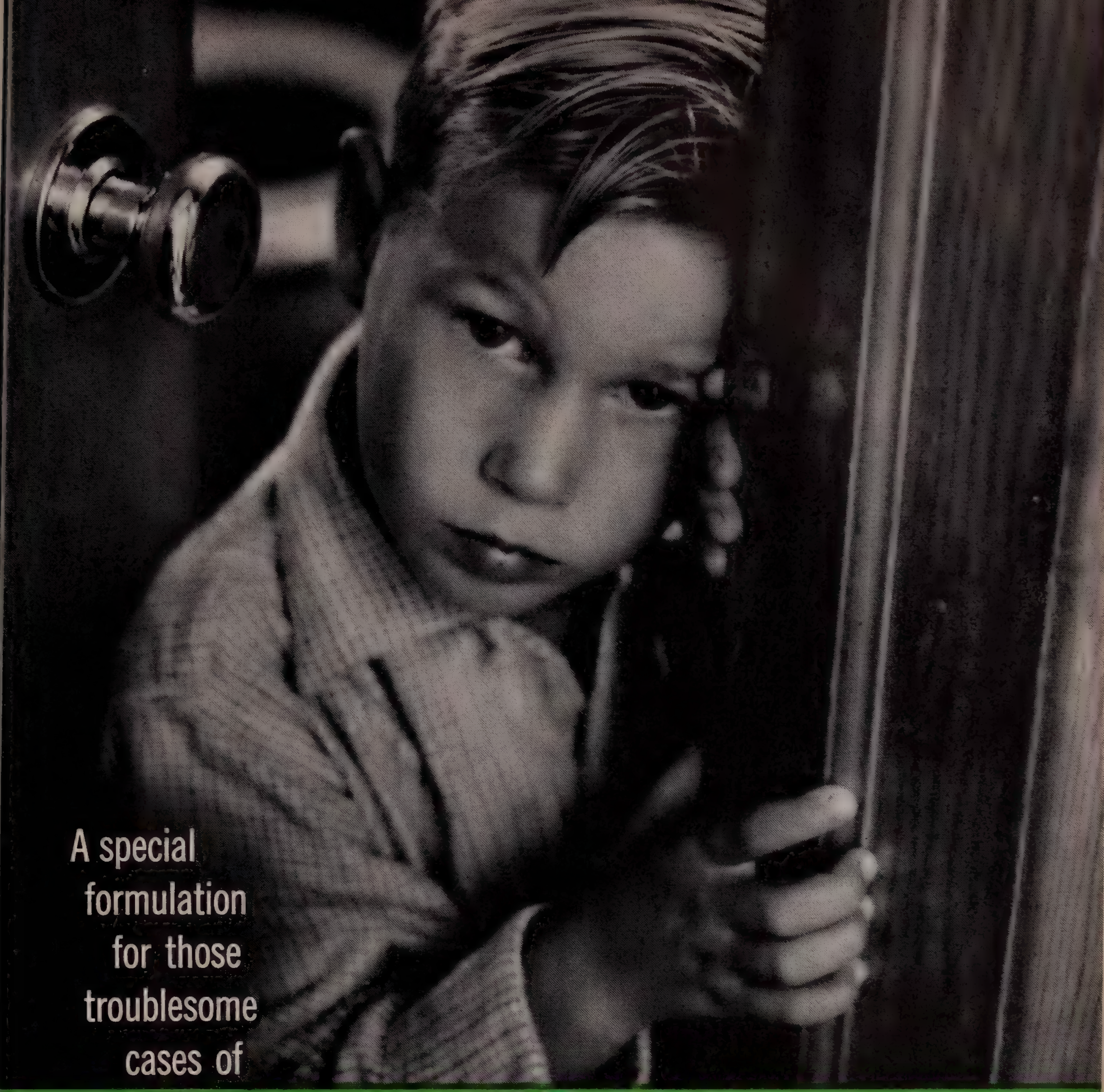

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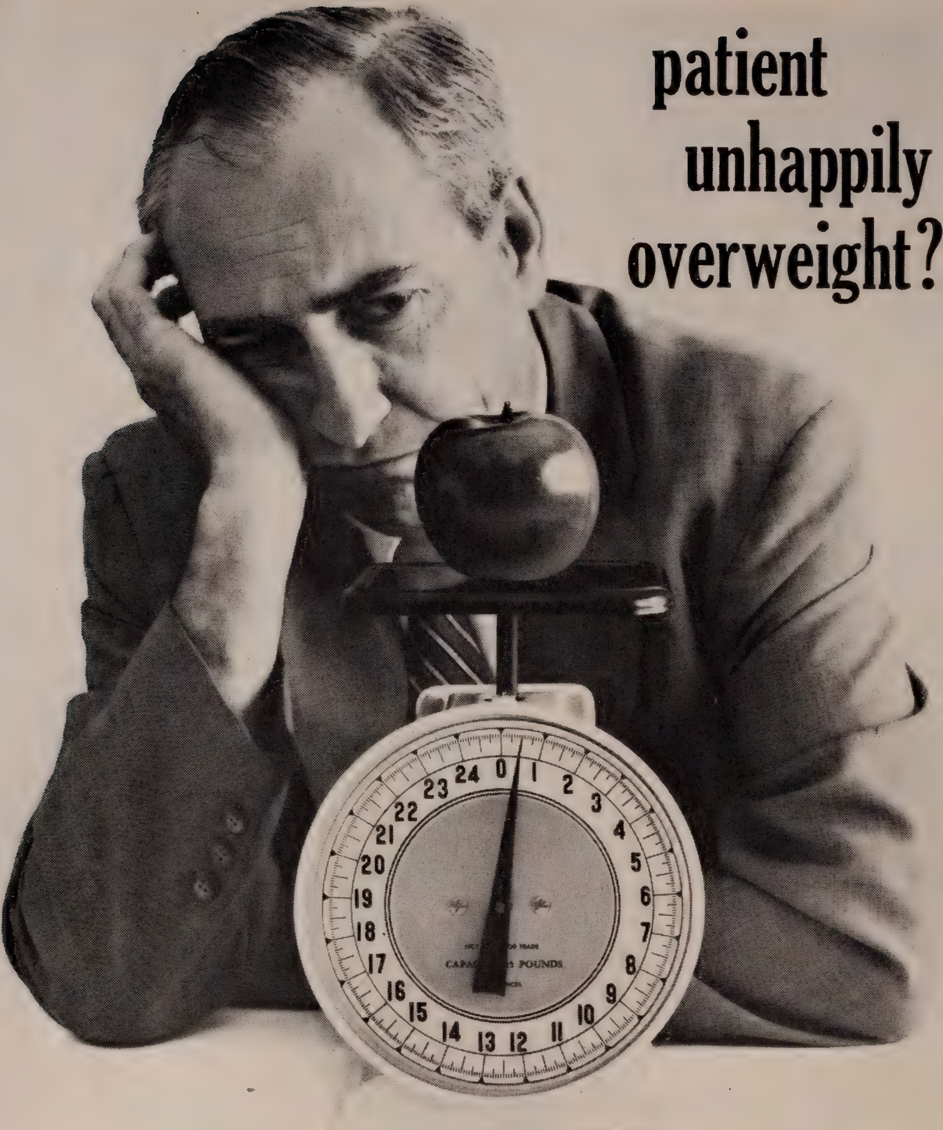

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[1] Douglas, H. S.: West. J. Surg. 59:238 (May) 1951.

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1.) Stoughton, R. B.: Report To The Council; Steroid Therapy In Skin Disorders, J.A.M.A. 170:1311-1315 (July 11) 1959. 2.) Goodman, H.: Concentration of Topical Medications Dispersed in Evaporating Vehicles with Particular Reference to Hydrocortisone Alcohol, Clin. Med. 6:781-784 (May) 1959.

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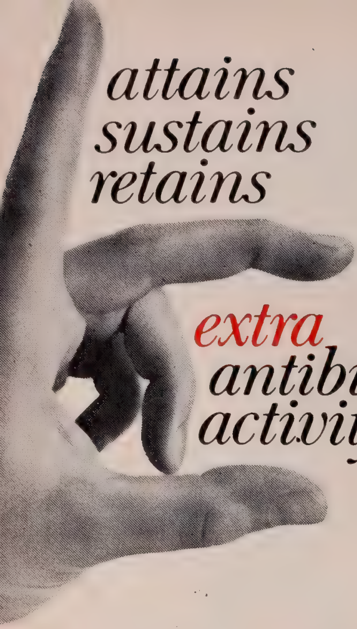

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retains

extra
antibiotic
activity

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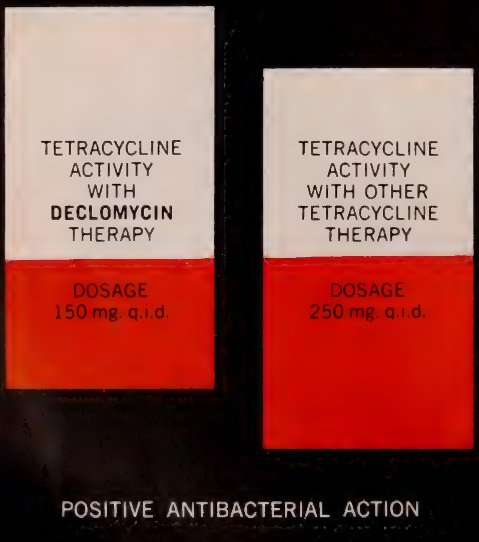
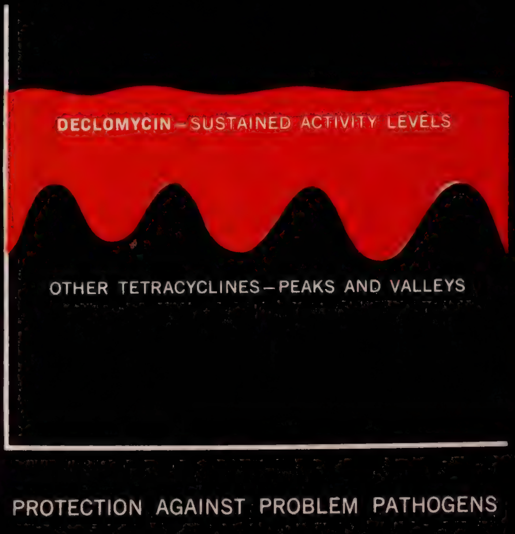


POSITIVE ANTIBACTERIAL ACTION



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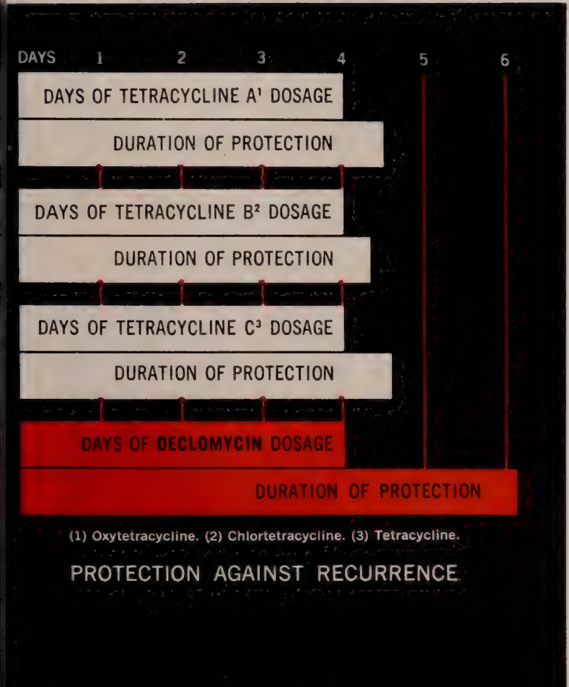

(1) Oxytetracycline. (2) Chlortetracycline. (3) Tetracycline.

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EDITORIALS

The MEND Program and the Medical Profession

The widespread favorable response to the current series on "The Physician in Civil Defense" suggests that it fills a real need. This series, one aspect of the MEND (Medical Education for National Defense) program at the Albany Medical College, draws attention to the program and its contributions to medicine and to the nation.

MEND began in 1952 as a function of the Association of American Medical Colleges, supported by a Federal grant. The soundness of the basic MEND policy as it has evolved is exemplified in the following principles:

(*a*) Each school is free to work out its own program to suit its individual needs;

(*b*) The programs are designed to stimulate in students and staff an attitude of responsibility in disaster as well as to teach appropriate materials;

(*c*) Emphasis is placed on professional rather than administrative and organizational topics.

Beginning with these fundamental principles, the MEND program has been administered with an appropriate mixture of imagination and common sense. To allow a gradual and orderly increase in the scope of the program, a number of medical schools were added each year, so that the total number now participating, all volunteers, is 81 of the 86 schools in the nation. The reports of each school are made available to the others so that important developments and innovations can be considered widely.

The response of the schools has been most favorable. Some have concentrated on the development of new teaching methods in the field of disaster medicine; others have set up disaster control units for peacetime and military disasters. The Albany Medical College MEND committee, recognizing a need for basically nonmedical and fringe medical information for the medical community, has undertaken to review, correlate, and present the basic facts needed for civilian survival in the event of a thermonuclear attack.

It should be noted, however, that the MEND program is not restricted to training for military disasters. Both natural and man-made civilian disasters will be handled better as a result of MEND influence.

The practicing physician is not left out. Through the cooperation of the Federal MEND administration, the medical colleges, and the medical societies, the salient facts of disaster management are being presented in this JOURNAL. The current series is a part of the State Medical Society's disaster preparedness plan. The Society, through the JOURNAL, will continue to do everything in its power to keep physicians abreast of the latest developments in disaster medicine.

The first series on "The Physician in Civil Defense" which is about to terminate will be followed shortly by a second series concerned with the strictly medical aspects of civil defense.—S. G.

The Turbo-Prop Airliners and Coronary Artery Disease

Life is punctuated by disasters, some predictable, others not. For example, two turbine-driven propeller airliners met with catastrophe within a six-month period, taking a toll of 97 lives. Similarities in the two calamities led to an extensive search by the manufacturer and by government agencies, with the revelation that critical air velocities had generated resonant oscillations and these had ripped the wings from the airplanes.

These accidents bring to mind potential similarities between the aerodynamic disturbances which lead to mass tragedies and hydrodynamic disturbances which may lead to obstruction of blood vessels in an individual, a more common misfortune.

The blood vessels of the body are subjected to hydraulic and hydrodynamic forces which have qualitative similitude to those which lift airplanes into the air. Thus the tissues of the blood vessel wall must withstand the oscillating, compressive, and tensile forces generated by the pulse wave, the drag induced by the flow of blood, as well as other hydrodynamic forces. The arterial pressure drives a filtrate of the blood containing lipids and other materials into the vessel wall, with the production of lipid infiltration, atherogenesis, and vascular sclerosis. If the oscillations and other mechanical forces to which an artery is subject cause disturbances in the behavior of its walls, metamorphosis of its tissues may be followed by thrombosis, stenosis, or even rupture.

The advanced state of the art of aerodynamics and the immensity of the problem of reconstructing the turbo-prop airliners to eliminate their inherent instabilities have launched a more than 25 million dollar program for modifying the 136 planes of this type. An army of highly trained mathematicians, aerodynamicists, engineers, and technicians has been called to solve in the shortest possible time the intricate problems posed by the accidents.

By contrast the state of the art of the application of hydrodynamics to vascular structure is so primitive and so relatively neglected that a much longer latent period will probably pass before hydrodynamic knowledge can lead to improved vascular safety. This is because relatively few workers appreciate the importance of the exploration of the effects of physical forces on the vessel wall; in consequence little support is now being provided for this type of work. The comparative sums expended and the urgency for discovery in both directions highlight the fact that the richness of aerodynamic and hydrodynamic theory has not yet been translated into the equally urgent problems of the vascular system.

When the lessons of hydrodynamics in vascular structure receive greater appreciation, as they must in the next decade, the important role of these forces in the development of vascular structure will quickly become clarified. It will then also be known that increased funds for research in this field can pay handsome dividends in improved public well-being. It may be hoped that the lessons of the turbine-driven propeller airliners may serve to direct more attention to the present need to study the effects of hydraulic forces on the arterial wall with the same intensity and support given to the prevention of aerodynamic tragedies.—S. R.

Maternal Morbidity and Mortality in New York State

The Subcommittee on Maternal and Child Welfare of the Public Health and Education Committee of the Medical Society of the State of New York is sponsoring in the NEW YORK STATE JOURNAL OF MEDICINE a series of articles concerning maternal morbidity and mortality. These will appear at quite regular intervals throughout the year. The chairman of the subcommittee wishes to outline in this issue of the JOURNAL the organization and activities of the subcommittee and to express his gratitude to those members throughout the State who have worked diligently to accumulate and study reports which have been sent to the central committee for analysis and publication.

The following physicians throughout the State are members of the subcommittee: Edward C. Hughes, M.D., chairman, Syracuse; Samuel Karelitz, M.D., vice-chairman, New Hyde Park; Meyeron Coe, M.D., Queens Village; Frank A. Disney, M.D., Rochester; Eugene R. Duggan, M.D., Rochester; Harold Jacobziner, M.D., New York City; John W. Latcher, M.D., Oneonta; William Mallia, M.D., Schenectady; Abraham C. Posner, M.D., New York City; Clyde Randall, M.D., Buffalo; Abraham B. Tamis, M.D., Bronx; George T. C. Way, M.D., Poughkeepsie.

Some years ago the State was divided into regions consisting of from five to eight counties to facilitate the method of obtaining reports. Obstetric and pediatric consultants have been appointed to these areas. Their functions have been to obtain reports of maternal deaths, review these with the doctor and hospital involved, and send the information to the central committee for study and cataloging. It has been gratifying to have the support of these physicians and to receive their reports—in most instances completely filled out including pathologic findings when autopsies had been done.

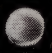
A list of the consultants is as follows: OBSTETRICIANS: R. Gordon Douglas, M.D., Region 1; Edward N. Cartnick, M.D., Region 2; Waring Willis, M.D., Region 3; John N. Phillips, M.D., Region 4; Robert E. L. Nesbitt, Jr., M.D., Region 5; Elmer Wessel, M.D., Region 6; Wendell D. George, M.D., Region 7; Ferdinand J. Schoeneck, M.D., Region 8; Milton A. Carvalho, M.D., Region 9; Ward L. Ekas, M.D., Region 10; R. Scott Howland, M.D., Region 11; Charles J. Woeppel, M.D., Region 12.

PEDIATRICIANS: Alfred E. Fischer, M.D., Region 1; Samuel Karelitz, M.D., Region 2; Edward A. Hardy, M.D., Region 3; Stewart C. Wagoner, M.D., Region 4; Hugh F. Leahy, M.D., Region 5; Harold Singer, M.D., Region 6; H. Louis George, M.D., Region 7; Tyree C. Wyatt, M.D., Region 8; John B. Burns, M.D., Region 9; William L. Bradford, M.D., Region 10; George R. Murphy, M.D., Region 11; William J. Orr, M.D., Region 12.

After the reports are received by the central committee, each death is analyzed and placed in a punch card system. These cards are arranged according to counties. Therefore there is at hand in the office of the chairman of the subcommittee complete reports of the maternal deaths in Upstate New York. Reports can be compiled readily, if anyone wishes to study any particular aspect of maternal mortality.

The second article to appear in the JOURNAL will be a report based on 147 fatalities associated with pregnancy which have occurred in New York State, exclusive of New York City, during the years 1956, 1957, 1958, and 1959. The Subcommittee on Maternal and Child Welfare not only will continue to assemble this important information but also will set up a method by which a perinatal mortality study can be in function within a year throughout New York State.

Physicians throughout the State are respectfully requested to fill out any questionnaires that they may receive from their area consultant in the near future. The subcommittee wishes to extend its appreciation to the many physicians throughout the State who have completed these questionnaires in the past.—E. C. H.



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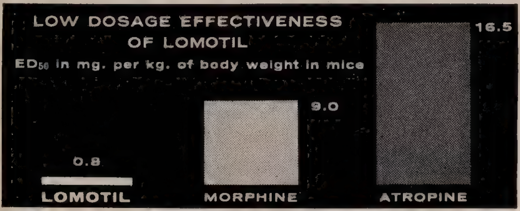

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SCIENTIFIC ARTICLES

Treatment of Depressed Patients in General Practice

WILLIAM SELDEEN, M.D., AMITYVILLE, NEW YORK

(*Director, General Practice Section, Brunswick General Hospital*)

PERHAPS the most common of the emotional problems seen in general practice is depression. Sadness, uncontrolled and unprovoked crying, psychomotor inhibition, and self-accusation are among the signs which should alert the physician to look for underlying emotional causes which may be contributing to the patient's distress. Frequently, these symptoms are accompanied by excessive worrying and other indications of anxiety.

If the depression is the result of an acute organic disease, the emotional symptoms may disappear when the disease is cured. Meanwhile, however, the patient's depression may be so severe that he is unable to carry on his normal daily activities, and he may even speak of suicide. Depression also frequently is evident in patients who have such serious chronic diseases as cancer, or among those who are convinced that they have such an ailment even though examination proves otherwise.

If the depressive symptoms can be relieved, the real disease is borne more easily, or the imagined one can be attacked through psychotherapy. When a patient is faced with insurmountable social or economic problems, his response to them again may be depression. In this state he is unwilling to recognize, or even incapable of recognizing, his problem for what it is and to make the best of the situation.

Electroshock therapy or psychotherapy is, of course, the treatment of choice for the depressed patient. Electroshock therapy very often is refused by the patient and the relatives. Unfortunately, many of these patients have receded so far into themselves that it is almost impossible to communicate with them. Until they are willing to discuss their problems and to listen to the advice of the physician, they merely sink deeper into their depressed state. It is here, when electroshock therapy is not feasible and the patient must be made more amenable to psychotherapy, that various drugs have been used with varying degrees of success.

Sedatives and hypnotic agents, when used on these patients, must be employed with caution and care. Although they may relieve insomnia and pain, they also may aggravate the depression. In searching for a more satisfactory therapy, Alexander* observed that benactyzine hydrochloride is very effective in decreasing a patient's depressive rumination and his psychomotor inhibition. Furthermore, he found that when meprobamate is given with benactyzine hydrochloride, the favorable qualities of each drug complement those of the other. As a result, he reported, the patient

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* Alexander, L.: Chemotherapy of depression; use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride (benactyzine), J.A.M.A. **166**: 1019 (Mar. 1) 1958.

TABLE I.—AGE DISTRIBUTION OF PATIENTS IN BENACTYZINE-MEPROBAMATE STUDY

Age (Years)	Number of Patients
18 to 24	4
25 to 34	8
35 to 44	10
45 to 54	8
55 to 64	7
65 to 74	4
75 to 84	4

returns to a condition closely simulating his normal state. His anxiety symptoms are not stimulated, and he is not further depressed. In this condition he is willing to talk about his problems, to attack those which can be solved, and to accept those which cannot be eliminated. If he has a somatic illness which must be treated, he is more cooperative and is better able to understand his physical condition.

Because other clinicians have reported similar results with this combination of drugs, and because these two drugs now are available in a tablet containing 400 mg. of meprobamate and 1 mg. of benactyzine hydrochloride, it was felt that this therapy deserved further clinical study. Consequently, the benactyzine-meprobamate combination (Deprol*) was used in the treatment of depression and anxiety in 45 patients.

Method

There were 9 males and 36 females in this study. Their ages ranged from eighteen to eighty-four, with the largest number being between thirty-five and forty-four years of age. A detailed listing of the age distribution is shown in Table I. All of these patients exhibited marked signs of depression and anxiety which arose from a variety of medical, social, and economic problems.

The depression of 8 of these patients was associated with a prior acute or chronic illness. Of these, 4 had had cancer and feared metastases, 2 had just recovered from acute cases of influenza, 1 had hyperthyroidism, and 1 had had acute infectious diarrhea. Three patients had various physical complaints which caused them to believe that they had cancer. Physical examination disproved this but did not convince the patients. The depression of 8 of the patients manifested itself in expressions of suicidal ideas, although the threats were never carried into action.

Actual symptoms of psychoses, such as delusions, ideas of persecution, and hallucinations appeared in 4 patients. The other patients had a variety of physical disorders including osteoarthritis, arteriosclerotic heart disease, dysmenorrhea, and rheumatoid arthritis. Among the social problems behind the depression were an alcoholic husband, marital difficulties, and a hereditary history of epilepsy. A more detailed listing of the backgrounds of depression is shown in Table II. The last column on the right in this table is the response of the depressive symptoms to benactyzine-meprobamate therapy and not the response of associated physical symptoms.

The dosage for the largest number of these patients (17) was one tablet four times a day. For 14 patients, one-half tablet four times a day was sufficient, while 3 patients were given two tablets four times a day. Other doses varied from one-half at bedtime to one twice daily. Thirty-two of these patients have been under this therapy for four months or less; the remaining patients have been treated for longer than four months. Twelve are still being given benactyzine-meprobamate. All patients also received parenteral high dosage of vitamin B complex and vitamin B_{12} therapy. If a patient required concomitant therapy for a somatic complaint, this, of course, was given also.

In addition, all patients were encouraged to discuss their emotional problems, and through psychotherapy an attempt was made to show them the source of their mental upset.

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* Deprol was supplied by Wallace Laboratories, New Brunswick, New Jersey.

TABLE II.—SUMMARY OF 45 DEPRESSED PATIENTS TREATED WITH BENACTYZINE-MEPROBAMATE

Case Number	Sex	Associated Diseases and Problems	Benactyzine-meprobamate dose (Tablets)	Length of Treatment	Results
1	F	Infectious diarrhea	1 four times daily	42 days	Complete remission
2	F	Cancer of the breast	½ three times daily	80 days	Complete remission
3	M	Cancer of the prostate	½ twice daily	179 days	Complete remission
4	F	Arteriosclerosis	½ four times daily	150 days*	Substantial relief
5	F	Fatigue, dizziness	1 twice daily	16 days	Complete remission
6	F	Cancer of the colon; diabetes	½ four times daily	12 months*	Complete remission
7	M	Marital difficulties	1 four times daily	47 days	No improvement
8	F	Obesity	1 three times daily	4 months	Substantial relief
9	F	Hypertension; husband's death	1 four times daily	21 days	Substantial relief
10	F	Obesity	1 four times daily	4 months*	Substantial relief
11	M	Obesity	2 four times daily	2½ months*	Slight relief
12	M	Influenza	½ four times daily	21 days	Complete remission
13	F	Rheumatoid arthritis	½ four times daily	79 days	Slight improvement
			1 four times daily	5 months*	Slight improvement
14	F	Childless	½ four times daily	19 days	Complete remission
15	F	Influenza	½ four times daily	35 days	Complete remission
16	F	Hypertension; family problems	½ three times daily	7 months	Complete remission
17	F	Family problems	1 four times daily	4 months	Complete remission
18	F	Feared cancer	½ three times daily	33 days	Complete remission
19	F	Marital problems	½ four times daily	3 months	Substantial relief
			1 at bedtime	2 months	Substantial relief
20	M	Paranoid ideas	½ twice a day	8 months*	Substantial relief
21	F	Cancer of the colon	½ three times daily	4 months	Complete remission
22	F	Fear of cancer	½ three times daily	9 months	Slight improvement
			1 three times daily	2 months*	Substantial improvement
23	F	Psychoneurosis; anorexia nervosa	1 four times daily	24 days	No improvement
24	F	Schizophrenia	1 four times daily	5 months	No improvement
25	F	Involutional melancholia	½–2 four times daily	2 months	No improvement
26	F	Death of husband	1–½ three times daily	3 days	Side-effects
27	F	Loss of hair; out of work	1 three times daily	8 months	Complete remission
28	F	Fear of cancer	1 four times daily	5 months	Complete remission
29	M	Paranoid ideas	½ four times daily	7 months	Complete remission
30	F	Paranoid ideas	2 four times daily	3 months*	Complete remission
31	F	Osteoarthritis; radiculitis	1 four times daily	4 months*	Complete remission
32	M	Arteriosclerotic heart disease; diverticulitis diverticulosis	½ three times daily	13 months*	Complete remission
33	F	Breast cancer	½ three times daily	3 months	Substantial relief
34	F	Dysmenorrhea; endometriosis	½ four times daily	12 months*	Complete remission
35	F	Hysterectomy; insomnia	½ four times daily	26 days	Substantial relief
36	F	Arthritis	1 three times daily	51 days	Complete remission
37	M	Acute psychosis	1 three times daily	4 months	Substantial relief
38	F	Marital difficulties	1 four times daily	7 days	Complete remission
39	F	Alcoholic husband	1 four times daily	11 months	Substantial relief
40	F	Fractured lumbar vertebra	½ four times daily	5 months	Complete remission
41	M	Emphysema; alcoholism	½ four times daily	21 days	Complete remission
42	F	Suicidal ideas without cause	1 four times daily	3 months	Substantial relief
43	F	No apparent cause	½ four times daily	2 months	Substantial relief
44	F	Epilepsy	1 four times daily	3 months*	Substantial relief
45	F	Hyperthyroidism	1 four times daily	2 months	Substantial relief

* Patient is still being given benactyzine-meprobamate.

Results

In all except 8 patients within this group the symptoms of depression either disappeared completely or were markedly relieved. Under benactyzine-meprobamate therapy, the patient's mood was elevated, and the outlook was improved. Those who had complained of fatigue and weakness said they felt stronger and particularly less tired on awakening. Anxiety and agitation were reduced, and those patients who had insolvable problems were able to adjust to them better. Several patients who had had suicidal trends gave up these ideas. Nine patients who had complained of physical disorders were relieved completely of all symptoms.

The speed with which improvement could be noted varied widely. One patient, for example, lost his symptoms of depression within sixteen days. On the other hand, another patient has been taking benactyzine-meprobamate for five months and is continuing the medication with substantial relief of his depressant symptoms. Of particular note is the fact that almost half the patients responded on the small dose of one-half tablet three or four times a day.

Eight of the patients in this group had been treated previously with a variety of other antidepressive medications. Among these were phenothiazines, barbiturates, psychic stimulants, monoamine oxidase inhibitors, and thymoleptic agents. None of these 8 patients had improved with these medications; on the other hand, under benactyzine-meprobamate therapy all received marked relief. Similarly, 6 patients failed to respond to treatment with meprobamate alone, but had an excellent response when benactyzine hydrochloride was added to the treatment.

When the drug was discontinued, following disappearance of the depressive symptoms, the majority of the patients maintained their symptom-free condition. However, 5 patients (2 with paranoid ideas, 2 who feared cancer, and 1 with a social problem) reverted to their depressed condition and drug therapy had to be reinstituted. Again their tensions were relieved and their emotional attitudes were improved. During the course of this study, one unusual indication for benactyzine-meprobamate medication was observed. The emotional problems of 3 patients were related largely to their obesity. Under benactyzine-meprobamate they accepted their physical condition more readily and were more amenable to the dietary restrictions placed on them.

One of the 5 patients who received no relief from the drug was diagnosed as having severe involutional depression, 1 had schizophrenia with depression, 1 had insolvable marital difficulties, and 1 had psychoneurosis with anorexia nervosa. The therapy had to be discontinued at an early stage with the fifth patient because of severe drowsiness and dizziness. Except for this one case, no other side-effects were noted as being serious enough to require withdrawal of the medication. Occasionally a patient would complain of being drowsy, but this disappeared after several days or after the dosage had been reduced.

The following cases are typical of those treated in this study:

Case Reports

Case 1.—In September, 1959, a thirty-three year-old woman sought treatment for severe epigastric pains which followed no specific pattern. She was anxious and tense during the examination and was worried about the pains of which she complained. During this visit she revealed great concern over the fact that she and her husband were childless after fifteen years of marriage. She was given one-half tablet of benactyzine-meprobamate four times a day. Within three days her mood had improved, and her pains had lessened. Within two weeks the pains had disappeared.

This patient was continued on the drug therapy until the first part of November, 1959, when the medication was stopped. The pains recurred within a week and the drug was instituted and continued until the first part of January, 1960. At that point the medication was again discontinued, and the patient has had no recurrence of either her painful or depressive symptoms. Of significance in this case is the fact that during the second period of treatment with benactyzine-meprobamate the patient arranged successfully for the adoption of a child.

Case 2.—This patient, an eighty-year-old woman, was seen first in September, 1959. Arteriosclerotic heart disease was diagnosed. During treatment for this condition it was noted that the patient had marked symptoms of depression. Under questioning this woman contended that she had been depressed for twenty-seven years. Her attempts to live alone at home caused progressive deterioration in her organic disease. Although she clearly needed to be placed in a nursing home, she refused to consent to this.

One-half benactyzine-meprobamate tablet, four times a day, was prescribed, and within one month the patient's mood improved substantially. At this time she agreed to be placed in a nursing home, where she is now receiving the care that she needs. Benactyzine-meprobamate treatment has been continued to the present time, and although she has not completely recovered from her depressive symptoms, she is at least more amenable to accepting her invalid condition.

Case 3.—This thirty-five-year-old woman had had a cancer of the breast removed. As a result of this traumatic experience, she feared metastases and became anxious and depressed. In February, 1959, one-half tablet four times a day was prescribed for her, and she was maintained on this dosage for two months. During this time she became reconciled to the surgery which had been performed and looked forward to life with much less apprehension. Within two months the depressive symptoms had disappeared completely. Treatment was discontinued, and there was no remission of the depression. Since the discontinuance of benactyzine-meprobamate treatment this patient has been subjected to traumatic situations, both physical and social, but in spite of these upsetting conditions, she has shown no inclination to return to her former depressed state.

Case 4.—Less successful was the treatment of a sixty-two-year-old man who had osteoarthritis of the spine. This patient was apathetic and had lost interest in his work. Furthermore, he was having difficulties with his wife. In November, 1959, one benactyzine-meprobamate tablet four times a day was prescribed. This treatment was continued for approximately six weeks. At the end of that time the medication was discontinued because there was no apparent change in the patient's symptoms.

Comment

When the 45 patients discussed in this study appeared for treatment, the majority of them believed themselves to be suffering from some somatic disease or had just recovered from some acute physical condition. During subsequent consultation and examination it became apparent that either there was no organic cause for their complaints or that emotional problems underlying the somatic difficulties exaggerated the physical symptoms. Sadness, unexplained crying, insomnia, and other symptoms which had no apparent physical cause, indicated that these patients were suffering from depression and anxiety. It became evident that these patients needed to be treated for mental disorders just as patients might need therapy for physical problems.

The results of benactyzine-meprobamate treatment, even when it was given in small doses, was unusually gratifying. When 88 per cent of a group responds favorably to a drug, that drug must be considered a useful adjunct to other forms of therapy. When the mood of these patients had been elevated, when their physical weakness and fatigue had been lessened, when suicidal trends had been reversed, and when other symptoms of depression had been removed, then these patients were ready to understand their emotional and physical problems and to cooperate in psychotherapy, chemotherapy, and physical therapy as they were required. The value of psychotherapy in conjunction with the drug medication cannot be discounted.

It is undoubtedly true that a large part of the success of this study was due to the author's attempt to uncover the causes of the patients' emotional problems. However, the mere revelation of these problems was not enough, and it was here that the value of the drug is perhaps most significant. The benactyzine hydrochloride-meprobamate combination appears to alleviate the depressive symptoms to such a degree that the patient not only will reveal his problems but also will be willing to understand them. Furthermore, in those patients who had reached such a state of depression that communication with them was difficult if not impossible, the drug, again appeared to be helpful in allowing them to open their minds to the doctor.

It should be noted also that several of the cases improved dramatically when the source of the depression was removed. For example, in Case 1 there was a complete remission of depression during the drug treatment. However, as was pointed out, at the time of the second treatment the patient adopted a child, and thus the problem of childlessness, which might have been the basic problem, was solved. In another case, when the patient was first examined, she stated that her husband was about to leave her. While treatment was progressing, the marital difficulty was resolved, and the husband and wife are living together more happily. Again there was complete remission of the depression. This, of course, is the only true and positive way to relieve depression—relieve the problem causing it. On the other hand, during the depression period and before the source has been removed, if it can be removed, benactyzine-meprobamate is an important and valuable adjunctive therapy which allows the patient to live with himself more contentedly.

Summary

Forty-five patients who exhibited signs of depression, such as sadness, insomnia, and crying were given meprobamate (400 mg.) and benactyzine-hydrochloride (1 mg.) in a combined form (Deprol) for periods ranging from one month to more than four months. All except 8 patients within the group responded markedly to the medication. As their emotional symptoms lessened or disappeared they became more amenable to psychotherapy and were better able to understand their emotional problems or to put up with their insolvable social or physical situations. The dosage for the largest number of the patients was one tablet four times a day; for about one-third, it was one-half tablet four times a day, and the remaining patients were given varying dosages. As the dosage was modified to suit the patient there was only one instance of drowsiness severe enough to warrant discontinuing the drug. It is concluded that benactyzine-meprobamate is a valuable and safe drug for use by the general practitioner in treating patients exhibiting symptoms of depression and anxiety.

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Recent Concepts in the Rehabilitation of the Patient with Peripheral Vascular Disease

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THE patient incapacitated by peripheral vascular disease presents a most difficult problem in management and rehabilitation. A definitive diagnosis must be made, differentiating the etiology of obstruction and/or vasospasm. Entities such as arteriosclerosis obliterans with or without diabetes, thromboangiitis obliterans, and Raynaud's disease have management and prognostic differences which should be recognized. The potential viability of damaged tissue must be assessed and tests of vascular reserve should be utilized in assessing the reversibility or irreversibility of tissue damage. Familiarity with the newer concepts of surgical procedures, such as bypass shunts and replacement grafts, may save a limb that otherwise would have to be sacrificed. If amputation is unavoidable, the level of amputation is most important to the prognosis for the functional use of a prosthesis. Goals have to be set for future planning, and a thorough knowledge of the patient's vocational and social background is necessary to plan for and arrive at the goals set.

Evaluation

The evaluation of such a patient starts with a careful history. Much information is to be gained by asking the right questions. It is here that one can assess the nature of pain, whether or not the condition is true claudication, the relation of discomfort to environmental temperature, the past history of disease in other organ systems that might have a bearing on future plans and goals, the use and abuse of tobacco, and the nature of the patient's vocation and avocation. The history is the groundwork for the rehabilitation program, since it is here that our basic goals may be set or modified by what our patient tells us about himself. Frequently it is at the history stage that some final plans in management can be formulated tentatively. For instance, if we hear that the amputee has true angina pectoris with only very slight exertion, we would be hesitant about a prosthetic program for him and might relegate that patient to a wheel chair. This decision might be made at the outset, on the basis of the history alone.

Traditionally, a thorough physical examination should follow the history, and so it does in the evaluation of the patient with peripheral vascular disease. Since what we find on making an examination of the organs that are somewhat remote from the peripheral arteries and veins may have a direct bearing on our ultimate plans, special attention must be given to vision, cardiac reserve, and the neurologic status, especially the sensory systems. If an older diabetic amputee has limited vision and absent position sense in the remaining limb and foot, his walking ability will be markedly reduced, no matter how good his cardiac reserve is, no matter how well his prosthesis fits, or no matter how strong his motivation to walk may be. It is imperative that we evaluate this aspect initially by examination, lest we find ourselves and our patient equally frustrated by his poor ability to walk despite all our urgings and his time and effort spent

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in training.

The examination of the peripheral status per se must not be haphazard. The limbs should be examined unclothed in the standing, sitting, and supine positions. It is impossible to evaluate adequately a limb in a cool room, so the room temperature at the time of examination should be optimum, and the patient should be given time to equilibrate to the room temperature. The temperature and color of the skin should be noted in the supine, elevated, and dependent positions. The use of a small skin thermometer is helpful and simple to use in this regard. Venous engorgement and edema must be noted. Pulses should be palpated systematically, and oscillometric examinations should be made at three levels. It is not beneath the dignity of the physician to separate the toes to look for fissures or fungus or to palpate the metatarsal arch to feel for subluxation. I have seen a protruding metatarsal arch make walking so painful, particularly in diabetic patients, that the entire rehabilitation program was held up. The addition of a well-placed metatarsal bar on the shoe may make the difference between ambulating and not ambulating in such a case.

When the abnormalities of the history and physical examination have been pieced together, we are well on the way toward formulating ultimate plans in treatment and rehabilitation. However, before any final conclusions about definitive medical or surgical treatment can be reached, it is usually necessary to assess the circulatory reserve of the limb. There are many tests for this purpose, but a thorough understanding of the physiologic effects of heat and cold on the body and a working knowledge of the autonomic nervous system are prerequisites for understanding and evaluating the results of these tests. It does no good to order a Gibbon and Landis test or an environmental temperature study if one does not understand the physiologic basis for these tests. It does no good to order a paravertebral block or a posterior tibial nerve block if one does not know how to assess the technical effectiveness of the block before one tries to assess the results. The aforementioned tests and others are extremely valuable in evaluating the vascular status of the limb and should be used. Arteriography may be an invaluable aid in demonstrating segmental occlusion and should be considered when there are proper indications.

Treatment

It is beyond the scope of this paper to discuss definitive surgical procedures in detail. However, a broad knowledge of the principles of bypass surgery and the kinds and levels of amputation is certainly within the realm of the physician who undertakes the management and rehabilitation of the patient with vascular disease. I feel it would be to the patient's advantage if the decision as to the level of amputation could be made jointly by the surgeon and physiatrist, taking into consideration the future economic and social goals of the patient and the rehabilitation potential.

One further word about surgery. I believe it is sound policy to start the rehabilitation program even before any definitive surgical procedure has been done. Much time can be gained if the patient with an amputation has adequate muscle strength and joint range of motion so that crutch walking may be started as soon as the surgeon permits. If the exercise program is begun immediately preoperatively, even while the patient is undergoing his evaluation for surgery, and continued immediately postoperatively, even while the patient is still bed-bound, precious time and money may be saved. The delaying effects of deconditioning while at prolonged bed rest may be devastating to an elderly patient.

If diagnostic tests show some degree of circulatory reserve and there is no progressive gangrene or infection, the treatment should be directed toward improving the blood flow. This may be accomplished in several ways. Heat can be used directly or reflexly to produce active hyperemia. Chemical vasodilators can be introduced intra-arterially or into the skin by physical means, and we can attempt to alter the blood flow mechanically. Heat applied locally produces active hyperemia with an increase of blood flow of several hundred per cent, but it also increases local tissue temperature and metabolism and thereby the tissue requirement of blood. In severe arterial obstructive disease the increase in metabolism is frequently greater than the possible increase in blood flow, and the result may be disastrous with a burn and progressive tissue destruction. I feel strongly that direct heat is contraindicated in advanced arterial disease, especially in the presence of sensory disturbances. The most useful form of heat therapy in vascular disease is reflex heat, and the Gibbon and Landis procedure itself may be used for therapeutic purposes.

Vasodilator drugs may be introduced directly into the skin of the involved limb by ion transfer or may be injected intra-arterially. Although the migration of solutes by iontophoresis is limited to epithelial layers, hair follicles, and coil glands of the skin, a reflex spread of hyperemia occurs to deeper tissues as well as to adjacent skin areas. The increased blood flow may last from one to several hours and may be of definite value for the development of collateral circulation. The local and intra-arterial introductions of vasodilator substances are indicated mainly in the advanced stages of arterial disease where direct heat is contraindicated or reflex heat is ineffective.[1]

Mechanical measures have been a standby in the treatment of vascular disease for many years. These measures are intended to increase arterial inflow and favor the venous return by increasing and decreasing the hydrostatic pressure within the blood vessels of a limb. Buerger's exercises, the oscillating bed, and intermittent venous occlusion are examples of such mechanical means, but I have come to discard them as ineffective. The most powerful and the simplest measure of producing vasodilatation in muscle is exercise. Muscle contraction is the physiologic stimulus for hyperemia in muscle, and walking is the most effective means of producing this muscular contraction. In the presence of frank gangrene, open ulceration, rest pain, and severe ischemic neuritis walking is as a rule contraindicated. In all other cases of peripheral arterial disease walking should be prescribed as a therapeutic measure.[2-4]

Preventive measures are as important as treatment to minimize complications that in themselves may lead to severe disability. Patients at bed rest with painful lesions of the foot develop flexion contractures with great rapidity. Achilles tendon shortening, heel ulcerations, and muscle atrophy may develop unless measures are taken to prevent these complications. To avoid deformity and skin breakdown proper positioning and splinting are essential in the treatment of the patient in bed.

Another area that is often neglected is foot care in the ambulatory patient. A physician is derelict in his duty to his patient if he does not make sure that the patient knows how to care for his feet. Merely telling a patient "take care of your feet" is not enough. It is necessary to explain in detail how to cut the nails, how to lubricate the skin, and how to keep the toes separated. If the patient is to walk, he must be told how much walking to do each day. If he smokes, he must be told in simple language why he must stop, so that it makes some sense to him.[5]

Prosthesis

Unfortunately, all too often medical and surgical measures fail to save a limb and the patient comes to major amputation. In such cases, wherever possible, the aim is to provide that patient with a prosthesis so that he can function as independently as possible, despite severe physical limitations. We have revised our criteria for the use of a functional prosthesis and it is a rare patient who will not be provided with one. I feel that a prosthesis should be prescribed even if the goals are limited to self-care alone. Functional ambulation, in the true sense of the word, is not feasible in many of the older patients, especially if the remaining limb is in a precarious state and other organ systems are involved with degenerative disease. However, the energy expenditure of walking a few steps with a prosthesis is less than the energy expenditure of walking without one, using crutches alone. Furthermore, in the presence of vascular disease affecting the remaining limb and foot, I feel that a prosthesis offers equalization of body weight, taking undue stress off the remaining foot and protecting it against further trauma.

Providing such a patient with a prosthesis may well affect the ultimate disposition. Many patients are able to return to their homes if they can function semi-independently in self-care using a prosthesis. Unfortunately, all too often they are sent to a nursing home if they are wheel chair bound, since frequently the family will not undertake the care of such a disabled individual.

If a prosthesis is prescribed for the severely disabled patient, as much stability as possible is built into it. A pelvic band, hip and knee locks, and single axis ankle are often ordered for the above-knee amputee, and a thigh lacer with side bars attached to the newer patella tendon bearing below-knee prosthesis instead of the supracondylar cuff may be the rule for the below-knee amputee. The use of a pylon for training purposes is used routinely in both above and below-knee amputees. Even in the younger, more vigorous above-knee amputee I do not hesitate to use a pylon for training, since I feel that stump shrinkage is hastened and earlier ambulation is made possible. I do not agree with the objection of others that a pylon necessarily teaches a stiff-knee gait to the above-knee amputee. I am not quite so strict about gait patterns, since I feel that as long as our older patient with vascular disease walks with a stabile gait, it is not so important if he has some gait abnormality. Canes and Lofstrand crutches are supplied when needed to help steady the gait.[6]

I believe we have in some measure solved the problem of securing satisfactory and inexpensive cosmesis for wheel chair-bound amputees. The legs from a store window manikin make excellent cosmetic limbs for unilateral or bilateral above and below-knee amputees, since they are simple to saw off the manikin at any desired level. The amputation stumps fit nicely into these hollow limbs, and they offer fine cosmesis for both males and females as they sit in wheel chairs.

Vocational Rehabilitation

Since World War II, great strides have been made in vocational rehabilitation for all disabled individuals who can work, particularly the amputee. Federal and state agencies have done much to help the amputee find his place in competitive industry. The Division of Vocational Rehabilitation offers financial aid in providing hospitalization, prostheses, prosthetic training, and vocational retraining for the amputee. Amputees, perhaps more than any other disabled group, have been accepted by industry and have been offered employment. It has been mainly through the efforts of those agencies interested in vocational rehabilitation working closely with the physician that this has been brought about.[7]

Comment

I have summarized only some of the high lights in the general management and rehabilitation of the patient with vascular disease. There is much to know if one assumes this responsibility. Patient care cannot be subdivided into "phases." Rehabilitation of any patient with chronic disease falls under the heading of "total patient care" and rehabilitating the patient with peripheral vascular disease is a prime example of total care. Responsibility cannot be delegated to others. This must be the credo of the physician who practices rehabilitation.

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Discussion

Alfred Ebel, M.D., *Bronx, New York.*—In discussing the rehabilitation of the patient with peripheral vascular disease Dr. Cummings has stressed the holistic approach which is so very important in the management of these problems. Any attempt at treating the local pathologic condition without considering the disease within the context of the patient's other medical, psychologic, and socio-economic framework is unrealistic and probably doomed to failure.

Dr. Cummings has covered the many aspects which must be considered so adequately that there remains little to be added. He has stressed the need for close consultation between surgeon and physiatrist since both are vitally concerned in the final outcome of the patient's medical problem. An ill-considered above-knee amputation when careful evaluation, good preoperative care, and expert surgical technic might have permitted a below-knee level procedure, may spell the difference between a rehabilitable patient and one who will remain unproductive, both economically and socially.

He also has pointed out the need for an appropriate exercise program for the patient before and after surgery. I should like to go a step further to emphasize the need for proper exercise long before surgery might even be contemplated. Peripheral arterial diseases are truly long-term problems, and attempts at conservative treatment may extend for many months before a decision to amputate can be properly made. A patient, who because of severe ischemic pain or chronic ulceration, is confined to a wheel chair for months before coming to amputation, may develop contractures of the hips or knees to an extent which may make the fitting and proper utilization of a prosthesis an impossibility. Permitting such contractures to develop often will prevent the rehabilitation of an otherwise rehabilitable individual. The need for a properly supervised exercise program during the period of conservative therapy is therefore quite obvious.

The question of conservative treatment also presents quite a problem. Dr. Cummings has discussed the various methods which are commonly employed, such as reflex heat, vasodilator drugs, electrotherapy, and mechanical measures, all of which are used in an attempt to improve peripheral circulation by one of two means; improving collateral circulation or releasing vasospasm where such an increased vasomotor state exists.

In studies which we recently completed we were able to demonstrate that psychogenic factors play a significant role in producing increased vasospasm in some patients, and that this increased vasomotor activity can be abolished by inhibiting these psychogenic factors. We have been able to produce maximum vasodilatation in the extremities of such patients by inducing relaxation or sleep through sedative drugs, using barbiturates in our cases. This opens up the field of tranquilizing drugs in the long-term medical management of chronic occlusive arterial disease where increased vasomotor tone is demonstrated. We have not had adequate experience with this method since our efforts were up to this point directed primarily to the use of sedation as a test for increased vasomotor tone. This method, we believe, may herald a new conservative approach to the management of some forms of peripheral vascular disease. (Perhaps our forefathers, who advocated spiritus frumenti for the treatment of peripheral vascular disease were on the right track after all.)

Evaluation of Dexbrompheniramine Maleate in Allergy by Double-Blind Procedure

Preliminary Report

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PERHAPS no other class of therapeutic agents offers the physician a wider choice of preparations than the histamine antagonists. On the other hand, in no other group of drugs is a discerning choice more difficult or less rewarding. As with most palliative pharmacologic substances the clinical usefulness of an antihistamine depends on a careful weighing of the benefits derived as opposed to the adverse side-reactions encountered. To the general practitioner a more efficient antihistamine represents a simple and practical approach to the symptomatic treatment of a variety of allergic disorders. To the physician in industry a more favorable therapeutic ratio implies a twofold dissuasive influence on absenteeism because the essential hypersensitivity reaction is controlled without substitution of drug-induced symptoms for those originally presented for treatment.

All of the antihistamines in current use may produce some untoward effects, but frequency and severity vary widely. An accumulating clinical experience appears to indicate that considerable improvement in both tolerance and histamine-antagonizing potency has been accomplished in the recently developed compound, brompheniramine (parabromdylamine) maleate.[1–5] The incidence of side-effects reported has ranged from 6.3 to 12 per cent with effective palliative doses of 8 to 36 mg. daily. In comparison with other antihistamines brompheniramine maleate may be considered a most satisfactory agent for the treatment of allergic complaints. The clinical work presented in this communication involves the active pharmacologic principle of brompheniramine isolated in the dextrorotatory isomer of the racemic compound.

Dexbrompheniramine maleate (Disomer),* employed in independent studies and with representative series of 107,[6] 177,[7] and 270[8] allergic patients, has demonstrated a superiority to the parent substance that encourages wider usage under more critical circumstances. Therapeutic levels have been attained with usual adult doses of 4 to 8 mg. daily. The frequency of side-effects reported are an impressively low 2.8 to 6.8 per cent.[6–8]

The present study was undertaken to evaluate the efficacy of this chemical in a group of hotel workers with respiratory symptoms due to allergic manifestations.

Materials and Methods

The study was conducted in the fall of 1959 and encompassed the common seasonal and perennial respiratory allergies. A total of 99 patients, predominantly male and ranging in age from thirty to seventy years, participated in the evaluation. Identical tablets coded as WL 5600 and WL 5600 A were supplied to the allergy clinic of an industrial health center without further identification. Each preparation was given to alternate patients presenting symptoms of hypersensitivity for treatment. No attempt was made at a crossing-over of

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* Dexbrompheniramine maleate, (Disomer), was supplied for this study by White Laboratories, Inc., Kenilworth, New Jersey.

TABLE I.—RESPONSE OF ALLERGIC COMPLAINTS TO DEXBROMPHENIRAMINE MALEATE AND INERT PLACEBO

	Dexbrompheniramine maleate				Placebo			
	Total	Results			Total	Results		
Diagnosis	Patients	Good	Fair	Poor	Patients	Good	Fair	Poor
Pollinosis	48	34	8	6	39	12	2	25
Vasomotor allergic rhinitis	6	5	0	1	6	1	2	3
TOTALS	54	39 (72.2 per cent)	8 (14.8 per cent)	7 (12.9 per cent)	45	13 (28.9 per cent)	4 (8.9 per cent)	28 (62.2 per cent)

medications. Courses of desensitization injections were instituted simultaneously in a majority of the cases encountered.

The series of 99 cases treated either with dexbrompheniramine maleate or with inert placebo consisted of 87 patients with pollinosis and 12 with vasomotor allergic rhinitis. Patients were advised to take the assigned medication in doses of one tablet three or four times daily. Since each tablet presumably contained 2 mg. of active material, patients receiving dexbrompheniramine maleate were responding to a total daily dosage of 6 to 8 mg. of antihistamine. Both dosage schedules were employed about equally. The duration of therapy extended from one to six weeks. At the end of this time 54 patients had been given WL 5600, and 45 had received WL 5600 A. The response to medication was rigidly assessed in accordance with control of itching, lacrimation, sneezing, and conjunctival reactions, as well as nasal discharge and blockage. Excellent to good results were recorded as good, moderate to fair results as fair, and poor to no results as poor. All untoward reactions occurring during treatment were noted even if a causal relationship was doubted by the attending physician.

Results

Of the 54 patients in this series treated with dexbrompheniramine maleate, 39 (72.2 per cent) experienced a good palliative effect, while a fair control of symptoms was accomplished in 8 cases (14.8 per cent) and 7 patients (12.9 per cent) showed a poor response. The results are reviewed in Table I. On the other hand, response to the inert placebo was good in 13 cases (28.9 per cent), fair in 4 (8.9 per cent), and poor in 28 (62.2 per cent). In this series the percentage of patients reacting favorably to placebo therapy was in the usual range of approximately 30 per cent. A consideration of the drug action in the 54 allergic complaints treated with dexbrompheniramine maleate showed that itching, sneezing, and lacrimation subsided rapidly, while nasal discharge was reduced and blockage alleviated at a somewhat slower pace. Also, of primary importance to the physician in industry, the medication in no way interfered with the ability of patients to perform their normal routine activities.

Side-Effects

A total of five unwanted reactions (9.2 per cent) occurred in the 54 patients receiving dexbrompheniramine maleate, and six (13.3 per cent) occurred in the 45 patients receiving inert placebo. Slight dizziness was experienced by 2 individuals in each group, but otherwise the nature of untoward effects differed. With dexbrompheniramine maleate, complaints included 1 case of anorexia, 1 of drowsiness and dryness of mouth, and 1 of "grippe-like" sensation. Side-effects reported by patients given the placebo consisted of 1 case of diarrhea, 1 of epigastric distress, 1 of nausea, and 1 of urinary frequency. The distribution of these reactions is presented in Table II. Because of an intolerance that was manifested by nausea, the medication, a placebo, was withdrawn from only 1 patient.

TABLE II.—NATURE AND FREQUENCY OF UNWANTED REACTIONS TO DEXBROMPHENIRAMINE MALEATE AND INERT PLACEBO

Symptom	Number of Complaints Dexbrompheniramine maleate	Placebo
Anorexia	1	0
Diarrhea	0	1
Dizziness, slight	2	2
Drowsiness and dryness of mouth	1	0
Epigastric distress	0	1
"Grippe-like" sensation	1	0
Nausea	0	1
Urinary frequency	0	1
TOTALS	5 (9.2 per cent)	6 (13.3 per cent)

A measure of the acceptance of an inert placebo as a therapeutic agent is given when side-effects as well as beneficial actions are reported. Nevertheless, certain difficulties are encountered in evaluating untoward reactions to the active agent under appraisal. For example, the type of unwanted reactions produced with placebo medication show a striking parallel to reactions associated with the histamine antagonists. Brompheniramine, parent to dexbrompheniramine maleate, has produced drowsiness,[1-5] vertigo,[5] epigastric distress,[1,3,5] and urinary discomfort,[1] a spectrum remarkably similar to that encountered with placebo in this series. Of practical importance is the fact that the incidence of untoward reactions with placebo and active material were in about the same range statistically.

Comment

Because the double-blind procedure employing a placebo control is accepted as a scientific approach to drug evaluation, it is always somewhat disturbing to observe a significant placebo response. Yet many careful clinical studies can be cited for evidence of therapeutic benefits and untoward reactions obtained with inert materials dispensed as medication. It has been estimated that as much as one third of the population is capable of reacting to a placebo as if it were a potent drug.[9] When a recent comparative study was carried out with brompheniramine maleate, chlorprophenpyridamine maleate, and a placebo, the placebo received the lowest rating with regard to efficacy, but nevertheless the rating was considered significant.[10]

Reactivity to a bland and inert material is by no means confined to therapeutic benefits. Complaints of gastric intolerance of placebo medication are sufficiently frequent to be noteworthy.[11] In the comparative study of antihistamines and placebo for control of allergic rhinitis, the observation is made that side-effects were as frequent with the placebo as those encountered with brompheniramine maleate.[10]

Once again, in the present study a placebo response was obtained. With tabulation of the data, however, there was no difficulty in distinguishing between the inert substance and the drug expected to provide some measure of symptomatic relief in allergy. The response to dexbrompheniramine maleate was 87 per cent in contrast with 37.8 per cent for the placebo. Significantly, the frequency of unwanted effects with dexbrompheniramine maleate (9.2 per cent) was slightly lower than with the placebo (13.3 per cent). A related and interesting finding in the series presented here was the striking similarity between side-effects reported by patients given placebo tablets and those which have come to be associated with the histamine antagonists. These included dizziness, gastrointestinal complaints, nausea, and urinary frequency.

From a careful consideration of objective data and patients' comments it is concluded that dexbrompheniramine maleate is an effective oral antihistamine with an ability to control allergic symptomatology in low dosage and with no greater propensity for producing side-effects than an inert substance.

Summary

1. A series of 99 patients with allergic complaints encountered at an industrial

health center participated in a critical evaluation of dexbrompheniramine maleate (Disomer) by double-blind procedure. From objective considerations as well as patients' comments, it is concluded that the compound is a highly efficient histamine antagonist, active in low dosage and producing few clinically significant side-effects.

2. Doses of 6 to 8 mg. daily achieved good to excellent results in 72.2 per cent and fair to moderate results in 14.8 per cent of 54 patients treated with the active material. Identical placebo tablets were given to 45 patients.

3. A placebo response was observed in keeping with the findings reported in previous drug evaluations.

4. It is considered significant that the frequency of unwanted effects with dexbrompheniramine maleate was 9.2 per cent in comparison with a 13.3 per cent incidence with inert placebo. The pattern of side-effects reported with placebo medication closely simulated that associated with the histamine antagonists.

5. To industrial physician and general practitioner alike, the improvement in potency and tolerance achieved with dexbrompheniramine maleate implies the ability to control the hypersensitivity reaction without substituting drug-induced symptomatology for that requiring treatment. Palliative therapy is possible without interference with the ability to perform normal routine activities.

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The only hopeless failure is the person who has ceased to strive for success.—B. C. FORBES

Treatment of Nephrosis with Methylprednisolone

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THE effectiveness of steroid therapy in the treatment of nephrosis is generally accepted.[1–3] Prednisone, prednisolone, and triamcinalone have been used and found useful in the management of this disease.[4–6] The results obtained with methylprednisolone (6 methyl-delta-1-hydrocortisone),* a new synthetic steroid, have not previously been reported. In metabolic and clinical studies milligram for milligram methylprednisolone is more potent than prednisolone and tends to cause less sodium and water retention.[7,8]

The formula of methylprednisolone is $C_{22}H_{30}O_5$ with a molecular weight of 374.46 mg. This substance is a derivative of prednisolone with the substitution of a methyl group for a hydrogen atom at the 6 alpha position. Because of the greater potency of this new compound, smaller doses than those used with the older corticosteroids have proved effective in a variety of diseases. This study was undertaken to evaluate methylprednisolone in a group of children with nephrosis.

Subjects and Laboratory Findings

Eight children, 5 boys and 3 girls, ranging in age from one and one-half to seven years, received methylprednisolone. Three of these patients (Cases 1, 2, and 6) had received prednisone before admission and one (Case 7) had received ACTH. Physical examination of these children showed the characteristic clinical and laboratory findings of childhood nephrosis. Two children (Cases 6 and 7) had had four previous attacks, and 1 (Case 3) had had a previous mild attack which subsided spontaneously. With one exception (Case 2) all the children were edematous. The child who was edema-free had been treated with prednisone in another hospital where diuresis had occurred after eleven days of treatment. He was transferred to our service because he developed mumps. This patient still had an inverted albumin-globulin ratio, a cholesterol of 390 mg. per cent, and a trace of protein in the urine at the time methylprednisolone was started.

Routine examinations of the urine of these 8 patients showed no red blood cells. The nonprotein nitrogen and blood urea nitrogen were within normal limits with two exceptions (Cases 6 and 7). In these children the blood urea nitrogen was temporarily elevated and then returned to normal. In addition to the usual laboratory tests gamma globulin and complement titrations were included in some of the patients.[9,10]

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* Supplied as Medrol, Upjohn Company, Kalamazoo, Michigan.

TABLE I.—CLINICAL FINDINGS

Case Number	Age (Years)	Number of Previous Attacks	Age at Onset	Therapy Before Admission	Blood Pressure	Edema
1	3 1/2	0	3 1/2	Prednisone 30 mg. per day for 3 days	120/80	2 plus
2	1 1/2	0	1 1/2	Prednisone 40 mg. per day, diuresis eleventh day	110/70	0
3	3	1	3	None	120/80	2 plus
4	2	0	2	None	110/60	2 plus
5	3	0	3	None	110/60	3 plus
6	7	4	5	Intermittent prednisone	120/70	2 plus
7	6	4	1	ACTH intramuscularly 1 week	120/75	3 plus
8	2 1/2	0	2 1/2	None	110/70	2 plus

TABLE II.—Effect of Therapy as Shown by Biochemical Determinations Before and After Methylprednisolone

Case	Weight (Pounds)	Protein-uria	Nitro-gen	Cholesterol (Mg. per 100 Ml.)	Albumin-Globulin Ratio	Gamma Globulin (Kunkel Units)	Complement (50 per cent Hemolysis Units)
1							
Before	37	2 plus	23.6*	854	0.78/4.24	5.04	2.6
After	37	0	31.5*	291	3.50/2.87	5.40	2.5
2							
Before	24	Trace	10.6†	390	2.69/2.76	1.30	2.5
After	23	0	. . .	210	4.31/2.44	6.80	3.0
3							
Before	36	2 plus	37.6*	580	1.19/2.83	0.40	1.5
After	32	0	29.0*	369	4.24/2.36	8.60	3.0
4							
Before	35	3 plus	13.5†	540	1.60/3.70	. . .	2.3
After	33	Trace	. . .	240	3.80/2.10	. . .	2.3
5							
Before	42	2 plus	16.5†	605	1.70/2.60	. . .	0.98
After	36	Trace	. . .	365	3.00/1.90	. . .	2.20
6							
Before	64	2 plus	21.0†	630	1.70/3.10	. . .	3.0
After	54	Trace	8.6†	293	3.32/2.86	. . .	3.6
7							
Before	63	1 plus	20.5†	430	2.50/1.50	. . .	1.8
After	57	0	16.0†	275	4.80/3.10	. . .	3.9
8							
Before	30	3 plus	11.0†	636	1.30/2.60	1.10	. . .
After	28	0	11.5†	306	5.77/2.47	3.20	. . .

† Nonprotein nitrogen; * blood urea nitrogen.

These data are summarized in Tables I and II.

Methylprednisolone Dosage

The following precautions were taken to forestall any possible untoward reactions during steroid therapy. The parents were questioned concerning a family history of hypertension, diabetes, peptic ulcer, psychosis, or tuberculosis. Treatment was deferred if the patient was thought to be in the incubation period of poliomyelitis, chickenpox, or any other viral disease. An x-ray film of the chest was taken and a tuberculin test done before initiating therapy. If the tuberculin test showed positive results isoniazid 10 mg. per kilogram in divided doses was given twice daily. Blood pressures were taken daily. If a diastolic pressure of more than 100 was recorded on several occasions, the steroid was discontinued. The patients were on a regular ward diet with the omission of salty foods, such as ham, fish, and peanuts. Biochemical determinations were repeated every one to two weeks. Antibiotic therapy was given only in the presence of infection.

Methylprednisolone was given in dosages of 0.5 to 1 mg. per pound of approximate dry weight. The drug was given daily in divided doses every six or eight hours for twenty-one days. If during this period diuresis occurred and proteinuria subsided, methylprednisolone was omitted for four days and then resumed at the same dosage on three consecutive days of each week and again omitted the following four days. Each child was observed for at least three weeks on intermittent therapy in the hospital to make sure that the urine remained essentially protein-free and that the abnormal biochemical findings were returning to normal.

Results

All the patients lost their edema. As shown in Table II, the urine in every instance became protein-free and the albumin-globulin ratio normal, and the cholesterol values decreased markedly or became normal. In 3 of 4 patients (Cases 2, 3, and 8), there was a marked rise in gamma globulin after therapy. In Case 1 no change was observed.

In only 1 patient (Case 5) was the complement reduced below the normal level before therapy. After therapy, parallel with clinical improvement, the complement rose in this child as well as in 4 others (Cases 2, 3, 6, and 7). In 2 patients (Cases 1 and 4) there was no change in complement titers subsequent to therapy.

Uptoward reactions occurred in only 1 child (Case 5). After three weeks of daily therapy this patient's urine was protein-free, and methylprednisolone was discontinued. The next day this child complained of pains in his legs. His Achilles tendons were spastic so that he walked on his toes. A transitory bilateral ankle clonus was present. These symptoms subsided in two days. A week later, when it was planned to start him on intermittent therapy, it was found that he had 4 plus glycosuria. Methylprednisolone was not resumed. This patient moved out of town and was placed under the care of another physician.

Conclusion

Nephrotic children gave an excellent response to the administration of methylprednisolone. Intermittent therapy with this steroid, given three consecutive days of each week and then omitted for four days, has also proved effective.

Addendum

Since this paper was submitted for publication, 5 more children have received methylprednisolone with excellent results in 4 patients. In the fifth child an initial diuresis with a weight loss of 7 pounds was obtained. However in this patient intermittent therapy failed to control proteinuria despite progressively increasing dosage.

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If a man does not know to what port he is steering, no wind is favorable to him.—SENECA

The State of Public Relations

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I HOPE that those of you who are engaged in public relations, and the press representatives who are thoroughly familiar with its press relations and publicity aspects, will bear with me while I tread some familiar ground.

The Rise of Public Relations

The rise of public relations in our time reflects a growing awareness of the fact that the management of human relationships is the most important single factor in the success of nearly any group effort you can name. This was expressed in the words attributed to Abraham Lincoln: "Public sentiment is everything. With it, nothing can fail; without it, nothing can succeed. He who molds public sentiment goes deeper than he who enacts statutes or pronounces decisions. He makes statutes or decisions possible or impossible to be executed."

If we accept this statement, and I think we must, it follows that it is simply good business to manage human relationships with as much understanding, skill, and wisdom as we can bring to the job. In short, good public relations is good business, not only for companies which make products or sell services, but also for group efforts generally.

Actually, one of the few really new things about public relations is its name. The philosophy of public relations goes back at least as far as the first caveman who abandoned the time-honored practice of wooing a mate with a mallet and chose instead the revolutionary method of behaving himself and seeing to it that his intended heard about his virtues.

Still, it is only within our lifetimes that public relations has come to be regarded as a vocation requiring certain minimum talents and special training. It is well within the memory of most of us that public relations has earned its way in our social and economic order by delivering demonstrable results not only in business and industry, but also in education, in professional societies, and associations—in short, in virtually all fields of organized endeavor.

In citing the rise of public relations, I need hardly point out here that members of some of the older and more respected professions, notably law and medicine, tend to view public relations with a somewhat jaundiced eye. There are many reasons for this, of course, but I think one reason is a misapprehension about the true function of public relations which is to predispose people to take actions to help an organization.

A Definition of Public Relations

Nearly all business dealings and most professional relationships call for a yes or no answer. A company, in selling its products, negotiating a union contract, or asking a city council to modify a zoning ordinance is seeking specific decisions and actions. Your own State Medical Society, in asking a legislator to sponsor a particular bill, or urging its members to use the designation "M.D.," also hopes for a specific action. But most of the day-to-day activities of a public relation program call for no such direct response. These activities seek, rather, to predispose the customer, employe, or city councilman or, in your case, the legislator or medical society member, to act favorably when there is a chance to do so.

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By identifying an organization with his interests from the time he first comes in contact with it, a public relations program tries to establish in his mind a reasonable motive for favorable future action.

Thus it can be seen why the results of a public relations program often cannot be measured directly, since its impact usually shows up in identifiable form only in connection with specific appeals calling for a yes or no answer.

Often, too, good public relations is reflected in the absence of tangible developments. For example, the passage of a bill licensing persons to practice certain of the healing arts without a medical education would, I am sure, create more than a mild stir in your own ranks. But the fact that the work of your State and county medical societies and the American Medical Association resulted in the legislators' refusing to consider such a measure would be a negative effect resulting, however, from a very positive public relations program. So, as the success of a driver may be measured partly by the absence of accidents, and the success of the Salk vaccine may be measured by the drop in polio cases, the success of a public relations program may be gauged to some extent by the absence of hostile actions by people who are important to the organization.

I suppose the simplest definition of public relations ever devised is the hackneyed one with which I am sure you are all familiar: "Doing good and getting credit for it." Oversimplified as this definition is, at least it has the merit of stressing a cardinal rule of public relations which I am afraid the medical profession may have been prone to overlook in the past. This rule states that simply "doing good" does not in itself constitute a public relations program.

Public relations operates on the principle that the success of any enterprise depends, first, on the degree to which the enterprise operates in the public interest and, second, on the degree to which people recognize its contribution to their welfare and reward it with their support. It is an axiom of public relations that unless people know of your deeds and approve of them, you may find yourself winding up the affairs of the most benevolent enterprise that ever failed for lack of public support.

Thus the goal of public relations is not virtue for virtue's sake, nor is it merely popularity. The goal is, rather, to get people to make decisions and take actions which will help an organization. The end results of good public relations are favorable operating conditions for an enterprise resulting from such expressions of approval.

Elements of a Good Public Relations Program

Let us look now at the elements that make up a public relations program.

First, the foundation-stones of public relations are the policies which govern an organization's actions, and its building blocks are the actions themselves. These are the raw materials with which the public relations man always works.

The second element, of course, is communication. The communications tools of public relations are the means by which an organization transmits facts about itself, its policies, its people, and its actions to persons inside and outside its ranks. The best known tool, of course, is publicity—so well-known, in fact, that it is often thought to be synonymous with the whole public relations process. Publicity bears much the same relationship to public relations as the stethoscope bears to the practice of medicine. Publicity is only one instrument, although an effective one, through which public relations accomplishes one of its functions, that of communication. Other methods are by booklets, speeches, displays, exhibits, films, and others.

The third and final element of public relations involves another aspect of the communications function. This aspect is to learn and relay back to management everything which bears on the organization's relations with the general public and its special publics—all the reports, opinion survey findings, even rumors which indicate where the organization stands in public opinion. These are the yardsticks which measure how well the organization is meeting its responsibility to operate in the public interest, and how well it is getting its story across to the people whose sentiments, as Lincoln put it, make management's decisions possible or impossible to be executed.

The Role of Public Relations in Medicine

Taking these three elements of public relations, let us see how they might apply to medicine's public relations.

I am aware, of course, that the medical profession tends to dissociate itself from the commercialism of the business world and from the pursuits and technic which one normally associates with business. One of these pursuits is public relations. Actually, its principles and most of its technics apply as well to medicine as they do to manufacturing or banking. Therefore, while the thought may dismay some doctors, the jump from public relations for business to public relations for medicine is not as great as many people think.

The top management of any organization, whether it is a manufacturing company or a professional society, sets the policies which govern its relations with people. The House of Delegates of your organization met at this convention to shape or revise the policies which will guide the Society's activities throughout the coming year. These policies will be the foundation stones of your public relations program.

Outstanding authorities are expressing views on medical, legal, and other matters which bear on the welfare not only of the medical profession, but also of every American. As a group, you take stands on issues such as socialized medicine, the Forand Bill, medical care for the aged, and other proposed measures which affect you and your livelihoods directly.

The level at which public relations thinking enters the deliberations of any organization's policy-making group and its day-to-day operating decisions has a marked effect on its ultimate success or failure. This is as true for a medical society as it is for a manufacturing concern, maybe even more so.

The Duties of a Public Relations Director

Public relations is a staff function—that is, it does not set policy for an organization, nor does it make operating decisions outside its own area. These are the prerogatives of management. But in the consideration of policies and operating decisions which affect human relationships, the skilled public relations man can make an important contribution to any organization.

I do not know the extent to which your own public relations people are brought into your deliberations on these matters. But I will say that unless the guidance of those who are charged with administering your public relations programs has been sought and applied in establishing these policies and taking these actions, an essential element of a sound public relations program is missing.

A fact not realized by many managements is that unless the voice of the person responsible for public relations is heeded in shaping policy, that organization does not have a public relations director. Whatever else he may direct—publicity, promotion, and so forth—he is not in charge of public relations. For if his counsel is not sought in such decision-making, what remains of the public relations function is merely the mechanical act of communication. The sad fact is that the chief executives of many organizations who think they have public relations directors actually have only couriers whose job is to deliver someone else's messages.

One of the chief duties of a public relations director, then, is to do all he can to see that the policies and actions of his organization reflect an honest regard for the rights and the welfare of all the people with whom the organization deals or whose interests it affects. In business this is often called the "corporate conscience" function of public relations. In a professional society such as yours, it is sometimes called the "institutional conscience" function. Both terms are too pretentious for my taste, but at least they are descriptive.

In saying that public relations people should serve as a sort of institutional conscience, let me make it clear that I do not impute to my own calling any stronger moral fibers than those possessed by the management of any reputable organization. I do say it is the public relations man's job to know more than anyone else in his organization about the impact of its actions in the field of human relations and to do everything in his power to see that this knowledge is applied with all the courage and wisdom that can be mustered.

Communications Function

Now, what about the communications function of public relations as it applies to your Society? Because your policies, your actions, and the issues at stake are important not only to you, but also to nearly 180 million other Americans, the words spoken and the actions taken at this convention are reported in the nation's newspapers; in trade, technical, and professional publications; and on television and radio. Thus your executives, your committees, and your speakers are, in effect, talking to millions of persons outside these convention rooms whose views are affected one way or another by what is said and done here.

And this, of course, is publicity. I am aware that in the lexicon of many medical men "publicity" ranks somewhere between "chiropractic" and "socialization." If the professional men of my acquaintance are any criterion, and I am sure they are, the term "publicity" conjures up for many of you visions of advance men for the circus, cheap stunts, and Broadway types in checked vests. In view of this, I would be interested to know how many distinguished speakers at this convention will resist the impulse to leaf through the newspapers to see if their remarks are reported and how much space they get. So, if the term "publicity" offends anyone, naturally he is free to call it "news coverage." I have been a little amused on occasion to find people who are unalterably opposed to "publicity" as something which is, at least, undignified and probably downright disreputable, who are entirely in sympathy with what they call "stories in the newspapers" about business or professional matters in which they are interested. The distinction is a little like that of the old-time anti-saloon leaguer who would not dream of touching alcohol, but who found certain fortified tonics for ladies' complaints really quite delightful.

Without this coverage of your meetings by the press, whose interest reflects that of its own audiences, you would be talking only to yourselves. And while you might be "doing good," you would be getting precious little credit for it, at least among the millions of Americans on whose good will your livelihoods depend.

I need hardly mention here that the story to be told must be a full and honest one. Unless an organization's deeds reflect clearly a regard for the legitimate self-interests of the people they affect, no efforts to hide them or twist them into a semblance of respectability can create a lastingly favorable impression in people's minds. And unless public relations functions are viewed as a permanent, integral part of an organization's operations which are designed to build favorable public attitudes throughout its lifetime, these functions should be recognized and labeled for what they are—promotion, not public relations.

Leo Brown, Director of Communications for the American Medical Association, touched on this when he told the Michigan Academy of General Practice last February:

"We find the medical profession becoming increasingly public relations-minded. So much that all too often physicians and medical societies are doing things because they are good public relations. This approach is fallacious. Public relations is not the deed, but the resultant of the deed. How many times have you heard a doctor say we should do this or that because it is good public relations? The motivation behind any activity of organized medicine should be measured in terms of whether or not it is good for the public, rather than whether it is good public relations for the profession. Effective public relations is always sincerely motivated, and is the interpretation of the deed rather than the deed itself." I think Mr. Brown's point is well taken.

As for advertising, which is often confused with public relations, it might seem too elementary to mention that the two are by no means synonymous if it were not for the fact that the nature of your vocation gives this distinction special meaning for you and your professional groups.

Advertising, of course, is the means by which an organization conveys information about itself and its products or services to the public through paid space in print or paid time on the air. The ban on advertising, as it relates to the medical profession, is so familiar to you and is so charged with high-voltage ethical implications, that I mention it here only to point up its corollary. Today, more than ever, your professional groups need to win public support for your views on issues which are increasingly important, even crucial, to medicine. And barred as you are from reaching the public through advertising, you need to seek every other available means to tell your story, convincingly and often, to win the active public support which is essential to your cause. Here is where an energetic public relations program is about the only course open to you as an organized group effort.

Like it or not, medicine not only has many of the aspects of big business today, but it *is* big business. I am told that the gross income of New York State's 31,000 doctors of medicine is somewhere in the neighborhood of $480,000,000 a year. Anyone who doubts that this is big business should be interested to note that the gross annual income of your State Society's members exceeds that of the National Cash Register Company or the Baltimore and Ohio Railroad.

I might add that the average company grossing that amount spends somewhere between a quarter and half a million dollars a year on public relations. Many spend well over half a million. And applying the rule-of-thumb of 3 per cent of gross income for advertising, such a company probably would spend about $14,400,000 on advertising its products or services.

Since Madison Avenue is off limits to the medical profession, it would seem to make sense for a society such as yours to direct a substantial portion of the money which a company normally would spend on advertising into expanding its public relations activities.

I would like to touch briefly on one matter which is of burning interest to all of you—that of socialized medicine. In relation to this matter, I would like to take a brief look at the third element of medical public relations, namely, where the profession stands today in public opinion.

As you are aware, the medical profession rates very high in public esteem. A survey with which you are no doubt familiar, conducted last year for the American Medical Association by the Opinion Research Corporation on "The Public Relations of Medicine," showed that doctors rate highest in public favor of 16 major occupational groups. Significantly, the next three groups ranking high in esteem were also in the field of health—nurses, druggists, and dentists. In another study conducted two years ago for the Public Opinion Index report on "The New Drive on Science and Education," doctors rated highest among five occupational groups in the criteria which the average American considers important in choosing a career. They far outranked high school teachers, stood well above corporation executives and scientists, and even outranked actors. And finally, among the persons mentioned in the Gallup Poll's 1959 list of the 10 most admired men in the world, two doctors, Albert Schweitzer and Thomas Dooley, were third and seventh, respectively.

Some persons might be tempted to conclude from this that medicine's public relations is such that the profession has nothing to fear from the forces of public opinion in this country. However, I could not agree with that. If anyone were to assume that the high esteem in which doctors are held by the average citizen is enough in itself to still the cry for socialized medicine and other changes which are against your interests, I would have to say emphatically that I think he would be wrong.

Let us look at some of the reasons.

Need For a Stronger Medical Public Relations Program

You are all too familiar, I am sure, with the old saying that public relations in medicine begins in the doctor's office and often ends there, at times abruptly. This is no longer considered amusing. In fact I think it underscores an increasingly significant trend with which doctors should be deeply concerned.

Favorable as the AMA survey was, it revealed some disturbing facts about the public's image of those who practice medicine. While doctors generally are rated high in such characteristics as understanding, warmth, and friendliness, there still remains a substantial group of Americans, 11 per cent, who think that doctors sometimes do not care about people's feelings. A small but significant segment, 4 per cent, think that doctors are usually cold and distant. And while more than half of those interviewed in the AMA survey said they thought doctors were sincerely devoted to their work and liked to serve all kinds of people, 7 per cent were convinced that doctors preferred to serve wealthy patients. Significantly, only one in five of those interviewed said they thought doctors were completely ethical.

As for service, nearly one fourth of the people interviewed said that doctors were too busy to give each patient full attention, and 15 per cent said that doctors often made people wait unnecessarily for service. On the matter of finances, it is interesting to note that sentiment is pretty evenly divided on whether doctors' fees are fair. While 24 per cent thought that doctors charged reasonable fees for their services, almost as many, 22 per cent, said that doctors often charged much more than one expected. Over one-tenth thought that doctors were mostly interested in making money.

Among those who are least favorably disposed toward doctors, the chief complaints are poor service and doctors' preoccupation with money. I myself have heard an increasing number of complaints about the disappearance of something very special in the doctor-patient relationship over the past decade or two. This is a sort of rapport, the euphoric feeling on the part of the patient that comes from believing that the doctor is really interested in his aches and pains. It seems to me that more and more persons comment these days that they do not really think that doctors care very much what happens to them as people, as distinct from the routine exercise in diagnosis and treatment. If this bothers quite a few persons, and apparently it does, I am afraid that very soon it is going to bother doctors a lot more than it does their patients.

If it is argued that socialized medicine would destroy the good services of private practice and the warm, personal doctor-patient relationship, what happens to these arguments when people feel that doctors give poor service and are more attentive to their dollars than their diseases? If we agree that impersonal medicine is bad to begin with, it is going to be hard to convince a lot of people that impersonal private medicine is any great improvement over impersonal government medicine.

As you know, the proposals for the socialization of medicine assume more and more guises these days. During a visit to Colorado I noticed a report in a Denver paper that the Governor was urging that the state demand several years of medical service in state institutions by all doctors who have received state aid during their medical training. This, the Governor argued, would help to solve the state's shortage of trained specialists, particularly in mental institutions. He did suggest, generously enough, that such doctors should get some time off from their state duties in their second or third year to start building private practices.

It is obvious that this particular battle will be a long and tough one. And it is only one of the many important battles which medicine will be waging in the months and years ahead.

Conclusion

It seems to me that there never will be a better time than the present for the medical profession to take careful stock of its assets and liabilities in the fight against socialized medicine and other trends which threaten its livelihood and our American way of life. Certainly what the doctors do as a group at the county, state, or national levels will be useful and important. But I do not believe that a group effort will be nearly as effective as what doctors do as individuals to strengthen the image of the physician as a solicitous friend who really cares whether his patients pull through their "funny" pains in the chest.

Next, I would suggest that the medical profession give more attention to the urgent need to tell its story, fully and repeatedly, to the American people and to such special groups as patients, suppliers, the pharmaceutical industry, druggists, and to all levels of government. It is a vitally important story, and the public relations programs of your professional organizations provide an effective means to tell it in such a way as to build public confidence in the medical profession and support for its objectives.

Finally, I would like to suggest that you who are already active in medical public relations, or who are at least in sympathy with its aims, seize every chance to stress the need for a more energetic program to those of your colleagues who are less enthusiastic. I would urge you to do all you can to make them stop thinking of public relations in terms of press-agentry and headline-hunting, or backslapping and drink-buying. I hope that you will try to get your colleagues to view public relations as a continuing mission of responsible citizenship, individually and collectively, coupled with a vigorous program to tell the story of medicine's problems and people and its achievements and hopes, as fully and frequently as possible, to all people who will listen. Public relations is fully as capable of delivering effective results in its own field as doctors are in their respective fields.

If I have sounded overly gloomy in evaluating the present state of affairs in this respect, I would like to counteract it by saying that I think great strides have been made in public relations for medicine. Certainly this Session on Public Relations is an eloquent testimonial in itself to the growing awareness of medicine's need for a more active program to win public support.

71 Broadway, New York 6

Happiness is a form of courage.—Holbrook Jackson

Encirclement of the Incompetent Cervical Os

A Simplified Technic

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A SURGICAL correction of the incompetent cervical os has been of interest to obstetricians since Lash[1] first called attention to it in 1950. Shirodkar [2,3] of Bombay devised an operation that could be performed during pregnancy. McDonald[4] of Melbourne reported a series of 70 cases in 1957. Barter[5] introduced the procedure to this country and reported a series of cases in 1958.

The operation consists of a submucous suture encircling the cervix at the level of the internal os. Various suture materials have been used including silk, nylon, ox fascia, mersiline tape, and steel wire. In this series of 24 cases a dacron suture has been most satisfactory.

Procedure

A heavy braided dacron suture (Deknatel) attached to a large curved atraumatic needle has simplified the procedure greatly. The anterior lip of the cervix is grasped with a ring forceps. A 2 cm. transverse incision is made at the bladder reflexion. The bladder is dissected from the cervix above the level of the internal os as determined by a finger in the cervical canal. The posterior lip of the cervix is then grasped and the lateral vaginal wall is retracted. The needled suture is inserted under the vaginal mucosa at the angle of the incision and passed clockwise. It is brought out at four or five o'clock and is reinserted in the same hole. With a finger in the cervical canal to protect the membranes and to serve as a guide, a deep bite is taken in the cervical tissue of the posterior lip. The needle is brought out at seven or eight o'clock and again is reinserted in the same hole. The circle is completed by bringing the needle out at the opposite angle of the anterior incision. The suture is then tightened and tied in a square knot. A second encircling suture is placed 2 mm. below this. A silk suture is placed on each side of the knots to hold the ends of the heavy sutures flat and to anchor them to the cervix. The incision is then closed with fine catgut completely covering the knots.

This needled suture makes the procedure less traumatic and quicker. Fifteen or twenty minutes is the usual time required. The attached needle makes it possible to take a deep bite into the cervical tissue posteriorly. It is therefore not necessary to use an anchoring suture at this point. If the heavy suture is just below the mucosa, it may slide down to the endocervical junction to cut through as the intra-uterine pressure increases. The diameter of the suture is sufficient to make it palpable if it becomes necessary to cut it to permit vaginal delivery.

In this series of 24 cases,* this suture was used in 15 cases. Mersiline tape was used in 6 cases, nylon covered with polyethylene tubing in 2 cases, and silk alone in 1 case.

The diagnosis in these cases was based on the history of previous late abortions with palpable and visual evidence of painless cervical effacement and dilatation during the pregnancy under observation or during the previous pregnancy. One patient was operated on when she was not pregnant. The other operations were done between the fourteenth and the twenty-eighth week of gestation.

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* Twenty-two cases, service and private, were from the Woman's Hospital Division. Two cases were from other hospitals.

A painless passage of an 8-mm. Hegar's dilator through the cervix is accepted by some obstetricians as evidence of cervical incompetence. Others find a patulous cervix not uncommon in parous women with no history of abortion. An x-ray investigation with a bag of opaque solution in the uterine cavity and cervix has been used as a diagnostic aid by some. Bergman of Sweden uses an intra-uterine balloon attached to a manometer. As this is withdrawn through the cervix, the pressure normally rises. A lack of rise in pressure denotes cervical incompetence.

If the patient is pregnant, the diagnosis must be based on the history or observation of a dilated cervix during a previous pregnancy as well as the frequent observation of the cervix during the present pregnancy.

Results

Of these 24 cases, 9 were successful. Eight patients were delivered by cesarean section, leaving the suture in place. One patient was delivered vaginally at term after removal of the suture. Three patients were undertermined, 1 at twenty-seven weeks gestation and 1 at thirty weeks. The third patient was not pregnant.

Four patients previously had cervical repair as advocated by Lash.[1] One of these had aborted following the Lash operation. The other 3 showed evidence of cervical dilatation. Two of the successful cases were in this group.

Ten patients were operated on after the dilatation was from 1 to 3 cm. In 7 of these patients the membranes were bulging beyond the external os. None of these cases had a successful outcome.

In 2 patients the suture cut through on the posterior lip at the endocervical junction as the patient aborted. The loop remained attached to the anterior cervix and was easily removed. Two patients became infected after rupture of the membranes. The suture was removed, the patient aborted, and the infection subsided with antibiotic therapy. In the other cases the sutures were removed when painful uterine contractions or bleeding were evident.

This 37 per cent success rate is lower than what has been reported in other series.[6-10] The first cases were poorly selected. The cervices were dilated with the membranes bulging beyond the external os. One patient was probably in labor at the time of the operation. None of these cases was successful.

The 8 successful cases were sutured before cervical dilatation. One case showed partial effacement of the cervix. All cases were done between the fourteenth and twenty-fourth week of gestation.

Summary

Braided dacron on an attached needle is a simple and satisfactory suture for the encirclement of the incompetent cervix. This operation is most successful when it is performed before the dilatation of the cervix.

121 East 60th Street, New York 22

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Tuberculosis Case Finding Among Young People

HENRY H. SHULTZ, M.D., ALBANY, NEW YORK

(*From the New York State Department of Health*)

THE notable changes that have occurred in the tuberculosis problem in the United States over the past few decades are well known. The mortality and morbidity rates, while varying from place to place, have shown a continuous downward trend, although the death rate has declined more rapidly than the case rate. Improved socioeconomic conditions, better public health practices, the advent of specific chemotherapy, and the development of definitive surgical procedures all have played a part in this changing picture. Case finding, the cornerstone of tuberculosis control, also has undergone marked changes over the years as new technics have been developed and old ones rediscovered.

Following the development of photofluorography, the technic of taking a small roentgenogram of the chest by photographing the image on a fluoroscopic screen, it became possible to make x-ray films of the chests of large numbers of people at low cost. It was thought that if the entire population of a community received chest x-ray examinations, all the previously unknown cases of tuberculosis would be discovered and the disease brought under control in a short time. This concept soon proved to be impractical. Since attendance at a mass survey was voluntary, many people refused chest x-ray examinations for a variety of reasons, and indeed, the very people who most needed roentgenography often stayed away. Financial considerations also limited the scope of such operations, and finally some communities rejected the whole idea of mass chest radiography. So almost from the start, mass radiography was in a sense selective in its application, in that the groups most often surveyed were those easiest to reach. These were often the so-called captive groups—school and college students, industrial and institutional populations and the like.

For many years it was evident that a marked shift has occurred in the prevalence of tuberculosis to the older age groups, and particularly to males. No longer was tuberculosis primarily a disease of young people, particularly women. It was now apparent that the "seed bed" of tuberculosis was the older male, and that mass case-finding technics had to be modified accordingly.[1,2] Consequently, it seems timely to review and re-evaluate the results of case-finding programs in upstate New York with particular emphasis on the yield in various age groups.

Materials and Methods

The Tuberculosis Control Program of the New York State Health Department has over the years conducted large-scale chest x-ray surveys of various communities in upstate New York as well as sponsoring the routine chest x-ray examinations of admissions to many general hospitals.[3] In 1955 the hospital x-ray program was extended to include general and chronic disease hospitals in New York City. Since 1952, x-ray films have been made yearly of approximately 200,000 individuals in the survey program, and in excess of 250,000 individuals yearly in the hospital program. The yield from the two programs has been analyzed by three broad age groups and by diagnosis, as can be seen from the tables. These data are based on the original tentative diagnosis from the survey film alone, and do not reflect the follow-up diagnosis. Although it is recognized that the initial diagnoses are not strictly accurate and cannot be used as a true measure of the

TABLE I.—Community Survey Program in Upstate New York

Year	Age Group (Years)	Number X-rayed	Probably Active Tuberculosis Number of Cases	Probably Active Tuberculosis Rate per 1,000 X-rayed
1952	15 to 24	40,065	15	0.4
	25 to 34	38,931	23	0.6
	35 and over	88,677	133	1.5
1953	15 to 24	38,650	19	0.5
	25 to 34	32,387	32	1.0
	35 and over	81,101	103	1.3
1954	15 to 24	54,431	20	0.4
	25 to 34	63,528	37	0.6
	35 and over	142,133	190	1.3
1955	15 to 24	47,669	19	0.4
	25 to 34	47,694	43	0.9
	35 and over	127,084	190	1.5
1956	15 to 24	52,298	17	0.3
	25 to 34	45,611	21	0.5
	35 and over	124,105	278	2.2
1957	15 to 24	49,655	20	0.4
	25 to 34	52,378	34	0.6
	35 and over	129,847	237	1.8
1958	15 to 24	32,976	17	0.5
	25 to 34	37,810	36	1.0
	35 and over	103,995	166	1.6

TABLE II.—Upstate General Hospital Admission Program

Year	Age Group (Years)	Number X-rayed	Probably Active Tuberculosis Number of Cases	Probably Active Tuberculosis Rate per 1,000 X-rayed
1952	15 to 24	49,543	36	0.7
	25 to 34	58,500	80	1.4
	35 and over	115,781	331	2.9
1953	15 to 24	54,390	44	0.8
	25 to 34	65,125	91	1.4
	35 and over	129,611	415	3.2
1954	15 to 24	55,366	23	0.4
	25 to 34	68,408	76	1.1
	35 and over	138,644	354	2.6
1955	15 to 24	60,149	23	0.4
	25 to 34	71,665	64	0.9
	35 and over	147,550	373	2.5
1956	15 to 24	60,893	21	0.3
	25 to 34	71,948	39	0.5
	35 and over	149,330	284	1.9
1957	15 to 24	59,842	25	0.4
	25 to 34	69,536	35	0.5
	35 and over	145,062	254	1.8
1958	15 to 24	54,704	13	0.2
	25 to 34	62,471	31	0.5
	35 and over	139,368	168	1.2

TABLE III.—New York City General Hospital Routine X-ray Program

Year	Age Group (Years)	Number X-rayed	Probably Active Tuberculosis Number of Cases	Probably Active Tuberculosis Rate per 1,000 X-rayed
1955	15 to 24	3,672	8	2.2
	25 to 34	4,171	19	4.6
	35 and over	8,601	100	11.6
1956	15 to 24	24,215	72	3.0
	25 to 34	25,782	153	5.9
	35 and over	52,936	597	11.3
1957	15 to 24	51,590	114	2.2
	25 to 34	55,788	183	3.3
	35 and over	132,838	1,030	7.8
1958	15 to 24	74,972	163	2.2
	25 to 34	68,313	264	3.9
	35 and over	162,141	1,234	7.6

prevalence of disease, nevertheless, since there was uniformity over the years in the original interpretations, it is felt that the tentative diagnoses adequately serve to indicate general trends.

In addition, the newly reported cases of respiratory tuberculosis in upstate New York are analyzed by the same broad age groups for the years 1952 to 1958 inclusive.

Results

Tables I and II summarize these data for the years 1952 to 1958 inclusive for the two upstate programs. Table III shows the same data for hospitals in New York City that routinely make x-ray films of the chests of inpatients and outpatients, but only for the years 1955 to 1958.

Examination of these tables reveals that, in general, the rates for tuberculosis, especially probably active tuberculosis, are very low in the fifteen to twenty-four-year age group, and considerably higher for the other two groupings. Also, the rates are considerably higher in the hospital program in New York City than in upstate New York. This is in accord with the common knowledge that there is far more tuberculo-

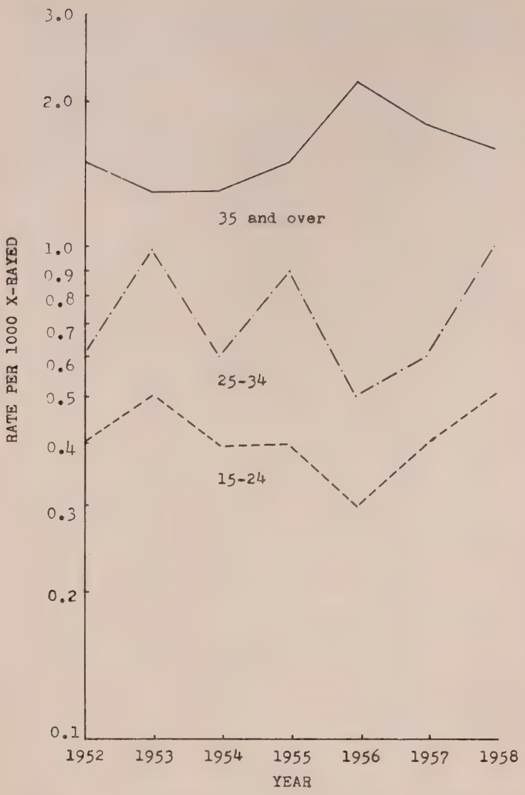

FIG. 1. Community survey program: Rates for probably active tuberculosis for a seven-year period, by various age groups.

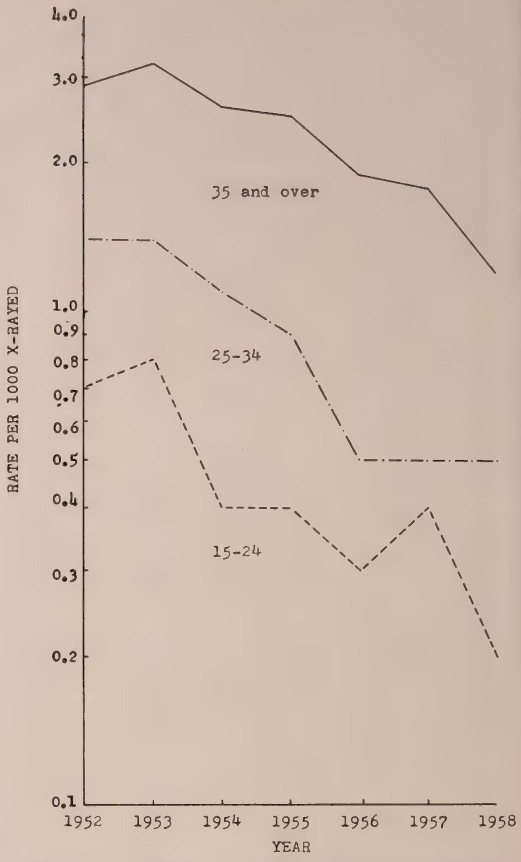

FIG. 2. Upstate hospital admission program: Rates for probably active tuberculosis for a seven-year period, by various age groups.

sis in large cities than in smaller communities. Since 1952 the rates have changed little for the survey program, while the rates in the upstate hospital program have shown a steady decline. The rates for New York City hospitals have shown a small decline. However, the New York City rates for each age group are far higher than in either upstate program, and the rates for the fifteen- to twenty-four-year age group in New York City are greater than those for all age groups combined for the two upstate programs. Figures 1, 2, and 3 show, in graphic form, the rates for probably active tuberculosis in the three programs for the three age groups for the time periods indicated. Additional evidence is afforded by the results of follow-up of suspected cases screened by the upstate hospital program for the year 1958. The yield of new, active, reportable tuberculosis was 0.1 per 1,000 for individuals under the age of twenty-five and 0.6 per 1,000 for those twenty-five years of age and over.

For comparative purposes, it is interesting to note the number of newly reported cases of active respiratory tuberculosis again analyzed by the three broad age groups. Table IV and Figure 4 show that the number of cases has declined in each age group since 1952. The greatest decline, 61.5 per cent, occurred in the twenty-five- to thirty-four-year age group. The fifteen- to twenty-four-year group showed a reduction of 51.9 per cent, while the group thirty-five years and over declined by 39.6 per cent. In terms of numbers of reported cases, the lowest is the fifteen-to twenty-four-year group.

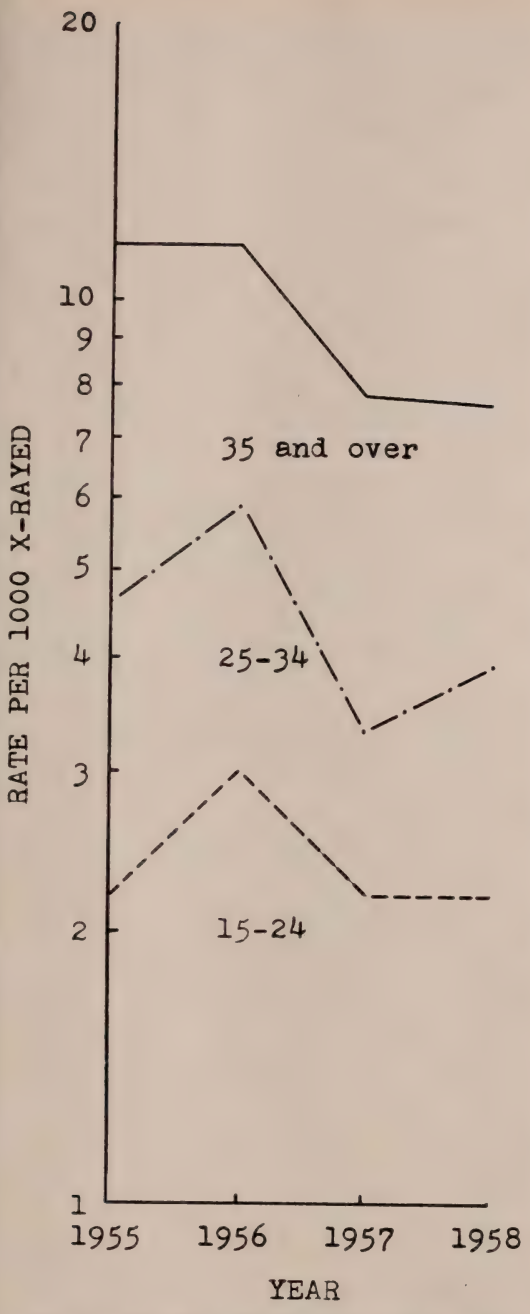

FIG. 3. New York City hospital program: Rates for probably active tuberculosis for a four-year period, by various age groups.

In this connection, the prevalence of tuberculous infection in the younger age groups is of considerable interest. During 1949 to 1951 Palmer *et al.*[4] tested with tuberculin 120,000 white men and women

TABLE IV.—NEWLY REPORTED CASES OF RESPIRATORY TUBERCULOSIS IN UPSTATE NEW YORK, BY AGE, 1952–1958
NUMBER OF CASES AND RATES PER 100,000 POPULATION

Age (Years)	1952 Number	1952 Rate	1953 Number	1953 Rate	1954 Number	1954 Rate	1955 Number	1955 Rate	1956 Number	1956 Rate	1957 Number	1957 Rate	1958 Number	1958 Rate	Per Cent Decrease 1952–1958 In Number of Cases	Per Cent Decrease 1952–1958 In Rate
All ages	4,098	55.6	3,769	49.9	3,518	45.5	3,260	41.1	2,868	35.1	2,497	28.9	2,381	27.0	41.9	51.4
15 to 24	332	36.2	365	39.9	368	40.4	312	34.1	252	26.4	222	22.1	208	21.3	37.3	41.2
25 to 34	745	68.1	684	62.1	626	56.4	504	45.1	401	36.3	358	31.8	287	24.3	61.5	64.3
35 and over	2,530	74.4	2,360	67.7	2,224	62.3	2,120	58.1	1,899	50.5	1,579	40.1	1,527	38.8	39.6	47.8

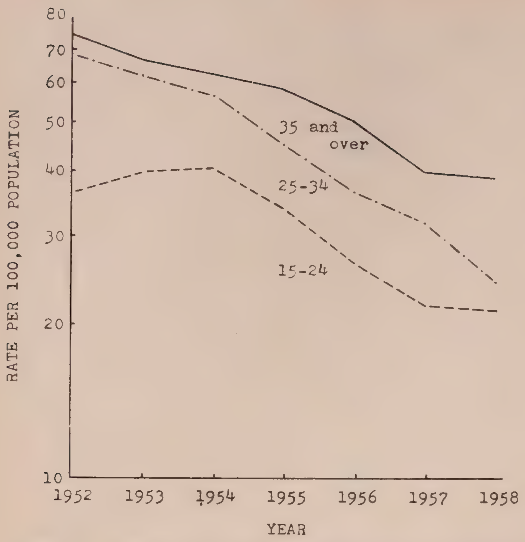

FIG. 4. Rates of newly reported cases of respiratory tuberculosis in upstate New York by age, 1952 to 1958.

seventeen through twenty-one years of age from many geographic areas of the United States. They found that the average frequency of reactors was 8.8 per cent. A small tuberculin survey conducted by the Tuberculosis Control Program of the New York State Department of Health in one of the State Teachers Colleges in 1958 revealed the average rate of positive reactors was 8.3 per cent among the students.[5]

For the past several years (until 1959) the Health Department has offered its chest x-ray survey services to various units of the State University. Roentgenograms were made of approximately 11,000 college students each year, and only one new active case of tuberculosis was discovered yearly by this method.

Comment

In community as well as hospital admission procedures, the policy has been to make every effort to take x-ray films of the chests of all individuals fifteen years of age or older. In view of the relatively low yield in the fifteen-to twenty-four-year age group, consideration should be given to discontinuing the routine x-ray filming of individuals in this age category. This is not to say that other case-finding efforts should be abandoned. Reference to Table IV will show that appreciable numbers of cases are still found among young people. However, it is evident that few of these cases are found by routine radiologic technics, since the survey yield, as has been shown, is so low. It seems likely that the majority of the new cases among young people are discovered in the course of examining contacts of known cases of tuberculosis and individuals with symptoms referable to the lungs.

Since 1956 when the National Academy of Sciences published its conclusions about the genetic effect of ionizing radiation, the subject of radiation hazards has assumed much importance in the minds of the medical profession and the laity. Although little is actually known about the genetic effects of ionizing radiation in man, it seems to be generally agreed that gonadal dosage should be kept to a minimum in persons of child-bearing age.

The individual gonadal dose received from a properly taken chest x-ray exposure with properly shielded equipment is extremely small. No person should be denied the benefits of such diagnostic x-ray examinations. However, since all radiation is considered harmful, and since its effects are thought to be cumulative, it is apparent that unnecessary exposure to ionizing radiation should be avoided, especially in young people.

The genetic danger of radiation is still speculative. The fact remains that in upstate New York in 1957 over 100,000 individuals under the age of twenty-five were routinely given chest x-ray examinations. It seems illogical to screen, by x-ray films, so many individuals in whom the rate for clinically significant tuberculosis is so low, and of whom less than 10 per cent can be expected to be tuberculin-positive. It would seem wiser to reserve x-ray examination of this age group for those individuals found to react to the tuberculin test.

Radiographic screening should be limited to older individuals and special groups where the tuberculosis rates are known or expected to be high.

Summary

The results of screening programs for tuberculosis in New York State have been analyzed by three broad age groups for a seven-year period. Although the cases are defined in terms of initial screening results which are not a true measure of case-finding yield, the data as presented do give an indication of screening trends. The analysis shows that the yield in the youngest age group, fifteen to twenty-four, is relatively low, except for general hospital admissions in New York City. Since the prevalence of tuberculous infection is so low in this age group, and since the genetic effect of ionizing radiation may be of importance in young people, consideration should be given to discontinuing roentgenographic screening of individuals in the younger age groups and limiting such methods to certain groups of older people where it is known or expected that tuberculosis is more prevalent.

84 Holland Avenue

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ANNUAL CONVENTION

Medical Society of the State of New York
War Memorial Auditorium, Rochester

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
340 East 72nd Street
New York 21, New York

The Annual Convention will be held May 8 to 12, 1961, at the War Memorial Auditorium, Rochester.

No applications can be considered after January 1, 1961.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

Group II: Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of facts.

Parent Education Program for Parents of Deafened Preschool Children

LEWIS W. BARTON, M.D., EDWARD W. IANDOLI, PH.D., AND PAULINE K. WINKLER, M.A., ALBANY, NEW YORK

(From the Conservation of Hearing Center, Albany Hospital)

THE preschool years of a deafened child's life constitute the optimal period for language development. In order that these years may be used to the best advantage, the parents must be educated to understand the child's special needs in relation to his handicap and to help the child adjust to a hearing world. Great as the task of the parents is in terms of guiding and understanding the normal-hearing child, of how much greater magnitude is the problem as it relates to the parents of a hearing-handicapped child. Deprived of communication, child and parent alike meet with constant frustration. Frequently the parents of a hearing-handicapped child find it difficult to accept him as he is and often show an unconscious attitude of rejection toward their child.

Parent Education Essential

There are many things the parents need to know. It is a waste of time to worry over the fact that the child is deaf and why this happened to their child. The important thing to consider is what to do about it. Parents need to know how to train the child's eyes to substitute for his ears. Moreover, they must be informed that sense training be started early so that the eyes, hands, and mind may be coordinated. Parents need to know how best to speak to the child, how to develop sound perception, how important residuals of hearing may be in learning language, and how to regulate the pitch and placement of the child's voice. Parents must be acquainted with amplification, since the child will probably use it the rest of his life. They must learn to make this child an integral part of the household, of his play group, and of the community. Parents should be cognizant of the psychologic development in normal children. They must learn that the child passes through an optimal period for speech development and when that particular period is past it becomes more difficult to develop speech. Incorrect handling at this time may retard the child the rest of his life. For these reasons the Conservation of Hearing Center at Albany Hospital, when it first started its training program for preschool deafened children eight years ago, incorporated the parents into the program.

It was soon discovered that the parents had many questions and needed much more help with their problems than could be given in the training sessions with the child. In an effort to give added help the parents were enrolled in the John Tracy correspondence course in addition to the weekly lessons at the Center with the child. It was felt that this course of instruction together with the explanations, implications, and effects of deafness would help to meet their needs. At the same time, the parents were urged to subscribe to the *Volta Review* which is a national magazine for all those interested in working with the acoustically handicapped. This periodical conducts a Roundabout for parents of deafened children. A group of parents of children within a five-year age range and a teacher of the deaf who acts as advisor comprise each group. In letters to the group the parents tell of their child's progress. They often state the problems encountered and make suggestions to other parents regarding solutions that they have used successfully with their own child in similar problems. The teacher sums up the letter and gives expert advice and help. The parents of the children in our preschool program were urged to join the Roundabout.

Institute for Parents

In 1952, in an attempt to further meet their needs, the first Institute for Parents of Deafened Children was held at the Conservation of Hearing Center at Albany Hospital. The Institute lasted four days with morning and afternoon sessions. A demonstration nursery school was set up for the children while the parents attended lectures by experts in the fields of pediatrics, otolaryngology, psychology, and education of the deafened. The Institute was well attended not only by parents and nurses but also by physicians and educators. So successful was this first Institute that the following summers a second and then a third Institute were held.

Parent-Education Program

While the numbers of those attending the Institutes continued to grow and the parents seemed to have many of their problems solved, still it was felt that this was not the answer. Once a year was far too seldom for the group to meet. Moreover, it was difficult for the lay person to absorb the vast amount of material presented in the four days. Finally, in March 1959, the present parent-education program was inaugurated. The plan, which so far has been highly successful, utilizes the staff of the Conservation of Hearing Center at Albany Hospital and supplements it with lectures from the Albany Hospital Departments of Pediatrics, Psychiatry, Otolaryngology, and related fields. While the program is designed especially for parents of preschool hearing-impaired children, the meetings are open to doctors, nurses, teachers, parents of school-age children, and friends. The staff is anxious to keep the group relatively small so that free discussion may take place. The group meets on the third Friday of every month at 8:30 P.M. The first hour is devoted to a lecture, the topic of which is chosen from titles submitted by the members of the parent-education group. This is followed by a one-hour discussion period. Interest has been so high that discussion has lasted approximately two hours in each session. The first meeting was devoted to the subject "How We Hear and What May Occur Pathologically to Produce Deafness." Subsequent lectures included the audiogram and the medical, audiologic, and educational implications of deafness. The training methods were presented and individual problems discussed.

Case History

One of the most interesting programs considered a fifteen-year case history. The speaker was a young girl about to be graduated from high school with hearing children. At the age of five she had been brought by a social worker from one of the childrens' homes to the Conservation of Hearing Center at Albany Hospital to be cleared for admission to an institution for mentally retarded children. Further examination and evaluation, however, altered the initial recommendations. Instead she was placed in a conservation of hearing class where she developed language. She was trained to use an individual hearing aid and acquired speech-reading skills. Finally she was transferred from a conservation of hearing class at the end of the third grade into a regular third grade in public school. At this time she was placed in a foster home near that school. The New York State Bureau of Vocational Rehabilitation entered the case in her third year of high school. This year, upon graduation, she will enter a school for training beauty technicians.

Many parents are concerned with how their children feel about their deafness and how it handicaps them in the social world. They welcomed the opportunity to discuss these aspects and to ask many questions of one who had a marked hearing loss. They found the answers both satisfying and gratifying.

Success of Institutes

Several topics suggested by the parents

are waiting for future meetings and discussion. From the enthusiastic response of parents, the staff of the Conservation of Hearing Center feels it has made a significant step forward. It may be necessary to have more frequent meetings in the future, but the present pattern will no doubt remain the same.

Parents have been encouraged to discuss articles they have read. Often this has led to a desire for more information. Therefore, a lending library of books and magazines in the field of the hard of hearing and the deaf is being started. One of the parents will take charge of this project.

Thus, the Conservation of Hearing Center works with the parents of the preschool deafened child, since the parents themselves are the key to the child. The more informed they are the better adjusted and educated the child will be.

Sources of Information

The following are sources of information for parents of deafened children:

John Tracy Clinic
806 East Adams Boulevard
Los Angeles 7, California

The American Annals of the Deaf
Callaudet College
Washington 2, D.C.

The Volta Review
1537–35th Street, N.W.
Washington 7, D.C.

The Silent Worker
2495 Shattuck Avenue
Berkeley, California

(*Last of a series of three articles on the Conservation of Hearing Center, Albany Hospital*)

Medical Society of the State of New York

ANNUAL CONVENTIONS

1961	May 8 to 12	Rochester
1962	May 14 to 18	New York City
1963	May 13 to 17	New York City

Trichomoniasis and Candidiasis Vulvovaginitis

Procedures that Most Frequently Result in Permanent Cures and Prevent Thrush in Newborn Infants

RALPH A. PATTYSON, M.D., EAST ORANGE, NEW JERSEY

(*From the Hospital Center at Orange*)

DURING the past twenty years voluminous literature has accumulated on the subject of trichomoniasis and candidiasis (moniliasis). Studies of the invading organisms have included classifications, habitats, morphology, pathogenesis, and clinical manifestations. Therapeutic agents and procedures have been investigated in vivo and in vitro.

It is estimated that in excess of 10 million individuals in the United States alone harbor the Trichomonas parasite in a pathogenic or dormant state.[1] Today candidiasis (moniliasis) is even more prevalent than trichomoniasis. Lee and Keifer[2] report that before the use of antibiotics became widespread, the office practitioner typically saw 4 cases of trichomoniasis for every case of vaginal moniliasis. Today the practitioner finds 3 cases of monilial vaginitis for each case of trichomonal vaginitis. In view of this large incidence, it becomes important to employ a treatment that will succeed most often in effecting a permanent cure. The high incidence of thrush in the newborn can be prevented by adequate treatment for candidiasis during pregnancy.

In 1937, I reported[3] the results of an intensive study of 250 patients with Trichomonas vaginalis vaginitis and other associated organisms. That two-year investigation was carried out at the University Hospital (formerly the New York Post-Graduate Medical School and Hospital, Columbia University). It included a description of symptoms, diagnosis, and the treatments available at that time. In this report I will discuss twenty years of experience subsequent to the 1937 study, with particular emphasis on the therapeutic management and criteria for cure of trichomoniasis and moniliasis vaginitis.

At present the clinical aspects of the pathogenic organisms of vaginal trichomoniasis and moniliasis are very familiar to physicians who practice gynecology. In the treatment of these infections, medications have been administered by local irrigations and by topical applications of powders, as well as by jellies, creams, tablets, suppositories, tampons, and capsules or tablets taken orally. Among the many chemical agents which have been and are still advocated are antibiotics, iodine, quinoline, sulpha, colloidal silver, bismuth compounds, and some arsenicals. To select the best of these technics and agents of therapy with which to obtain permanent cures has been the objective of my twenty years of study, the results of which will be described in this report.

Pentavalent Arsenical Therapy

In my experience during the past twenty years, therapy with pentavalent arsenical (Cinquarsen Compound Formulations)* achieves the highest rate of initial cure, the best maintenance of infection-free status, and the lowest incidence of recurrence. The arsenical used is chemically designated as P-carbamido-benzenearsonic acid, and it is compounded in formulations which uniformly effect the desired changes in the flora and the state of moisture and which assure the persistence of medication in the vaginal tract and the immediate reduction of discharge and irritation.

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* Pentavalent arsenical compound formulations (powder, solution, and suppositories) and vaginal insufflators were supplied for this clinical study by the Powdex Corporation, New York City.

Absence of Arsenical Reactions.—Of greater importance is the fact that throughout the observations and study conducted at the University Hospital[3] and in my office since then, no evidence of toxicity to this pentavalent arsenical was found, and very few patients were sensitive or allergic to this preparation. In a recent study Buxton and Weinman[4] also reported that they had had no arsenical reactions with their use of this pentavalent arsenical therapy.

Diagnosis and Treatment

The patient with vaginitis will have had either no previous treatment or will have had treatment elsewhere. To determine the diagnosis, biologic specimens are studied by hanging drop, smear, and culture. The hanging drop is examined immediately for the presence of trichomonads. The smear and culture are sent to the laboratory for the diagnosis of monilia and/or associated organisms.

Technic of Therapy

The most important consideration in therapy is the need to bring the antitrichomonal or antimycotic agent in contact with the parasite. This poses the anatomic problem of the proper distribution of the medicament. The mechanics of application would seem most effective when complete exposure of the vaginal mucous membrane is obtained. This is best done by the method of insufflation with the vaginal insufflator, using pentavalent arsenical powder formulations. This insufflator is so constructed that the air pressure is under constant control. Using a minimum of air pressure, the entire surface of the gently dilated vagina, including the external cervical os, is covered completely with a dry powder without employing a speculum which would interfere with applying the powder to the entire affected area. Other methods of administration, including douches, tablets, creams, and others, do not provide this intimacy of contact in the inaccessible areas.

It is preferable that treatment be carried out as an office procedure. For occasional cases, where treatment at the office three times a week is not feasible, the patient is instructed in the proper use of the insufflator as a home procedure, or the pentavalent arsenical vaginal suppositories may be prescribed as an effective supplement for less frequent office insufflations. The patient then reports at designated intervals for check-up examinations.

When the positive diagnosis of trichomoniasis has been established by hanging drop, the vulva and vaginal tract are cleansed carefully with a suitable antibacterial solution. These parts are then dried carefully and pentavalent arsenical powder in the desired formula is insufflated. I use 15-grain pentavalent arsenical powder (formula No. 43) for each insufflation. This procedure is repeated three times a week for two weeks, during which time tub baths, douching, and coitus are not permitted. A perineal pad is worn for twenty-four hours after each insufflation. Any co-existing disease of the cervix should be treated. The patient is re-examined two weeks after the last insufflation. If the hanging drop is still positive for trichomoniasis and no other complications are noted, a second course of pentavalent arsenical powder insufflation is administered three times weekly for a two-week period.

If it is not possible for the patient to come to the office for a course of pentavalent arsenical powder insufflation treatments three times a week for two weeks, then I prescribe twelve 3-grain pentavalent arsenical vaginal suppositories to be used nightly before retiring. The first insertion is to begin forty-eight hours after the pentavalent arsenical powder insufflation treatment, if one is administered at the office. The patient is instructed to douche prior to the insertion of the first suppository and again forty-eight hours after the last suppository. If the patient cannot come to the office for another powder insufflation treatment, then I repeat the prescription for twelve suppositories and instruct the patient to report for a check-up two weeks after the application of the last suppository.

Treatments with suppositories or pentavalent arsenical powder insufflations should be continued throughout any menstrual period. When suppositories alone are used, more than two weeks are necessary to effect a cure; when supplemented with pentavalent arsenical powder insufflations, the time varies with the number of insufflations administered.

If the laboratory findings establish the presence of trichomonads in the bladder and/or urethra, or if the cultured vaginal secretions are positive for Candida albicans or other organisms, treatment is somewhat different.

When the trichomonads are present in the bladder and/or urethra, the bladder is irrigated with sterile water, and 50 cc. of a 1 per cent solution of pentavalent arsenical compound (formula No. 52) is instilled into the bladder and retained as long as the patient is comfortable. Pentavalent arsenical urethral suppositories may be used instead of the procedure described. This treatment is followed by the usual procedure of cleansing and drying of the vulva and the vaginal tract, and by the insufflation with pentavalent arsenical powder. The bladder or urethral treatments and the insufflations are repeated three times weekly for two weeks.

If the laboratory findings establish the diagnosis of candidiasis, 1-grain pentavalent arsenical powder (formula No. 45) is insufflated three times weekly for two weeks. When both monilia and Trichomonas are present, I alternate pentavalent arsenical powder (formula No. 43) with pentavalent arsenical powder (formula No. 45) giving these treatments three times a week over a two-week period.

Treatments for Patients Sensitive to Pentavalent Arsenical.—The few patients who are sensitive to this pentavalent arsenical can easily be detected after the first or second treatment. These patients will complain of increased irritation, or a mild dermatitis will be observed. The patients are instructed to take a vinegar douche daily for a period of ten days or until symptoms subside. Following this, another pentavalent arsenical treatment is given, and the patient is instructed to take a vinegar douche for another period of ten days. Pentavalent arsenical treatments and douches are continued until the patient's laboratory examinations show negative results. Patients who tolerate the first and second treatment are usually not sensitive to pentavalent arsenical and can continue with the established clinically standardized courses of pentavalent arsenical therapy until a cure is effected.

Prophylaxis to Prevent Thrush.—Pentavalent arsenical powder formulations, used with an insufflator, can be administered safely up to the last month of pregnancy and are an excellent prohylaxis in preventing thrush in the baby.

Routine Criteria of Cure.—Our criterion for the success or failure of treatment is the presence or absence of the respective organisms in the vaginal tract, bladder and/or urethra three months following the last treatment as proved by laboratory examination of smear, culture, and hanging drop. It must be emphasized that cure is not determined merely by the patient's subjective improvement as shown by relief from symptoms, but must be confirmed by laboratory examinations. Campbell[5] states that when the diagnosis was made by culture, he found more than 40 per cent of all pregnant women harbored Candida albicans vaginitis, but only about 10 per cent showed symptoms.

Rigorous Criteria of Cure for Special Follow-up Study.—A rigorous and systematic follow-up study of 778 patients was

TABLE I.—Results of Treatment with Pentavalent Arsenical

Infections	Total Patients	Results (Number of Patients) Negative	Positive	Per Cent Negative	Positive
Group A					
Trichomonas vaginalis vaginitis with no bladder or urethra involvement; trichomoniasis	297	285	12	95.96	4.04
Group B*					
Trichomonas vaginalis vaginitis and Candida albicans vaginitis with trichomonads in bladder and/or urethra; trichomoniasis and moniliasis	172	166	6	96.51	3.49
Group C					
Candida albicans vaginitis with no Trichomonas involvement; moniliasis	309	295	14	95.47	4.53

* Prior treatment by other methods and medications.

undertaken to ascertain the permanence of cure. All patients in this study group were examined at intervals of from six to twelve months over a ten-year period following a diagnosis of cure three months after the last treatment. Biologic specimens were taken and a diagnosis was made from hanging drop, smear, and culture. The patients were divided into groups A, B, and C, and the results were tabulated as shown in Table I.

Comment

A small group of patients (Table I) showed a reinfection or recurrence of candidiasis (moniliasis) several months after receiving a course of treatment because of susceptibility to fungus, diabetes, pregnancy, or following the administration of antibiotics. These patients were given another course of pentavalent arsenical powder insufflations, and again the laboratory findings indicated negative results.

Treatments with suppositories or pentavalent arsenical powder insufflations should be continued throughout the menstrual periods. Co-existent conditions of the cervix, such as cervical erosions or cystic endocervicitis, should be treated appropriately while the specific therapy is being employed.

Conclusion

Pentavalent arsenical therapy has now been used by me for more than twenty years. I believe that it is safe and is the most effective treatment. Other gynecologists have also reported that they used this pentavalent arsenical therapy successfully for more than twenty years and find it to be the most effective treatment.[6,7]

Benigno[8] stated that he used this pentavalent arsenical therapy extensively in both clinic and private practice for the past fifteen years and that he has found it to be the most successful treatment for trichomoniasis with recurrences reduced to a minimum.

Buxton and Weinman[4] stated that in their hands the most satisfactory type of trichomonacide of the many varieties on the market was some type of pentavalent arsenic preparation. The pentavalent arsenic used by them was in the preparation pentavalent arsenical powder for vaginal insufflation. They reported this form of therapy to be the most satisfactory.

Greenblatt[9] reported that this pentavalent arsenical yielded excellent results for the treatment of trichomonas vaginalis. Kleegman[10] stated that if the organism (trichomonad) was found in the bladder urine or urethra, this pentavalent arsenical solution should be instilled into the urethra and bladder three times a week.

Montgomery[11] stated that he has used this pentavalent arsenical since his early days at The Sloane Hospital for Women in 1932, and that he finds that today it is still the best effective treatment for trichomonas infection.

Salter[12] stated that he used this pentavalent arsenical therapy for Trichomonas vaginalis vaginitis with very favorable results in a considerable number of cases, and, in his opinion, this pentavalent arsenical therapy was the best of the available forms of treatment.

Wetchler[13] stated that since his experience with this pentavalent arsenical therapy many years ago at the gynecologic clinic of the New York Post-Graduate Medical School and Hospital (now called the University Hospital), this pentavalent arsenical has been his most reliable agent for the treatment of vaginal trichomoniasis, and he finds that it is still the best medication for the treatment of this infection.

Summary

Treatment for trichomoniasis and candidiasis vulvovaginitis with pentavalent arsenical formulations has been described. The results have been tabulated for 778 patients. The experience of the author suggests that cases of trichomoniasis and moniliasis vaginitis can be effectively treated with pentavalent arsenical formulations. The criterion of cure is a negative result in a culture three months after the last treatment, and a cure rate of approximately 96 per cent can be expected as demonstrated by the ten-year follow-up study.

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Magnificent promises are always to be suspected.—THEODORE W. PARKER

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Diagnosis and Treatment of the Toxemias of Pregnancy

I.—Diagnosis

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Although the exact cause of acute toxemia is presently unknown, refinements in management have decreased its incidence and severity. Improvements in diagnosis have made it possible to identify definite organic causes for certain categories of the syndrome that were formerly considered of unknown etiology. Furthermore, the recognition of the importance of minimal symptoms and signs has diminished the ultimate severity of toxemia. This has undoubtedly reduced the maternal mortality rate and improved fetal survival. Periodic clinical examinations of all pregnant women have provided more accurate early diagnosis. The patient who has had previous difficulty receives additional attention to determine accurately the special hazards involved. Patients with previous toxemia, hypertension, or renal disease may be seen at short intervals in special clinics. These precautions make it possible to scrutinize each patient carefully, making a successful outcome more likely.

Our present working classification of this syndrome was defined by the American Committee on Maternal Welfare in 1952.[1]

I. Acute Toxemia of Pregnancy
  A. Preeclampsia: onset usually after twenty-fourth week
    1. Mild
    2. Severe
  B. Eclampsia
II. Chronic Hypertensive Vascular Disease
  A. Chronic hypertensive vascular disease without superimposition
    1. Hypertension known to be present prior to pregnancy
    2. Hypertension found in early pregnancy, usually prior to the twenty-fourth week
  B. Chronic hypertensive disease with superimposition
III. Unclassified

Preeclampsia and Eclampsia

Preeclampsia is characterized predominantly by the principal signs of hypertension, edema, and proteinuria, usually after the twenty-fourth week of gestation.[2-4]

Hypertension.—Hypertension exists when the systolic pressure is 140 mm. of mercury or above, and the diastolic pres-

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sure is 90 mm. or above. However, elevation of 30 mm. in the systolic pressure and of 15 mm. or more in the diastolic pressure also is considered evidence of toxemia despite pressures below 140/90. One abnormal blood pressure reading in itself is insufficient evidence for the diagnosis of toxemia. In general, two abnormal blood pressure readings must be obtained at an interval of more than six hours. At the first antepartum visit many apprehensive patients will have an elevated blood pressure which usually returns to normal values after twenty or thirty minutes of rest. However, transient elevations of this type should not be ignored, for many such patients exhibit sustained pressure elevation either in the third trimester or in a future pregnancy.

A large number of patients will have a definite family history of hypertension. During the child-bearing period from the ages of fifteen to forty-five, there is a gradual normal increase in the blood pressure. The young primipara whose usual blood pressure of 100/70 suddenly rises to 135/85 in the last trimester may have preeclampsia. However, a sustained blood pressure of 140/95 alone in the elderly multipara is not evidence of acute toxemia. Obese women with greatly increased arm circumference usually display a falsely elevated blood pressure reading because of the additional pressure needed to compress the brachial artery. This false elevation may amount to as much as 25 mm. systolic and 15 mm. diastolic pressure. A leg cuff applied to the arm is necessary to record these patients' pressures accurately.

EDEMA.—Edema is another manifestation in the triad of the signs of toxemia. A sudden weight gain of 3 pounds or more in any one week should be interpreted as a warning of toxemia even in the absence of hypertension and proteinuria. This may occur before visible signs of edema are present. Five pounds of weight gained in one week is sufficient evidence of toxemia.

PROTEINURIA.—The acute onset of proteinuria as determined by a catheterized specimen is most significant in the diagnosis of acute toxemia. The presence of 1 plus proteinuria for two consecutive days with glacial acetic acid or 0.5 Gm. per twenty-four hours with Esbach's procedure is bona fide evidence of toxemia. Although this sign usually arises later than hypertension or edema, its presence is of serious prognostic implication. Orthostatic proteinuria may be ruled out easily by examination of the early morning specimen and of one taken during the day, while the patient is active. The presence of pyelonephritis or renal infection also must be considered. In long labor and particularly in primigravidas, proteinuria may be observed without evidence of toxemia.

MILD AND SEVERE PREECLAMPSIA.—The differences between mild and severe preeclampsia are almost entirely quantitative rather than qualitative variations of the cardinal signs. If the blood pressure rises to a level of 160/110 or above, if the proteinuria is 3 plus or more with the glacial acetic acid test or 5 Gm. or more per twenty-four hours with the Esbach reagent, or if the weight gain and edema are massive, the diagnosis of severe preeclampsia is indicated. In addition, more rarely the presence of oliguria with a urinary output of 400 cc. or less in a twenty-four-hour period, severe headache, epigastric pain, extensive retinal arteriolar spasm or hemorrhage, pulmonary edema, or cyanosis definitely indicate further advancement of the toxemia and establish the diagnosis as severe preeclampsia. The high frequency of toxemia associated with multiple pregnancy is well known.[5, 6]

CONVULSIONS.—Further progression of the toxemia with particular involvement of the cerebral vessels by ischemia may lead to hyperirritability, hyperreflexia, and twitching. This may be followed by a generalized convulsion, having tonic and clonic components, and not differing in appearance from those caused by other disease entities. This, associated with other clinical signs of toxemia, is evidence for the diagnosis of eclampsia. Although the American Committee Classification lists eclampsia in the acute variety of toxemia, there is good evidence to indicate that it often is associated with chronic vascular disease. Careful follow-up by Rasmussen *et al.*[7] has indicated that 36 per cent of patients with previous eclampsia will eventually develop evidence of hypertensive vascular disease.

Coma.—Very rarely coma will appear without eclampsia, usually in a patient with severe preeclampsia. This eclampsia without convulsions occurs once for every 28 cases of bona fide eclampsia.[8] Death is rapid, usually within forty-eight hours. The pathologic findings are identical with those in true eclampsia.[9]

Chronic Hypertensive Vascular Disease

Chronic hypertensive vascular disease may be diagnosed if the blood pressure rises before the twenty-fourth week and if this elevation persists after delivery.[10] Chesley[11] has shown that many patients with a condition diagnosed as preeclampsia, who showed postpartum persistence of hypertension, had hypertension prior to pregnancy. If the findings of toxemia appear before the thirty-second or thirty-fourth week, this is almost conclusive evidence of the presence of chronic hypertension, and therefore recurrences of the toxemia are most likely to be found in subsequent pregnancies. If these patients are observed after a decade, many will show bona fide vascular disease.

The onset of superimposition in a patient with hypertensive disease is indicated, according to the classification, if the blood pressure shows a sudden elevation of 30 mm. systolic and/or 15 mm. of diastolic pressure. The development of significant proteinuria and edema usually is associated with the presence of blood pressure elevation. In the hypertensive patient on hypotensive agents, superimposition may be manifested only by proteinuria. This finding has serious implications and frequently is associated with increased perinatal and maternal mortality; the hypotensive agents may mask the presence of a full-blown superimposition.

The diagnosis of recurrent toxemia may be made if a patient who has preeclampsia and is normotensive in the interval between pregnancies develops the toxemia after the twenty-fourth week of gestation and is normotensive six weeks postpartum.[12] However, the presence of a recurrent toxemia should be sufficient clinical evidence to arouse suspicion of underlying vascular disease. If the patient is followed long enough (five or ten years), evidences of generalized vascular disease may appear. There may be a correlation between the duration and the early onset of preeclampsia in a pregnancy and its recurrence.[11]

Unclassified

The third category of classification, unclassified toxemia, is a wastepaper basket to include all cases for which there has been inadequate follow-up or clinical material. Eventually the accumulation of more data will clarify the existing classification. At times the incompleteness of data makes accurate classification almost impossible.

Retinal and Conjunctival Vascular Changes.—Retinoscopy may be of considerable value in identifying the severity of toxemia as well as in determining the variety.[13] In mild preeclampsia it is of little value, for the changes are transient and minimal. In severe preeclampsia the degree of arteriolar spasm may be an important guide to the severity of the disease.[14,15] The presence of chronic hypertensive vascular disease is a more important indication for retinal observations. This is true particularly when the diastolic pressure is at 110 mm. or higher. Careful scrutiny of the retinal vasculature is essential to proper classification and management.[15,16] When prominence of arteriolar reflex stripe, arteriovenous nicking, or hemorrhage are noted at the initial examination, hypertension is the most likely diagnosis. This is true even after the twenty-fourth week. Grade III or retinal hemorrhages indicate a serious complication. The sudden disappearance of retinal arteriolar spasm in severe toxemia is not infrequently associated with intrauterine death.[17, 18] Rarely, permanent blindness may result.[19] The bulbar conjunctiva provide an additional site for visualization of the peripheral vascular bed.[20,21] Minimal variations, such as mild spasm and capillary ischemia, are seen late in the third trimester. In toxemia there is further progression of these changes, such as advancing spasm, increasing capillary ischemia, and diffuse capillary tortuosity.

CHANGES IN RATE OF GROWTH OF FETUS.—It has been recognized for some time that many infants born to mothers with long-standing hypertension are smaller than the average babies reported by clinics. However, it is not uncommon for some mothers with severe hypertension to have normal or excessively large babies. The small-infant pattern appears to repeat itself in some individuals with severe long-standing hypertension. To evaluate more accurately the growth rate in terms of the duration of pregnancy, the weight only of living infants was correlated directly with the average expected weight at various weeks of pregnancy.[22] A standard table of weight versus gestation time (Streeter) was used as a basis for comparison. If the birth weight was less than average for the known duration of pregnancy, allowing three weeks for a negative deviation, the infant was considered underweight. Using this criterion, an infant at forty weeks would be considered small if the weight was that expected for a thirty-seven-week infant. In general, as the grade of chronic vascular disease progressed, the percentage of small babies increased.

PREMATURE SEPARATION OF THE PLACENTA.—Not infrequently the uterus in patients with toxemia will exhibit increased tone. This may be followed by slight vaginal bleeding. These two signs precede overt evidence of separation of the placenta characterized by frank bleeding and board-like rigidity of the uterine wall. This complication occurs in from 5 to 10 per cent of the more severe toxemias if interruption is postponed for two to three weeks after the onset of the disease.[23] The frequency with which placental separation is preceded by hypertension has been reported as being between 25 to 60 per cent. It is evident that the likelihood of separation is greater in the more advanced toxemias.

RENAL FUNCTION AND CORTICAL NECROSIS OF THE KIDNEY.—In general, renal function is normal during pregnancy. Concentration power is unaltered and a specific gravity of 1.020 to 1.032 is normal after a test period. Urea clearance is within normal limits, but may tend to average 180 per cent above normal from the thirty-second to the thirty-sixth weeks of pregnancy.[24]

Renal cortical necrosis is a complication resulting in renal shutdown of varying degrees, usually associated with premature separation of the placenta. Previous hypertension occurs in 25 per cent of the cases, another 10 per cent have eclampsia, and 18 per cent show acute preeclampsia. In 40 per cent, careful autopsies and evaluation of clinical course failed to reveal any accompanying abnormality.[25] The arteriolar spasm is sufficiently severe to interfere with renal function, at first by albuminuria and gradually by various degrees of renal failure.

HYDATIDIFORM MOLE AND HYDROPS FETALIS.—In hydatidiform mole and hydrops fetalis the symptoms and signs are those of an acute toxemia, but the causes are related to organic placental disease. The frequent occurrence of acute toxemia associated with hydatidiform mole and hydrops fetalis is well known.[26–28] In one large series of hydrops fetalis from the British Isles, the toxemia incidence was 52 per cent, and an extensive experience with hydatidiform mole from the Philippines indicated a toxemia incidence of 36 per cent. In both these states there is a qualitative alteration of the placenta associated with a hyperplasia of the trophoblastic elements. The presence of a rapidly enlarging uterus without a fetal heart or skeleton in the second trimester, together with the rapid onset of acute toxemia are frequently associated with hydatidiform mole. Similarly, the sudden onset of toxemia and the absence of the fetal heart would together strongly suggest hydrops fetalis in a patient with previous erythroblastosis or a high Rh antibody titer.

Toxemias Related to Other Organic Diseases

An additional heading which may be added to the Classification of the American Committee includes toxemias that are related to or caused by some other disease unrelated to the pregnancy. Further information concerning previously poorly understood types of vascular disease is now available. These smaller groups now are being separated from essential hypertension. Other known varieties of vascular disease, many of which were previously overlooked or more frequently mislabeled acute toxemia, may now be classified separately.

IV. Toxemias Related to Other Organic Diseases
- A. Renal Disease
    - 1. Nephritis
        - a. Acute
        - b. Chronic
    - 2. Pyelonephritis
    - 3. Polycystic disease of the kidney
    - 4. Unilateral kidney disease
- B. Diabetes mellitus
- C. Vascular anomalies: coarctation of the aorta–renal arteries
- D. Endocrine disorders
    - 1. Pheochromocytoma
    - 2. Hyperfunction of the adrenal cortex
- E. Other generalized vascular disease: lupus erythematosus
- F. Blood dyscrasias: Sickle cell disease

Nephritis.—Primary renal disease may complicate pregnancy in a variety of ways. Usually acute nephritis occurs early in life, either during childhood or adolescence, and is associated with hematuria, generalized edema, particularly of the face, and a febrile episode which may last for from one to three or four weeks. Some bilateral or unilateral flank pain may be associated with this disease, and frequently there is a history of an upper respiratory infection or tonsillitis. The urine characteristically shows protein and large amounts of casts.

It is unusual for an acute nephritic episode to be associated directly with pregnancy. More frequently such an episode represents a recurrence of an acute nephritis. If there is a reduction of renal function during the acute nephritic episode, hypertension may develop. The presence of an episode of fever and the appearance of large amounts of casts in the urine will differentiate the acute, or recurrent, nephritis from the usual variety of acute toxemia.

More frequently, an underlying chronic nephritis may complicate pregnancy. An acute episode of renal disease may have occurred many years ago, and the kidneys may have sustained considerable damage and reduction in function. Particularly during the last trimester of pregnancy with the increased load on the kidneys, proteinuria may recur, with the presence of a sudden hypertension. Reduced renal function at this time, with urinary casts, should arouse suspicion of underlying nephritis. Blood chemistry levels for nitrogenous products, urea nitrogen, nonprotein nitrogen, and uric acid may show a concomitant elevation. With chronic nephritis, there may be a recrudescence of renal failure with each pregnancy. Secondary vascular disease may occur with continued elevation in blood pressure and nonspecific changes in the retinal vessels. Pyelography associated with an acute or chronic nephritis shows normal renal pelvic calices. If renal function is greatly diminished, pyelography will not be successful owing to a low concentration of the iodinized radiopaque contrast agent.

Chronic nephritis accompanied by albuminuria alone does not result in serious fetal loss. If elevation of blood pressure is associated with chronic nephritis, the prognosis in general is poor, especially if the blood pressure is elevated before the thirtieth week. In one series, 33 live births resulted in a group of 35 pregnancies.[29] In this group 1 patient with elevated blood pressure developed eclamptic convulsions. In 9 patients, there was a definite impairment of renal function. The degree of renal impairment had no effect on the course of pregnancy, and there was no deterioration in renal function during the pregnancy.

At the present time there is no evidence to indicate that chronic or acute nephritis associated with pregnancy always will alter the prognosis for the mother. It is apparent that the nephritis continues its natural course whether the woman is pregnant or not. It also was observed that many of the patients with chronic nephritis, like those with essential hypertension, develop a reduction of blood pressure in the second trimester.

PYELONEPHRITIS.—Pyelonephritis invariably is produced by repeated episodes of infection of the urinary tract. An acute pyelonephritis of pregnancy, particularly on the right side, is frequent in the second trimester. This is true because of the torsion of the uterus to that side and the protection provided to the left ureter by the sigmoid colon. The association of flank pain, urgency and frequency of urination, the presence of proteinuria, and bacteria in the urine establish the diagnosis. Treatment of the infection with various antimicrobial agents usually results in amelioration of the infection without residual impairment; however, not infrequently a long-standing pyelonephritis will produce damage to both kidneys. At the onset of a pregnancy many years later no evidence of reduced function may be evident, but with the increased renal load as the pregnancy progresses, hypertension and proteinuria may develop because of the residual damage resulting from pyelonephritis. Occasionally, a marked unilateral renal impairment associated with pyelonephritis may result in a severe secondary hypertension. This form of hypertension usually is successfully treated by a unilateral nephrectomy.

CONGENITAL POLYCYSTIC KIDNEY DISEASE.—Congenital polycystic kidney disease is a rare complication of pregnancy.[30] The diagnosis is made on the basis of physical examination and pyelography. Usually a history of the disease in the immediate family may be obtained. Frequently, large kidneys may be palpated. However, in late pregnancy, because of a large uterus overlying the kidneys, this condition may be confused with toxemia of pregnancy. Intravenous pyelography will in most instances specifically assure the diagnosis, demonstrating characteristically enlarged pelves, elongated and blunted calyces, and a greatly increased renal shadow. Hypertension and renal failure are frequent complications associated with this congenital anomaly. Temporary further advancement of this process may occur in the third trimester.

DIABETES MELLITUS.—When contracted originally during adolescence, diabetes mellitus may reach the phase associated with vascular sclerosis.[31,32] This may manifest itself during pregnancy by calcification of the large arteries, petechial hemorrhages in the retina, secondary hypertension, or proteinuria associated with Kimmelstiel-Wilson syndrome. At The New York Hospital during the years 1955 through 1959 the incidence of all varieties of toxemia in this disease was 17.1 per cent. The incidence of toxemia in the total pregnancies over the same five-year period was 5.9 per cent. Early in a pregnancy associated with diabetes mellitus, there usually will be no clinical manifestations of vascular changes; however, the exacerbation of vascular changes caused by the pregnancy may produce the findings of an acute toxemia, so that in the third trimester mild hypertension, retinal arteriolar spasm, and albuminuria may be evident. The basic underlying process will still be that of diabetes mellitus, and following the pregnancy the clinical findings all may revert to normal.

COARCTATION OF THE AORTA.—Coarctation is a localized narrowing of the aorta and is diagnosed as a result of hypertension in the upper extremities with hypotension in the lower. This is chiefly systolic, although occasionally the diastolic level is also elevated. (In normal patients the systolic pressure in the femoral artery is 20 mm. higher than in the brachial artery). Without surgery about 70 per cent of the patients suffering from this defect die by the age of forty. In a total of 200 unoperated patients, the maternal mortality was 14.7 per cent. In 50 patients operated on prior to pregnancy, there were no maternal deaths.[33,34] The presence of other vascular anomalies in the renal arteries and abdominal aorta are now being investigated.

PHEOCHROMOCYTOMA.—A rare and serious complication associated with pregnancy, pheochromocytoma may be difficult to diagnose, particularly if it is not considered.[35,36] The largest reported series associated with pregnancy numbers 55 cases. It is a disease of young women and usually occurs during the first to the third pregnancy. It is associated with dramatic elevations in the blood pressure and is rarely associated with proteinuria. Original diagnosis of preeclampsia or eclampsia was made in 7 patients; obstetric shock in 5 and cardiovascular disease in 7.

Usually pregnancy has a serious effect on individuals with this tumor. The growth may have a very slow onset during any portion of pregnancy and may simulate an acute severe preeclampsia. A recurrence of symptoms which occurred prior to pregnancy may be the picture. An acute exacerbation associated with a sudden hypotensive state may be wrongly treated with noradrenalin or adrenalin, resulting in the death of the patient. Most frequent and important, the blood pressure is extremely labile and may rise 20 to 60 mm. rapidly, reverting to normal several hours later. Frequently observed are severe headache, vomiting or nausea, sweating, palpitation, breathlessness, apprehension, and reduced power of extremities. Tests can be performed on patients suspected of having pheochromocytoma, and they are without undue hazard if the patient is observed carefully.

1. Drugs causing an outpouring of adrenalin or noradrenalin, such as histamine in doses of 0.01 to 0.025 mg., will produce a rapid attack of headache, sweating, and pallor. A slight fall in blood pressure is followed by a rapid rise.

2. Phentolamine methanesulfonate (Regitine) 5 mg. intravenously may be used as a hypotensive agent. Hypotensive drugs which neutralize circulating noradrenalin, such as phentolamine methanesulfonate in doses of 2.5 to 5 mg., produce a dramatic reduction in blood pressure.

3. Catechol amines in the blood or, more commonly, in the urine, may be of considerable assistance. This determination depends on the increased secretion of adrenalin-like substances.

The maternal mortality rate in pheochromocytoma is about 50 per cent, and when the exacerbation of tumor symptoms is associated with labor, it may be as high as 100 per cent. The primary cause for most of the fatalities associated with the disease is lack of proper diagnosis. In severe undulating hypertension the most important fact is to consider pheochromocytoma and thus save a maternal life by a correct, early diagnosis.

HYPERFUNCTION OF THE ADRENAL CORTEX.—Frequently associated with hyperfunction of the adrenal cortex is hypertension of varying degree, in addition to adiposity, osteoporosis, amenorrhea, abdominal striae, insensitivity to insulin, and sodium retention. There is usually an elevation of the urinary glucocorticoids as indicated by measurements of plasma cortisol and urinary hydroxycorticoids. After surgery and removal of an adenoma or a hyperfunctioning gland, frequently there may be a residual hypertension. Pregnancy associated with postoperative Cushing's syndrome may manifest an organic hypertension which may later show exacerbation and superimposition, as do the other varieties of vascular disease. In addition to Cushing's type of adrenal hyperfunction, one may see hypertension due to primary hyperaldosteronism. Profound muscle weakness and a hypokalemic hypochloremic acidosis should suggest this possibility. As yet, no case of hyperaldosteronism associated with pregnancy has been reported.

Lupus Erythematosus.—A rare vascular disease, lupus erythematosus may in its early stages show principally an albuminuria without the generalized manifestations, such as a skin lesion and renal or pulmonary complications.[37–39] The hypertension may vary according to the severity of the vascular disease, but it also may be changed temporarily by pregnancy. A patient with previous toxemia will not infrequently develop the typical lupus butterfly rash, thus placing another acute toxemia into a specific organic disease category. In general, pregnancy appears not to effect lupus erythematosus, and the disease continues on its natural course. Transient fever, recurrent polyarthritis, pleurisy, marked proteinuria, leukopenia, and hypochromic anemia frequently accompany this disease. The presence of lupus erythematosus cells is quite specific and should assure the diagnosis in doubtful cases.

Sickle Cell Disease.—Sickle cell disease is a hereditary chronic abnormality of the red cells usually seen only in Negroes.[40,41] In Harlem Hospital there were 9 cases among 51,000 Negro patients. The red cell destruction and anemia are characteristic, with thrombosis and embolization occurring and involving any organ of the body. Frequently renal impairment makes itself known by proteinuria and hematuria, with a high frequency of toxemia developing, being reported by one author[41] as high as 34 per cent in pregnant patients with sickle cell disease.

Summary

Prolonged, accurate clinical observations result in a well-documented clinical classification of the varieties of toxemia. This has several advantages in the management of the patient. It determines the optimum time of delivery and the method of treatment for the present pregnancy, thereby reducing the fetal loss and the maternal danger. With limitations, the classification also indicates the prognosis for the future. Reasonably accurate predictions may be made concerning the possible recurrence of the toxemia and the future risks to mother and fetus. Possible therapy in the interval between pregnancies for such conditions as a pyelonephritis might appreciably improve later maternal morbidity. A gradual increase in the number of medical diseases which may be complicated by toxemia has further narrowed the group of patients with acute toxemia of unknown etiology. It is likely that acute toxemia will be further classified into known organic disease categories if long periods of postpartum follow-up are undertaken. The ultimate diagnosis and classification of coarctation of the aorta, pheochromocytoma, unilateral pyelonephritis, and sickle cell disease, all of which formerly rested on an indefinite classification of acute toxemia, frequently may save a fetal and maternal life. In the second portion of this article the recent treatments for toxemia included under groups I and II will be detailed.

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Knowledge is what you learn from others; wisdom is what you teach yourself.—Anon

CLINICOPATHOLOGIC CONFERENCE

BRONX MUNICIPAL HOSPITAL CENTER

BRONX, NEW YORK

Conducted by ALFRED ANGRIST, M.D. MARCH 6, 1959
Discussed by L. LAZAR, M.D., NEW YORK CITY

Malignant Lymphoma and Diabetes Mellitus

Case History

A sixty-nine-year-old Italian housewife was apparently in good health until eight months prior to admission, when she fell down a flight of stairs and was treated at home for rib fractures. Generalized weakness and increasing pallor were noted. Five months prior to admission fever (99 to 100.5 F.), nocturnal diaphoresis, and nonproductive cough began. At another hospital x-ray films of the chest revealed pneumonia. Antibiotics were administered, and the patient was discharged as symptomatically improved after seven days. One week later she was readmitted because of increasing pallor. Detailed records are not available; however, bone marrow, gastrointestinal series, barium enema, and intravenous pyelogram were said to have produced negative results. Two units of packed red blood cells were administered. Weakness was ameliorated, and although cough and fever persisted, the patient was discharged. One week later she developed a cold. Tetracycline was administered without evident beneficial effect. Fever and weakness recurred with a nonproductive, painless cough. These symptoms persisted for about ten days and then (three days prior to admission) she complained of dull anterior chest pain which was increased by coughing but only slightly by inspiration. Ankle edema was noted for the first time and she sought hospitalization at The Bronx Municipal Hospital Center.

PAST HISTORY.—Mild diabetes mellitus was diagnosed ten years prior to admission and 3 units of protamine zinc insulin daily resulted in good control without complications.

She had received parenteral B_{12} and liver extract for eight months prior to admission. Surgery for perforated appendicitis had been performed at Bronx Municipal Hospital Center two years prior to this admission.

A bilateral cataract extraction had been performed at the same hospital one year prior to admission. At the time hemoglobin was 12 Gm. per 100 ml., urine specific gravity 1.011, with 2 plus albumin and sugar.

There had been asymptomatic hypertension (200/100) of fifteen to twenty years duration. There was no past or present history of hemoptysis, pleuritic pain, angina, alcoholism, jaundice, neurologic signs or symptons, weight loss, or shaking chills.

PHYSICAL EXAMINATION.—Examination revealed a markedly obese, pale, elderly female in no acute distress, lying flat in bed. Her pulse was 90 and regular, respirations 20, blood pressure 160/90, and temperature

100.2 F. There was no cyanosis, jaundice, or petechiae.

Head, ear, eye, nose, and throat examination revealed bilateral cataract scars. A right fundus examination revealed arteriolar narrowing, exudate, and microaneurysms. The mucous membranes were pale, and examination of the nodes produced negative results. The neck veins were distended to 30. There was questionable dullness at both lung bases posteriorly but no rales or fraction rubs. Examination of the heart showed the point of maximum impulse to be in the left anterior axillary line. There was a regular sinus rhythm with Grade III apical systolic murmur radiating to the left axilla and to the left sternal border. P_2 was greater than A_2. The liver edge was felt to be 5 to 6 fingerbreadths below the right costal margin. A firm spleen tip was palpated 6 to 9 fingerbreadths below the right costal margin. Examination of the extremities showed a 2 plus bilateral pitting of the ankle and pretibial edema. There was no clubbing. Pelvic, rectal, and neurologic findings were normal.

Laboratory Findings.—Laboratory findings showed the urine to be yellow with a specific gravity of 1.010, acid, containing a trace of protein, no sugar, acetone, and bile. There were 0-1 hyaline casts and uric acid crystals per high power field. The stool (not described) was guaiac 3 to 4 plus. The hematocrit was 19, hemoglobin 7, red blood cells 2.1, red blood cells hypochromic, microcytic, 1 target cell, and 1 nucleus. There were 225,000 platelets, 11,200 white blood cells, (61 polymorphonuclearcytes, 18 bands, 17 lymphocytes, 3 monocytes, 1 eosinophil), and corrected sedimentation rate of 5.

The venous pressure was 130 mm., saline circulation time 19 seconds, bleeding time one and one-half minutes, and circulation time eight and one-half minutes. Gastric aspirations were green, guaiac-negative with free acid present. Serum iron was 100 gamma per cent and the results of the Coombs test were negative. A urine culture produced negative results. A throat culture revealed nonhemolytic enterococci.

The blood urea nitrogen was 41, fasting blood sugar 108 to 195, carbon dioxide 17.9, chloride 107, sodium 136, potassium 4.3, calcium 10.7, phosphorus 4.6, and alkaline phosphatase 2.6 Bodansky units. The bilirubin was 0.54, thymol turbidity 0.75, cholesterol 120, esters 95, prothrombin control, albumin/globulin 3.6/1.9, creatinine 1.1, serum glutamic oxalacetic transaminase 24, serum glutamic pyruvic transaminase 19, and C-reactive protein, 0.

Serum electrophoresis included albumin 56 per cent, gamma globulin 15 per cent, beta globulin 12 per cent, and alpha globulins 17 per cent. Bone marrow aspiration was slightly hypercellular. Platelets were adequate with slight eosinophilia. An electrocardiogram showed a regular sinus rhythm of 82, PR of 0.15, QRS of 0.08, depressed segment, diphasic T_1, 2 aVf, aVl, and v_2 to v_6. Portable chest x-ray films showed pulmonary congestion with the heart markedly enlarged. X-ray films of the abdomen revealed diffuse haziness. An intravenous pyelogram revealed nonvisualization of either calyceal system.

Course.—The patient received 30 units of protamine zinc insulin daily, mercuhydrin, phenobarbital, phenergan, digoxin, and a 1,000-calorie diabetic diet. The stools remained guaiac 3 plus, blood pressure slowly fell to about 110 to 150/40 to 60, pulse was 74 to 96, and respirations were 24 to 34. The patient became restless and was placed in an oxygen tent. Phenobarbital and parenteral paraldehyde and 2 units of packed red blood cells were administered. The patient remained dyspneic, febrile, incontinent of urine, restless, and confused. Hematocrit was 30 and slowly fell to 26. The electrocardiogram was not changed. Reticulocyte count on the third hospital day was 6 per cent. Daily serum glutamic oxalacetic transaminase was 24, 34, 160, and 200, and serum glutamic pyruvic transaminase was 18, 18, 260, and 360. On the seventh hospital day the patient became tachypneic and sweaty. The pulse and blood pressure were unobtainable, and she expired.

Discussion

L. Lazar, M.D.: On the way here this afternoon I passed Dr. Angrist on Bruckner Boulevard. I hope this was symbolic and that I can stay ahead of him all afternoon.

At the outset, I might say that I don't think all of the manifestations of this illness can be ascribed to one process. We know that this patient had several diseases before her final illness. She had mild diabetes for about ten years and apparently had renal insufficiency for some time. A year before her present admission a specific gravity of 1.011 was recorded at least once, and I assume that the listed urine is a composite of her admission urines. There were no casts, white cells, or other elements described. There is a long history of hypertension with a pressure of about 200 over 100 mm. of mercury.

Now, if we plunge into the unknown, I think we might start with cardiac disease. It is my feeling that her final illness started in the thorax and very likely was some form of heart disease. Let us assume that she had hypertensive cardiovascular disease and some degree of arteriosclerotic disease; where can we go from there? She had an enlarged heart and a Grade III systolic murmur. These two clinical findings may be accounted for by facts we already know. Rheumatic heart disease should be considered but not seriously. If this sixty-nine-year-old woman had mitral insufficiency or an aortic valvular lesion leading to this size heart, she would have presented murmurs and other manifestations of heart disease some time ago. Perhaps we may see the x-ray now.

M. Elkin, M.D.: We don't have the outside films available. The films we have are few. I can't answer all your questions from the films we have here.

This first chest study was done in 1956, apparently the time of her perforated appendix attack. At that time her heart appeared slightly enlarged, probably consistent with her hypertension. Her lungs were basically clear. The trachea was deviated a bit to the right, I think, related to the aorta. The next study of her chest was done during the most recent admission. This is a portable film, and things here are quite magnified. There are some matters of interest though. The heart is big, although the size cannot be detailed from the portable study, and the shape is consistent with pericardial effusion, although it is by no means diagnostic. She does have an atelectatic area in the lower lung field.

In relation to your question as to a possible pulmonary neoplasm—she does have a widening of the superior mediastinum, but I think that this is more apt to be due to vascular changes than to a tumor. I would think that we don't have any evidence for a pulmonary neoplasm in these studies.

In respect to her previous rib fracture, you sometimes wonder if that could have been through a pathologic bone. She does have deformity of her left fifth rib, but the bone looks normal, and so I assume that that was a traumatic and not a pathologic fracture. A study of the abdomen done in 1956 shows nothing of great significance. However, in 1958 we have an intravenous pyelogram, and I too wonder about the reason for that study. In any case, as is expected with a high blood urea nitrogen, there was no excretion of opaque material in the renal system. The soft tissues are not well visualized. The appearance suggests fluid in the abdomen.

The bones show no evidence of destructive lesions. In summary, I think her heart is big. The shape is consistent with pericardial effusion, and I think there may be some fluid in her abdomen. I see no evidence of tuberculosis in the lungs.

Question: Dr. Elkin, why does the stomach stay filled with gas?

Dr. Elkin: Well, we ordinarily swallow gas. It is not uncommon to see gas in the stomach, especially in a sick patient.

Dr. Lazar: The possibility of subacute bacterial endocarditis seems attractive. This patient had fever, an enlarged heart, murmurs, splenomegaly, and anemia. There is no report of blood cultures. We shall set endocarditis aside for the present.

I assume that this patient had uremia; uremic pericarditis should be considered. She did have chest pain, accentuated by coughing and breathing. In uremia one rarely has a large effusion such as may have been present in this case.

The diagnosis of tuberculous pericarditis should always be entertained when there is anything to suggest stealthy pericardial disease with low grade fever and any evidence of tamponade. There are several forms of tuberculous pericarditis. There is an uncommon form, perhaps present in this instance, which involves old or very young people. In older persons it is often insidious and shows no evidence of pulmonary or mediastinal involvement. The patient is chronically ill with a slight fever, cough, and weakness. This may be associated with a slow, downhill course and laboratory evidence suggesting some involvement of myocardium or pericardium. Pathologists are not able to account for the source of pericardial infection. More often, pericardial tuberculosis arises by extension from mediastinal nodes or by hematogenous dissemination from a pulmonary focus.

The question of why she was bleeding from the gastrointestinal tract is not easy to answer. Among the diagnoses I considered was hiatus hernia, which certainly is logical in an obese person, even with a lack of x-ray confirmation. It is quite possible that without proper technic this diagnosis might be missed. A gastric tube was passed, and there was no evidence of bleeding. There was only one passage of the gastric tube, and there might not have been bleeding at that time. Duodenal ulcer also might be missed. Radiologic technics are difficult with sick, obese patients. Lesions of the small bowel are sometimes a source of bleeding. There was no small intestine x-ray film to which we can turn. A pathologic condition of the cecum may be detected only after repeated barium enemas. She had only one barium enema. There was constant evidence of bleeding. With the markedly depressed hemoglobin she exhibited, I think that a cecal lesion must necessarily be considered. One other possibility was the uremic ulceration of the bowel. She did have an elevated blood urea nitrogen and fixed urine specific gravity for some time. Uremic colitis is not always associated with diarrhea, and it often presents itself with phlegmonous mucosal changes and oozing of blood, or actual ulceration of the bowel, usually near the right side of the colon and the transverse colon. I think uremia is likely as the cause of intestinal bleeding.

If a patient presents a history of pulmonary disease, pleuritis, and recurrent fever, one must consider recurrent pulmonary emboli. I find no reason to consider embolism seriously, even though she had bilateral edema in the lower extremities. Abdominal neoplasm may be associated with phlebitis and pulmonary emboli.

Certain malignant conditions commonly are present with fever and may metastasize to the pericardium and produce fatal hemopericardium. The patient showed no evidence of real weight loss, and there were no localizing symptoms to suggest a neoplasm. Neoplasms which present a febrile pattern occasionally are hypernephroma, carcinoma of the colon, and hepatoma. Bronchogenic carcinoma involves the pericardium very frequently and may manifest itself as pericardial disease. However, I do not believe the diagnosis is a malignant condition.

We now come back to an interpretation of the hepatosplenomegaly. This patient was an obese Italian woman. She had no evidence of jaundice in the past. She had blood chemistries which did not support the diagnosis of cirrhosis. Hepatomegaly due to cardiac disease and congestive heart failure is very common. Splenomegaly is less common but may be associated with longstanding congestive failure, particularly in chronic rheumatic heart disease. However, I have put aside the diagnosis of rheumatic heart disease, and logically, I cannot attribute the hepatosplenomegaly to this mechanism. Occasionally, pancreatic cancer involving the splenic vein can metastasize to the liver, cause splenomegaly, and may be associated with distant metastasis to the pericardium. Lymphoma remains a possibility.

In summary, the two most likely possibilities are primary tuberculous pericarditis and subacute bacterial endocarditis. Terminal dissemination of tuberculosis to the liver and spleen would account for the gradually climbing serum glutamic oxalacetic transaminase and serum glutamic pyruvic transaminase. Subacute bacterial endocarditis in older people is notoriously an insidious disease and sometimes defies diagnosis because the pattern is unusual. Valvular anatomy distorted by arteriosclerotic changes or other pathologic changes, such as lupus erythematosus, may have superimposed bacterial vegetations.

It is my opinion that this woman died because of pericardial effusion, which accounts for her electrocardiographic changes, gradually falling blood pressure, congestion, negative response to energetic therapy, and her decline over a period of a few months. I believe that tuberculosis in the form of "primary" tuberculosis of the pericardium with terminal dissemination is the most likely diagnosis.

Diagnoses

Clinical.—*(1) Hypertensive cardiovascular disease with congestive heart failure; (2) diabetes mellitus; (3) anemia and hepatosplenomegaly of unknown origin.*

Dr. Lazar.—*(1) primary tuberculosis of the pericardium; (2) Subacute bacterial endocarditis.*

Anatomic.—*(1) Malignant lymphoma, probably lymphocytic type involving liver, spleen, nodes, omentum, bone marrow; (2) "hyalinosis" of the liver, spleen, kidneys, and pancreatic islands; (3) diabetes mellitus (Kimmelstiel-Wilson nephropathy, with azotemia); (4) purpura; (5) pulmonary edema and congestion.*

Pathologic Report

Boris Gueft, M.D.: The gross findings were puzzling and not easily explained despite frozen sections done at the time of autopsy.

The patient was quite obese. There was definite evidence of purpura, with ecchymoses of the skin of the extremities. Only about 20 cc. of bloody pericardial fluid were found. The heart showed left ventricular hypertrophy, and weighed 350 Gm. with moderately diffuse myocardial scars. There was no endocarditis. Severe generalized arteriosclerosis was noted. About 800 cc. of bloody fluid were present in each pleural cavity. The lungs showed edema and congestion with lower lobe collapse.

There was severe hemorrhagic ascites, as suggested by Dr. Elkin. This ascites was probably undetected clinically because of obesity. The peritoneum was altered by the presence of many gray to red firm nodules up to 2 cm. in diameter. It was even considered possible that miliary tuberculosis was present in the gross. Numerous fibrous peritoneal adhesions were seen. The appendix had been removed.

All lymph nodes were two to three times normal size. The liver weighed 2,400 Gm. and showed a gray-red fine mottling. The spleen weighed 800 Gm., grossly showing many fine psuedofollicles, suggesting an altered architecture.

Both kidneys were enlarged, pale, and firm weighing 410 Gm. together. The corticomedullary junction was blurred. Pelvic mucosal hemorrhages were apparent. On gross examination it appeared to be either amyloidosis or severe Kimmelstiel-Wilson nephropathy.

The intestines revealed mucosal purpura, a change probably responsible for the patient's anemia and guaiac-positive stools. No ulcers were seen.

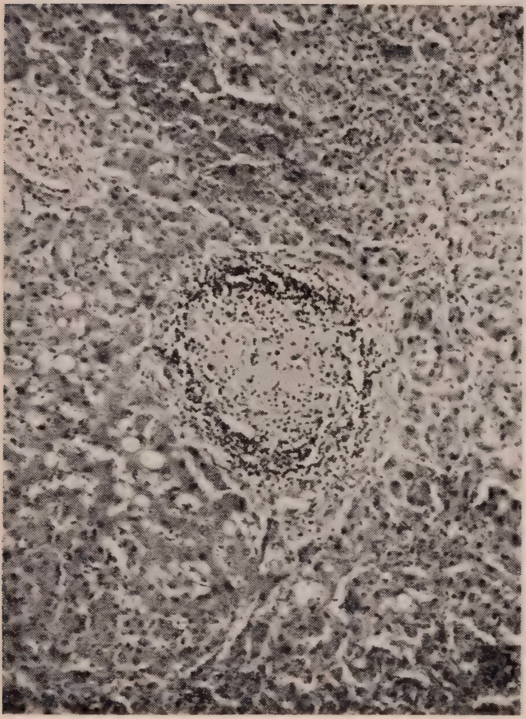

FIG. 1. Microscopic view of pseudofollicles found in liver and spleen.

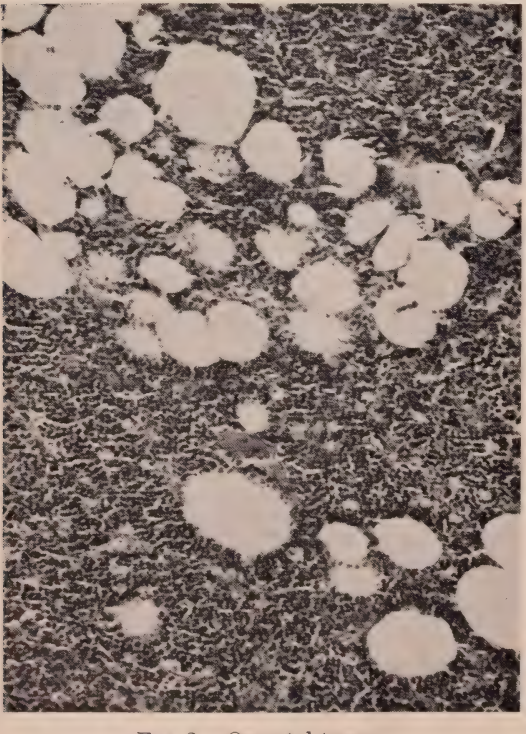

FIG. 2. Omental tumor.

Microscopically, the liver and spleen were seen to contain many pseudofollicles composed of a peripheral collection of small lymphocytes and central hyalin deposits taking acid aniline dyes, such as eosin and fast green. No amyloid was detected by the usual methods (Fig. 1). The omental nodules, lymph nodes, and marrow showed sheets of lymphocytes with a sprinkling of histiocytes. Distinct Sternberg-Reed cells were not seen. There were no eosinophils. Abundant fat was noted in the omentum (Fig. 2). Hyalin deposits such as those of the spleen and liver were seen in many of the tumorous areas elsewhere. It was difficult to decide whether this was Hodgkin's lymphoma or a lymphocytic lymphoma. There were many hyalinized islands in the pancreas.

The kidneys showed remarkable hyalin basement membrane thickenings. In some glomeruli there were ball-like hyalin deposits of the Kimmelstiel-Wilson lesion (Fig. 3). Fatty glomerular loop lesions, such as those seen in diabetes, also were noted. A suggestion that these glomerular changes were due to systemic lupus could not be proved; there were no hematoxylin bodies.

The hyalin material seen everywhere was not understood. It took collagen stains, but an ultraviolet absorption spectrum with a microspectrophotometer showed a marked, broad 2,800 A peak, which could have been due only to aromatic amino acids, such as tyrosine or tryptophan, which are not found in pure collagen (Fig. 4). Thus it is concluded that a noncollagenous protein was present in the hyalin deposit.[1] Apparently, in addition to the malignant lymphoma, there is present an abnormal protein deposit in many areas, a "paraproteinosis" to use the term devised by Apitz[2] in 1940. He used this to describe the peculiar tissue deposits and the high serum proteins found in multiple myeloma. Teilum[3] has extended this concept considerably and concludes that this paraproteinosis or hyalinosis is characteristic in such diseases as systemic lupus and sclero-

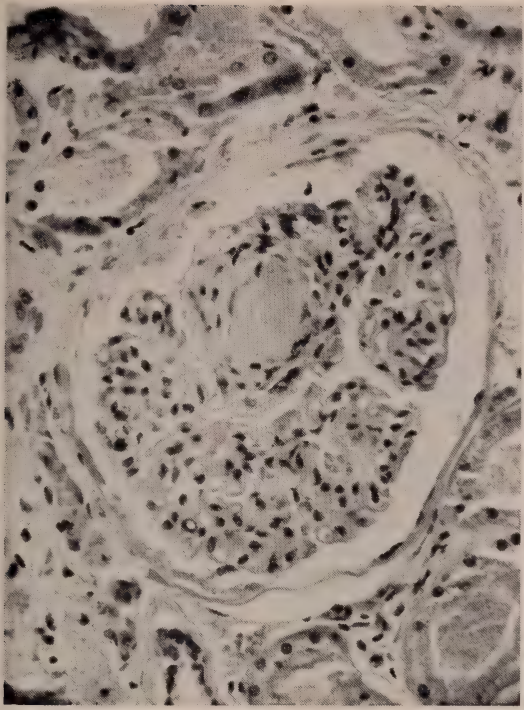

FIG. 3. Hyalin deposits found in kidneys.

derma, intimating that the basic mechanism in these morbid conditions is the hyalin deposition. Rappaport[4] has described hyalin droplets in lymphosarcoma cells, a fact that tends to link the hyalin deposits to the lymphoma in this case.

QUESTION: What caused the elevated transaminase?

DR. GUEFT: Possibly some small necrotic foci that were found scattered in the liver. There were no pulmonary infarcts.

QUESTION: What is found in the marrow in refractory anemia, such as this patient had?

DR. GUEFT: It is known that there are roughly three types of marrow which are not successful in producing red blood cells. One is a marrow without marrow cells, such as might be found when a widespread lymphoma is present. Another type is the extremely hyperplastic, poorly functioning marrow, while the third type appears to be normal.

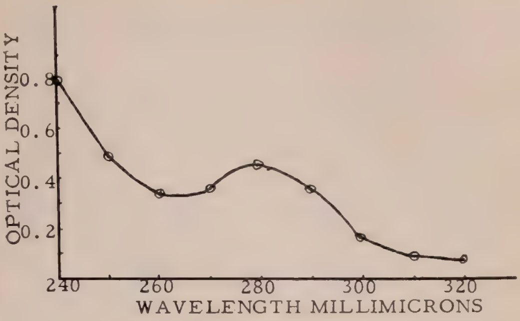

FIG. 4. Ultraviolet absorption spectrum.

QUESTION: Why was there a hemorrhagic tendency?

DR. GUEFT: Lymphomatous infiltrations of the marrow may produce this, causing depression of platelet production. Rappaport[4] suggests that a poor prognosis is indicated in such cases of malignant lymphoma, which seems to be our experience in this case. He correlates the presence of cellular hyalin droplets with acquired hemolytic aneuria.

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When a man says money can do anything, that settles it; he hasn't any.—E. W. HOWE

Current Concepts in

DIABETES MELLITUS

Sponsored by the Clinical Society of the New York Diabetes Association

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Laboratory Aids in Diagnosis

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The correct diagnosis of any disease is essential to its understanding and proper treatment. In the detection of diabetes mellitus laboratory tests have been developed which are of paramount importance in the specific indentification of this disorder.

Screening Tests

In a person with the classical manifestations of diabetes mellitus (polyphagia, polydipsia, polyuria, nocturia, weight loss, and weakness, and in women, vaginal itch) the diagnosis of this disease can be established by the finding of glucose in the urine and a hyperglycemia in the fasting state or two or three hours after a carbohydrate-rich meal (100 Gm. of carbohydrate or more). Even in the absence of the listed clinical symptoms the diagnosis of diabetes is warranted when the fasting blood sugar levels are consistently high, that is, above 130 mg. per 100 ml. with the Folin and Wu or the Folin-Malmros method and above 120 mg. per 100 ml. with the true blood glucose methods. It is warranted also when the venous blood sugar exceeds 170 mg. per 100 ml. two or three hours after a carbohydrate-rich meal with the Folin and Wu method and 150 mg. per 100 ml. with true blood glucose methods, provided that glucose is present in the urine and the subject is free from the various conditions in which transient hyperglycemia and glycosuria are not uncommon (Table I).

Glucose Loading Tests

In mild diabetes and in persons who are only suspected of having this disease the fasting and postprandial blood sugar values may remain normal, and in such instances more elaborate procedures are needed to confirm or to rule out the existence of diabetes. Such may be the case: (1) when there is a history of even transient glycosuria or when sugar is found in the urine of a person who is free from the clinical manifestations of diabetes and has normal fasting and postprandial blood glucose values; (2) when a person with complaints characteristic of diabetes consistently shows negative results of tests for glucose in the urine (for example in the case of a high renal

TABLE I.—DECREASED CARBOHYDRATE TOLERANCE IN NONDIABETIC CONDITIONS

- Physiologic Causes
  - Carbohydrate starvation
  - Physical inactivity (old age, prolonged bed rest, arthritis)[1]
- Pathologic Causes
  - Liver disease due to toxic agents, cirrhosis, glycogenosis
  - Endocrine disorders with overfunction of the anterior pituitary, the thyroid, and the adrenals (acromegaly, basophilic pituitary adenoma, hyperthyroidism, Cushing's syndrome, aldosteronism, pheochromocytoma)
  - Functioning islet cell tumors
  - Conditions of stress (fractures, myocardial infarction)
  - Essential hyperlipemia[10,11]
  - Uremia[12]
  - Damage to the central nervous system (brain injury, brain tumor, brain hemorrhage)
  - Brucellosis[13]
  - Neoplasia[14,15]
  - Asphyxia
  - Drugs (ether anesthesia, barbiturate addiction,[16] thorazine,[17] adrenocortical steroids)

threshold for glucose); (3) when it is desired to find out whether or not an apparently normal person with a family history of diabetes suffers from a latent or mild form of this disease; (4) when glycosuria with or without hyperglycemia is found in such conditions as pregnancy, thyrotoxicosis, liver disease, and infectious states; (5) when the existence of diabetes is suspected because of retinopathies, nephropathies, and neuropathies of undetermined etiology since these are seen often in degenerative complications of diabetes; and (6) when mothers give birth to large babies and women exhibit pregnancy and neonatal abnormalities such as are encountered in diabetic and prediabetic women.

Glucose Tolerance Tests

STANDARD ORAL GLUCOSE TOLERANCE TEST.—It is well known that prolonged starvation or carbohydrate restriction may cause a temporary impairment of glucose tolerance which is reflected in hyperglycemia and glycosuria on refeeding or the administration of glucose. This is the so-called starvation or hunger diabetes.[1-6] This impairment of glucose tolerance is ascribed to a decrease in the insulin content of the pancreas induced by carbohydrate restriction[7] and a marked reduction in the phosphorylating capacity of muscles induced by starvation.[8] To avoid an erroneous diagnosis of diabetes in nondiabetic persons a diet containing at least 150 Gm. of carbohydrate daily[9] is given for from three to five days preceding the test.

Before and during the test the subject should be made comfortable, and tension and excitement should be avoided since they may entail a rise in the blood glucose content. Physical activity may lower the blood glucose concentration and therefore should be reduced to a minimum shortly before and during the test. The test is performed after a fast of from twelve to fourteen hours. In adults the test dose may be 100 Gm. of glucose or 1.75 Gm. per kilogram of body weight dissolved in 250 cc. of water; in children 1 Gm. per pound of body weight is used. Customarily, the glucose content in the blood and the urine is determined in the fasting state and at intervals of thirty, sixty, one hundred and twenty, and one hundred and eighty minutes after the administration of glucose. However, for reasons stated later, it is recommended that the test be extended to the fourth and fifth hours after the administration of glucose. In reporting the results of the test it is important to indicate whether venous or capillary blood was used and whether the chemical technics employed measured true blood glucose or whether they included nonfermentable, that is, nonglucose-reducing substances as well. Because the blood content of these substances may vary rather widely, the true blood glucose methods are more reliable.

As previously mentioned, glucose loading tests should be employed in doubtful cases to establish the diagnosis of diabetes. It is most regrettable that they are often performed in patients with consistently high-fasting or postprandial blood glucose levels, in those with a well-documented

TABLE II.—NORMAL VALUES FOR THE STANDARD ORAL GLUCOSE TOLERANCE TEST

Type of Blood and Chemical Method	Blood Sugar Values in Mg. per 100 Ml. Fasting	Peak	Two Hours
Venous			
Folin-Wu	80 to 120	170	120*
True blood glucose	60 to 100	150	100*
Arterial or capillary			
Folin-Malmros	80 to 120	200	120*
True blood glucose	60 to 100	200	100*

* or less.

history of this disease, and even in patients maintained on insulin.

With regard to the diagnostic criteria of diabetes, Mosenthal and Barry[10] stressed two key readings: (1) the fasting level, and (2) the level two hours after the administration of glucose, since in a normal subject the blood sugar returns to the normal level within two hours after glucose loading (Table II). It is generally agreed that a true blood glucose content of 120 mg. per 100 ml. or more in the fasting state and two hours after administration of glucose warrants the diagnosis of diabetes, and that a two-hour value between 110 and 120 mg. per 100 ml. is only suggestive of this condition. Some writers consider a peak value of 170 mg. per 100 ml. (Folin and Wu method) in the first hour of the test as an adequate criterion of diabetes. Such an attitude may entail an unwarranted diagnosis of this disease in subjects with a rapid absorption of sugar from the intestinal tract, such as is found in the dumping syndrome after gastric surgery and in some patients with peptic ulcer, duodenitis, or thyrotoxicosis.[11, 12] The characteristic of the deranged carbohydrate metabolism in diabetes is the high and prolonged tolerance curve in which the blood glucose remains elevated for three hours or more after the test dose of glucose (120 mg. per 100 ml. or more at two hours and 110 mg. per 100 ml. or more at three hours). However, it is well to remember that a high and prolonged curve during the initial two or three hours of the test may occur also in various physiologic and clinical conditions unrelated to diabetes (Table I). Thus, in the presence of the clinical manifestations of diabetes a high and prolonged curve confirms the diagnosis of this disease, but if the interpretation of such a curve is not clear, it is better to defer the diagnosis and repeat the tolerance test after a few weeks or months.

In some instances, after an early elevation the blood glucose drops to 100 mg. per 100 ml. or less and subsequently rebounds to higher levels at two hours. Such rebound curves should be regarded as normal.[10] Another curve pattern which requires careful consideration is that with an early excessive elevation of blood glucose which is followed by its fall to hypoglycemic levels between the third and fifth hours of the test. Such initially high curves with secondary hypoglycemia were first reported by Harris.[13] He considered patients with this type of curve as potentially diabetic, and a similar view was recently voiced by Skillern and Rynearson.[14] That such curves are not in themselves adequate for the diagnosis of diabetes is indicated by the fact that in most of them the peak glucose concentration in the capillary (arterial) blood does not exceed the normal value of 200 mg. per 100 ml.[15–17] Furthermore, since this pattern of tolerance curve may vary in the same subject and may be replaced by a normal curve in a repeat tolerance test,[15–19] one such test is certainly not sufficient to establish the existence of diabetes.

As mentioned earlier, glucose loading tests are used also to rule out the existence of diabetes, particularly when glycosuria occurs without concomitant hyperglycemia. This may be seen in renal glycosuria, a condition in which renal tubules fail to reabsorb part of the glucose filtered through the renal glomeruli. Thus renal glycosuria is not the consequence of hyperglycemia such as is seen in true diabetes mellitus but expresses a defect in tubular function. Although the nature of this defect has not been established, most likely it is related to the phosphorylating system which insures the transport and reabsorption of glucose in the tubules. This is indicated by the occurrence of renal glycosuria after the administration of phlorhizin, a substance known to be an inhibitor of phosphorylation reactions.

In the literature there is much confusion concerning the normal renal threshold for glucose. This stems chiefly from the use of venous and not arterial blood in glucose tolerance tests, although in the determination of the renal threshold the arterial blood is more important, since it is the arterial and not the venous blood that carries glucose to the renal glomeruli.[11] Studies by Smith[20] and Mosenthal[10] show the arterial threshold for glucose to be 200 mg. per 100 ml., and if glycosuria occurs above this level, even with low venous blood sugar values, true renal glycosuria is not present. A more precise evaluation of renal glycosuria may be made by measuring the maximum tubular reabsorption of glucose, but in this test again arterial and not venous blood is used for glucose estimations.

A temporary lowering of the renal threshold for glucose may be seen in pregnancy and hyperthyroidism[12] and in patients treated with ACTH[21, 22] and with glucocorticoids or their derivatives.[23, 24] Persistent renal glycosuria may be genetically transmitted,[25] or it may result from certain forms of renal disease such as the Fanconi syndrome or from tubular damage due to toxic agents (heavy metals poisoning).

Since fructose gives a positive reaction with routine tests for urinary glucose (reduction of metallic oxides, fermentation with bakers' yeast, and osazone formation with phenylhydrazine), fructosuria may be mistaken for glycosuria of diabetes or that of renal glycosuria.[26] Alimentary fructosuria may be seen after ingestion of large amounts of fructose or of fructose-containing foods (fruits, honey), particularly in patients with liver disease, while "essential fructosuria" represents an inborn error of metabolism most likely related to the conversion of fructose to glucose in the liver.[25] In fructosuria the sugar appears in the urine because of the low renal threshold for fructose but the glucose tolerance test is normal.

Other sugars occasionally appearing in urine that may be mistaken for glucose are galactose, lactose, and the pentoses. In all these conditions the glucose tolerance test is within normal limits. Galactose is found in the urine of infants suffering from galactosemia, a hereditary metabolic error characterized by the deficiency of phosphogalactose-uridyl transferase which catalyzes the conversion of galactose 1-phosphate to glucose 1-phosphate.[25, 27] Galactosuria also may be seen in nursing infants with gastrointestinal disorders and in adults suffering from hyperthyroidism or from liver dysfunction. Lactosuria is encountered more often than galactosuria. It is a physiologic phenomenon seen not infrequently in nursing women.[12]

Pentosuria may occur as a transient phenomenon after the ingestion of large quantities of fruits and berries rich in pentoses (prunes, cherries, plums, and grapes), or it may be persistent in essential pentosuria which is a harmless and rare hereditary metabolic anomaly confined to certain groups of Jewish ancestry.[25]

THE ONE-HOUR, TWO-DOSE ORAL GLUCOSE TOLERANCE TEST OR THE EXTON AND ROSE TEST.—The one-hour, two-dose oral glucose tolerance test or the Exton and Rose test consists in giving 50 Gm. of glucose at fasting and again one-half hour later. Only three blood sugar determinations are made, one at fasting and the other two a half hour and an hour after the first glucose dose. The test is more convenient than the standard test since it may be completed in one hour. It is said to be based on the Staub-Traugott phenomenon in which a second dose of glucose given two hours (and not one-half hour as in the Exton and Rose test) after the first one, that is, at the time when the blood glucose has fallen to a low level, fails to cause a rise in the blood glucose content. In the Exton and Rose test the second dose is superfluous since it is given when there is still plenty of glucose in the stomach. The observed drop in blood glucose is therefore not due to the second glucose dose and it does not differ from that which is seen when only one dose of glucose is given. Furthermore, since the test measures the height but not the duration of the blood sugar elevation, it may lead to an erroneous diagnosis of diabetes, for instance, in the dumping syndrome. In practice this test is often inconclusive when a tolerance test is needed most, that is, in doubtful cases of diabetes.

INTRAVENOUS GLUCOSE TOLERANCE TESTS.—Because the standard oral glucose tolerance test is time-consuming and may lack specificity, various intravenous glucose loading tests have been proposed. It was thought that such tests, by eliminating the variability in the rate of glucose absorption from the gastrointestinal tract, could serve as a good index of glucose utilization in the peripheral tissues and that in consequence they would provide reliable criteria for the diagnosis of diabetes. In practice, however, the interpretation of the parenteral glucose loading tests is rendered difficult by the fact that they vary greatly with regard to the amount, the concentration, and the infusion rate of the employed glucose solutions. Some writers administer $^1/_3$ Gm. of glucose per kilogram of body weight in a 50 per cent solution given within three to five minutes,[28] others 0.2 Gm. per kilogram given in ninety seconds,[29] and still others a standard dose of 100 cc. of a 25 per cent glucose solution.[30] Most widely used is the test described by Thorn *et al.*[31] in which 0.5 Gm. per kilogram in a 20 per cent solution is given in a period of thirty minutes to conform to the normal rate of glucose absorption from the gastrointestinal tract.

The question as to whether or not the intravenous glucose tolerance tests provide a greater degree of sensitivity than the oral tests was taken up by Womack and Moyer.[32] In a group of 37 subjects with a normal response to intravenous glucose loading they found 9 who showed diabetic features in the standard oral glucose tolerance test. Similarly, among 80 elderly subjects studied by Chesrow and Bleyer[33] there were 16 with normal intravenous tolerance curves who demonstrated diabetic curves in the oral test while diabetic features in both tests were seen in only 2 subjects of their series.

A modification of the classic intravenous glucose loading tests which is based on the determination of the rate of glucose disappearance from the blood was introduced by Amatuzio *et al.*[34] These writers administer 25 Gm. of glucose in a 30 per cent solution in four minutes and take blood glucose measurements before the administration and every eight minutes thereafter for seventy-two minutes. From these measurements they calculate the rate of disappearance of the administered glucose which they found to be 3 to 4.84 per cent per minute in normal subjects, 0.93 to 2.46 per cent per minute in mild diabetes, and 0.23 to 1.64 per cent per minute in severe diabetes.

The rate of glucose uptake by the tissues as a diagnostic criterion of diabetes was studied by Bastenie, Conrad, and Franckson.[35] In their technic 0.66 ml. of a 50 per cent glucose solution per kilogram of body weight is given by rapid injection, and blood glucose measurements are made every ten minutes for thirty minutes. The results are plotted on a semilogarithmic scale and the slope of the line is taken as the expression of glucose uptake or assimilation by the tissues.

INTRAVENOUS GLUCOSE TOLERANCE TESTS WITH ESTIMATION OF INORGANIC SERUM PHOSPHATE AND POTASSIUM.—The hope that intravenous tolerance tests may help in the separation of hyperglycemia of diabetes from that seen in liver disease has been dissipated by the overlap of curves in these two groups of patients. For this reason the determinations of serum inorganic phosphate and of potassium were added to the intravenous tolerance tests on the assumption that utilization of glucose in the tissues is accompanied by a decrease in the serum content of these substances.[36, 37] However, the direction and the magnitude of changes in the serum content of these substances following administration of glucose proved variable and not significant enough to be used as a criterion in the diagnosis of diabetes.

Some years ago I emphasized the inconsistency in the variation of the serum phosphate content after the administration of glucose, insulin, and epinephrine[38] and showed that similar changes may be observed under conditions which do not affect the blood glucose concentration in any way, even after taking a glass of water.[38, 39] In this work determinations of the inorganic phosphate were carried out together with those of the total blood phosphorus content and it was found that changes in the inorganic phosphate occurred without a change in the total phosphorus content. This fact invalidates the theory that in man after the administration of glucose, insulin, and epinephrine the phosphate leaves the blood stream to participate in the formation of a carbohydrate-containing compound in the tissues. This is in agreement with the work of Cori and Goltz[40] who have shown that the increase in the inorganic phosphate in the liver after insulin is at the expense of the organic phosphorus content in the liver itself. It is also in agreement with the more recent work of Sacks and Sinex[41] who with the use of C^{14}-labeled glucose and P^{32}-labeled phosphate demonstrated the fact that while insulin increases the transport of these two substances into the rat's diaphragm there is no quantitative correlation between these changes, since on a molar basis the transfer of phosphate was twice as great as the increase in glucose utilization through oxidation and glycogen formation.

Against this background it may be pointed out that in the past decade several investigators have reported on the lack of consistent changes in the serum phosphate level in relation to blood glucose changes in normal subjects, diabetic subjects, and those afflicted with hepatic dysfunction.[42–46] The lack of correlation between changes in the blood glucose and potassium in normal subjects and in diabetic subjects given glucose by vein also has been reported.[45]

Sulfonylurea Loading Tests

Since none of the reviewed glucose tolerance tests can be regarded as completely satisfactory for the diagnosis of diabetes, it is not surprising that the advent of the hypoglycemic sulfonylureas has prompted their use for the detection of mild diabetes. In the test introduced by Unger and Madison[47, 48] 1 Gm. of sodium tolbutamide in 11 cc. of distilled water is given by vein in two minutes. Blood specimens for glucose determinations are obtained before and twenty and thirty minutes after the administration of the compound. Because of the danger of hypoglycemia the test is then terminated by giving carbohydrates.

The blood glucose level twenty minutes after the administration of tolbutamide is regarded as the key reading. At that point, in 96 per cent of 100 nondiabetic subjects the blood glucose content fell to a mean value of less than 84 per cent of the pretest value with a range of 9 to 85 per cent, and in 95 per cent of 79 mild diabetic subjects it fell to a mean value of 80 per cent or more, with a range of 61 to 108 per cent. Thus the writers consider the failure of the blood glucose to fall below 84 per cent of the fasting level as strong evidence for the diagnosis of diabetes, and the zone between 80 and 84 per cent of the pretest level as abnormal but not diagnostic. However, the presented data show that 10 per cent of patients in each group had an overlap in the blood glucose fall which at twenty minutes ranged from 75 to 89 per cent of the pretest level. Thus a fall of the blood glucose below 84 per cent of the fasting level does not exclude diabetes, a fact which greatly reduces the diagnostic accuracy of the test.

The technic of Zarowitz and Eis[49] consists of giving 1 Gm. of sodium tolbutamide in 20 cc. of isotonic saline solution intravenously in two minutes. Blood sugar determinations by the Folin and Wu method are done on specimens withdrawn before the injection and every twenty minutes for two hours after the injection. In a group of 25 nondiabetic subjects they recorded the nadir in the blood sugar in the forty-minute specimen, and this was followed by a rebound during the remaining eighty minutes, while in 26 diabetic subjects the decline was of lesser magnitude and continued without a rebound until the end of the test. At twenty minutes the nondiabetic subjects showed a mean decline of 36 per cent of the pretest blood sugar value with a range of 15 to 72 per cent, and the diabetic subjects showed a mean value of 11 per cent with a range of 10 to 30 per cent. At forty minutes in the nondiabetic subjects the mean blood sugar fall was 40 per cent of the pretest level with a range of 17 to 62 per cent, and in 9 nondiabetic pregnant women the decline in blood sugar ranged from 4 to 52 per cent of the fasting level. In diabetic patients the mean blood sugar fall amounted to 23 per cent with a range of 1 to 44 per cent, but a more pronounced drop was noted at sixty minutes, at which time the mean value was 30 per cent with a range of 3 to 55 per cent. In 9 pregnant diabetic women it occurred eighty minutes after the injection and ranged from 10 to 35 per cent of the fasting level. In their conclusions the writers place emphasis on the absence of the rebound from the blood sugar nadir as the diagnostic feature of mild diabetes.

Because marked zones of overlapping blood glucose values were seen in normal and diabetic subjects in the two preceding studies the usefulness of the tolbutamide tolerance tests in doubtful cases of diabetes may well be questioned. Furthermore, the rationale itself of these tests may also be questioned. They are based on the assumption that sulfonylureas stimulate the release of insulin from the islet cells. However, it is by no means certain that this is the only mechanism of their action. Indeed, there are many observations which indicate that these compounds may have extrapancreatic effects,[50–52] and the recent work of Renold and his associates[53,54] makes a particularly strong case for the concept that tolbutamide exerts significant metabolic effects which differ from insulin effects and are produced without the mediation of insulin. The subject certainly deserves further exploration, but in view of a high incidence of venous thrombosis after intravenous injection of sodium Orinase[55] it is advisable to discontinue entirely for the present time the intravenous tolbutamide tolerance tests.

Latent Diabetes and the Prediabetic State

The glucose tolerance test presented the physician with the first laboratory tool for the identification of the specific metabolic disorder of diabetes, and with its use it soon became obvious that abnormally high tolerance curves may be observed in subjects who are entirely free from the clinical manifestations of diabetes. From this finding arose the concept of latent diabetes as a state of decreased tolerance to glucose loading with an absence of the clinical features of diabetes and of glycosuria.

Recognition of the hereditary nature of diabetes created particular interest in the study of carbohydrate tolerance in the asymptomatic members of families with a history of diabetes. It has been known for a long time that some subjects with familial predisposition to diabetes may develop this illness only late in life, while others may exhibit a transient diabetic state as a result of obesity, in the course of pregnancy, during infectious states, and under various stressful circumstances. With the subsidence of the precipitating factors the diabetes frequently disappears and cannot be demonstrated by conventional laboratory methods. It may recur under suitable conditions and may ultimately progress to the state of permanent diabetes. The span of life which precedes the onset of permanent diabetes in such subjects has been aptly termed the prediabetic state.[56–61]

Two avenues of approach suggest themselves for the detection of the prediabetic state: (1) the search for clinical and laboratory evidence of diabetes during stressful situations, and (2) the experimental production of stresses that may bring to the surface the potentiality of diabetes in subjects with normal carbohydrate tolerance under normal life conditions.

Pregnancy is known to be a physiologic stressful condition that may precipitate a transient diabetes in women predisposed to this illness. Other stigmas of the prediabetic state in pregnancy include the toxemia of pregnancy, spontaneous abortions and miscarriages, stillbirth, fetal congenital abnormalities and prematurity, as well as the bearing of large babies (10 pounds and more). Such prediabetic manifestations were reported to precede for from five to twenty years the development of manifest and permanent diabetes. This subject was studied particularly well by Hoet[57] who confirmed the work of earlier investigators on the occurrence of abnormal glucose tolerance tests after the fourth month of pregnancy in women with diabetic traits and then a return to normal after delivery. He also described Cushing-like features in the fetus of a prediabetic mother, which he attributes to the effects of an abnormal intra-uterine environment created by the hypercorticism of pregnancy not compensated for by adequate insulin production because of functional deficiency of the maternal islets. An ambitious program of study of the prediabetic state in pregnancy was undertaken by Wilkerson.[62] His data are based on the screening of over 11,000 pregnancies. Although only 11 per cent of the women in his series gave a family history of diabetes, carbohydrate abnormalities were found in 44 per cent and definitely abnormal glucose tolerance tests in 23.5 per cent. Among patients who were re-examined within five months after delivery, in 92 per cent of those with an abnormal glucose tolerance test the response to glucose loading returned to normal limits.

In an effort at prediction of future diabetes in nondiabetic relatives of diabetic patients Fajans and Conn[60, 61] introduced the cortisone-glucose tolerance test. The rationale of this test rests on the diabetogenic action of cortisone which is used to unmask the functional inadequacy of the islets. First, a three-hour oral glucose tolerance test is carried out and on the next day subjects weighing less than 160 pounds are given 50 mg. of cortisone acetate at eight and a half and again at two hours before the ingestion of glucose, and those weighing more than 160 pounds are given $62^1/_2$ mg. at both intervals.

The test results are regarded as positive if the blood glucose is above 160 mg. per 100 ml. at one hour and above 140 mg. per 100 ml. at two hours and as negative if the two-hour reading is 140 mg. per 100 ml. or less.

A positive response to the cortisone-glucose tolerance test was observed in only 3 per cent of 104 control subjects while it was positive in 25 per cent of 295 nondiabetic relatives of known diabetic persons who had a normal response to the preliminary glucose tolerance test. Among patients followed up for six years, diabetes was diagnosed in 18 per cent of 34 subjects with a positive response and in only 1 of 57 subjects with a negative response. It is noteworthy, however, that the test varied between positive and negative responses in a small group of positive reactors as well as in a small group of negative reactors with a family history of diabetes.

In the opinion of West[63] the cortisone-glucose tolerance test shows a limited ability to identify potential diabetic individuals. His patients were primed with cortisone in amounts suggested by Fajans and Conn,[60, 61] or with prednisone or prednisolone. They showed wide individual variations in their response to the test and there was no great difference between those with and those without a family history of diabetes. As an example, a blood glucose reading above 140 mg. per 100 ml. at two hours was recorded in 20 per cent of those with and in 23 per cent of those without a diabetic family history. It is obvious that long-term experience with such tests is needed to indicate their reliability and usefulness, and that at present great caution is needed to prevent arriving at diagnostic conclusions that later may have to be abandoned.

The conclusions of Barreto and Recant[64] derive from the assumption that in diabetes and prediabetes the rate of insulin release is decreased and that it may be increased by the action of tolbutamide. Their technic consists in giving tolbutamide intravenously after steroid priming with Decadron phosphate or prednisone. The number of subjects (20 normal and 6 with a family history of diabetes) studied by these writers is too small for a valid interpretation of differences between the two groups of subjects. It is interesting, however, that 8 patients of their series who had an exaggerated response to steroids showed a normal response to tolbutamide when it was given without steroid priming. This finding casts some doubt on the validity of the tolbutamide tolerance tests in the diagnosis of mild diabetes.

Detection of Glucose in Urine

Routine laboratory testing methods for the presence of glucose in urine, such as Benedict's and Fehling's reactions and the Clinitest and Galatest procedures, are based on the reduction of alkaline copper or bismuth reagents by glucose, with a resulting change in the color of the reagent. Because other sugars, such as fructose, galactose, and the pentoses also possess this reducing property, the recently introduced enzymatic test in which glucose oxidase is used to catalyze conversion of glucose to gluconic acid and hydrogen peroxide[65-67] is of particular value. The latter is then detected by its oxidizing effect on indicator dyes in the presence of peroxidase. The test is specific for glucose and eliminates the nonglucose reducing substances. Clinistix and Tes-Tape papers are based on this method and may be used conveniently for the detection of urinary glucose.

Since fructose, galactose, and lactose, similarly to glucose, are fermentable by bakers' yeast, they must be identified by special procedures. With the use of phenylhydrazine fructose forms osazone crystals identical morphologically with glucose osazone. Thus fructose is identified by: (1) the Salivanoff's resorcinol-hydrochloric acid reaction, and (2) paper chromatography. Lactose is identified by a characteristic osazone with phenylhydrazine, by Rubner's test with the use of lead acetate, and by a positive reaction to a test with mucic acid, and galactose is identified by the mucic acid test, the phloroglucin-hydrochloride reaction, and by paper chromatography. Pentoses are not fermented by yeast and may be detected by pentosazone crystals formed with phenylhydrazine, by Bial's orcinol-hydrochloride reaction and by paper chromatography.

Falsely positive tests for glucose in urine may result from the presence of creatinine, uric acid, glucuronic acid (which appears in urine after the ingestion of chloral hydrate, camphor, menthol, para-aminobenzoic acid, aminopyrine, and salicylates) also from the presence of large amounts of ascorbic acid and the homogentisic acid of alkaptonuria. These substances are not fermented by bakers' yeast, but they can be separated easily from urinary glucose by means of the glucose oxidase test.

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The truth is always the strongest argument.—SOPHOCLES

NUTRITION EXCERPTS

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CORNELL UNIVERSITY

ITHACA, NEW YORK

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Contamination of Foods by Fallout

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It is only since 1952 that the total amounts of radioactive materials in the biosphere began to increase on a world-wide scale and raised concern as to the possible effects on the populations of the world. At that time, the first hydrogen bomb was exploded in a test exercise in the Pacific. As a result of this nuclear detonation and subsequent blasts, large quantities of radioactive fission products were formed. Part of the nuclear debris was injected into the stratosphere and carried by wind currents throughout the world, although the pattern of distribution was nonuniform. With time, the fission products descended to the lower layers of the atmosphere and were carried to the earth primarily by rainfall. The materials that fell into the seas were diluted by the vast volumes of water and thus were of less concern than those descending to the earth's land mass. On descent to the arable agricultural areas, the radioactive materials entered the biologic cycle primarily through vegetation.

There are three general ways in which growing plants accumulate radioactive fission products. First, there is direct contamination of the foliar parts of the plant; the radionuclide, depending on its physical and chemical properties, may be directly absorbed into the leaves and translocated to the fruit or other edible parts. Second, the fission products not immediately retained by the plant may be washed from the aerial parts by rain, contaminating the basal parts of stems or surface roots. Plant-base absorption of these substances could then take place. Third, the radioactive substances directly contaminating the soil would also be available for absorption by the deeper root systems of the vegetation. However, the route from soil to plant is a complicated system and the degree of transfer by this mechanism is dependent on many factors, primarily on the physicochemical reactivity between the radioactive element and the soil. Estimations by Russell[1] have indicated that 80 per cent of the strontium-90 entering the food chain does so either by direct foliar contamination or by plant-base absorption; the other 20 per cent enters from the soil. Therefore, the levels of strontium-90 in vegetation are dependent primarily on the rate of fallout. Since cesium-137 is tenaciously fixed in soil particles, almost all entry into plants is by foliar absorption and, therefore, cesium-137 levels are completely dependent on fallout rate.

After the radionuclides are incorporated into the plant, the fission product may be transmitted to man directly by way of vegetables, cereals, grains, fruits, and so forth, or indirectly through animal products. Since the ruminant grazes relatively large areas of agricultural land, a significant amount of the fission products are ingested by this species and then passed on to the human population through milk or meat. The relative contribution of different classes of foods to the total body burden will vary with the specific isotope and will be mentioned subsequently. Although the main vector from nuclear detonation to man is from food, there are at least two other pathways that may be mentioned, as follows: (1) by direct inhalation and subsequent absorption from the aveolar tissue or (2) by percutaneous absorption. Under certain situations, such as nuclear reactor accidents or industrial applications of radioisotopes, inhalation and percutaneous absorption may become the primary routes of entry.

Specific Fission Products

Although scores of radioactive materials are produced in nuclear fission, only two, strontium-90 and cesium-137, contribute appreciably to the body burden of man and are of most concern; these will be discussed in detail. In addition to strontium-90 and cesium-137, however, other radionuclides from nuclear fission have been detected in milk and other foods. These include primarily strontium-89, barium-140, and iodine-131. Radiozinc and radiozirconium also have been seen in foods.[2] Because of certain physical properties, radioactive contaminants other than strontium-90 and cesium-137 do not contribute significantly to the total dietary intake of radionuclides by man. Yet, these radionuclides will be of importance from close-in fallout and from nuclear reactor accidents.

Strontium-90.—The fission product that is considered to be the most hazardous is radioactive strontium—strontium-90. The contributing factors are the following: (1) It is produced in high yield from nuclear detonations; (2) it has a long half-life of about twenty-eight years; (3) it moves readily through the biosphere and is absorbed in appreciable amounts from the digestive tract of animals; (4) it localizes and irradiates specific sites in the skeleton; and (5) it is retained for years in the skeleton after once being absorbed.

Since calcium and strontium are members of the same group of elements of the Periodic Table, it is not surprising to find that these alkaline earths have, in many respects, a similar behavior. In fact, it has been found experimentally that calcium moves qualitatively the same as strontium through the biologic chain although quantitative differences certainly do exist. At each step in the transfer of calcium and strontium through the biosphere, a certain degree of fractionation appears to occur between these elements. The magnitude of discrimination varies with the particular biologic system and with the species involved. In progressing from soil to plant, the over-all average difference in the movement of calcium and strontium is about unity but the range was found to be from 0.7 to 1.3.[3] After ingestion by the animal, it has been observed that calcium is absorbed at rates two to three times that of strontium and that the kidney clears plasma strontium more readily than it does plasma calcium. The net result of these physiologic processes is a greater retention of calcium in respect to strontium. This has real significance from the radiation hazard standpoint because the total strontium-90 body burden is decreased as well as the density of ionizing radiation at the skeletal site. Discrimination between calcium and strontium occurs also in passage of these ions across the placenta and the mammary gland; the movement of calcium exceeds that of strontium across these membranes by a factor of 2. In the lactating animal, the over-all reduction in the strontium-calcium ratio from diet to milk is about a factor of 10. Thus, lactation represents a significant barrier against strontium-90 in the biologic cycle.

In man, the same relative degree of discrimination occurs as in the experimental animal. The strontium-90-calcium ratio in the skeleton of man is one-half to one-quarter that of the diet. A recent report by Lough, Hamada, and Comar[4] indicates that the human mammary gland distinguishes between calcium and strontium in about the same way as does the bovine mammary gland.

The levels of strontium-90 in various foodstuffs are being monitored continually by governmental agencies, particularly the Health and Safety Laboratory of the U. S. Atomic Energy Commission and the U. S. Public Health Service. Independent units, such as Consumers Union, also have taken it upon themselves to estimate and contribute information on current radioisotope levels in the human diet. Although until about two years ago only the strontium-90 content of milk was assayed, more thorough surveys are now being carried out to include the major types of foods and drinking water. Thus, it is presently possible to obtain a clearer idea of the relative contribution of radiostrontium from specific foods to the total intake. In illustration, in 1958 and 1959 it was found that approximately 40 per cent of the strontium-90 consumed was from dairy products; 29 per cent from vegetables (cabbages, spinach, and green beans); 9 per cent from bakery products; 8 per cent from cereal products; 8 per cent from fruits; and 6 per cent from meat, fish, potatoes (and other roots), and drinking water.

In 1959, the annual intake of strontium-90, depending on source of data, ranged from 5,000 to 9,500 micromicrocuries of strontium-90 per person per year.[5] When given in terms of the "strontium unit," the values ranged from 11.6 to 19.6 micromicrocuries of strontium-90 per gram of ingested calcium. What do these levels mean in terms of the strontium-90 hazard to man? This question has no answer at present. The figure given as a point of reference is the recommendation by the National Committee for Radiation Protection and the International Committee of Radiological Protection that the strontium-90 in water should not exceed 100 micromicrocuries of strontium-90 per L. Thus, if the strontium-90 were present in milk, the value would become 100 micromicrocuries of strontium-90 per gram of calcium or 100 strontium units since milk contains about 1 Gm. of calcium per L. Although there are many uncertainties in this recommended value (as recognized by the aforementioned committees), it is a basis for comparison with current levels of strontium-90 in food as determined by radioassay. It is apparent that the average human diet in the United States contains less strontium units than that which is recommended by a factor of about 5.

A considerable amount of research effort in this country is aimed at devising methods for reducing the ingestion and absorption of radionuclides. By elevating the calcium and phosphorus content of the diet, it has been possible to decrease significantly the strontium-90 retention.[6] Other dietary alterations, such as adding chelating or complexing agents, have not proved to be of value. The use of ion exchange resins for removing strontium-90 from milk may have merit if environmental levels increase considerably or in case of nuclear disaster. If fluid milk is passed through an ion-exchange resin, 70 to 90 per cent of the strontium-90 can be removed readily; by charging the resin with electrolytes in the same proportion as they exist in milk, there will not be any gross alteration of the composition of milk.[7] At present, a joint project between the U. S. Department of Agriculture, the U. S. Department of Health, Education, and Welfare, and the U. S. Atomic Energy Commission is under way to test the ion-exchange resin technic for milk under pilot-plant conditions.

In a recent report,[8] the concept of the protective effect of milk on strontium-90 retention, as proposed by Larson[9] and others, was reviewed. The arguments on which this thinking is based are, indeed, sound. If it is assumed that the fractionation between strontium and calcium in movement from diet to bone is the same for milk and nonmilk foods, the strontium-90 to calcium ratio in the bone would be directly related to the strontium units in the diet. Although there is evidence that milk drinking alters discrimination in the rat,[10] there has not been any substantiating evidence for this in man. Since the strontium-90-calcium ratio in nonmilk foods (as a composite) exceeds the ratio in milk by a factor of 3 at present, it is apparent that individuals subsisting entirely on milk would have a body burden one-third that of nonmilk drinkers. Thus, the greater the proportional intake of milk, the smaller would be the body burden of strontium-90. Important factors here are: (1) the high calcium content of milk and (2) the significant discrimination against strontium in the lactating cow.

Cesium-137.—The fission product usually considered as next in importance to strontium-90 as a possible hazard is cesium-137. Cesium is a member of the same chemical group as potassium and rubidium and displays biologic properties similar to these alkali metal ions. The factors contributing to the magnitude of radiation hazard of cesium-137 are the following: (1) It is produced in high yield from nuclear fission; (2) it has a long physical half-life of about thirty-three years; and (3) it is readily absorbed from the gastrointestinal tract. Factors which tend to decrease the radiation effect are that: (1) Cesium-137 is not readily taken up by plants from the soil; (2) the radionuclide is not concentrated at any particular site in the body but is uniformly distributed through the muscle mass; and (3) cesium-137 has a relatively short biologic half-life that has been estimated to be from one hundred and ten to one hundred and forty days in man.

Since cesium-137 is not available for root absorption by plants, the main route of entry into agricultural products is by direct foliar contamination. It would therefore be expected that cesium-137 levels in the human diet would reflect the current rates of fallout rather than the accumulative relationship.

In recent studies in our laboratory with lactating goats, it was observed that the cesium-potassium ratio in milk was about 1.4 when the cesium-potassium ratio in the diet was taken as unity. The same ratio between plasma and diet and muscle and diet was also seen. Since the ratio of cesium-137 to total potassium in meat and milk was about the same, the average content of cesium-137 in either product can easily be calculated from the other source. Further, since meat and milk contribute together about 85 per cent of the cesium-137 to the human diet, a good approximation of the current cesium-137 intake can be obtained from milk cesium-137 values and a knowledge of the potassium intake from different food sources.

Research workers at the Los Alamos Laboratory[5] have been estimating the cesium-137 content of milk for the past several years, using a 4-pi counter; at the same time, the total potassium content of the samples was also obtained by measurement of radiopotassium (potassium-40). From October, 1959, to April, 1960, the average cesium-137-potassium ratio of 103 samples of nonfat dry milk from California was about 15 micromicrocuries of cesium-137 per gram of potassium. The similar values for the cesium-137 content found in people from California over the same period (December, 1959, to March, 1960) was about 63 micromicrocuries of cesium-137 per gram of potassium. Assuming again that the milk cesium-137-potassium ratio reflects the intake of these particular people, it can be seen that cesium-137 is preferentially retained over potassium by a factor of about 4; this preferential retention factor coincides with estimates from the comparative biologic half-lifes of cesium-137 and potassium-42.[11] The average cesium-137 levels in nonfat dry milk from New York State from October, 1959, to April, 1960 was about 43 micromicrocuries of cesium-137 per gram of potassium. No cesium-137 data of residents of New York State were given.

Using the Californian data for further estimations, it was given that the total potassium content of these individuals averaged 183 Gm.; thus, the body burden of cesium-137 in these people was about 11,586 micromicrocuries of cesium-137. The concentration of cesium-137 in milk from California would be about 65 micromicrocuries of cesium-137 per L. Since the National Committee for Radiation Protection-International Committee of Radiological Protection recommendation for occupational maximum permissible concentration for total body is 30 microcuries and the recommended maximum permissible concentration for water is 200 millimicrocuries per L., the maximum permissible concentration for the general population would be 3 microcuries of cesium-137 for total body and 20 millimicrocuries of cesium-137 per L. of milk, using the reduction factor of 10 for the general population. It may be seen, therefore, that the cesium-137 content of people as a result of environmental contamination is three hundredth of the maximum permissible concentration, and cesium-137 in milk is also about three hundredth of the recommended value.

Further Comment on Radiation Hazard

In comparing the maximum permissible concentration recommended by governmental agencies with current levels of strontium-90 and cesium-137 in foods, it was seen that the latter was far below the maximum permissible concentration. However, it is indicated by these committees that the recommended levels are to be used as guides only and to indicate concentrations at which the risk of radiation damage is extremely small. In setting a maximum permissible concentration, it is implied that there is a threshold level for producing deleterious radiation effects to the mammalian body. A threshold level may be defined as the concentration or body burden of radionuclides necessary for damage to become manifest. Research information with experimental animals has suggested that there is no threshold in the production of leukemia, undesirable genetic changes, and life shortening. There is also no unanimity of opinion in regard to a threshold for the formation of osteogenic sarcomas. Finkel,[12] from data obtained from studies with mice, concluded that there was an apparent threshold for a carcinogenic response of the skeleton to internally deposited strontium-90. Kamb and Pauling[13] felt that no conclusion could be drawn on the threshold problem from Finkel's data because of insufficient numbers of animals. Another interpretation of the same data was made by Archer and Carroll[14]; their analysis suggested that there was a definite indication of a zero threshold for effects from strontium-90. The same uncertainties hold for other internal emitters and for external irradiation. Since most of the information was obtained on this problem from studies with fruit flies or mice or rats, there is always the question of species variability in extrapolation to man. Additional research certainly must be undertaken to provide additional and independent data on the threshold, linear response problem.

Conclusion

All responsible individuals are in agreement that there is some risk involved in the use of atomic energy, and that the safest level of radionuclides in the biosphere is zero. But the manifold benefits to man from atomic energy in medicine, biology, and industry dictate that atomic energy applications will always be a part of our lives. With every benefit, there always seems to be a risk. Analogies are often made to the automobile industry in which the lethal effects of the products far exceed any expected from the peaceful use of nuclear energy. It is the continued responsibility of appropriate groups to recognize these factors and continually weigh the current benefits against the potential risk.

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(*Number seventeen in a new series of Nutrition Excerpts*)

The deepest principle in human nature is the craving to be appreciated.—WILLIAM JAMES

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D., Secretary, Medical Education for National Defense (MEND) Committee, Albany Medical College

Survival in a Thermonuclear War

IX. Hope for the City Dweller

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A SUPERFICIAL view of hydrogen bombs and intercontinental ballistic missiles has apparently led many to discount the survival chances of the city dweller in the event of an attack. Unfortunately, this sort of view has led to a fatalistic attitude in many large cities, with most people apathetic toward civil defense measures.

However, a more realistic view of the problem shows that the city dweller has an excellent chance of survival, provided he and his government take certain precautions in advance.

This situation is so important that it deserves a separate paper. Although there will be some duplication of parts of other papers in this series, the subject is important enough to justify some repetition. Furthermore, the consideration in one place of all the factors bearing specifically on city survival may help clarify the issues.

Large City Disinterest in Defense

In the large cities, there appears to be an almost complete lack of interest in civil defense matters. This disinterest in turn seems to come from a feeling that any practical defense measures would be hopeless anyway. To a large extent, this fatalistic feeling has been promoted by ill-considered diagrams in newspapers and magazines. It has been quite common to illustrate the destructive effect of a hydrogen bomb by showing an artist's conception of a bomb exploding over the southern tip of Manhattan. The concentric rings of destruction then extended up into Westchester County. After seeing this sort of diagram a few times, it is understandable why an average New Yorker would think that no practical measures could help him if an attack comes.

However, such impressions are misleading. There is little chance that any missile would be able to hit a land target directly. It is true that there are reports of missiles hitting within 2 miles of their targets. However, these were target areas at sea. It is more difficult to hit a land target. The earth's shape is somewhat irregular, and the exact relationship of two points on different continents is not known. Thus, although atlases give specific figures for the distances between New York and points on other continents, these distances are really estimates. They may be off by as much as 40 miles.

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Furthermore, it is becoming increasingly clear, that our large cities would not be the primary target of an enemy. Instead, the targets for the initial strike would be our Strategic Air Command and missile bases. Thus, residents of the Plattsburgh area are in greater danger than New York City residents.

Other Methods of Attack Impractical

It has been said that an enemy could destroy most of our cities without using intercontinental missiles. In theory, enemy submarines 100 miles off our coast could, in unison, fire Polaris-type missiles at all our coastal cities. However, in practice, it is unlikely that an enemy would use such a method in its initial attack. There are too many long-range plans which they would have to make for such an attack to be properly coordinated. Too many people would have to know what was planned, and any leak of information would invite an attack by our forces. Even if enemy security arrangements were ideal, other things could go wrong with their plans. An alert American Coast Guard might notice an ominous pattern in enemy submarine movements and give a timely warning.

It has been stated also that an enemy might hide hydrogen bombs in the holds of cargo ships which would then anchor in our harbors with the bombs set to go off simultaneously. In theory, this might happen, but in practice, an enemy would risk too much by such a method of attack. Again, too many people would have to know the plans, and there would be too much opportunity for our intelligence agencies to discover what was going on.

Thus, it appears that a coordinated surprise attack on the United States, to be launched in complete secrecy, would be by intercontinental ballistic missiles which, as was pointed out, are inaccurate against land targets.

Need for City Shelters Imperative

This inaccuracy, however, is relative. As pointed out in detail earlier, the radius of lethal fallout is such that if we don't have shelters, the missile can miss the target by over 100 miles and still kill everyone without shelter in the target area. Therefore, we must have adequate shelters.

If these shelters are designed to resist fallout only, they will still save millions of lives. Any blast resistance incorporated into these shelters would increase the number of lives saved.

Much of the confusion in the average city dweller's mind is due to the failure to clarify the changes in civil defense planning in relation to evacuation. It is quite obvious to the average person caught in rush hour traffic that evacuation of a large city when attack is expected within less than an hour is quite impractical. Continued talk about evacuation merely convinces him that civil defense cannot help him.

Evacuation would be helpful only if there were many hours of warning as well as adequate shelters scattered throughout the surrounding area. Neither of these essentials is at all likely to be available.

Accordingly, the most practical way to save the lives of city dwellers would be to have adequate shelters right in the city. These shelters should be in business firms, stores, theaters, and all other buildings. They should be designed to accommodate all employes and customers.

These shelters might not be large enough to contain food for the recommended two-week period. However, since we are concerned with survival, not comfort, some compromises can be made. Almost everyone can survive two days without food. If these shelters can protect against fallout for only two days, they will save millions. At the end of two days, radiation intensity will be only 1 per cent of the intensity at one hour. Many people could then be evacuated, if necessary, to safer areas.

It would be particularly helpful if underground passages were dug, connecting the center of cities to the outskirts. Such passages could be used as subways or underground highways during peacetime. They could readily be connected to the existing subway system.

It would not be necessary to connect the underground passages to each shelter. At the end of two days, it would be quite safe to leave a shelter and walk up to ten blocks to a subway or underground passage. Even if the city were close enough to ground zero for the one-hour radiation level to be 3,000 roentgens per hour, it would only be 30 r per hour at the end of two days. If it took thirty minutes to walk to the nearest subway entrance, the exposure would be only 15 r, which wouldn't cause any difficulty at all.

The subways should be improved so that radioactive dust will not seep into them. The cost can be held down to reasonable levels by modifying the subway entrances with double or revolving doors. This, of course, will mean that subway entrances will have to be enlarged considerably. Blower-filter units can readily be installed along the subway tunnels to provide fresh air. Such units, powered by small gasoline motors, have been developed by the Army Chemical Warfare Service and are quite practical and relatively inexpensive.

If the hydrogen bomb misses the city by more then 10 miles, most of the buildings will remain standing, and the greatest number of injuries will be due to broken glass. After the explosion, there will be at least fifteen minutes before the fallout descends. During that time, most people should be able to get to a basement shelter, even if they have to walk down the stairs to do so.

If there is any warning before the bomb explodes, the underground shelters will be even more helpful. The United States is currently developing a method which will warn of an enemy missile being launched from Europe or Asia. Thus far, the reports on it seem quite promising. To be sure, the warning time given will be short—never more than fifteen minutes, and perhaps only ten. Nevertheless, with adequate rehearsal, most people should be able to get into underground shelters in that space of time.

The value of such warning time, coupled with shelters to go to, can be illustrated by considering once again the hypothetic (and unlikely) event of a hydrogen bomb exploding over the center of New York City. If there were reasonable underground shelters and ten minutes of warning time, most New Yorkers could survive. In the absence of shelters and warning time, the fatality rate for the city would be close to 100 per cent.

Recommended Governmental Procedures

These factors lead to the consideration of what should be done to protect the city dweller. The recommended measures fall into two classes—personal and governmental. The personal measures are described in another article in this series. The governmental measures are somewhat more complex.

First, every store, business establishment, and apartment house in a city should be required to provide adequate shelter protection for all occupants. Shelter occupancy should be calculated on the basis of maximum occupancy during business peaks.

Second, every city should provide and maintain a network of underground evacuation routes to the suburbs. These routes would be designed for use after the explosion, rather than before it. They should be built in such a way that pedestrians as well as vehicles could use them.

Third, existing subways should be protected against fallout.

Fourth, our research efforts to provide warning of an approaching missile should be stepped up to an emergency crash program regardless of budgetary consideration.

Fifth, studies should be started to find some way of reducing the menace of flying glass. Perhaps something simple like requiring steel venetian blinds inside every window will be effective. Perhaps other methods will be needed.

Sixth, civil defense rehearsals should be frequent, realistic, and enforced by law.

Finally, the Federal government should make provisions to safeguard our reserve food supplies—the "unwanted" stored grain—from fallout.

These measures would all cost money. However, they don't compare to the cost of our current highway program which is far less important.

(Number nine in a series on the Physician in Civil Defense)

ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

CARDIOVASCULAR SPOTLIGHT

Prepared by the Subcommittee on Heart Disease
Council Committee on Public Health and Education
Medical Society of the State of New York

J. G. FRED HISS, M.D., *Editor*

The Cardiac in Industry

NORMAN PLUMMER, M.D., NEW YORK CITY
(*General Medical Director, New York Telephone Company*)

More than five million cardiacs are employed in this country. Even more surprising is the fact that these cardiacs are performing just about every type of job, from the most sedentary to the most strenuous. President Eisenhower is perhaps the most prominent example.

Working in New York City, May Wilson, M.D., and her associates studied 141 rheumatic fever patients, people they had followed for many years, who by concealing their history were taken into the armed forces during World War II. These men served in all branches of the service and in all theatres of operation; 47 per cent in active combat. This group was compared with a similar group remaining in civilian life. Dr. Wilson found no increase in recurrent rheumatic fever or carditis and no aggravation of the cardiac condition. She concluded "that men with rheumatic heart disease were able to tolerate strenuous activity in basic training under combat conditions."

Similar findings have been demonstrated for the arteriosclerotic cardiacs. It has been estimated that some five hundred thousand persons with coronary disease are added yearly to the labor market. These cardiacs are found working in all types of occupations, and where groups of these have been studied it has been shown that working has had no adverse effect on the course of the disease. As a matter of fact, the evidence is more that the social and economic advantages of working have produced benefits that are not present when idleness is enforced.

If it were possible to compare the five million cardiacs at work with a comparable five million who have retired from gainful employment, there is not the slightest question in my mind but that the group at work would be the healthier, both in terms of heart disease and certainly in general health, well-being, and happiness.

For years industries have gone to great lengths to screen cardiacs from their working forces. In this respect there is a difference between large and small industries. Larger industries, which have comprehensive preemployment examinations, usually exclude cardiacs from employment, but in these larger industries the economics of the situation permits the retention on the payroll of the employe who develops heart disease. On the other hand, smaller industries, generally with limited facilities for performing pre-employment examinations, do not initially exclude as many cardiacs but more readily drop the person who develops heart disease. The sum total today, after all efforts at exclusion, is that large and small industries, depending on age and sex of employes, have between 5 and 10 per cent of their employe populations who have some type of cardiovascular disease.

The ability of a person with heart disease to find and hold a job and to work effectively is much more dependent on the person's attitude and his mental and emotional composition than on the type and extent of heart disease involvement. Of course this does not apply to the relatively small percentage of cardiacs who are in failure, either from active disease or from a high degree of cardiac impairment, and are markedly limited in their ability to perform any type of physical work.

In spite of what I have already said about cardiacs being found in all types of occupations, I believe that placement of the cardiac is all-important. In this field the surface has only been scratched. A well-thought-out program lies somewhere in the future. It will require a genuinely cooperative effort on the part of the medical profession and community health agencies and industrial management and unions. Furthermore, the government enters this picture strongly because employment of cardiacs is involved in workmen's compensation and insurance legislation. The interpretation and implication of such laws create serious problems.

Today it is accepted generally that physical work does not cause coronary sclerosis and atherosclerosis, and some authorities believe that work and exercise have a preventive effect. However, there are some who believe that the emotional and mental stress of an occupation is important in the cause of coronary atherosclerosis. This theory remains highly speculative for many reasons, among which is the fact that emotional stress can be only vaguely defined or measured.

Today we know very little about the factors that trigger an initial or subsequent coronary accident. We physicians agree fairly well on the advisability of a period of rest following an acute myocardial infarction. Beyond that, particularly in patients with normal signs, we do not agree. We do not know when more rest is good or when more exercise is preferable. When a coronary occlusion occurs we can only speculate as to what may have triggered it. It is this speculation that creates a serious problem in the employment and placement of cardiacs.

Fortunately the private physician as a rule is not held responsible for what happens to the coronary patient on the first day out of bed or on the first day of shopping. On the other hand, today, mostly for economic reasons, the employer is held responsible for what happens to the cardiac when he returns to work. An industry employing older workers and allowing cardiacs to return to work creates its own responsibility for what happens to each of them. It is not only a financial but a moral responsibility.

For the future good of the cardiac it is fortunate that most doctors do not consider heart disease, except in rare instances, an occupational disease. Furthermore, it is good and right that they do not consider that heart attacks, except under most unusual circumstances, are reportable under the accident provisions of the Workmen's Compensation Law. It would be unfortunate for the cardiac, as well as for the physician, if the situation with heart disease paralleled what has happened with hernia and chronic back disease, with more and more cases being classified as occupational and compensable.

So finally let us remind ourselves that cardiacs can work and do work and that they improve while working, and let us do all that we can toward removing as many as possible of the barriers which keep them from getting jobs.

At the New York Telephone Company we have at work every day some hundreds of employes who at some time in the past, both recent and remote, have suffered a major myocardial infarction. At the time of the attack many of these persons were considered highly unlikely to survive. Still more were regarded at the time as never being able to work again. But they are at work, working effectively, and in many instances have not had a day of absence since returning to work.

To complete this picture of heart disease in industry, we must accept the fact that in some instances after heart attacks the cardiac damage is so great that the patient's return to gainful employment of any type is out of the question, and retirement becomes necessary. Also there is a larger group who for a number of different reasons find that retirement from active employment in industry is preferable and that this offers them the most promising future.

ANNOUNCEMENT

Influenza Immunization

A statement by Leroy E. Burney, M.D., Surgeon General, U. S. Public Health Service

Two outbreaks of influenza swept the United States in the fall of 1957 and the winter of 1958, resulting in 60,000 more deaths than would be expected under normal conditions. There were, in addition, more than 26,000 excess deaths during the first three months of 1960 which also were considered to be the result of influenza.

These departures from the usually predictable norms prompted the Surgeon General's Advisory Committee on Influenza Research to analyze the cause and to seek measures to prevent such an occurrence in the future.

The committee found that a new antigenic variant, the Asian strain, because of its widespread introduction and the general lack of resistance to it, was the direct cause of the excess number of deaths, not only in the total population but most markedly among the chronically ill, the aged, and pregnant women. As a result of these findings, the Public Health Service is urging a continuing program to protect these high-risk groups in order to prevent a recurrence of this excess mortality.

The high-risk groups who contribute most to the excess deaths and who the Public Health Service believes should be routinely immunized each year are as follows:

1. Persons of all ages who suffer from chronic debilitating disease, in particular: (*a*) rheumatic heart disease, especially mitral stenosis; (*b*) other cardiovascular diseases, such as arteriosclerotic heart disease or hypertension—especially patients with evidence of frank or incipient insufficiency; (*c*) chronic bronchopulmonary disease, for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, or pulmonary tuberculosis; (*d*) diabetes mellitus; (*e*) Addison's disease.
2. Pregnant women.
3. All persons sixty-five years or older.

The adult dosage recommended by the advisory committee for initial immunization is 1.0 cc. (500 cca units) of polyvalent vaccine, administered subcutaneously on two occasions separated by two or more months. Persons previously immunized with polyvalent vaccine should be reinoculated with a single booster dose of 1.0 cc. subcutaneously each fall. The only contraindication to vaccination would be a history of food allergy to eggs or chicken or a prior history of allergic reaction to an egg-produced vaccine, such as the commercial influenza product. The time to start such a program is before the onset of the influenza season. In the past, influenza vaccination has been sparse and sporadic and primarily in response to an epidemic or the threat of an epidemic. The unpredictability of recurrence of influenza and its continued endemic occurrence are well known. Therefore the Public Health Service strongly recommends that immunization of these high-risk groups be started now and continued annually, regardless of the predicted incidence of influenza for specific years.

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies in the operating room including causes of death during anesthesia

Prepared by the Anesthesia Study Committee of the New York State Society of Anesthesiologists

CHARLES L. BURSTEIN, M.D., *Chairman*
B. J. CILIBERTI, M.D., *Cochairman*
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ALFRED F. GRANATELLI, M.D.
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Cardiovascular Collapse During Gynecologic Surgery

CARDIOVASCULAR collapse during surgery, as has been shown in previous Clinical Anesthesia Conferences, may occur and may be due to various causes. When cardiovascular collapse occurs suddenly, without apparent cause, there may be some hesitation in immediate treatment. Nonetheless, a plan of action should be pre-outlined and carried out in case of such an occurrence—as it was in the following report.

Case Report

A sixty-five-year-old obese woman was admitted to a hospital for an anterior colporrhaphy. Her meager history revealed that she had had pneumonia seven years ago and a chronic cough for about one year. On physical examination, some rales and wheezing were noted in both lung fields so that chronic bronchitis was suspected. A medical consultation was requested, but the internist gave the assurance that there was no evidence of bronchitis or cardiopulmonary decompensation.

A roentgenogram of the chest produced normal findings. The patient's arterial blood pressure was 146 mm. Hg systolic and 70 diastolic, her pulse rate was 96 beats per minute, and her respiratory rate was 20 excursions per minute. Her temperature was 98.6 F. The urinalysis was normal except for a trace of sugar. The hemoglobin content in the blood was 12.5 Gm. per 100 ml.

For preanesthetic medication the patient was given Amytal Sodium 100 mg., meperidine, 50 mg., and atropine 0.4 mg. by intramuscular injection. When the patient arrived in the operating room an hour later, her blood pressure was 146/70, pulse rate 96 beats per minute, and respiratory rate 20 excursions per minute. Anesthesia was induced and maintained with cyclopropane and oxygen. Induc-

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Discussed at a conference held at Bellevue Hospital, New York City, June 6, 1960. Clinical Anesthesia Conferences are held on the first Monday of every month.

tion was smooth and uneventful. The patient was placed in the lithotomy position, and surgery was begun ten minutes after the start of anesthesia.

The patient's blood pressure at this time had risen to 190/80 with a pulse rate of 120 beats per minute. Despite an oropharyngeal airway, the patient's respirations seemed slightly obstructed so that the breathing was assisted manually with each inspiratory effort. Eight minutes after the initial incision a dose of 40 mg. of succinylcholine was given intravenously, and a number 36 plastic orotracheal tube was introduced under direct laryngoscopic vision. Since the patient remained apneic after intubation, a small quantity of ether was introduced in the breathing system in an attempt to stimulate spontaneous respiration. However, it became increasingly difficult to inflate the breathing bag, and wheezing became evident in the patient's lungs. Hypertension at 190/80 and tachycardia at 120 beats per minute persisted.

Suddenly, ten minutes later, no blood pressure or pulse could be determined. The surgeons were notified. They noted that the patient's blood was becoming dark, and they could feel no femoral artery pulse. Ether was discontinued, and the patient was given 100 per cent oxygen. Surgery was ceased, and the patient was placed in the supine position. Auscultation over the precordium failed to detect any heart sounds. It was decided to do a left thoracotomy and treat the cardiac arrest. Approximately one-and-a-half to two minutes elapsed from the time that the blood pressure and pulse could not be obtained until the chest incision was made. The incised cutaneous tissue produced only slight oozing of dark blood. The pleural cavity was incised quickly, and observation of the heart revealed it to be beating regularly at 120 beats per minute. The myocardium had fairly good tone. Almost simultaneously there was a good radial artery pulsation, and the blood pressure was determined to be 140/100.

The patient's respirations, which had been maintained artificially during the entire period, still required artificial control. After 25 minutes her blood pressure stabilized at 170/85 and the pulse rate at 120 beats per minute. The patient started to move her arms, and anesthesia with cyclopropane and ether was administered again. Five minutes later wheezes again were detected in the patient's lungs. A dose of 0.2 mg. of isoproterenol hydrochloride (Isuprel hydrochloride) was injected intravenously, and this resulted in clearance of the bronchial wheezing. Soon after, the blood pressure started to decline, and it leveled off at 130/80 with a pulse rate of 96 beats per minute. At this time, 90 minutes after the cardiac arrest, the patient's thoracotomy wound was closed.

Electrocardiograms taken during this period showed a sinus tachycardia, a wandering pacemaker and nonspecific S-T segment depression. Soon the electrocardiograms returned to within normal limits. The patient was replaced in the lithotomy position, and the planned operative procedure was continued. The cardiovascular system remained stable, but apnea persisted during all this time. Ten minutes after surgery was completed spontaneous breathing returned. The patient's tracheobronchial tract was suctioned, and the endotracheal tube was removed. Consciousness reappeared rapidly.

The patient was transferred to the recovery room. On arrival there her blood pressure was 170/75, pulse rate 110 beats per minute, and respirations 20 excursions per minute. Coarse rales could be heard at the drainage site in the left lateral chest, otherwise the chest was clear. Roentgenograms of the chest were ordered and treatment with chloromycetin and penicillin was begun. Her recovery was uneventful, and the patient was discharged from the hospital three and one-half weeks later.

Comment

Although this case of cardiac arrest appeared suddenly, it was preceded by a period of oxygen-lack due to bronchiolar constriction during a pelvic gynecologic procedure. Stimulation of the pelvic nerve during certain gynecologic procedures has been known to produce certain reflexes, such as the pelvolaryngeal reflex resulting in laryngeal spasm and the pelvocardiac reflex resulting in cardiac vagal stimulation with bradycardia and arterial hypotension.[1] It has been pointed out repeatedly that oxygen-lack can accentuate such reflexes.[2,3]

In this case, oxygen-lack was a significant factor. It was evidenced by conspicuous bronchial wheezing soon after inhalation anesthesia was started, and this resulted in arterial hypertension with tachycardia and cyanosis. When surgery was ceased and an attempt was made to treat the cardiac arrest, stimulation of the pelvic nerve was interrupted, and it is possible that cessation of such stimulation resulted in cessation of the intensified pelvocardiac reflex.

Management of the case, on the whole, was good. Initial obstructed breathing was relieved by endotracheal intubation. Apnea was treated by artificial respiration. As soon as the patient's blood pressure and pulse could not be detected, this information was conveyed immediately to the surgeon, who immediately palpated a large, nearby artery which was not functioning. Simultaneous precordial auscultation produced no heart sounds. Ninety seconds after cardiac arrest was discovered a thoracotomy incision was made, and it was noted that there was no active bleeding. The pleural cavity was entered quickly preparatory to producing artificial manual cardiac contractions. Fortunately, by this time, spontaneous cardiac contractions recurred.

In retrospect, this might have been the type of case in which vigorous intermittent pulmonary ventilation was sufficient to treat this type of cardiac arrest. However, pulmonary inflation was difficult in this patient because of bronchiolar constriction. Manual external compression of the thorax to contract the arrested heart without thoracotomy has been proposed recently, but there is the danger that it may not be effective and may result in excessive loss of vital time.[4]

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(Number one hundred in a series of Clinical Anesthesia Conferences)

Every man carries with him the world in which he must live.—F. Marion Crawford

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D.; *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Oil of Wintergreen, Warfarin Sodium, and Potassium Permanganate Intoxications

THE following incidents were recently reported to the New York City Poison Control Center.

INCIDENT 1

Toxic Agent	*Age*	*Sex*
Oil of Wintergreen	7 months	Male

A two-year-old sibling administered approximately one ounce of oil of wintergreen, which he obtained from a dresser in the bedroom, to his seven-month-old brother. After obtaining the bottle, he climbed onto the railing of the crib and poured the product into the infant's mouth. The mother, who was in another room, heard the child cry out with pain. On learning what happened, she took the child to a hospital emergency room.

The patient's stomach was lavaged in the emergency room with normal saline within thirty minutes after ingestion, and the gastric contents removed consisted of curdled milk with a greenish tinge. On the patient's arrival in the emergency room, the physical examination produced essentially normal results. The patient was afebrile, had no respiratory distress, was conscious, had no cyanosis, and appeared normal in every respect.

Following the gastric lavage he was admitted to the inpatient service. About twenty minutes after the initial examination in the emergency room the child developed generalized convulsions for which oxygen and $^1/_2$ grain of phenobarbital were administered. The convulsions lasted from ten to twelve minutes. However, respiration suddenly stopped, and on auscultation no breath sounds or heart beat were audible. Caffeine sodium benzoate, 4 minims, was given intramuscularly, and the key emergency team was immediately alerted. Cardiac massage, intubation, and cut-down were performed, and intravenous fluids with Levophed and Solu-Cortef were given. However, the child expired about forty-five minutes after the cardiac massage, or three hours after the ingestion. The final postmortem diagnosis was methyl salicylate intoxication.

The public health nurse who interviewed the mother noted other hazardous environmental conditions in the home, such as an electric fan placed on the mantel. Since the child who had given the oil of wintergreen to the patient exhibited his ability to climb to high places, the public health nurse advised the mother to remove the fan to a more secure place. This child was judged by the parent to be of above average intelligence.

The many incidents of methyl salicylate poisonings, both fatal and nonfatal, reported to the Center, emphasize the fact that this product has no place in the home, particularly where children are part of the household. Physicians must alert parents to the need for discarding this product from medicine cabinets.

INCIDENT 2

Toxic Agent	*Age*	*Sex*
Coumadin (warfarin sodium)	38 years	Male

This patient ingested eighteen 5 mg. warfarin sodium tablets in a suicidal attempt at 9:40 P.M. Vomiting was induced, and the patient was taken to an emergency room where his stomach was lavaged with saline twenty minutes after ingestion.

The symptons on admission were abdominal pains. (One doubts whether the abdominal pains were actually due to the ingested substance.) Ten mg. of vitamin K were prescribed to be taken three times daily for one day.

An inquiry was made of Shepard Shapiro, M.D., a consultant on anticoagulant therapy, to determine whether the amount of vitamin K prescribed was an effective therapeutic dose. He indicated that this amount of vitamin K would have been insufficient in this instance. Dr. Shapiro also stated that:

> Vitamin K specifically counteracts the hypoprothrombinemia-inducing action of these drugs. The preparation of choice is vitamin K_1 (Mephyton). There recently has been made available as aqueous colloidal solution, 10 mg. per ampule, for parenteral administration. It is recommended that one such ampule be given as promptly as possible and that this be repeated on the following day. Prothrombin time on the second day should be normal. If prolonged, 10 mg. of vitamin K_1 should be given daily until the prothrombin time is normal. There are no side-effects induced by vitamin K_1. The anticoagulant (Dicumarol or a congener) is likewise free of side-effect other than prothrombin depression.

Warfarin is also widely used as a rodenticide. This, as well as all the other anticoagulant rodenticides, has been used in many thousands of applications in this City. Although numerous accidental ingestions by children and adults have been reported to this Center, no known injury from such ingestions has been observed here.

Potassium Permanganate Poisoning

Since the beginning of the year 23 cases of potassium permanganate poisoning were reported to the New York City Poison Control Center. Sixteen of these occurred in females. The age varied from ten months to forty-three years.

Although this product is frequently used in attempted abortions and suicidal attempts, it is also not infrequently ingested accidentally by children.

The director of obstetrics of Harlem Hospital, A. Charles Posner, M.D., wrote to the Department of Health on June 17, 1960 suggesting that this drug not be sold over the counter by pharmacists but only on prescription from a physician. He indicated that patients inserted these pills in the vagina, causing burns and severe bleeding. Dr. Posner states that many women have been admitted in a state of shock, requiring several transfusions. They also develop vaginal scars leading to difficulties in labor and at times requiring cesarean section.

Accordingly, we suggested to our legal division that the New York City health code be amended to make it mandatory that this product be sold only on prescription from a physician.

The United States Food and Drug Administration announced that effective October 23, potassium permanganate preparations with one exception have been ordered onto the prescription-only list.

"The exception is an aqueous solution containing no more than 0.04 per cent of potassium permanganate. This, however, must be labeled with a warning that it is for external use only; that 'severe injury' may result from use internally or as a douche, and that contact with mucous membranes must be avoided.

"Any preparation containing potassium permanganate for veterinary use must be labeled with the caution that 'federal law restricts this drug to sale by or on the order of a licensed veterinarian,' " Commissioner George P. Larrick said in a policy statement published in the August 23 *Federal Register.* "All drugs containing this substance will be regarded by FDA as misbranded unless they carry the warnings suggested by FDA," Mr. Larrick said.

Potassium permanganate, as well as camphorated oil and oil of wintergreen, are old household stand-bys that are frequently involved in accidental poisonings as could be noted from our various case reports.

One objective of the prescription-only requirement is to discourage individuals from purchasing these products freely and using them indiscriminately. It is hoped that this restriction will ultimately prevent many needless injuries.

In addition, physicians are requested to alert families under their care to the potential hazard of potassium permanganate.

(*Number sixty-six in a series of Briefs on Accidental Chemical Poisonings*)

Medical Society of the State of New York
District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
I	May, 1961	. . .
II	October 26 and 27, 1960	Grossinger
III & IV	September 14 and 15, 1960	Schroon Lake
V	Spring, 1960	. . .
VI	September 28, 1960	Ithaca
VII	October 13, 1960	Corning
VIII	September 29, 1960	Jamestown
IX	May, 1960	. . .

CASE REPORT

The Use of Steroids in Infectious Mononucleosis

RICHARD RELKIN, M.D.,* NEW YORK CITY

(*From the Department of Medicine, The Brooklyn Hospital, Brooklyn*)

SINCE the efficacy of steroids in the treatment of infectious mononucleosis is still being debated, any clinical experience which can help evaluate further the use of these drugs in this disease would be of importance to the physician. It is the purpose of this report to present a case of infectious mononucleosis manifesting a life-threatening airway obstruction which responded dramatically following the use of prednisone, and to review some of the literature with regard to the use of steroids in infectious mononucleosis.

Case Report

A sixteen-year-old white female noted the onset of a frontal headache, a sore throat, and shaking chills while she was in school on September 17, 1958. A school physician allowed her to remain in school for the rest of the day. The following day her oral temperature was 103 F., and the patient noticed cervical lymph node enlargement. A physician was summoned and prescribed penicillin, erythromycin, and aspirin. Subsequently the patient's mother, a nurse, noticed periorbital edema in conjunction with swelling of the entire face and a faint maculopapular rash over both cheeks.

A white blood cell count done at this time through the facilities of a private laboratory revealed a count of 5,000 with 60 per cent atypical lymphocytes. A heterophil agglutination titer was also performed and it was found to be 1:224.

The fever persisted with normal readings in the morning spiking to 104 F. in the midafternoon and evening. By September 19 the sore throat had abated.

In the twelve days prior to admission to The Brooklyn Hospital, the patient vomited about four times, each time with a spike in fever. On September 22 the patient began to experience left upper quadrant and left flank pain of an intermittent stabbing character that was not relieved by sitting up and leaning forward and was aggravated by deep inspiration. She complained of definite tenderness in the left upper quadrant. On September 29, the day of admission, the patient, after vomiting, went to bed, then arose and experienced an episode of syncope lasting from fifteen to twenty minutes (the time was documented by her mother). Following this she was brought into The Brooklyn Hospital.

There was no history suggesting a hemorrhagic diathesis or anemia. The patient had not experienced any dysesthesias, pain, tenderness or weakness of any extremity, convulsions, or incontinence. She had had rubeola, varicella, mumps, and rubella as a child. She had been vaccinated against poliomyelitis, variola, and pertussis, and she had been immunized against diphtheria and tetanus. The remainder of the past history and a review of the systems was entirely within normal limits.

A physical examination revealed an alert, cooperative, pale white female in moderate distress. Her blood pressure was 90/40, pulse 110 and regular, respirations 26, and temperature 102.8 F. The patient exhibited a generalized pallor. An acneiform eruption was present over both malar prominences. A bruise was present over the left tibia. Slight periorbital edema was evident. The conjunctivas were pale. The fundi were normal. A circumoral pallor with cyanosis of the lips was present. A petechial enanthema was seen on the hard and soft palates. The fauces and oropharynx were markedly injected and erythematous, and there was a 2 plus hypertrophy of the tonsils.

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* At present serving with the U. S. Navy.

The neck revealed a bilateral fullness with large ill-defined groups of both anterior and posterior cervical nodes; a few tender pea-sized nodes were also present in the posterior cervical region. The trachea was the midline and the neck was supple.

No axillary nodes were palpable. The breasts were normal. The lungs were clear to percussion and auscultation. An examination of the heart revealed no enlargement or thrills, the sounds were strong without murmurs, and the rate was 110 and regular. The aortic and pulmonic second sounds were equal. M_1 was greater than M_2.

An examination of the abdomen revealed a marked tenderness in the left upper quadrant, but the edge of the spleen could not be felt. Punch tenderness was present over the liver but, again, no edge was felt. The remainder of the abdominal examination showed negative results. There was no inguinal adenopathy.

No costovertebral angle or spinal tenderness was elicited. The extremities were cool and pale with slightly cyanotic nail beds.

A neurologic examination indicated normal findings except for the presence of markedly hypoactive deep tendon reflexes.

The laboratory data included a hemoglobin of 9.7 Gm. per 100 ml.; a hematocrit of 29; a white blood count of 10,400 with 38 polymorphonuclear neutrophil leukocytes; 61 lymphocytes, about 60 per cent of which were atypical; and 1 monocyte. The urine was yellow and clear with a specific gravity of 1.014, and with no albumin or bile. The urinary urobilinogen showed normal results, and the reducing substances were 2 plus (an infusion was running). The erythrocyte sedimentation rate was 48 mm. per hour. The urea was 23 mg. per 100 ml. The serum glutamic oxalacetic transaminase was 157, and the serum glutamic pyruvic transaminase was 262. The heterophil titer was 1:7168; after absorption with guinea pig kidney, it was 1:3584; after beef cell antigen absorption, it showed negative results. Following hydration the hemoglobin was 7.9 Gm. per 100 ml., the hematocrit was 23, and the white blood count was 8,500 with essentially the same differential. A reticulocyte count was 4.2 per cent. The platelet count was 230,000, and the Coomb's test indicated negative results, as did a lupus erythematosus cell preparation. The prothrombin time was twenty-six seconds with a control time of fourteen seconds; the cephalin-cholesterol flocculation was 2 plus; the bilirubin total was 0.35 mg. per 100 ml., all of which was indirect. The fasting blood sugar was 83 mg. per 100 ml. The blood culture and the febrile agglutinins both showed negative results, as did the serology test. A throat culture grew out Streptococcus viridans and Aerobacter aerogenes. An x-ray film of the chest indicated normal findings, and an examination of the abdomen in a supine anteroposterior view showed a suggestion of splenic enlargement.

The patient was placed on dextro-propoxyphene hydrochloride with aspirin and prochlorperazine, and received 40 units of ACTH in infusion on two successive days; concurrently 20 mg. of potassium chloride were given.

On October 4 the patient complained of increasing throat pain, and at this time it was noted that the oropharynx was almost completely occluded by the hypertrophied tonsils, which were now covered with an adherent whitish-yellow exudate. On October 5 an infusion of 40 units of ACTH was given, and the patient was placed on prednisone 15 mg. every six hours. Tetracycline was added to the infusion, and the following day the patient was given tetracycline orally 250 mg. every six hours. A tracheotomy set was kept in her room.

During the following twelve days the prednisone was gradually decreased to 5 mg. twice a day. Following the institution of steroid therapy the temperature fell to under 100 F. and remained there. On October 6 the white blood count was 5,200 with 60 polymorphonuclear neutrophil leukocytes and 32 normal lymphocytes. The hemoglobin rose to 10 Gm. per 100 ml. with a hematocrit of 30. On the day of discharge the hemoglobin was 13 Gm. per 100 ml., and the hematocrit was 38. No blood transfusions had been given, nor had any iron or vitamin therapy been attempted. The white blood count was 9,500 with 72 polymorphonuclear neutrophil leukocytes, 14 normal lymphocytes, 5 monocytes, 8 eosinophils, and 1 basophil. The erythrocyte sedimentation rate was 28 mm. per hour, the serum glutamic oxalacetic transaminase was 50, and the serum glutamic pyruvic transaminase was 92. The patient was discharged improved on

October 17. However, during the ensuing three days she experienced left upper quadrant "gas pains" which increased in severity, and she was readmitted on October 20. An examination at this time revealed a blood pressure of 98/60, a pulse rate of 100 and regular, respirations of 20, and a temperature of 100.4 F.

The entire physical examination was within normal limits except for exquisite tenderness with rebound in the left upper quadrant. No splenic edge was felt. There was a dullness over the left lateral rib margin.

The laboratory data revealed a heterophil titer of 1:896 unabsorbed. The serum glutamic oxalacetic transaminase was 42 and the serum glutamic pyruvic transaminase was 32. The hemoglobin was 10.3 Gm. per 100 ml. with a hematocrit of 32. The white blood count was 7,050 with 62 polymorphonuclear neutrophil leukocytes, 32 normal lymphocytes, 5 mononcytes, and 1 eosinophil. The urinalysis showed normal results. The abdominal film was again interpreted as showing splenic enlargement; this time the stomach was pushed to the right by a large soft tissue hazy mass which occupied the entire left upper quadrant and extended down to the iliac crest. No calcifications were seen.

Because of the lack of certainty by some observers that the mass seen on the x-ray film was the spleen, a retrograde pyelogram was done on November 1 and was reported as showing normal results except for the presence of a suprarenal mass, thought to be the spleen by the urology department.

On November 3 the heterophil titer was 1:112 without absorption, and the splenic tenderness had subsided sufficiently for the edge of the spleen to be felt by one observer below the left costal margin.

At the time of the second admission the patient's prednisone, which had been 10 mg. per day while at home, was immediately increased to 50 mg. per day and then gradually tapered to 22.5 mg. per day at the time of her discharge on November 6, 1958.

Comment

There have been a number of reports of the use of steroids in the treatment of infectious mononucleosis. Betts, Siekert, and Clark[1] mentioned steroids as a suggested treatment in their patient who had weakness, sensory loss, and respiratory paralysis; however, they were not used. Saunders and Adams[2] noted the effect of steroids on the blood picture in infectious mononucleosis. Nelson and Darragh[3] (case 19 of a series) reported a patient with hepatosplenomegaly, lymphocytosis, and hemolytic anemia whose heterophil titer was 1:7168 (the only case found in the literature with a titer comparable to that reported in this paper). This patient demonstrated a good blood picture response to the use of steroids. Myatt and Linn[4] successfully treated thrombocytopenia with cortisone. Doran and Weisberger,[5] Johnson,[6] and Redmond[7] all treated severe "toxic" cases of infectious mononucleosis with either ACTH or cortisone and found that there was a drop in temperature, increase in strength and appetite, and a decrease in hepatosplenomegaly. Frenkel *et al.*[8] used cortisone with good results in their case of meningoencephalitis. Mason and Adams[9] found definite benefit from the use of steroids, especially a lessening of the pharyngitis; however, they felt that the ultimate value of steroids was still to be proved. Creditor and McCurdy[10] reported life-saving benefits using prednisolone in their case of infectious mononucleosis with respiratory obstruction. While the lympholytic action of prednisone on the spleen in our case was not so dramatic, to be noted was the striking regression of tonsillar tissue just twenty-four hours after the institution of steroid therapy. This regression enabled the patient to swallow capsules of tetracycline, when just the day before she had almost suffocated. However, since tetracycline also had been given during those twenty-four hours, it is not possible to say with absolute certainty that the steroids were wholly, or even partially, responsible for the marked improvement. Nevertheless, it is felt very strongly that the use of prednisone in this case was probably life-saving, and it is urged that steroids be used whenever airway occlusion appears imminent.

Summary

An unusual and severe case of infectious mononucleosis has been presented. The patient had an extreme elevation of heterophil antibody titer, splenomegaly with probable subcapsular hemorrhage, and life-threatening airway obstruction. Suffocation was dramatically warded off following the use of prednisone.

The literature on the use of steroids in in-

fectious mononucleosis is reviewed briefly. The prompt use of steroids in cases of impending airway occlusion due to infectious mononucleosis is urged.

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Acknowledgment.—I am extremely grateful to George E. Anderson, M.D., Director, Department of Medicine, The Brooklyn Hospital, for his encouragement in writing this report.

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Reserve the Dates . . .

155th Annual Meeting

Medical Society of the State of New York

May 8 to 12, 1961

Hotel Manger **Rochester**

MEDICAL CARE INSURANCE

A series of articles on health insurance prepared by the Associated Blue Shield Plans of New York State

LEONARD J. RAIDER, M.D., *Editor*

*The Dynamics of Blue Shield and Their Relationship to the Future of Private Medical Care**

IRA C. LAYTON, M.D., KANSAS CITY, MISSOURI

(Vice-President, Surgical-Medical Care Plan)

CONTRARY to the opinion of many, Blue Shield did not spring fully armed, like Athena, from the brow of a medical Zeus to defend the world against socialized medicine. Rather our most profound economic depression led medical leaders to explore the possibilities of prepaid medical insurance for both patient and physician. In those grim years, medical care often was not obtained because inability to pay weighed heavily on the conscience of many individuals. Often, too, physicians were forced to turn to other occupations to augment their greatly diminished incomes. Some means of protection for both parties had to be devised. While the insurance companies refused the job on the scale proposed, Washington was becoming aware of the urgency of medical care for large segments of the population. The Federal philosophy of paternalism was gaining. In the end, the threat of Messrs. Wagner, Murray, and Dingle rallied virtually all physicians behind those programs that eventually developed into Blue Shield. The hours of cautious planning and the studies of premiums and utilization bore fruit. Public acceptance of these programs, limited as they were at first, was instantaneous. Their success made it possible to broaden benefits, always with the same enthusiastic public response. Today the commercial companies, which rejected medical care insurance before it was tested by the profession, pay the highest compliment to Blue Shield by competing in the voluntary health insurance field.

Basic Principles

Because Blue Shield plans developed independently at the local level there were variations among them, primarily fiscal. Four principles were, however, common to all. Every Blue Shield program was concerned with (1) the public interest—making coverage available to the public within the limits of reasonable insurance principles, and at a community rate; (2) representing the profession in the locality served; (3) preserving the traditional doctor-patient relationship; and (4) limiting itself to the economic aspects of medicine.

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* Presented as the keynote address at the Annual Blue Shield Professional Relations Conference, Chicago, Illinois, February 1, 1960.

The first principle, that of the public interest, is borne out by the nonprofit nature of the programs and the presence of lay members on most governing boards. Likewise, fee schedules were first devised to provide payment satisfactory to most doctors for much of the local population. Broad community coverage, acceptance of all reasonable risks, individual enrollment, and provisions for group conversion reflect the profession's intent to offer the best possible services to subscribers. But Blue Shield's success proved so great that in many areas it unfortunately did not keep pace with the times. Some fee schedules became inadequate—eliciting criticism from both the public and the profession.

Competition from the commercial companies also has influenced "public interest." Health and welfare issues, now admitted to the bargaining tables as fringe benefits, are frequently a matter of dollars and cents, not services needed. Management and union leaders are eager to sell the idea that something special has emerged from bargaining sessions. Commercial carriers often set up a fairly good surgical schedule, but few or no medical benefits. Too often the subscriber has no voice in determining what product will be purchased; until he uses his coverage, he does not know how adequate it may be. Commercial competition has produced other problems—before it came a community rate took care of good and poor risks alike. Now we find that Blue Shield, despite its nonprofit basis, sometimes loses desirable group contracts to commercial companies who can write a lower rate and still show a profit. Continuation of this trend will price Blue Shield out of the market for those who need it most—those whom the commercial companies will not protect. "Public interest" is no simple goal.

What of the relationship between Blue Shield and the medical profession which created it? Certainly it was good in the beginning. Blue Shield provided income for services where income otherwise might not have been available. Blue Shield is still the strongest defense against agencies eager to intrude on the practice of medicine. Yet, ironically, three consequences of its progress have tended to discourage a close rapport with the profession: prosperity, the growth of Blue Shield, and advances in medical practice.

Prosperity, the prime factor, has led many physicians to believe that Blue Shield is no longer an economic necessity. And the growth and unforeseen success of Blue Shield have made it difficult for administrative staffs and governing boards to keep the physician informed of their problems; decisions have been made without consulting the profession in general.

Even advances in medical practice have their reverse side. Increased specialization and the differentiation of fees between the general practitioner and specialist, especially the nonsurgical specialist, have produced a thorny situation. A new generation of physicians, unversed in the background and philosophy of Blue Shield, has been highly critical of the plan; they look on Blue Shield as one more agency to interfere with the doctor-patient relationship, rather than as a representative of the profession in economic affairs with the public.

This leads to the third concept underlying all Blue Shield programs: noninterference in the doctor-patient relationship—a worthy but naive principle. Blue Shield was intended to serve as a depository for funds for physicians' services to subscribers. Thus there would seem to be little chance for interference by Blue Shield, and of course such interference is never intended. But rapid expansion of plans, with sales of contracts to large groups, can mean that the subscriber knows little about his contract's limitations. Inevitably, too, the existence of Blue Shield funds alters the patient's and doctor's attitude to medical care expense. Pressure to utilize insurance and spare out-of-pocket expense affects the economic side of the doctor-patient relationship. Demands for unnecessary services or hospitalization, insistence on unnecessary technics, though not the intent, are the byproducts of Blue Shield or any program that undertakes to provide specific benefits. These demands corrode professional relationships. The existence of any type of health insurance may affect the economic aspect of the doctor-patient relationship and also to some extent the doctor's personal relationship with the patient.

The fourth philosophic concept, that Blue Shield must not influence the practice of medicine, is also laudable. Again, however, economics exerts some influence. Elective surgery is more readily elected in the presence of funds. The presence of an assistant surgeon may be affected, as well as the frequency of consultation, and even the duration of hospital stay. Ideally, medical care allowances may provide for adequate care where the absence of funds might mean substandard treatment. On the other hand, such funds also invite abuse. Fee schedules agreed to by the profession influence the patient's evaluation of his physician's services, although they are not so intended. The thoughtless exclusion of certain benefits may have bearing on the way medicine is practiced in a given area.

These four principles point up the problems facing Blue Shield which, because of its huge membership, has become almost a public trust. Blue Shield was never intended to serve the doctor at the expense of the public. Were this true, socialized medicine would have been here long ago. Blue Shield was meant to serve as the fiscal arm of the profession, not necessarily to augment the income of physicians but to help insure that a significant part of the population would be able to pay its medical bills.

Possible Future Developments

What of the future? Prepaid medical care is assuredly here to stay. It will remain on a voluntary basis if we solve our problems. It will become involuntary if we cannot. We must meet the threat of the insurance industry partly through dollar competition and, more important, through educating the leaders of management, labor, and civic organizations. They must be shown that Blue Shield was created by the medical profession for the public welfare, and that as such it is *not* in itself a member of the insurance industry. They must be convinced that only through Blue Shield and the profession can the problems of medical care for the aged, the indigent, and other poor risk groups be met adequately—except, of course, for the extravagant intervention of the Federal government. Labor leaders must be reminded that a few pennies increase in monthly dues provides not only higher quality protection for employes they represent but also contributes to the medical welfare of groups shunned by profit-seeking organizations. If Blue Shield fails in these attempts, it must be prepared to resort to competitive economic procedures such as experience rating and segmentation of benefits, to maintain good risk contracts, and to reach desirable groups not covered before. Through deeds, not words, we can continue to serve the whole community at a rate which the community can afford. What John Q. Public wants he usually gets one way or another. The public's demand for more benefits, more complete fee schedules, be they service or indemnity, will be met and must be met by the doctors' plan if the practice of medicine is to survive in its present form.

Blue Shield cannot exist without the support of the medical profession. Similarly the independent practice of medicine cannot long exist without Blue Shield. In truth we are mutually dependent. Too many physicians are not aware of the often-quoted "principle of subsidiarity"—"When there is a social problem, the solution of that problem must be provided by the lower and better qualified group. If this group cannot or will not meet its obligation, it becomes the responsibility of the state to do so." Blue Shield is the instrument of the lower and better qualified group, namely, the medical profession. More physicians must be reminded of Blue Shield's integrity of purpose and brought into active participation through committee membership and service on advisory groups.

Blue Shield represents the whole profession and must not be commandeered by organized minorities into actions favorable only to them. Changes in Blue Shield programs that are acceptable to the whole profession and that meet the public need must be embraced. Those that would benefit only part of the profession must be avoided with equal energy. Closer liaison between state and county medical organizations and their component Blue Shield plans is imperative. Through consultation with organized medicine and through sage consideration by Blue Shield governing boards, we may insure that Blue Shield's influence in medical economics will not adversely affect the art and science of medical practice.

(Number three in a series of special articles on Medical Care Insurance)

ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

Alfred A. Angrist, M.D., *Chairman*
Committee on Prize Essays

NECROLOGY

James Howard Arsenau, M.D., of Lyons, died on September 28 in his office at the age of forty-nine. Dr. Arsenau graduated in 1935 from Syracuse University School of Medicine. He was president of the Seventh District Branch and a member and past president of the Wayne County Medical Society, and a member of the Medical Society of the State of New York and the American Medical Association.

Andrew John Balko, M.D., of Long Island City, died on May 31 at the age of fifty-four. Dr. Balko graduated in 1934 from St. Louis University School of Medicine. He was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Marshall William Brown, M.D., of Babylon, died on October 11 at the age of fifty-six. Dr. Brown graduated in 1926 from the University of Kansas School of Medicine. A former Suffolk County coroner, he was an Associate of the International College of Surgeons, and a member of the American School Health Association, the Southside Clinical Society, the Suffolk County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Irving Busch, M.D., of New York City, died on July 7 at the age of sixty-five. Dr. Busch graduated in 1919 from Columbia University College of Physicians and Surgeons and interned at Beth Israel Hospital. He was an attending in surgery at Beth Israel Hospital. Dr. Busch was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jacob N. Cohen, M.D., of Brooklyn, died on September 29 at the age of seventy-four. Dr. Cohen graduated in 1907 from Long Island College Hospital Medical School. He was a consulting physician at Greenpoint Hospital. Dr. Cohen was a member of the Kings County Medical Society and the Medical Society of the State of New York.

William F. Cregg, M.D., of Syracuse, died on June 14. Dr. Cregg graduated in 1896 from Syracuse University School of Medicine. Retired, he was an honorary member of the staff of the Crouse-Irving Hospital.

Morris James Culhane, M.D., of Rochester, died on July 7 at his summer home at Payne Beach at the age of fifty-eight. Dr. Culhane graduated in 1928 from Syracuse University School of Medicine. He was a member of the Rochester Academy of Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Irving H. Dolin, M.D., of Brooklyn died on June 19 at the age of sixty-three. Dr. Dolin graduated in 1922 from Long Island Hospital Medical School.

Dana Fletcher Downing, M.D., of Richmond Hill, died on July 3 at the age of eighty-three. Dr. Downing graduated in 1904 from Boston University School of Medicine. He was a Fellow of the American Psychiatric Association.

Henry Craig Fleming, M.D., of New York City, retired, died on October 12 at his home at the age of seventy-nine. Dr. Fleming graduated in 1906 from Jefferson Medical College of Philadelphia. He was a consulting physician at Bellevue and Sydenham Hospitals and was director of medicine of the Department of Correction. Dr. Fleming was a Diplomate of the American Board of Internal Medicine, a Fellow of the American College of Physicians, a Fellow of the American Academy of Compensation Medicine, Inc., and a member of the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

David E. Fraser, M.D., of Lyndonville, died at his home on August 21 at the age of eighty. Dr. Fraser graduated in 1903 from the University of Buffalo School of Medicine. He was county coroner for Orleans for eighteen years.

Charles Gottlieb, M.D., of New York City, died on June 5 at Manhattan General Hospital at the age of seventy-three. Dr. Gottlieb graduated in 1907 from New York University and Bellevue Hospital Medical College and interned at Mount Sinai Hospital. He was a consultant in radiology at University Hospital and retired in 1952 as chairman, Department of Radiology, New York University College of Medicine. Dr. Gottlieb was a Diplomate of the American Board of Radiology (Diagnostic Roentgenology), a Fellow of the American College of Radiology, and a member of the Radiological Society of North America, Inc., the New York Academy of Medicine, the New York Roentgen Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis William Greenberg, M.D., of Brooklyn, died on June 29 at the age of fifty-three. Dr. Greenberg graduated in 1931 from George Washington University School of Medicine.

Ludwig Nicol Heine, M.D., of Great Neck, died on August 3 at the age of eighty-four. Dr. Heine received his medical degree from the University of Freiburg in 1899. He was a member of the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Kurt E. Hirschfeld, M.D., of the Bronx, died on October 7 at the age of sixty. Dr. Hirschfeld received his medical degree from the University of Gottingen in 1924. He was a clinical assistant in neurology at Lebanon Hospital. Dr. Hirschfeld was a member of the American Academy of General Practice, the Rudolf Virchow Medical Society, the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Earl James Kempton, M.D., of Weedsport and Auburn, died on July 14 at his home at the age of sixty-nine. Dr. Kempton graduated in 1917 from Syracuse University School of Medicine. He was an attending physician in general practice at Mercy and Syracuse Memorial Hospitals and health officer for Weedsport, Brutus, Port Byron, Mentz, and Conquest, Weedsport Central School physician, and a former member of the Board of Education of the Weedsport Central School. Dr. Kempton was a member of the Cayuga County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ralph I. Kreisberg, M.D., of New York City, died on October 21 at University Hospital at the age of fifty-seven. Dr. Kreisberg graduated in 1928 from New York University and Bellevue Hospital Medical College. He was an assistant attending in dermatology and syphilology at Bellevue Hospital and was medical director of the Eastern division of the Tidewater Oil Company. Dr. Kreisberg was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Anna Kubista, M.D., of West Sayville, died on May 19 at Scotch Plains, New Jersey, at the age of seventy-nine. Dr. Kubista graduated in 1911 from New York Medical College and Hospital for Women.

Christian E. F. Laatsch, M.D., of Trenton, Michigan, formerly of Sonyea, died on September 19 at the age of seventy-one. Dr Laatsch graduated in 1928 from Indiana University School of Medicine. He had been supervising psychiatrist at Craig Colony Hospital. Dr. Laatsch was a member of the Finger Lakes Neuropsychiatric Society.

David Lefferts, M.D., of New York City, died at his home on June 15 at the age of sixty-four. Dr. Lefferts received his medical degree from the University of Berlin in 1921. He was an adjunct in radiology at Montefiore Hospital. Dr. Lefferts was a Diplomate of the American Board of Radiology (Diagnostic Roentgenology), a Member of the American College of Radiology, and a member of the New York Roentgen Society, the Rudolf Virchow Medical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Joseph M. Linett, M.D., of Brooklyn, died on June 18 at the age of seventy-two. Dr. Linett graduated in 1917 from Columbia University College of Physicians and Surgeons. He was a consultant in obstetrics and gynecology at Beth-El Hospital. Dr. Linett was a Diplomate of the American Board of Obstetrics and Gynecology, a Fellow of the American College of Surgeons, and a member of the Brooklyn Gynecological Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Frank B. Littlewood, M.D., of New Rochelle, died on September 6 at his home at the age of ninety. Dr. Littlewood graduated in 1893 from Bellevue Hospital Medical College. He was a consultant in surgery at New Rochelle Hospital and had served as president of the medical board in 1903, 1909, and from 1913 to 1917. Dr. Littlewood was a member of the Westchester County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Gervais Ward McAuliffe, M.D., retired, of Bridgehampton, formerly of New York City, died in Southampton Hospital on October 17 at the age of sixty-four. Dr. McAuliffe graduated in 1920 from Long Island College Hospital Medical School and interned at Long Island College Hospital. He was an attending in otolaryngology at New York Hospital and a consultant in otolaryngology at Southampton and Fitkin Memorial (Neptune, New Jersey) Hospitals. A former president of the New York County Medical Society he was also an honorary surgeon to the New York City Police Department. Dr. McAuliffe was a Diplomate of the American Board of Otolaryngology, a Diplomate of the American Board of Plastic Surgery, a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the American Academy of Ophthalmology and Otolaryngology, the American Laryngological, Rhinological and Otological Society, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Bush McGraw, M.D., of New York City, died on October 23 at the Harkness Pavilion, Columbia-Presbyterian Medical Center, at the age of sixty-three. Dr. McGraw graduated in 1921 from Cornell University Medical College and interned at Bellevue Hospital. He was an attending in psychiatry at Presbyterian Hospital and a consultant in psychiatry at Community Hospital of Glen Cove. He was a former clinical professor of psychiatry at the College of Physicians and Surgeons and for thirty years, until 1958, was chief of the University's Vanderbilt Psychiatric Clinic. With Dr. George Draper he organized the Constitution Clinic where he conducted studies on the peptic ulcer, a development that marked the beginning of psychosomatic medicine at the Presbyterian Medical Center where he also established the first psychiatric consultation services and initiated the practice of having medical students visit patients in their homes and where he helped found a psychiatric service for children which service was later taken over by the Babies Hospital. Dr. McGraw developed a teaching center for instruction in military neuropsychiatry at the Vanderbilt Clinic during World War II. A past president of the New York Psychiatric Society, the New York Society for Clinical Psychiatry, and the Society of Alumni of Bellevue Hospital, Dr. McGraw was a Fellow of the American Psychiatric Association and a member also of the Association for Research in Nervous and Mental Disease, the New York Academy of Medicine, the New York Neurological Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Edwin P. McWayne, M.D., retired, of St. Petersburg, Florida, formerly of Fayette, died on September 6 at Taylor-Brown Memorial Hospital, Waterloo, at the age of eighty-eight. Dr. McWayne graduated in 1897 from the University of Buffalo School of Medicine. He was a member and former president of the Seneca County Medical Society and a member of the Medical Society of the State of New York and the American Medical Association.

David Bert Mendelson, M.D., of Rochester, died on October 1 in Park Avenue Hospital at the age of sixty-five. Dr. Mendelson graduated in 1920 from Columbia University College of Physicians and Surgeons. He was an assistant attending physician in internal medicine at Park Avenue Hospital. Dr. Mendelson was a member of the Academy of Psychosomatic Medicine, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Raymond Leo Harrington Murphy, M.D., of Jackson Heights, died in St. John's Hospital on August 28 at the age of sixty-five. Dr. Murphy graduated in 1918 from Fordham University School of Medicine and interned at Fordham and St. Vincent's Hospitals. He was director of otolaryngology at St. John's Long Island City Hospital and vice-president and secretary of the medical board. Dr. Murphy was a Diplomate of the American Board of Otolaryngology and a member of the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Thomas Francis Nevins, M.D., of Brooklyn, died on September 28 at his home at the age of seventy-seven. Dr. Nevins graduated in 1907 from Long Island College Hospital Medical College. He was an honorary member of the staff of the Prospect Heights Hospital. Dr. Nevins was a member of the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Gohring Ryon, M.D., of Schenectady, died in a drowning accident in Lake George on

October 1 at the age of fifty-two. Dr. Ryon graduated in 1938 from Johns Hopkins University School of Medicine. He was an attending physician at Schenectady Rehabilitation and Day Hospital, an associate attending physician at St. Clare's Hospital, and a clinical assisting attending physician at Ellis Hospital. Dr. Ryon was a member of the American Academy of General Practice, the Schenectady County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Jesse M. W. Scott, M.D., retired, of Schenectady, died on October 10 in Ellis Hospital at the age of eighty-seven. Dr. Scott graduated in 1896 from Albany Medical College. He was a consultant in neuropsychiatry at Ellis Hospital. Dr. Scott was a Fellow of the American College of Physicians and a member of the Mohawk Valley Neuropsychiatric Society, the Schenectady County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

William H. Seward, M.D., of Amsterdam, died on September 29 at his home at the age of seventy-two. Dr. Seward graduated in 1912 from Albany Medical College. He was honorary chief of staff at St. Mary's Hospital and an honorary member of the staff at Amsterdam City Hospital. Dr. Seward was a Fellow of the American College of Surgeons and a member of the Montgomery County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Norman Sloan, M.D., of New York City, died on October 6 at Doctors Hospital at the age of forty-three. Dr. Sloan graduated in 1942 from University of Manitoba Faculty of Medicine and in 1949 from McGill University Faculty of Medicine and interned at Montreal Neurological Institute. During World War II he served as a captain in the Royal Canadian Army Medical Corps. Dr. Sloan was a Member of the American Psychiatric Association and belonged also to the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

B. C. Syverson, M.D., of Bellerose, died on September 19 at the age of seventy-three. Dr. Syverson graduated in 1915 from the University of Illinois College of Medicine.

Anthony S. Votos, M.D., of New York City and Garden City, died on September 30 at the age of fifty-one. Dr. Votos graduated in 1944 from Long Island College Medical School. He was a clinical assistant in psychiatry at Kings County Hospital. Dr. Votos was a Fellow of the American Psychiatric Association and a member of the Psychoanalytic Association of New York, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter D. Woodward, M.D., of New York City, died on October 8 in the Westchester Division of New York Hospital at the age of forty-four. Dr. Woodward graduated in 1943 from the University of Virginia Medical Department. He was an attending in psychiatry at New York Hospital Outpatient Department, an instructor in psychiatry at Cornell University Medical College, and chief psychiatrist for the American Cyanamid Company. Dr. Woodward was a Member of the American Psychiatric Association and belonged also to the Richmond County Medical Society and the Medical Society of the State of New York.

Behind every argument is somebody's ignorance.—JUSTICE LOUIS D. BRANDEIS

MEDICAL NEWS

Hospital Reporting System to be Reviewed—The State Board of Social Welfare recently announced that the growth of hospital services in New York State in recent years because of the expansion of hospital facilities and hospital insurance programs has made it necessary to review the State Department of Social Welfare's twenty-five-year-old system of hospital reporting. More than 400 voluntary, proprietary, and local public hospitals periodically report operating costs and other information to the Department. The hospitals serve over 2,250,000 patients annually, for which they receive approximately $600,000,000 in personal, Blue Cross, and public funds.

The Board authorized Raymond W. Houston, commissioner of the Department to appoint a review committee. It will consist of representatives of the State Hospital Association, the United Hospital Fund of New York, the Conference of New York State Blue Cross Plans, the Associated Hospital Service of New York, the Joint Committee on Hospital Rates, which includes several State agencies, and the Department.

At present, the hospitals prepare reports separately and differently for the various Blue Cross plans, the State, and hospital-fund groups. One objective of the review committee will be to establish a system of uniform reporting that will simplify the reporting of the hospitals, clarify hospital-cost factors, eliminate conditions which now cause confusion or complexity in evaluating hospital-cost data, and indicate more effectively trends in the State's hospital economy.

Deputy commissioner Byron T. Hipple, Jr., will act as chairman of the committee, and Dr. David M. Schneider, the Department's director of research and statistics, will assist the committee.

The present system of hospital reporting was set up in 1936 by the Department with the assistance of the Spelman Fund of New York. It developed out of a demonstration project under Dr. Schneider's direction.

Influenza Vaccination Urged for Heart Victims—The American Heart Association and the National Heart Institute of the United States Public Health Service have issued a statement urging routine vaccination against influenza for persons with heart and blood vessel disease.

A. Carlton Ernstene, M.D., president of the American Heart Association, and James Watt, M.D., director of the National Heart Institute, said, "Evidence of the past three years has abundantly confirmed that the dangers of influenza are much greater for patients with heart or lung disease than for others. The risk is particularly high for those with lung congestion due to heart disease. Also, it is clear that the threat of influenza is continually recurring. We recommend that heart patients seek the advice of their physicians with regard to obtaining the protection offered by routine vaccination."

Films on Chest Diseases Sought—The Committee on Motion Pictures of the American College of Chest Physicians is interested in learning about new films on diseases of the chest (heart and/or lungs) for possible presentation at the twenty-seventh annual meeting of the College in New York City, June 22 through 26, 1961.

Films accepted for presentation in the annual motion picture program are eligible for the 1961 film contest. The committee is also interested in reviewing new motion pictures for inclusion in the approved film list of the American College of Chest Physicians.

Physicians should forward all pertinent information concerning their films to: Paul H. Holinger, M.D., Chairman, Committee on Motion Pictures, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

Monthly Seminars in Dermatology—The Division of Dermatology of the Department of Medicine of the State University of New York College of Medicine at New York City will present the following seminars in dermatology in the coming months: "Use and Abuse of Corticosteroid Therapy"—Thursday, January 26, 1961, 4 : 00 to 6 : 00 P.M., by Louis J. Soffer, M.D., attending physician and head of endocrinology at Mount Sinai Hospital; and "Cutaneous Manifestation of Internal Diseases"—Friday, February 6, 1961, 10 : 00 to 11 : 30 A.M., by Conrad Stritzler, M.D., associate clinical professor, State University of New York College of Medicine at New York City.

Both seminars will be held in the E Building Auditorium, Kings County Hospital, 451 Clarkson Avenue, Brooklyn 3, New York.

For further information contact: Lawrence Frank, M.D., Director, Division of Dermatology, State University of New York Downstate Medical Center, 450 Clarkson Avenue, Brooklyn 3, New York.

American College of Surgeons Names New Fellows—Approximately 1,175 surgeons were inducted recently as new Fellows of the American College of Surgeons. Physicians from the State of New York who received this honor are as follows: *Albany:* James H. Cleary, M.D., Harvey W. Kausel, M.D., Robert E. L. Nesbitt, Jr., M.D., Fremont C. Peck, Jr., M.D., and Marvin Posner, M.D.; *Amityville:* Ellsworth R. Erb, M.D., and William Yankiver, M.D.; *Binghamton:* Jose Garcia-Blanco, M.D., and John S. Raymond, M.D.; *Bronx:* Arnold R. Sanders, M.D.; *Bronxville:* William E. Rogers, M.D.; *Brooklyn:* Irving S. Behr, M.D., Robert L. Bell, M.D., Leonard R. Cacioppo, M.D., Cesaro Castellaneta, M.D., J. Eugene Chalfin, M.D., Gabriel J. Greco, M.D., Charles R. Jaffe, M.D., Bernard Kamhi, M.D., George J. Mastellone, M.D., A. Stephen Morel, M.D., Abraham Rosenthal, M.D., Harold Rothman, M.D., Philip N. Sawyer, M.D., Stanley H. Tischler, M.D., Vicent Tricomi, M.D., and Charles C. Weitzman, M.D.

Buffalo: Guy S. Alfano, M.D., Sal H. Aquilina, M.D., Delmer E. Batcheller, M.D., Donald R. Becker, M.D., Theodore Drapanas, M.D., Henry C. Everett, M.D., Edward A. Fial, M.D., James T. Grace, Jr., M.D., Tingwei Hsia, M.D., John P. Luhr, M.D., Clarence E. Sanford, M.D., Harry Schwippert, M.D., Robert Spier, M.D., and Norman B. Thomson, Jr., M.D.; *Canandaigua:* John C. Carpenter, M.D.; *Corning:* Milton C. Lapp, M.D., *East Williston:* Joseph O. Pistocchi, M.D.; *Elmira:* Ralph S. Canter, M.D.; *Farmingdale:* Seymour Reissman, M.D.; *Flushing:* Robert E. Block, M.D., Bertram W. Charap, M.D., William F. Dorsey, M.D., Donald J. Leahy, M.D., Paul M Read, M.D., and John S. Rienzo, M.D.; *Freeport:* Bernard Rodier, M.D., Robert J. Ryan, M.D.; *Glen Head:* Griswold P. D. Nammack, M.D.; *Goshen:* Robert W. Rakov, M.D.; *Great Neck:* Keith M. Schneider, M.D., Eugene D. Schwartz, M.D., and Joseph J. Smith, M.D.; *Hempstead:* Walter W. Miner, M.D.; *Hicksville:* Robert K. Match, M.D., and Victor Perlow, M.D.; *Huntington:* Andrew W. Lawrence, M.D., and Daniel W. Wilbur, II, M.D.; *Ithaca:* Orrin J. Van Dyk, M.D.; *Manhasset:* Bruce R. Heinzen, M.D., and Joseph F. Hindman, M.D.; *Middletown:* Martin Altchek, M.D.; *Nanuet:* Thomas F. Sullivan, M.D.; *New Hyde Park:* Wilfred Guerra, M.D.

New York City: Stanley F. Altman, M.D., Irving Baras, M.D., Charles R. Blair, M.D., Norman R. Bloch, M.D., Peter A. Bossart, M.D., John J. Bowe, M.D., John T. Brennam, Jr., M.D., Richard S. Bryan, M.D., Theodore J. Capeci, M.D., George Z. Carter, M.D., Mark T. Cenac, M.D., Robert S. Coles, M.D., John W. V. Cordice, Jr., M.D., George N. Cornell, M.D., Louise M. Dantuono, M.D., Andrew De Roetth, Jr., M.D., Henry Dlugi, M.D., Robert T. Edmunds, M.D., Carl R. Feind, M.D., Robert L. Feldman, M.D., Edward I. Goldsmith, M.D., Myron Gordon, M.D., George H. Haddad, M.D., Jerome J. Hoffman, M.D., Anthony M. Imparato, M.D., Jerry H. Jacobson, M.D., Leon Katowicz, M.D., Quan Y. Kau, M.D., Bernard Levine, M.D., John S. Lewis, M.D., J. William Littler, M.D., Ralph Lusskin, M.D., Peter J. Marchisello, M.D., Henry D. Messer, M.D., William F. Panke, M.D., Jack W. Passmore, M.D., Salvatore J. Pernice, M.D., Martin A. Pfotenhauer, M.D., Constantine Photos, M.D., S. Frank Redo, M.D., Michael Rohman, M.D., Seymour L. Romney, M.D., Alfred J. Rossi, M.D., Louis J. Rosenfeld, M.D., Donald M. Shafer, M.D., John H. Sharp, M.D., Thomas J. Sinatra, M.D., Norman M. Stoller, M.D., Bjorn Thorbjarnarson, M.D., Chester M. Vernon, M.D., Donald J. Warren, M.D., John W. White, M.D., and Wilfred Yoslow, M.D.

Niagara Falls: Nicholas I. Ardan, Jr., M.D.; *North Troy:* Rudolph L. Coletti, M.D.; *Norwich:* Thomas M. Flanagan, M.D.; *Patchogue:* Milton Rosenberg, M.D.; *Plattsburgh:* Donald T. Kasprzak, M.D.; *Poughkeepsie:* Irving H. Dreishpoon, M.D., and Bert A. Kanwit, M.D.; *Port Jefferson Station:* Joseph S. Consoli, M.D.; *Rochester:* A. J. Graziani, M.D., John H. Remington, M.D., and Abraham J. Tatelbaum, M.D.; *Rockville Centre:* James D. McMahon, M.D., and William H. Murphy, M.D.; *Rome:* John H. Gabler, M.D.; *Rye:* David A. W. Wilson, M.D.; *Scotia:* Peter Terzian, M.D.; *Southampton:* Hugh Halsey, II, M.D., and Ralph D. Junker, M.D.; *Spring Valley:* Marcel E. Back, M.D.; *Staten Island:* Kamehameha K. Wong, M.D.; *Syracuse:* Frank A. Bersani, M.D., Edward Dunn, M.D., Russell W. Greenhalgh, M.D., Herbert D. Gullick, M.D., and Seward N. Holstein, M.D.; *Tonawanda:* James H. Cosgriff, Jr., M.D.; *Utica:* Anthony T. Graniero, M.D., and Gurney E. Kelley, M.D.; *White Plains:* Howard B. Simon, M.D.; and *Yonkers:* Saverio S. Bentivegna, M.D.

Physician Lectures in South America—Bernard Rogoff, M.D., New York City, recently visited South America and presented lectures in the following countries: *Brazil*—Sao Paulo, participated in the commemorative exercises at the University of Sao Paulo for the tenth anniversary of the Professor Luiz Decourt service; Rio de Janiero, lectured to the rheumatic disease service of Professor Pedro Nava, and at the University of Brazil to the service of Professor Feijo; *Uruguay*—Montevideo, lectured to the service of Professor Herrera Ramos;

and *Argentina*—Buenos Aires, lectured before "Ateneo," a combined rheumatologic group

Medical Film Prize Offered—The annual prize for "Medico-Surgical Cinema" will be given during the last session of the course of Actualités Médico Chirurgicales at the Nouvelle Faculte de Médecine de Paris on March 14, 1961.

The judges will consider the didactic value of the film as well as its cinegraphic quality. Only 16-mm. films will be admitted. The projection time must not exceed thirty minutes. Candidatures and films should be sent to: Secrétariat du *Journal La Presse Medicale*, 120 Boulevard Saint-Germain, Paris VI, France, prior to February 1, 1961.

Prizes will be awarded to the authors of the best films. Films subsidized or produced by a laboratory or a firm will also be admitted.

Seminars in Psychiatry—The Department of Psychiatry of the City Hospital at Elmhurst is currently presenting a series of seminars in psychiatry. The seminars scheduled for the coming weeks are as follows: December 5 at 2 : 30 P.M., "Salient Clinical Manifestations" by Haruo Okazaki, M.D., Brooklyn; December 12, at 2 : 30 P.M., "Sequelae of Head Trauma" by Stanley Aronson, M.D., Brooklyn.

Because of limited seating capacity those wishing to attend the lectures who are not members of the hospital staff are requested to notify the secretary of the Department of Psychiatry, City Hospital at Elmhurst, 79–01 Broadway, Elmhurst 73, New York.

100th Anniversary of Rudolf Virchow Society—The Rudolf Virchow Society is celebrating its one hundredth anniversary this year. The society, formerly called German Medical Society, in the City of New York, held its centennial meeting on November 7 at the New York Academy of Medicine.

The society was organized on December 19, 1860, as a small discussion group of German physicians practicing in New York City. Although its name has been changed several times during its history its dedication to the advancement of medical science has remained the same.

Those wishing to know more about the society should contact: Karl F. Hoffman, M.D., 108 East 85th Street, New York 28, New York.

TB Sanatorium in Suffolk County Closes—The closing of the Suffolk Tuberculosis Sanatorium at Holtsville, Suffolk County, effective December 31, 1960, has been announced by the State Health Department.

The 103-bed sanatorium has been open since 1921. Tuberculosis care for residents of Suffolk County will be provided by the Nassau County Sanatorium at Farmingdale. Chest clinic services in Suffolk County will be continued under county auspices.

Pamphlet on State Rehabilitation Program—Detailed information about the operation of the State Health Department's medical rehabilitation program is contained in the new pamphlet, "New York State Medical Rehabilitation Program."

The pamphlet tells who is eligible to receive benefits under the program, explains the procedures to follow when seeking medical rehabilitation services, and the method used to determine how the cost for medical care and treatment will be met.

Copies are available without cost to residents of New York State from: Office of Public Health Education, 84 Holland Avenue, Albany 8, New York.

State Divided Into Mental Health Regions—Division of the State into ten mental health regions and the establishment of an advisory committee on mental health in each of the regions has been announced by Paul H. Hoch, M.D., State Commissioner of Mental Hygiene.

Dr. Hoch feels that the establishment of the regional advisory committees, recommended by Governor Rockefeller in his special message to the Legislature, will bring about a better integration of mental health services of communities and State institutions.

All counties of the State are assigned to a mental health region, but membership on the advisory committees is limited to those counties in which community mental health boards have been established. The committees will be composed of the chairmen and professional directors of services of community mental health boards and the directors of State institutions serving the same geographic area. A representative of the Department's Community Mental Health Services will serve as secretary for each of the regional committees.

The regional advisory committees, according to the Commissioner, will consider any matter relating to the mental health needs and services of the region the committee represents and make recommendations to the Commissioner of Mental Hygiene, the directors of State institutions, and to community mental health boards located in or serving their areas. The committees, however, will have no executive, administrative, or appointive powers or duties.

Award Contest on Proctology—The International

Academy of Proctology announces its annual cash prize and certificate of merit award contest for 1960–1961. The best unpublished contribution on proctology or allied subjects will be awarded $100 and a certificate of merit. The winning contribution will be selected by a board of impartial judges, and all decisions will be final.

The formal award of the first prize and presentation of other certificates will be made at the annual convention dinner dance of the International Academy of Proctology, April 12, 1961, at the Drake Hotel, Chicago, Illinois.

The International Academy of Proctology reserves the exclusive right to publish all contributions in its official publication, *The American Journal of Proctology*. Entries must not exceed 5,000 words, must be typewritten in English, and submitted in five copies. Entries must be received no later than February 1, 1961, and should be sent to: Alfred J. Cantor, M.D., Executive Officer, International Academy of Proctology, 147–41 Sanford Avenue, Flushing 55, New York.

Examination for the American Board of Obstetrics and Gynecology—The part 1 examinations (written) of the American Board of Obstetrics and Gynecology will be held on Friday, January 13, 1961.

Candidates with reopened applications will be required to submit case reports for review thirty days after notification of eligibility. No such candidate may take the written examination unless the case abstracts have been received in the office of the executive secretary.

Current bulletins outlining present requirements may be obtained by writing to: Robert L. Faulkner, M.D., American Board of Obstetrics and Gynecology, 2105 Adelbert Road, Cleveland 6, Ohio.

Course at University of Illinois—The Department of Otolaryngology, University of Illinois College of Medicine, will conduct a postgraduate course in laryngology and bronchoesophagology from March 13 through March 25, 1961.

Registration will be limited to 15 physicians who will receive instruction by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

For further information write to: Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago 12, Illinois.

Personalities

Appointed

Samuel Blinder, M.D., New York City, as consulting cardiologist to the United Nations.

Retired

I. Morton Brenner, M.D., New York City, from the staff of Grand Central Hospital, after twenty-five years of service.

Elected

J. Scott Butterworth, M.D., New York City, as president-elect of the American Heart Association . . .Anthony C. Cipollaro, M.D., New York City, as president of the New York City Cancer Committee of the American Cancer Society. . .Dickinson W. Richards, M.D., New York City, as chairman of the United Nations World Health Organization's expert committee on pulmonary heart disease. . . Edward C. Veprovsky, M.D., Flushing, as president of the Queens County Division of the American Cancer Society.

Speaker

Lionel S. Auster, M.D., New York City, at the fourth National Cancer Conference at the University of Minnesota, in Minneapolis, and at the second International Meeting on Forensic Pathology and Medicine, in New York City in September . . .Jacob Furth, M.D., Buffalo, delivering the Harrington Lecture at the University of Buffalo School of Medicine, on November 10, on the topic "Perspectives of Hormonal Control of Neoplasms". . .Henry J. Heimlich, M.D., New Rochelle, before the twenty-fifth annual meeting of the American College of Gastroenterology on October 26. . .Melitta Schmideberg, M.D., New York City, November 16, on the topic "Special Problems with Female Offenders" on a panel discussion presented by the Department of Clinical Services of the Association for Psychiatric Treatment of Offenders.

The greatest remedy for anger is delay.—SENECA

MONTH IN WASHINGTON

Representatives of the medical and health professions, the Federal government and national civic groups are cooperating in the development of a program for starting the general use of Sabin live-virus poliomyelitis vaccine next year.

Shortly after clearing the Sabin vaccine for general use, Leroy E. Burney, M.D., Surgeon General of the Public Health Service, asked 23 nongovernment organizations to designate members to serve on a Surgeon General's Committee on Poliomyelitis Control.

An Agenda Committee met with P.H.S. officials in Atlanta October 11 and 12 and drafted a basic agenda for a meeting of the Control committee in midwinter. At the Atlanta meeting, preliminary consideration also was given to administrative and technical problems involved in use of the live-virus vaccine developed by Albert B. Sabin, M.D., of Cincinnati.

The Agenda committee was made up of representatives of the American Medical Association, American Academy of General Practice, American Academy of Pediatrics, Association of State and Territorial Health Officers, Children's Bureau, and the National Foundation.

The Sabin vaccine is not expected to be available in substantial quantities before mid-1961.

The chief question is whether the vaccine—which is given orally in the form of pills, liquid, or candy—will be administered on individual or mass community basis. The P.H.S. special committee that recommended approval of the oral vaccine said that the community basis would be better.

"Because of the unique nature of live-poliovirus vaccine, with its capacity to spread the virus in a limited manner to nonvaccinated persons, the committee cannot make recommendations for manufacture without expressing concern about the manner in which it may be used," the special committee said.

"The seriousness of this responsibility can be illustrated, for example, by the known potentiality of reversion to virulence of live-poliovirus vaccine strains, and the possible importance of this feature in the community if the vaccine is improperly used.

"For example, the vaccine has been employed largely in mass administrations where most of the susceptibles were simultaneously given the vaccine, thus permitting little opportunity for serial human transmission; or, it has been administered during a season of the year when wild strains have usually shown limited capacity for spread. This experience should provide the basis for developing usable practices for the U.S.A."

The special committee also said attention should be given to administration to special groups, such as very young children, pregnant women, and susceptible adults.

"Even more important is the planned continuation of this program as long as necessary to achieve and maintain the required results," the committee said.

The committee was headed by Roderick Murray, M.D., of the National Institutes of Health. Its other members were four M.D.'s and one Ph.D., all of whom were connected with universities except for one M.D. from the Public Health Service's Communicable Disease Center at Atlanta.

Neither the committee nor Dr. Burney anticipated that the live-virus vaccine would replace the killed-virus Salk vaccine used since April, 1955.

"It appears probable that only a unified national program which utilizes each of the available types of vaccine to its best advantage can accomplish the total prevention of outbreaks," the committee said.

Dr. Julian P. Price of Florence, S. C., Chairman of the A.M.A.'s Board of Trustees, predicted the live-virus vaccine "will be one more powerful weapon against an ancient and crippling disease." He said that physicians "have conscientiously pushed immunization with the Salk vaccine and now, with this new vaccine, the profession is hopeful that even better results can be achieved."

Five states were ready soon after the effective date of October 1 to submit plans for participation in the Federal-state program of health care for the needy and near-needy aged persons which recently was enacted into law. The states were Arkansas, Michigan, New Mexico, Oklahoma, and Washington.

As of early October, another 25 states were preparing to consider legislation to set up such a program or had indicated a willingness to proceed without new legislation. They were Alabama, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Montana, Nevada, New Jersey, North Dakota, North Carolina, Ohio, Pennsylvania, Rhode Island, Utah, West Virginia, Virginia, and

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

Wyoming.

Arthur S. Flemming, Secretary of Health, Education, and Welfare, urged all states to take part in the program as soon as possible. But he also said he hopes that Congress in the next session will approve a Republican plan for a supplementary Federal-state program to help provide private health insurance for elderly persons who cannot meet their medical expenses.

It appears that the issue probably will arise in Congress next year because some Democrats also have said they will again sponsor legislation that would provide health care for aged persons through the Social Security system.

The A.M.A. has launched a "comprehensive study and action program" to guide Americans in spending their health-care dollars more wisely.

The A.M.A.'s new Commission on Medical Care Costs has set out "to find answers to the many questions being raised about medical care costs and to present the findings frankly and forthrightly to the medical profession and to the public."

The program is "dedicated to promoting the highest quality health care at the lowest cost." Louis M. Orr, M.D., of Orlando, Florida, chairman of the commission, said that "any barrier that stands in the way of this objective should be removed—immediately."

One of these barriers is money wasted on ineffective nonprescription or over-the-counter drug products, such as vitamins, food fads, and rheumatism and arthritis remedies. A.M.A.'s Council on Foods and Nutrition has estimated that much of the estimated $350 million spent annually on self-prescribed vitamins is wasted.

The A.M.A. is urging physicians to alert their patients and the public to the latent dangers involved in self-prescribing and to the folly of throwing their health-care dollars away on quackeries.

On another front in the war against quackery, Food and Drug Commissioner George P. Larrick reported that during the past twelve months the F.D.A. had seized falsely promoted vitamins, minerals, and other so-called "health foods" valued in excess of $1.5 million. He said that the amount of misinformation, pseudo-science and plain "hokum" on health care reaching the public through books and magazine articles is increasing.

MEDICAL MEETINGS

Schoenberg Memorial Lecture

The 1960 Schoenberg Memorial Lecture, sponsored jointly by the National Society for the Prevention of Blindness and the New York Society for Clinical Ophthalmology, will be given at 8:15 P.M., on Monday, December 5, at the New York Academy of Medicine, 2 East 103rd Street, New York City. It will be presented by Derrick T. Vail, M.D., Chicago ophthalmologist and head of the Department of Ophthalmology at Northwestern University Medical School. The topic of Dr. Vail's address will be "Treatment of Thyrotrophic Exophthalmus."

Buffalo Academy of Medicine Presents Symposium on Live Poliovirus Vaccine

The Buffalo Academy of Medicine will present a symposium on live poliovirus vaccine on Wednesday, December 7, at the University of Buffalo Medical School. Ernest Witebsky, M.D., Buffalo, will be the moderator. Panelists will include: Albert B. Sabin, M.D., Cincinnati; Dr. John P. Fox, New York City, and Fredrick C. Robbins, M.D., Cleveland, Ohio.

For further information contact: Mr. Melvin F. Hall, 220 Delaware Avenue, Buffalo 2, New York.

Association for the Advancement of Psychoanalysis

"Kairos and the Therapeutic Process" will be the subject of a paper to be given on Wednesday evening, January 25, 1961, at 8:30 P.M. at the New York Academy of Medicine, 2 East 103rd Street, New York City, by Harold Kelman, M.D., New York City, dean of the American Institution for Psychoanalysis.

The discussants will be Charles R. Hulbeck, M.D., and Joseph W. Vollmerhausen, M.D., of New York City.

For information contact: Albert L. Deutsch, M.D., Chairman, Professional Relations Committee, Association for the Advancement of Psychoanalysis, Inc., 220 West 98th Street, New York 25, New York.

Woman's Auxiliary

to the MEDICAL SOCIETY OF THE STATE OF NEW YORK

Physicians' Home

THE month of December seems to be a most fitting one to report on the work of the county auxiliaries to the Medical Society of the State of New York for Physicians' Home. It is the month when remembering old friends and new has long been a tradition, but the guests of Physicians' Home are remembered not only during December but throughout the entire year.

Physicians' Home is not one home but many. Forty years ago several wise, kindly, and far-seeing doctors formed a corporation financially to assist aged or needy colleagues to spend their declining years in the comfort of their home surroundings near family and friends. Since then Physicians' Home has paid out in beneficial aid an aggregate of $451,898. This has provided approximately 500 beneficial-aid years of support for eligible beneficiaries.

Today all are familiar with the ever-rising cost of living. However, we are living in an age which provides some security to our doctors through hospital insurance plans carried by their patients individually or through industrial groups and also by welfare agencies. The doctor of yesterday did not have that protection; nevertheless he carried on and established the medical profession as one of honor and esteem. Some of these fine men and their families have been unfortunate financially due to circumstances beyond their control, including long illnesses, and the Physicians' Home provides a dignified way to assist these less fortunate professional friends.

Last year 36 county auxiliaries and the Woman's Auxiliary to the Medical Society of the State of New York contributed $2,732 through the State Auxiliary to the Physicians' Home. This amount was raised in various ways—direct contributions from members, benefit card parties, dances, bake and novelty sales, teas, and luncheons. Other contributions were in the form of Christmas baskets as well as visits by Auxiliary members to the guests and their widows. At the present time the Home is caring for 17 doctors, 8 wives, 29 widows, and 7 dependents.

At the Fall Conference at West Point the Auxiliary began an appeal to all county auxiliaries and during December a personal letter will be sent to all members. As a stimulus to the members at the conference, Mrs. Charles Bivona, Newburgh, set up an attractive display of a small house with a garden and a flowering hedge. Previously, each Auxiliary member had been asked to furnish ten copies of her favorite recipe and as these were sold at 10 cents a copy a flower bloomed in the hedge. By this means $40 was raised. The Auxiliary hopes this year to obtain more contributions for this project and urges that doctors' wives serve as ambassadors to the county medical societies to urge members to contribute to the Home automatically when they pay their annual dues.

During this time when so much stress is placed on aid to the aged and aging and the threat of socialized medicine is ever present it is important that New York State continue this established working plan to assist its own. The Physicians' Home needs a 100 per cent support and the raising of funds must continue on its present dignified level. The Medical Society and the Auxiliary as professional groups can make this project a personal one, and as an added incentive use the Christmas season to make the Home a priority through gifts and contributions. Large or small send the gifts for—

"It is not what we give, but what we share,
For the gift without the giver is bare."

MRS. K. W. JARVIS, *Chairman*
Physicians' Home

43 West Sixth Street
Oswego, New York

I prefer the most unjust peace to the justest war that was ever waged.—CICERO

NEWS FROM THE MEDICAL SCHOOLS

Albany Medical College

Speakers—Richard T. Beebe, M.D., Robert B. Lamb professor and chairman of medicine, John T. Garrett, M.D., assistant chief of the medical service, Veterans Administration Hospital, and assistant professor of medicine at the College, John E. Kiley, M.D., associate professor and head, Sub-Department of Renal Diseases, and John K. Miller, M.D., associate in community health, presented papers at the regional meeting of the American College of Physicians in Rochester on October 7. Dr. Beebe presided at the afternoon session of the meeting.

Resigned—John W. Runyan, M.D., associate professor and director of the division of medical clinics, resigned to accept an appointment as associate professor of medicine and director of endocrinology and diabetes at the University of Tennessee College of Medicine in Memphis.

Author—Antonio Boba, M.D., associate professor of anesthesiology, is the author of "Hypothermia for the Neurosurgical Patient," which has been published by Charles C Thomas Company.

Cornell University Medical College

Grants—Research and training grants and fellowships in the amount of $649,495 have been awarded by the United States Department of Health, Education, and Welfare. The grants are from the Public Health Service, National Institutes of Health, and the National Heart Institute, all components of the Department of Health, Education, and Welfare.

New York University Medical Center

Appointed—Lewis Thomas, M.D., chairman, Department of Medicine, has been appointed to a four-year term on the National Advisory Health Council. Dr. Thomas will make recommendations to the Surgeon General on matters relating to the functions of the Public Health Service and will advise on the activities of the Division of General Medical Sciences of the National Institutes of Health.

University of Rochester School of Medicine and Dentistry

New Clinical Research Center—A new clinical research center will be built under a grant of $244,696 from the National Institutes of Health. Work will begin on the project about December 12. The new facility will involve remodeling and rearranging of the former metabolism ward on the second floor of Wing P between the School and the Atomic Energy Project and will provide accommodations for 8 patients as well as enhance the scope of clinical research activities and will involve all departments of the school.

1960 Gold Medal—William L. Bradford, M.D., chairman, Department of Pediatrics, was awarded the 1960 Gold Medal of the University's Medical Alumni Association. Gilbert B. Forbes, M.D., professor of pediatrics, presented the award which is given to a faculty member in recognition of his integrity, inspiring teaching, and devotion to medical students.

Promise is most given when the least is said.—George Chapman

BOOKS RECEIVED

(The following books were received during the month of September, 1960)

Diabetic Care in Pictures. By Helen Rosenthal, B.S., and Joseph Rosenthal, M.D. Third edition. Octavo of 237 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $4.50.

A Syllabus of Laboratory Examinations in Clinical Diagnosis. Edited by Lot B. Page, M.D., and Perry J. Culver, M.D. Revised edition. Quarto of 580 pages, illustrated. Cambridge, Harvard University Press, 1960. Cloth, $12.50.

The Out-patient Treatment of Schizophrenia. A Symposium. Edited by Sam C. Scher and Howard R. Davis. Octavo of 246 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $5.75

Meaning and Methods of Diagnosis in Clinical Psychiatry. By Thomas A. Loftus, M.D. Octavo of 169 pages. Philadelphia, Lea & Febiger, 1960. Cloth, $5.00.

Medical and Biological Research in Israel. Edited by Moshe Prywes. Octavo of 562 pages, illustrated. Jerusalem, The Hebrew University of Jerusalem, 1960. Cloth, $8.00.

Rypins' Medical Licensure Examinations. Edited by Walter L. Bierring, M.D. Ninth edition. Quarto of 804 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $11.

You and Your Eyes. By Lawrence Lewison. Octavo of 253 pages, illustrated. New York, Trinity Publishing Corporation, 1960. Cloth, $3.50.

Sight, A Handbook for Laymen. By Roy O. Scholz, M.D. Octavo of 166 pages, illustrated. Garden City, N. Y., Doubleday & Company, Inc., 1960. Cloth, $3.50.

Principles of Human Genetics. By Curt Stern, Ph.D. Second edition. Octavo of 753 pages, illustrated. San Francisco, W. H. Freeman and Company, 1960. Cloth, $9.50.

Obstetrics. By J. P. Greenhill, M.D. Twelfth edition. Quarto of 1,098 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $17.

A Clinical Prospect of the Cancer Problem. By D. W. Smithers, M.D. Octavo of 232 pages, illustrated. E. & S. Livingstone, (Baltimore, The Williams & Wilkins Company), 1960. Cloth, $8.50.

Rose and Carless Manual of Surgery. Sir Cecil Wakeley, C.B., consulting editor. Nineteenth edition. Octavo of 1,389 pages, illustrated. Baltimore, The Williams & Wilkins Company, 1960. Cloth, $15.

Occupational Diseases and Industrial Medicine. By Rutherford T. Johnstone, M.D., and Seward E. Miller, M.D. Octavo of 482 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $12.

The Role of the Physician in Environmental Pediatrics. By Carl C. Fischer, M.D. Octavo of 122 pages, illustrated. New York, Landsberger Medical Books, Inc., 1960. Cloth $5.50.

Advances in Internal Medicine. Volume X. Edited by William Dock, M.D., and I. Snapper, M.D. Octavo of 390 pages, illustrated. Chicago, The Year Book Publishers, Inc., 1960. Cloth, $10.50.

Review of Medical Microbiology. By Ernest Jawetz, M.D., Joseph L. Melnick, Ph.D., and Edward A. Adelberg, Ph.D. Fourth edition. Octavo of 376 pages, illustrated. Los Altos, Lange Medical Publications, 1960. Paper, $5.00.

Outline of Pathology. By John H. Manhold, Jr., M.D., and Theodore E. Bolden, D.D.S. Duodecimo of 340 pages. Philadelphia, W. B. Saunders Company, 1960. Plastic, $4.75.

The National Formulary, Eleventh Edition (N.F. XI). Prepared by the Committee on National Formulary under the supervision of the Council, by authority of the American Pharmaceutical Association. Octavo of 531 pages, illustrated. Washington, D.C., American Pharmaceutical Association, 1960. Cloth, $9.00.

Handbook of Medical Treatment. Edited by Milton J. Chatton, M.D., Sheldon Margen, M.D., and Henry Brainerd, M.D. Seventh edition. Duodecimo of 569 pages, illustrated. Los Altos, Lange Medical Publications, 1960. Cloth, $3.50.

Visual Aids in Cardiologic Diagnosis and Treatment. Edited by Arthur M. Master, M.D., and

Ephraim Donoso, M.D. Quarto of 216 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $10.

Clinical Obstetrics and Gynecology, Volume 3 Number 3. September 1960. Bleeding and Hemorrhage in Late Pregnancy. Edited by R. Gordon Douglas, M.D. Special Articles. Frigidity. By Edward C. Mann, M.D. The Obstetric Forceps. Puerperal Fever. Gynecology Becomes a Surgical Specialty. By Harold Speert, M.D. Octavo of 358 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Published quarterly (four numbers a year). Cloth, $18. per year.

What Price Medical Care? A Preventive Prescription for Private Medicine. By Sir Earle Page, M.D. Octavo of 160 pages. Philadelphia J. B. Lippincott Company, 1960. Cloth, $3.50.

Atlas of Exfoliative Cytology—Supplement 2. By George N. Papanicolaou, M.D. Quarto, looseleaf n.p., illustrated. Cambridge, Harvard University Press, 1960.

BOOKS REVIEWED

Antibiotics Annual 1959–1960. By Henry Welch, Ph.D., Chairman of Symposium, and Felix Marti-Ibanez, M.D., Editorial Director. **Proceedings of the Seventh Annual Symposium on Antibiotics, Sponsored by Antibiotics & Chemotherapy, and Antibiotic Medicine & Clinical Therapy.** Quarto of 1,034 pages, illustrated. New York, Antibiotica, Inc., 1960. Cloth, $15.

Over 150 papers introduce microbiologic and clinical findings on newer antibiotics, as well as newer uses of the older antibiotics. Other papers are retrospective reviews; panel discussions project antibiotic problems with respect to sensitization. These *Annuals* are highly informative publications on current work. But they are equally valuable for permanent reference on the uses of the antibiotics and chemotherapeutic substances that they record.—Erwin Di Cyan

The Medical Clinics of North America. Lahey Clinic Number. March, 1960. Endocrine and Metabolic Diseases and Use and Abuse of Corticosteroid Therapy. Octavo. Philadelphia, W. B. Saunders Company, 1960. Published Bimonthly (six numbers a year). Cloth, $18 net; Paper, $15 net.

This is an excellent clinical résumé of the current conceptions of endocrinology by the Lahey Clinic Group. The broad aspects of diagnosis and treatment of problems for the generalist and internist are presented in a practical fashion. Highlights are the medical man in gynecology, endocrine anemia, use of thyroid extract in the post thyroidectomy phase of hyperthyroidism of pregnancy, and the premenstrual tension syndrome. A candy tolerance test for diabetes is offered. Metabolic diseases are also included. The controversial subject of corticosteroid and ACTH therapy is well handled.—Bernard Seligman

Cardiac Auscultation, Including Audio-Visual Principles. By J. Scott Butterworth, M.D., Maurice R. Chassin, M.D., Robert McGrath, M.D., and Edmund H. Reppert, M.D. Second revised and enlarged edition. Octavo of 102 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $6.25.

This is the second edition of a brief treatise on cardiac auscultation by Butterworth and his associates at the New York University Post-Graduate Medical School. The volume, originally intended to supplement a course in the subject, contains several short chapters setting forth those physical principles which explain heart sounds and murmurs. The new edition is for the general reader, an improvement on the first since stethograms are now supplemented by simultaneous electrocardiograms or carotid pulse curves. The book may be recommended to all those who do not have a large cardiologic library.—Milton Plotz

Cosmetic Surgery: Principles and Practice. By

Samuel Fomon, M.D. Quarto of 651 pages, illustrated. Philadelphia, J. B. Lippincott Company, 1960. Cloth, $27.50.

This volume is a contribution of paramount importance to the literature of plastic and reconstructive surgery.

It comprises a wide field and is encyclopedic in scope. The author focuses his attention on surgery for altering the contour solely for the purpose of improving the appearance.

The book is divided into two sections. The first section is devoted to general principles. This portion covers the important principles of anesthesia, wounds, scars, tissue transplantation. The second section is entitled regional cosmetic surgery. Considerable space is alloted to a detailed discussion of the external nose and the face.

The author has a distinct clarity of expression. He gives fine details of the various surgical procedures. There are numerous illustrations. Pitfalls are stressed. Surgical anatomy is presented as a background for the operative procedure. Salient physiologic principles are brought out in the presentation of the various treatments.

The book is well indexed. It is printed on good paper. The publisher has done a good job of representing the material in clear, legible print. The drawings are very distinct.

The author is well qualified to write such a book. He has had considerable personal experience and is the author of several excellent texts and numerous articles in surgical literature. He has been a teacher of this special type of surgery for many years. Many active surgeons in this field are former students of Dr. Foman.—ALAN A. KANE

Principles of Orthopaedic Surgery. By Paul C Colonna, M.D. Revised edition. Octavo of 799 pages, illustrated. Boston, Little, Brown & Company, 1960. Cloth, $22.

Colonna's contributions to the development of orthopedic surgery are already very well known and this latest text is an expansion of the original book *Regional Orthopaedic Surgery* which was published in 1950 and represents largely the author's personal experiences.

In keeping with the present trends in orthopedic surgery, a great deal of emphasis has been placed on acute trauma, without, however, neglecting the more common chronic orthopedic disabilities.

The author continues to pursue the regional approach with introductory chapters on physiology and pathology of the bones and joints in general and applied anatomy of particular areas. There is a very valuable chapter on principles of orthopedic apparatus and mechanics with suitable illustrations to supplement the clear and concise text. This material should prove particularly valuable to the orthopedic intern and resident.

In the opinion of this reviewer, this book's primary appeal would be to the medical student and intern rather than to the practicing orthopedic surgeon.—MAX S. RABINOWITZ

Textbook of Otolaryngology. By David D. DeWeese, M.D., and William H. Saunders, M.D. Octavo of 464 pages, illustrated. St. Louis, The C. V. Mosby Company, 1960. Cloth, $8.75.

The authors are otolaryngologists of national repute as well as teachers. This volume is, indeed, most welcome and definitely fills a need not only to medical students but to all who practice otolaryngology and its related fields of speech and hearing. The format is excellent and the book is profusely illustrated, not only with clinical pictures but also with x-rays, diagrams, and technics. The reviewer, because of his interest in the problems of the hard of hearing, was particularly impressed by the chapters on the anatomy of the ear, physiology of hearing, audiometry, and the labyrinth. Very well prepared are also the chapters on hearing and the rehabilitation of persons with a hearing loss. The reviewer feels this volume will hold an honored place in any medical library.—SAMUEL ZWERLING

The Haunted Mind. A Psychoanalyst Looks at the Supernatural. By Nandor Fodor. Octavo of 314 pages. New York, Helix Press, 1959. Cloth, $5.00.

This intriguing volume which has as its subtitle "A Psychoanalyst Looks at the Supernatural," does not indicate whether the author is an M.D. or not. Nevertheless, he has written extensively on occult subjects including "An Encyclopedia of Psychic Science," "These Mysterious People," "New Approaches to Dream Interpretation," "Haunted People; Story of the Poltergeist Down the Centuries."

The author hails from Hungary. He has had personal visits with Freud and has come up with a publication, "Freud, Dictionary of the Unconscious." Formerly director of research for the International Institute for Psychic Research in London, England, he is currently a practicing psychoanalyst in New York City.

The Haunted Mind affords unlimited leeway for such a person gifted with imagination and a bent for scientific investigation of psychic phenomena. Trained as a journalist, he writes lucidly and interestingly with actual persons in the foreground, revealing the content of a story-teller who almost makes the supernatural seem natural.

Anyone interested in such themes as an interview

[Continued on page 3900]

In trichomonas vaginitis "...permanent **CURES** in 84.6%"[1] ▪ "...symptomatic and bacteriologic **CURES**" in 100%[2] ▪ "symptomatic **CURE** was obtained in 100%, and bacteriologic **CURES** in 82.5%"[3] in moniliasis "symptomatic **CURE** was effected in about 80%"[4] in mixed infections "complete symptomatic and bacteriologic **CURES** in 92%"[3] in endocervicitis 75% "were clinically and bacteriologically (as indicated by vaginal smears and cultures) **CURED**"[5]

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References: 1. Angelucci, H. M.: Am. J. Obst. & Gynec. **50**:336, 1945. 2. Hensel, H. A.: Postgrad. Med. **8**:293, 1950. 3. Cortese, J. T.: Clin. Med. **2**:45, 1955. 4. Dill, L. V., and Martin, S. S.: M. Ann. District of Columbia **17**:389, 1948. 5. Horoschak, A., and Horoschak, S.: J. M. Soc. New Jersey **43**:92, 1946.

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[Continued from page 3898]

with the dead, fate and fortune, black magic, phenomena of levitation, Sprite and Werewolf fantasies, reincarnation and the like, would do well to delve into this readable compendium of psychic phenomenology.—Frederick L. Patry

The Neurochemistry of Nucleotides and Amino Acids. A Symposium of the Section on Neurochemistry, American Academy of Neurology. Edited by Roscoe O. Brady, M.D., and Donald B. Tower, M.D. Octavo of 292 pages, illustrated. New York, John Wiley & Sons, Inc., 1960. Cloth, $10.

Neurochemistry is a fundamental discipline in investigative work in neurology and in increasing measure in psychiatry. This nonverbal research tool has proved to be fruitful of contributing to the understanding of the mechanism of action of psychic energizers, tranquilizers, serotonin, etc., and has disclosed a number of physiologic mechanisms concerned with emotional disturbances.

This book, a record of the Symposium of the Section on Neurochemistry of the AAN is a splendid contribution to the subject. It concerns the metabolic role in nerve and other tissue, of certain amino acids and other substances, (GABA, asparagine, glutamine, brain proteins) and nucleotides (guanine, cytidine, uridine, and above all, adenine nucleotides) as well as coenzyme metabolism as related to nerve tissue and presumably brain function. The role that the adenine nucleotides in particular play in neural coenzyme metabolism requires a rearrangement in our thinking; the study of the metabolic role of a number of its analogues affecting nerve tissue or perhaps nerve function may enable us to prove or disprove concepts rather than merely to hypothesize them.

The book is highly suitable for and recommended to clinicians, particularly those active in neurology and psychiatry, as well as to biochemical and pharmacologic research workers.—Erwin Di Cyan

Edema, Mechanisms and Management. Edited by John H. Moyer, M.D., and Morton Fuchs, M.D. Octavo of 833 pages, illustrated. Philadelphia, W.B. Saunders Company, 1960. Cloth, $15.

This volume comprises a symposium on the various phases of salt and water retention and their management. Moyer and Fuchs, the editors, have done an extremely able job of editing and in their selection of the 90 or more contributing specialists. In contrast to many volumes of this sort, the material, while large, is tightly arranged and lacks the haziness and overlapping which so often appear in these works.

Fortunately, the panel discussions, always useful, are included. There is no one practicing medicine today who would not benefit by reading this volume or at least some sections of it.—Milton Plotz

Physiology of Prematurity, Transactions of the Fourth Conference, March 25, 26, and 27, 1959. Edited by Jonathan T. Lanman, M.D. Octavo of 187 pages, illustrated. New York, Josiah Macy, Jr. Foundation, 1960. Cloth, $4.50.

The participants of this conference were 12 members of the regular panel and 14 invited guests.

The book is in the same format and of the same excellent quality as the previous editions of similar conferences on other subjects. It is edited by Jonathan T. Lanman, M.D., Department of Pediatrics of New York University-Bellevue Medical Center.

The subjects discussed were heat regulation, hypothermia and asphyxia, and chemical structure, functional integration and renal regulation as factors in the physiology of the newborn.

There was a group interchange of questions and answers and opinions of each topic by the members of the panel and invited guests. Each subject is amply illustrated by tables and graphs and followed by a considerable list of references.

The book is a scientific and authoritative symposium on the subjects mentioned and will appeal to investigators along this field—obstetricians and pediatricians who are interested in the physiology of prematurity as a basis for therapy.—Jacob Halperin

Ciba Foundation Symposium on Amino Acids and Peptides with Antimetabolic Acitivity. Editors for the Ciba Foundation G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. With 28 illustrations. Octavo of 280 pages. Boston, Little, Brown & Company, 1958. Cloth, $8.75.

This symposium reports a collaboration of organic chemists, biochemists, and biologists interested in those amino acids and polypeptides which have antimetabolic, antibiotic, or cytotoxic properties. While the papers presented in this book are far too advanced and abstract for the average practicing physician, they should be of great help to researchers in this field.

A perusal of the subjects covered in this symposium will, however, give the clinician marked encouragement that such work should soon bear fruit in the continuing fight against infections and malignancies. For instance, the active constituents of antibiotics which have proved too toxic for clinical use have been analyzed. In several, β-amino acids have been isolated. This has stimulated the synthesis of β-amino acids by organic chemists

[Continued on page 3902]

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1. Lippmann, O.: Arch. Ophth. **57**:339, March 1957.
2. Gordon, D.M.: Am. J. Ophth. **46**:740, November 1958.

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[Continued from page 3900]

and some will be ready for biologic testing. The important role of α-amino acids in antibiotic action is illustrated by the in vitro action of chloramphenicol; this antibiotic has been shown to inhibit protein synthesis by displacing amino acids essential for this process.

The amino acids essential for somatic growth have been shown by tissue culture studies to be the same as those essential for tumor growth. However, tumor cells are particularly sensitive to glutamic acid and methionine antagonists. Two diazo-amino acids (azaserine and DON or 6-diazo-5-oxo-L-norleucine) which antagonize glutamic acid have had clinical trials. Ethionine, a methionine antagonist, has also been tried. They have proved too toxic to bone marrow, pancreas, kidney, and liver. Attaching a nitrogen mustard group to amino acids has also been tried; two of these, melphalan and aminochlorambucil have had clinical trials with indifferent success.

Actinomycin is both antibiotic and the D form can cause regression in Wilms tumors. This is the only association demonstrated thus far between antibiosis and anticancer effects. Other antibiotics are being analyzed chemically and tested biologically to ascertain their mode of action. Gramicidin, bacitracin, tyrocidine, etamycin, and so forth have been shown to be cyclic polypeptides. Their chemistry is being vigorously studied with the aim of improving their antibiotic properties, diminishing their toxicity, and possibly uncovering specific antimetabolic properties that can be used in treating malignancies.

These highly technical studies must elicit the congratulations of physicians for the marked advances made by our basic scientists. Like the fighting solider in the army, the clinician can be happy to find such competence in the workers behind the lines.—MILTON B. HANDELSMAN

The Kinetics of Cellular Proliferation. Edited by Frederick Stohlman, Jr., M.D. Quarto of 456 pages, illustrated. New York, Grune and Stratton, 1959. Cloth, $5.75.

This was the subject of a conference sponsored by the Study Section of the National Institutes of Health, held at Salt Lake City, Utah, January 19 to 21, 1959. It was necessary in order to evaluate the steady accumulation of data on the kinetics of cellular proliferation using such classic technics as transfusion experiments, morphologic examination of tissues, determination of mitotic index and estimation of the rate of mitosis with stathmokinetic drugs as might be anticipated in this, the atomic age. Much of the information presented was obtained with radioactive tracers. In spite of the trend toward the physical, chemical, and mathematic precision, the older classic technics of morphology and others were not discarded.

The core of the subject could be boiled down to one common denominator—D.N.A., whether one considered the red cell, white cell, or platelet. Thus there was addressed to this subject a coterie of participants which included not only hematologists and biochemists but also theoretic chemists, statisticians, mathematicians, and even electrical engineers. Be that as it may, the miracle of morphology as expressed by Dr. Bessis, shone brightly and illuminated the entire conference when he showed the transplant of iron from a reticular cell to a red cell.

We have still a great deal to learn about basic hematology—many questions still await a definitive answer.

This book is provocative in that it shows how those in the field work behind the scenes; each worker dedicated to a specific quest for specific information.—MAURICE MORRISON

Handbook of Aging and the Individual. Edited by James E. Birren, Ph.D. Octavo of 939 pages, illustrated. Chicago, The University of Chicago Press, 1959. Paper, $12.50.

Aging, like growth and development, is coming of literary age. Although valid understanding of this process remains uncomfortably limited, the number of relevant studies together with attendant interest and concern warrant attempts to summarize and systemize available information. The present volume is the first of three intended to meet this need and is concerned explicitly with the biologic and psychologic bases for aging—the bases of changes in behavior and in components of the individual organism that occur with advancing years. Prepared by 30 highly qualified contributors under the able editorship of the chief of the Section on Aging, National Institutes of Health, its 24 comprehensive chapters are organized into four sections: Foundations of Research on Aging; Biological Aspects of Aging; Aging in Environmental Settings; and Psychological Characteristics of Aging. Although some gaps are inevitable between separately authored segments, the vast material is incredibly well presented, reflecting excellent selection and integration. Helpful summaries are found in many chapters, references are numerous and up to date, and a good index complements generally sound scholarship. This is a major contribution and, although "it is principally intended for use by graduate students and professional and scientific specialists as a reference work," the practitioner who is increasingly related to aging—at all levels—will also find much of interest and value.—ROBERT W. HILLMAN

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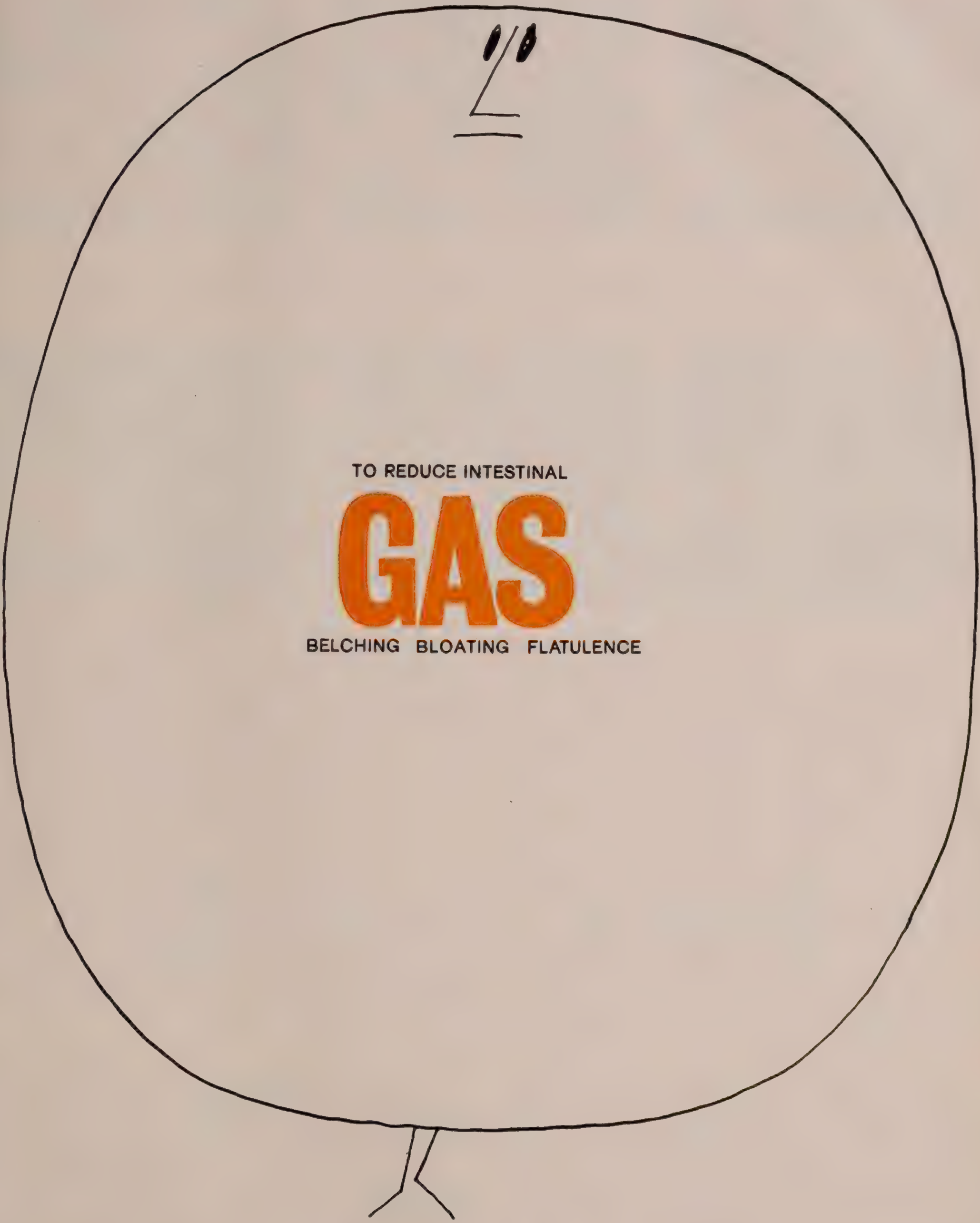
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[Continued from page 3902]

The Multilingual Manual for Medical Interpreting. By Louis R. M. Del Guercio, M.D. Octavo of 160 pages. New York, Pacific Printing Co., Inc., 1960. Paper, $2.50.

Louis Del Guercio, M.D., and the 19 contributors to "The Multilingual Manual for Medical Interpreting" have produced a very useful and remarkable handbook for clinical use by physicians. The manual is designed so that a doctor unfamiliar with foreign languages can obtain a complete medical history from, and perform a physical examination upon, a patient who does not understand English but who can read or understand French, Italian, Spanish, Polish, German, or Russian.

There are 100 questions and statements with many subdivisions, and included are requests for permission for autopsies and operations. The questions are paraphrased so that they can be answered in the negative or the affirmative, or by suitable gestures. Fortunately, the phonetic transliterations are in the form of English syllables, and there is no need to refer to phonetic symbols. The system is similar to that found in the United States Armed Forces language handbooks of World War II, and should be easy to use without a prior knowledge of the language. The book can also be used by showing the proper question in the foreign language to the patient and waiting for an answer. The format of the manual is handy and attractive, with each of the six language sections separated by marginal tabs. All of the English questions are the same in each section, and are followed by the translation, with the phonetic spelling below this. A comprehensive index is included for use in inquiring about individual symptoms.

Typographic errors are found, such as the misspelling of Deutsch on the cover and in the text, and certainly many who use the book will wish certain questions had been included, but the overall work is excellent.

The physician who can approach a foreign patient in his own language gains prestige and establishes rapport which is valuable in good patient care. Medical students in large cities should use this handbook from the start of their clinical training, and by the time they begin their private practice, they will be able to approach the ideals of good medicine on an international level. The role of the physician has in the past transcended language barriers with the use of academic Latin, and this was one of the reasons the profession had a universal appeal. In these days of rapid and widespread international travel of both patient and physician, the use of this handbook will help the physician out of the state of unilingual provincialism. *The Multilingual Manual for Medical Interpreting* is a step in the right direction and deserves a place in every cosmopolitan physician's library.—ROBERT TURELL

Surgery of Repair as Applied to Hand Injuries. By. B. K. Rank, M.S., and A. R. Wakefield, M.S. Second edition. Octavo of 284 pages, illustrated. Baltimore, The Williams and Wilkins Company, 1960. Cloth, $9.00.

This book has been written to show the extensive and multiple types of injuries that may be sustained. It goes into repair of the immediate acute injury and also secondary repair of complications.

The book is well written. The photographs and illustrations are excellent. I can highly recommend this book for reference material.—OTHO C. HUDSON

The Child With Mongolism. By Clemens E. Benda, M.D. Octavo of 276 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $9.50.

The material presented in this book is based on the author's collection of over 1,000 clinical observations, enriched by a careful study of 78 postmortem examinations.

There are chapters on the diagnosis of mongolism at birth, physical and mental development of mongolism, and anatomic and x-ray observations. Other chapters are devoted to anomalies of the nervous system, hematology, and biochemistry. The discussion of etiology is interesting because trisomy in mongolism is evaluated. The chapter on treatment is used to bring out the author's individual ideas. For years he has advocated the combined use of pituitary-thyroid-B_{12}, and has felt it stimulates the growth rate. He further feels that mental development is also improved. These observations have not been generally accepted.

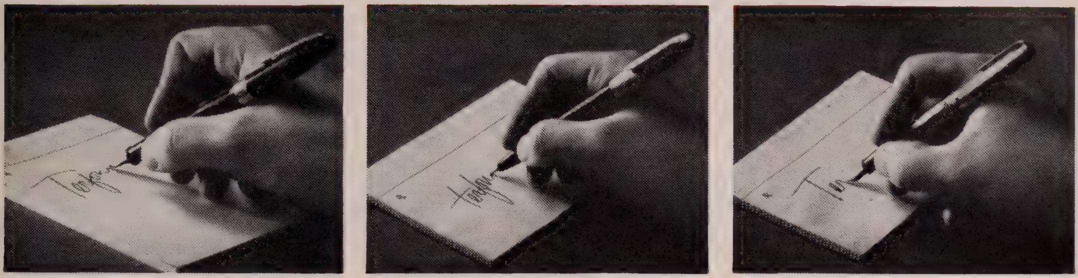
For any physician interested in the problem of mongolism, this book is highly recommended.—STANLEY S. LAMM

Pharmacopeia of the United States. 16th Revision (USP XVI). Octavo of 1,192 pages. By Authority of the United States Pharmacopeial Convention, Inc. Prepared by the Committee of Revision and published by the Board of Trustees. Director of Revision, Lloyd C. Miller, Ph.D. Distributed by Mack Publishing Co., Easton, Penna. 1960. Cloth, $10.

The advent of the new drugs and reevaluation of older ones requires rather frequent publication of definitions and standards. Originally published decennially, the USP has been published every five years since the 13th revision. Occasional revisions or additions of several materials are made in the interim between the appearance of revisions of the

[Continued on page 3908]

more and more physicians are prescribing this triple sulfa



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drains excess water
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Created especially for those patients whose emotional condition complicates the treatment of hypertension and congestive failure

Now the most widely prescribed diuretic-antihypertensive, hydrochlorothiazide, is combined with the most widely prescribed tranquilizer, meprobamate. Called "Miluretic", it constitutes new, effective therapy for hypertension and congestive failure—*especially when emotional factors complicate your treatment.*

What does Miluretic do? Both components are of proven value in hypertension. And in congestive failure, Miluretic induces smooth, continuous diuresis. Miluretic's biggest advantage is that it tranquilizes hypertensive and edematous patients safely and quickly.

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Available at all pharmacies

Composition: 200 mg. Miltown (meprobamate, Wallace) + 25 mg. hydrochlorothiazide

Dosage: For hypertension, 1 tablet four times a day. For congestive failure, 2 tablets four times a day.

Supplied: Bottles of 50 white, scored tablets

[Continued from page 3904]

USP.

The present, the 16th revision, official from October 1, 1960, contains 908 monographs of drugs including 225 new admissions; 159 monographs which appeared in the old revision have been dropped and do not appear in the present revision. The reasons for deletion bear explanation: Drugs are frequently dropped because they are believed to have outlived their usefulness, but they may be deleted for other reasons, such as being quite well known or are not in frequent use. Also, many worthwhile drugs dropped from the USP are admitted to the National Formulary (NF).

About 30 substances in the new revision are official under new titles—for reasons of simplification or better description. In certain instances the title allows a greater latitude; for example, *hydrocortisone acetate* ointment of the previous revision becomes *hydrocortisone* ointment in the USP, XVI, and may contain either hydrocortisone or hydrocortisone acetate equivalent to 1 per cent hydrocortisone.

The new admissions reflect drugs prescribed with great frequency, or those which enjoy a resurgence of popularity. Among them are several preparations of erythromycin, chloral hydrate capsules, meprobamate, sodium liothyronine, warfarin sodium, tolbutamide, etc.

The USP represents a legal standard to which all listed drugs must conform. That is its outstanding purpose. Analytic methods dictate the procedures by which their conformance to standards is ascertained, thus assuring purity and potency.

But it is not to be assumed that the quality of drugs not official in the USP is not controlled. The Food and Drug Administration requires a product to conform to its own standard—unless an accepted standard is available. For the physician the perusal of the USP may be interesting but only in a detached or remote sense. Fundamentally it is a book of standards. Even the dosages are merely a general guide and the physician is better advised to look elsewhere for more comprehensive information on dosage such as those found in pharmacology texts or manufacturers' brochures, especially those describing new drugs.—Erwin Di Cyan

National Formulary. 11th Edition (NF, XI). Octavo of 563 pages. Prepared by the Committee on National Formulary under the Supervision of the Council, by Authority of the American Pharmaceutical Association and Published by it. Director of Revision, Justin L. Powers, Ph.D. Distributed by J. B. Lippincott Co., Philadelphia, Pa. 1960. Cloth, $9.

The purpose and usefulness of the NF are similar to and in fact identical with that of the USP. The NF is published at the same time as the USP with interim revisions or additions of several items. The new edition of the NF and the new revision of the USP become official at the same time, October 1, 1960.

The present edition has 815 monographs which include 285 new admissions, 137 of which were dropped from the previous revision of the USP and the remainder, 148 new admissions, are entirely new in official recognition. Among these are butabarbital sodium, zoxazolamine, sulfamethizole, acetaminophen, sitosterols, benzestrol, salicylamide, etc.; 208 monographs were deleted from the previous edition and do not appear in the NF, XI.

The new 2-column page arrangement and smaller typeface make the book physically thinner but nonetheless allow a greater number of pages. Since it is not for continuous reading but rather for periodic reference the smaller typeface does not make the volume difficult to use.

The NF has equal legal stature with the USP. It is a book of standards, chemical definitions and analytic methods. Its usefulness to the physician borrows the limitations of the USP.—Erwin Di Cyan

A Doctor in Many Lands. The Autobiography of Aldo Castellani. Octavo of 359 pages. Garden City, N. Y., Doubleday & Company, Inc., 1960. Cloth, $4.95.

Aldo Castellani, an expert in tropical medicine who has taught in London, New Orleans, and Rome, has here set down his autobiography and many medical reminiscences. One would suppose that a man who has lead as adventuresome a life as he would be able to write a volume of intense interest to doctors; this is not that book. In the first place, I would infer from its contents, that Dr. Castellani addresses himself to a lay rather than a medical audience. In any case, his friendship with Mussolini, to a large extent warm and admiring, and his presumably unquestioning assumption of the post of chief of medicine in the Fascist Armies, will not set well with American audiences. His name dropping, an occupational but quite forgivable hazard of writing autobiographies, in this book becomes inflated and distasteful.—Milton Plotz

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"Now" is the watchword of the wise.—C. H. Spurgeon

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“R Day”—*when pain is relieved*—can come early for patients with inflammatory (non-traumatic) neuritis if treatment with Protamide is started promptly after onset.

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>
> *96% experienced excellent or good results with 5 or less injections*

Thus, the neuritis patient’s first visit—especially an early one—affords the opportunity to speed his personal “R Day.”

Protamide is available at pharmacies and supply houses in boxes of ten 1.3 cc. ampuls. Intramuscularly only, one ampul daily.

PROTAMIDE®

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1. Lehrer, H. W., et al.: Northwest Med. 75:1249, 1955.
2. Smith, Richard T.: New York Med. 8:16, 1952.

3909

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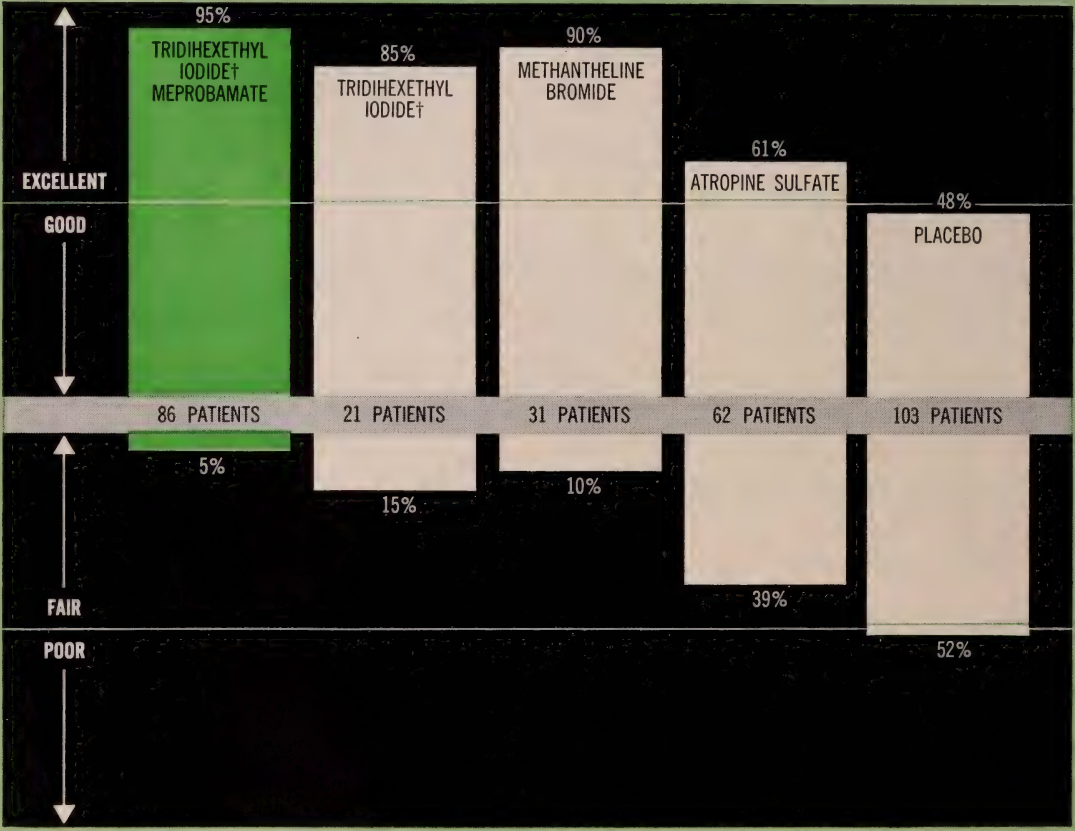
in relieving tension . . . curbing hypermotility and excessive secretion in G. I. disorders



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clinically proven safety

The efficacy of **PATHIBAMATE** has been confirmed clinically in **duodenal ulcer, gastric ulcer, intestinal colic, spastic and irritable colon, ileitis, esophageal spasm, anxiety neurosis** with gastrointestinal symptoms, and **gastric hypermotility.**

Pictured are the results obtained with the PATHILON (tridihexethyl iodide)–meprobamate combination† in a double-blind study of 303 ulcer patients, extending over a period of 36 months.* They clearly demonstrate the efficacy of **PATHIBAMATE** in controlling the symptoms.

SIDE EFFECTS	TRIDIHEXETHYL IODIDE† MEPROBAMATE	TRIDIHEXETHYL IODIDE†	METHANTHELINE BROMIDE	ATROPINE SULFATE	PLACEBO
DRY MOUTH	1%	5%	72%	46%	5%
STOMATITIS	1%	0%	28%	14%	0%
VISUAL DISTURBANCES	0%	0%	50%	34%	1%
URINARY RETENTION	0%	0%	18%	11%	1%
DROWSINESS	20%	0%	0%	0%	0%
COMPLICATIONS OR SURGERY					
HEMORRHAGE	0%	9%	3%	9%	10%
PERFORATION	0%	0%	0%	6%	0%
OPERATION	0%	5%	5%	14%	2%
RECURRENCES					
NONE	28%	23%	25%	17%	26%
FEWER AND MILDER	67%	62%	52%	37%	24%
SAME OR MORE	5%	15%	23%	46%	50%

*Atwater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. **Am. J. Digest. Dis.** 4:1055 (Dec.) 1959.

†PATHILON is now supplied as tridihexethyl chloride instead of the iodide, an advantage permitting wider use, since the latter could distort the results of certain thyroid function tests.

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Soma (carisoprodol), 200 mg.;
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**References available on request.*

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*From a clinical investigator's report to Merck Sharp & Dohme.

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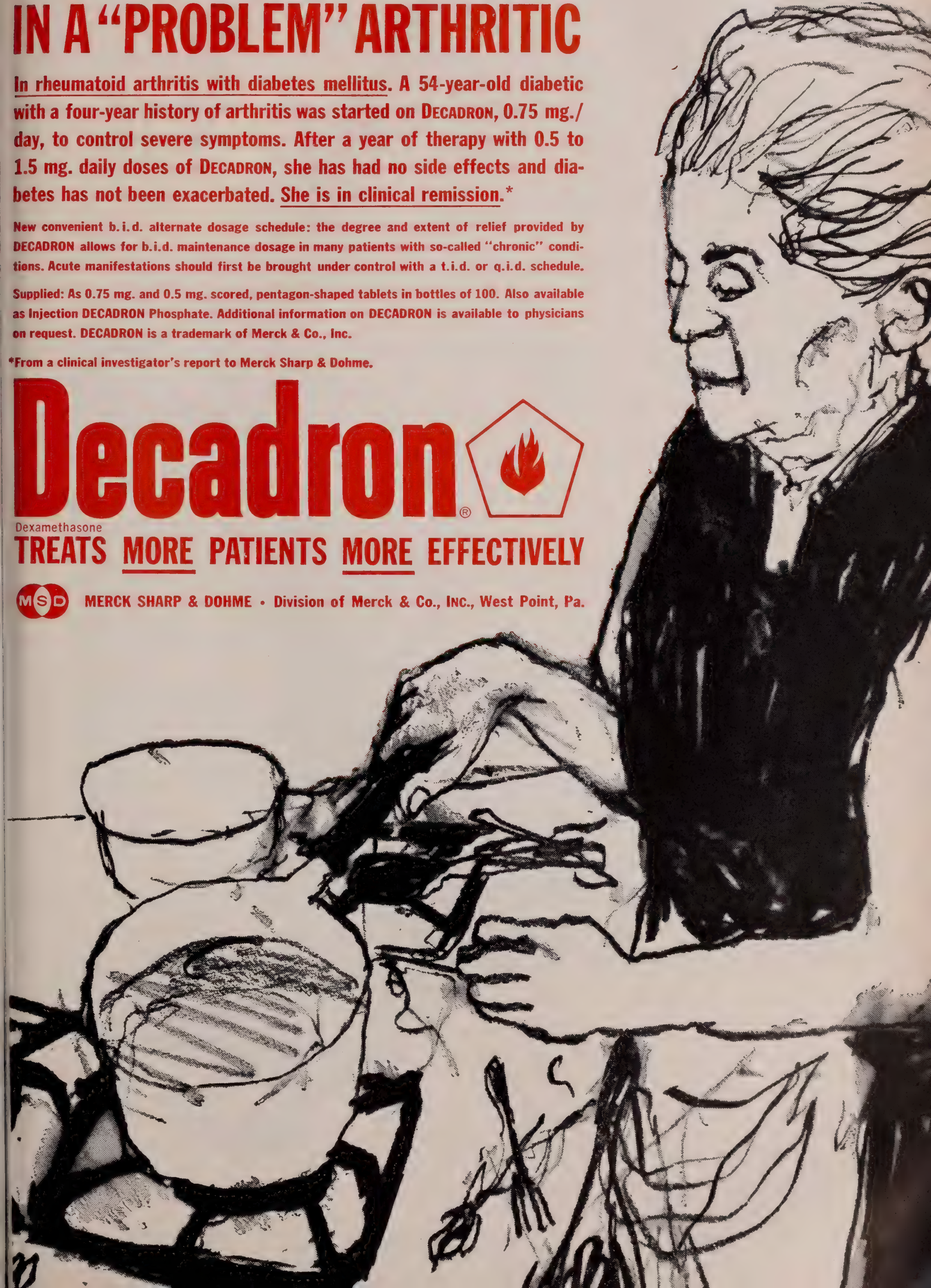

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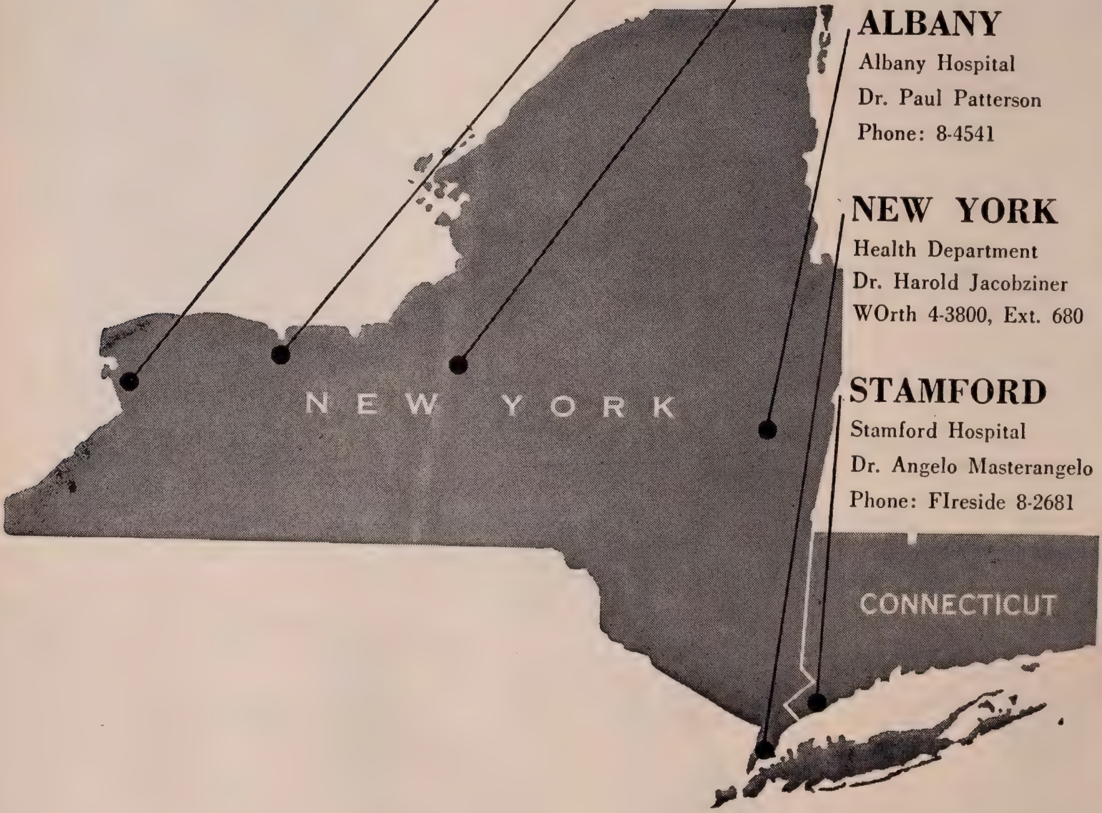

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WEIGHT	Initial Dose	Daily Maintenance	Initial Dose	Daily Maintenance
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40 lbs.	80 drops	40 drops	2 tsp.	1 tsp.
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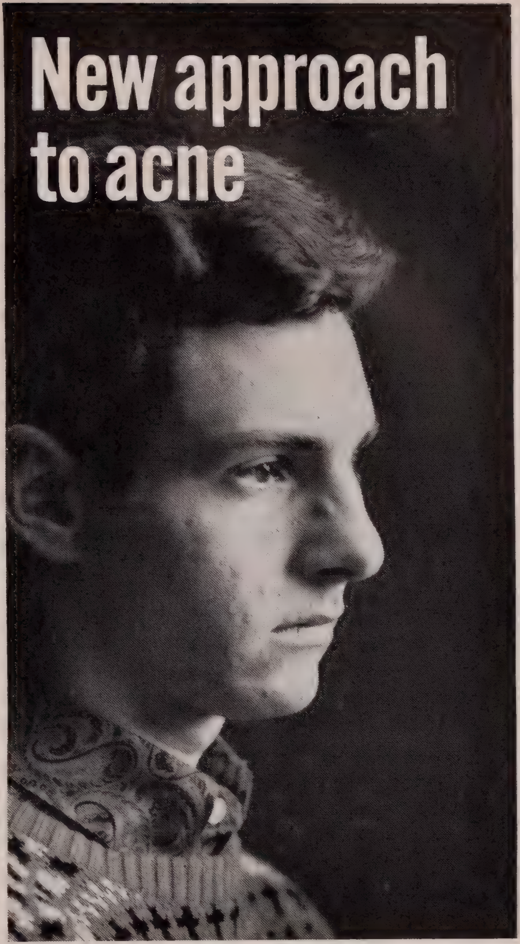

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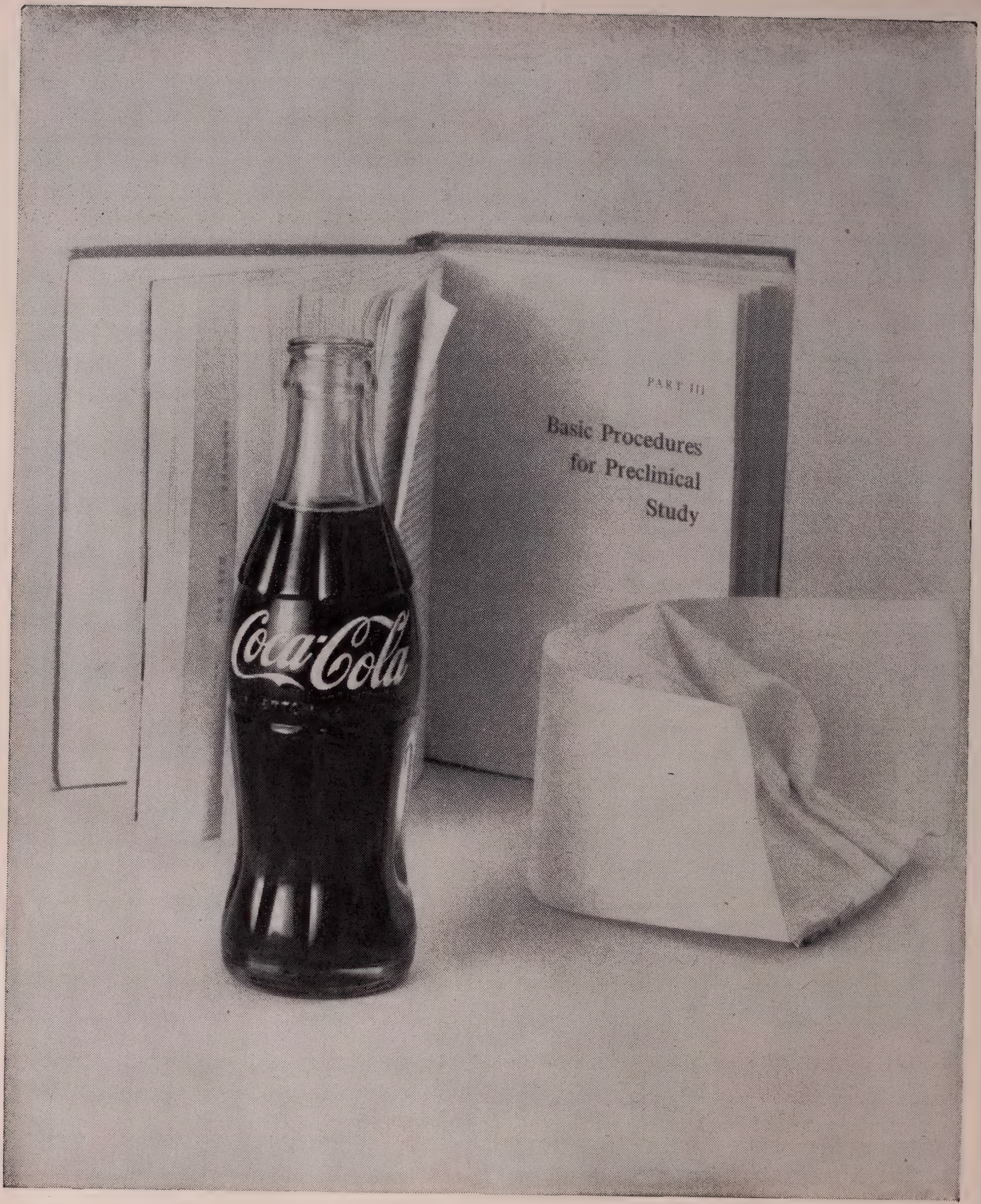
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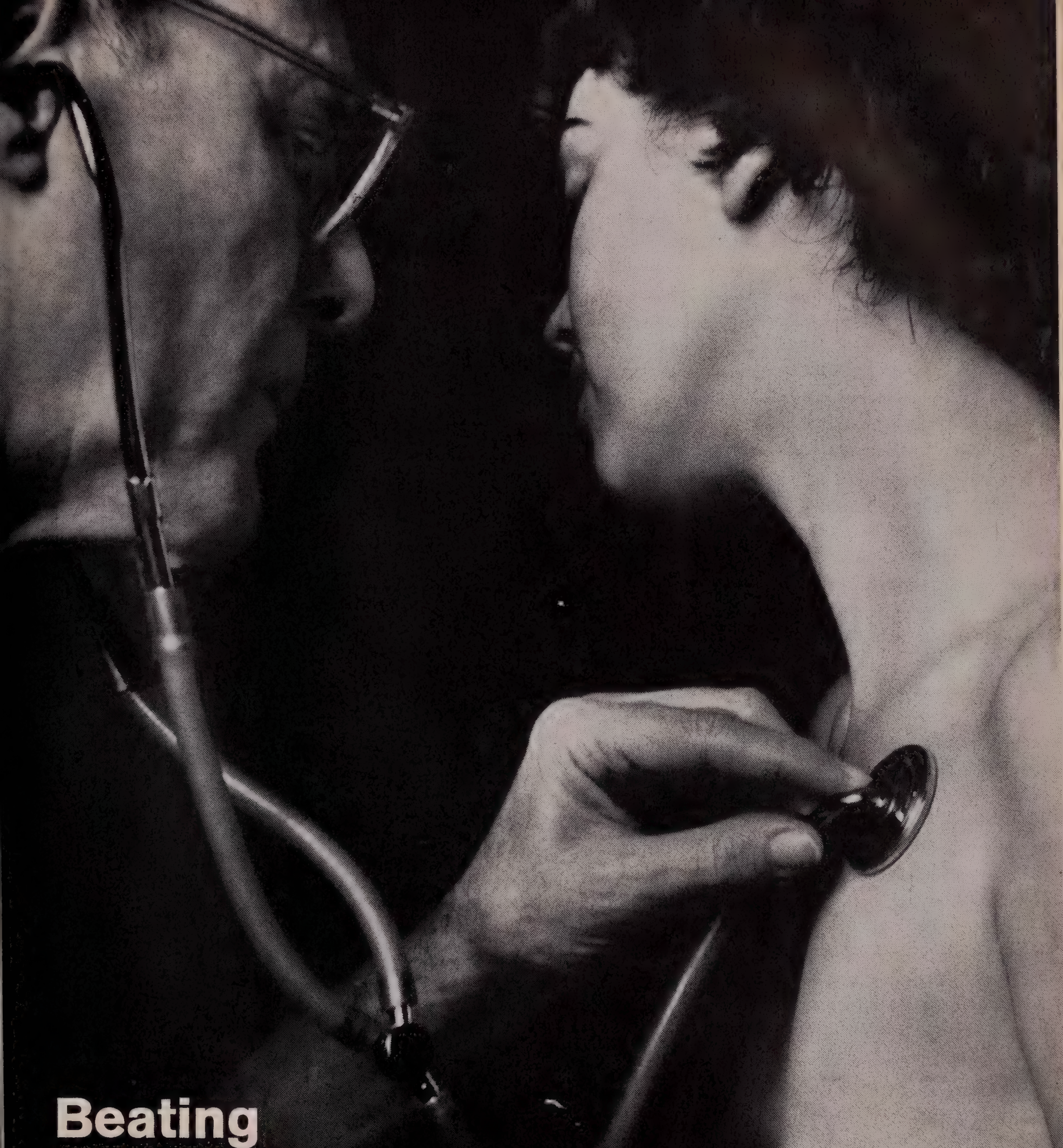

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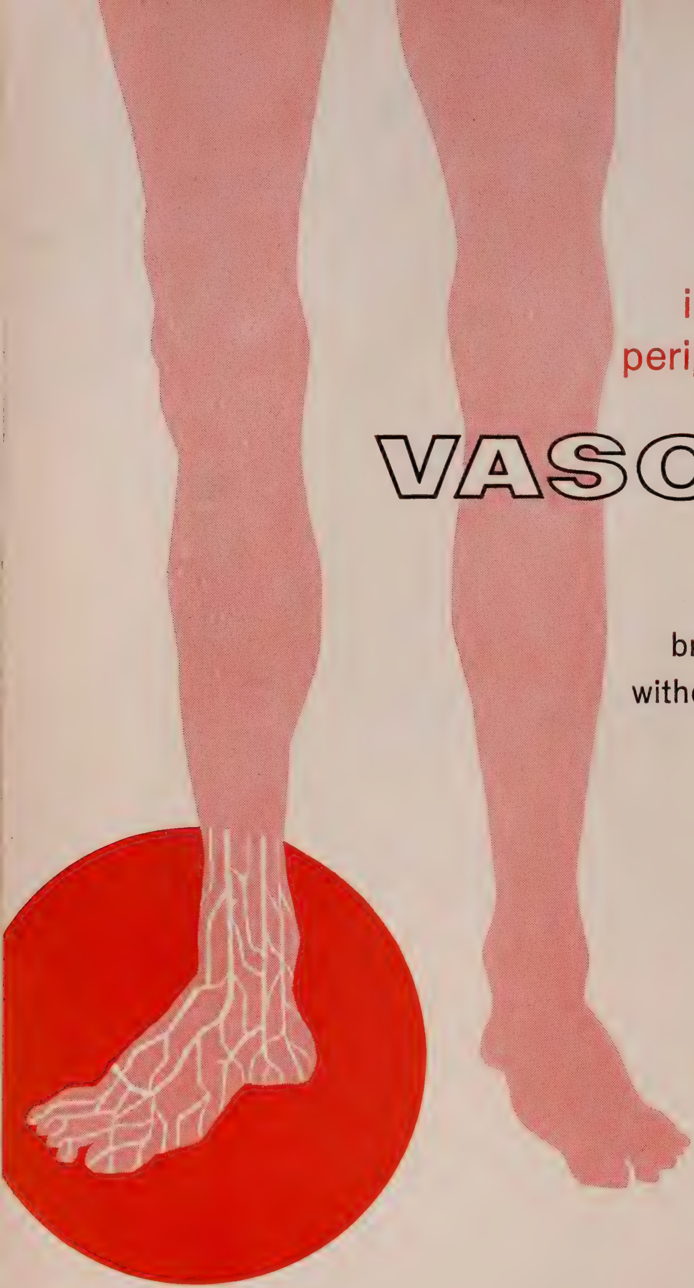

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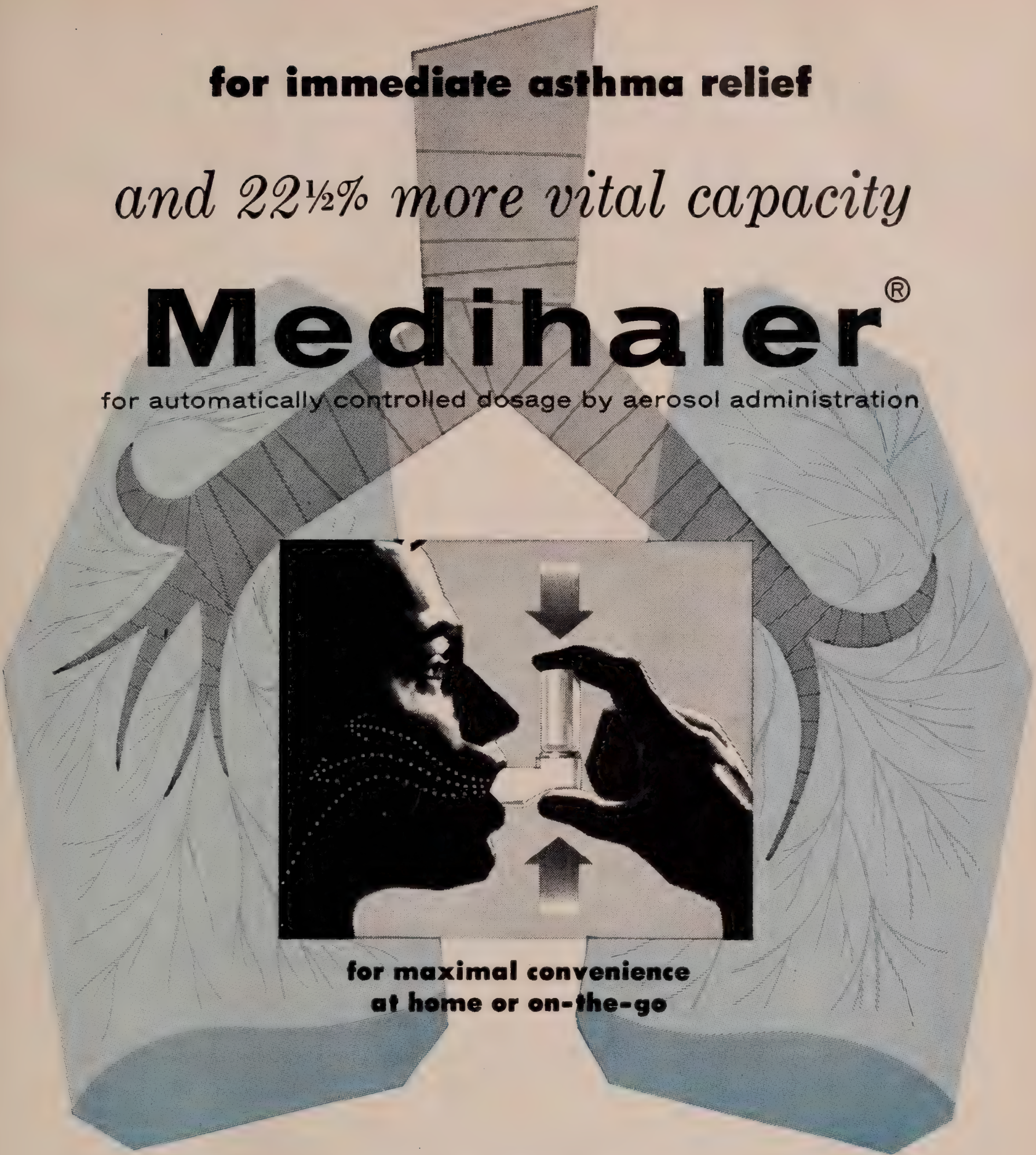

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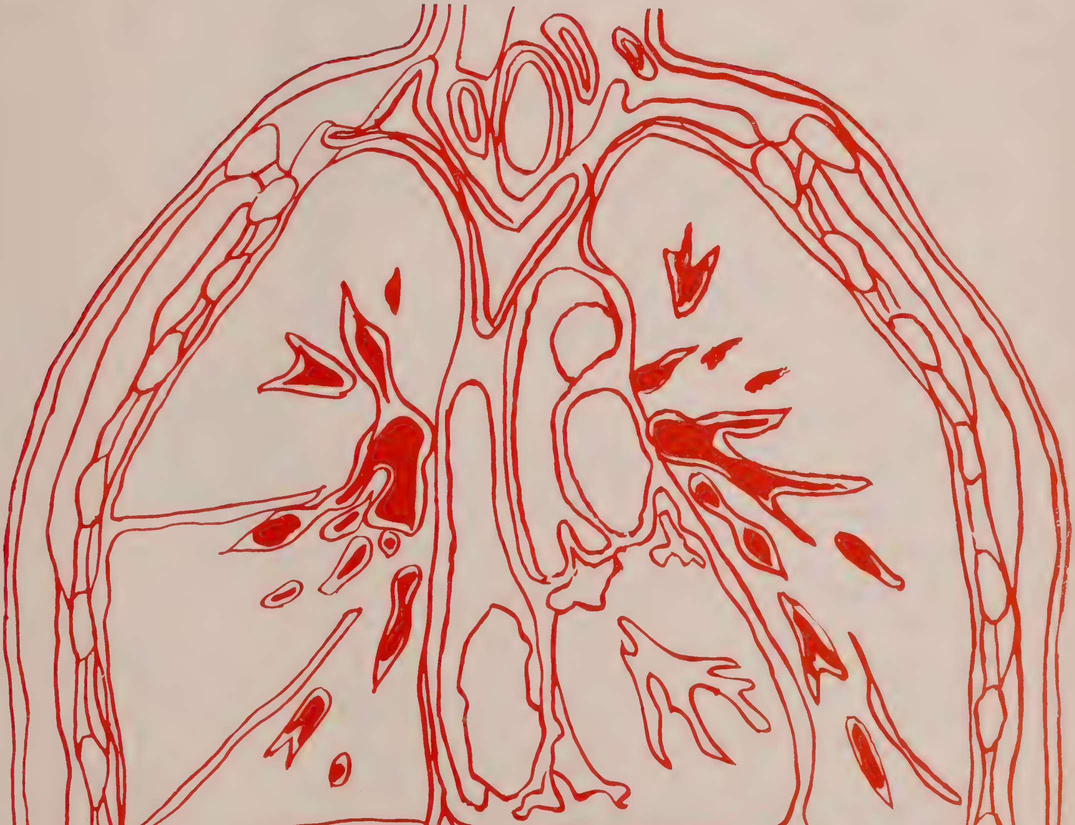

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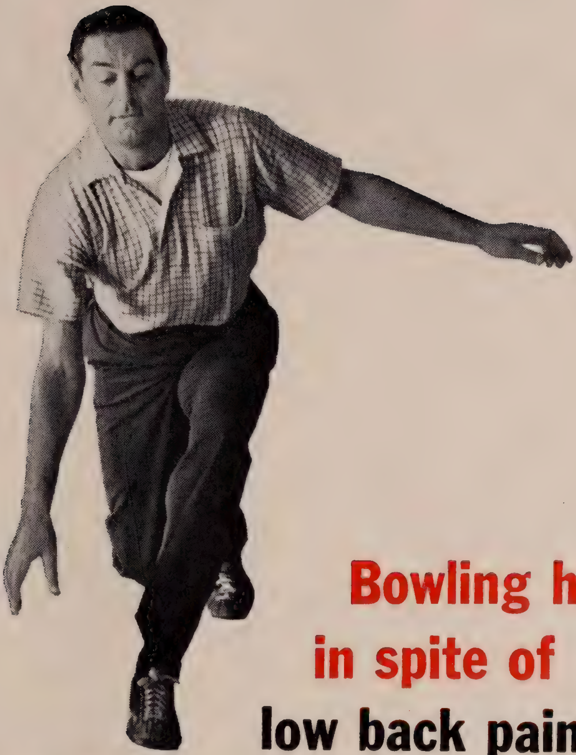

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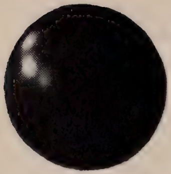

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making
oral blood-sugar
control a reality
for more
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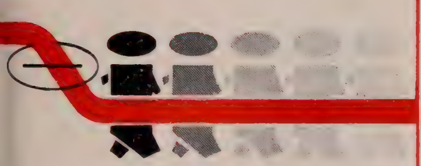
brand of chlorpropamide



IN BRIEF

DIABINESE, a potent sulfonylurea, provides smooth, long-lasting control of blood sugar permitting economy and simplicity of low, once-a-day dosage. Moreover, DIABINESE often works where other agents have failed to give satisfactory control.

INDICATIONS: Uncomplicated diabetes mellitus of stable, mild or moderately severe nonketotic, maturity-onset type. Certain "brittle" patients may be helped to smoother control with reduced insulin requirements.

ADMINISTRATION AND DOSAGE: Familiarity with criteria for patient selection, continued close medical supervision, and observance by the patient of good dietary and hygienic habits are essential.

Average maintenance dosage is 100-500 mg. daily. For most patients the recommended starting dose is 250 mg. given once daily. Geriatric patients should be started on 100-125 mg. daily. A priming dose is not necessary and should not be used; most patients should be maintained on 500 mg. or less daily. Maintenance dosage above 750 mg. should be avoided. Before initiating therapy, consult complete dosage information.

SIDE EFFECTS: In the main, side effects, e.g., hypoglycemia, gastrointestinal intolerance, and neurologic reactions, are related to dosage. They are not encountered frequently on presently recommended low dosage. There have been, however, occasional cases of jaundice and skin eruptions primarily due to drug sensitivity; other side effects which may be idiosyncratic are occasional diarrhea (sometimes sanguineous) and hematologic reactions. Since sensitivity reactions usually occur within the first six weeks of therapy, a time when the patient is under very close supervision, they may be readily detected. Should sensitivity reactions be detected, DIABINESE should be discontinued.

PRECAUTIONS AND CONTRAINDICATIONS: If hypoglycemia is encountered, the patient must be observed and treated continuously as necessary, usually 3-5 days, since DIABINESE is not significantly metabolized and is excreted slowly. DIABINESE as the sole agent is not indicated in juvenile diabetes mellitus and unstable or severely "brittle" diabetes mellitus of the adult type. Contraindicated in patients with hepatic dysfunction and in diabetes complicated by ketosis, acidosis, diabetic coma, fever, severe trauma, gangrene, Raynaud's disease, or severe impairment of renal or thyroid function. DIABINESE may prolong the activity of barbiturates. An effect like that of disulfiram has been noted when patients on DIABINESE drink alcoholic beverages.

SUPPLIED: As 100 mg. and 250 mg. scored chlorpropamide tablets.

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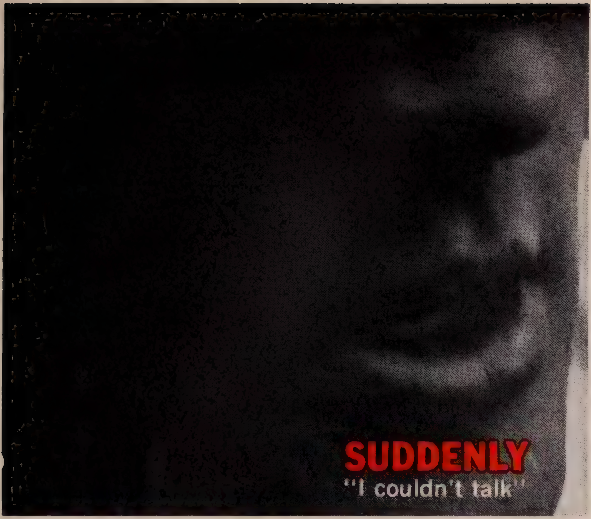
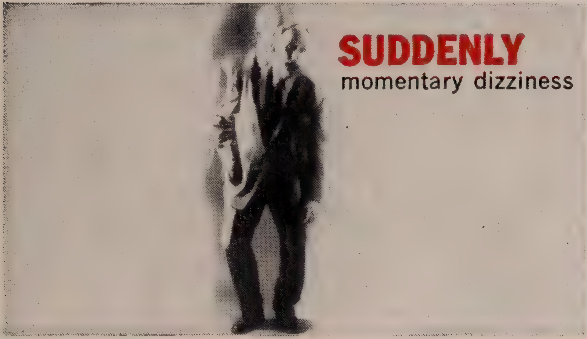

SUDDENLY
"I couldn't talk"


SUDDENLY
momentary dizziness

Look out for the "little strokes"

resulting from abnormal capillary fragility. Sudden dizzy spells, blurred vision, bizarre feelings of pain, transitory weakness of arm or leg—all are typical symptoms.[1] It has been suggested that many of these incidents (frequent in the middle years as well as in the elderly[2]) might be due to minor cerebral hemorrhages.

"Little strokes"—avoidable? Many cerebral accidents may be avoided if adequate amounts of hesperidin and ascorbic acid are provided.[3] Hesper-C, a combination of hesperidin complex and ascorbic acid, promotes capillary resistance and repair; helps reduce the damage from abnormal capillary fragility.[4]

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References: 1. Alvarez, W. C.: The New Physician 6:42, 1957. 2. Little Strokes, Hope through Research, Publication 689, United States Department of Health, National Institute of Neurological Diseases and Blindness, 1959. 3. Gale, E. T., and Thewlis, M. W.: Geriatrics 8:80, 1953. 4. Martin, G. J. (Ed.): Hesperidin and Ascorbic Acid, New York, S. Karger, 1955.

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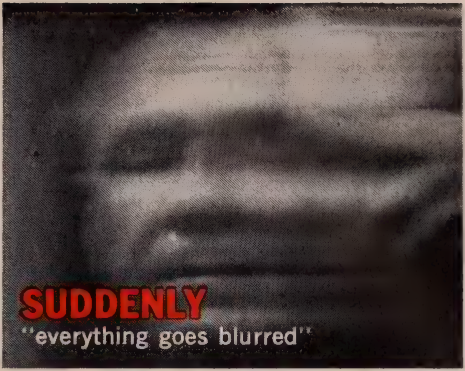
SUDDENLY
"everything goes blurred"

SUDDENLY
she finds herself dropping things

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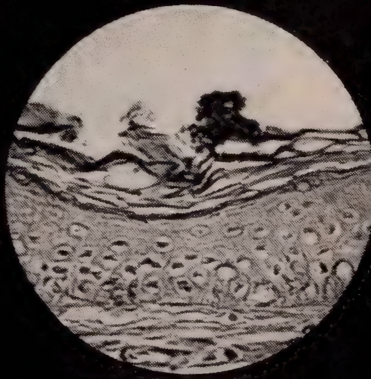
new study:

"almost universally rapidly curative"[1] *in*

infantile eczema

Biopsy section from skin stained with osmic acid after treatment for one week with placebo base shows little unsaturated oil (black stain) on the surface and practically none within the epidermis.



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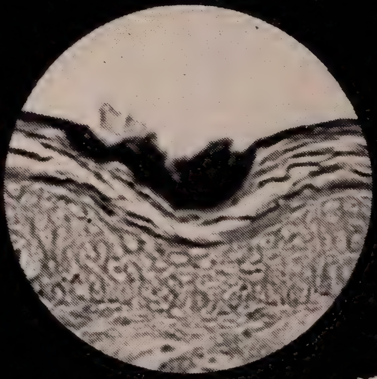

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1. Spoor, H. J.: New York St. J. M. 60:2863, 1960.
2. Wiese, H. F., et al.: J. Nutrition 66:345, 1958.
3. Smith, L. W., et al.: Amer. J. Med. Sc. 237:600, 1959.
4. Nutrition Reviews 17:136, 1959.

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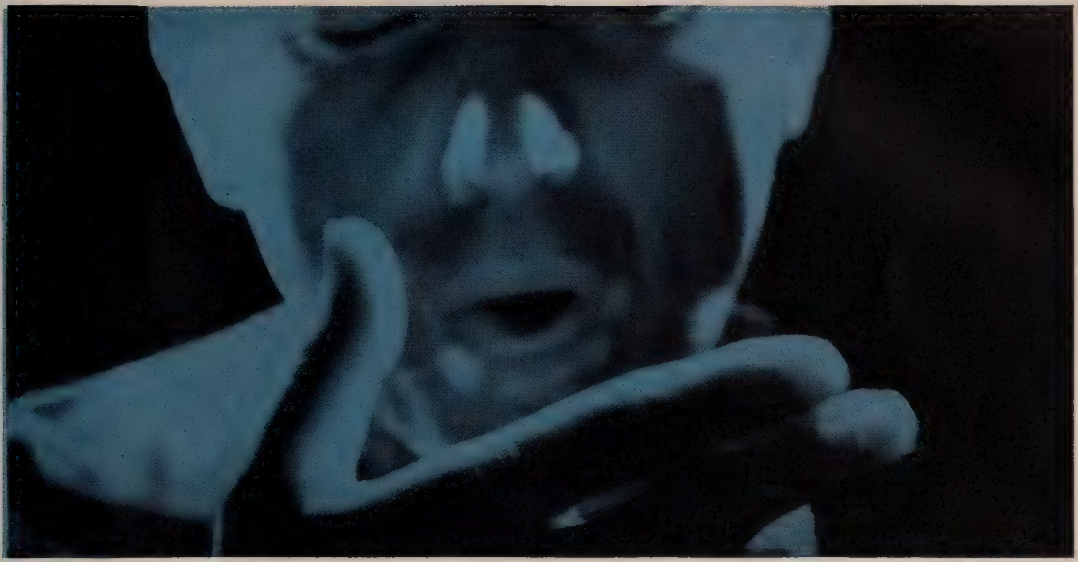

helps remove the cause of cough[1]

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references: 1. Blanchard, K., and Ford, R. A., J.-Lancet, 74:433, 1954. 2. Cass, L. J., and Frederik, W. S., Am. Pract. Dig. Treat., 2:844, 1951. 3. Hayes, E. W., and Jacobs, L. S., Dis. Chest, 30:441, 1956. 4. Blanchard, K., and Ford, R. A., Clin. Med., 3:961, 1956. 5. Blanchard, K., and Ford, R. A., Rocky Mt. M. J., 52:278, 1955. 6. Boyd, E. M., et al., Can. M. Assoc. J., 54:216, 1946.

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Supplied: Bottles of 16 ounces and 1 gallon.

Dosage: Every three or four hours—adults, 1 to 2 teaspoonfuls; children ½ to 1 teaspoonful. 27160

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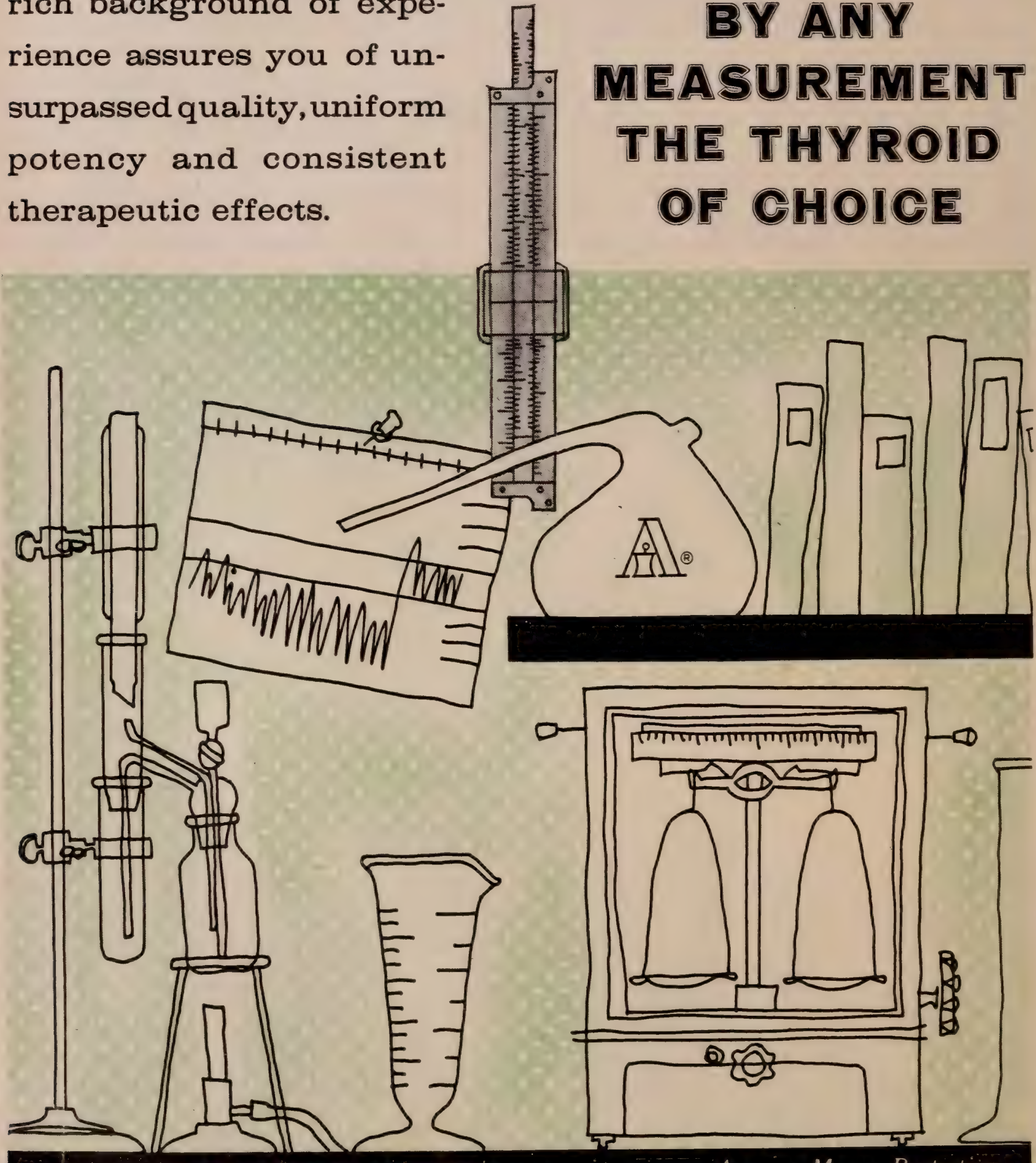

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References: 1. Pitts, R. F., Am. J. Med., 24:745, 1958. 2. Ford, R. V., Cur. Therap. Res., 2:51, 1960.

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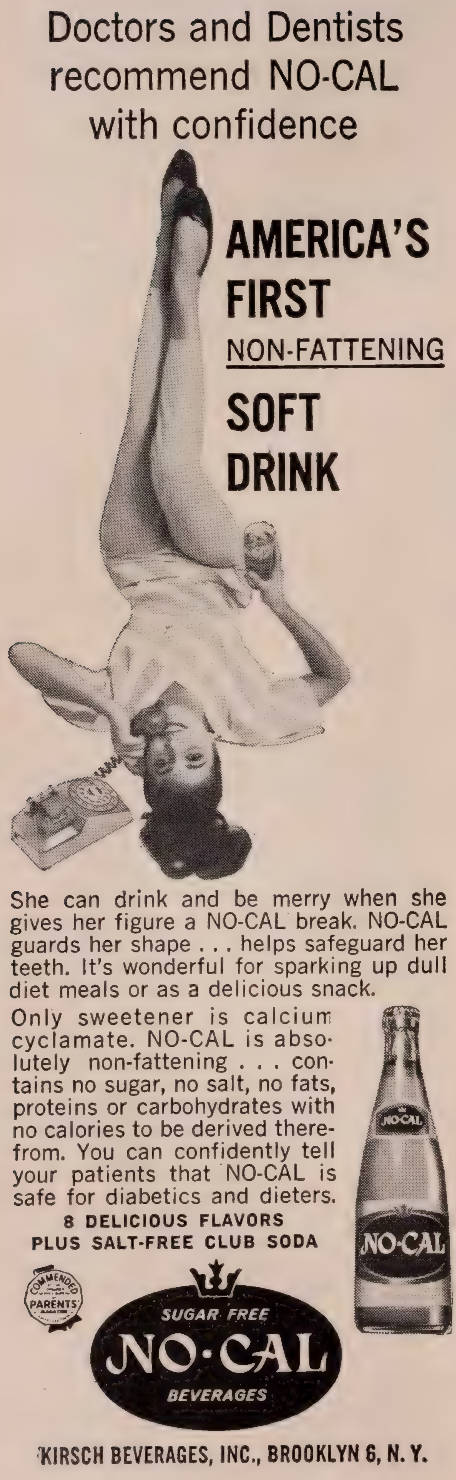

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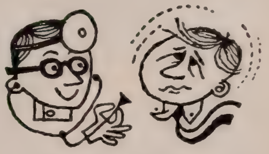

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(virtually 9 times out of 10)

Remission in 82%; relief in 92%. So reports an investigator who recently studied ANTIVERT in dizziness.[1] After studying 50 patients, Scal concluded that "Those with Meniere's syndrome who were given the preparation [ANTIVERT] in the early stages of this condition, reported prompt improvement in the relief of dizziness, headaches and tinnitus."[1]

ANTIVERT combines meclizine (12.5 mg.) with nicotinic acid (50 mg.). Prescribe one ANTIVERT tablet before each meal for relief of Meniere's syndrome, arteriosclerotic vertigo, labyrinthitis, and vertigo of nonspecific origin.

Supplied: In bottles of 100 blue-and-white scored tablets. Prescription only.

Reference: 1. Scal, J. C.: Eye Ear Nose & Throat Month. **38**:738 (Sept.) 1959.

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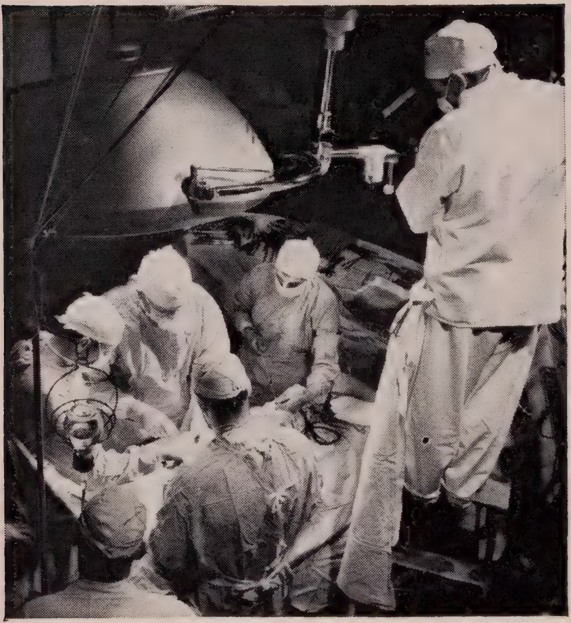
of the nation
and your profession*



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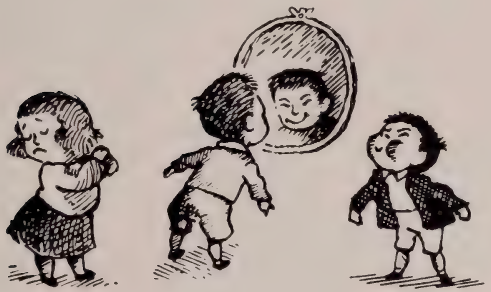
a mustache is to wear on Halloween

dogs are to kiss people



a face is something to have on the front of your head

REDISOL® is so kids have better appetites

Redisol (Cyanocobalamin, crystalline vitamin B_{12}) often stimulates children's appetites with consequent weight gain. Tiny **Redisol Tablets** (25, 50, 100, 250 mcg.) dissolve instantly in the mouth, on food or in liquids. Also available: cherry-flavored **Redisol Elixir** (5 mcg. per 5-cc. teaspoonful); **Redisol Injectable,** cyanocobalamin injection USP (30 and 100 mcg. per cc., 10-cc. vials and 1000 mcg. per cc. in 1, 5 and 10-cc. vials).

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What's she doing that's of medical interest?

She's drinking a glass of pure Florida orange juice. And that's important to her physician for several reasons.

How your patients obtain their vitamins or any of the other nutrients found in citrus fruits is of great medical interest — considering the fact there are so many wrong ways of doing it, so many substitutes and imitations for the real thing.

Actually, there's no better way for this young lady to obtain her vitamin C than by doing just what she is doing, for there's no better source than oranges and grapefruit ripened in the Florida sunshine. There's no substitute for the result of nature's own mysterious chemistry, flourishing in the warmth of this luxurious peninsula.

An obvious truth, you might say, but not so obvi to the parents of many teen-agers.

We know that a tall glass of orange juice is j about the best thing they can reach for when they r the refrigerator. We also know that if you encour this refreshing and healthful habit, you'll be helpi patients to the finest between-meals drink there

Nothing has ever matched the quality of Flori citrus — watched over as it is by a State Commissi that enforces the world's highest standards for qual in fresh, frozen, canned or cartoned citrus fruits a juices.

That's why the young lady's activities are of medi interest.

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SAFE, RELIABLE, ECONOMICAL AND EFFECTIVE DIURETIC

MERCUPROCYL

(brand of mersalyl and theophylline injection, U.S.P., with procaine borate ½%)

Mercuprocyl is indicated in all cases of congestive heart failure and is particularly effective in those in which the edema is not outwardly apparent, but in which diuresis produces symptomatic improvement. In cardiac dyspnea frequent and regular use of an effective mercurial diuretic makes the patient more comfortable. Mercuprocyl is indicated in hypertension, heart failure with pulmonary congestion, cardiorenal edema, cardiac decompensation, cirrhosis of the liver and nephrosis.

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Available in 10cc multiple dose vials at all surgical supply dealers and many hospitals.

Write for physicians' samples for clinical trial.

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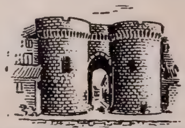
a celebrated example
of the French Art.



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solve the mystery of Acne Therapy

Brāvisol has a gentle, graded abrasive action that attacks the acne lesion simply and directly. Helps open plugged pores, reduce postules and blackheads, control oiliness. Outstanding success on thousands of acne cases. Brāsivol (pat. pend.) contains: mild abrasive (Al_2O_3), hexachlorophene 1%, drying soap-and-detergent base.

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Logical Dermatologicals—since 1847
Stiefel Laboratories, Inc. Oak Hill, N.Y.
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Fine
Medium
Rough

3 grades permit gradual increase of abrasive action as acne improves. Also, Brāsivol Base (abrasive free), starter therapy for the more acute cases.

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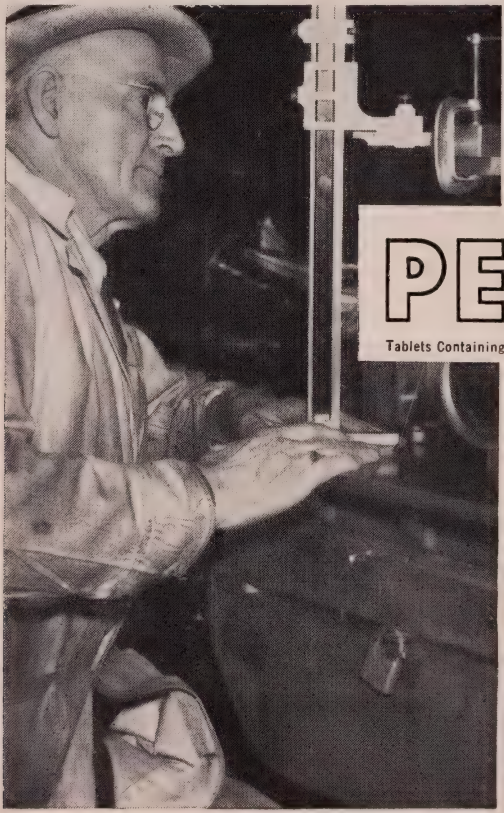
ABRASION THERAPY FOR ACNE
in certain countries Brāsivol available as DENCO-BRAS.™



IN ANGINA PECTORIS
keep him active and less concerned with himself

PENTOXYLON®
Tablets Containing Pentaerythritol Tetranitrate (PETN) 10 mg. and Rauwiloid® (Alseroxylon) 0.5 mg.

Relief of Pain . . . Long-Acting Coronary Vasodilatation (PETN)

Relief of Anxiety and Tachycardia . . . Bradycrotic and Gentle Tranquilizing Action (Rauwiloid)

Dosage: One to two tablets q.i.d. before meals and on retiring.

Riker Northridge, California

NEW For the
multi-system disease
HYPERTENSION

SALUTENSIN™

Hydroflumethiazide • Reserpine • Protoveratrine A

An integrated multi-therapeutic antihypertensive, that combines in balanced proportions three clinically proven antihypertensives.

In each **SALUTENSIN** Tablet:

Saluron® (hydroflumethiazide)— a saluretic-antihypertensive	50 mg.
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Comprehensive information on dosage and precautions in official package circular or available on request.

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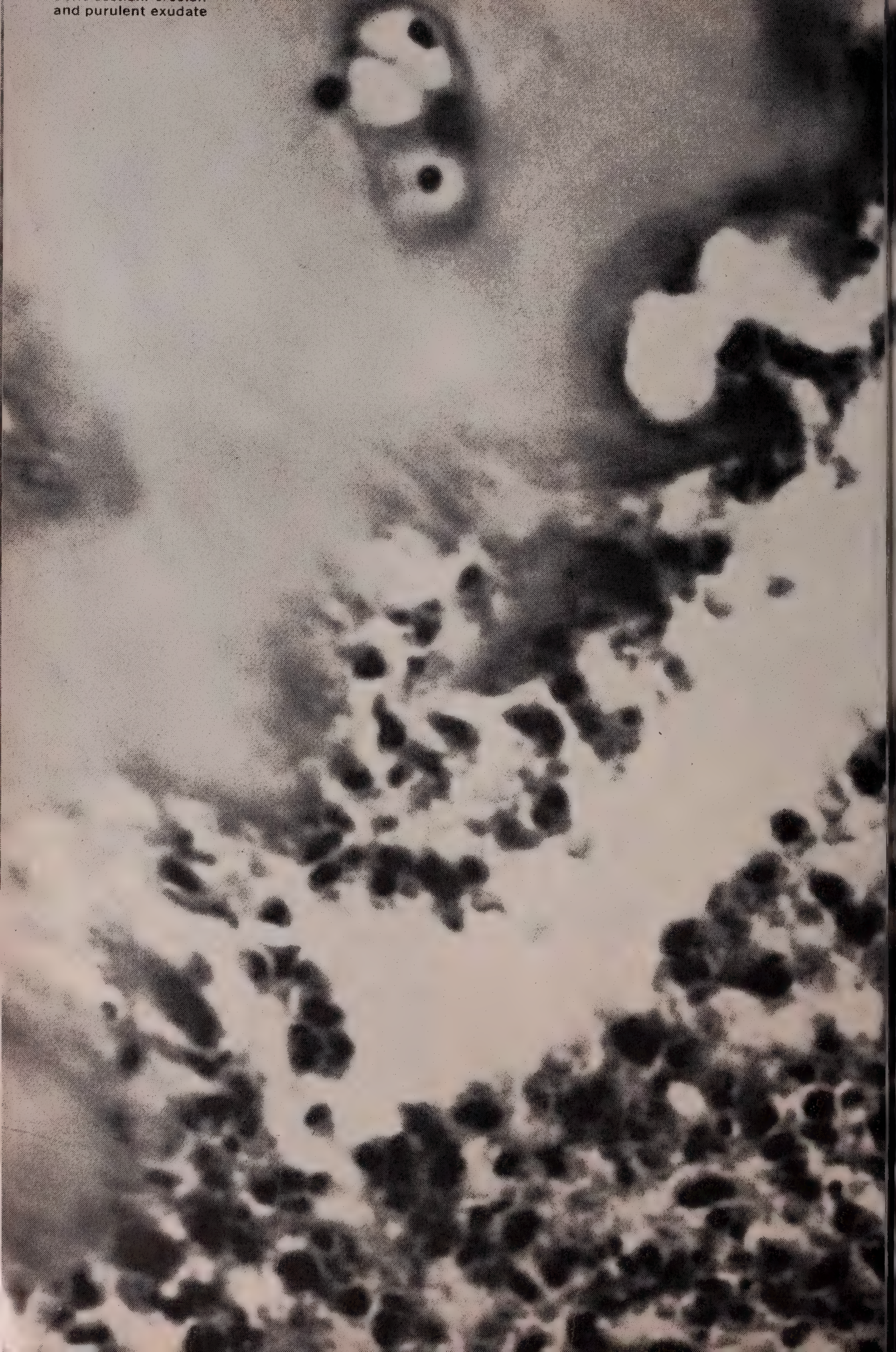
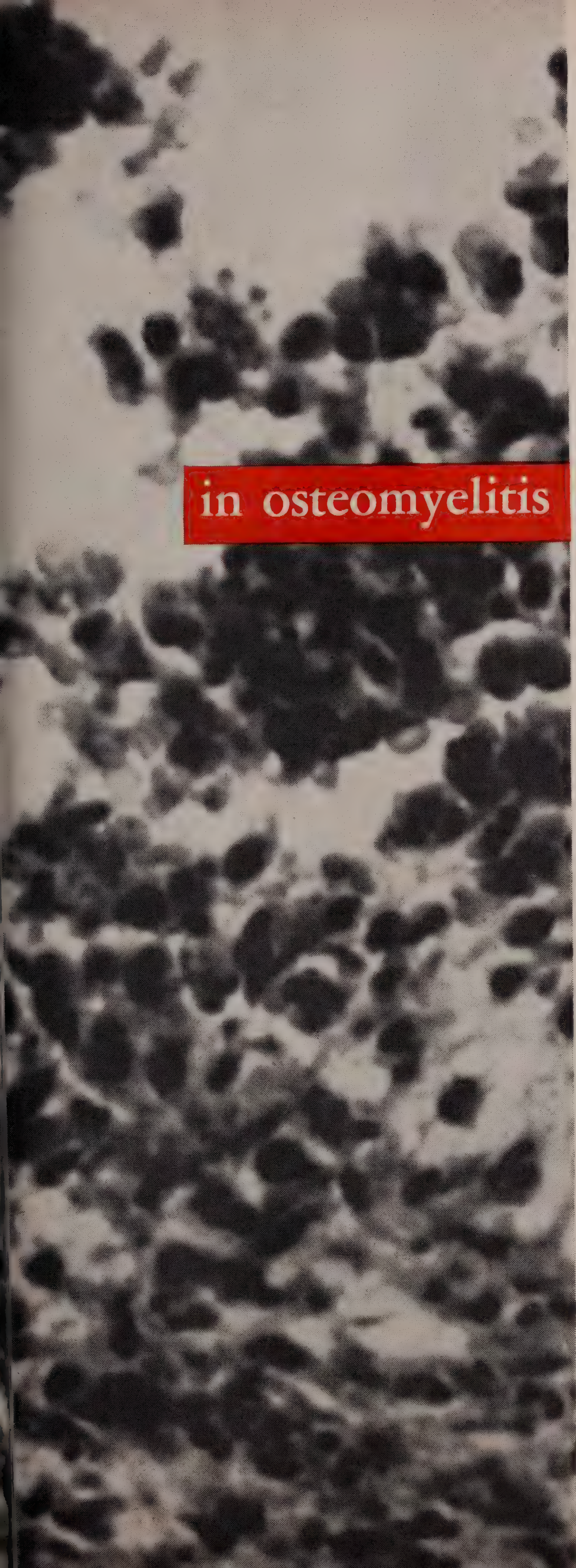


and purulent exudate



Therapeutic confidence

Panalba is effective against more than 30 commonly encountered pathogens including ubiquitous staphylococci. Right from the start, prescribing it gives you a high degree of assurance of obtaining the desired anti-infective action in this as in a wide variety of bacterial diseases.

Supplied: Capsules, each containing Panmycin* Phosphate (tetracycline phosphate complex), equivalent to 250 mg. tetracycline hydrochloride, and 125 mg. Albamycin,* as novobiocin sodium, in bottles of 16 and 100.

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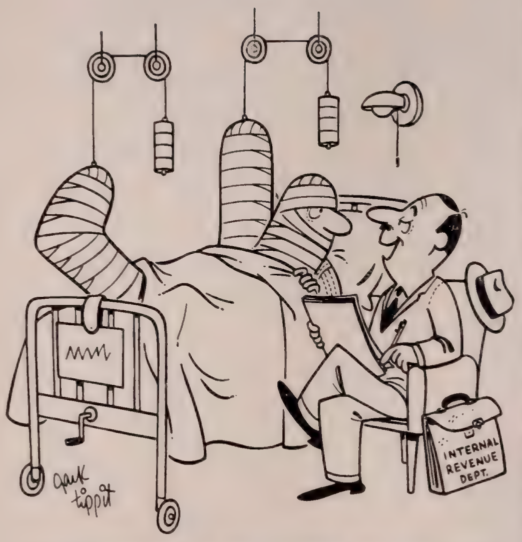
Kalamazoo, Michigan

Upjohn

Panalba*

your broad-spectrum antibiotic of *first* resort



"This will give you a break on this year's tax. However, I'm here about last year's return."

time-tested therapy

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bronchial asthma

paroxysmal dyspnea

Cheyne-Stokes respiration

dubin aminophylline

reliable diuresis

potent myocardial stimulant

bronchial relaxant

tablets, ampuls, powder, suppositories

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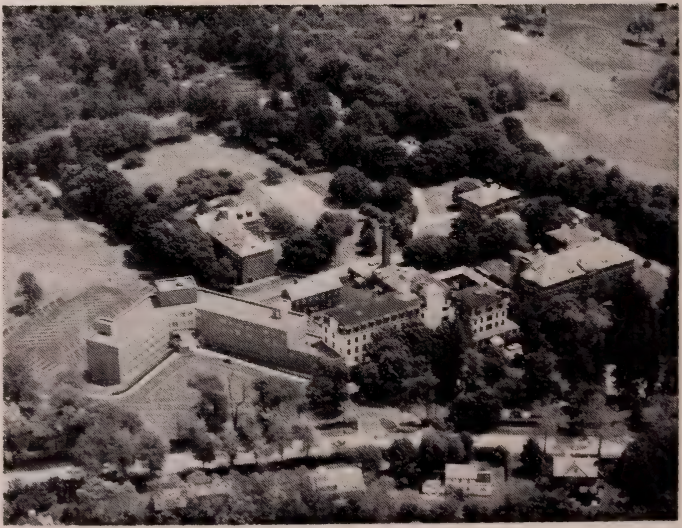
A voluntary non-profit institution providing all modern therapies for mental and emotional disorders including individual and group psychotherapy, pharmacotherapy, insulin coma and electro therapies and extensive activity programs. All facilities expanded for in- and out-patients, day care and clinic service for children. Acutely ill and continued therapy patients admitted.



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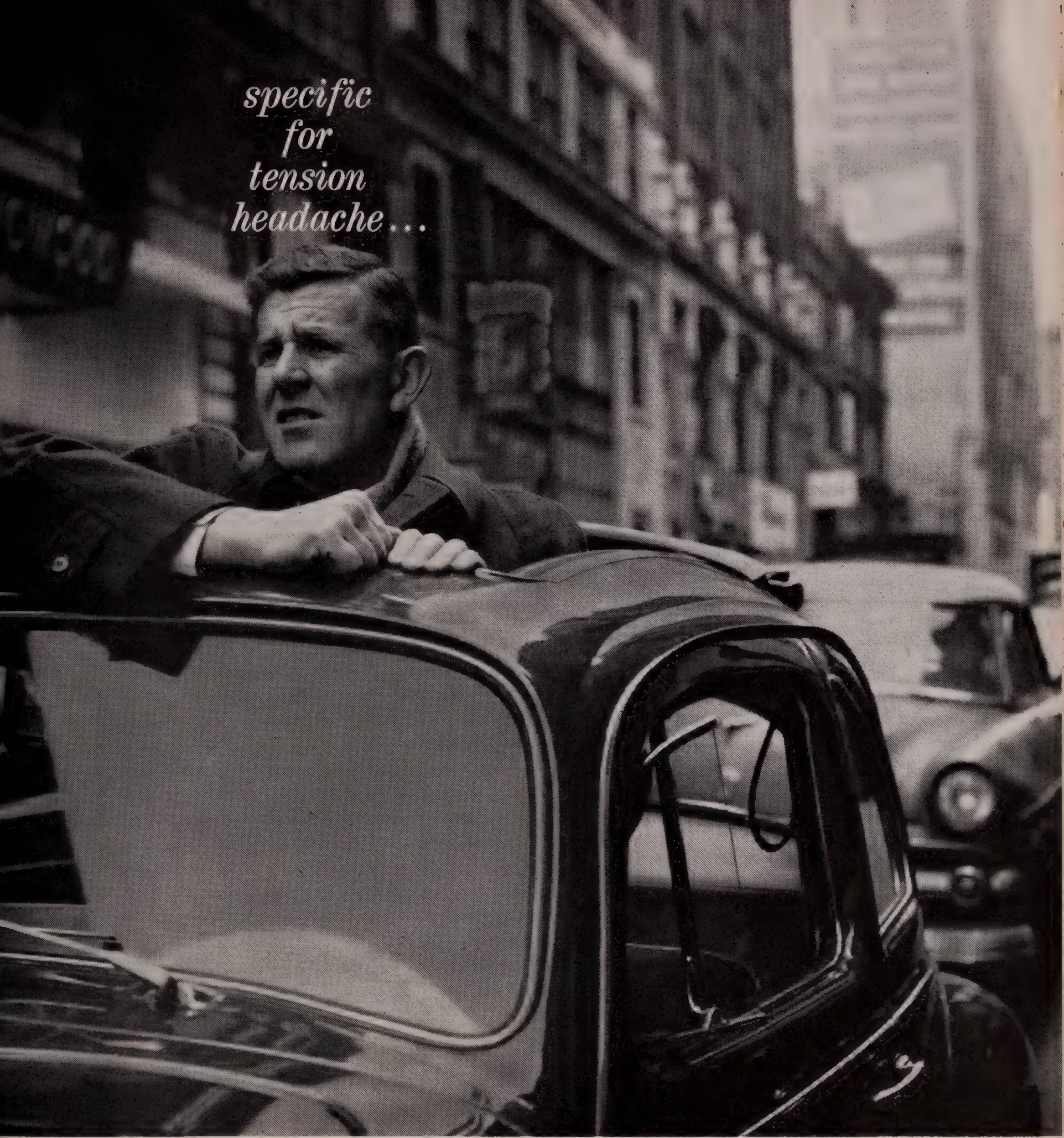
Medical Director



Fiorinal®

relieves pain,
muscle spasm,
nervous tension

rapid action • non-narcotic • economica

"We have found caffeine, used in combination with acetylsalicylic acid, acetophenetidin, and isobutylallylbarbituric acid, [Fiorinal] to be one of the most effective medicaments for the symptomatic treatment of headache due to tension."

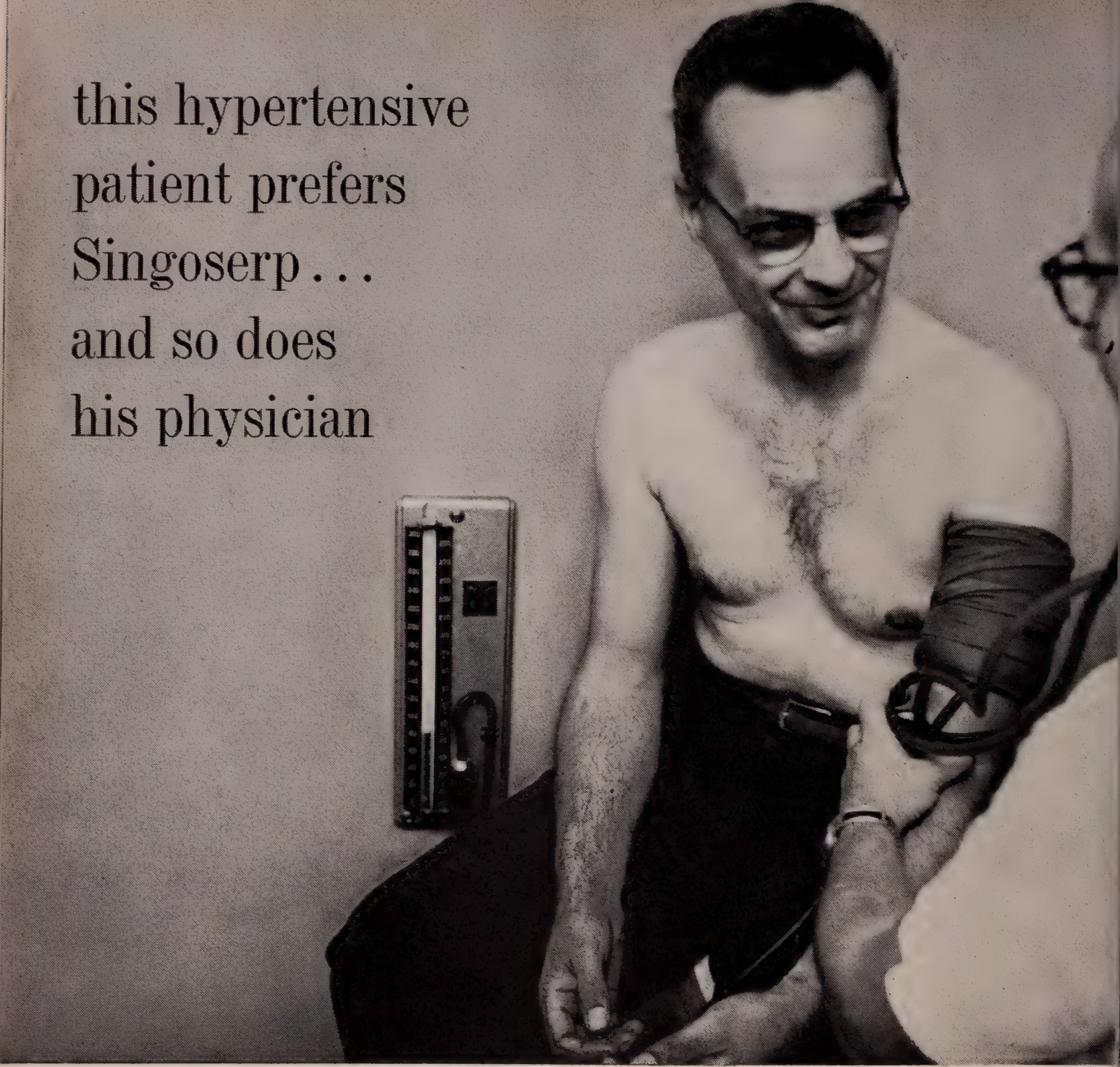
Friedman, A. P., and Merritt, H. H.: J.A.M.A. *163*:1111 (Mar. 30) 1957.

Available: Fiorinal Tablets and
New Form — Fiorinal Capsules

Each contains: Sandoptal (Allylbarbituric Acid N.F. X) 50 mg. (3/4 gr.), caffeine 40 mg. (2/3 gr.), acetylsalicylic acid 200 mg. (3 gr.), acetophenetidin 130 mg. (2 gr.).

Dosage: 1 or 2 every four hours, according to need, up to 6 per day.

SANDO



this hypertensive patient prefers Singoserp . . . and so does his physician

Photo used with patient's permission.

Patient's comment: "The other drug [whole root rauwolfia] made me feel lazy. I just didn't feel in the mood to make my calls. My nose used to get stuffed up, too. This new pill [Singoserp] doesn't give me any trouble at all."

Clinician's report: J. M., a salesman, had a 16-year history of hypertension. Blood pressure at first examination was 190/100 mm. Hg. Whole root rauwolfia lowered pressure to 140/80—but side effects were intolerable. Singoserp 0.5 mg. daily, further reduced pressure to 130/80 and eliminated all drug symptoms.

Many hypertensive patients and their physicians prefer Singoserp® because it usually lowers blood pressure without rauwolfia side effects

---

SUPPLIED: Singoserp **Tablets**, 1 mg. (white, scored). Also available: Singoserp®-Esidrix® **Tablets** #2 (white), each containing 1 mg. Singoserp and 25 mg. Esidrix; Singoserp®-Esidrix® **Tablets** #1 (white), each containing 0.5 mg. Singoserp and 25 mg. Esidrix. **Complete information sent on request.**

Singoserp® (syrosingopine CIBA)
Singoserp®-Esidrix® (syrosingopine and hydrochlorothiazide CIBA)

CIBA

ANTACID THERAPY

for bedridden as well as ambulant patients

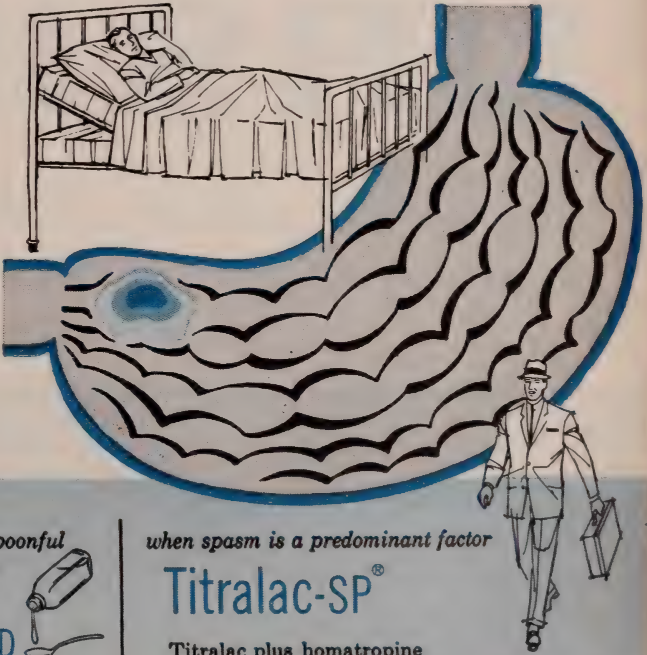
Pleasant Tasting

Titralac®

milk-like action...

no constipation or laxation...

no interference with gastrointestinal absorption...



WHENEVER an ANTACID is indicated:

- Peptic ulcer (gastric and duodenal)
- Heartburn due to dietary or alcoholic indiscretions, pregnancy
- Gastric hyperacidity associated with acute, subacute, and chronic gastritis
- Drug-induced gastric hyperacidity resulting from administration of salicylates, corticosteroids, reserpine, etc.

for on-the-go convenience

Titralac® TABLETS

Prompt prolonged action anywhere, anytime. Smooth, deliciously flavored tablets may be chewed, dissolved in mouth, or swallowed with water.

Availability: White, mint-flavored tablets, each containing glycine 0.18 Gm. and calcium carbonate 0.42 Gm. In bottles of 100

for relief in a teaspoonful

Titralac® LIQUID

Just one teaspoonful—not ounces or tablespoonfuls. Fresh minty flavor appeals to the most finicky palate.

Availability: White, mint-flavored liquid, each teaspoonful (5 cc.) containing glycine 0.30 Gm. and calcium carbonate 0.70 Gm. In bottles of 8 fl. oz.

when spasm is a predominant factor

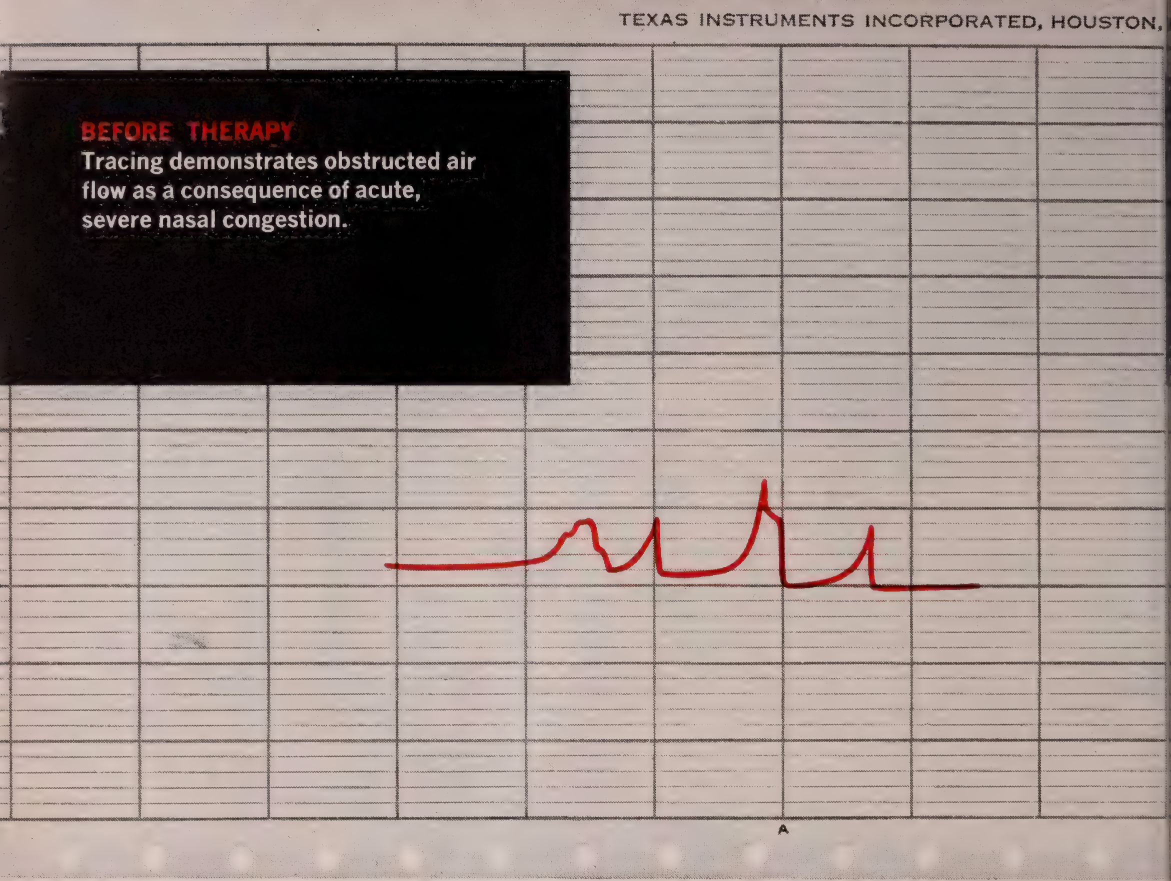
Titralac-SP®

Titralac plus homatropine methylbromide, for acute phases or when spasm contributes to symptom picture. Same delicious taste as Titralac tablets and liquid.

Availability: Pink, mint-flavored tablets, each containing Titralac formula plus 0.5 mg. homatropine methylbromide, bottles of 100.

Riker

Northridge, California



BEFORE THERAPY
Tracing demonstrates obstructed air flow as a consequence of acute, severe nasal congestion.

URSINUS®

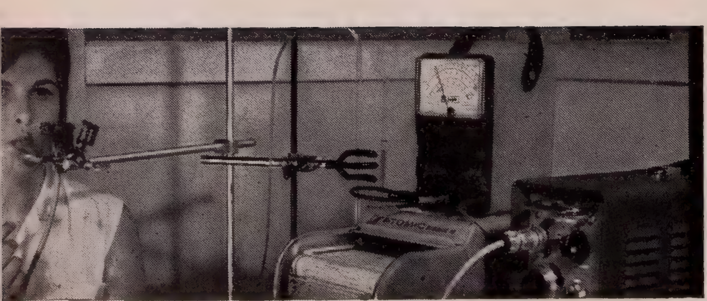
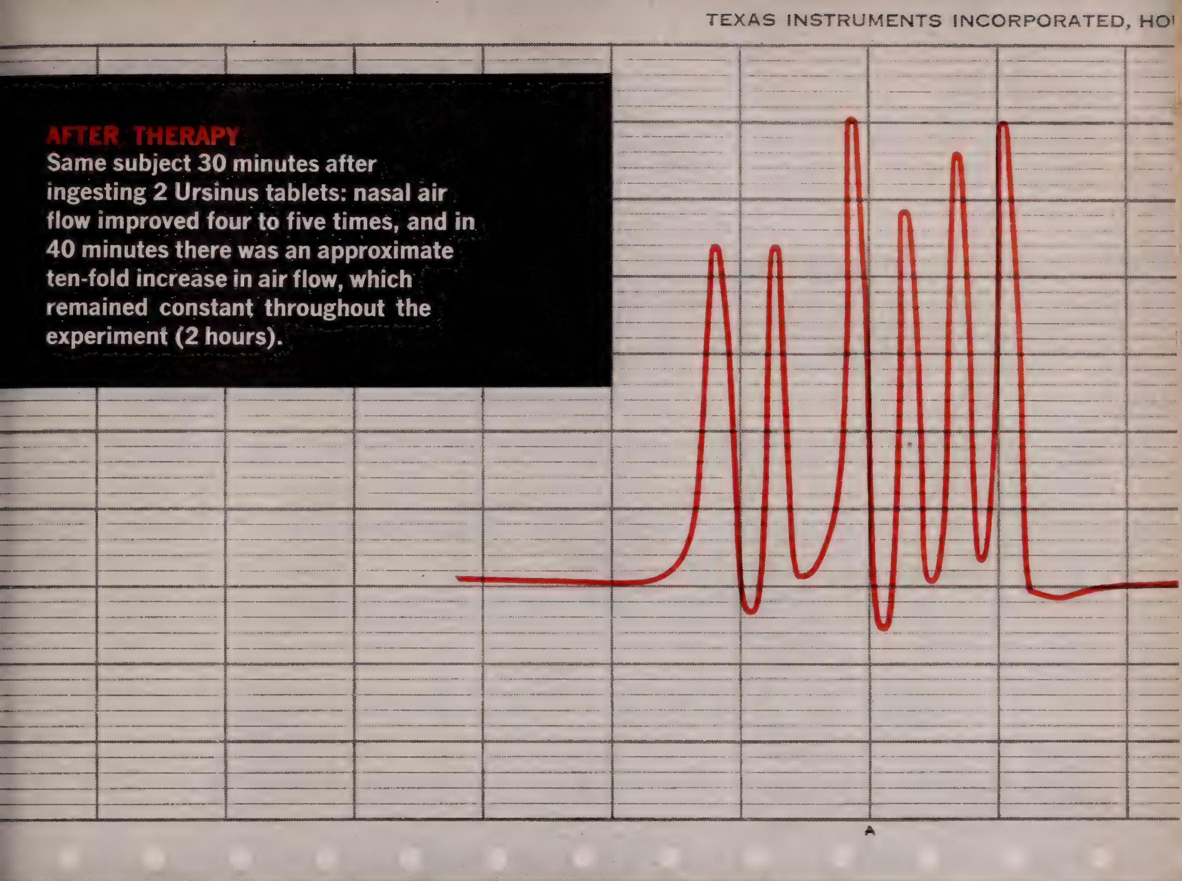


Photo shows use of electronic rhinograph, a new technique to measure air flow and response to decongestant therapy, using same subject as control.

SMITH-DORSEY – a division of The **WANDER COMPANY, LINCOLN, NEBRASKA**



AFTER THERAPY
Same subject 30 minutes after ingesting 2 Ursinus tablets: nasal air flow improved four to five times, and in 40 minutes there was an approximate ten-fold increase in air flow, which remained constant throughout the experiment (2 hours).

for SINUSITIS

DECONGESTS PARANASAL SINUSES, TREATS UNDERLYING CAUSE OF PAIN AND PRESSURE

As an oral decongestant with antiallergic and antiinflammatory action, URSINUS shrinks edematous-congested turbinates, opens obstructed ostia, re-establishes sinus drainage and nasal patency. Pain, produced by pressure from retained sinus secretions and engorged turbinates, is promptly and effectively relieved over a prolonged period of time.

Each URSINUS Inlay-Tab contains: phenylpropanolamine HCl, 25 mg.; pheniramine maleate, 12.5 mg.; pyrilamine maleate 12.5 mg.; Calurin® (calcium acetylsalicylate carbamide, equiv. to aspirin 300 mg.) Dose: 1 or 2 tablets every 4 to 6 hours. Supplied in bottles of 100 URSINUS tablets.

THE AMERICAN CANCER SOCIETY is dedicated to saving lives from cancer and spearheads the fight against cancer quackery. Its Committee on New or Unproved Methods of Treatment of Cancer has a membership of physicians, lawyers, educators, and public relations specialists. This committee has been a prime mover in developing constructive action

against cancer quackery

Inspired by model legislation formulated by this committee with the active cooperation of the California Medical Association, California, Kentucky and Nevada recently passed bills providing the first effective means of fighting cancer quackery at its base of operations—in the local community.

To keep both the public and the medical profession informed, the Society has established, in its national office, a central repository of material on new or unproved methods of cancer diagnosis, treatment and cure—a principal source of such information in this country.

The American Cancer Society, in this as in all its efforts, serves both the private citizen and the practicing physician—and is, in turn, served by both.

THE AMERICAN CANCER SOCIETY

a breathing spell from asthma

Quadrinal*

a rapid way to clear the airway

- **stops wheezing**
- **increases cough effectiveness**
- **relieves spasm**

In chronic disorders associated with obstructed respiration, the dependable antispasmodic and expectorant action of Quadrinal rapidly clears the bronchial tree. Patients breathe more easily and acute episodes of bronchospasm are often eliminated. Quadrinal is well tolerated, even on prolonged administration. The potassium iodide in Quadrinal provides an expectorant of time-tested effectiveness and safety.

Indications: Bronchial asthma, chronic bronchitis, pulmonary fibrosis, pulmonary emphysema.

Quadrinal Tablets, containing ephedrine HCl (24 mg.), phenobarbital (24 mg.), 'Phyllicin'* (theophylline-calcium salicylate) (130 mg.), and **potassium iodide** (0.3 Gm.).

Also available —
a new Quadrinal dosage form with taste-appeal for all age groups:
fruit-flavored QUADRINAL SUSPENSION (1 teaspoonful = 1/2 Quadrinal Tablet)

KNOLL PHARMACEUTICAL COMPANY, ORANGE, NEW JERSEY

*Quadrinal, Phyllicin®

an antibiotic improvement
designed to provide
greater therapeutic effectiveness

now
Pulvules®
Ilosone®
(propionyl erythromycin ester lauryl sulfate, Lilly)

in a more acid-stable form
assure adequate absorption even when taken with food

Ilosone retains 97.3 percent of its antibacterial activity after exposure to gastric juice (pH 1.1) for forty minutes.[1] This means there is more antibiotic available for absorption—greater therapeutic activity. Clinically, too, Ilosone has been shown[2,3] to be decisively effective in a wide variety of bacterial infections—with a reassuring record of safety.[4]

Usual dosage for adults and for children over fifty pounds is 250 mg. every six hours.
Supplied in 125 and 250-mg. Pulvules and in suspension and drops.

1. Stephens, V. C., *et al.:* J. Am. Pharm. A. (Scient. Ed.), *48:*620, 1959.
2. Salitsky, S., *et al.:* Antibiotics Annual, p. 893, 1959-1960.
3. Reichelderfer, T. E., *et al.:* Antibiotics Annual, p. 899, 1959-1960.
4. Kuder, H. V.: Clin. Pharmacol. & Therap., in press.

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A SAD ANNOUNCEMENT

As we go to press, it is our sad duty to announce
the death of our editor,
Laurance D. Redway, M.D.,
which occurred on November 18.
The January 1, 1961, issue of the Journal
will be a memorial to the
life and work of Dr. Redway

EDITORIALS

Christmas—1960

Giving has been a part of Christmas since the beginning, when three wise men following a bright new star brought gifts of gold, frankincense, and myrrh. Down through the ages the custom has been carried, differing in times and climes but always adhering to the central theme of good will revealed by offering.

There has developed a shallow kind of reciprocal giving for its sake alone. But there is a wider, deeper giving, of which two examples may be cited.

A poor widow, her only son imprisoned, found herself alone on Christmas Eve in her little frame house in a forgotten crossroads village in the far north. There was no money in the house and little food. She wanted to remember her friends on Christmas Day with some sort of gift. Going to her slimly stocked cupboard she found some sugar and a few drops of essence of peppermint. With these ingredients she made some candies and with boxes, fancy paper, and ribbon hoarded from a happier time, she packaged them tidily and the next morning set out for her friends not empty handed.

Another mother, her child-rearing days at an end, went back to her old office job, not to provide luxuries for herself but to supplement her son's summer earnings so that he might stay in medical school.

Here is contemporary giving of a high order, truly as royal as that of Gaspard, Melchior, and Balthazar.

We who have it within our province to bear the gift of health might well rededicate ourselves at this season. Remembering that we are but the instruments that pass on the hard-won knowledge gained in the laboratory and clinic, may we do so with more humility than pride and constantly work toward greater usefulness. Only so will the gift of health, which we are so privileged to bear, be honored in the hearts of men.

Our heartiest greetings to all for a happy holiday.

Tuberculosis Goals

It was agreed at the Arden House Conference on Tuberculosis at Harriman, New York, November 29 to December 2, 1959, that the ultimate goal is the elimination of tuberculosis in the United States of America. Until an ultimate weapon such as a preventive vaccine can be developed, intermediate goals and standards of performance are to be inaugurated. The major recommendation of the Conference was modern treatment with effective drugs applied as a public health measure both therapeutically and prophylactically. An ad hoc committee including representatives of the United States Public Health Service and the National Tuberculosis Association was appointed and has recommended intermediate goals and standards for the United States Public Health Service to be adapted to state and local health departments and tuberculosis association programs.

The New York State Health Department's proposed program is in general agreement with the recommendations. Priorities now under study will be established at a later date. If tuberculosis is to be eradicated infection must be controlled. The two national intermediate goals are (1) an active case rate of not more than 10 per 100,000 population by 1970. The present rate is 33. This will require an average annual decline rate of 10 instead of the present 8 per cent. (2) Control of spread of infection to the point where not more than 1 per cent of fourteen-year-olds react to tuberculin. It is estimated that if a community tests its school-enterers and finds as many as 1 per cent reacting to tuberculin at the time, it will require at least ten years to reach this goal.

Intermediate performance standards call for (1) satisfactory report to the Health Department on at least 75 per cent of new cases within six months; (2) 90 per cent of tuberculin reactors to receive chest x-rays within two months; (3) 90 per cent of close contacts with new active cases to be reported in a calendar year; (4) 75 per cent of newly reported active cases with positive sputum, with proper drug treatment, should be negative within six months; (5) all active cases should be under treatment and at least 90 per cent in the hospital or under drug treatment elsewhere. Health Department records should reveal adequacy of treatment of nonhospitalized patients; (6) not less than 80 per cent of active cases treated at home should have had sputum examination within six months.

To accomplish these goals and standards will require increased effort and cooperation of not only the physicians and official health departments in our State and nation, but also of voluntary agencies, such as the tuberculosis associations, rehabilitation and educational centers, and most important the public at large. The traditional annual Christmas Seal Sale which was launched in November deserves the support of all in order that tuberculosis associations may continue an essential role in support of these objectives.—W. G. C.

Best Judgment vs. Error of Judgment

In a recent decision the Supreme Court, Appellate Division, Third Department reversed an award of $140,000 against the State of New York made to a young physician by the Court of Claims of New York and dismissed his claim. The opinion of the Appellate Division is of interest because it restates one of the basic rules applicable to malpractice actions, that is, *the rule requiring a physician to use his best judgment does not hold him liable for a mere error of judgment, provided he does what he thinks is best after careful examination.*

The claimant was a young married physician of twenty-six years who had completed successfully his first year of residency in psychiatry and who expected to serve his second and third years of residency without interruption. He had joined the New York State National Guard on July 21, 1953. Prior to this he had worked one night a week as a civilian for the National Guard, examining members and enlistees, on a fee basis. On his enlistment he was ordered to Camp Drum, New York, to participate in a two weeks summer training encampment extending from July 25, 1953, to August 8, 1953. In accordance with such orders he departed from Buffalo, New York, about 9:00 A.M. on July 25, 1953, driving his own private automobile, with permission, to the encampment, arriving there about 3:30 P.M. on the same day, at which time he had a headache and a pain in his back. He complained of headache and discomfort to other officers that afternoon and evening and to his roommate during the night. In the morning the roommate took him to a dispensary attached to a National Guard unit, arriving at about 7:45 A.M. He was examined there by a physician of the Medical Corps of the National Guard who found nothing wrong but after some discussion gave him a note authorizing his examination at a hospital. His roommate then took him to the post hospital and left him there.

A nurse told him that he was at the wrong hospital and arranged his removal to the evacuation hospital, which like the post hospital was commanded and staffed by regular U.S. Army personnel. At no time after leaving the dispensary was he in a National Guard establishment or treated by National Guard personnel. He was examined at the evacuation hospital and treated, no positive diagnosis being made but meningitis being suspected. He was put to bed, treated overnight, and at noon removed by ambulance to Sampson Air Force Base Hospital, a unit of the U.S. Air Force. Again a tentative diagnosis of meningitis was made but at about 10:00 P.M. poliomyelitis was correctly diagnosed. At the time of the trial he could not walk or get around without help, except after being in a wheel chair. His legs were permanently paralyzed and his disability was permanent.

The physician-claimant did not charge the State of New York with negligence which caused him to have the disease of poliomyelitis at the beginning. Apparently he had unknowingly had it for several days before joining the National Guard at Camp Drum. He did sue the State on the theory that there was negligence on the part of military medical personnel in failing promptly to diagnose and treat the disease of poliomyelitis and in failing to relieve him from physical activity and to require his immediate immobilization. He charged that this negligence aggravated and increased the degree of residual paralysis.

At the trial before the lower court the claimant produced a medical expert who testified that various acts of negligence toward the claimant at Camp Drum, en route to and at Sampson Hospital did aggravate the claimant's condition—the poliomyelitis which he was suffering and the residual paralysis. This medical witness was the only doctor to testify at the trial.

The Appellate Division in reversing the award of $140,000 granted by the lower court said that in its opinion the medical evidence was insufficient to support the award. It ruled that it found no evidence of negligence, nor more than an error of judgment, on the part of any physician concerned. It then quoted from the landmark decision of *Pike v. Honsiger*, 155 N.Y. 201, which in large part laid down the ground rules governing malpractice actions in New York, wherein the Court said: "*The rule requiring (a physician) to use his best judgment does not hold him liable for a mere error of judgment, provided he does what he thinks is best after careful examination.*"

The Court went on to explain why it found the medical evidence insufficient to sustain the award. It pointed out that although the claimant's medical expert said that his physical activities aggravated his residual disability, the cross-examination of the witness conclusively revealed the speculative nature of his opinion. The expert conceded that he could not fix the degree or percentage of the eventual disability attributable to any particular activity or period of activity and said, "There are many factors here which are beyond the human understanding or endeavor that enter into this situation and, therefore, there's no way of calculating this." He also conceded with equal frankness that one of the important factors entering into the eventual disability was "the nature and extent of virulence of the original virus" and that in the claimant's case the particular strain of virus had not been determined. The Court also pointed out that there appeared from this same expert's testimony ample reason and justification for a delay of a day or of a day or two in making a diagnosis, even in the acute phase of the disease, as well as for like delay in prescribing bed rest. The Court noted that the medical expert also had said that poliomyelitis sometimes simulates meningitis—which at least two of the Army doctors tentatively diagnosed—and that it was not shown that meningitis required treatment different from that given the physician-claimant. (*Cunningham v. State of New York*, 10 A.D. 2d 751 reversing 18 Misc. 2d 367.)

Services Available to the Blind

For the information of our membership, attention is directed to the "Directory of Services for the Blind in New York State." This 17-page brochure, published by the Commission for the Blind, New York State Department of Social Welfare, 270 Broadway, New York 7, New York, is comprised of four sections:

1. Information on agencies and institutions offering general services, educational services for blind children, Braille and Talking Book library services, and public assistance for blind persons.
2. The local voluntary agencies for the blind.
3. The national voluntary agencies located in New York State.
4. An index of agencies.

This is the first edition of this booklet. A copy may be obtained by writing to the above address.

The New York State Commission for the Blind operates under the State Department of Social Welfare, supported by public funds. It provides the following: gives consultative service to voluntary agencies for the blind and other social agencies; assists visually handicapped persons in utilizing established community resources—both those set up specifically for the blind and others organized for aiding persons having varied handicaps; provides home teaching service for blind persons everywhere in the State where there is need for this service.

Through its Educational Consultation Service the Commission assists parents of blind children in understanding, developing, and planning for their visually handicapped child when this help is not otherwise available. The Commission administers the Federal-State program for vocational rehabilitation of the blind in New York State- This program encompasses vocational counseling, physical restoration, job training, and placement.

The Commission sets up and stocks vending stands located in Federal, State, municipal, and privately owned buildings. It trains blind operators to run the stands and supervises their operation. If such service is not otherwise available in the community, the Commission teaches handcraft work to interested blind persons, and assistance is given in planning for the sale of products.

The Commission is the agent designated by the United States Library of Congress for distributing Talking Book machines in New York State. Talking Book machines are loaned to blind persons either directly by the Commission or through agencies for the blind which serve as subdistributors within their areas of service.

In accordance with legislative mandate a register of blind persons is maintained. Statistics derived from the register are used for medical research and in program planning by agencies for the blind. To foster sight conservation the Commission conducts State-wide educational programs focused on the prevention of blindness.

It is a matter of regret that, because of its size, the brochure cannot be reproduced in this JOURNAL. But we are sure that many of our readers will wish to acquire a copy so that they may have a handy reference to the many services available to the blind in the Empire State.

Ability and necessity dwell near each other.—PYTHAGORAS

Editorial Comment

Misrepresentation Is Tyranny. A recent report from the Arthritis and Rheumatism Foundation states that over $250,000,000 yearly is spent on products and treatments for arthritis which are offered to the public with misleadingly implied benefits.

Chronic disease sufferers have always been game for the unscrupulous promoter of worthless drugs, diets, exercises, and other fantasies. One might say that in a free society it is a citizen's privilege to be duped if he so desires. We have been all through that in the case of the uninformed investor and the bucket-shop. No one decries the fact that honesty is being enforced. However, government regulation is but one part of the solution.

The Foundation report further states that surveys show that nearly 50 per cent of those suffering from arthritis are without medical supervision because they believe that little or nothing can be done for them. Physicians can counteract this pessimism by never letting it arise. There are worth-while treatments based on scientific fact obtained through experiment. We are learning more about this constellation of diseases every year. Even without emotional appeal physicians can give more relief than quackery can.

The Foundation has set up a program which will coordinate efforts of Federal agencies, national organizations, and other groups in the fight against misleading promotion of arthritis products.

If the physician will set up a program in his own office to combat pessimism in relation to this disease the battle with a scandalous abuse will be fairly joined.

ANNOUNCEMENT

Medical Society of the State of New York
1961 Convention
May 8 to 12, 1961
War Memorial Auditorium, Rochester

SCIENTIFIC MOTION PICTURES

William J. Sullivan, M.D., *Chairman*, Scientific Motion Picture Subcommittee of Convention Committee, is interested in hearing from members who have 16-mm. motion picture films suitable for presentation at the 1961 convention.

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SCIENTIFIC ARTICLES

Prolonged Therapy with Adrenocorticosteroids in Allergic Diseases

EMANUEL SCHWARTZ, M.D., BROOKLYN, NEW YORK

(From the Department of Medicine, Long Island College Hospital, and the State University of New York Downstate Medical Center)

In 1950 a study was undertaken to determine the therapeutic effects of cortisone in patients with allergic diseases. As newer and better adrenocorticosteroids were discovered and made available, they were investigated clinically.[1–9] Thus, hydrocortisone, prednisone, prednisolone, methylprednisolone, triamcinolone, and alpha dexamethasone have been evaluated in the symptomatic relief of allergic patients. At the present time further studies are in progress with a new steroid, beta dexamethasone. Early clinical impressions are favorable with a suggestion of improved therapeutic response. Clinical evaluation with injectable and nebulization therapy with the newer steroids is also in progress.

These studies afforded an opportunity for comparative studies of the symptomatic relief, frequency, and severity of side-effects with these steroids and for comparative studies between short-term and long-term therapy. This report is a continuation of a study presented at the Sesquicentennial Convention of the Medical Society of the State of New York, General Session, on February 20, 1957.

Fifty-nine of 68 patients with severe hay fever, with a mean average therapy duration of fifteen days, receiving prednisone and/or prednisolone, had satisfactory symptomatic relief. Side-effects occurred in 5, or 7.4 per cent. Twenty-one of 25 hay fever patients receiving cortisone had satisfactory relief, and side-effects occurred in 9, or 36 per cent. Nine of 10 patients receiving hydrocortisone for an average of ten days had satisfactory relief with 2 patients having side-effects. There were no severe side-effects with cortisone, hydrocortisone, prednisone, or prednisolone. In another study of 277 patients with miscellaneous allergic diseases excluding hay fever, treated with prednisone or prednisolone from three days to six months, with an average of four months, 235 patients had satisfactory relief, and side-effects occurred in 40, or 14.5 per cent. No severe side-effects occurred.

Forty-six (92 per cent) of 50 patients receiving triamcinolone for relief of chronic intractable bronchial asthma had a satisfactory response. The duration of therapy was for from one to nine months, and side-effects occurred in 9 cases (18 per cent).

Presented at the 154th Annual Meeting of the Medical Society of the State of New York, New York City, Section on Medicine, May 11, 1960.

Cortisone and hydrocortisone used in this study were supplied by Merck Sharp & Dohme, West Point, Pennsylvania, through Elmer Alpert, M.D. Prednisone and prednisolone were supplied as Meticorten and Meticortelone by Schering Corp., Bloomfield, New Jersey, through George Babcock, M.D. Triamcinolone was supplied as Aristocort by Lederle Laboratories Division, American Cyanamid Company, Pearl River, New York, through Christopher H. Demos, M.D. Dexamethasone was supplied as Decadron by Merck Sharp & Dohme through Nicholas E. Capeci, M.D., and as Deronil by Schering Corp. through George Babcock, M.D.

TABLE I.—Duration of Therapy in 50 Patients

Duration (Years)	Number of Patients
2 to 3	15
3 to 4	11
4 to 5	8
5 to 6	8
6 to 7	4
7 to 8	2
8 to 9	1
9 to 10	1

Satisfactory relief occurred in 90 per cent of 51 patients with miscellaneous allergies receiving alpha dexamethasone, and side-effects occurred in 17.6 per cent. The duration of therapy was from one week to four months.

The results obtained with adrenocorticosteroids in the symptomatic relief of allergic diseases far surpass those obtained previously with any other agent or procedure. Over the years it has become quite clear that their effects are temporary. However, under certain circumstances they are life-saving, and their administration has decreased the number of hospital admissions of patients with chronic intractable bronchial asthma, as compared with presteroid days. One patient in the present group had 13 hospital admissions while under my care and approximately 20 other hospital admissions from 1930 to 1953, during the presteroid days. She had two hospital admissions from 1953 to 1960, while receiving steroids. One article goes so far as to say that the steroids are no better than such well-known agents as adrenalin or aminophylline combined with general supportive therapy. While there may be some reason for this opinion, a survey of chronic asthmatic patients shows a considerable difference in their ability to carry on earning a livelihood now, as compared with presteroid days.

The best results are obtained in self-limited reaction diseases, such as those caused by penicillin and other drugs. Short-term therapy is most desirable in allergic diseases because side-effects are fewer and less severe.

Some of our severely afflicted asthmatic patients have been under continuous, long-term corticosteroid treatment for as long as ten years. An evaluation was made of long-term administration in an attempt to compare the therapeutic value of the various corticosteroids and to assess the benefits and hazards of this type of management.

Method

This series consisted of 50 patients ranging in age from eleven to sixty-six years. There were 26 males and 24 females. Forty-nine were afflicted with chronic asthma. The duration of symptoms ranged for from two months to twenty-nine years. One patient had allergic eczema. Five of the asthmatic patients also had hay fever, 4 others had perennial allergic rhinitis, 3 had nasal polyps, 2 had allergic eczema, and 2 had chronic emphysema. Previously all patients had been observed and treated for from two months to twenty years by the elimination of offending allergens, hyposensitization, and other drugs, such as bronchodilators, iodides, and antibiotics, which are known to give satisfactory symptomatic relief. With the usual therapeutic measures relief was not satisfactory in these patients. In this series, continuous corticosteroid therapy was administered only after all other measures had failed and after short-term and prolonged intermittent corticosteroid therapy had failed to afford adequate and/or sustained relief.

Once long-term, continuous therapy was established, allergic management, hyposensitization, and the usual therapeutic measures also were used whenever feasible. Continuous corticosteroid therapy with cortisone, hydrocortisone, prednisone or prednisolone, triamcinolone, and alpha dexamethasone was administered consecutively to 50 patients over a period of from two to ten years, with a mean average duration of therapy of four years, seven months. (Tables I and II). Of 50 patients, 10 received cortisone with an average duration of therapy of 15.2 months, 25 hydrocortisone

TABLE II.—Comparative Studies of Corticosteroids

Corticosteroids	Duration of Therapy (Months)	Mean Average Duration of Therapy (Months)	Number of Patients
Cortisone, hydrocortisone, and prednisone	51 to 110	71	10
Cortisone	1 to 33	15	...
Hydrocortisone	2 to 32	15	...
Prednisone	18 to 63	41	...
Hydrocortisone and prednisone	24 to 79	45	14
Hydrocortisone	$^{1}/_{2}$ to 36	11	...
Prednisone	19 to 60	34	...
Prednisone, triamcinolone, and alpha dexamethasone	25 to 64	45	8
Prednisone	2 to 38	21	...
Triamcinolone	2 to 21	10	...
Alpha dexamethasone	5 to 22	14	...
Prednisone and triamcinolone	35 to 70	49	4
Prednisone	7 to 36	22	...
Triamcinolone	15 to 34	27	...
Prednisone and alpha dexamethasone	26 to 60	46	10
Prednisone	4 to 46	28	...
Alpha dexamethasone	5 to 22	18	...
Triamcinolone and alpha dexamethasone	24 to 32	27	3
Triamcinolone	6 to 12	10	...
Dexamethasone	12 to 20	17	...

for 14.1 months, 45 prednisone for 32.6 months, 16 triamcinolone for sixteen months, and 21 dexamethasone for sixteen months. Of this group, 7 patients received only prednisone with an average duration of therapy of 41.7 months, one only hydrocortisone for fifty-two months, and one only triamcinolone for twenty-eight months. Fifty-one patients received two to five different steroids consecutively, and this group afforded an opportunity for comparative studies. For the purpose of comparative studies several patients were represented in more than one group. It is felt that the results of these prolonged trials presented descriptively may convey useful information with findings of other investigators.

Cortisone, hydrocortisone, and prednisone or prednisolone were given consecutively to 10 patients. The duration of therapy was from fifty-one to one hundred ten months, with a mean average duration of therapy of seventy-one months. The duration of therapy with cortisone ranged from one to thirty-three months, with a mean average of fifteen months. With hydrocortisone duration ranged from two to thirty-two months, with a mean average duration of fifteen months. With prednisone and/or prednisolone, duration of therapy ranged from eighteen to sixty-three months, with a mean average duration of forty-one months.

Fourteen patients received hydrocortisone and prednisone or prednisolone consecutively with a total mean average duration of therapy of forty-five months. The duration of therapy with hydrocortisone ranged from two weeks to thirty-six months, with a mean average duration of eleven months. The duration of therapy with prednisone and/or prednisolone ranged from nineteen to sixty months, with a mean average duration of thirty-four months.

Eight patients received prednisone, triamcinolone, and alpha dexamethasone consecutively for from twenty-five to sixty-four months over an average period of forty-five months. The duration of therapy with prednisone ranged from two to thirty-eight months, with a mean average duration of twenty-one months. With triamcinolone therapy duration ranged from two to twenty-one months with a mean average duration of ten months. With dexamethasone it ranged from five to twenty-two months, with a mean average of fourteen months.

Four patients received prednisone and

TABLE III.—COMPARISON OF THERAPY WITH CORTISONE, HYDROCORTISONE, AND PREDNISONE OR PREDNISOLONE IN 10 PATIENTS

Age (Years)	Sex	Indication	Cortisone: Duration of Therapy (Months)	Cortisone: Result	Cortisone: Side-Effects*	Hydrocortisone: Duration of Therapy (Months)	Hydrocortisone: Result	Hydrocortisone: Side-Effects*	Prednisone or Prednisolone: Duration of Therapy (Months)	Prednisone or Prednisolone: Result	Prednisone or Prednisolone: Side-Effects*
40	F	Asthma, nasal polyps	24	Fair	12	24	Fair	12, 16	62	Satisfactory	11, 12, 16, 18
52	M	Asthma	1	Poor	None	30	Satisfactory	2, 4	63	Satisfactory	None
46	F	Asthma	2	Poor	19, 14	32	Fair	5	18	Satisfactory	3
54	F	Asthma	12	Fair	10	3	Fair	10	36	Satisfactory	None
66	F	Asthma	13	Satisfactory	5	8	Satisfactory	5	30	Satisfactory	5
63	M	Asthma, allergic rhinitis	7	Fair	None	5	Satisfactory	None	58	Satisfactory	None
50	F	Asthma	7	Fair	None	27	Fair	None	31	Satisfactory	None
56	F	Asthma	22	Satisfactory	None	16	Satisfactory	None	58	Satisfactory	None
59	M	Asthma	31	Fair	None	2	Fair	None	31	Fair	None
43	F	Asthma	33	Satisfactory	None	6	Satisfactory	None	26	Satisfactory	None

* Numbers refer to side-effects described in TABLE IX.

triamcinolone consecutively for from thirty-five to seventy months, with a mean average of forty-nine months. The duration of therapy with prednisone ranged from seven to thirty-six months, with a mean average duration of twenty-two months. With triamcinolone it ranged from fifteen to thirty-four months, with a mean average of twenty-seven months.

Ten patients received prednisone and alpha dexamethasone consecutively for from twenty-six to sixty months, with a mean average of forty-six months. The duration of therapy with prednisone ranged from four to forty-six months, with a mean average of twenty-eight months. With dexamethasone therapy ranged from five to twenty-two months, with a mean average of eighteen months.

Three patients received triamcinolone and dexamethasone consecutively for from twenty-four to thirty-two months, with a mean average of twenty-seven months. The duration of therapy with triamcinolone ranged from six to twelve months, with a mean average of ten months. With dexamethasone therapy ranged from twelve to twenty months, with a mean average of seventeen months. (Comparative studies are shown in Table II.)

The average daily maintenance dose of cortisone ranged from 50 to 75 mg. Hydrocortisone doses ranged from 40 to 60 mg., prednisone or prednisolone (used interchangeably), 10 to 15 mg., triamcinolone, 4 to 8 mg., and alpha dexamethasone, 0.75 to 2.25 mg.

Results

The results of therapy in the 10 patients who received cortisone, hydrocortisone, and prednisone or prednisolone in sequence are shown in Table III. The predni-steroids proved best of the three agents among these patients. With cortisone 3 of 10 patients had satisfactory relief, with hydrocortisone, 5 of 10, and with predni-steroids, 9 of 10. Four patients whose response to cortisone or hydrocortisone was poor or fair had satis-

TABLE IV.—Summary of Results and Side-Effects; Comparative Studies in 10 Patients (Therapy in Sequence)

Agent	Symptomatic Relief: Satisfactory	Symptomatic Relief: Fair	Symptomatic Relief: Poor	Average Duration of Therapy* (Months)	Side-Effects: Total	Side-Effects: With (Number of Patients)	Side-Effects: Without (Number of Patients)
Cortisone	3	5	2	15	5	4	6
Hydrocortisone	5	5	0	15	7	5	5
Prednisone or prednisolone	9	1	0	41	5	3	7

* Mean average duration of therapy: five years, eleven months.

factory results with the predni-steroids. Three others who had a satisfactory response to the older drugs had similar relief with the newer. Two patients whose response to cortisone was fair or poor had satisfactory relief with hydrocortisone and predni-steroids. One patient had a poor response to all three.

Side-effects were approximately the same in these patients. Those who had side-effects with cortisone or hydrocortisone usually had similar side-effects with prednisone or prednisolone, whereas 5 of the 10 patients did not experience a single side-effect with any of the drugs, despite consecutive therapy with an average therapy duration of seventy-one months.

One patient whose x-ray films showed osteoporosis and fracture of the right lower ramus of the pelvis after one year of cortisone therapy was continued on cortisone, hydrocortisone, and prednisone therapy for another eight years because of very severe, chronic, intractable bronchial asthma. X-ray films recently have shown a slight increase in mineralization and density of bone. This patient was hypertensive six months prior to the onset of cortisone therapy. After six years of corticosteroid therapy, this patient had an acute infarction of the anterior wall. The infarction has healed. During this episode and after, corticosteroid therapy was continued and adequately controlled the asthmatic symptoms.

Another patient in this group, while on corticosteroids, was in an automobile accident, sustained a ruptured colon, and went into shock. With good surgical management and increased dosage of corticosteroids preoperatively and postoperatively, recovery was good, and wound-healing was not delayed. It was possible to get this patient off corticosteroids, and none have been administered for almost three years.

Another patient with asthma complicated by diabetes mellitus had to increase the insulin requirements while taking cortisone and hydrocortisone, and there was no increase while receiving predni-steroids.

Another patient, previous to steroid therapy, had over 30 hospital admissions in twenty-three years because of severe intractable bronchial asthma. While she was on steroids for seven years the patient was hospitalized twice, once with a bronchopulmonary infection and an exacerbation of the asthma. On the second admission she was treated for severe asthma following sudden withdrawal of corticosteroids to evaluate her symptomatic response to Elixophyllin.

Side-effects are numbered in Table III. The numbers refer to side-effects described in Table IX. Of 10 patients receiving cortisone, five side-effects occurred in 4 patients. These side-effects were osteoporosis, palpitation, nervousness, increased glycosuria in a diabetic patient, and fullness of the face. Six patients had no side-effects. With hydrocortisone seven side-effects occurred in 5 patients. These side-effects were osteoporosis, substernal pain or burning, bloating, edema of the abdominal wall, fullness of the face in 2 patients, and an increase in glycosuria in a diabetic patient. Five patients had no side-effects. With pred-

TABLE V.—COMPARISON OF THERAPY WITH HYDROCORTISONE AND PREDNISONE OR PREDNISOLONE IN 14 PATIENTS

Age (Years)	Sex	Indication	Hydrocortisone			Prednisone or Prednisolone		
			Duration of Therapy (Months)	Result	Side-Effects*	Duration of Therapy (Months)	Result	Side-Effects*
29	M	Asthma	18	Fair	5	30	Satisfactory	1, 5, 15
35	M	Asthma	6	Satisfactory	10	50	Satisfactory	10
46	F	Asthma, allergic rhinitis	2	Satisfactory	None	30	Satisfactory	2
55	F	Asthma	14	Fair	5, 14	22	Satisfactory	3, 5, 13, 14
59	M	Asthma	2	Poor	7	28	Satisfactory	7
34	F	Asthma, allergic rhinitis	16	Fair	14, 19	31	Satisfactory	14, 19
34	M	Asthma	26	Satisfactory	None	53	Satisfactory	None
57	M	Asthma	3	Satisfactory	3	21	Satisfactory	7
53	F	Asthma	6	Fair	None	29	Satisfactory	None
54	F	Asthma	5	Fair	5, 17	60	Satisfactory	None
48	M	Asthma	$^{1}/_{2}$	Fair	None	36	Satisfactory	None
42	M	Asthma, allergic rhinitis	6	Poor	None	38	Fair	5
18	F	Asthma, eczema	36	Satisfactory	5	32	Satisfactory	5
60	F	Asthma	9	Fair	None	19	Satisfactory	None

* Numbers refer to side-effects described in TABLE IX.

TABLE VI.—SUMMARY OF RESULTS AND SIDE-EFFECTS; COMPARATIVE STUDIES IN 14 PATIENTS (THERAPY IN SEQUENCE)

Agent	Symptomatic Relief			Average	Side-Effects		
	Satisfactory	Fair	Poor	Duration of Therapy* (Months)	Total	With (Number of Patients)	Without (Number of Patients)
Hydrocortisone	5	7	2	11	11	8	6
Prednisone or Prednisolone	13	1	0	34	15	9	5

* Mean average duration of therapy: three years, nine months.

nisone, six side-effects occurred in 3 patients. These side-effects were fullness of the face (two instances), osteoporosis, substernal pain or burning, hypertension, and ecchymosis. Four of these side-effects occurred in the same patient. Seven patients had no side-effects (Table IV).

In another group of 14 patients receiving hydrocortisone and prednisone or prednisolone consecutively, with a mean average duration of therapy of forty-five months, comparative studies showed that 4 patients had no side-effects with either corticosteroid (Tables V and VI). Hydrocortisone, with a mean average duration of therapy of eleven months, produced 11 side-effects in 8 patients. Six patients had no side-effects, 4 had fullness of the face, 1 diabetic patient had increased glycosuria, 2 had palpitations, 1 nondiabetic patient had transient glycosuria, 1 experienced nervousness, 1, dizziness, and 1, weakness. Five of 14 patients on prednisone and prednisolone therapy had no side-effects, with a mean average duration of therapy of thirty-four months. Fifteen side-effects occurred in 9 patients. Four side-effects occurred in 1 patient and three in another. The patient suffering four side-effects experienced diuresis, fullness of the face, palpitations, and an overwhelming spread of infection which resulted in his death after he had received prednisone or prednisolone for twenty months. Rapid shock set in and death occurred in twelve hours. Autopsy (by Thomas Morrione, M.D.) revealed the following pathologic conditions: bronchopneumonia, acute interstitial myocarditis, atrophy of the cortex of the adrenal gland, cytoplasmic degranulation and vacuolization of the basophils of

TABLE VII.—COMPARISON OF THERAPY WITH PREDNISONE OR PREDNISOLONE, TRIAMCINOLONE, AND ALPHA DEXAMETHASONE

			Prednisone or Prednisolone			Triamcinolone			Dexamethasone		
Age (Years)	Sex	Indication	Duration of Therapy (Months)	Result	Side-Effects*	Duration of Therapy (Months)	Result	Side-Effects*	Duration of Therapy (Months)	Result	Side-Effects*
29	M	Asthma	30	Satisfactory	1, 5, 15	12	Satisfactory	15, 5	22	Satisfactory	15, 5
59	M	Asthma, emphysema	31	Fair	None	21	Fair	None	12	Fair	None
24	M	Asthma, hay fever	38	Satisfactory	None	12	Satisfactory	22	5	Satisfactory	23
58	M	Asthma	2	Satisfactory	5, 7, 17	17	Satisfactory	7, 17, 24	24	Satisfactory	7, 17, 24
48	F	Asthma, allergic rhinitis	28	Satisfactory	None	2	Satisfactory	None	10	Satisfactory	19
40	M	Asthma	9	Satisfactory	9	6	Satisfactory	9, 2	10	Satisfactory	9, 2
52	M	Asthma	24	Fair	17, 25	$4\frac{1}{2}$	Satisfactory	17, 22, 25	15	Satisfactory	23, 25
43	M	Asthma	9	Fair	20	6	Fair	1	10	Fair	27
54	F	Asthma	36	Satisfactory	None	34	Satisfactory	None	..	...	...
46	F	Asthma, allergic rhinitis, nasal polyps	30	Satisfactory	2	15	Satisfactory	None	..	...	...
48	F	Asthma	7	Fair	3, 5, 24	31	Fair to satisfactory	20, 21	..	...	...
63	F	Asthma	17	Satisfactory	5	28	Satisfactory	5	..	...	...
66	F	Asthma	30	Satisfactory	5	..	...	...	16	Satisfactory	5, 20, 21
37	M	Allergic eczema	24	Satisfactory	None	..	...	...	19	Satisfactory	None
50	F	Asthma, hay fever	46	Satisfactory	5, 8	..	...	...	5	Satisfactory	5, 8
43	M	Asthma	34	Satisfactory	None	..	...	...	20	Satisfactory	None
43	F	Asthma	26	Satisfactory	None	..	...	...	15	Satisfactory	None
48	M	Asthma	36	Satisfactory	None	..	...	...	22	Satisfactory	16
42	M	Asthma, allergic rhinitis	38	Fair	5	..	...	...	22	Fair	5
12	M	Asthma	4	Satisfactory	5	..	...	...	22	Satisfactory	5
53	M	Asthma	34	Satisfactory	2	..	...	...	17	Satisfactory	None
30	M	Asthma	5	Satisfactory	None	..	...	...	20	Satisfactory	None
10	M	Asthma	..	...	...	6	Satisfactory	5	18	Satisfactory	5
37	F	Asthma, hay fever	..	...	...	12	Satisfactory	22	12	Satisfactory	23
27	F	Asthma, hay fever	..	...	...	12	Satisfactory	None	20	Satisfactory	None

* Numbers refer to side-effects described in TABLE IX.

the anterior pituitary, hyalinization of the basement membrane of the bronchioles, swollen epithelial cells, emphysema, and the presence of many eosinophils.

The other side-effects were 3 cases of fullness of the face and 1 each of acne, purplish abdominal striae, increased glycosuria in another diabetic patient, bloating, palpitations, nervousness, and 2 cases of transient glycosuria in nondiabetic patients.

With prednisone or prednisolone, symptomatic relief occurred more frequently, was more satisfactory, and more sustained. Thirteen of 14 patients had satisfactory symptomatic relief, and 1 had fair relief. Five of 14 patients on hydrocortisone therapy had satisfactory relief. Seven experienced fair relief and 2, poor relief (Table VI).

Comparative studies (Table VII) with prednisone or prednisolone, triamcinolone, and alpha dexamethasone administered consecutively to 8 patients over an average period of forty-five months showed that satisfactory symptomatic relief was afforded with prednisone or prednisolone in 5 patients and fair relief in 3. The mean average duration of therapy was twenty-one months. With triamcinolone, satisfactory relief occurred in 6 patients and fair relief in 2. The average duration of therapy was ten months. With alpha dexamethasone satisfactory relief occurred in 6 patients and fair relief in 2. The average duration of therapy was fourteen months. One patient had no side-effects after sixty-four months of consecutive therapy on all three corticosteroids.

With prednisone or prednisolone, ten side-effects occurred in 5 of 8 patients, and no side-effects occurred in 3. The side-effects were acne in 1, fullness of face in 2, striae in 1, transient glycosuria in 1, weakness in 2, plethora in 1, epigastric pain or burning in 1, and hyperhidrosis in 1. With triamcinolone given to these 8 patients, 11 side-effects occurred in 6 patients and no side-effects in 2. The side-effects were fullness of face in 1, weakness in 2, striae in 1, marked weight loss in 2, glycosuria in 1, plethora in 1, thin skin in 1, acne in 1, and hyperhydrosis in 1. With alpha dexamethasone administered to these 8 patients, 12 side-effects occurred in 7 patients, and there were no side-effects in 1. The side-effects were fullness of face in 1, striae in 1, marked weight gain in 2, transient glycosuria in 1, weakness in 1, plethora in 1, nervousness in 1, thin skin in 1, phlebitis in 1, abdominal cramps in 1, and hyperhydrosis in 1.

Comparative studies with prednisolone and triamcinolone administered consecutively to another group of 4 patients, with a mean average duration of therapy of forty-nine months, resulted in satisfactory relief obtained in 3 of the 4 patients with either prednisolone or triamcinolone. With prednisolone five side-effects occurred in 4 patients, and with triamcinolone three side-effects occurred in 2 patients. The side-effects were not unusual, and no severe reactions were encountered.

Comparative studies with prednisolone and alpha dexamethasone in 10 patients given these drugs consecutively over a mean average period of forty-six months gave the following results: Satisfactory symptomatic relief was obtained in 9 of the 10 patients with alpha dexamethasone and prednisolone. One patient had only fair relief with either steroid. Six side-effects occurred in 5 patients with prednisolone and no side-effects occurred in the other 5. With alpha dexamethasone eight side-effects occurred in 5 patients, and no side-effects appeared in the other 5. Four patients had no side-effects with either drug. An increase of a previous existing hirsutism with both steroids occurred in 1 patient. None of the other side-effects were unusual or severe.

Comparative studies with triamcinolone and alpha dexamethasone in 3 patients given these drugs consecutively over a mean average duration of therapy of twenty-seven months resulted in satisfactory symptomatic relief in all 3 on both steroids. One patient on triamcinolone for twelve months lost 12

TABLE VIII.—SUMMARY OF RESULTS AND SIDE-EFFECTS; COMPARATIVE STUDIES IN 25 PATIENTS (THERAPY IN SEQUENCE)

Agent	Number of Patients	Symptomatic Relief Satisfactory	Symptomatic Relief Fair	Symptomatic Relief Poor	Average Duration of Therapy* (Months)	Side-Effects Total	Side-Effects With (Number of Patients)	Side-Effects Without (Number of Patients)
Prednisone or prednisolone	22	17	5	0	24	21	13	9
Triamcinolone	15	12	3	0	16	17	10	5
Alpha dexamethasone	21	18	3	0	16	22	14	7

* Mean average duration of therapy: four years, eight months.

TABLE IX.—SIDE-EFFECTS IN 50 PATIENTS ON LONG-TERM STEROID THERAPY

Side-Effect*	Cortisone	Hydro-cortisone	Prednisone or Prednisolone	Triam-cinolone	Alpha Dexa-methasone
1. Acne	..	..	1	1	..
2. Bloating	..	1	3	..	1
3. Diuresis	..	1	1	..	..
4. Edema of abdominal wall	..	1	..	..	..
5. Fullness of face	1	6	15	3	6
6. Gastrointestinal bleeding	..	..	1	..	..
7. Glycosuria (transient in nondiabetic)	..	1	2	1	1
8. Hirsutism	..	..	1	..	1
9. Hyperhydrosis	..	..	2	1	1
10. Increased glycosuria (in diabetic)	1	2	1	..	..
11. Ecchymosis	..	..	1	..	..
12. Osteoporosis	1	1	1	..	..
13. Overwhelming spread of infection	..	..	1	..	..
14. Palpitation	1	2	2	..	..
15. Striae	..	..	1	1	1
16. Substernal pain or burning	..	1	2	..	1
17. Weakness	..	1	2	2	1
18. Hypertension	..	..	1	..	1
19. Nervousness	1	1	1	..	1
20. Epigastric pain or burning	..	..	1	1	1
21. Nausea	..	..	..	1	1
22. Weight loss (marked)	..	..	..	3	..
23. Weight gain (marked)	..	..	..	1	3
24. Thin skin	..	..	..	1	1
25. Plethora	..	..	1	1	1
26. Phlebitis	..	..	1	..	..
27. Abdominal cramps	..	..	..	..	1
TOTALS	5	18	42	17	22

* Often more than one effect occurred in the same patient.

pounds and regained most of them after receiving alpha dexamethasone for another twelve months. A summary of results and side-effects in comparative studies with prednisone or prednisolone, triamcinolone, and alpha dexamethasone are shown in Table VIII.

Side-effects in 50 patients on long-term corticosteroid therapy are shown in Table IX.

Comment

Corticosteroids were administered to these patients because they were severely ill and were not relieved by other measures. Symptomatic relief was satisfactory and far surpassed that obtained previously with allergic management, other medications known to be of benefit in allergic diseases, and short-term and long-term intermittent corticosteroid therapy. In comparative studies symptomatic relief with prednisone and prednisolone, triamcinolone, and alpha dexamethasone occurred more frequently and was more complete and sustained than with cortisone and hydrocortisone. With cortisone, with a mean duration of therapy

TABLE X.—Summary of Results and Side-Effects With Steroid Therapy in 50 Patients

Agent	Number of Patients	Symptomatic Relief Satis-factory	Fair	Poor	Average Duration of Therapy (Months)	Side-Effects Total	With (Number of Patients)	Without (Number of Patients)
Cortisone	10	3	5	2	15.2	5	4	6
Hydrocortisone	25	11	12	2	14.1	18	13	12
Prednisone or prednisolone	45	39	6	0	32.6	42	27	18
Triamcinolone	16	13	3	0	16	17	10	6
Alpha dexamethasone	21	18	3	0	16	22	14	7

* Mean average duration of therapy: four years, seven months.

of fifteen months, 3 of 10 patients experienced satisfactory relief; with hydrocortisone, with a mean average duration of therapy of fourteen months, 11 of 25 patients had satisfactory relief; with prednisone and prednisolone, with a mean average duration of therapy of 32.6 months, 39 of 46 patients experienced satisfactory relief; with triamcinolone, with a mean average duration of therapy of sixteen months, 12 of 16 patients experienced satisfactory relief, and with alpha dexamethasone, with a mean average duration of therapy of sixteen months, 18 of 21 had satisfactory relief (Table X).

There were variations in individual responses to these steroids. Prednisone and prednisolone, triamcinolone, and alpha dexamethasone were superior to the older corticosteroids. Steroids were changed from time to time when it was found that a patient was not responsive to one steroid and showed improvement on another.

Optimum symptomatic relief and the severity and number of side-effects depended on dosage and the duration of therapy. An attempt was made to attain the smallest possible dose that would effectively relieve symptoms, to prevent the occurrence of severe side-effects and decrease their number. The average daily maintenance dose with the various corticosteroids in this series were: cortisone 50 mg. to 75 mg., hydrocortisone 40 mg. to 60 mg., prednisone or prednisolone 10 mg. to 15 mg., triamcinolone 4 mg. to 8 mg., and alpha dexamethasone 0.75 mg. to 2.25 mg. At times symptoms recurred or increased in severity if the dose was decreased only slightly below the maintenance level. A delicate balance in dosage had to be found. At other times, with an increase in severity of symptoms, the dose had to be increased to the initial daily dose level for two to three days and then gradually decreased again.

Every possible precautionary measure was taken to decrease the severity and number of side-effects. Corticosteroids were given only if the allergic condition was severe and not relieved by other measures. If a contraindication was present, corticosteroids were not given unless the allergic condition failed to respond to other measures and the severity of the allergic condition outweighed the severity of a complicated disease or the possibility of severe side-effects. In these cases steroids were resorted to when a certain amount of calculated risk was accepted, and treatment was administered with caution.

In infection, antibiotics were given early and in larger doses than are ordinarily given, to prevent an increase in asthmatic symptoms and/or spread of infection. To decrease the possibility of resistance of organisms, antibiotics were switched frequently. Antibiotics were not given unless there was clear evidence of infection. Clinically, in this series there was 1 patient with a widespread overwhelming infection that resulted in death. The occurrence of acute infections in 49 of 50 patients in this series was about the same as that for non-steroid-treated patients, or in the general population. Asthma was complicated by healed tuberculosis in 2 patients. To overcome decreased resistance caused by corticosteroids, larger than usual doses of streptomycin, isoniazid, and para-aminosalicylic acid were administered. The dosages of the antimicrobial drugs were gradually decreased, and the steroids were given alone without causing an activation of the tuberculosis. With several patients whose asthmatic symptoms were increased in severity by infection, it was necessary to increase the dose of corticosteroid, that is, from the maintenance dose to the initial dose level.

Antacids were administered routinely to all patients. In 2 patients there was a previously existing peptic ulcer, one complicated by hemorrhage. The steroids were given with safety in small doses, and close surveillance included frequent roentgenographic examinations of the gastrointestinal tract.

Withdrawal syndrome occurred in several patients and was characterized by weakness, lassitude and aches, easy fatigability, and personality changes. These symptoms are due to adrenal insufficiency and were brought on by a sudden withdrawal of the steroid from the patient, or a too-fast decrease in dosage. It also occurred when medication was given below a certain dosage level. These symptoms usually cleared up when the dose was increased or ACTH was substituted. Weakness occurred in 1 patient while he was taking prednisone or prednisolone, triamcinolone, or alpha dexamethasone. Another patient complained of weakness while he was taking hydrocortisone and another while taking triamcinolone. When this side-effect appeared, it usually cleared up by increasing the dose slightly for two or three days. Anaphylactic shock was caused by ACTH in 1 of these patients.

Frequent clinical observation and surveillance to determine the presence of masked infection and possible presence of adverse effects included recording the weight of the patient, blood pressure determination, urinalysis for sugar before and during treatment, pre-treatment chest x-ray and sputum examination for tubercle bacilli repeated every three to six months and more often if necessary, and x-ray examination of the spine every three to six months or more often if osteoporosis or fracture is present. If there was a history of ulcer, pre-treatment x-ray films of the gastrointestinal tract were taken. During treatment x-ray films were taken if gastrointestinal symptoms appeared.

Common side-effects were noted and management of severe side-effects was practiced. Side-effects included spread of infections, masked infections, spread of unsuspected or inactive tuberculosis, exacerbation of quiescent ulcers, gastrointestinal hemorrhage and perforation, potassium deficiency, muscular weakness, negative nitrogen balance, osteoporosis and fractures, psychotic manifestations, anaphylactic shock by ACTH, periarteritis, postoperative adrenal insufficiency with shock, and withdrawal syndrome.

The side-effects noted on 50 patients on long-term corticosteroid therapy are shown in Table IX. Cortisone, hydrocortisone, prednisone or prednisolone, triamcinolone, and alpha dexamethasone therapy was given in sequence. Five side-effects occurred in 4 of 10 patients treated with cortisone, with a mean duration of therapy of 15.2 months; 18 side-effects occurred in 13 of 25 patients treated with hydrocortisone, with a mean average duration of therapy of 14.1 months; 42 side-effects occurred in 25 of 45 patients treated with prednisone or prednisolone, with a mean average duration of therapy of 32.6 months; 17 side-effects occurred in 10 of 16 patients treated with triamcinolone, with a mean average duration of therapy of sixteen months; and 22 side-effects occurred in 14 of 21 patients treated with alpha dexamethasone, with a mean average duration of therapy of sixteen months.

In comparative studies with cortisone, hydrocortisone, and prednisone or prednisolone given in sequence to 10 patients, with a total mean average duration of therapy of five years, eleven months, five side-effects occurred in 6 patients treated with cortisone during fifteen months of therapy, seven side-effects occurred in 5 patients treated with hydrocortisone during another fifteen months of therapy, and six side-effects occurred in 3 patients treated with prednisone or prednisolone with forty-one months of prednisone therapy and after a total mean average duration of therapy of five years, eleven months.

There was no significant change in number of side-effects at the end of a total mean average duration of therapy of five years, eleven months with cortisone, hydrocortisone, and prednisone or prednisolone, as compared to a mean average duration of therapy of fifteen months with cortisone or thirty months with cortisone and hydrocortisone therapy. Osteoporosis was present in 1 patient taking all three steroids. Increased glycosuria occurred in 1 diabetic patient when he took cortisone and hydrocortisone but not when he took prednisone. Five patients in this group were able to tolerate cortisone, hydrocortisone, and prednisone for long periods, and others had an untoward reaction regardless of which steroid was selected.

In comparative studies with hydrocortisone and prednisone or prednisolone given in sequence to 14 patients with a total mean average duration of therapy of forty-five months, 11 side-effects occurred in 8 patients treated with hydrocortisone during eleven months of therapy, and 15 side-effects occurred in 9 patients treated with prednisone or prednisolone during thirty-four months of therapy. In this group, the number of patients with side-effects and the number of side-effects were significantly higher than in the previous group. One patient died from an overwhelming spread of infection after thirty-six months of steroid therapy. Increased glycosuria in a diabetic patient occurred while he was taking hydrocortisone and prednisone or prednisolone. Purplish abdominal striae occurred in 1 patient. Three patients were able to tolerate both steroids without side-effects.

In comparative studies with prednisone or prednisolone, triamcinolone, and alpha dexamethasone, 21 side-effects occurred in 13 of 22 patients treated with prednisone or prednisolone, 18 side-effects occurred in 10 of 15 patients treated with triamcinolone, and 21 side-effects occurred in 14 of 21 patients treated with alpha dexamethasone. There was no significant difference in the number of side-effects with all three corticosteroids (Table VIII). There were no severe side-effects. There was marked weight loss in 3 patients treated with triamcinolone and marked weight gain in 3 patients treated with alpha dexamethasone. In debilitated patients prednisone or alpha dexamethasone was preferable to triamcinolone. In obese patients triamcinolone was preferable.

Summary

Continuous corticosteroid therapy with cortisone, hydrocortisone, prednisone or prednisolone, triamcinolone, and alpha dexamethasone was administered consecutively to 50 allergic patients over a period of from two to ten years, with a total mean average duration of therapy of four years, seven months. Satisfactory symptomatic relief occurred in 3 of 10 patients during cortisone therapy, in 11 of 25 patients during hydrocortisone therapy, in 39 of 46 patients during prednisone or prednisolone therapy, in 12 of 15 patients during triamcinolone therapy, and in 18 of 21 patients during alpha dexamethasone therapy.

Five side-effects occurred in 4 of 10 patients treated with cortisone, 18 side-effects occurred in 13 of 25 patients treated with hydrocortisone, 42 side-effects occurred in 25 of 45 patients treated with prednisone or prednisolone, 17 side-effects occurred in 10 of 16 patients treated with triamcinolone, and 22 side-effects occurred in 14 of 21 patients treated with alpha dexamethasone (Table X). Severe side-effects were infrequent.

After all other forms of therapy have failed to afford symptomatic relief, the use of corticosteroids for long-term management in allergic diseases is not an unjustified hazard if certain precautions are observed and the patient is maintained under close clinical surveillance.

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Discussion

Carl E. Arbesman, M.D., *Buffalo.*—Dr. Schwartz is to be congratulated for accumulating so much valuable data on the effects of prolonged steroid therapy on allergic patients.

Since the development of the corticosteroids over ten years ago, we, too, have followed patients using all of the various steroids as they became available. The great advance appeared when the metisteroids, prednisone and prednisolone, delta analogues of cortisone and hydrocortisone, were introduced. These latter substances had all the anti-inflammatory activity of their predecessors, but did not have the troublesome problem of electrolyte changes with sodium and potassium changes to as great a degree. The more recent corticosteroids, methyl prednisolone, triamcinolone, and alpha dexamethasone, although prescribed in smaller dosages, apparently had no great advantage over the metisteroids.

It has been our experience that if large enough dosages of any of these corticosteroids are given, the patients will develop the hyperphysiologic effects of steroid therapy, such as weight gain, water retention, edema, and Cushing's syndrome. Also, these patients usually will obtain beneficial results if sufficiently large doses are prescribed. However, it is true, as Dr. Schwartz so aptly pointed out, that certain patients will respond more favorably to one corticosteroid than to another with less hyperphysiologic effects. Each of these newer steroids have some such reactions, which are characteristic. For example, one of the most troublesome effects of alpha dexamethasone is the terrific, voracious appetite and weight gain that develops. Triamcinolone frequently will cause loss of weight and decrease in appetite. Hence, we use these effects by prescribing alpha dexamethasone to the malnourished patients and triamcinolone to the obese patients.

Other troublesome side-effects that we have encountered, chiefly with triamcinolone, are muscle cramps and muscle weakness. This frequently can be overcome by the addition of supplemental potassium. However, we have 1 patient who developed such muscle weakness in his legs that he is now confined to a wheelchair.

Occasionally, an allergic patient who has been on maintenance steroid therapy with one of the synthetic steroids will have a relapse, and despite increased dosage, the patient does not respond. I like to call this condition "cortisone escape." In these instances we have found that if the patient is hospitalized and given a readily available natural steroid, hydrocortisone, intravenously, he will react very favorably. The usual dosage recommended is 300 mg. in 1,000 cc. of 5 per cent glucose over a six-to-eight-hour period. This may be repeated and then gradually reduced.

We have had only 2 patients with osteoporosis as a complication of steroid therapy in the past ten years. Both of these patients were women over seventy years of age. If the indication for prolonged steroid therapy is strong enough and there is no other substitute medication, we feel that there are no contraindications to its use. Of course, the physician must be cognizant of the many ill-effects that can develop, such as those described by Dr. Schwartz.

Patients with active peptic ulcer have been given corticosteroids. Of course, they are placed on a bland diet and given antacids. The steroid of choice in these cases would be hydrocortisone rather than the metisteroids, since the latter produce five times as much hydrochloric acid in the stomach as does hydrocortisone. The same conditions hold true for the diabetic patient. The insulin requirement may be adjusted while the patient is on steroid therapy.

Even patients with tuberculosis, as has been described, may be given steroids if necessary, providing they are covered by the proper chemotherapeutic agents.

All of these corticosteroids now available are useful adjuncts in the management of allergic disorders. One frequently must prescribe a type which is of greatest advantage to the patient. However, these materials are potent physiologic and pharmacologic agents and should not be used indiscriminately for minor ailments, such as acute urticaria or mild, seasonal rhinitis.

It is known that the lower the amount of steroid given, the less the undesirable effects. Hence, it behooves us to lower the dosage of these steroids to just that amount which will keep the patient comfortable with the addition of other supportive agents, such as bronchodilators and antibiotics.

ANNOUNCEMENT

Medical Society of the State of New York

1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961*, and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. ANGRIST, M.D., *Chairman*
Committee on Prize Essays

Chronic Headache

A Study of Over 2,000 Cases

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CHRONIC headache challenges the physician to ascertain its cause, and very often the diagnosis may tax the ingenuity of the keenest clinician. On the other hand, chronic headache becomes a major problem to the patient, especially if he finds his symptoms tenacious and severe, as is often the case. He seeks help from any and every source he can. In the words of Moenche,[1] "the person with a headache often finds himself a medical orphan. He is fortunate indeed, if the headache is transient, for otherwise he may find himself on an excursion to ophthalmologist, otolaryngologist, neurologist, dentist, psychiatrist, osteopath, and chiropractor. Thereupon he is x-rayed, massaged, analyzed, fitted with glasses, relieved of his turbinates and teeth and too often emerges with his headache intact."

This article represents a fourteen-year study of over 2,000 cases of chronic, recurring headaches, most of which were previously diagnosed as idiopathic headache, sinus headache, postconcussion syndrome, atypical trigeminal neuralgia, migraine, Horton's histamine cephalalgia, tension headache, or psychogenic headache. It was found that headache affected females twice as often as males, with the age varying from six to eighty years. The duration of headache varied from one year to fifty-six years, with the average being fourteen years.

Careful investigation revealed that in over 90 per cent of these cases the origin of the headache was a mechanical irritation of the cervical nerve roots, usually resulting from previous trauma, as was evidenced by definite physical findings in the neck and by roentgenographic findings of characteristic changes in the cervical spine. Trauma to the cervical spine has been recognized only recently as an important factor in the cause of headache, and consequently the vast number of headaches of cervical origin heretofore have not been properly managed in both diagnosis and treatment. It is the purpose of this article to discuss only headache of cervical origin.

Pathologic changes in the neck long have been thought to be connected with headaches. In 1911, Telling[2] described a headache which was associated with "nodular fibromyositis" of the occipitocervical region. Seven years later Patrick[3] gave his classic description of "indurative" or "rheumatic" headache, which had its origin from the back of the neck and radiated upward and to the frontal area. In 1929, Gunther and Kerr[4] tried to show that hypertrophic osteoarthritis of the cervical spine was a factor in producing occipital headache with occasional temporal radiation through radicular irritation. Hadden[5], in 1940, ascribed certain types of headache and facial pain to fibrositis of the posterior muscles of the neck and scalp with involvement of the occipital nerves. However, it was not until 1942 that Kelly[6] mentioned trauma to the cervical spine as the causative factor in the production of headache. Subsequently, Davis[7] in 1945 in his analysis of injuries of the cervical spine found that many symptoms, including headache, may develop from relatively minor trauma and that the trauma produces a loss of the normal lordotic curvature of the cervical spine demonstrated roentgenographically. Shortly after World War II, Raney and Raney[8] demonstrated by myelogram and by surgery that "lesion of the cervical disk is one of the commonest pathologic conditions of the cervical spine, and one of the commonest symptoms resulting therefrom is headache." During the past few years major contributions to our knowledge of headache have been added by numerous studies on whiplash injury of the neck.[9-15]

Etiology

Headache of cervical origin is a referred symptom caused by a mechanical derangement of the cervical spine which in turn produces compression or irritation of one or more cervical nerve roots or portions thereof. Trauma to the cervical spine is the prime factor in producing cervical nerve root irritation. The initial effect of injury is the overstretching of the supporting longitudinal ligaments of the cervical spine. In addition, there may be swelling and hemorrhage within the capsular structures of the joints with edema of the dural sheath of the nerve roots. This may give rise to eventual adhesions between the dural sleeve and adjacent structures and cause chronic nerve root irritation.

If the injury is severe, the intervertebral disk also may be damaged by fragmentation of the nucleus pulposus or rupture of the annulus fibrosus. Trauma initiates degenerative changes in the intervertebral disks and in the articular surfaces of the lateral intervertebral (covertebral) joints of Luschka which eventually lead to narrowing of the intervertebral space and hypertrophic spurring usually accompanied by encroachment of the intervertebral foramen. The importance of the small joints of Luschka has been repeatedly emphasized in their role of producing cervical nerve root irritation, especially in chronic cases, because of their proximity to the nerve roots.[14-16] In addition, the vertebral artery and nerve may be compressed or irritated and cause disturbance of the circulation to the occipital lobes, pons, and medulla. The cervical sympathetic nerves usually are affected either directly by trauma or indirectly by reflex action. Thus it readily can be seen that trauma to the cervical spine can and usually does cause a wide range of symptoms, of which headache very often may be the most annoying and the most persistent (Fig. 1).

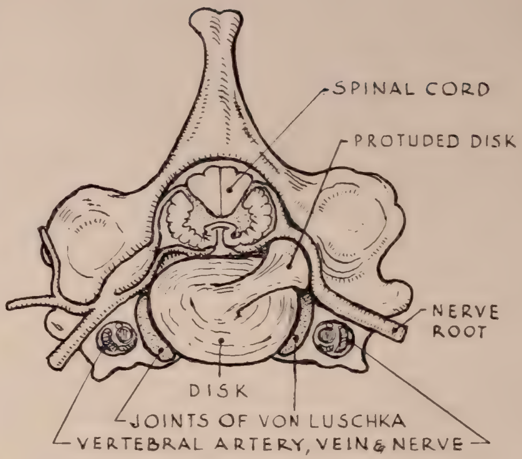

FIG. 1. Diagrammatic cross section of the lower cervical spine showing a herniation of the intervertebral disk compressing the adjacent nerve root.

Types of Injury to the Neck

There are innumerable ways in which the neck may be injured either by direct or by indirect force. Direct injury to the neck may occur by a blow on the neck with an inanimate object, such as a bat, stick, or rubber hose, or by a fall directly on the neck while doing gymnastics or other athletic endeavors. Indirect trauma to the neck is much more common and may occur in many ways. Force may be transmitted to the cervical spine through the arms during a fall on the outstretched hands, or through the lower spine by a fall on the buttocks or feet. Severe damage to the neck very often occurs in head injuries, such as those sustained while boxing or diving, and too often the resulting symptoms are attributed solely to the head injury. The cervical spine may be injured when the neck is jerked by sudden forceful pull on the arm such as that which occurs in calf roping or parachute jumping. Constant strain or twisting of the neck over a prolonged period of time definitely constitutes trauma, although it may not be recognized as such. This type of trauma is common to people in certain professions and occupations, such as dentists, photographers, auto mechanics, and letter carriers.

Strain on the neck while the head is hyperextended during anesthesia for prolonged surgical operations may act in the same manner as an injury to the neck and cause cervical damage. Carrying heavy baggage or manual manipulation of heavy objects or machines also may place an indirect strain on the neck. With our modern ways of travel, an increasingly important factor in producing cervical trauma arises from automobile accidents, especially to persons who are in a head-on collision or are sitting in a stopped or slowly moving automobile which is hit in the rear. This type of trauma is commonly called whiplash injury of the neck because the head and neck are thrown backward or forward forcibly with a recoil in the opposite direction.

Trauma assumes greater importance if superimposed on previous spinal damage or on inherent hereditary weakness of the cervical spine. Congenital anomalies, such as congenital fusion of two cervical vertebrae or developmental defects of the laminas, tend to throw unequal and undue strain on the entire cervical spine and thus are potential causes of cervical nerve root irritation inasmuch as the nerve roots then are more vulnerable to trauma. Acute flexion and other extreme ranges of motion of the neck are relatively common precipitating causes of symptoms in patients who already have received previous cervical trauma.

Naturally, the greater the trauma to the neck, the more likely is the cervical spine to be damaged. Sometimes repeated minor injury to the neck may be all that is necessary to produce cervical nerve irritation. It is important to realize that a history of frank trauma very often may not be obtained from the patient for many reasons. Trauma may be so slight or so far in the past that its casual relationship either is forgotten or thought by the patient to be of no importance, inasmuch as it is not unusual for the headache to be delayed for days, months, or years. When the occurrence of the headache is delayed for any length of time, the patient may not remember the original injury, especially if it was not severe enough to confine him to bed or to a hospital. In addition, most injuries of the cervical spine result from indirect trauma or occur during childhood or adolescence, and hence the patient may be totally unaware that he ever received any injury of the neck. Spurling and Segerberg,[17] in their report on 110 cases of intervertebral disk lesions in the lower cervical region producing foraminal root compression, recorded a history of frank trauma in only about one third of the patients.

Character and Site of Head Pain

There is no specific characteristic or locale of the headache of cervical origin. The headache may be unilateral or bilateral, localized, or generalized over the whole head. If the pain is unilateral, it is not uncommon for it to shift to the opposite side from time to time or become general on both sides. When localized, it may affect any part of the head or face, but it is usually frontal or occipital or a combination of both.

It cannot be emphasized too strongly that the headache very often is not occipital in nature as is so commonly supposed. Pain in or in back of the eyes is a common complaint following cervical trauma. The patient may describe the pain in the head as aching, throbbing, boring, stabbing, compressing, or bursting in character. In some patients, the head pain itself may be so severe that it is not relieved by simple analgesics; in others, the headache may be so mild that no medication is taken for relief. Sometimes paresthesia and sensitivity of the scalp and face or neuralgia of the teeth and jaws may be associated with or substituted for the headaches. It is not unusual for the headache to be vascular in nature as shown by the increase of pain with vasodilators, such as nitroglycerine, and by the alleviation of pain by vasoconstrictors, such as ergotamine tartrate.

The pain may be localized in the head or may be associated with pain in the neck. The pain may start in the back of the neck and radiate into any part of the head, or it may commence in the head and terminate in the neck. However, it has been found that in almost 50 per cent of the cases the patient does not complain of any pain in the neck and consequently is not aware that he has a neck condition. However, in time he usually develops definite neck symptoms which sometimes are more annoying and disabling than the headache itself.

The headache usually is intermittent and recurrent, occurring is some instances every day and in others at extremely variable intervals. The duration of pain also is variable. Some attacks last for a minute, whereas others last for hours, days, weeks, and sometimes months at a time. In some patients, the headache may disappear for no apparent reason, and in others it may remain stationary for years or become progressively worse with time. In the very chronic cases, the character and site of the pain very often change or shift, and sometimes the patient may describe more than one type of headache.

Associated Symptoms

Although headache may be the presenting and predominating symptom which makes the patient seek relief, it is rarely the only complaint. Usually, there are a variable number of other complaints occurring with the headache or in the interval between headaches. The extraordinary feature of the cervical headache is that the condition is not confined to the head but is associated with a wide range of symptoms referred to other parts of the body, which recently have been grouped together under the heading of "cervical syndrome."[10,12,13,16]

Symptoms may be referred to eyes, ears, nose, throat, thorax, upper extremities, and gastrointestinal system. In addition, the patient may complain of a great variety of other symptoms. The combination of fatigue and general irritability is present in practically every case in varying degrees. Fatigue may vary from a slight feeling of tiredness to extreme exhaustion which is not relieved by rest.

Symptoms suggesting psychoneurosis are not uncommon and are evidenced by poor concentration and memory, mood changes, feeling of tension, depression, confusion, and general anxiety. There may be evidence of irritation or instability of the vasomotor system manifested by such symptoms as profuse perspiration, pallor, flushes, labile hypertension or hypotension, faintness, momentary blackouts, tremor, and insomnia. In almost one third of the cases the patient develops a periodic or permanent intolerance to certain foods and drugs, such as chocolate, cake, meat, raw fruit, orange juice, alcohol, or aspirin, which when ingested produce a headache attack.

In a small proportion of cases severe vasomotor symptoms may occur suddenly from time to time climaxed by a general feeling of collapse. The patient becomes pallid, develops a cold sweat, and complains of constriction of the chest, sometimes with severe chest pain, palpitation, and difficulty in breathing, swallowing, and talking, accompanied by a feeling of impending death. The collapse syndrome may occur with or without the headache. It is, generally speaking, the most alarming group of symptoms which may be produced by cervical nerve root irritation and very often is mistaken for angina pectoris or coronary disease.

It is interesting to note that almost 50 per cent of the patients give a history of a low back condition with or without sciatica at one time or another, and in some patients the back condition may be more severe and disabling than the headache. The back condition no doubt stems from the same basic trauma, producing a derangement of the supporting ligaments and intervertebral disks of the lumbar spine.

In general, it may be stated that although headache is the outstanding and predominating symptom, it usually is associated with many other symptoms, it may be substituted entirely by one or more of these associated symptoms, or it may alternate with them.

Precipitating Factors

The headaches usually are recurrent in nature, subject to periods of remission and acute exacerbation. Exacerbation of the headache may be precipitated by many extraneous factors in different patients, such as emotional disturbances; tension; menstruation; climacteric; barometric pressure variations; fatigue; constipation; exposure to sun, smoke fumes, or drafts; ingestion of alcohol or certain foods; or watching fast-moving objects in moving pictures or television.

Relaxation or oversleeping, which is common over the weekend, may aggravate or precipitate an attack in some patients. Prolonged reading or writing, especially in unnatural or uncomfortable positions, very often will induce symptoms. Physical activities involving the use of the hands, arms, or shoulders in lifting, carrying, ironing, or vacuum cleaning will place an indirect strain on the neck and may provoke an acute attack. Sometimes acute flexion or rotation of the neck may do the same. Additional injury, however slight, may aggravate the headache by placing further strain on the cervical spine. All these extraneous factors tend to confuse the already complicated picture of headache of cervical origin. However, these factors are only exciting or precipitating causes producing a direct or indirect irritation of the cervical nerves.

Physical Findings

In chronic headache, definite physical signs have been found consistently in the neck. Localized cervical tenderness, spasm of the muscles of the back of the neck, and restriction of movement of the neck are the most common physical findings. They are especially pronounced during the headache phase but very often are present to a lesser degree in the interval between headaches. In unilateral headache, the head and neck often are tilted, usually away from the painful side. There is practically always marked point tenderness on digital pressure over the upper cervical spine on the same side as the pain, which may often aggravate, precipitate, or reproduce the original pain in the head. However, in less than 1 per cent of cases, hypesthesia is substituted for local tenderness on the involved side of the neck.

The midcervical and lower cervical spine also may be tender on the ipsilateral side and sometimes on the opposite side, and the tenderness may extend laterally for 1 or 2 inches, occasionally ending in definite, painful nodules. Spasm of the muscles of the back of the neck often is present and varies from slight stiffness to marked rigidity, and movements of the neck, especially extremes of flexion, hyperextension, or rotation may be painful and restricted. In some cases, however, an unusual range of movements of the neck can be demonstrated, indicating a weakness of the supporting ligaments of the cervical spine. The patient, as a rule, is not aware of these neck signs and usually is surprised when the examiner brings them to his attention.

During the headache phase the ipsilateral eye and sometimes both eyes may be ptosed or even completely closed, with ocular signs on one or both sides, such as lacrimation, scotoma, conjunctivitis, photophobia, hemianopsia, and dilatation or contraction of one or both pupils. Rhinorrhea, which is occasionally very profuse, may be present on one or both sides, and sometimes clogging of one or both nostrils may substitute for or alternate with rhinorrhea.

Occasionally, there may be motor, sensory, or reflex changes of the upper extremity, as well as positive head compression sign of Spurling and Scoville. However, these signs are much more often absent than present, with the exception of reflex changes, which were found in about 25 per cent of the cases.

Severe coughing (cough reflex), sneezing, hearty laughing, or straining at stool may produce or aggravate the headache. Most headaches, when severe, are accompanied by gastrointestinal disturbances; however, gastrointestinal disturbances may be present in the interval between headaches.

X-Ray Findings

The roentgenographic findings of the cervical spine in chronic headache usually are very definite. Films are taken of the anteroposterior, oblique, and lateral views. The lateral films should be taken with the patient in the standing position, first with the head erect, then with the head hyperextended, and finally with the head fully flexed. The most important changes involve the alignment of the cervical spine. Complete or segmental loss of the normal lordotic curve of the cervical spine is the most consistent characteristic feature and very often may be the only abnormality found. In some cases, the loss of the lordotic curve can be corrected by hyperextension of the head; in others, marked exaggeration of the lordotic curve is produced by hyperextension. These changes indicate overstretching of the anterior longitudinal ligaments of the cervical spine, which acts as a check strap to excessive hyperextension.

In addition, there may be other roentgenographic findings characteristic of lesions of the cervical disks. There may be a narrowing of the intervertebral space and hypertrophic arthritic lipping of the contiguous vertebral bodies. These changes take years to develop and represent previous damage to the affected disk with progressive degeneration. Oblique views may demonstrate decrease in the size of the corresponding intervertebral foramen. Careful examination of the lateral film may reveal varying degrees of subluxation indicating trauma to the supporting ligaments of the cervical spine (Figs. 2 and 3).

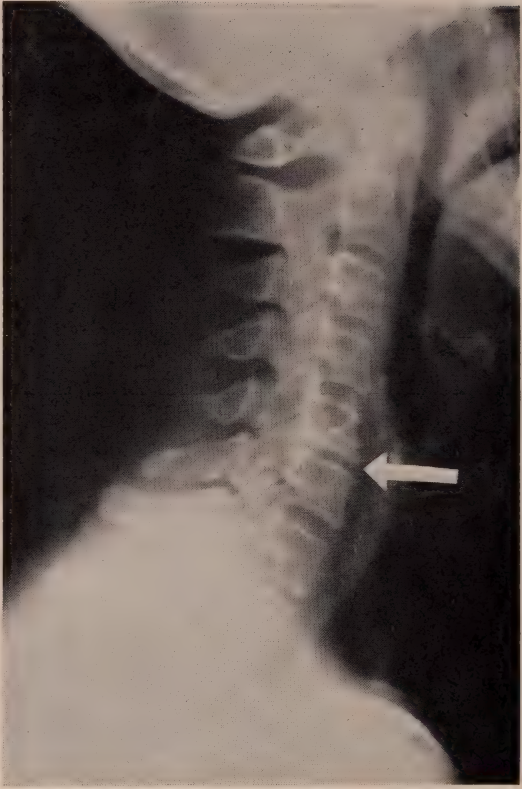

FIG. 2. Roentgenogram of the cervical spine of a sixty-five-year-old registered nurse showing disk pathology at the level of the fifth and sixth cervical vertebrae, manifested by narrowing of the intervertebral space, localized hypertrophic arthritic changes of the contiguous vertebral bodies, and loss of the lordotic curve. The patient was treated for "migraine headache" for over forty-five years before receiving traction therapy. Headaches were completely relieved after three months of traction.

Generally speaking, the more chronic the condition, the more apt are roentgenographic changes to be found. However, cervical nerve root irritation may be present in the absence of any changes demonstrable by x-ray examination. Conversely, roentgenographic evidence of a marked pathologic condition of the disk alone does not necessarily imply that the condition is producing headaches, because symptoms occur only when there is mechanical compression or irritation of the adjacent nerve root.

Diagnosis

The most important point in the treat-

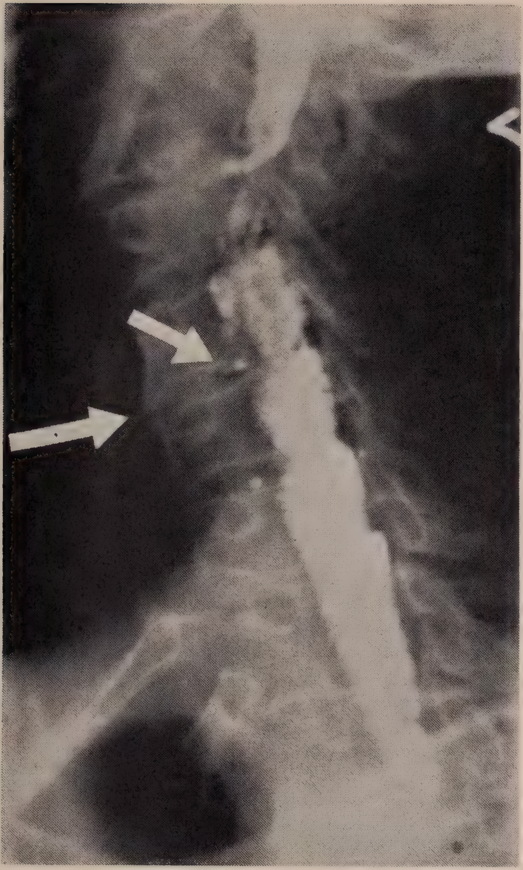

FIG. 3. Pantopaque myelogram of the cervical spine revealing a marked filling defect between the fifth and sixth cervical vertebrae in a forty-nine-year-old machinist suffering from chronic headache. Note that the intervertebral space between the fifth and sixth cervical vertebrae is markedly narrow and is accompanied by hypertrophic osteoarthritic changes. A ruptured disk was found at the level of the fifth and sixth cervical vertebrae at surgery. Relief of the headaches followed surgery.

ment of any headache case is to establish a definite diagnosis wherever possible before any treatment is commenced. The first step in diagnosis is to determine whether the headache is of intracranial or extracranial origin. This is done by obtaining a careful history and by complete physical and neurologic examinations. In the history, special attention is paid to previous trauma, family diathesis, allergy, and the evaluation of any psychic element or tendencies. After the physical and neurologic examinations, routine blood counts, blood Wassermann test, urine analysis, and x-ray examination of the skull and cervical spine should be carried out. Special examinations, such as studies of visual fields and refractive errors, simple spinal puncture, electroencephalography, pneumoencephalography, and myelography are included when indicated.

When no evidence of any of the common causes of headache can be found after complete examination, it is well to concentrate on re-examination of the neck, physically and roentgenographically. The diagnosis of headache due to cervical nerve root irritation should be deferred until all other possible causes of headache are ruled out.

Treatment

Having ruled out all other possible causes of headache and having found physical and/or roentgenographic evidence of a cervical condition, specific treatment should be concentrated on the neck.[18] Cervical traction is specific for headache of cervical origin and is by far the most effective method, not only of giving the patient symptomatic relief but also for relieving or preventing the other symptoms associated with headaches. Maximum benefits can be obtained when traction is carried out in the supine or horizontal position. Traction may be performed as an office procedure, keeping in mind that treatment should be continued for at least three months. In the more severe and chronic cases, it may be advantageous to start therapy by hospitalizing the patient for more sustained traction on an intermittent basis for about two weeks.

It cannot be emphasized too strongly that traction therapy now is a highly specialized field and should be carried out by men experienced in this type of treatment if satisfactory results are to be expected. Experience has shown that traction carried out by the patient at home usually will lead to failure and, generally speaking, is not recommended unless the patient can be given proper instruction and adequate opportunity to practice the procedure under supervision. While the patient is undergoing traction therapy, medication should be prescribed for symptomatic relief to help tide the patient over the headache attacks. If the headaches are severe, intravenous injection of 500 cc. of 0.1 per cent procaine hydrochloride in normal saline with 2 cc. of injectable Benadryl may be given daily for from seven to ten days.

In the small group of patients who cannot obtain adequate relief of the headache with traction therapy and/or medication, cervical myelography may be necessary to determine the presence of a disk or other space-occupying lesion in the spinal canal. The myelogram should be followed by cervical laminectomy, if indicated. However, surgery should be considered only in desperate cases when the pain is so severe and the condition so disabling that the patient cannot live with his symptoms or contemplates suicide, because surgery at best can offer only satisfactory relief of chronic headache in about 50 per cent of the cases. In addition, this type of surgery is not a simple procedure and is not without some risk to the patient.

Results

In patients with chronic headache of five years or less duration, 80 per cent were completely relieved on a permanent basis with traction therapy, another 15 per cent obtained sufficient relief to carry on a normal existence, and the remaining 5 per cent received no adequate relief with any form of conservative treatment. Sixty per cent of patients who have had the condition for over five years obtained complete relief of headache, 30 per cent were considerably improved, and the other 10 per cent reported little or no improvement. As a general rule, the less chronic the case and the younger the patient at the time of commencement of traction therapy, the better is the outlook for complete and permanent relief of headache. Therefore, early diagnosis and treatment are essential if chronic headaches are to be prevented. If the condition is treated early, there is sufficient evidence to show that the patient will never reach the chronic stage and thus will be spared the untold sufferings of the chronic headache patient.

Conclusion

1. Lesions of the cervical spine are one of the principal causes of persistent headache.
2. Chronic headache of cervical origin is a referred symptom caused by compression or irritation of one or more cervical nerve roots or portions thereof.
3. Trauma to the cervical spine is the prime factor in producing cervical nerve root irritation.
4. Headache can be treated successfully by cervical traction.
5. Chronic headache can be prevented by early recognition and treatment of lesions of the cervical spine.

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ANNOUNCEMENT

Influenza Immunization

A statement by Leroy E. Burney, M.D., Surgeon General, U. S. Public Health Service

Two outbreaks of influenza swept the United States in the fall of 1957 and the winter of 1958, resulting in 60,000 more deaths than would be expected under normal conditions. There were, in addition, more than 26,000 excess deaths during the first three months of 1960 which also were considered to be the result of influenza.

These departures from the usually predictable norms prompted the Surgeon General's Advisory Committee on Influenza Research to analyze the cause and to seek measures to prevent such an occurrence in the future.

The committee found that a new antigenic variant, the Asian strain, because of its widespread introduction and the general lack of resistance to it, was the direct cause of the excess number of deaths, not only in the total population but most markedly among the chronically ill, the aged, and pregnant women. As a result of these findings, the Public Health Service is urging a continuing program to protect these high-risk groups in order to prevent a recurrence of this excess mortality.

The high-risk groups who contribute most to the excess deaths and who the Public Health Service believes should be routinely immunized each year are as follows:

1. Persons of all ages who suffer from chronic debilitating disease, in particular: (*a*) rheumatic heart disease, especially mitral stenosis; (*b*) other cardiovascular diseases, such as arteriosclerotic heart disease or hypertension—especially patients with evidence of frank or incipient insufficiency; (*c*) chronic bronchopulmonary disease, for example, chronic asthma, chronic bronchitis, bronchiectasis, pulmonary fibrosis, pulmonary emphysema, or pulmonary tuberculosis; (*d*) diabetes mellitus; (*e*) Addison's disease.
2. Pregnant women.
3. All persons sixty-five years or older.

The adult dosage recommended by the advisory committee for initial immunization is 1.0 cc. (500 cca units) of polyvalent vaccine, administered subcutaneously on two occasions separated by two or more months. Persons previously immunized with polyvalent vaccine should be reinoculated with a single booster dose of 1.0 cc. subcutaneously each fall. The only contraindication to vaccination would be a history of food allergy to eggs or chicken or a prior history of allergic reaction to an egg-produced vaccine, such as the commercial influenza product. The time to start such a program is before the onset of the influenza season. In the past, influenza vaccination has been sparse and sporadic and primarily in response to an epidemic or the threat of an epidemic. The unpredictability of recurrence of influenza and its continued endemic occurrence are well known. Therefore the Public Health Service strongly recommends that immunization of these high-risk groups be started now and continued annually, regardless of the predicted incidence of influenza for specific years.

Treatment of Nerve Gas and Other Anticholinesterase Poisoning

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POISONING with anticholinesterase compounds presents a therapeutic challenge to both military and civilian physicians. The military is concerned primarily with the development of an adequate defense against nerve gas attack. Rescue problems are compounded by the extreme toxicity of the agents, anticipated widespread dissemination with resultant contaminated atmospheres, and the limitations on cumbersome equipment imposed by battlefield conditions. Civilian physicians, on the other hand, must be prepared to treat individuals exposed to related compounds in industry and medicine. Frequent newspaper reports of fatalities suggest that optimal management is often lacking. In addition, the possibility of nerve gas attacks on civilian populations cannot be ignored.

TABLE I.—SIGNS AND SYMPTOMS OF ANTICHOLINESTERASE POISONING

- Ocular
  - Miosis
  - Lacrimation
  - Dimness of vision
  - Impaired accommodation
  - Pain on accommodation
- Nasal
  - Rhinorrhea
- Respiratory
  - "Tightness" of chest
  - Cough
  - Bronchorrhea
  - Dyspnea
- Muscular
  - Easy fatigue
  - Muscular weakness
  - Fasciculations
  - Cramps
- Genitourinary
  - Frequency
  - Involuntary micturition
- Central nervous
  - Frontal headache
  - Mood changes
  - Drowsiness
  - Insomnia, dreams
  - Ataxia
  - Electroencephalographic changes
  - Hyperpyrexia
  - Cheyne-Stokes respirations
  - Convulsions
  - Coma with areflexia
- Gastrointestinal
  - Anorexia and nausea
  - Eructations, heartburn
  - Vomiting
  - Hyperactive bowel sounds
  - Diarrhea
  - Involuntary defecation

The treatment of poisoning due to anticholinesterase agents is based on a firm understanding of pathogenesis and drug effects. Many excellent reviews have appeared in the past,[1-6] but significant chemotherapeutic advances justify another. Moreover, military resuscitation devices, presently in the development stage, may eventually enjoy widespread civilian use.

General Considerations

The nerve gases are organophosphorus compounds and are particularly suited for use in combat by nature of their extreme toxicity. The volatile compounds, sarin (methylisopropoxy fluorophosphine oxide) and tabun (dimethyl-amino ethoxy cyanophosphine), were developed by the Germans in World War II. More recently developed agents have other properties which might be exploited depending on the tactical situation. Other compounds related to the nerve gases in structure have enjoyed widespread use in medicine and industry. Drugs such as diisopropyl fluorophosphate and tetraethylpyrophosphate have been used in the treatment of abdominal distention, urinary retention, glaucoma and myasthenia gravis. Parathion, malathion, tetraethylpyrophosphate, and hexaethyltetraphosphate have value as insecticides and have had world-wide usage.

The manifestations of overdosage with all of these agents are essentially similar. Their action is secondary to the inhibition of cholinesterase enzymes, more or less irreversibly, resulting in the accumulation of acetylcholine at various sites: (1) at the

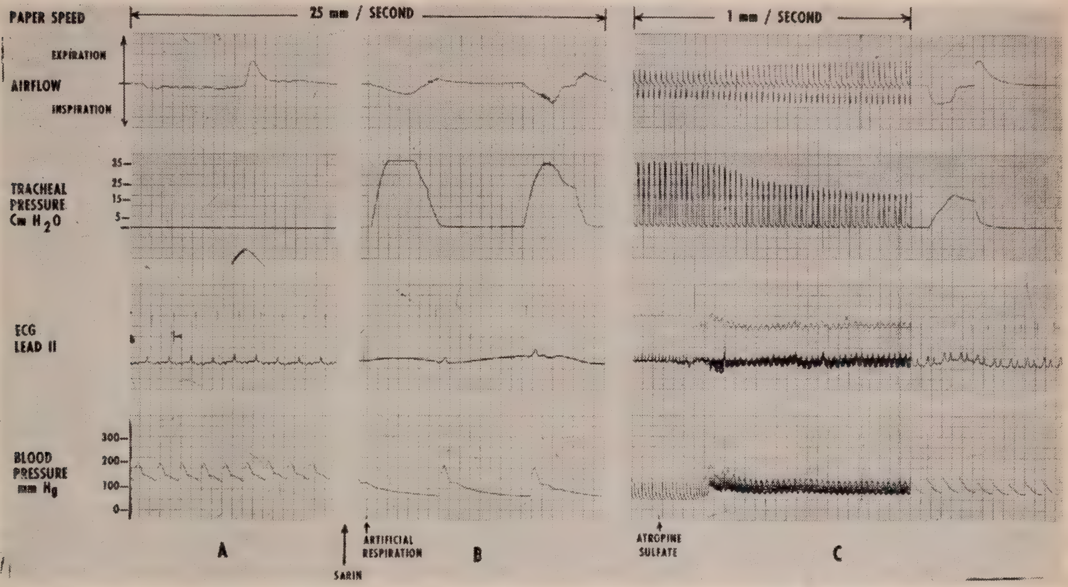

FIG. 1. An anesthetized dog demonstrated some typical responses to sarin, artificial respiration, and atropine. (*A*) Control period. Note the adequate airflow, negligible tracheal pressure, sinus cardiac rhythm, and blood pressure of 200/120 mm. Hg. (*B*) Following 50 median lethal doses of sarin, airflow decreased and tracheal pressure was elevated. Electrocardiographic changes included atrial arrest and a slow idionodal rhythm. Blood pressure fell, but note the increased pulse pressure. Artificial respiration failed to modify these changes. (*C*) Following atropine sulfate (1.0 mg. per kilogram intravenously) note the increase in airflow concomitant with a decrease in tracheal pressure. The heart rate which was slow initially increased as the rhythm reverted to a sinus focus. Blood pressure which had fallen to a level lower than in B exhibited a rise after atropine.

ends of postganglionic cholinergic nerves to smooth and cardiac muscle and secretory glands (muscarine-like effects), (2) at preganglionic nerves to autonomic ganglia and motor nerves to striated muscle (nicotine-like effects), and (3) in the central nervous system. Commonly observed symptoms and signs are presented in Table I. The major cause of death is hypoxia which results from a combination of central respiratory depression, bronchial obstruction due to copious secretions and bronchoconstriction, and peripheral paralysis of the muscles of respiration.

Treatment includes atropine sulfate, artificial respiration, and oximes. Each has its advantages and disadvantages and therefore its niche in treatment. These considerations are presented.

Atropine Sulfate

Atropine sulfate, the standard drug for the nerve gas casualty, has provided reliable and predictable results in all varieties of anticholinesterase intoxication. It prevents access of acetylcholine to receptors normally stimulated by choline, but its effect is limited to the muscarine-like and central nervous system manifestations. Other therapy is needed to counteract the nicotine-like symptoms and signs.

Atropine sulfate is best administered parenterally, and 2-mg. ampins or syrettes are provided to aid men and troops for initial intramuscular self-treatment. It is important to emphasize the fact that casualties can tolerate greater amounts of atropine sulfate than unexposed individuals, as this dosage level is higher than that used initially in most clinical situations. Overdosage is safer than undertreatment in the exposed individual.[7,8] Manifestations of atropine sulfate intoxication, such as mydriasis, dry mouth, tachycardia, and ileus, may be incapacitating, but large amounts have been given without fatality.[5] Atropine

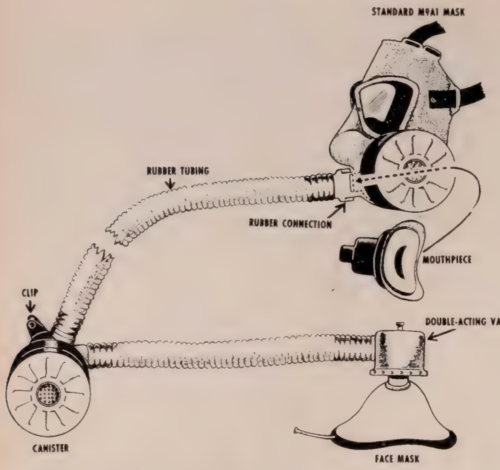

FIG. 2. Mask-to-mask apparatus for resuscitation in a contaminated atmosphere.

sulfate requirements will depend on the severity of the anticholinesterase intoxication. Two-mg. doses of atropine sulfate may be administered intramuscularly as frequently as every fifteen minutes until neutralization of the anticholinesterase effects is achieved or mild symptoms of atropinization appear. In the presence of shock the intravenous route and comparable doses should be employed.

The clinical picture provides a more reliable therapeutic guide than red cell and plasma cholinesterase changes. The cholinesterase level, usually expressed as per cent of normal, will vary depending on the rapidity of poisoning and other factors; therefore, symptoms and cholinesterase reduction do not necessarily parallel each other. Usually with acute poisoning, symptoms become manifest when the cholinesterase level approaches 50 per cent of normal. Manifestations may be prominent, however, with less profound cholinesterase reduction. The reverse situation is often present with chronic exposure where the blood cholinesterase may approach zero per cent without the appearance of symptoms. This apparent paradox is somewhat similar to the relationship between hematocrit levels and manifestations of anemia. With acute blood loss such as that seen with massive gastrointestinal hemorrhage, symptoms of shock may precede significant hematocrit reduction. Contrariwise, with the development of a chronic anemia such as pernicious anemia, compensatory changes may retard symptoms despite very low hematocrit levels. In these instances as with anticholinesterase poisoning, symptoms reflect tissue functions rather than blood measurements.

Some experimental responses to sarin, artificial respiration, and atropine sulfate are illustrated in Figure 1 in which a dog is the subject. It is to be noted that atropine sulfate produced a beneficial effect on respiration, presumably by reducing bronchial secretions, relieving bronchospasm, and reducing central respiratory depression. Mechanical assistance was necessary to maintain ventilation, however, since atropine sulfate is believed to have no effect on peripheral nerve paralysis (nicotine-like manifestations).

Artificial Respiration

Assisted ventilation is necessary in severe anticholinesterase intoxication until tissue cholinesterase is regenerated. Such respiratory aid must be capable of overcoming the unusually high resistances encountered.[9] For military use, it must also be practical in a contaminated atmosphere and efficient from the point of view of personnel expended.

Mouth-to-mouth resuscitation and its head-tilt modifications are satisfactory methods for maintaining individual casualties once they have been removed from a contaminated atmosphere. They are particularly suited for individual victims exposed in peacetime, as might occur in laboratory, hospital, industrial, or agrarian accidents. No special equipment is necessary, a minimum of training is required, and a satisfactory source of air capable of overcoming the high resistances is readily available. These methods have, in fact, superseded other manual procedures for artificial respiration. The mouth-to-mouth method has been well described elsewhere.[10,11] Occasionally, leakage of air around the rescuer's thumb is excessive, inflation of the victim's stomach is unavoidable, and convulsion or trismus prevents inflation through the mouth. The head-tilt modification, particularly when the mouth-to-nose route is employed, obviates these difficulties. Since this method is relatively new it is described briefly.

> The neck is elevated and the head is tilted back as far as possible by pressure on the crown of the head with one hand. The chin is pulled up with the other hand, and the lungs are inflated via the nose or mouth. Expiration is a passive process. The semilateral position may be used if necessary or desired.[12]

For military use in contaminated atmospheres, where the rescuer as well as the victim must be protected from further exposure, a modification of this method employing a mask-to-mask apparatus has been devised. The rescuer wears a standard M9A1 gas mask to which a mouthpiece, a length of flexible rubber tubing, a double-acting valve, a second canister, and an anesthetic-type face mask have been added (Fig. 2). The mouthpiece is inserted into the standard gas mask. When the operator breathes through his mouth, he is connected to the casualty via the mouthpiece and the rubber tubing, bypassing the air inlet in the gas mask. The second canister provides a source of decontaminated air for both rescuer and victim. The long rubber tubing adds to the dead space and helps to prevent symptoms of hyperventilation in the operator. The double-acting valve in the circuit allows the rescuer's breath to reach the victim, but prevents the victims's exhaled air from returning, causing it to exist through the valve ports. The operator's hands are free to hold the mask over the victim's mouth and nose, clear the mouth, elevate the chin, and intubate the trachea if necessary. In addition, the rescuer's hands are also free to lift a stretcher so that transport of the intubated casualty can be accomplished by two rather than three persons. Utilizing this method of assisted ventilation and atropine sulfate, relatively untrained Army personnel have been successful in treating unanesthetized dogs exposed to ten median lethal doses of sarin.

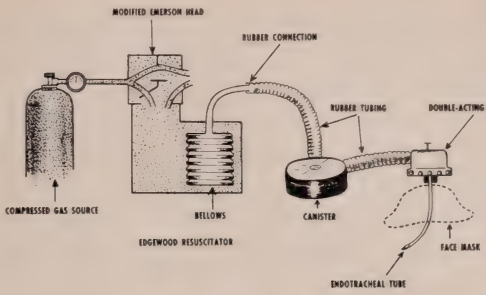

Fig. 3. Mechanical resuscitator with endotracheal tube attached. Note that the compressed gas activates the bellows. Air for the victim enters the separate respiratory circuit through a one-way valve at the canister.

A mechanical resuscitator particularly suited for field use has been developed at the Army Chemical Center by Hustead and Clements.[13] This unit (Fig. 3) is compact and its bellows can operate on any source of compressed air which delivers 35 to 50 pounds per square inch, for example that supplied by a jeep motor. This unit is an adjustable volume- and pressure-limited resuscitator. It will cycle if either the prescribed tidal volume (usually 900 to 1,000 cc.) or the prescribed pressure (60 cm. of water) is achieved. The normal cycling frequency is 16 times per minute.

Although satisfactory methods for assisted ventilation are available and being developed, all are cumbersome, require training, and expend men and equipment. Some means of preventing the need for assisted ventilation is desirable.

Oximes

The oximes, the most recent addition to the therapeutic armamentarium, have been available only since about 1955.[14,15] Their mechanism of action is incompletely understood, although they do appear to exert a beneficial effect primarily on the nicotine-like manifestations of anticholinesterase compounds. In vitro, they are capable of reactivating cholinesterase after inhibition.[14,16] Therefore, it is probable that they may be of some use in the treatment of the muscarine-like and central nervous system effects.

Extensive in vivo data concerning pyridine-2-aldoxime and diacetyl monoxime have been accumulated by Grob and Johns.[17,18] They have demonstrated that the local neuromuscular block produced by a number of anticholinesterase compounds, including sarin, is reversible by intra-arterial infusion of pyridine-2-aldoxime and diacetyl monoxime. In addition, the intravenous infusion of 500 to 2,000 mg. of these oximes ameliorated the generalized weakness produced by oral or parenteral administration of anticholinesterase compounds to normal human volunteers and patients with myasthenia gravis who were overtreated with anticholinesterase medications. In Japan, there has been extensive clinical experience with pyridine-2-aldoxime in the treatment of parathion intoxication, with very encouraging results.[19]

Since one of the major actions of the oximes is on neuromuscular block, it is hoped that they will be of particular value in the treatment of respiratory muscle paralysis, thus decreasing or eliminating the need for assisted ventilation. The desirability of such an agent for field use and mass treatment is obvious. Moreover, there is some evidence that the oximes are effective when they are used prophylactically as well as therapeutically.[19,20] Until extensive clinical trials under controlled conditions of severe cholinesterase inhibition are possible, it is unlikely that the exact dosage and place of the oximes in treatment will be known.

In addition, technical considerations in the preparation of the oximes have provided another stumbling block. Pyridine-2-aldoxime is relatively insoluble so that intramuscular administration is not feasible, and relatively large quantities of fluid are necessary for intravenous administration. The British have recently introduced a more soluble methanesulfonate salt of pyridine aldoxime for intramuscular injection,[21] and work along similar lines is in progress in our laboratories. The perfection of such a preparation is highly desirable for self-medication in the field.

Other Therapy

Extensive military or civilian experience with severe human poisoning is not available at this time, but it is reasonable to employ standard supportive therapeutic adjuncts. The dosage and routes of administration of these agents are described in standard texts and need not be modified for anticholinesterase poisoning.

In brief, it may be said that clothing will afford temporary protection from percutaneously administered anticholinesterase compounds. Nonetheless, decontamination of skin, clothing, and surroundings with copious amounts of water, bleach, or alkali is important since a residual agent may do additional harm to the victim and to medical personnel Oxygen bubbled through water or other wetting agents will benefit the cyanotic victim. Cardiotonic drugs are indicated if pulmonary edema supervenes, particularly in the persons with pre-existing reduced cardiac reserve. Barbiturates, usually contraindicated in the presence of respiratory depression, can be used judiciously to control convulsions if mechanical resuscitators are available. Tridione is also effective.[4,5] Vasopressors such as norepinephrine and metaraminol bitartrate have been advanced as therapy for shock in cholinesterase inhibition.[22] In our experience with dogs when hypotension occurs it is secondary to hypoxia and is rationally treated by improving respiration rather than with the use of these drugs.[23]

Summary

The pharmacologic and physiologic responses to anticholinesterase agents have been described. These organophosphorus compounds exert their deleterious actions by inhibiting cholinesterase enzymes at nerve

endings. As a result, acetylcholine hydrolysis is impaired and an abnormal accumulation of this compound results in characteristic clinical manifestations. Atropine sulfate which prevents access of acetylcholine to its receptors is standard therapy for mild cases. Its beneficial action is, however, limited to muscarine-like and central nervous systems effects. A suggested treatment schedule is presented. Severe cases of poisoning require the use of assisted ventilation since respiratory failure is the chief cause of death. The head-tilt method of assisted ventilation and, for contaminated atmospheres, a new mask-to-mask and mechanical resuscitator have been described. Ideal therapy demands some means of circumventing the need for assisted ventilation, and the recently available oxime drugs are extremely promising in this regard. They appear to have the ability to reverse the nicotine-like symptoms of anticholinesterase poisoning and, in initial clinical trials, have decreased morbidity and mortality.

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Diplomacy: The art of letting someone have your way.—Anon

The Surgical Approach to Diffuse Obstructive Emphysema

Preliminary Report

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ALTHOUGH the surgical approach to the large pulmonary bullous lesion is now generally accepted, the surgical treatment of diffuse obstructive emphysema is less well established. It is the purpose of this paper to present our operative experience with a small group of cases of diffuse emphysema. Although this experience admittedly is small, the results lead us to believe that a review of the study is worth while at this time. This paper is presented as a report of a study in progress.

Factors which lead to the pathologic changes seen in diffuse emphysema have been recognized for a considerable period of time; however, the exact cause or causes that initiate these changes remain less obvious. A clear understanding of the disturbed physiologic state, even though the cause is obscure, may suggest a method or methods of treatment which will aid in reversing these pathologic processes. Such methods may offer clinical improvement for long periods of time even though the causative agents may continue to exert their unfavorable influence. An enumeration in some detail of the changes seen in emphysema is in order since it is on this basis alone that any surgical treatment can reasonably be offered.

Physiologic Abnormalities

Some degree of obstruction at the terminal bronchioles during the diastolic phase of ventilation results in the ballooning of alveoli and their consequent breakdown and coalescence into larger air sacs. This continuing process accounts for the overdistended voluminous lung that is the final result. The clinical expression of this process is the marked increase in the size of the thoracic cavity, particularly in the anteroposterior diameter. This results in a flattened diaphragm with little or no excursion, a position in which the diaphragm lends very little to the breathing effort. The patient has been described rightly as "breathing at the top of his lungs." The large increase in the total lung capacity is associated with an even greater proportional increase in the residual volume. This increase in "dead" space occurs at the expense of the other more active components. The immediate compromising result is inefficient intrapulmonary mixing.

In emphysema the pulmonary capillary bed may be greatly narrowed as a result of either the destruction of alveoli or the compression effect of ballooning. Since the normal compensatory mechanisms, such as the opening up of new vascular channels or the widening of those already present, are lost, a higher than normal gradient may be required to maintain a normal flow rate. Hickam and Cargill[1] point out that additional increments in the flow rate would require greater than normal increments in pressure since the capacity for widening the vascular bed has been largely exhausted. They further point out that a normal resting

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pulmonary pressure in a patient with emphysema does not establish normal function of the pulmonary vascular bed. Pulmonary hypertension may appear only when the rate of flow is increased.

Two important functions of lung tissue are affected by the changes which have been described. Ventilation and the diffusion of gases across the pulmonary capillary bed are impaired. The varying degrees of anoxia with carbon dioxide retention that occur exert an untoward influence by further constricting the pulmonary capillaries. The altered physiologic state may be compromised further by polycythemia, hypervolemia, and increased cardiac output, a process which finally may lead to right ventricular hypertrophy and right-sided heart failure.[2]

A loss in elastic tissue is a feature of the overdistended lung and thus accompanies the process. As a result of the elastic recoil of the lung being compromised, the natural support for maintaining adequate bronchiolar lumina is lost. The total effect is a deviation from normal in intrapleural pressures. To a large degree it is on the recognition of this fact that the surgical therapy of emphysema is based.

Brantigan and his coworkers[3,4] and others have stressed the fact that a great variation in the extent of the involvement of the various lobes may and frequently does exist. Although the disease process is generalized, the changes may vary from lobe to lobe and from segment to segment. The periphery of the lobe tends to be more involved than the hilar regions. Our experience agrees with these observations. The recognition of these variations in involvement is important in the consideration of surgical treatment.

Anticipated Effects of Surgery

To be of value a surgical procedure must influence some or all of these changes to such an extent that the gas exchange is improved. It seems reasonable that a reduction in volume, as suggested by Brantigan and Mueller,[3] accomplishes this in several ways: (1) the residual volume is reduced, (2) intrapleural pressures are directed toward a more normal negative force, (3) some of the more involved tissues are resected, and (4) a favorable influence on the pulmonary capillary bed may be exerted by the relief of some of the compression caused by an overdistended lung. It seems to us that the greatest effect of a reduction in volume is on ventilation. To what extent the pulmonary bed is favorably impressed remains somewhat obscure.

Surgical Procedure

The lung which is more involved is operated on first. Through an anterolateral intercostal incision adequate exposure is obtained. A careful examination of the lung is done, and an effort is made to recognize the extent and the variation of the disease. A reduction in volume is effected by the application of long, curved clamps at convenient peripheral contours. A running basting suture with chromic catgut is accomplished, and the line of the excision is oversewn.

Recently it has become our practice to remove not only those parts of the lung which lend themselves to resection but also the tissue over the flat surfaces of the lung. Although it is difficult to determine the exact amount of tissue to remove, for the present it is sufficient to say that we now tend to resect more than we did previously. It has been estimated that about 30 to 40 per cent of the total lung volume is excised. Hilar denervation has not been done in this study because it is hoped that by not combining procedures a measure of the true worth of a reduction in lung volume might be learned.

Material and Method

In 1958 we began a study to evaluate such a surgical procedure, and since then 13 patients with diffuse emphysema have been operated on. The ages of the patients ranged from thirty-six to sixty-six years.

TABLE I.—Pre- and Postoperative Determinations* in a Thirty-Nine-Year-Old Male with Diffuse Obstructive Pulmonary Emphysema Who Underwent Surgery of the Left Lung

Test	Results	
	Preoperative	Postoperative
Vital capacity	4.6 L.	4.4 L.
Maximum breathing capacity	51 L. per minute (39 per cent)	57 L. per minute (44 per cent)
Timed vital capacity	1.6 L. 2.3 L. 2.7 L.	1.9 L. 2.5 L. 2.8 L.

* Six-month interval.

TABLE II.—Pre- and Postoperative Determinations* in a Fifty-Two-Year-Old Male with Diffuse Obstructive Pulmonary Emphysema Who Underwent Surgery of the Right Lung

Test	Results	
	Preoperative	Postoperative
Residual volume	3,580 cc.	2,591 cc.
Maximum breathing capacity	88 L. per minute (68 per cent)	102 L. per minute (83 per cent)
Timed vital capacity	2.4 L. 3.5 L. 4 L.	3 L. 4 L. 4.6 L.

* Six-month interval.

TABLE III.—Bronchospirometric Determinations* in Same Patient as in Table II

Test	Results (Per Cent)			
	Right Lung		Left Lung	
	Preoperative	Postoperative	Preoperative	Postoperative
Ventilation	45	52	55	48
Oxygen uptake	40	47	60	53
Vital capacity	40	52	60	48

* Six-month interval.

All but 2 were in the sixth decade, and all were males.

The work-up, not as complete in the beginning of our study as it is now, includes a battery of tests. The tidal volume, vital capacity, inspiratory and expiratory reserves, residual volume, and total lung capacity are measured. The more dynamic studies include determinations of the timed vital capacity, maximum breathing capacity, and oxygen uptake. Both the timed vital capacity and the maximum breathing capacity appear to reflect significant changes following resection. Further experience with a larger number of cases will be necessary before an accurate estimation of the worth of these tests can be made.

Bronchospirometric determinations are done in all cases. Cardiac catheterization and the measurement of pulmonary artery pressures now are done routinely. However, the few findings which are available for study are inconclusive. Careful evaluation of these data may lead to more definite criteria for the selection of patients for surgery.

Results

The two most striking results were in the 2 younger patients, thirty-nine-year-old and fifty-two-year-old males, after surgery of one lung. Table I shows the pre- and postoperative findings in the thirty-nine-year-old patient. Although no real difference is shown, the patient experienced marked clinical improvement, and he was very enthusiastic about the result of the first procedure. This disproportion between subjective and measured results is in accord with the experience of Tabakin, Adhikari, and Miller.[5] The patient was able to return to strenuous work. It would seem that this fact is a true measure of the success of the procedure.

Table II shows the pre- and postoperative findings in the fifty-two-year-old patient. The clinical result was good, but it was less striking than that in the previous patient. However, the objective results are more impressive than those in the other patient. The residual volume and the maximum breathing capacity appear to reflect a favorable effect of the resection. Table III gives the pre- and postoperative results of bronchospirometry in the same patient. The results suggest an improvement in ventilation in the right lung.

There were 2 deaths. One patient died of an air embolus eight hours following surgery. This resulted when an attempt was made to establish a pneumoperitoneum. An autopsy confirmed the cause of death. The other death occurred sixteen months postoperatively. The patient was readmitted with marked evidence of pulmonary insufficiency and died while in the admissions office. He had been in cardiac failure prior to the operation. The remaining 9 patients shared some degree of subjective improvement; however, function measurements were inconclusive.

Comment

Although our experience has been very limited, encompassing few patients and a short follow-up period, we are sufficiently favorably impressed by the clinical results which have been obtained by a reduction in volume to continue the study. It is hoped that by complete and careful pre- and postoperative studies the worth of the surgical procedure can be judged. It is only by careful preoperative studies and postoperative studies done at designated intervals that any real contribution can be made. The interpretation of subjective results for short periods of time is not too meaningful a method of evaluation.

Complete studies are being performed in an effort to compile data that will show objectively the effects of lung volume reduction and that will help to establish the means by which a more critical selection of patients can be made. The continuance of such a program over a sufficiently long period of time with repeated interval studies will contribute to a more accurate definition of the real worth of surgical resection in diffuse obstructive pulmonary emphysema.

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None are more liable to mistakes than those who act only on second thoughts.—VAUVENARGUES

Cardiovascular Effects of Oxytocin Injection (USP) Synthetic, Prepared Oxytocin, and the Ergot Alkaloids

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The recent chemical synthesis of pure oxytocin injection (USP) synthetic (Syntocinon)[1-3] has revived interest in the study of the various oxytocic drugs used in obstetrics.

In 1957, Caldeyro-Barcia, *et al.*,[4] Fugo and Dieckmann,[5] and Douglas, Kramer, and Bonsnes[6] reported that prepared oxytocin (Pitocin) and oxytocin injection (USP) synthetic had equal uterotonic effects. In the same year, Friedman[7] demonstrated that oxytocin and the ergot alkaloids, ergonovine and methyl ergonovine (Methergine), were equally effective oxytocic preparations postpartum, but that these ergot preparations produced more undesirable emetic and hypertensive side-effects. However, very little information relating to the comparative cardiovascular effects of these drugs has been reported recently. In the past there have been reports of cardiac collapse and death following the administration of posterior pituitary extracts to anesthetized patients.[8-15] Despite the work of Morris and his associates.[16-19] which showed that impure oxytocin had little effect on the cardiovascular system and could be used without hazard during cyclopropane anesthesia, it is commonly believed that impure oxytocin, because of its vasopressin content, cannot be used with impunity. The need to reinvestigate the cardiovascular effects of these drugs, and to include data on their compatibility with commonly used anesthetic agents, seemed apparent and was, therefore, undertaken.

TABLE I.—POSTERIOR PITUITARY PREPARATIONS

Preparation	Description
Pituitrin	Naturally occurring extract of the gland containing both oxytocic and vasopressor principles.
Prepared oxytocin	Naturally occurring (purified) oxytocin containing not more than 0.5 units of pressor activity per milliliter.
Pitressin	Naturally occurring (purified) vasopressin containing not more than one oxytocic unit per milliliter.
Oxytocin injection (USP) synthetic	Synthetic (pure) oxytocin.
Vasopressin	Synthetic (pure) vasopressin.

Table I shows the relative amounts of oxytocic and vasopressor materials in the commonly used posterior pituitary preparations and the recently synthesized preparations, oxytocin injection (USP) synthetic and vasopressin. Previously most work on the pharmacology of oxytocin utilized prepared oxytocin, a highly purified preparation, but one still containing up to 0.5 units of pressor activity per milliliter. The availability of synthetic oxytocin makes investigation of oxytocic substances more precise.

Figure 1 indicates diagramatically the chemical structure of oxytocin and vasopressin based on the amino acid structure of these compounds. Each substance consists of a cyclic octapeptide plus three molecules of ammonia. Oxytocin and vasopressin differ

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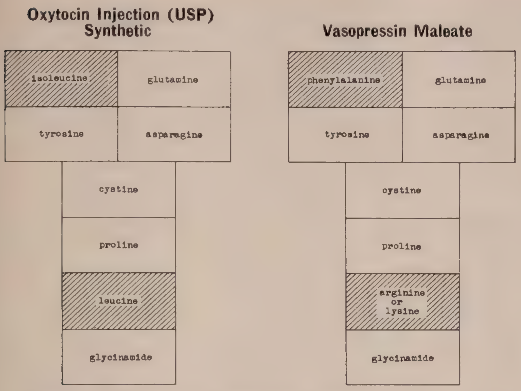

FIG. 1. Schematic representation of the amino acid structure of oxytocin injection (USP) synthetic and vasopressin maleate.

only in regard to two amino acids. Vasopressin contains phenylalanine instead of isoleucine and arginine (beef pituitaries) or lysine (hog pituitaries) instead of leucine. This structural difference is apparently sufficient to result in dissimilar physiologic actions, but it is still small enough to make the isolation of the pure substance from biologic material very difficult.

This preliminary report is essentially a comparative study of the cardiovascular effects of prepared oxytocin, oxytocin injection (USP) synthetic, ergonovine maleate, and methyl ergonovine maleate in both anesthetized and unanesthetized subjects. The observations indicate that there are consistently significant differences in the effects of these drugs which merit further investigation.

Method

One hundred anesthetized patients and 7 unanesthetized normal volunteers were included in this study. The patients were selected at random, but those who were of poor physical status were not included. They were all adults ranging in age from nineteen to seventy-five years, 80 being females and 20 males. As their primary anesthetic agent, 89 patients received cyclopropane, 8 patients received a spinal injection, and 3 patients received nitrous oxide-thiamylal sodium (Surital). The surgical procedures performed on these patients consisted of cesarean section, dilatation and curettage, vaginal and abdominal hysterectomy, prostatectomy, herniorrhaphy, cholecystectomy, gastroenterostomy, gastrectomy, and intestinal resection. All of these procedures were carried out uneventfully except for one curettage during which there was severe and prolonged hemorrhage. The patients studied were divided into six groups, and the normal subjects were divided into four groups on the basis of the drug used and its mode of administration (Table II).

GROUP I. *11 patients.*—These patients received prepared oxytocin, 10 international units, administered intravenously within ten seconds. The pulse and blood pressure were recorded at intervals of fifteen seconds for a period of thirty minutes. Two patients received spinal anesthesia, and 9 patients received cyclopropane.

TABLE II.—DRUGS STUDIED IN ANESTHETIZED PATIENTS AND UNANESTHETIZED VOLUNTEERS

Groups	Drugs	Dosage
In Anesthetized Patients		
I	Prepared oxytocin	10 international units intravenously, single dose.
II	Prepared oxytocin	10 international units intravenously, in 1 L. 5 per cent of dextrose in water.
III	Oxytocin injection (USP) synthetic	10 international units intravenously, single dose.
IV	Oxytocin injection (USP) synthetic	10 international units intravenously, in 1 L. 5 per cent of dextrose in water.
V	Ergonovine maleate	0.2 mg. intravenously, single dose.
VI	Methyl ergonovine maleate	0.2 mg. intravenously, single dose.
In Unanesthetized Subjects		
VII	Prepared oxytocin	10 international units intravenously, single dose.
VIII	Oxytocin injection (USP) synthetic	10 international units intravenously, single dose.
IX	Vasopressin	0.5 pressor units intravenously, single dose.
X	Oxytocin injection (USP) synthetic Vasopressin	10 international units intravenously, single dose. 0.5 pressor units

TABLE III.—AVERAGE BLOOD PRESSURE CHANGES FOLLOWING OXYTOCIC DRUGS ADMINISTERED INTRAVENOUSLY TO ANESTHETIZED PATIENTS

Groups	Method	Number of Patients	Drugs	Amounts	—Blood Pressure Changes (mm. Hg)—	
					0–60 seconds Average*	5–30 minutes Average*
I	Single dose	11	Prepared oxytocin	10 international units	−33/−24	+5/+2
II	Drip	17			−0.8/−2	+6/+5
III	Single dose	17	Oxytocin injection (USP) synthetic	10 international units	−25/−20	+11/+4
IV	Drip	17			−0.3/+0.4	+2.5/+2
V	Single dose	18	Ergonovine maleate	0.2 mg.	+3/+6	+6/+4
VI	Single dose	10	Methyl ergonovine maleate	0.2 mg.	+3/+0.5	+2.7/+1.5

* Numerator equals systolic blood pressure, denominator equals diastolic blood pressure.

GROUP II. *17 patients.*—These patients received prepared oxytocin, 10 international units diluted in 1 L. of 5 per cent dextrose in water administered intravenously at a rate of from 1 to 4 ml. per minute. Pulse and blood pressure were recorded at intervals of fifteen seconds for a period of thirty minutes and then at five-minute intervals for a period of thirty minutes to three hours. Sixteen patients received cyclopropane anesthesia and 1 patient received nitrous oxide-thiamylal sodium.

GROUP III. *17 patients.*—These patients received oxytocin injection (USP) synthetic, 10 international units administered intravenously within ten seconds. The pulse and blood pressure were recorded at intervals of fifteen seconds for a period of thirty minutes. Thirteen patients received cyclopropane, 2 patients received nitrous oxide-thiamylal sodium, and 2 patients received spinal anesthesia.

GROUP IV. *17 patients.*—These patients received oxytocin injection (USP) synthetic, 10 international units diluted in 1 L. of 5 per cent dextrose in water administered intravenously at a rate of from 1 to 4 ml. per minute. The pulse and blood pressure were recorded at intervals of fifteen seconds for a period of thirty minutes, and then at five-minute intervals for a period of from thirty minutes to three hours. Fourteen patients received cyclopropane and 3 patients received spinal anesthesia.

GROUP V. *18 patients.*—These patients received ergonovine maleate 0.2 mg. administered intravenously within ten seconds. The pulse and blood pressure were recorded at intervals of fifteen seconds for a period of thirty minutes. Seventeen patients received cyclopropane and 1 patient received spinal anesthesia.

GROUP VI. *20 patients.*—These patients received methyl ergonovine maleate 0.2 mg. administered intravenously within ten seconds. The pulse and blood pressure were recorded at intervals of fifteen seconds for a period of thirty minutes. All patients received cyclopropane anesthesia (Table III).

The volunteers were all normal healthy young adults ranging in age from twenty-three to twenty-nine years. Three were female and 4 were male. An intravenous infusion of 500 ml. of 5 per cent dextrose in water was started with a 20-gauge needle. The volunteer was allowed a rest period of approximately fifteen minutes after the introduction of the needle, and then the control blood pressure and electrocardiogram were taken. The drugs were administered through the intravenous tubing without the subject being aware of the time of administration. The subject was asked to report any subjective symptoms, and these were recorded. The same subjects participated in Groups VII to X with the exception of 2 who did not continue beyond Group VIII. Each group experiment was separated from the preceding one by an interval of at least twenty-four hours.

GROUP VII. *7 volunteers.*—These subjects were given prepared oxytocin, 10 international units administered intravenously within ten seconds. The blood pressures were taken at fifteen-second intervals, and continuous electrocardiographic tracings of Lead II were recorded for a period of from five to ten minutes.

GROUP VIII. *7 volunteers.*—These subjects were given oxytocin injection (USP) synthetic, 10 international units, and the same procedure was followed as in Group VII.

GROUP IX. *5 volunteers.*—These subjects were given 0.5 ml. of synthetic vasopressin* (diluted to contain one unit of pressor activity per milliliter) administered intravenously within ten seconds. The procedure used in Group VII was followed.

GROUP X. *5 volunteers.*—These subjects received oxytocin injection (USP) synthetic, 10 international units plus synthetic vasopressin 0.5 ml., administered together intravenously within ten seconds. The procedure used in Group VII was again followed.

In 5 subjects electrocardiographic tracings of Lead II were recorded after exercise strenuous enough to produce a tachycardia comparable to that obtained with the administration of oxytocin.

Observations in Anesthetized Subjects

PULSE. *Group I.*—Two patients anesthetized with cyclopropane developed an increase in their pulse rates, in 1 case from 60 to 96 and in the other case from 72 to 96. Both patients returned to the baseline rate within three minutes. There were no arrhythmias.

Group II.—There were no changes in the pulse rate or rhythm except in 2 cases anesthetized with cyclopropane. One patient developed premature ventricular beats lasting ninety seconds and disappearing spontaneously. A second patient, who sustained a sudden severe loss of blood during curettage for incomplete abortion, developed a grossly irregular pulse with a pulse rate of 120 to 130. The arrhythmia cleared following the rapid administration of 1 L. of whole blood.

Group III.—There were no changes in the pulse rate or rhythm except in 1 case. A patient anesthetized with cyclopropane with an initial pulse rate of 60 developed a tachycardia of 120 fifteen seconds after administration of oxytocin injection (USP) synthetic. The rate fell to 96 within two minutes, to 84 within three minutes, and to 72 within five minutes.

Groups IV, V, and VI.—There were no significant changes in the pulse rate or rhythm.

BLOOD PRESSURE. *Table III, Groups I and III.*—Where prepared oxytocin and oxytocin injection (USP) synthetic were given in one intravenous dose, the maximum drop in blood pressure was noted from fifteen to sixty seconds following injection. In all cases the blood pressure returned to normal levels in from two to four minutes, and during the subsequent twenty-five minutes a small rise in blood pressure was noted in 5 of the 11 Group I patients and in 7 of the 17 Group III patients. The drop in blood pressure in Group I (prepared oxytocin) averaged 33 mm. Hg systolic and 24 mm. Hg diastolic. In Group III (oxytocin injection [USP] synthetic) the drop averaged 25 mm. Hg systolic and 20 mm. Hg diastolic. The latent rise in blood pressure averaged, for prepared oxytocin, 5 mm. Hg systolic and 2 mm. Hg diastolic and, for oxytocin injection (USP) synthetic, 11 mm. Hg systolic and 4 mm. Hg diastolic.

Group II and IV.—Where prepared oxytocin and oxytocin injection (USP) synthetic were administered in intravenous drip there was essentially no change in blood pressure during the first minute of administration, but during the next twenty-five minutes a small rise in blood pressure occurred in 6 of the 17 Group II patients

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* The synthetic vasopressin used in this study was supplied through the courtesy of Rudolph Bircher, M.D., Medical Director of Sandoz Pharmaceuticals, Hanover, New Jersey.

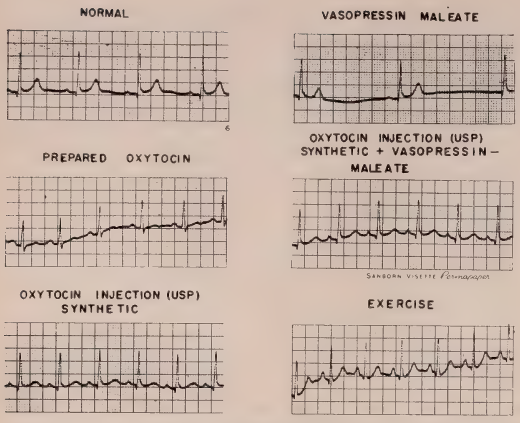
NORMAL
VASOPRESSIN MALEATE
6
OXYTOCIN INJECTION (USP) SYNTHETIC + VASOPRESSIN—MALEATE
PREPARED OXYTOCIN
SANBORN VISETTE Permapaper
OXYTOCIN INJECTION (USP) SYNTHETIC
EXERCISE

Fig. 2. Typical electrocardiographic changes in normal subjects following intravenous use of various drugs.

and in 8 of the 17 Group IV patients. With prepared oxytocin this rise averaged 6 mm. Hg systolic and 5 mm. Hg diastolic, and with oxytocin injection (USP) synthetic it averaged 2.5 mm. Hg systolic and 2 mm. Hg diastolic.

Groups V and VI.—When ergonovine maleate and methyl ergonovine maleate were given, there was a mild rise in blood pressure during the first minute, the average rise in systolic pressure being the same for both, but the average rise in diastolic pressure was greater for ergonovine maleate than for methyl ergonovine maleate. However, within a half hour the average rise in both systolic and diastolic pressures was greater for ergonovine maleate than for methyl ergonovine maleate.

Observations in Unanesthetized Subjects

Pulse. *Group VII.*—Following the administration of prepared oxytocin, 10 international units administered in one intravenous dose, all subjects developed an increase in the ventricular rate. The increase varied from 24 to 51 beats per minute, the average increase being 38.

Group VIII.—After oxytocin injection (USP) synthetic, 10 international units administered intravenously in one dose, the ventricular rate also increased in all subjects. The increase varied from 24 to 43 beats per minute, the average being 34.

Group IX.—Following the administration of vasopressin, the ventricular rate decreased in all subjects, the decrease in rate ranging from 6 to 34 beats per minute, the average decrease in rate being 18. Except for 1 patient, all subjects showed a sinus arrhythmia along with the bradycardia.

Group X.—After the administration of oxytocin injection (USP) synthetic plus vasopressin all subjects developed an increase in the ventricular rate, the range being from 34 to 40 beats per minute with an average increase in rate of 35.

Following exercise the ventricular rate increased in all subjects, the increase ranging from 40 to 70 beats per minute with an average increase of 54.

Blood Pressure. *Group VII (prepared oxytocin).*—There was a drop in blood pressure in all subjects except for 1 who showed a rise of 10 mm. Hg in both systolic and diastolic pressures. The drop in systolic pressure ranged from 20 to 30 mm. Hg, and in diastolic pressure it ranged from 10 to 25 mm. Hg. The average drop in pressure was 25/20 mm. Hg.

Group VIII (oxytocin injection [USP] synthetic).—There was a drop in blood pressure in all subjects, the range being from 20 to 40 mm. Hg systolic, and from 10 to 40 mm. Hg diastolic. The average drop in pressure was 26/21 mm. Hg.

Group IX (vasopressin).—There was a rise in blood pressure in all subjects, the range being from 5 to 30 mm. Hg systolic, and from 10 to 30 mm. Hg diastolic with an average rise of 18/22 mm. Hg.

Group X (oxytocin injection [USP] synthetic and vasopressin).—All subjects manifested a drop in blood pressure, the range being from 15 to 51 mm. Hg systolic, and from 10 to 30 mm. Hg diastolic, with an average drop in pressure of 21/20 mm. Hg.

Exercise raised the blood pressure in all subjects.

Electrocardiogram (Figure 2).—

Group VII (*prepared oxytocin*).—The maximum electrocardiographic changes occurred in from ninety to one hundred and twenty seconds. All subjects showed flattening of the T wave, with inversion of the T wave in 2 subjects. Five of the 7 subjects showed depression of the S-T segment.

Group VIII (*oxytocin injection* [*USP*] *synthetic*).—The maximum electrocardiographic changes occurred in from seventy-five to one hundred and five seconds. All subjects showed flattening of the T wave. This flattening was of smaller magnitude in 6 subjects, and it was of a greater magnitude in 1 subject than was noted in the prepared oxytocin group. Two of the 7 subjects showed a depression of the S-T segment.

Group IX (*vasopressin*).—The maximum electrocardiographic changes occurred in from seventy-five to ninety seconds. There were no changes in the T wave or the S-T segments as compared with the baseline tracings. Four of the 5 subjects had sinus arrhythmia accompanying the bradycardia.

Group X (*oxytocin injection* [*USP*] *synthetic plus vasopressin*).—The maximum electrocardiographic changes occurred in from seventy-five to one hundred and thirty-five seconds. There was a flattening of the T wave in all subjects, the magnitude resembling that which occurred with oxytocin injection (USP) synthetic (Group VIII) rather than prepared oxytocin (Group VII). There was depression of the S-T segment in 2 of the 5 subjects.

Exercise, although producing a much more marked tachycardia than the oxytocic preparations, produced less flattening of the T wave and no change in the S-T segment in all 5 subjects. In all the unanesthetized subjects the pulse, blood pressure, and electrocardiogram returned to the baseline in from three to eight minutes.

Subjective Symptoms. *Group VII* (*prepared oxytocin*).—All 7 subjects experienced severe palpitations, throbbing of the head, warm flushes over the face and chest, slight dizziness, and a brackish or metallic taste. The 1 subject who developed a hypertension rather than a hypotension also experienced a "tightness" in the chest.

Group VIII (*oxytocin injection* [*USP*] *synthetic*).—All 7 subjects complained of the same symptoms as in Group VII. The symptoms, however, were not so severe except for a markedly throbbing headache in 1 subject which lasted for about one-half hour. The same subject who developed "tightness" in the chest in Group VII did so again.

Group IX (*vasopressin*).—All 5 subjects developed discomfort in the chest which varied in degree from a feeling of "mild constriction" to actual precordial pain. Three patients developed a "warmth" over the face and neck, 2 patients felt a "tingling" around the lips and nose, 2 patients experienced a "gnawing" visceral pain.

Group X (*oxytocin injection* [USP] *synthetic plus vasopressin*).—All 5 subjects had sensations which they stated were not so severe as in Group VII, but more severe than in Group VIII. They all had palpitations, throbbing of the head, warm flush over the face and chest, and a metallic taste. Two patients developed "precordial pressure," and 2 had slight abdominal pain. One female subject felt severe uterine contractions that were like menstrual cramps.

Comment

Both prepared oxytocin and oxytocin injection (USP) synthetic when administered in intravenous drip produced no significant changes in pulse or blood pressure except for a mild hypertension. Although no electrocardiographic studies were done in the patients who received oxytocin in intravenous drip, other investigators have shown that patients receiving oxytocin injection (USP) synthetic by intravenous drip do not show any electrocardiographic abnormalities.[20] When prepared oxytocin and oxytocin injection (USP) synthetic were given in concentrated single intravenous doses, they produced a marked but transient hypotension followed by a mild hypertension. The electrocardiograms taken showed T-wave and S-T segment changes following both drugs, but these were much greater with prepared oxytocin than with oxytocin injection (USP) synthetic despite the fact that similar hypotension and tachycardia were observed in both groups.

Bergquist and Kaiser[21] administered large intravenous doses of oxytocin injection (USP) synthetic to unanesthetized patients, and found electrocardiographic changes similar to those observed in this series. They concluded that the T-wave and S-T segment changes were related to the tachycardia, that is, on an ischemic basis secondary to tachycardia and poor coronary filling. In this study it was shown that exercise, although producing a much more marked tachycardia than the oxytocic preparations, resulted in less flattening of the T wave and in no change in the S-T segment. Tachycardia alone, therefore, is not responsible for the electrocardiographic changes.

Woodbury *et al.*[22] in 1944, was interested in the cardiovascular actions of the oxytocic principle of the posterior pituitary gland, and since oxytocin injection (USP) synthetic was not then available, he studied prepared oxytocin. The electrocardiograms he took showed a flattening of the T wave throughout the period of low blood pressure. Since this occurred as soon as the blood pressure started downward, Woodbury concluded that it indicated that the T-wave change was not a manifestation of reduced coronary blood flow secondary to hypotension but a weakening of the myocardium itself due to interference with its oxidative processes.

In this study the administration of prepared oxytocin and oxytocin injection (USP) synthetic resulted in a similar tachycardia and hypotension for each subject, but a much more marked electrocardiographic change resulted with the use of prepared oxytocin. In an effort to determine the reason for this difference, we combined synthetic oxytocin and synthetic vasopressin in the amounts in which they would be found in prepared oxytocin. The electrocardiographic changes, however, resembled in magnitude those observed with oxytocin injection (USP) synthetic rather than prepared oxytocin. Apparently the combination of synthetic oxytocin and vasopressin administered in this study cannot be equated (either in chemical composition or in quantity) with the naturally occurring substance.

Mayes and Shearman[23] studied prepared oxytocin and oxytocin injection (USP) synthetic and concluded that the cardiac changes observed were due to the oxytocic fraction of the posterior pituitary and not to the presence of minute quantities of pressor material in preparations such as prepared oxytocin. In this study the administration of 0.5 vasopressor units of vasopressin produced no T-wave or S-T segment changes. Other investigators, however, have demonstrated a difference in cardiovascular effects between the two drugs. Landesman and Mendelsohn[24] developed a technic for the study of the peripheral vascular bed in the uterine omentum of the rat, and concluded that prepared oxytocin produced a constrictor response ten times greater than that of oxytocin injection (USP) synthetic. It has also been demonstrated that, on occasion, commercial prepared oxytocin contains more than the designated maximum of 0.5 vasopressor units per milliliter. Reinberger and Mackey[25] reported that certain lots of prepared oxytocin were found to have 18 pressor units per milliliter. This is sufficient to produce significant coronary vasoconstriction. Krettek and Russum[9] reported a case in which prepared oxytocin was the agent responsible for coronary spasm and death. Death occurred during the induction of labor, in the absence of any other medication, and prior to any form of manipulation. The postmortem examination confirmed the clinical impression.

All of the oxytocic preparations studied here produced a mild rise in blood pressure after five minutes. McGinty[26] showed that prepared oxytocin, ergonovine, and methyl ergonovine all produced blood pressure elevations of approximately the same magnitude when administered intravenously during the third stage of labor. The rise in blood pressure was mild except in the case of the vasomotor labile or toxic patient, and, he concluded, that in these patients one should avoid the intravenous route except in instances of severe hemorrhage.

In this study ergonovine appeared to produce a slightly greater rise in blood pressure than methyl ergonovine. Groeber and Bishop[27] reviewed the literature comparing the pressor effects of ergonovine with methyl ergonovine and found that most studies yielded equivocal results. They then did a large double blind study and were unable to demonstrate a statistically significant difference in the responses to the two drugs.

Casady, Moore, and Bridenbaugh,[28] in a study of deliveries performed under continuous caudal block analgesia, found that the combined effect of a vasoconstrictor and an oxytocic drug given three to six hours apart led to severe hypertension in some cases. They believed that the synergistic and additive vasoconstrictive effects of a vasoconstrictor and an oxytocic drug, when both are given, may be far out of proportion to the expected reaction to separate administration of either of these drugs.

We have found that both prepared oxytocin and oxytocin injection (USP) synthetic, when administered in intravenous drip, produced no significant cardiovascular changes, but when employed in single large intravenous doses, they had many undesirable effects. Both prepared oxytocin and oxytocin injection (USP) synthetic should not be administered in large concentrated doses intravenously, but rather as a dilute infusion. Oxytocin injection (USP) synthetic is a safe drug to use in intravenous drip and with the anesthetic agents commonly used in obstetrics. Prepared oxytocin, however, even in dilute infusion, although it appeared safe from the results in this study, is not without hazard, since it has two potential dangers. It contains vasopressin and animal protein. Shock, therefore, can occur either from cardiac failure due to coronary spasm or from anaphylaxis. Since the occurrence of shock during prepared oxytocin infusion is very rare, it would require an extremely large series of cases studied over a long period of time to prove any clinical superiority of oxytocin injection (USP) synthetic as compared with prepared oxytocin. Ichiyanagi and Morris[19] studied the electrocardiographic effects of oxytocin injection (USP) synthetic and prepared oxytocin on cardiac rhythm during cyclopropane anesthesia. They found no difference in the incidence of cardiac irregularities between the two groups. Their study, however, was limited to patients in whom hypercapnia, hypoxia, and deep anesthesia were avoided. In our study the 1 case where profound arrhythmia occurred combined the elements of stress, (that is, severe hemorrhage), cyclopropane, and intravenous prepared oxytocin. The presence of stress[29,30] may play a very important role in the production of cardiac arrhythmias during the administration of prepared oxytocin, especially to the anesthetized patient.

Summary

1. Prepared oxytocin (Pitocin) and oxytocin injection (USP) synthetic, (Syntocinon), administered intravenously to anesthetized patients in a dilute infusion, produced no cardiovascular changes, but administered in concentrated doses, produced hypotension.

2. Prepared oxytocin and oxytocin injection (USP) synthetic, administered intravenously to unanesthetized subjects in concentrated doses, produced hypotension, tachycardia, and electrocardiographic changes. The electrocardiographic changes were more marked with prepared oxytocin than with oxytocin injection (USP) synthetic.

3. Vasopressin, 0.5 vasopressor units, administered intravenously to unanesthetized subjects, produced hypertension, bradycardia, and sinus arrhythmia.

4. Oxytocin injection (USP) synthetic and vasopressin, administered together intravenously to unanesthetized subjects, produced cardiovascular changes resembling those found with oxytocin injection (USP) synthetic rather than with prepared oxytocin.

5. Ergonovine and methyl ergonovine, administered intravenously to anesthetized patients, produced no significant cardiovascular changes, but all of the oxytocic preparations studied produced a mild rise in blood pressure from five to thirty minutes after administration.

6. Oxytocin injection (USP) synthetic is a safe drug when administered in dilute infusion, and it is compatible with the anesthetic agents commonly used in obstetrics. Prepared oxytocin, however, has the disadvantage of containing two contaminants: vasopressin and animal protein. The presence of stress may play an important role in the production of cardiac arrhythmias during the administration of intravenous prepared oxytocin, especially when the myocardium has been sensitized by an anesthetic agent.

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Discussion

Merel H. Harmel, M.D., *Brooklyn, New York.*—Dr. Lipton and her associates are to be congratulated on this carefully worked out clinical study which effectively supplements and supports the work of Morris[17] and others. All of these studies appear to establish the fact that the synthetic oxytocin, oxytocin injection (USP) synthetic, appears, under proper circumstances, to be a drug which may be used safely in the human being. On the basis of this study, it would appear that prepared oxytocin, which from time to time has been associated with untoward reactions, even death, is also a relatively safe drug. The basis for these untoward reactions has not been established by any investigation thus far and unfortunately, to quote the authors, prepared oxytocin "is not without hazard, since it has two potential dangers. It contains vasopressin and animal protein. Shock, therefore, can occur either from cardiac failure due to coronary spasm, or from anaphylaxis." This, however, can only be speculation. The demonstration that transient hypotension may occur following the single intravenous injection of the calculated dose of prepared oxytocin or oxytocin injection (USP) synthetic is important, for such hypotension in patients with hypercarbia and/or hemorrhage might lay the groundwork for an accident. The demonstration that the dilution of these drugs was not associated with the changes in rhythm or hypotension is significant and represents the fundamental contribution of this study to the safe use of these agents.

While the data do not reveal any new information regarding the reported electrocardiographic changes associated with the single intravenous injection of prepared oxytocin and oxytocin injection (USP) synthetic, the findings on conscious volunteers suggest that the electrocardiographic changes which do occur are probably related to specific drug activity rather than to tachycardia, as proposed by Bergquist and Kaiser.[21] Since these observations were made on conscious volunteers, one would wonder at the possible modifications which anesthesia and operation might impose on cardiac rhythm when these drugs are injected under the same circumstances. One gains the general conclusion from this report that oxytocin injection (USP) synthetic appears to be relatively safer than prepared oxytocin.

Medical Society of the State of New York
District Branch Meetings—1960–1961

District Branch	*Date*	*Place*
I	May, 1961	. . .
II	October 26 and 27, 1960	Grossinger
III & IV	September 14 and 15, 1960	Schroon Lake
V	Spring, 1960	. . .
VI	September 28, 1960	Ithaca
VII	October 13, 1960	Corning
VIII	September 29, 1960	Jamestown
IX	May, 1960	. . .

Clinical Experience with a New Saluretic Agent, Hydroflumethiazide

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Hydroflumethiazide (Saluron*) is one of the most recently introduced of the benzothiadiazine saluretic agents. In animals, it is more potent than chlorothiazide and is a weaker inhibitor of carbonic anhydrase. The latter action is probably responsible for the lessened excretion of potassium and bicarbonate that has been reported.[1,2]

Since these actions represent potential advantages over currently available preparations, it seemed worth while to undertake a clinical study of hydroflumethiazide.

Materials and Methods

WEIGHT STUDY.—Hydroflumethiazide in doses of 50 mg. twice daily was administered to 29 hospitalized and 45 clinic patients. Of these, 46 showed overt evidences of fluid retention, and 28 did not. No changes were made in the therapeutic regimen of any patient, except that in 35 cases of patients who had been taking 500 mg. of chlorothiazide twice daily, hydroflumethiazide was substituted.

Hospitalized patients were weighed daily, while the outpatients were weighed at weekly intervals. Weight changes were recorded as kilograms gained or lost over the weight on the morning the drug was begun.

COMPARISON WITH HYDROCHLOROTHIAZIDE.—In 6 of the cardiac patients with edema, hydroflumethiazide was discontinued after two weeks, and the patients were allowed to regain weight. They were subsequently given hydrochlorothiazide in comparable doses (50 mg. twice daily) and again followed for two weeks.

In addition, in 4 patients who apparently became refractory to the effects of hydroflumethiazide, hydrochlorothiazide was directly substituted in the same dose and without a diuretic-free interval. These patients then were followed for an additional two-to-three-week period.

ELECTROLYTE STUDIES.—Determinations of serum sodium, potassium, chloride, and carbon dioxide were made before the drug was begun and again after one week or more of therapy. The urinary excretion of sodium, potassium, and chloride also was measured. Besides the control specimen, one other urine was collected, usually during the first twenty-four hours of drug administration. In tabulating the serum or urinary sodium and chloride determinations, the patients were grouped according to their dietary intake of salt. This was not done for the potassium studies. In addition, the tabulations include only patients in whom both pre- and post-drug blood or urine samples were obtained.

PLASMA VOLUMES.—Plasma volumes were determined in 10 hospitalized patients by the use of I^{181}-labeled albumin. Carrier albumin was added to the solutions containing the I^{131} albumin. The patients were studied in the fasting state and before they arose in the morning. Control bloods were drawn, and fifteen minutes later another sample was obtained from the opposite arm. Only 2 of these patients had edema, and in these, additional samples were drawn at thirty and forty-five minutes.

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* Product of Bristol Laboratories, Syracuse, New York.

TABLE I.—TOTAL WEIGHT CHANGES ACCORDING TO TOTAL LENGTH OF TIME ON HYDROFLUMETHIAZIDE

	Patients with Fluid Retention		Patients without Fluid Retention	
Duration of Treatment	Number of Patients	Mean Weight Change (Kg.) and Standard Deviation	Number of Patients	Mean Weight Change (Kg.) and Standard Deviation
<1 week	8	− .65 ± 1.95	4	−2.0 ± 1.51
1 week	7	−2.74 ± 3.97	12	−1.01 ± 1.66
2 weeks	2	−4.7	3	−1.35
3 weeks	5	− .82 ± 1.6	...	...
4 weeks	5	−1.58 ± 3.16	5	−2.5 ± 3.61
5 weeks	1	− .9	1	− .9
6 weeks	4	−1.25 ± 1.45	...	...
7 weeks	...	...	...	...
8 weeks	4	− .95 ± 2.3	3	− .16 ± 1.1
>8 weeks	10	− .89 ± 2.59	...	...
TOTALS	46		28	

Plasma volumes were repeated after the patients had been receiving hydroflumethiazide for one week. Seven of these patients were subsequently given chlorothiazide, 500 mg. twice daily, and the plasma volumes were repeated in one week.

BLOOD PRESSURE EFFECTS.—At each visit the blood pressure was recorded in both the sitting and supine positions. These findings were expressed as mean arterial blood pressure, calculated as one-half the sum of the systolic and diastolic levels.

STUDIES OF TOXICITY.—Before and at least one week after hydroflumethiazide was begun, complete blood counts were performed in 24 patients. In 16 patients nonprotein nitrogen determinations were made before and during hydroflumethiazide administration. Ten individuals were similarly studied for bromsulfalein retention.

At each visit patients were questioned concerning possible side-effects, such as weakness, irregular heart action, gastrointestinal disturbances, muscular cramps, or pruritus.

Results

WEIGHT CHANGES.—Table I summarizes the total weight changes in the patients according to the length of time they received therapy. Fifty-four of the 74 patients lost weight initially on hydroflumethiazide, while 17 gained and 3 showed no change. The greatest single weight loss was 9.8 Kg. in one week in a diabetic patient with the Kimmelstiel-Wilson syndrome in whom diuresis had failed on a combination of chlorothiazide and mercurial agents.

Eleven of the 17 patients who gained weight while receiving hydroflumethiazide were severe cardiac cases with obvious fluid retention who had been receiving frequent injections of mercurial agents. The other 6 were either compensated hypertensives or "normals," and the greatest total weight gain in this latter group was 1 Kg.

In some of the outpatients who were followed for at least four weeks, there seemed to be a characteristic pattern of drug effect. Maximal weight loss was achieved in from two to four weeks, and thereafter weight was regained, although not necessarily to the control levels. Such a pattern is illustrated by Figure 1 which shows the weekly weight changes in 9 patients with heart failure. Similar effects with both chlorothiazide and hydrochlorothiazide have been observed by others as well as by ourselves.[3]

Four of these patients who at first lost weight but later began to regain weight while receiving hydroflumethiazide were switched directly to hydrochlorothiazide, 50 mg. twice a day. Diuresis was attained in 3 of these. Nine other outpatients who had been receiving chlorothiazide 500 mg. twice weekly prior to the beginning of this study and who had regained weight, were

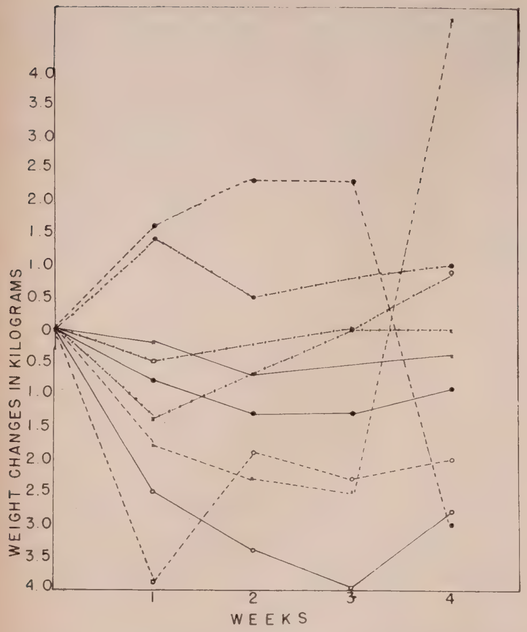

FIG. 1. Weekly weight changes in 9 cardiac patients with edema who were followed for four weeks.

given hydroflumethiazide, 50 mg. twice daily, and a weight loss was again achieved in 8.

COMPARISON WITH HYDROCHLOROTHIAZIDE.—Table II shows the mean weekly weight losses in the 6 edematous patients who received treatment with first hydroflumethiazide and then hydrochlorothiazide after being allowed to regain weight. The slight differences recorded are not statistically significant.

TABLE II.—MEAN WEEKLY WEIGHT CHANGES IN SIX CARDIAC PATIENTS TREATED WITH HYDROFLUMETHIAZIDE, THEN WITH HYDROCHLOROTHIAZIDE AFTER FIRST BEING ALLOWED TO REGAIN WEIGHT.

Drug	Mean Weight Loss (Kg.) and Standard Deviation 1 Week	Mean Weight Loss (Kg.) and Standard Deviation 2 Weeks	P Value
Hydroflumethiazide	– .9 ± 1.5	– .14 ± 1.1	<.1
Hydrochlorothiazide	−1.6 ± 1.2	−1.6 ± 1.5	<.1

ELECTROLYTE EXCRETION.—Electrolyte excretion data are summarized in Figure 2. Actually there is no statistically significant difference in the mean excretion of electrolytes before or during drug administration. However, 9 of the 12 individuals on low salt diets showed increased sodium excretion and 7 out of 10 showed increased chloride excretion.

Seven of the 10 patients on regular diets excreted more sodium and 5 of 9 excreted more chloride than they did during the control period. Eleven of the 20 patients on whom potassium studies were performed showed an increase in excretion.

OTHER DETERMINATIONS.—As can be seen from Table III, no statistically significant changes occurred in serum sodiums and chlorides during treatment with hydroflumethiazide. However, 9 of 12 patients

TABLE III.—CHANGES IN SERUM ELECTROLYTES, HEMATOCRITS, NONPROTEIN NITROGEN AND BROMSULPHALEIN OCCURRING DURING TREATMENT

	Control							During Hydroflumethiazide Administration						
	Sodium mEq. per L.	Potassium mEq. per L.	Chlorine mEq. per L.	Carbon Dioxide mEq. per L.	Hematocrit Vol. Per Cent	Nonprotein Nitrogen Mg. Per Cent	Bromsulphalein Per Cent Retention 45 minutes	Sodium mEq. per L.	Potassium mEq. per L.	Chlorine mEq. per L.	Carbon Dioxide mEq. per L.	Hematocrit Vol. Per Cent	Nonprotein Nitrogen Mg. Per Cent	Bromsulphalein Per Cent 45 minutes
Low salt diet	138.3 ± 3.3 (12)*	. . .	104 ± 7.9 (10)*	. . .	. . .	. . .	. . .	137.8 ± 3.5	. . .	100.2 ± 9.1	. . .	. . .	. . .	. . .
Regular salt diet	136.2 ± 4.1 (6)*	. . .	110.7 ± 6.9 (12)*	. . .	. . .	. . .	. . .	138.5 ± 4.1	. . .	109 ± 11	. . .	. . .	. . .	. . .
Both diets	. . .	4.5 ± .56 (30)*	. . .	27.5 ± 3.9 (23)*	43 ± 5 (24)*	43.5 ± 9 (16)*	5.7 ± 7.8 (10)*	. . .	4.13 ± 5.6	. . .	28.3 ± 2.7	45 ± 4.4	49.6 ± 12	10.1 ± 7.9

* Number of patients studied in each group.

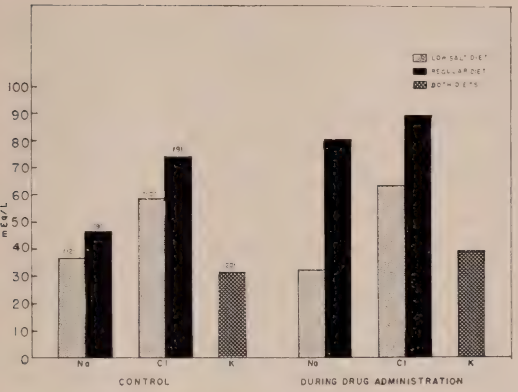

FIG. 2. Mean electrolyte excretion in patients before and twenty-four hours after first drug administration. Figures above bars in control determinations refer to number of patients in each group. Patients on whom potassium determinations were performed were not separated according to dietary salt intake.

on low salt diets and 5 of 12 on regular diets did exhibit decreases in chloride concentration.

The changes in the potassium levels are statistically significant, and 23 of 30 patients showed slight decreases. In 6 of these, levels between 3.5 and 3.8 mEq. per L. were recorded.

The mean carbon dioxide values are essentially the same before and during the treatment, although 14 of 23 patients showed slight but definite increases (2 to 3 mEq. per L.). The hematocrit, white blood cell count, and differentials showed no essential change.

The mean values for the nonprotein nitrogen determinations also are not significantly different. However, the nonprotein nitrogen rose in 8 of 16 patients. Only 1 of these patients was normal before treatment; the other 7 had elevated nonprotein nitrogen to begin with and it became further elevated while the patients were receiving hydroflumethiazide.

Significant changes in mean bromsulphalein retention were not observed. However, the test showed abnormal results in 2 individuals during the period of drug administration.

No significant directional changes occurred in plasma volumes. Three patients showed drops of 250 cc. or more, while 2 showed rises of equal amounts, and the rest exhibited no particular change. Essentially the same findings were observed after one week of chlorothiazide therapy. These results are summarized in Table IV.

BLOOD PRESSURE.—The antihypertensive actions of hydroflumethiazide will form the subject of another report.[4] However, in 26 hypertensive outpatients who were followed for approximately twelve weeks, the average fall in the mean blood pressure was 12 mm. Hg. Sixteen of these previously had been receiving chlorothiazide or its analogue, and in 6 of these there was a further drop in blood pressure when they received hydroflumethiazide. In 9 others, the original blood pressure fall was maintained.

TABLE IV.—CHANGES IN PLASMA VOLUME, WEIGHT, AND BLOOD PRESSURE IN PATIENTS BEFORE AND AFTER SEVEN DAYS OF HYDROFLUMETHIAZIDE 100 MG. DAILY AND CHLOROTHIAZIDE 1 GM. DAILY

	Control			Hydroflumethiazide			Chlorothiazide		
Patient No.	Plasma Volume (Cc.)	Weight (Kg.)	Blood Pressure (Mm. Hg)	Plasma Volume (Cc.)	Weight (Kg.)	Blood Pressure (Mm. Hg)	Plasma Volume (Cc.)	Weight (Kg.)	Blood Pressure (Mm. Hg)
1*	2,863	75.2	140/80	2,792	74.5	102/72	2,815	74.3	118/70
2	2,812	85.9	144/84	3,149	82.7	140/90	2,912	82.0	180/70
3	2,788	65.9	108/64	2,571	65.0	106/72	2,557	63.9	104/60
4	2,406	59.1	102/70	2,352	59.1	110/70	...	...	...
5	2,342	56.1	140/116	1,994	55.0	120/80	2,417	55.7	140/102
6*	3,044	80.9	150/90	3,558	78.2	140/80	3,653	77.3	140/80
7	2,872	54.1	144/90	2,401	52.7	178/78	2,293	52.7	110/74
8	2,570	60.7	138/80	2,538	60.9	106/84	2,567	64.1	120/104
9	3,805	65.0	138/90	3,730	63.9	130/80	...	...	...
10	2,601	81.8	120/70	2,302	80.5	120/64	...	...	...

* Fluid retention.

TABLE V.—SIDE-EFFECTS ENCOUNTERED IN HYDROFLUMETHIAZIDE THERAPY

Side-Effects	Number of Patients
Weakness	9
Abdominal cramps	4
Leg cramps	2
Pruritus	1
Anorexia	1
Ventricular ectopics	4
Bradycardia	2
Prolonged P-R interval	1
Auricular fibrillation with right bundle branch block	1
TOTAL	25

SIDE-EFFECTS.—Side-effects are listed in Table V. In the 1 patient with anorexia and in another with leg cramps, the complaints were severe enough to require discontinuation of the drug.

Six of the 8 patients who developed abnormalities in the electrocardiogram or cardiac rhythm were receiving digitalis. Discontinuation of hydroflumethiazide and oral administration of potassium chloride resulted in prompt return to normal.

Comment

Hydroflumethiazide is an effective and potent saluretic agent. Following its administration, there are excreted increased amounts of water, sodium, chloride, and potassium, although the loss of the latter is relatively small. No significant changes in serum sodium and bicarbonate occur, but there is a trend toward lower chloride and potassium values. These effects have been described by others[5] and are similar to those reported for hydrochlorothiazide.[6] In our experience, the effective dose of the two drugs and the expected weight loss are quite similar.

It is of interest that some patients lose more weight initially, regain some of it, and then level off. Our data would suggest that refractoriness to members of the benzothiadiazine group does occur. Furthermore, the pharmacologic actions of hydroflumethiazide and chlorothiazide and its analogues must differ in certain respects, since administration of the fluoro-preparation will cause diuresis and blood pressure drop in some patients who have ceased to respond to the chloro drugs. The reverse also is true.

It would seem that in patients who have refractory reactions to one of the benzothiadiazine drugs, switching to another member of the group may be attended by renewed effectiveness.

The insignificant changes in plasma volume in our study are in accordance with those recently reported for chlorothiazide.[7] It is possible that greater changes would have occurred if the follow-up study had been performed earlier than one week. Still, these studies raise speculation concerning the mechanism of antihypertensive effects of these drugs, since many patients will exhibit significant blood pressure drops in one week. Therefore, factors other than decreased plasma volume may be responsible for the antihypertensive activity.

Hydroflumethiazide is well tolerated, and for the most part, side-effects are few and minor. More than usual caution should be exercised in administering the drug to patients with impaired renal or hepatic function or to individuals receiving digitalis. The hazards of a rising nonprotein nitrogen or of digitalis toxicity, although infrequent, are probably real ones just as they are with other benzothiadiazines. In our hands, discontinuation of the hydroflumethiazide and/or the administration of potassium chloride resulted in prompt reversal of the digitalis intoxication.

Conclusions

1. Hydroflumethiazide is a potent, relatively safe oral diuretic and antihypertensive agent. The dosage is approximately one-tenth that of chlorothiazide.

2. It effects an increased excretion of water, sodium, chloride, and potassium. Serum electrolytes are essentially unchanged, although there is a trend toward

lower chloride and potassium values.

3. Refractoriness to this and similar drugs may occur. Substitution of another drug from the benzothiadiazine group may result in renewed diuresis or blood pressure fall, thus suggesting a slightly different pharmacologic action.

4. The antihypertensive action is not solely explained by changes in plasma volume, since such did not occur after one week.

5. Use of the drug may be attended by an increase in bromsulphalein retention or by a rise in nonprotein nitrogen in patients with renal disease.

6. Signs of digitalis toxicity may be observed, and administration of potassium chloride is of value in the treatment of this condition.

Acknowledgment.—The authors wish to acknowledge the technical assistance of Miss Madeline Tuori, R.N.

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ANNUAL CONVENTION

Medical Society of the State of New York
War Memorial Auditorium, Rochester

SCIENTIFIC EXHIBITS

Applications for space for the scientific exhibits should be made directly to the Chairman of the Scientific Exhibits Subcommittee of the Convention Committee:

William L. Watson, M.D.
340 East 72nd Street
New York 21, New York

The Annual Convention will be held May 8 to 12, 1961, at the War Memorial Auditorium, Rochester.

No applications can be considered after January 1, 1961.

There will be two groups of awards:

Group I: Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.

Group II: Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of presentation and correlation of facts.

Comparison of Diatrizoate Methylglucamine, Sodium Acetrizoate, and Diatrizoate Sodium in Cerebral Angiography

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THE value of cerebral angiography in the diagnosis of an intracranial pathologic condition is well established. Its usefulness in the individual case is determined by several factors. Among them the degree of contrast and of safety of the radiopaque medium is decisive. An adequate contrast medium should demonstrate the intermediate and venous phases of the cerebral circulation as well as of the arterial phase.

During recent months we have used a 60 per cent solution of diatrizoate methylglucamine (3,5-diacetamido-2,4,6-triiodobenzoic acid) (Renografin) for cerebral angiography. The results stimulated us to compare the results of the present examination with those performed with 50 per cent of sodium acetrizoate (3-acetamido-2,4,6-triiodobenzoate) (Urokon) and 50 per cent of diatrizoate sodium (3,5-diacetamido-2,4,6-triiodobenzoate) (Hypaque).

The case material of this study represents a cross section of an average neurosurgical practice: brain tumors, cerebrovascular disorders, traumatic problems, and others. The majority of the examinations were performed under local anesthesia, using the percutaneous technic. An 18-gauge needle was connected with the syringe by a plastic tubing. The contrast media were injected as rapidly as the viscosity permitted. The films were exposed at about zero, two, and four seconds following injection. The radiologic technic was identical in both series. Exposure was performed on the Schoenander table.

Fifty consecutive diatrizoate methylglucamine angiograms were compared with 50 angiograms using sodium acetrizoate and 10 angiograms using diatrizoate sodium. The diatrizoate sodium examinations were done on patients whose condition required bilateral angiography. In these cases one side was injected with diatrizoate methylglucamine and the other side was injected with diatrizoate sodium. Eight cc. of 60 per cent diatrizoate methylglucamine, 8 cc. of 30 per cent diatrizoate sodium, and 12 cc. of 30 per cent sodium acetrizoate were used per injection. The arterial, intermediate, and venous phases of each examination were evaluated by a radiologist and a neurosurgeon separately according to a point system: 4, very good; 3, good; 2, satisfactory; and 1, unsatisfactory.

The vascular opacification of the angiogram obtained with sodium acetrizoate was found to be slightly less dense than that of those angiograms using diatrizoate methylglucamine. This resulted in an assessment averaging one point higher in favor of the latter medium. When the small number of diatrizoate sodium angiograms were compared with the diatrizoate methylglucamine angiograms, the radiopacity of both media was of equal degree in the arterial and intermediate phases. In the venous phase the degree of radiopacity achieved with diatrizoate methylglucamine appeared slightly higher than that encountered with diatrizoate sodium. This difference might be explained on the basis of the higher viscosity of diatrizoate methylglucamine resulting in a slightly lessened dilution of the medium during the

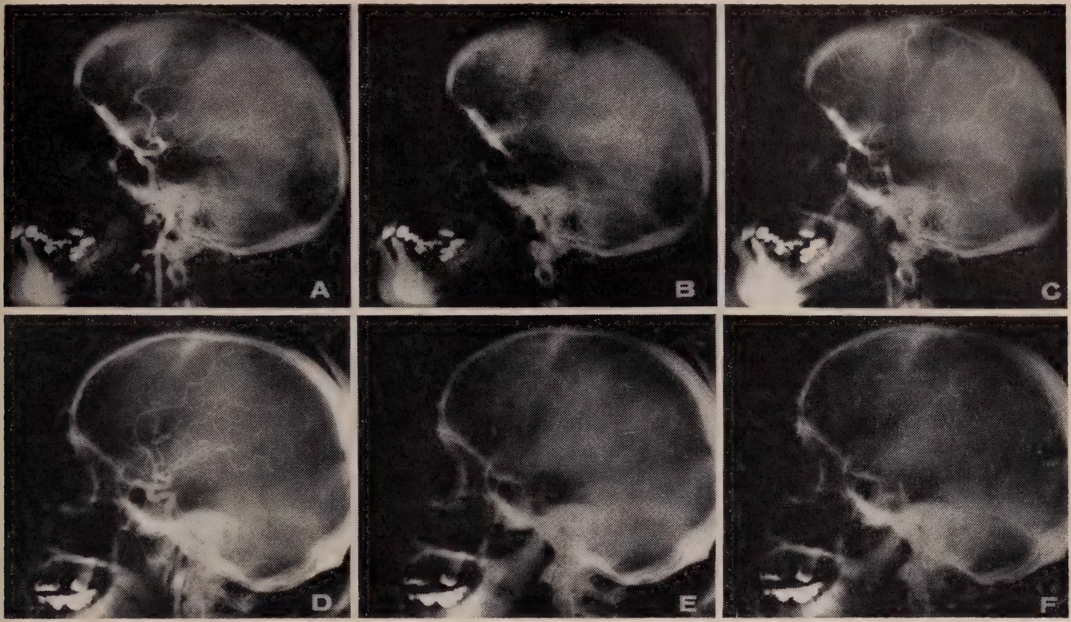

FIG. 1. (*A*) and (*D*) depict the arterial phase; (*B*) and (*E*) depict the intermediate phase; (*C*) and (*F*) depict the venous phase. The angiogram demonstrated in (*A*), (*B*), and (*C*) was performed with diatrizoate methylglucamine; the angiogram demonstrated in (*D*), (*E*), and (*F*) was done with diatrizoate sodium. Both angiograms are approximately equivalent in density and were assessed with the note "very good." Note that the density of the veins approximates the density of the medium-sized arteries. The venous phase of the diatrizoate sodium study is slightly less distinct than that of the diatrizoate methylglucamine study. This is attributed to the lesser viscosity of diatrizoate sodium. This minimal difference was encountered in several instances; otherwise, there was no radiographic difference between the two media.

capillary phase (Fig. 1). In addition every patient was observed specifically for expression or movement during the injection. Diatrizoate methylglucamine caused little or no discomfort at injection. This facilitates radiography markedly in studies performed under local anesthesia. An injection of sodium acetrizoate and, to a lesser degree, of diatrizoate sodium was not infrequently followed by a marked movement of the head and/or a rather violent expression of pain.

Among the 50 examinations performed with diatrizoate methylglucamine we had two complications: one transient hemiparesis and one convulsion of the grand mal type, both in patients with ruptured intracranial aneurysms. The second patient also had seizures prior to the injection of the angiogram. Among the 10 diatrizoate sodium cases, we observed 2 cases of petechial eruptions of the ipsilateral side of the face without neurologic symptoms. The same patient who had a temporary hemiparesis after injection with diatrizoate methylglucamine developed coma with Cheyne-Stokes respiration after an injection of diatrizoate sodium performed under general anesthesia. Unfortunately we do not have an adequate record of the complications encountered with the sodium acetrizoate series.

Summary

The radiographic contrast and the tolerance of diatrizoate methylglucamine (Renografin), sodium acetrizoate (Urokon), and diatrizoate sodium (Hypaque) were compared. The angiograms performed with 8 cc. of diatrizoate methylglucamine in a 60 per cent solution were found to be of a higher contrast when compared with those done with 12 cc. of 30 per cent sodium acetrizoate, particularly in the

venous phase. The arterial and arteriolar phases of the angiograms performed with diatrizoate methylglucamine and diatrizoate sodium were found of equal contrast but the venous phase of the diatrizoate methylglucamine studies showed slightly higher contrast. The lack of movement following injection and the little discomfort experienced by the patient represent a favorable feature of diatrizoate methylglucamine. This proved to be of particular value in studies performed under local anesthesia. The incidence of complications was low.

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Is There a Doctor in the House?

In a teaching hospital the term "doctor" can often be rightfully applied to many persons whose work and academic standing is not primarily concerned with the practice of medicine, surgery, and dentistry. Many of these are the men and women who hold doctoral degrees in physics, biology, chemistry, and other sciences which make them an important part of the medical center team.

However, other academic degrees and ranks also entitle their holders to refer to themselves as doctors. Here are some;

D.Agr.—Doctor of Agriculture
D.Cn.L.—Doctor of Canon Law
D.C.S.—Doctor of Commercial Sciences
D.C.T.—Doctor of Christian Theology
D.D.—Doctor of Divinity
D.Econ.—Doctor of Economics
D.Ed.—Doctor of Education
D.Eng.—Doctor of Engineering
D.es Sc.—Docteur es Sciences
D.F.A.—Doctor of Fine Arts.
D.H.L.—Doctor of Hebrew Literature
D.Hy.—Doctor of Hygiene
D. Iur. Utr.—Doctor of both Civil and Cannon Law
D.Lit(t).—Doctor of Letters; Doctor of Literature
D.L.S.—Doctor of Library Science
D.Mus.—Doctor of Music
D.Math.Sc—Doctor of Mathematical Science
D.Paed.—Doctor of Paedagogy
D.Phil.—Doctor of Philosophy
Dr.Jur.—Doctor of Laws
Dr. rer. Nat.—Doctor of Natural Science
Dr. rer. Pol.—Doctor of Political Science
D.Sc.—Doctor of Science
D.Sc.A.—Doctor of Applied Science
D.Sc.Pol.—Doctor of Political Sciences
D.S.T.—Doctor of Sacred Theology
D.Theol.—Doctor of Theology
D.V.M.—Doctor of Veterinary Medicine
D.V.S.—Doctor of Veterinary Surgery
E.D.—Doctor of Engineering (U.S.A.)
Ed.D.—Doctor of Education
J.S.D.—Doctor of Juristic Science
J.U.D.—Doctor of both Civil and Cannon Law
Ju.D.—Doctor of Law
L.H.D.—Doctor of Humane Letters
Litt.D.—Doctor of Letters
LL.D.—Doctor of Laws
Ph.D.—Doctor of Pedagogy
Ph.D.—Doctor of Philosophy
Sc.D.—Doctor of Science
S.C.D.—Doctor of Commercial Science
S.J.D.—Doctor of Juristic Science
S.T.D.—Doctor of Sacred Theology
Th.D.—Doctor of Theology
D.Ch.—Doctor of Chiropody
D.S.C.—Doctor of Surgical Chiropody

—*The Stethoscope, Columbia-Presbyterian Medical Center*

proceedings

NEW YORK ALLERGY SOCIETY

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SHEPPARD SIEGAL, M.D., *Editors*

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SCIENTIFIC SESSION

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Immunologic Aspects of Rheumatoid Diseases

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Hematologic Disorders Due to Immune Mechanisms

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S. SENIOR SACK, M.D.: The two speakers of the evening come from the same institution. Both men are expert in their respective fields, hematology and arthritic disease, areas in which we allergists should be intensely interested. Our first speaker is Harry Bartfeld, M.D.

Immunologic Aspects of Rheumatoid Disease

HARRY BARTFELD, M.D.: Rheumatoid arthritis should really be called rheumatoid disease, since it has long been known to be a systemic, self-perpetuating, inflammatory disorder. In the past decade more attention has been paid to its nonarthritic manifestations. Its specific "granuloma," the subcutaneous nodule, has been found in tissues of the heart, lungs, synovial membrane, and sclera. Diffuse arteritis can also be present.

The serologic test for rheumatoid arthritis enhanced its status as a general one. In fact, an anarthritic rheumatoid disease has been described on the basis of a test showing positive results and the presence of a subcutaneous nodule. In England a syndrome of a nodular fibrosis of the lungs in miners has been described. When the lungs were sectioned, some of the granulomas were similar in histology to the classical subcutaneous nodule. Half of these patients had positive results in tests for rheumatoid factors, while not all patients had joint changes.

THE IMPETUS TO THE STUDY OF RHEUMATOID DISEASE.—The impetus to the study of rheumatoid disease really began when a serologic test was established for it. The history of the serologic test began in 1929 when it was found that the sera of 60 per cent of rheumatoid arthritis patients could agglutinate suspensions of hemolytic streptococci in titers of 1:160 or more. This is a significant titer and rarely found unless frank streptococcus infection is present. Many of these patients did not have fever or leukocytosis, and cultures of blood or synovial fluid showed negative results for streptococci. Some physicians at that time treated rheumatoid arthritis with streptococcus vaccine with little effect. Over the next twenty years investigators found that rheumatoid serum could also agglutinate pneumococci and even collodion suspensions, and it was concluded that such sera had physicochemical properties that affected the stability of colloidal suspensions.

The matter rested until 1948 when a technician in New York City developed rickettsialpox while working with the organism in the laboratory. It was found that complement fixation tests with the patient's convalescent serum showed agglutination of sensitized sheep cells in very high titer. This patient also had severe rheumatoid arthritis. Following this lead, the investigators found that the same was true of sera from other rheumatoid patients. Just before publication of these results, it was found that Swedish workers had reported in 1940 that sheep red blood cells sensitized with subagglutinating doses of rabbit antisheep red blood sera gave significant agglutination titers with sera of patients having rheumatoid arthritis. It is interesting that much of the early and later work in this field was done in New York City and in Sweden. Other workers modified the basic test. Thus, instead of rabbit hemolysin, human Fraction II, which is gamma globulin, could be absorbed on tanned sheep cells to give such a system. Also latex or bentonite particles coated with Fraction II could be used.

Another system is Rh positive cells sensitized with anti Rh cell serum. A direct precipitin test can be done with heat-aggregated Fraction II and the patient's serum. In essence the mechanism involved in these tests is a reaction between rheumatoid factor in the patient's serum and human or animal gamma globulin. This is facilitated by particulate matter such as red blood cells, latex particles, or bacteria. These tests show positive results in about 70 per cent of the patients having active rheumatoid arthritis and in even a higher percentage when the more refined technics of euglobulin agglutination and inhibition are used. The rheumatoid factors are absent early in the disease, and the tests generally indicate more positive results with a longer duration of disease and are related to some extent to severity and joint involvement. There is no relation of the titer to activity or steroid therapy. In some cases, after complete extended remission, tests may indicate negative results. On the whole, patients with tests showing positive results have a less favorable prognosis.

IDENTIFICATION OF THE RHEUMATOID FACTOR.—Attention now turned to identification of the rheumatoid factor in hopes of finding its relation to the disease itself. It was demonstrated by various methods of characterization involving electrophoresis, chromatography, and the ultracentrifuge that it was a gamma globulin moving with the fast fraction of gamma, and that it was a macroglobulin of 19 Svedberg units of sedimentation constant with a molecular weight of approximately 1 million. The material it reacted with was slow-moving gamma II globulin which has a sedimentation constant of 7 Svedberg units and a molecular weight of 150,000. The reactant could be gamma globulin of human or animal origin, but before it reacted with rheumatoid factor it had to be aggregated by heating or changed by interacting with a specific antigen as in the sensitized sheep cell or human anti-Rh cell tests.

It was found in some severe rheumatoid patients that the rheumatoid factor could exist as a soluble circulating complex with 7 Svedberg units of gamma globulin. This complex has a sedimentation constant of 22 Svedberg units, gives a positive test result in vitro, and can be broken down to components of 19 and 7 Svedberg units by treatment with sulfhydryl compounds. Thus, it was easy to postulate that such a complex could be deposited in the synovial membranes and in other tissues in the rheumatoid patient and simulate the pathogenesis of the arteritic lesions of serum sickness. Those workers who suggested that the rheumatoid factor might be a true antibody also pointed out that while many of the natural and acquired human immune gamma globulin bodies are of 7 Svedburg unit size, some are also macrogammaglobulins. Among these are the isoagglutinins, heterophil antibodies, cold agglutinins, typhoid O antibody, leukagglutinins, Rh_0 saline agglutinins, thyroid antibody, Wassermann reagin, properdan, lupus antibodies, and conglutinin. Some of these also exist as 7-Svedberg unit antibodies, such as isoagglutinins, typhoid, thyroid, and lupus antibodies. I should add that some work has been done showing that the atopic reagins are 16-Svedberg unit macroglobulins.

Further evidence favoring hypersensitivity in rheumatoid arthritis includes the occurrence of lymphadenopathy and plasmacytosis, and it has been shown that these cells produce antibodies. In addition, as for many true antibodies, the rheumatoid factor has been shown to be heterogeneous. At this time four rheumatoid macroglobulins have been identified. It has been argued that since the rheumatoid factor reacts with nonspecific gamma globulin, it is not a true antibody, but human antithyroid antibody is similarly nonspecific with various species of thyroglobulin. Others have been able to show, with fluorescent antibody globulin, that gamma globulin was present in rheumatoid lesions. Finally, with fluorescent Fraction II, it was demonstrated that the rheumatoid factor was present in the plasma cells of the spleen, lymph nodes, subcutaneous nodules, and synovial membrane of rheumatoid patients.

On the other hand, other studies cast doubt on the significance of this rheumatoid factor. In the past four years it has been shown that typical rheumatoid arthritis is present in about 30 per cent of the patients having congenital and acquired agammaglobulinemia and hypogammaglobulinemia. This is over five times the expected incidence of this disease in a general population. These patients do not have plasma cells, do not produce circulating gamma globulin, and have no resistance to bacterial infection. Some of these rheumatoid patients have subcutaneous nodules. Exhaustive tests for the rheumatoid factor indicate negative results. The patients do have delayed skin reactions and resistance to virus diseases. I shall comment on this later. In addition, in this group the following have been reported: diffuse, fibrinoid vascular disease, scleroderma, and dermatomyositis. It has also been found that tests for the rheumatoid factor did not indicate specific results. Tests showing positive results are reported in 1 per cent of the normal controls; 5 per cent of a hospital population; and from 10 to 30 per cent of patients with liver, lung, and kidney disease, cancer, and infections, especially when secondary macroglobulinemia was associated. The tests showed positive results in half the cases having primary macroglobulinemia.

The Ouchterlony gel diffusion technic can be used to illustrate graphically the identity, nonidentity, and cross reactions of antigens and precipitating antisera. Also, the shape and position of the precipitin lines can help differentiate between macroglobulins and 7-Svedburg unit gamma globulin. With this technic it has been found that lines of identity appear with seropositive rheumatoid and nonrheumatoid sera when tested against antimacroglobulin sera and heat-aggregated Fraction II. Also, using rabbit antirheumatoid eugloblin serum, it has been shown that seropositive rheumatoid and nonrheumatoid patients show similar precipitin lines. It has been reported that reacting 19-Svedberg unit globulin was found in the plasma cells of a nonrheumatoid seropositive patient's lymph nodes and spleen when they were treated with fluorescent Fraction II.

Finally, studies by various workers in America and England have never demonstrated any influence of the rheumatoid factor in producing or changing the course of the disease. Weekly transfusions of high titer rheumatoid blood given to volunteers over a period of six weeks, and even when a second stimulating transfusion was given some weeks later, caused no reaction of any kind. The rheumatoid factor disappeared like any homologous protein with a half-life of six days. It did not act as a foreign protein, and no antibodies to it were produced in the volunteers. In addition, transfusions of such blood into rheumatoid patients did not aggravate their disease, nor did the injection rheumatoid factors interarticularly. An injection of the rheumatoid factor or aggregated gamma globulin subcutaneously produced no nodules in rheumatoid or nonrheumatoid patients. The transfusion of blood cells of rheumatoid into nonrheumatoid patients had no effect. The injection of a rheumatoid factor into monkeys did not produce the disease.

Certain criteria have been established for auto-immune diseases which, to some extent, follow Koch's postulates. The rheumatoid factor does not satisfy all of these criteria.

At this time it is obvious to most workers in the field that the circulating rheumatoid factor is not related either to its etiology or to pathogenesis. It generally appears weeks and months after the disease is established, and similar substances appear in patients with no rheumatoid disease. Some workers have reported tissue factors that give weak immunologic tests with rheumatoid sera, but these tests were not completely specific.

It has been suggested that production of the rheumatoid factor may follow a primary insult to the patient that results in metabolic change with the production of macroglobulins of dysproteinemic nature, similar to what happens in Waldenström's primary macroglobulinemia and in secondary macroglobulinemia. On the other hand, while Waldenström did not say the macroglobulin he discovered was an antibody, he did feel that the disease was the result of continued infection, possibly a virus that causes a hyperergic immune response in the patient. Thus, in rheumatoid disease, the appearance of the rheumatoid factor may follow a primary insult of infectious nature, bacterial or viral, causing the disease directly, or it may result in delayed sensitivity and subsequent disease. It has been pointed out that patients having agammaglobulinemia or hypogammaglobulinemia and rheumatoid disease or other collagen syndromes have no circulating antibody and no rheumatoid factor. These patients are very susceptible to nonviral infections, and their systems do produce delayed or cellular sensitivity. Thus, if the cause of rheumatoid disease is due to hypersensitivity, it would appear to be that of delayed sensitivity, since these patients do not produce gamma globulin and circulating antibody. By the same token, rheumatoid patients who can produce gamma globulin and circulating antibody could produce the rheumatoid factor as a secondary phenomenon.

Thus far, intensive search of rheumatoid tissues for causative infectious agents has been without reward. Assuming that the disease is due to an unidentified infectious agent with or without associating hypersensitivity, the presence of the rheumatoid factor that reacts with the patient's gamma globulin could be explained by the possibility of the infectious agent having antigenic groups in common with gamma globulin. The antibody produced to the infectious agent could thus react with gamma globulin. In this respect it has been shown that Type 4 pneumococcus has an antigenic group in common with the human group A, and in such patients false blood typing has been shown. In human beings we do know that some infectious agents can cause vascular disease.

It is important to realize that since the rheumatoid factor of a patient can react with its own gamma globulin, we must accept the fact that if it were a true antibody, it would be produced to its own self. This is generally not acceptable. A primary insult, however, could modify gamma globulin so it would not be recognizable as self by the immunologic mechanism. It has been shown in Hashimoto's disease that thyroglobulin, which is stored in the gland and normally is not present in the circulation, enters the circulation. Thyroglobulin is not recognizable as self to the immune mechanism, and thyroid antibodies are produced by the host to its own thryoglobulin.

An exciting theory for auto-immune diseases is the de novo clone theory. Here in the replacement of cells by the organism a single cell arises that is genetically different from the host that produced it, and this subdivides to give a colony or clone of cells. Assuming that the new cell is a lymphoblast or plasmablast, or their pleuripotent precursors, the colony recognizes the host as different and may thus produce antibodies to the host's own tissues and gamma globulins and thus cause and perpetuate an auto-immune disease.

Comment.—It must be remembered that in diseases of connective tissue, especially rheumatoid disease and systemic lupus, there is a strong familial, if not genetic, background. In members of the same family, rheumatoid arthritis, systemic lupus, hypogammaglobulinemia, and the positive rheumatoid factor test are not uncommon. This has also been seen in relatives of rheumatoid patients who have agammaglobulinemia or hypogammaglobulinemia.

It has been suggested that in agammaglobulinemia and rheumatoid disease, primitive mesenchymal cells may be present. Whether or not these are determined genetically is not known at present. Some investigators who feel that the pathogenesis of rheumatoid disease is on an auto-immune basis have proposed that when this system is activated, immature or cellular antibodies are produced, resulting in delayed sensitivity that causes and perpetuates the disease.

This is the current concept of the immunologic background of rheumatoid disease.

Dr. Sack: Thank you, Dr. Bartfeld. Our second speaker will be Leo Weiner, M.D.

Hematologic Disorders Due to Immune Mechanisms

Leo Weiner, M.D.: It is becoming more evident that many of our hematologic disorders have an immunologic basis. Many of these conditions were recognized many years ago; many of them were suspected of having an immunologic basis, but it is only more recently with some of our finer technics that we have been able to demonstrate some of the processes of immunity that prevail in these conditions.

These hematologic disorders run through the entire spectrum of hematologic conditions. For example, we find that bleeding problems, diseases of the red blood cells, and diseases of the white blood cells may be immunologic disorders, and there is even a possibility that the same is true of much of our neoplastic disease.

If we turn our attention to the bleeding problems that are encountered, in normal hemostatic mechanisms we feel that there are three basic mechanisms involved: a vascular mechanism, a platelet mechanism, and a coagulative mechanism.

The Vascular Mechanism.—An example of a disorder of the vascular mechanism is

Henoch's purpura, also known as allergic purpura. It is generally seen in children and manifests itself with purpuric manifestations, gastrointestinal bleeding, hematuria, and occasionally nephritis. One interesting aspect of the course of the skin manifestations is that it begins as an urticarious lesion, then goes on to a papular lesion, and then becomes purpuric in character. The pathologic basis of this disease appears to be a vasculitis or an angiitis. What apparently happens is that there is an inflammatory reaction in the small vessels, the precapillaries, which leads first to the extravasation of plasma and later to the extravasation of the formed elements, resulting in the purpuric reaction.

Sometime ago Japanese investigators produced a fairly classical lesion of this sort by injecting endothelium into another test animal forming an antiserum against the endothelium, and then injecting the endothelium into the experimental animal. More recently it has been shown that patients with Henoch's purpura have sera which contain an antibody with the capacity of forming a precipitin reaction with endothelium antigen, while normal control sera do not.

This evidence seems to support the concept of a vascular sensitization, an antibody being produced against endothelium in Henoch's purpura. Many antigens have been incriminated, including drugs such as quinidine, bacterial and viral infection, foods. Exposure to antigen is followed by an allergic "build up," followed by an explosive purpuric reaction to it.

Platelet Sensitization.—We may also have platelet sensitization, an example of which is the so-called "idiopathic" thrombocytopenic purpura. This is a rather serious disease, occurring primarily in younger people. These people have a fall in their platelet counts to values of 30,000 from a normal count of about 250,000. As a result of this, they develop bleeding manifestations, such as petechial eruptions, gastrointestinal bleeding, and epistaxis.

About ten years ago there was considerable controversy about the etiology of this condition, and Harrington in St. Louis took some of the blood of a patient who had thrombocytopenic purpura and injected it into himself. He had a prompt fall in his own platelet count and developed marked bleeding manifestations, including a cerebral hemorrhage. However, he recovered without sequelae.

This experience suggested that one was dealing with some sort of serum or plasma factor which was responsible for idiopathic thrombocytopenic purpura, and the search was on to see whether this could be demonstrated in the test tube. It has been shown subsequently that the serum of from 50 to 60 per cent of patients with idiopathic thrombocytopenic purpura causes agglutination and subsequent lysis of platelets, suggesting that these sera contain an antiplatelet antibody.

I mentioned that quinidine produces Henoch's purpura. Many other drugs have done the same thing. These drugs include sedormid, barbiturates, para-aminosalicylic acid, and many others. One can frequently demonstrate an antibody in vitro in the following manner.

Platelets exposed to the serum of a patient who has recovered from Henoch's purpura are unaffected. Platelets exposed to the drug are unaffected. However, if the serum is incubated with the drug and then the platelets are added, the platelets agglutinate and lyse. Thus the suggested mechanism is that the drug reacts with the platelets to form a complex which becomes antigenic and stimulates the production of antibodies against the drug-platelet complex. When these antibodies come into contact with the platelets plus the drug, it causes agglutination and subsequent lysis of the platelets. In a similar manner, it has been thought that foods play their role in producing this sort of picture. The orris root, for example, has been known to produce thrombocytopenic purpura.

Thrombocytopenia may occur in certain

collagen disorders. For example, we have seen patients with lupus, with periarteritis nodosa, and with dermatomyositis who were admitted to the hospital not because of their collagen disease, but because of bleeding manifestations, and who were found to have what is thought to be idiopathic thrombocytopenic purpura. On closer scrutiny, they were found to have one of the conditions mentioned. Apparently the abnormal protein associated with these diseases has the ability to cause thrombocytopenia.

Coagulation.—The third basic mechanism which may be involved immunologically is coagulation. It is generally felt that patients with hemophilia lack the antihemophilic globulin. During the course of treatment of these individuals with antihemophilic globulin to prevent the bleeding, a refractoriness to treatment may develop, and very often in these situations an antibody against the antihemophilic globulin can be demonstrated. The patients lack this antibody. They are sensitized with it, and finally they develop an antibody which has the capacity to precipitate antihemophilic globulin, making it ineffective. Other antibodies, similar to antihemophilic globulin, have been encountered in lupus on occasion. Again, the abnormal protein not only produces the thrombocytopenia but also produces a circulating antibody against antihemophilic globulin. This has also been encountered on rare occasions in pregnancy where it is felt that the female has been immunized by the fetus with an abnormal protein that has the ability to neutralize the antihemophilic globulin, resulting in marked bleeding manifestations that continue for as long as a year before there is a diminution in this antibody.

Now let us turn our attention to the red cell disorders that are thought to be on an immune basis. You are all familiar with the Rh antibody, the fact that there are Rh-negative individuals, either as a result of transfusion or, in females, as a result of pregnancy where the fetus may be Rh positive, crossing the placental barrier and immunizing the mother. The maternal antibodies in turn circulate back into the fetus, agglutinate the red cells, and produce a severe hemolytic disease in the newborn infant, known as erythroblastosis fetalis.

Not only does this occur with Rh groups, but also it occurs occasionally with the ABO groups where an O mother will be immunized by a B fetus or an A fetus and hence will build, in addition to the naturally occurring antibodies, isoagglutinins, so that we may have hemolytic disease of the newborn infants as a result of ABO immunization.

Other Causes of Hemolytic Diseases.—In addition to these hemolytic diseases due to blood groups, we encounter hemolytic diseases that are associated with infections, particularly many of the virus infections, such as infectious mononucleosis and primary atypical pneumonia. In these diseases we may get abnormal protein which will cause agglutination of the red cells, destruction of the red cells, and resultant hemolytic anemia.

The thought occurs that many of these viruses or bacterial products may be fixed on the red cells in the course of their circulation, may be picked up by the reticuloendothelial system, by the lymphoid elements, and by the plasma cells. Complex antibodies are built against both the virus and the red cells; hence, one has an autohemolytic system.

Drugs, such as sulfur, quinine, primaquine phosphate, and so forth, can also cause hemolytic anemias, and the thought here also is that these drugs combine with a serum factor to produce antibodies. One aspect of this problem which should be of particular interest to allergists is the hemolytic anemia due to primaquine phosphate sensitivity. Hemolytic anemia has been found to occur primarily in Negroes, and about 10 per cent of the Negro population has a sensitivity to primaquine phosphate. On studying this condition a little more closely, it has been found that these individuals have an inherited defect in their enzyme systems. More specifically, this defect is in the 6-glucose-phosphate dehydrogenase system. It is interesting that in hemolytic anemias of frijolism, due to the frijole bean or castor bean, these individuals have also been found to have a similar defect in their enzyme systems. In view of the inherited aspect of many of the immunologic diseases which Dr. Bartfeld mentioned and with which you, as allergists, are familiar, the question arises as to whether much of this may also be related to some enzyme defect or some inherited enzyme abnormality.

In addition, one encounters a group of hemolytic diseases called symptomatic diseases, which are found in association with lymphosarcoma, chronic lymphatic leukemia, and some of the collagen disorders. In these diseases, as with the thrombocytopenias, a frank hemolytic anemia may occur. In fact, the patient with lymphosarcoma or chronic lymphatic leukemia may be suffering occasionally more from his hemolytic anemia than from the leukemia itself. About 15 per cent of all of these patients have frank hemolytic anemia, and it has been found that about 90 per cent of these patients will have a definite demonstrable antibody against the red cells, as shown by the Coombs test.

In some cases the use of the Coombs sera does not demonstrate an antibody, and so we employ various tricks with which you may be familiar, such as trypsinizing the red cells to make them more sensitive to agglutinins.

Finally we are left with a group of autohemolytic diseases, which we call idiopathic because we are unable to find the etiologic agent despite our search for it. These patients have marked destruction of their red cells. Instead of their red cells surviving one hundred and twenty days, they frequently survive only from five to ten days. This destruction is due to a "warm" antibody which is invariably demonstrable by the presence of the red cells, and the technic employed is the use of the Coombs serum or the trypsinized cells, as I have indicated.

Then there are some other hemolytic anemias that are due to the so-called cold agglutinating antibodies. While the warm antibody is most effective at 37 C., the cold agglutinins generally are more effective at 22 C. or at 27 C. These agglutinins are encountered in syphilis, causing a condition known as paroxysmal cold hemoglobinuria or paroxysmal nocturnal hemoglobinuria, where the cells are agglutinated in the cold and then appear to be lumped when they are warmed to body temperature. Cold agglutinins are more frequently encountered in viral diseases.

Time does not permit more than a sketchy discussion of any of these subjects, but one would be remiss in omitting mention of the immune aspect of white cell disease. With suitable laboratory technics, the presence of leuko-agglutinins is demonstrable. These agglutinins are antibodies which have the capacity to agglutinate white cells, while leukoprecipitins have the capacity to precipitate white cells. Using complement fixation technics, it has been shown that in lupus erythematosus there is an antibody directed against the nucleus of the white cell.

The full significance of this has not yet been realized, but there are one or two things which are known. For example, patients who receive multiple transfusions (and I have such a patient who has received 140 transfusions in the last two years) occasionally have febrile reactions of 104 F. or 105 F. without any destruction of the red cells. In these individuals the red cells have a normal survival; however, one can frequently demonstrate serum antibodies against the white cells being infused, and one will be able to demonstrate the presence of leuko-agglutinins. If washed red cells are used, from which the white cells have been separated, this reaction fails to occur, and the patient may receive the transfusion without any discomfort. In some of these patients who have agranulocytosis, leukopenia, and similar conditions, the presence of leuko-agglutinins has been demonstrable.

Not only do we have antibodies against the red cells, the white cells, and the platelets, but occasionally we also have antibodies against perhaps two of the three or against all three together. These conditions, known as pancytopenias, are caused by drugs. Many of the drugs that cause these pancytopenias are frequently incriminated in causing aplastic anemias, and many of us feel that very often the same mechanisms responsible for the peripheral sensitization of these cellular elements may, in fact, be responsible for the precursors of these elements in the bone marrow and end up producing an aplastic anemia.

Within the past two or three years, there has been a great deal of excitement about the possibility of bone marrow transfusion in conditions in which the bone marrow is absent. In most tissue transplants, animals have a tendency to reject, over a period of time, the tissue that has been transplanted into them. However, if one irradiates these animals, or gives them an antimycotic drug such as urethane or nitrogen mustard to destroy the immune mechanism of the animals and then gives the animals a tissue transplant, they will accept it as part of their own and when they go on to develop an immune mechanism again, they will no longer develop an immune mechanism against this foreign substance.

I think most of you are probably familiar with the studies in which fetuses were injected with foreign tissue before the immune mechanism was fully developed, and they failed to develop antibodies against this foreign tissue and accepted it as part of their own. This was a very exciting discovery until it was found that such recipients, while accepting the graft, failed to grow and finally died as runts. This has become known as runt's disease. What apparently happened was that instead of building antibodies against the tissue implanted into this animal, the bone marrow began building antibodies against mouse tissue, and it destroyed the lymphopoietic and hemopoietic tissue of the mouse; thus the mouse was destroyed by this newcomer into its system.

There is still much work going on in this field. It is thought that perhaps if one used embryonic tissues rather than adult tissues, so that the tissue would be modified in the individual, one would not get this specific alteration. Other attempts have been made by sensitizing some of these animals in embryonic states to the foreign tissue so that the subsequent challenge with it would not produce such a situation.

Finally, there are two aspects of immune mechanisms which are of some interest in regard to leukemias. One aspect is that leukemias and lymphomas are subject to recurrent infections. These are diseases of the reticuloendothelial system; they are diseases of the lymphoid tissue involving the plasma cells and because these are diseased tissues, perhaps these individuals do not build antibodies properly against the infectious agents; hence, these individuals come down with recurrent infections.

As a matter of fact, someone has suggested that possibly this is very similar to the runting phenomenon in these diseases where the diseased tissue, which is an abnormal lymphoid-plasma cell, the reticuloendothelial cell, begins building antibodies against the normal lymphoid tissue, and thus cuts down the immune defense mechanisms of the individual.

Question and Answer Period

Dr. Sack: We have listened to two fine presentations, and I suspect that some of you may want to make some comments or ask questions.

Ely Perlman, M.D.: I wonder if Dr. Bartfeld would make a comment on the polysaccharide streptococcicide. In a recent paper on rheumatoid lesions this was mentioned.

Dr. Bartfeld: It has been reported that the injection of laboratory animals with streptococci and their products may cause vasculitis and fibrinoid degeneration predicated on antigen-antibody basis. A self-limited arthritis has been reported in rabbits injected with streptococci and in rats injected with streptobacilli, and positive rheumatoid factor tests have been described in these animals. However, it is believed that this is not a true rheumatoid factor, but an antibody produced in these animals to the gamma globulin present in the human sera in which the streptococci are cultured, which is carried over when the materials are injected.*

Dr. Sack: Are there any other comments to be made by people from the floor?

Murray Dworetzky, M.D.: I would like to ask Dr. Weiner how one gets an extract of endothelium.

Dr. Weiner: These workers used rabbit vessels. This was done from material in the amnion which was very rich in vascular supply.

Dr. Sack: May I ask you a rather kindergarten question? Would you care to list the several clinical conditions in which the Coombs test is of a help diagnostically? I have noted that there is a great deal of confusion among general practitioners as to the meaning of the Coombs test from the clinical point of view.

Dr. Weiner: The Coombs test has its primary place in demonstrating that there is an antibody coating the red cells. We call these antibodies "incomplete agglutinating antibodies." There is something in the plasma which gets on the red cell and coats it. It would be a wonderful thing if we could take these red cells, expose them to the patient's serum, and show that the patient's serum has a capacity to agglutinate these red cells. Unfortunately, this is not possible because these antibodies are incomplete. To demonstrate this antibody one injects human serum or human globulin into a rabbit which produces an antihuman globulin, and if we expose these red cells which are now coated to the rabbit serum which has an antihuman globulin, prompt agglutination will result.

This test shows positive results in autoimmune hemolytic anemia if a patient has antibodies circulating in the serum against the red cells of the donor or the intended donor. It will agglutinate these red cells if there are antibodies against it which might not be demonstrable until the Coombs serum is added. As I have mentioned, in lymphoma, in the collagen disorders, and with hemolytic disease one will invariably be able to demonstrate this coating.

Occasionally you are called on to ask, "How shall we demonstrate that the cell may not be coated? Can we demonstrate this antibody in the serum?" You could do this by exposing red cells to this serum and by incubating them with the serum. These cells will now become coated, and when you add the Coombs sera or the rabbit sera, agglutination will result. The demonstration of the antibodies in the serum is called the indirect test because first the red cells must be coated with the serum. The demonstration on the red cells is known as the direct Coombs test.

Dr. Sack: Are there any other questions or comments?

Dr. Dworetzky: Is it not true that in group incompatibilities, as in Rh incompatibilities, the Coombs test usually shows negative results?

Dr. Weiner: Yes, the Coombs test indicates negative findings unless there is ABO sensitization, but if there is a weakly positive test with trypsinization, you may be able to demonstrate this.

Dr. Sack: I wish to thank both Dr. Weiner and Dr. Bartfeld for the very instructive evening we have had. I am sure all of us learned a great deal from both speakers.

Heroism consists in hanging on one minute longer.—Norwegian Proverb

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*Since this paper was presented a further report has been published stating that rabbits injected with their own gamma globulin prepared by ammonium sulfate precipitation and incorporated with Freund's adjuvant produced antibodies of antigamma globulin specificity.

RECENT ADVANCES IN MEDICINE AND SURGERY

A series of review articles dealing with medical progress

ROBERT TURELL, M.D., *Editor*

Diagnosis and Treatment of the Toxemias of Pregnancy

II.—Treatment

ROBERT LANDESMAN, M.D., AND ROBERT CHARLES KNAPP, M.D., NEW YORK CITY

(*From the Department of Obstetrics and Gynecology, The New York Hospital*)

PRENATAL evaluation and management form the single most important means to recognize and control toxemia of pregnancy. The New York Hospital conducts a clinic to care for patients who have the greatest potential for developing toxemia. Patients from the general antepartum group are admitted to this clinic if, during the current pregnancy, they develop an elevated blood pressure of 140/90 or over or exhibit a rising diastolic or systolic pressure, manifest an abnormal weight gain (5 pounds in one week), or show proteinuria at any time during the pregnancy. Also included in the group for special management are those who have had any variety of toxemia in previous pregnancies. In addition, the clinic admits patients with a history of chronic hypertension, nephritis, chronic pyelonephritis, or polycystic kidney disease. Patients with multiple gestation and diabetes also require closer observation and similar rigid clinic control because of the high incidence of toxemia in these groups.

Repeated instructions and frequent clinic visits are the backbone of management for the previously mentioned group.[1] Those patients with mild hypertension before thirty-five weeks or with well-controlled renal disease are seen every two weeks. Most frequently, all other patients are seen at one-week intervals. Occasionally, because of sudden exacerbation of symptoms in a patient close to term, the repeat visit will be required two to four days before deciding when hospitalization and delivery may be indicated. However, when true toxemia develops, hospitalization is indicated without compromise.

The patients in the toxemia clinic require specialized, continued, dietary instructions. The primary objective is to attain a well-balanced high-protein, low-salt diet which is generally low in calories. The ideal method to achieve this goal is to review the patient's food consumption during the twenty-four hours immediately preceding the visit and to alter the diet as necessary. It is inadvisable to rely solely on written

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instructions, for usually these are not followed. Hamlin[2] feels that a high degree of success may be achieved by using such slogans as "shun the baker, and cultivate the butcher," and "lay down the bread knife, and take up the carving knife." Frequently, including the husband in the dietary instructions will accomplish a great deal, particularly after the importance of the diet in the prevention of future toxemic complications has been explained.

The total daily food content generally should be reduced to 1,500 to 1,800 calories, depending on the age and general body build of the patient. If the woman is being managed on an ambulatory basis, salt may be limited to 3 Gm. per day. Only rarely does the patient fully cooperate with the nutritionist. If the usual dietary sodium is reduced to half its former value, that is probably the average effect. True salt restriction is seldom obtained except under conditions of rigid hospital control. All prepared salts, smoked meats and fish, pastries, buttermilk, frozen and canned vegetables and soups, cheeses, crispy flaky dried cereals, and cocktail snack foods should be completely eliminated from the diet.

As substitutes for salt in seasoning, there are available a variety of other agents, such as lemon juice, pepper, fresh onion, and dry mustard. Of the cheeses, only pot cheese is sufficiently low in salt. Fresh vegetables (with the exception of beets, spinach, and chard), fresh fruits, and unsalted meats and fish are the mainstays of this diet. Beverages, such as cola and flavored soda drinks, are high in salt. Plain soda water or the available low-calorie, low-salt flavored drinks may be substituted. Supplemental vitamins in usual minimal requirements may be added to the diet. However, at the present time there is no evidence that supplemental vitamins aid in therapy.

Bed rest is an important part of prophylaxis against toxemia. At first this may be night rest prolonged to ten hours supplemented by afternoon naps. Bed rest for the entire day at home often is undesirable, for if the patient needs protracted rest, hospitalization usually is required.

The most frequent symptom requiring therapy in the toxemia clinic is edema or rapid increase in weight.[3] The signs and symptoms may be an increase in weight of 5 pounds or more in one week, tightening of the wedding ring, pretibial edema of the legs, a whitening of the infraorbital skin (white rings under the eyes), or widening of the bridge of the nose. Chlorothiazide in doses of 500 mg. once or twice a day or hydrochlorothiazide 50 mg. once or twice a day are the most effective oral diuretics presently available.[4,5] If renal function is normal, this drug may be administered throughout pregnancy. It is advisable to supplement this drug with adequate potassium, available in orange juice, dried apricots and peaches, currants, paprika, and molasses. Potassium chloride 60 to 80 mEq. per day may be added. We have found no evidence of hypokalemia following continued chlorothiazide therapy for three months during pregnancy using this regimen. Uric acid serum levels frequently will become elevated with the use of chlorothiazide but are of no clinical significance. Rarely chlorothiazide or its derivatives may be ineffective in the treatment of edema.

Another diuretic found to be of value is acetazolamide (Diamox).[6] The usual dose is from 250 to 500 mg. per day. This drug should be administered for a maximum of five days, for it may produce a frank metabolic acidosis. The effect of the agent is self-limited, since the metabolic acidosis prevents the diuretic action. Usually refractoriness develops after three or four days of therapy. After an interval of several days, the drug may be repeated. The toxic effects are similar to those of all the sulfonamide derivatives and include thrombocytopenia, fever, erythema, and hives. Rarely, acetazolamide may be more effective than the chlorothiazide derivatives. In general, the carbonic anhydrase inhibitors have been supplanted by the chlorothiazide compounds.

Ammonium chloride in doses of from 4 to

8 Gm. a day for five days has been completely replaced by the newer diuretics.[7] This compound can cause nausea and vomiting. Meralluride (Mercuhydrin) may be used intramuscularly occasionally in dosages of 1 to 2 cc. However, it usually is reserved for the acutely ill patient who requires hospitalization.

At the present time the hypotensive agents rarely are used in the toxemia clinic. However, they may be employed with some success in those patients with chronic hypertension seen early in pregnancy. Oral reserpine is started in dosages of from 0.25 to 0.5 mg. each day.[8,9] The therapeutic effect of this agent is not fully established for two weeks. The dose may be elevated to from 2 to 3 mg. a day. The true benefits of oral reserpine in hypertension over many months are highly questionable. Reserpine usually is insufficiently effective in severe hypertension and must be combined with hydralazine. Frequently nasal stuffiness, dizziness, lethargy, and less frequently emotional depression and fluid retention may occur. The depression may be slow in onset and usually develops after an average of three months of therapy. In more than half the patients there will be a moderate lowering of the blood pressure to within normal limits. One of the drawbacks of this therapy is the frequent severe hypotension which results when the reserpine is combined with an anesthetic agent, such as thiopental sodium (Pentothal sodium) or cyclopropane. If delivery under general anesthesia is anticipated, the reserpine may be discontinued two weeks prior to the date of expected delivery. Our experience with reserpine shows no improvement in fetal salvage; also, this drug may mask the manifestations of superimposition, and it in no way modifies the basic toxemic process.

Oral hydralazine has been used in dosages of from 20 to 200 mg. a day.[10] Headaches, occasional nausea, and joint pain are frequent side-effects. The ganglionic blocking agents, such as mecamylamine, pentolinium, and chlorisondamine are contraindicated in the ambulatory patient during pregnancy.[11] An overdosage will produce severe shock and hypotension which may result in fetal anoxia and fetal paralytic ileus with frequently associated fetal death.

The tranquilizers recently have come into prominence as mild sedatives and for the relief of anxiety, insomnia, and tension.[12] Meprobamate in doses of from 400 to 800 mg. one to three times a day has been recommended. However, in a controlled study of patients with insomnia, this drug did not prove more effective than phenobarbital. Furthermore, the tranquilizers may produce dermal manifestations, such as urticaria, erythema, and generalized pruritus.

For mild sedation, reducing tension, and improving and prolonging sleep, the barbiturates are the most widely used and the most practical. However, they have no beneficial effect on the course of the toxemia. Phenobarbital may be taken orally three or four times a day in 30- to 60-mg. doses. Pentobarbital and secobarbital in doses of from 100 to 200 mg. may be given for sleep. Narcotic addiction and generalized skin rashes with pruritus are a few of the possible complications. In the terminal stage of labor, barbiturates are contraindicated, particularly in the toxemic mother, because of the transmission to the fetus and the depressing effect on respiration.

Several tests of renal function may be performed in the clinic.[13] A concentration and dilution test is simple and informative, particularly concerning the concentrating power of the renal tubules. The normal kidney may concentrate urine from 1.029 to 1.032 specific gravity. The kidneys with severe damage will not concentrate urine to above 1.010, which is the approximate specific gravity of blood serum. False concentration tests may result if the patient is on a restricted salt intake. Two days prior to the concentration test, 5 Gm. of salt a day usually are necessary. Usually, fluids are restricted for twelve hours, conveniently from 9 P.M. to 9 A.M., and the urine is collected at 9 A.M. and 10 A.M. A dilution test may follow by giving the patient 500 to 1,000 cc. of fluid, and evidence of dilution may be determined by samples every half hour for two hours. The normal kidney usually will dilute the urine to a specific gravity of 1.001 to 1.003. If concentration and dilution do not occur to these levels, some type of renal disease may be responsible for the toxemia syndrome.

The urea clearance test is also a practical test to perform in the clinic. This is a measure of the amount of blood cleared of urea by the kidneys in one minute. A twenty-four-hour rough screening test is performed. The first specimen is discarded on awakening, and thereafter the urine is collected for twenty-four hours. A fasting blood urea nitrogen is obtained at the termination of the collection. The normal urea clearance usually is above 70 per cent. Normally, this clearance tends to rise over 100 per cent between the thirtieth and the thirty-sixth weeks of pregnancy, at which time it may be elevated to as high as 180 per cent. In general, if two urea clearances are below 60 per cent, this usually indicates definite reduction in renal function. Although other renal function tests are available (phenolsulfonphthalein test, glomerular filtration rate, and renal plasma flow determination), the only over-all practical tests are the concentration and dilution and the urea clearance tests. A knowledge of renal function in the evaluation and treatment of toxemia is especially important. Any mild, toxemic symptoms associated with reduced renal function have a more serious prognosis, particularly for the fetus. Patients with renal manifestations therefore are more readily admitted to the hospital at the earliest sign of toxemia.

Hospital Admission

Hospitalization from the toxemia clinic is advised with progression of the clinical picture. This decision is mandatory when a full-blown toxemia with massive edema, marked elevation in blood pressure, and 4 plus proteinuria develops. However, this latter picture rarely is noted in the well-regulated clinic. The vast majority of decisions are based on minor variations in the symptoms and signs.

In the patient who is carefully followed at weekly intervals, the onset of a 1 plus proteinuria is a highly significant finding and usually is sufficient by itself to warrant admission. This proteinuria must be confirmed by a catheterized urine specimen without the presence of clumped white blood cells. If hypotensive agents, such as reserpine, and diuretics, such as chlorothiazide are administered, the proteinuria may be the only reliable clinical finding, since the symptomatic therapy will disguise the true levels in the other two important clinical modalities.

If a sudden blood pressure elevation occurs with a systolic elevation of 30 and diastolic of 15 mm. Hg, hospital admission should be considered. This is particularly true if the pressure level is over 150/100. In the younger patients with initial pressure of 110/70, an elevation of 30 systolic and 15 diastolic pressure may be of serious import. However, in the older, mildly hypertensive group from the ages of thirty-eight to forty-five, a sustained pressure of 150/100 throughout the entire pregnancy is not unusual. The usual hypertensive or recurrently toxemic patient will tend to develop increasing blood pressure late in the third trimester. If this elevation is more than 15 points diastolic or is associated with any other abnormality, hospital admission is advised. A fall of blood pressure is of no clinical significance in itself as far as toxemia is concerned. A second trimester fall is not uncommon among hypertensive patients, and at times this fall may occur in the third trimester.

Edema is the least important of the triad. Usually the low salt diet and the use of diuretics have reduced all edema. A sudden weight gain may occur as a rebound phenomenon if chlorothiazide is discontinued. This weight rebound, while in itself not a serious finding, means that the patient must be closely observed. If, on the other hand, progressive edema occurs while the patient is receiving the diuretics, and if weight gain is more than 5 pounds in one week, then hospitalization on the basis of edema alone is indicated. The presence of edema of the upper extremities, face, and eyelids, is always of greater significance than edema of the lower extremities.

Hospital Management of the Toxemias

PREECLAMPSIA.—Hospitalization provides more efficient management of the patient with preeclampsia through intensification of the same type of therapy provided in the antepartum clinic and through controlled bed rest. Morris *et al.*[14] have demonstrated the improved and rapid clearance of sodium_{24} when it is injected into the uterine wall following bedrest. Likewise, a delayed clearance is produced by physical activity in the toxemic patient. This suggests strongly that a state of rest increases the rate of blood flow in uterine and placental circulation. The diet again may be restricted to a 3 Gm. salt intake daily. Because of the inactivity, total calories are low, ranging from 1,200 to 2,000 per day, depending on the patient's size. Usually barbiturate sedation, phenobarbital during the day and pentobarbital at night, reduces restlessness and provides prolonged sleep, but has little value in controlling the preeclampsia. If the blood pressure is above 160/110, hypotensive agents may be used to reduce the hazard of maternal cerebral hemorrhage. Reserpine, cryptenamine, and hydralazine compounds either alone or in combination are the agents of choice. If any edema is present, diuretic agents may be given. Chlorothiazide and its derivatives are the most effective. If hyperreflexia, twitching, or sudden worsening of the toxemia are evident, parenteral magnesium sulfate should be administered promptly.

The single most important blood determination device is the hematocrit. This may be checked serially every six hours. An elevation may indicate hemoconcentration, a progression of the disease process. Other blood chemistry determinations are the nonprotein nitrogen, uric acid, carbon dioxide, chlorine, sodium, and potassium levels. The nonprotein nitrogen may rise to the upper limits of normal in toxemia, but any elevation beyond this would indicate renal damage as the underlying disease. Uric acid levels may rise to abnormal heights, possibly because of the use of chlorothiazide. The decrease in carbon dioxide and increase in chlorine may indicate the presence of metabolic acidosis, or the chlorine may be elevated following intensive ammonium chloride diuretic therapy. Hypokalemia may follow prolonged chlorothiazide therapy without adequate potassium replacement. To prevent this, potassium chloride 60 to 80 mEq. parenterally or in tablet form, may be given.

If within twenty-four hours the cardinal signs of toxemia appear to improve, with return of the blood pressure to normal limits, a reduction in proteinuria, and absence of edema, the pregnancy may be permitted to proceed. The tape measurements of the height and width of the fundus should be recorded together with the fetal heart beat every day. Not infrequently a stationary fetal size will precede intrauterine death. Similarly, observations of the retinal and conjunctival vessels may provide additional information.[15] The development of arteriolar spasm or retinal hemorrhages and the onset of placental separation will add further to the general clinical picture of advancement of the toxemic process.[16] If the toxemia is well controlled, the patient may be carried to term in the hospital.

In the presence of severe preeclampsia oral intake is restricted, and the patient is maintained on 5 per cent dextrose in water. It is advisable to place an indwelling catheter into the bladder better to ascertain urinary output. Hyperreflexia is treated best with magnesium sulfate given intramuscularly. Chlorothiazide is of value to maintain good urinary output. Other drugs rarely are necessary. Ordinarily it is inadvisable to plan delivery promptly at admission, and usually a twenty-four-hour period or at least twelve hours is recommended for a trial of medical regimen. However, with severe preeclampsia and particularly in the young primigravida, delay should not be greater than the twelve hours.[17] Usually oxytocin and rupture of the membranes will result in simple delivery in less than twelve hours. In toxemia the uterus often is hyperirritable and usually responds rapidly to induction. If induction fails, delivery by cesarean section is necessary. Because of the high fetal loss associated with prematurity, delivery early in the third trimester often will result in fetal death. In 1959 at The New York Hospital the loss of fetuses weighing between 500 and 999 Gm. was 100 per cent; from 1,000 to 1,499 Gm. it was 77 per cent; from 1,500 to 1,999 Gm. 25.7 per cent; from 2,000 to 2,499 Gm. 4.7 per cent, and from 2,500 to 4,000 Gm. 0.7 per cent. The indication for interruption of severe preeclampsia prior to the thirty-fourth week must be on a maternal basis completely. If the toxemia is associated with anuria, retinal hemorrhages, or hyperreflexia, or if the blood pressure is at uncontrollable levels, interruption of the pregnancy is indicated, for the maternal life is in serious jeopardy.

It is generally unwise to prolong a pregnancy for more than three weeks following the onset of a severe variety of acute preeclampsia. Although the clinical symptoms and signs of the toxemia may subside, all evidence points to the fact that the toxemic process continues unabated insofar as the fetus is concerned.[18,19] No available drug therapy can be considered curative as far as the fundamental toxemic process is concerned. In the intermediary period of from thirty-two to thirty-five weeks, individualization of the case with a consideration of many factors is necessary. The course of symptoms and signs, uterine and fetal rate of growth, retinal vessels, the irritability of uterine muscle, and the previous obstetric history must be taken into account. If the patient is at term with a fetal weight estimated at greater than 2,500 Gm., despite the apparent slackening of the preeclampsia, the patient should be delivered. Induction with sublingual or intravenous oxytocin usually is accomplished over several days during six- to eight-hour periods each day. Unless the preeclampsia progresses, delivery by cesarean section rarely is necessary.

Essential Hypertension.—Patients with sustained, low-grade essential hypertension may be followed throughout pregnancy without admission to the hospital, while those with more severe hypertension should be admitted for evaluation and diagnosis when they are first seen.[20] Patients with essential hypertension commonly exhibit periods of normotension, most frequently in the second trimester. However, a dip in blood pressure not infrequently occurs in this group in the third trimester, and a return to elevated blood pressure levels may be observed one month postpartum.[21] The importance of frequent antepartum visits is related to the fact that 25 to 30 per cent of the patients with essential hypertension will develop superimposition which is associated with high fetal and maternal risks without proper management.[22] Strict dietary regulation with salt restriction, prolonged rest periods, diuretics, and antihypertensive drugs when indicated constitute the basic symptomatic regimen. Mild hypertension usually may be watched closely until spontaneous labor intervenes; induction rarely is indicated.

When sustained hypertension reaches the level of 160/110 or above, fetal and maternal mortality rise concomitantly. In our series the fetal loss was 23 per cent. In addition, many of this group (30 per cent in The New York Hospital series) had small-sized infants in relation to the week of the gravidity. In the presence of reduced renal function, hypertensive heart disease, retinal arteriolar changes, such as marked arteriolar spasm or hemorrhage of Grade II or III, or previous superimposition, early admission to the hospital is essential for a decision as to the time for termination of the pregnancy. Early in the pregnancy this can be done by therapeutic abortion, but later a hysterotomy may be necessary.

If the sustained high blood pressure is the only abnormality, the patient may be followed in the clinic, and hospitalization during the last month may be indicated in some, particularly if fetal growth rate is reduced or if any other complication occurs. Induction or cesarean section should be performed if the patient goes to term, since there is a distinctly higher fetal loss of the postmature infants associated with severe degrees of essential hypertension.

Essential Hypertension with Superimposition.—The presence of superimposition is a serious complication and requires immediate hospitalization.[23] In general, there are two distinct varieties of superimposition. The first is the superimposition of a mild type, which manifests itself in the carefully followed patient with essential hypertension. Frequently, minimum 1 plus proteinuria or additional blood pressure elevation of over 15 mm. Hg diastolic or 30 systolic are the findings. With the almost routine use of chlorothiazide and its derivatives, edema is seen infrequently. This minimal superimposition requires hospitalization. Frequently, after several days of bed rest, sedation, and dietary regulation the signs of superimposition will abate. The proteinuria may become only a trace, and the blood pressure may return to the previous clinic level. Once superimposition is manifest, the fetal risk is high, ranging around 20 per cent. However, because of the careful control, the maternal risk is negligible. Delivery within two to three weeks is usually indicated by the simplest method, either induction, which is preferred, or cesarean section.

The fulminating variety or second type of superimposition is a far more serious complication, particularly from the maternal point of view. As a rule, patients suffering from this complication have had little or no antenatal care. The symptoms are a sudden rise in blood pressure, often to 200 mm. Hg or more systolic, massive proteinuria, and marked edema. There also may be severe headaches, blurring of vision, epigastric pain, or blindness. The percentage of small infants in this group is high.

The treatment as outlined for severe preeclampsia is essential, and in general, delivery usually is necessary within twenty-four to forty-eight hours. The fetal loss in this uncontrolled superimposition group ranged from 30 to 60 per cent. Occasional maternal death (5 to 10 per cent) may result, most frequently from cerebral hemorrhage or anuria. At term, once there is stabilization of symptoms, delivery is indicated, followed in most cases by tubal ligation. This usually is true early in pregnancy despite the high fetal death rate associated with prematurity.

Eclampsia.—The initial object of therapy in eclampsia is to reduce the possibility of injury associated with convulsions and to prevent their subsequent occurrence. Immediate hospitalization is essential with the onset of antepartum eclampsia. The patient must be kept at complete bed rest and closely observed by physicians and nurses, with careful recordings of the blood pressure, pulse, respiration, and presence of cyanosis.[24] It is unnecessary to follow the old tradition of keeping the room in darkness, but the people around the patient should work quietly, and she should not be disturbed by unessential noises or movements. It is preferable to keep the room well lighted so as to provide adequate, continuous observation of the patient.

To prevent aspiration during a subsequent convulsion or during general anesthesia at delivery, nothing is given by the oral route. Fluids are given intravenously and at first are limited to 5 per cent dextrose in water. More concentrated solutions do not appear to be necessary. Saline solution is avoided to prevent the further deposition of edema. Medications may be administered into the tubing or added directly to the infusion. Oxygen, either by face mask or tent, is advisable, since this may help to decrease tissue hypoxia in the cerebrum and kidney. Face mask oxygen, as compared to the tent, facilitates nursing care. The latter obviously is more comfortable for the patient. A mouth gag and tracheotomy set should be available, the former to prevent injury to the tongue and the latter to be used if respiratory difficulties should arise.[25] A Foley catheter is inserted to give an accurate picture of the urinary output. The urine volume and quantitative protein are measured every hour.[26] Blood is drawn for typing, crossmatching, hematocrit, and blood chemistries. Packed red cells are made available because of the possibility of shock or blood loss from placental separation. The fetal heart is recorded closely. Blood chemistry determinations should include nonprotein nitrogen, uric acid, carbon dioxide, sodium, and potassium.[27] The nonprotein nitrogen indicates the retention of nitrogenous compounds. In advanced toxemias the nonprotein nitrogen often may be slightly elevated. Uric acid may be markedly elevated in toxemia. This previously was considered an ominous sign, but at present the elevation most frequently occurs following the use of chlorothiazide derivatives.[28] The chlorine, sodium, and carbon dioxide levels will indicate the acid base balance. If hypokalemia is present, potassium chloride 40 to 80 mEq. per liter may be added to the infusion. If the carbon dioxide is lowered by rapid respirations (tachypnea associated with convulsions), sodium chloride may be added as normal saline solution (500 cc. 0.9 per cent sodium chloride). If there is further difficulty, a blood pH may be performed and then appropriate salts may be added to bring the pH to normal.

Anticonvulsant Agents

Magnesium sulfate ($MgSO_4 \cdot 7H_2O$)[29–31] is the agent most widely used to reduce neuromuscular irritability following convulsions or associated with fulminating preeclampsia. It has been demonstrated from serum magnesium levels that with initial intramuscular dosage, therapeutic levels are not obtained during the first four to six hours. Therefore, the initial dose is given intravenously as 3 Gm. in a 10 per cent solution, and at the same time 10 Gm. are administered intramuscularly in a 50 per cent solution (10 cc. in each buttock). Following this initial dose, 5 Gm. are administered intramuscularly every four hours. This dosage schedule should maintain the serum magnesium at about 7 mg. per milliliter, a level which usually prevents the onset of convulsions. Maintenance doses of magnesium sulfate are discontinued if the patellar reflex disappears, since this may indicate the imminence of respiratory depression. The urinary output should be at least 100 cc. between doses. If overdosage occurs, accompanied by a respiratory rate below 10 respirations per minute, 10 cc. of 10 per cent calcium gluconate may be employed.

McCall and Sass,[32] studying cerebral circulation in toxemia, showed that magnesium sulfate diminished cerebrovascular resistance and increased oxygen metabolism. With morphine sulfate and phenobarbital, the cerebral vascular spasm is unrelieved. On the other hand, intravenously administered amobarbital sodium (Amytal sodium) and thiopental sodium produce further cerebral ischemia and depression of cerebral oxygen metabolism. Because of its low toxicity to the mother and fetus and its ease of administration, magnesium sulfate is the preferred anticonvulsant agent. This drug often is all that is necessary to control the convulsions. Morphine, barbiturates, and chloral hydrate are indicated rarely, if ever. They further depress an already compromised fetus. The antihypertensive agents have a place when the systolic pressure is extremely high and there is danger of a cerebral vascular accident. Here they may be administered together with the magnesium sulfate. We feel they do little by themselves to alleviate convulsions.

However, it must be realized that there is no true unanimity concerning the selection of drugs in the treatment of eclampsia. Good results have been reported with the use of magnesium sulfate alone, barbiturates alone, magnesium sulfate together with barbiturates, or a combination of all the known anticonvulsant agents. Although in our opinion morphine has little value in the antepartum patient with eclampsia, many clinics use this drug almost exclusively.[33,34] In the early 1900s, Stroganoff used it as his main anticonvulsant agent together with chloral hydrate.[35] The principal objections to it are its marked respiratory depressive effect in anticonvulsant doses, its inability to relieve cerebral spasm, and its known action to reduce urinary output. When administered, usually 16 to 32 mg. are given either subcutaneously or intravenously. The initial dose may be intravenous. Meperidine hydrochloride (Demerol) in doses of 100 mg. every four hours may be used instead. If respirations are depressed, a narcotic antagonist, such as nalorphine hydrochloride (Nalline) 5 to 10 mg. intravenously, may be given. If pulmonary ventilation does not respond within five to ten minutes, a repeat dose may be administered. Ten to 20 mg. of nalorphine hydrochloride usually restore respirations to normal. If the infant's respirations are depressed at birth, 5 to 10 mg. of this narcotic antagonist may be used. During the postpartum period morphine sulfate may be used to best advantage. Here it may be administered to a patient with severe toxemia or together with magnesium sulfate to one with a postpartum eclampsia.

All the barbiturates are capable of preventing or suppressing convulsions. They have been used successfully at The New York Hospital for many years. Their principal disadvantage is that they produce cerebral ischemia and marked depression of cerebral oxygen metabolism. Cerebral vascular spasm is made more severe by the barbiturates.[36] The cerebral oxygen condition of the fetus may be extremely depressed by these drugs, and there is no antagonist as there is in the case of morphine derivatives. However, intravenous thiopental sodium has been used effectively to control convulsions.[37,38] It is advantageous during a convulsion because of its ease of administration and its rapid action. Intravenous amobarbital sodium or sodium phenobarbital in doses of 0.25 mg. and 130 mg. respectively every six hours, may be employed. Chloral hydrate, which was at one time preferred by Stroganoff, together with morphine for treatment of eclampsia, does not appear to be as effective as magnesium sulfate in the prevention of convulsions. However, the low incidence of side-effects and lack of allergic phenomena are known advantages. Three Gm. of the drug every six to twelve hours is an effective dose. New capsules permit dosage of 1 to 2 Gm. orally. Rectal administration does not provide as accurate a dosage as the parenteral route.

Antihypertensive Agents

As stated previously, the antihypertensive agents perhaps have their place in the prevention of a cerebral vascular accident.[39,40] However, they do little to alleviate convulsions, and there have been reports of patients on these drugs convulsing with the blood pressure in the normotensive range. Reserpine may be used alone to lower the blood pressure in moderately severe elevations.[41] This agent is effective in about one third to one half of cases. A single dose of from 2.5 to 5 mg. may be given intravenously, and this dose may be repeated every four to six hours intramuscularly or intravenously for several days. Maximum vascular effects appear in thirty to sixty minutes. Blood pressure usually falls to about normal levels. Shock and postural hypotension are not caused by reserpine. Following prolonged administration of reserpine, general anesthesia frequently produces significant hypotension. Thiopental sodium and to a lesser extent cyclopropane result in the most severe hypotension. The effects of reserpine persist for two weeks after cessation of therapy. If this agent is used, local anesthesia is the method of choice for delivery. The advisability of reserpine therapy in the treatment of eclampsia and the possible risk of hypotension during general anesthesia must be evaluated for the individual patient.

When the blood pressure is at extremely high levels, over 160/110, the most useful therapy at the present time is a combination of veratrum alkaloids and hydralazine hydrochloride (Apresoline).[42] Twenty mg. of hydralazine hydrochloride and 5 mg. of cryptenamine (Unitensen) or 0.25 mg. of protoveratrine A and B as veratrum alkaloids are both placed in 500 cc. of 5 per cent glucose in distilled water.[43–47] This solution is administered by intravenous infusion at a rate of 20 drops per minute; the blood pressure is recorded at five-minute intervals for two hours and then at less frequent periods. The blood pressure usually is lowered promptly by this combination of agents. If this is not successful in one-half hour, an additional 1 mg. per 100 cc. of veratrum may be introduced into the infusion mixture. Hydralazine hydrochloride increases cardiac output and improves the renal circulation.[48] Frequently severe headache, palpitation, nausea, and joint pain may result from the hydralazine hydrochloride. Doses of 100 to 200 mg. intravenously in a twenty-four-hour period may be given without danger.

In general, the veratrum compounds produce marked nausea at close to the therapeutic levels. Since slight overdosage may result in marked hypotension and shock, this drug is administered only in the hospital with the patient under constant observation. For marked blood pressure elevations in the acutely ill patient, hydralazine and veratrum intravenously are at present preferable to the ganglionic blocking agents. The occurrence of episodes of severe hypotension with these agents is less frequent. After the initial treatment, if delivery is not contemplated, veratrum 0.5 mg. and reserpine 2.5 mg. may be given intramuscularly every four to six hours as necessary to maintain the lower blood pressure.

Diuretic Agents

If edema is present at the time of a convulsion, chlorothiazide in doses of 250 mg. or hydrochlorothiazide 25 mg. may be administered intravenously at six-hour intervals.[49] This usually will result in prompt diuresis in from thirty to sixty minutes. If renal function is adequate, no toxicity may be anticipated. If renal function is compromised, potassium depletion and increase in azotemia may be expected. Frequently, chlorothiazide and its derivatives will produce a dramatic elevation in plasma uric acid levels. However, this is of no significance and does not indicate progression of the toxemia. If any of the chlorothiazide preparations are administered for over twenty-four to forty-eight hours, potassium should be added. In addition to its diuretic effect, the chlorothiazide compound will enhance the action of the hypotensive agents reserpine, hydralazine, and the veratrum compounds. Frequently, one-half the dosage will suffice for the hypotensive agents when chlorothiazide therapy is administered concurrently.

The chief action of chlorothiazide compounds is a rapid increase in sodium and chloride excretion. Potassium is excreted but to a lesser extent. In the presence of good kidney function and an adequate dietary potassium hypokalemia may not occur. This diuretic action usually is continuous, and the drug may be given over a period of several months, usually with no change in its effectiveness.

The mercurial diuretics long have been known to be effective, particularly by the parenteral route. Meralluride in doses of 1 or 2 cc. intramuscularly is dependable for producing a rapid diuresis. Not infrequently there are toxic effects, such as hypochloremic and hypopotassemic alkalosis, muscular pains, erythema, tetany, and allergic reactions. Dimercaprol (British anti-lewisite) may reduce the toxicity of the mercurials. In general, recent experience indicates that chlorothiazide is as effective even by the oral route and is less toxic.

It is important to check the patient with eclampsia frequently for evidence of congestive heart failure. The patient must not be given intravenous fluids too rapidly lest the cardiovascular system be compromised. With a rapid pulse or evidence of fluid in the chest, it may be necessary to administer digitalis rapidly to these patients by the intravenous route.

Delivery

During or immediately following a convulsion, delivery is associated with high maternal risk. It is preferable to wait at least twelve hours after the last convulsion before attempting delivery.[50-52] A vaginal examination is performed to ascertain the condition of the cervix and the position of the presenting part. If induction is feasible, an amniotomy is performed and dilute oxytocin administered intravenously beginning with 2 units per 500 ml. However, if induction is difficult or long labor of over twenty-four hours is anticipated, delivery by cesarean section is preferred. General anesthesia is the method of choice for delivery, although local anesthesia may be used, particularly when reserpine or other hypotensive agents have been administered recently.

Early delivery of a fetus estimated at 2,500 Gm. or more is associated with little additional risk, but the problem is more difficult with premature infants. There is no unanimity of opinion as to the management of the latter group following eclampsia. If the patient's condition is stabilized, many advocate temporization, feeling that each day gained is of value in decreasing prematurity. However, despite adequate hospital management, there is some danger of fetal death in utero, recurrent convulsions, or premature separation of the placenta. Considering all factors, once eclampsia has occurred, delivery usually should be performed within twenty-four hours.

Conclusions

The treatment of toxemia is nonspecific and is directed toward reducing clinical signs and symptoms. Edema may be controlled by low-salt diet and diuretics; hypertension by rest, sedation, and hypotensive agents; and convulsions by anticonvulsant drugs. These may protect the mother, but the intrauterine toxemic process appears to be relatively uninfluenced.

Regardless of the improvement in the signs and symptoms afforded by the various outlined courses of therapy, the toxemic syndrome is brought to a halt only by delivery. The high fetal loss is related chiefly to the early onset of the toxemic process and the complication of prematurity. If the mother's life is in jeopardy by the rapid advancement of the toxemia, delivery by the easiest possible method is the procedure of choice. The establishment of special clinics for the care of toxemic patients has reduced the maternal risk. The more satisfactory use of sedation, anticonvulsants, and the newer diuretics has reduced the frequency of the more serious maternal complications, such as eclampsia, separation of the placenta, cerebral hemorrhage, and blindness. Improved technics for induction of labor have reduced the frequency of toxemia as an indication for cesarean section.

Good prenatal care today, although symptomatic, has been associated with a reduction in the frequency of toxemia. The incidence is now less than half the rate twenty-five years ago. Moreover, the severity of the disease in the adequately cared for patient is greatly reduced. Eclampsia itself may be almost completely prevented by adequate prenatal care. Although the mechanism for the development of toxemia or a technic for prevention has not materialized, the maternal risk has been lowered substantially, and the fetal survival rate has improved.

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School Population Continues to Grow

With 45,000,000 school-age children filling the nation's schoolrooms to overflowing for the new school year, the nation faces the problem of providing for a school population of 53,000,000 by 1970, it is reported by statisticians of the Metropolitan Life Insurance Company.

In 1980, the school-age population is expected to be 59,000,000. In other words, about 14,000,000 children will be added to our population of elementary and high-school age in the next two decades—a gain of almost a third.

This expected growth reflects largely the record high number of births throughout postwar years and their expected continuation at a relatively high level, the statisticians point out.

Although elementary schools have already experienced marked increases in enrollments, the number of children in the five- to thirteen-age bracket is expected to reach new high levels during the next five years. The increase will average about one-half million each year, reaching 36,230,000 by 1965. By 1980 this group of children may number 42,500,000, one fourth more than at present.

Registration in high schools has been expanding at a faster rate than that for elementary schools in the last few years, and this trend is expected to continue during the 1960's. Thus, the number of children at ages fourteen to seventeen will climb from 11,250,000 this year to 14,400,000 in 1965, and to 16,000,000 by 1970. This means that the population at the high school ages will grow by 42 per cent within the next ten years.

Elementary and high-school enrollments will continue to rise to new peaks in most sections of the country, but the increases will be especially high in areas where there has been a large influx of population. This will be particularly true in the West and in suburban communities throughout the country. It is clear that for many years to come the United States will be confronted with the problem of providing adequate educational facilities and personnel for a rapidly increasing school population. It is vital to the welfare of the American people that these needs be met.

CLINICOPATHOLOGIC CONFERENCE

ROSWELL PARK MEMORIAL INSTITUTE

BUFFALO, NEW YORK

Conducted by JOHN W. PICKREN, M.D. SEPTEMBER 20, 1958

Discussed by JAMES GRACE, M.D.

The Use of Radioactive Iodine Rose Bengal Liver Scan in the Diagnosis of a Mass in the Epigastrium

Case History

The patient was a seventy-nine-year-old white female who was first seen at Roswell Park Memorial Institute twenty-three years prior to death. The first admission was for the purpose of receiving postoperative x-ray therapy, since she recently had undergone a left radical mastectomy for breast carcinoma at another hospital. She was given a course of x-ray therapy and followed through the ensuing twenty-two years without any evidence of recurrence. Fourteen years prior to her death a basal cell carcinoma of the face was excised.

One year before her death she began to experience low back pain. During this year she complained of increasing weakness, easy fatigability, progressive weight loss, and annoying night sweats. Four months before her death she developed a mass in the right cervical region which was excised and reported as a "granuloma of cervical lymph nodes." Her final admission, which was two months prior to her death, was for investigation of the cervical lymphadenopathy.

A physical examination revealed an elderly female with a blood pressure of 110/50 mm. Hg, pulse 86 per minute, and respirations 20 per minute. In the right side of the neck there was a firm, movable mass which measured approximately 4 cm. in diameter and was located deep to the central portion of the sternocleidomastoid muscle. Throughout the right anterior and posterior cervical triangles, numerous enlarged and shotty lymph nodes were felt. The left breast was absent, and a well-healed scar showed no evidence of recurrent tumor. The remainder of the physical examination produced essentially normal findings. She was anemic with a hemoglobin of 8.4 Gm. per 100 ml. and had a leukocyte count of 11,300 per cm.

On her fourth hospital day she became febrile with temperatures up to 102 F. Her fever subsided spontaneously on the eighth hospital day but recurred on the twentieth day with spikes up to 103 F. At this time her liver was palpable at 2 cm. below the right costal margin. The spleen was not palpable. Intradermal tests at this time gave negative findings for cat-scratch disease, tuberculosis, coccidioidomycosis, and histoplasmosis. An electrocardiogram showed Q, S-T, and T-wave abnormalities compatible with an old, healed, anterior wall infarct, and a severe degree of coronary sclerosis. A roentgenogram showed the chest to be essentially normal. At this time a firm, smooth, exquisitely tender mass appeared in the epigastrium. It was located about 3 cm. below the left costal margin and moved with respiration. A radioactive iodine rose bengal liver scan was interpreted as showing a nonfunctioning area in the upper portion of the right lobe and in the area of the porta hepatis which was compatible with metastatic disease. The serum proteins, serum alkaline phosphatase, nonprotein nitrogen, and van den Bergh test reaction were normal. She was given chloramphenicol, and after two doses of 500 mg. each on the twenty-ninth hospital day she became afebrile.

Ten days later, on the thirty-ninth hospital day, her temperature again began to spike as high as 102 F. A chest roentgenogram at this time showed slight haziness in the left upper lung field and slight obliteration of the left costophrenic angle. The roentgenologist interpreted the haziness in the left upper lung field as increased density due to an overlying scapula. A thoracentesis yielded 16 ml. of light yellow fluid with a protein content of 3.3 Gm. per ml. At this time the leukocyte count was 16,250 per cm. with 84 per cent neutrophils. A needle liver biopsy was performed, and normal liver tissue was reported. Fourteen blood cultures all were sterile for bacterial growth. The patient was placed on chloramphenicol therapy, but her fever did not respond, and this was discontinued. Her fever continued until the forty-eighth hospital day when her temperature again returned to normal.

One week later, on the fifty-fifth hospital day, the fever reappeared, and combined therapy with penicillin and streptomycin was instituted without clinical improvement. The patient was given diethylstilbestrol for diagnostic and therapeutic purposes. Pseudomonas aeruginosa was cultured from the urine, and she was started on sulfisoxazole (Gantrisin) therapy. By the sixtieth hospital day she had become very dyspneic and was placed in an oxygen tent. A chest roentgenogram at this time showed ill-defined densities in the left upper and right lower lung fields. Repeated electrocardiograms showed no significant changes from the earlier ones. The venous pressure at this time was 170 mm. of water, and the circulation time was seventeen seconds. Her blood pressure fell to 94/50 mm. Hg, and the patient expired on the sixty-second hospital day.

Discussion

James Grace, M.D.: What were the results of the urine examinations and the serologic test for syphilis?

John Pickren, M.D.: The urinalyses and serology findings were negative.

Dr. Grace: I would like to see the chest roentgenogram.

Richard Sheehan, M.D.: The first film, which was taken ten years before death, showed extensive calcification of her aorta and bronchial cartilages and minimal fibrotic changes in the apices. Seven and nine years later the findings are similar. On her last admission, in addition to these persistent changes, the costophrenic angle is obscured, indicating a small amount of pleural effusion.

Dr. Grace: You felt that the haziness described in the protocol was due to the overlying scapula?

Dr. Sheehan: Yes, the earlier films of the last admission were so interpreted. However, in later films, a definite alveolar type of infiltration was seen in this area. There is a pulmonic consolidation with associated extensive peribronchial infiltrations throughout the entire right lung field. The diaphragm is not elevated, but some effusion still is present. The picture is characteristic of an inflammatory process. However, one might see similar pictures in bronchiolar carcinoma or lymphoma, but the rapidity of development suggests inflammation.

DR. GRACE: May I see the photographs of the liver scans?

AHSEN OZARDA, M.D.: The visualization of the liver by using I^{131} rose bengal liver scans permits the detection of space-occupying lesions in the liver and extrahepatic masses which may have influence on the liver contours, such as right pleural effusion, atelectasis, right ventricular hypertrophy, or intra-abdominal lesions.

Our technic involves the use of high-contrast photoscanning technics, focusing collimators, and minimal radioisotope doses of rose bengal. Rose bengal is specifically absorbed and excreted by the polygonal cells of the liver. To obtain the best results with lowest dosage of radioactive material, a blocking dosage of 100 mg. of nonradioactive rose bengal is injected intravenously. This administration prevents rapid clearance of the 50 microcuries of I^{131}-labeled rose bengal which is injected ten minutes later. The photoscanning procedure starts twenty minutes after the injection of the isotope. Scanning is begun on the inferior border of the organ and progresses superiorly; in this way the gallbladder region is scanned before it concentrates a large amount of radioactivity. With the Roswell Park photoscanner this procedure usually takes forty-five minutes or one hour, depending on the size of the liver. Normally, the thickest portion of the liver, the central part of the right lobe, is visualized as uniform maximum density on the film, and the density gradually decreases toward the periphery. The density over the left lobe is approximately one half that visualized over the right lobe. The borders of the organ are visualized distinctly on the scans, and it is possible to state the size of the liver. The effects of adjacent organs and abnormal masses on the liver also can be assessed.

Value and Limitations.—According to our results, the over-all accuracy of liver photoscanning is about 90 per cent. The procedure is entirely harmless, can be accomplished within an hour, and can be repeated in a few days if necessary. It is also useful in choosing a site for liver biopsy. Furthermore, some gallbladder disorders (distention, stones, and obstruction of the common bile duct) also can be detected. No complications have been observed; there is no contraindication to this procedure.

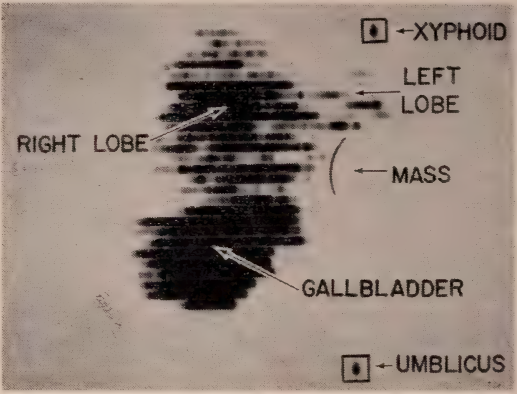

FIG. 1. Photoscan shows patchy decreased areas of uptake in periphery of the liver and the indentation in the region of the porta hepatis.

However, there are limitations. Small space-occupying lesions cannot be detected if they are less than 2 cm. in diameter, particularly if they are deeply situated. Detection of lesions in the left lobe is more difficult than those in the right lobe. No differential diagnosis can be made as to the nature of the lesions. However, in most cases of liver metastases, photoscans are valuable in ascertaining progression of these lesions. In rare instances, the blocking dose in normal livers may not be effective, and the radioactive rose bengal is cleared very rapidly through the liver and collected in the gallbladder. In such a patient only a small amount of radioactivity remains in the parenchyma, resulting in patchy areas of decreased uptake as seen on the photoscan. These artificial radioisotope deficits may cause erroneous interpretations and give false positive results.

There are areas of patchy, decreased uptake distributed at the periphery in the region of the upper portion of the right lobe (Fig. 1). An area of increased uptake at the lower part of the right lobe corresponds to the region of the gallbladder. There is a suggestion of a round large mass at the site of the porta hepatis protruding into the parenchyma.[1]

The previously mentioned patches may represent space-occupying lesions in the liver. However, in the presence of a large amount of radioactive dye and peripheral distribution of these radioisotope deficits above it, this scan should be repeated by increasing the blocking dose of nonradioactive rose bengal.

Dr. Grace: Can large nodes in the area of porta hepatis cause this picture?

Dr. Ozarda: Yes, but the evidence is strongly suggestive rather than conclusive. Certainly, large nodes around the porta hepatis can do so. The changes in the superior part of the liver are compatible with parenchymal lesions, such as metastases and fibrotic processes.

Dr. Grace: Could these not represent abscesses or infarcts?

Dr. Ozarda: These findings are not pathognomonic; any kind of multiple space-occupying lesion may produce this picture.

Dr. Grace: What culture media were used in the repeated blood cultures?

James Holland, M.D.: The usual routine.

Dr. Grace: In effect, we have an elderly, white female who underwent a radical mastectomy for breast carcinoma twenty-two years previously and apparently remained free of a recurrent malignant condition. She then developed a chronic debilitating process in the last year of life which was characterized by nonspecific complaints terminating in the last two months of life with acute febrile episodes associated with an undulating type of fever.

Dr. Pickren: Dr. Grace, would you like to see the picture of the biopsy?

Dr. Grace: Yes.

Dr. Pickren: In the cervical lymph node we see a granuloma which contains a zone of central necrosis and peripheral epithelioid and giant cells. These giant cells have multiple nuclei and abundant cytoplasm. The lesion is an epithelial granuloma.

Dr. Grace: This case brings to my mind several questions which I will try to approach with some sort of order. (1) Could this entire episode be related to the original breast tumor twenty-three years ago? (2) Might her disease be a malignant process unrelated to the original breast tumor? (3) Might this terminal disease represent an infectious granulomatous disease? (4) Might the final episode represent a chronic malignant disease plus a superimposed acute infection?

Persistent Breast Cancer.—In the answer to the first question on breast tumors, it certainly is possible to have a recurrence of breast tumor this long after removal of the primary tumor. Metastatic foci have appeared more than thirty-five years postoperatively.[1] However, in this patient the sequence of events was such that recurrence of the breast tumor seemed unlikely to play a major role in her death. The roentgenograms are not suggestive of metastatic lesions. The nonfunctioning areas in the liver, as demonstrated by the liver scan, might represent metastatic deposits, but certainly other processes may produce such nonfunctioning areas. The granulomatous disease seen in the enlarged cervical lymph node has no similarity to the cancer of the breast.

Second Primary Malignancy.—In answer to the second question, there is evidence to suggest that about one year prior to the patient's death another disease developed. It is possible that this disease might have been a lymphoma, especially Hodgkin's disease. For several months she had nonspecific symptoms, such as easy fatigability, weight loss, and finally palpable lymphadenopathy. It is not infrequent for a lymphoma in the retroperitoneal lymph nodes to stay hidden for a considerable length of time before peripheral nodes appear. Her earliest symptoms might have been due to an inapparent lymphomatous disease, and as it progressed cervical lymphadenopathy developed. It is certainly possible for Hodgkin's disease to show an atypical histologic pattern in its early stages which might be confused with a granulomatous process. It is interesting to speculate about the negative reaction to tuberculin skin tests in this patient. It is well established that patients with positive reactions to tuberculin skin tests may revert to negative reactions during acute exacerbations of Hodgkin's disease, and again show positive reactions when a remission occurs. This phenomenon is not specific for the tuberculin antigen, and any skin test depending on delayed hypersensitivity reactions also may react in this manner. Of course, in this patient the negative results of the skin test may mean that she never had been tuberculin-positive. The mass in the abdomen and the undulating type of fever, which might be construed as an unusual form of Pel-Ebstein fever, are compatible with Hodgkin's disease. Evidence against this diagnosis are the findings of essentially normal serum proteins and a fairly normal hemoglobin until near the end of her course.

Granulomatous Lesions.—The third possibility is that one of the nonmalignant granulomatous diseases could have accounted for the entire terminal episode.

From a large number of possibilities, I will mention but a few. The most common one is tuberculosis. To explain this picture, one should consider a generalized tuberculosis with an acute terminal exacerbation. However, if miliary tuberculosis had persisted for several months, I should expect more findings in the original chest film. It is possible that it was an entirely extrapulmonary tuberculosis, but in any event, I would expect the lymph node involvement to be more diffuse than has been described.

Another granulomatous disease which always must be considered is syphilis. An acute terminal course and negative serologic findings for this disease argue against this diagnosis. One of the favorite granulomas of the internist is Boeck's sarcoidosis. The acuteness of the course is against Boeck's sarcoid. However, it is interesting that in patients with Boeck's sarcoid one might see a type of skin anergy similar to that which occasionally occurs in individuals with Hodgkin's disease. It would be unusual for Boeck's alone to cause this type of fever, because ordinarily it has a relatively benign course and rarely causes much elevation of temperature unless secondary complications are present. Another disease producing granulomatosis is brucellosis. Dr. Neter, what would be the chances of growing out the Brucella organism with the type of culture media used for the routine blood cultures?

ERWIN NETER, M.D.: Nil.

DR. GRACE: Brucellosis can involve the reticuloendothelial system. The white count rarely is elevated in brucellosis, and ordinarily a relative lymphocytosis is present. This patient had an elevated white count with a predominance of polymorphonuclear leukocytes. An important point against brucellosis was the failure of the condition to respond to any of the antibiotics. Brucellosis does not respond dramatically, but it does respond fairly well to large doses of broad spectrum antibiotics given over a long period of time. I doubt that the whole picture could have been on the basis of brucellosis. Other granulomas, such as tularemia, leprosy, cat-scratch fever, and lymphopathia venereum should be mentioned. A final group of granulomas that warrants attention is the mycotic infection group. Because of the large number of mycotic infections, I will discuss only the more likely ones. These organisms are not readily detected by the routine blood cultures. They are notoriously poor respondents to the usual chemotherapy or the antibiotic agents. They might give a picture such as was seen in this patient. Frequently, they are secondary to other diseases, indicating that most of these organisms are only slightly pathogenic. The five most frequently associated with other diseases are Aspergillus, Candida or Monilia, Cryptococcus, Histoplasma, and Mucor. Of the diseases complicated by these five fungi, leukemias, lymphosarcoma, Hodgkin's disease, aplastic anemia, tuberculosis, and diabetes are the most common ones.

Zimmerman and Rappaport[2] pointed out that one third of all cases of disseminated cryptococcosis were associated with lymphomas. All of these diseases may produce a prolonged course and may involve many organs and systems. The diagnosis depends largely on isolation of the offending organism. However, certain clues as to the identity of the organism may be gained by the localization and type of organ involved. Cryptococcosis most frequently involves the central nervous system and usually produces meningitis. However, there may be visceral or pulmonary involvement. The pulmonary involvement is interesting as compared with some of the others in that it does not ordinarily produce hilar lymphadenopathy. The lung involvement may come fairly late in the disease if the infection is localized in another organ. Mucor, until a few years ago, was thought always to be nonpathogenic, but in more recent years it has been found to cause infections in association with diabetes, lymphomas, and leukemias. It tends to invade arteries and veins and cause infarctions of the liver, spleen, heart, lungs, and kidney. Often one may find signs of multiple infarcts in these organs. Histoplasmosis involves the reticuloendothelial system and generally gives granulomatous pictures in the lymph nodes. Actinomyces, Blastomyces, and Coccidioides are more pathogenic, and infections are not usually secondary to another major disease.

I think that acute bacterial endocarditis or other bacterial infections were unlikely in this case because of the repeated negative results of blood cultures.

I would now like to sum up all of this and put my neck squarely on Dr. Pickren's chopping block. I think the situation that could most clearly explain this lady's symptoms and clinical course is that in the last year of her life she developed a lymphomatous disease, probably Hodgkin's disease. This progressed steadily until the last few weeks of life when it was complicated by infection. I think the most likely infection was one of a mycotic variety, and to really get out on a limb, I would say cryptococcosis or mucormycosis.

DR. PICKREN: Are there any questions or comments?

THOMAS DAO, M.D.: Why was this patient treated with diethylstilbestrol?

DR. HOLLAND: In addition to the differential diagnosis in the excellent discussion given by Dr. Grace, we considered the possibility of metastatic carcinoma of the breast. We felt that the findings of the liver scan might be due to metastases to the liver. Recognizing that patients of this age who have breast cancer sometimes respond to diethylstilbestrol, we chose to try it rather than undertake a therapeutic trial with x-ray or alkylating agents. She was given diethylstilbestrol for two days before we were led to change our minds.

WILLIAM REGELSON, M.D.: In an old lady running a prolonged fever, urinary tract infection is a possibility. Pyelonephritis or pyelitis may simmer along, particularly if antibiotics are administered.

DR. GRACE: I absolutely agree. However, if exacerbations occurred to cause high temperature spikes, I should expect a positive blood culture to be found at some time during the repeated examinations, and I would not have expected the negative results of urinalyses.

AVERY SANDBERG, M.D.: Would you comment on the instances of mycotic infections in patients receiving antibiotics and on adrenal failure in patients with histoplasmosis?

DR. GRACE: Most certainly. To answer your last question first: Disseminated histoplasmosis is notorious for its involvement of the adrenals resulting in extensive necrosis of the gland. Certainly with adrenal destruction the terminal event may be hypotension, as was seen here, and other findings associated with acute adrenal insufficiency. In answer to your first question, antibiotics may alter the usual flora of the gastrointestinal tract and allow certain of the fungi to flourish. This phenomenon has been noted particularly with the use of antibiotics for sterilization of the bowel. No doubt the widespread use of broad spectrum antibiotics as well as the use of adrenal cortical steroids play a role in the increased incidence of fungal infections in the lymphomatous diseases.

Joseph Sokal, M.D.: The amount and type of antibiotic she received for the period listed in the protocol is not enough to control brucellosis.

Dr. Grace: I agree that the amount of drug and the short duration of therapy would not be expected to cure brucellosis.

Dr. Sokal: The temperature chart is not a perfect teaching example of Pel-Ebstein fever; the temperature should go higher, and the fall should be more dramatic. However, the pattern certainly falls within the definition of Pel-Ebstein fever. To make a definite diagnosis of Pel-Ebstein fever, however, it is necessary to rule out other causes than Hodgkin's disease. Some infections cause a relapsing type of fever, or patients may have a succession of infections with intervals of normal temperature. In both situations blood cultures may show negative findings throughout. When all the appropriate tests are performed and give negative results, a fever of this type in a patient with Hodgkin's disease may be defined as Pel-Ebstein fever.

Robert Tarail, M.D.: What histologic picture does a granuloma of brucellosis in the lymph node produce? Does one usually see necrosis in the lymph node of a patient with sarcoidosis? Since the question of tuberculosis has been raised, can you give more details of the skin tests?

John Costa, M.D.: She had purified protein derivative, number 1 strength.

Charles Ross, M.D.: A negative purified protein derivative in patients with active tuberculosis is probably due to the use of a purified protein derivative antigen that is not fresh or is of insufficient strength.

Dr. Pickren: Classically, in Boeck's sarcoidosis caseous necrosis is not seen. Brucellosis can give a picture very similar to this one.

Nicholas Primikirios, M.D.: Are the microscopic changes consistent with tularemia?

Dr. Pickren: The changes are compatible but not typical of tularemia. Characteristically, the granulomas of tularemia have more necrosis and show a greater polymorphonuclear leukocyte response.

Dr. Neter: At least one finding was omitted from the protocol. Four days before death a Widal test showed the following: no antibodies against typhoid, paratyphoid, or tularemia organisms, but a positive reaction for brucellosis. On the routinely used blood cultures media Brucella will not grow, but special culture media are available, and the organism can be grown.

Dr. Holland: When the report of positive agglutination for brucellosis was received, vigorous chloramphenicol, streptomycin, and penicillin therapy was instituted. There was no response, and she died on the third day of this therapy. Again, it should be emphasized that this patient had received antibiotics, including chloramphenicol and streptomycin (but at different times), on several occasions but of insufficient amounts over too short a period for adequate therapy to control brucellosis.

Diagnoses

Clinical.—*Brucellosis.*

Dr. Grace.—*Hodgkin's disease with terminal complication by cryptococcosis or mucormycosis.*

Anatomic.—(1) *Brucellosis*, and (2) *bronchopneumonia.*

Pathologic Report

Dr. Pickren: The autopsy revealed a generalized lymphadenopathy. The epigastric masses were enlarged retroperitoneal lymph nodes. Granulomas similar to the lesion in the biopsy were present in many of the lymph nodes and in the bone marrow. Histologically, it is impossible to be specific about the etiologic agent unless the pathogenic organism can be isolated and characterized. In the pathologic differential diagnosis, the causes of epithelioid granulomas as outlined by Dr. Grace were considered. Cat-scratch disease can be eliminated quickly because of the clinical course. The histologic picture is atypical for tuberculosis. Hodgkin's disease is a possibility, but again the picture is unusual, for there are few eosinophils and only scanty fibrosis. Although the multinucleated giant cells resemble the Sternberg-Reed cells of Hodgkin's disease, most of them contain too many nuclei and have too much cytoplasm. These cells more closely resemble megakaryocytes. In the face of the positive titer for brucellosis and with the histologic findings presented, I feel that the most likely diagnosis is brucellosis. It would have been nice to have isolated the organism. Unfortunately, the proper media for culturing the organisms of brucellosis was not used. Terminally the patient developed bronchopneumonia and died.

Dr. Tarail: Dr. Pickren, was there a search made for intracellular gram-negative bacilli as seen in brucellosis? Incidentally, this intracellular position renders chemotherapy of brucellosis difficult because of the lack of diffusion of the antibiotic into the cells.

Dr. Pickren: Gram's stain and special stains for fungi and for acid-fast organisms failed to show organisms. This patient lived in an urban district. A study of her chart failed to indicate a possible source of her infection, but no epidemologic survey was carried out.

Dr. Holland: One of the most important things we have learned from this discussion is that a high epigastric mass associated with abnormalities in a liver scan is not synonymous with metastatic cancer.

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Linoleic Acid a Vital Nutrient

America need not look to a drastic change in its diet for better health balance, thanks to the new information on the nutritional importance of linoleic acid and other unsaturated fats, says Dr. C. G. King, executive director of the Nutrition Foundation. Linoleic acid, an important constituent of corn, cottonseed, soy, and many other salad oils, should make up about 3 to 5 per cent of a person's total caloric intake, he suggests. An easy way to do this is to dress salads with the oils that contain high levels of linoleic acid, as opposed to the traditional olive oil which is relatively low in linoleic acid. Other good sources of linoleic acid are chicken and fish.

Food processors are helping increase the average American's linoleic acid intake by conserving more of the food element in solid fats.—*Nutrition Foundation*

Current Concepts in

DIABETES MELLITUS

Sponsored by the Clinical Society of the New York Diabetes Association

Editors

MAX ELLENBERG, M.D.
HAROLD RIFKIN, M.D.

The Prediabetic State

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PREDIABETES or the prediabetic state is an important newly-emphasized concept in the field of diabetes mellitus. It may be defined as that period of time wherein there is a loss of normal carbohydrate tolerance, without the signs or symptoms of overt diabetes, and wherein this decreased tolerance subsequently returns to normal. It also implies that it is from the prediabetic group of patients that the majority of future overt diabetic individuals will develop. Because the hereditary potential for diabetes has been firmly established, this prediabetic state can occur at any time from birth to senescence.[1] Natural stress factors such as obesity, infection, pregnancy, and puberty, all of which are known to be associated with loss of carbohydrate tolerance in genetically predisposed people, will allow the prediabetic state to be detected more readily.

Who has the potential for developing diabetes? This is an important question, for if such individuals can be detected accurately, then perhaps careful and critical analysis during the prediabetic state may allow for greater understanding of the pathogenesis of overt diabetes mellitus and its complications.

Important Initial Contributions to Research

In attempting to answer the question of who is potentially diabetic Conn and his associates[2,3] have made important initial contributions. It was known to them and others that cortisone, in high dosage, could alter the carbohydrate tolerance in apparently normal people. This loss of tolerance quickly disappeared when the cortisone was withdrawn. If the cortisone was continued, the initial decrease in carbohydrate tolerance diminished, indicating, perhaps, compensation on the part of the beta cells of the islets of Langerhans. If smaller and smaller doses of cortisone were used, then the initial loss of tolerance became less and less. With these facts, a standard cortisone-glucose tolerance test was devised. Eight hours and two hours before a standard oral glucose tolerance test was performed, patients weighing less than 160 pounds were given 50 mg. of cortisone and those over 160 pounds, 62.5 mg. of cortisone. The criteria of normal for the glucose tolerance test was based on their own experience accumulated during many years of observation. For the test to be normal, using the true blood sugar method, a one-hour blood sugar of less than 160 mg. per 100 ml. and a two hour blood sugar of less than 110 mg. per 100 ml. must be attained following the oral administration of 100 Gm. of glucose.[4] A blood sugar value of 120 mg. per 100 ml. or more at two hours was considered to be definitely abnormal, and a blood sugar between 110 and 120 mg. per 100 ml., although not diagnostic, was considered to represent probable diabetes. A blood sugar of 160 mg. per 100 ml. or more at the end of one hour in association with the previous levels made the test more definitely diagnostic. Based on the strong hereditary tendency of diabetes, Conn and his associates performed both standard oral glucose tolerance tests, and cortisone-glucose tolerance tests, in relatives of diabetic subjects and, as a control, used a group of patients who had no family history of diabetes. The results were very illuminating. Of 387 close relatives of diabetic individuals, 18 per cent were already diabetic as demonstrated by abnormal glucose tolerance tests; 4 per cent were probably diabetic as established by the aforementioned criteria. Of 295 patients with normal results to glucose tolerance tests, 25 per cent showed positive results to cortisone-glucose tolerance tests as compared with 2 per cent in the control group. Of the former 25 per cent, 33 patients have been followed for one to five years and 5 of these have developed overt diabetes. This test serves as a detection device for the prediabetic patient. Only long-term observation will determine how accurate this procedure is as a tool for detection and prediction.

Conditions Which Predispose to Diabetes

Obesity.—The association of decreased glucose tolerance with obesity is well known. It is not uncommon to see a return of diminished tolerance toward normal after considerable weight loss. Conn and his group, however, demonstrated potential diabetes by an abnormal cortisone-glucose tolerance test at a time when weight loss had occurred and a standard glucose tolerance test was normal. Nevertheless, such maintained weight loss did not protect against the development of frank diabetes, and in a number of patients progressive deterioration of carbohydrate tolerance developed. This artificial stress test in otherwise unstressed patients serving as a measure for the potential of diabetes, may afford greater knowledge in the future.

Infection.—The ill effect of infection on diabetes is well established. This is a natural form of stress and there is a good deal of evidence that a phase of hyperadrenocortisonism occurs with the production of increased hydroxyglucocorticosteroids. All physicians can recall instances when, during a variety of infections such as carbunculosis, pyelonephritis, and pneumonia, patients demonstrated glycosuria which subsequently cleared with the subsidence of the infection. The same has been true at times of acute myocardial infarction and acute cerebral vascular accident. Many patients have diminished carbohydrate tolerance early in the course of such events only to have it improve when the natural stress has subsided. The tolerance in some patients with both infection and/or any of the conditions previously mentioned does not improve spontaneously. It is here that the prediabetic state no longer exists because the diagnosis of diabetes, albeit mild, can now be made.

Pregnancy.—Pregnancy has allowed for considerable advance in the consideration of the prediabetic state. It is felt that progressive hypercortisonism during the course of pregnancy contributes to the prediabetic state.[5] The majority of investigators have shown that the prediabetic state is associated with a high fetal mortality, in some instances as high as 20 to 39 per cent.[6–8] This is particularly true when it is unrecognized and hence unmanaged. It has been observed that the complications of the prediabetic state in pregnancy antedate the clinical diagnosis of diabetes by a period of from five to thirty years. When prediabetes exists in pregnancy, abnormalities in glucose tolerance do not usually occur until after the fourth month. From then on it is usually progressive. If one measures glucose tolerance in each trimester, a progressive deterioration can be demonstrated. In some instances large doses of insulin are required to control progressive hyperglycemia. In most women, however, there is no alteration in glucose tolerance throughout the pregnancy. The hypoglycemic response following intravenous tolbutamide correlated with glucose tolerance tests, show diabetic blood sugar response curves similar to that which occurs in the nonpregnant diabetic patient.[9] Within two to seven days, the majority of postpartum patients demonstrated complete reversal to normal of both the abnormal glucose tolerance test and tolbutamide response. The prediabetes of pregnancy can frequently be suspected in the postpartum period. The abnormal disorder leads to the production of babies who are too large, weak, and edematous, and to babies who have biochemical disorders in the immediate postpartum period.[10] About 20 per cent of the babies born to prediabetic mothers weigh 10 pounds or more at birth as compared with an incidence of 2 per cent expected in the general population.[2] Many babies are stillborn and many die in the neonatal period. Glycosuria of pregnancy cannot be considered benign unless normal glucose tolerance is continuously demonstrated in each trimester. A family history of diabetes must make the physician aware of the possibility of prediabetes. Obstetric complications such as polyhydramnios, repeated abortions, toxemia of pregnancy, congenitally abnormal pregnancies, and excessive weight gain, particularly due to true fat, must arouse the suspicion of prediabetes. According to Jackson,[11] abnormal glucose tolerance tests occurred frequently in mothers under suspicion, but only once in a controlled group of patients. Pathologic study of the fetal islets of Langerhans can suggest quite consistently that a prediabetic state existed in the mother.[11,12] The islets undergo considerable hypertrophy and in the absence of Rh incompatability, this finding is virtually pathognomonic of the prediabetic state. In Jackson's experience, many mothers of stillborn children with islets cell hypertrophy subsequently develop overt diabetes.

The hazards of prediabetes of pregnancy are obvious when this situation goes undetected. Fetal mortality has dropped from 28.6 per cent in those who were discovered late or undetected, to 1.7 per cent in those who were found early and managed.[13] A recent preliminary report by Wilkerson[14] suggests that the total abnormal outcome of pregnancies in women who were normal, and in women who had abnormal carbohydrate metabolism but who were treated with insulin, was considerably less than in a positive control group which consisted of women with abnormal carbohydrate tolerance but wherein no insulin was prescribed. If by gaining greater knowledge of the prediabetic period in pregnancy, greater fetal salvage can be attained, this indeed is an advance in medicine's obligations to society.

Do repeated episodes of diminished glucose tolerance during successive pregnancies lead to a greater incidence of diabetes in the mother in the succeeding years? The evidence at hand is still not conclusive. However, in Jackson's experience, every patient who manifested prediabetes in pregnancy developed a more definite abnormality in at least three years while in the unpregnant state. Another report showed that 17.8 per cent of all women delivering babies weighing 10 pounds or more eventually became frankly diabetic.[15]

HYPOGLYCEMIA.—In reviewing the histories of patients who developed diabetes mellitus, it has become more apparent that many patients described symptoms and signs of hypoglycemia, which antedated by months the overt manifestations of diabetes. A number of investigators have emphasized a hypoglycemic phase in undetected mild diabetes.[16–18] Seltzer, Fajans, and Conn,[19] reported on 110 patients studied in a six-year period whose glucose tolerance tests were characterized by a normal, or slightly elevated fasting blood sugar, hyperglycemia which was prolonged up to two hours or more, and then a sudden sharp fall to hypoglycemic levels in the remaining three to six hours. Approximately 40 per cent of these patients had a family history of diabetes. It is worthy of note that several of these patients in subsequent years progressed to frank diabetes. Unger and Madison,[20] and Zarowitz and Eis,[9] reported independently that in the large majority of patients the response to intravenous tolbutamide in a two-hour period can separate the very mild diabetic individual from the normal individual. Tolbutamide, like glucose, is considered to be a betacytotropic stimulant and the normal insulin response following an intravenous injection of tolbutamide is prompt. It occurs maximally within forty minutes, then quickly ceases. The diabetic response is characterized by a delayed gradual decrease in the blood sugar frequently falling to the nadir of the normal, but this occurs after sixty minutes. More recent work,[21] wherein newer technics allow for greater accuracy in the determination of plasma insulin activity, demonstrates what one would expect to find in these patients when they receive either glucose or tolbutamide intravenously; that is, that the insulin activity of the plasma was as high or even higher at the end of the glucose or tolbutamide tolerance tests than the insulin activity was in the normal subjects in the early part of the test. The normal response was characterized by a quick rise in insulin activity followed by a rapid decrease. The quantitative response following glucose was greater than that following tolbutamide.

It is possible to conceive that the earliest defect in undetected mild diabetes is a decrease in the speed of insulin release, which accounts for the sustained hyperglycemia; however, insulin release, although delayed, subsequently occurs and produces the hypoglycemia. As time, perhaps months or years, progresses, the beta-cell system being taxed maximally finally succumbs, and the result is persistant hyperglycemia and frank diabetes. More and more of these patients are now being recognized. In my own estimation and that of others, these patients have already developed mild diabetes and cannot be considered as prediabetic. The use of low carbohydrate-high protein diets has diminished the episodes of hypoglycemia, but unfortunately no definite method is available to prevent the development of frank diabetes.

Retinopathy and Neuropathy.—Diabetic retinopathy and neuropathy are not infrequently the initial findings in patients who do not have overt symptoms of diabetes mellitus. The definition of prediabetes as stated at the beginning of this article excludes this group of patients for it is considered that these findings are representative of undetected diabetes, not of prediabetes.

The hope for the future, as it is in all fields of preventive and environmental medicine, is to apply the basic knowledge of the beginnings of a disease so that its inception can be prevented or, if it has already begun, its sequelae can be ameliorated. The prediabetic state lends itself most propitiously to such application.

Summary

The prediabetic state antedates the onset of overt diabetes mellitus by many years. It includes that time of decreased glucose tolerance without overt symptoms of diabetes which subsequently returns to normal. Natural stress factors allow this state to be more readily detected. The cortisone-glucose tolerance test may serve as a tool for the detection of the prediabetic patient.

Spontaneous hypoglycemia occurs in the early phases of diabetes. Analysis of these patients indicates that they are already diabetic.

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(*Number six in a series of articles on Current Concepts in Diabetes Mellitus*)

Cystic Fibrosis, Killer of Children

Cystic fibrosis outranked diabetes, rheumatic fever, and poliomyelitis as a cause of death of children under fifteen years of age in 1958. Incidence of the disease, which is a hereditary metabolic disorder, is estimated to be 1 in 1,000 live births, while 2 to 20 per cent of the population are genetic carriers of the disease.

The great majority of its victims—about 95 per cent—are under twenty years of age. Although there is a trend toward survival after childhood, in one hospital of 550 patients only 106 lived beyond ten years of age.

Progress is reported in the diagnosis of cystic fibrosis.

As a result of improved diagnostic technics, such as the sweat test for electrolytes, the disease is being recognized earlier in its course.—*Patterns of Disease, Parke, Davis & Company*

THE PHYSICIAN IN CIVIL DEFENSE

A series of articles prepared by Solomon Garb, M.D.,
Secretary, Medical Education for National Defense (MEND)
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Survival in a Thermonuclear War

X. When Time Is Short

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NO ONE can predict when a nuclear attack may come or how much warning will be available. Perhaps, as some believe, an attack will come as a complete surprise. However, it might also follow a period of rising international tension so that some warning, foreboding, or even premonition will be available. This was true of World Wars I and II.

If no warning whatever is available to us, this article will be of little use. However, changes in the international scene might portend an approaching attack. If so, this article could be helpful to those who don't yet have shelters when danger threatens.

Some shelters cannot be built in a short time. Steel pipe is not ordinarily stockpiled in most places, and delivery might be delayed one to six months after an order is placed.

Poured concrete shelters also require time. Time is needed for excavation, for building forms, and most important, for the concrete to cure and develop strength. It is hard to see how a poured concrete shelter can be finished less than a month after an order is placed.

Therefore, when time is short, simpler, less effective measures will have to be used. In planning these measures the following assumptions have been made:

1. In a period of grave danger, when many people try to build shelters at once, contractor's machinery and labor will be too scarce to depend on. However, it is assumed that common hand tools will be available. Therefore, the average man will have to do his own digging and building.
2. Steel, concrete, and sandbags will be in short supply.
3. Depending on the area, new lumber may or may not be in short supply.
4. An average man, during an emergency, motivated by fear for his family's survival will work hard at building a shelter, putting in at least eight hours a day despite fatigue, blisters, and so forth.
5. Such a man should be able to shovel earth at a rate of at least 1 cubic foot per minute, 60 cubic feet per hour, or 480 cubic feet per eight hours.
6. In most cases, the earth will have to be shoveled into a wheelbarrow, moved, and then dumped. The rate at which this can

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be done would vary considerably, but should be in the range of 120 to 240 cubic feet per eight hours.

Understanding these assumptions, it should be possible for the reader to make modifications for different situations. For example, if only four hours per day can be devoted to building the shelter, the time must be doubled. If there are two healthy adult men to build the shelter, the time can be halved.

In arranging the suggested steps in relation to the time available before an attack, it is not assumed that anyone can definitely know what the future holds. Rather, the time available is taken to be the considered opinion of the reader, based on the circumstances at the time. Thus, if during a period of international tension, a reader believes that an attack may come in a week, he should follow the recommendations given under the one-week heading. If the next day the situation suddenly worsens, he may then think it best to allow only one day of grace and follow the one-day recommendation. This seems the best and most practical approach to a difficult and complex problem.

Possibilities of Action Within an Estimated Time Before Attack

A. When Less Than Two Months but More Than Two Weeks.—1. If possible, build a basement shelter.

2. If you have no basement, try to join forces with a friend or neighbor who has.

3. If you have no basement, build an interior shelter as close as possible in design to a basement shelter.

4. Use basement corner away from windows. Mark off area about 7 by 8 feet.

5. Brace the joists in the center of the shelter area, and on the inner side.

6. If new lumber is not available, use old lumber, logs, or anything suitable.

7. Cover the floor of the room above the shelter with newspaper, plastic, or building paper, and shovel onto it a layer of earth 3 feet thick. This earth layer should extend outward about 3 feet. Thus, if the interior of the shelter is 7 by 8 feet, the earth cover will be about 10 by 11 feet.

8. Build an earth wall, about 3 feet thick, around the 8 by 7 foot shelter area, extending up to the ceiling, leaving a narrow door opening. (*a*) Since sandbags will probably not be available, another means will have to be used to keep the earth in position. Forms can be built of wood or other materials. Doors taken off hinges, tables, shelves, filing cabinets, or anything available can be used. (*b*) Put up a radiation barrier about $2^1/_2$ feet beyond the door opening, also consisting of a 3 foot thickness of earth.

9. Put planks, several layers of heavy cardboard, or anything similar against the outside of all basement windows, and then shovel earth around it, so that the window and at least 1 foot of the adjoining wall is covered by about 3 feet of earth. Take the earth from the area at least 4 feet from the house.

10. The women in the family during this time should be procuring food for the shelter and storing water in every available container.

B. When One to Two Weeks.—In general, the same steps are to be followed as in A., with the following differences: Step 7—Cover the floor with only 2 feet of earth instead of 3. Step 8—Build the earth wall only 12 inches thick. If more time is available, more earth can be added later.

C. When Two to Six Days.—1. Place planks, shelving, or several thicknesses of cardboard around the outside of all basement windows, and shovel about 2 feet of earth against this support.

2. Follow steps 5, 6, 7 of A., but use a layer of earth only 12 inches thick at first.

3. If more time remains, increase the earth layer to 18 inches in thickness.

4. If still more time is available, try to build at least 1 wall of earth 12 inches thick in the basement (B., step 8).

5. The women should be procuring food and storing water in every available con-

tainer.

D. WHEN ONE TO TWO DAYS.—1. Protect and cover basement window openings as in C., step 1.

2. Brace every other joist in the basement shelter area.

3. Cover evenly with 8 inches of earth the floor above the shelter area.

4. If more time remains, increase earth cover to 12 inches.

5. The women should be procuring food and storing water in every available container.

E. WHEN SIX TO TWENTY-FOUR HOURS. —1. Cover basement windows as in C., step 1.

2. Shovel a layer of earth 6 inches thick over the floor of the room above the shelter area.

3. If more time remains, follow steps in D.

4. The women should be procuring food and storing water in every available container.

F. WHEN THREE TO SIX HOURS.—1. Cover basement windows as in C., step 1.

2. Shovel a layer of earth 4 inches thick over the floor of the room above the shelter area.

3. If more time remains, follow E., then D.

4. The women should bring all available food to the shelter area and fill all available containers with water. In some areas, it may be possible to buy more food. In most areas, this will be impractical.

G. WHEN ONE TO THREE HOURS.—1. Cover basement windows as in C., step 1, but to thickness of 1 foot only.

2. Bring all available food to basement, and fill all available containers with water. Make no attempt to purchase food.

3. Bring tables to basement.

4. Pile books, magazines, anything, on top of tables, and crouch under tables. If necessary brace tables.

H. WHEN THIRTY TO SIXTY MINUTES.—1. Cover basement windows with up to 6 inches of earth.

TABLE I.—RELATIONSHIPS BETWEEN FLASH-SOUND INTERVAL, DISTANCE TO CENTER, AND ESTIMATED FALLOUT TIMES*

Flash-Sound Interval (Seconds)	Distance (Miles)	Probable Time to Fallout (Minutes)
Under 50	Under 10	10
60	12	12
90	18	18
120	24	24
200	40	40
300	60	60
500	100	100
750	150	150

* Several assumptions are made in this table. First, it is assumed that the reader is in the direct path of the fallout. In reality, the fallout pattern is cigar-shaped. However, it is better to take precautions that are unneeded than not to take them and need them.

A second assumption is that the stratosphere winds will blow at an average rate of 60 miles per hour. The actual velocity might be lower, and in a few situations, higher. However, on the basis of present knowledge, 60 miles per hour seems a reasonable estimate.

2. Bring all available food to basement, and fill all available containers with water.

3. Bring tables to basement. Pile things on tables, and crouch under tables. If necessary brace tables.

I. WHEN FIFTEEN TO THIRTY MINUTES.—1. Bring a seven-day supply of food and water to basement.

2. Bring tables to basement, pile things on tables, and crouch under tables. If necessary brace tables.

J. WHEN FIVE TO FIFTEEN MINUTES.—1. Bring a two-day supply of food and water to basement.

2. Lie down in corner, as far from window as possible.

3. If there is extra time, pile a barrier of books, magazines, wood, furniture, anything, between your family and any window opening.

K. WHEN ZERO TO FIVE MINUTES.—1. Go right to basement.

2. Lie down in corner, as far from windows as possible.

3. If there is extra time, pile a barrier of books, and so forth, between your family and any window opening.

L. When There Is no Warning (Bomb Flash Is Seen).—1. Drop to the floor at once, face down, eyes closed, and protect your eyes with your arms.

2. Start counting out loud—one second, two seconds, three seconds, and so forth—until you hear the noise of the blast. The time interval between flash and blast is a rough guide to the distance to the center of the explosion.

This distance, in turn, gives a rough approximation of the period of grace before fallout arrives (Table I).

3. Assume that the minimal grace period will be ten minutes, then follow the recommendations in J.

4. If the time interval indicates a longer grace period, follow the recommendations given in the appropriate section. For example, if it appears that the grace period will be forty-five minutes, follow the recommendations in H.

5. If specific civil defense announcements over the official civil defense channel (Conelrad) give a more precise time prediction, follow them.

(*Number ten in a series of articles on the Physician in Civil Defense*)

National Paunchiness Decried as Preventable

For those having waistline difficulties, there is blunt talk from one of the nation's leading nutrition scientists, Dr. C. G. King, executive director of the Nutrition Foundation. Overeating—the cause of almost all obesity—is the "most damaging kind of malnutrition in the U.S. and the other technologically advanced countries," he says.

Moreover, it is the "least excusable form of malnutrition."

The consequences are simple: "fat people have more ailments and die younger." What can be done to induce people to eat only as much as they actually require? Some, Dr. King notes, are convinced by an awareness of the way in which overeating reduces the average life span. In other cases, the social premium on slimness proves decisive.

Whatever the motivation—the desire for longevity, physical strength, or social success—nutrition education and practices have a dominant role. He emphasizes that both adults and children must be alerted to the consequences of overeating and obesity.

"Average U.S. adults could beneficially lose 15 pounds each." Dr. King feels a target of that nature is needed for the guidance of laymen and for intelligent practice in preventive medicine.

He adds that as nutrition research gives a growing insight into the "cause and prevention of metabolic diseases, public education will become a steadily more important factor in conserving health. We are moving toward the concept that a sick person means someone has failed—probably the patient and possibly the doctor—except in cases of normal aging and even that can surely be retarded by intelligent and satisfying types of living."

In regard to diet, he urges a broad balance of foods, including regular consumption of meat, milk, poultry, fish, bread, other cereals, some unsaturated fats, potatoes, leafy vegetables, and fruit.—*Nutrition Foundation*

CLINICAL ANESTHESIA CONFERENCE

A series of conferences on medical emergencies
in the operating room including causes of death
during anesthesia

Prepared by the Anesthesia Study Committee of the
New York State Society of Anesthesiologists

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Induction Overdosage

In a previous Clinical Anesthesia Conference it was pointed out that elderly persons require significantly smaller doses of narcotic drugs than younger patients do to avoid respiratory and circulatory depression.* Similar caution should be applied during induction and maintenance of anesthesia in geriatric patients. The following case report supplied by J. E. Campbell, M.D., illustrates the disastrous result when routine anesthetic technics are applied to an elderly person.

Case Report

An eighty-three-year-old woman was admitted to a hospital following a fall to the floor while getting out of bed. She suffered severe hip pain and external rotation of the right leg. The patient was 60 inches in height and weighed 82 pounds. She was poorly nourished and disoriented.

Her arterial blood pressure was 160 mm. Hg systolic and 90 diastolic. Her pulse rate was 68 beats per minute, and her respiratory rate was 22 respirations per minute. Her temperature was 99.2 F. The clinical impression was fracture of the right hip, hypertensive cardiovascular disease with heart block, and dehydration.

Laboratory studies showed that the hemoglobin content in the blood was 12 Gm. per 100 ml. The white blood count was 13,000 per ml. with 92 per cent polymorphonuclear cells. The hematocrit was 38. The blood urea nitrogen was 11 mg. per 100 ml.

A roentgenogram film of the chest showed slight, mottled, increased density in both upper lung fields and a suggestion of cardiac enlargement. X-ray findings also revealed a fracture of the neck of the right femur with displacement of the shaft upwards, so that the greater trochanter lay on a level with the superior aspect of the acetabulum, and there was moderate anterior angulation at the fracture site.

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* Clinical Anesthesia Conference, Burstein, C. L., Ed., Respiratory depression due to postoperative narcotic overdosage, NEW YORK STATE J. MED. **60**: 2296 (July 15) 1960.

An electrocardiogram showed complete auriculoventricular dissociation with widened and slurred QRS complexes.

The patient was placed on Buck's extension. She was given Digoxin and Mercuhydrin. On the following day, it was proposed to do an open reduction of the hip. For preanesthetic medication the patient was given 25 mg. of hydroxyzine pamoate (Vistaril) and 0.3 mg. of atropine by intramuscular injection.

When the patient arrived in the operating room an hour later, she was very restless and complained of severe pain. Spinal analgesia had been proposed, but the patient was unmanageable. Instead, she was given 25 ml. of 0.5 per cent thiopental sodium intravenously to facilitate moving her onto the operating table. Following this, the patient ceased breathing, and the blood pressure and pulse were unobtainable. An airway was introduced, and artificial respiration with oxygen was started. Methamphetamine hydrochloride (Methedrine) 30 mg. was injected intravenously followed by 5 mg. of phenylephrine hydrochloride (Neo-Synephrine) but without result.

The patient's pupils became dilated, and she was pronounced dead.

A complete autopsy did not reveal any direct cause of death. It showed generalized arteriosclerosis, chronic perisplenitis, and the transcervical fracture of the right femur. Chemical analyses of the distribution of thiopental sodium in the tissues showed the following quantities in milligrams per 100 Gm. of tissue: blood, 1.79; brain, 1.68; heart, 2.72; liver, 3.38; lung, 3.30; mesenteric fat, 1.68, and adrenals, 2.88.

It was concluded that the body of the decedent contained approximately 200 mg. of thiopental sodium.

Comment

The conclusion to be drawn from this unfortunate case is obvious. Debilitated elderly individuals can be overdosed easily with anesthetic drugs or other central nervous system depressant drugs. When an anesthetic is administered by an inhalation technic, it is possible to avoid such a catastrophe because certain signs that indicate increasing depth of anesthesia follow a certain sequence, and it is possible to revert the process by emptying the breathing mixture while the oxygen content is increased. In the case of an intravenously administered drug which is injected rapidly, as it was in this case, there may be little that can be done when the predetermined dose happens to be an overwhelming overdose.

To minimize such untoward complications it is advisable to proceed by means of one of two technics. One may prepare a more dilute solution, such as a 0.2 or 0.1 per cent concentration of thiopental sodium which is then administered intravenously by an intravenous drip until the desired effect is obtained. If a more concentrated solution is preferred, as the one used in this case, it should not be injected as a single injection but rather by means of serial injections of 3 to 5 ml. at a time with at least thirty seconds elapsing between increments. The latter technic probably is the safer because there have been instances reported in which the intravenous drip of thiopental sodium was accidentally left running, and inadvertent overdosage occurred.

(*Number one hundred one in a series of Clinical Anesthesia Conferences*)

The opportunity is often lost by deliberating.—Publilius Syrus

BRIEFS ON ACCIDENTAL CHEMICAL POISONINGS IN NEW YORK CITY

From the Poison Control Center, New York City Department of Health

A series prepared by

HAROLD JACOBZINER, M.D., *Assistant Commissioner, New York City Department of Health; Medical Director, Poison Control Center*

HARRY W. RAYBIN, M.S., *Technical Director, Poison Control Center*

Activities of the Poison Control Center During the First Six Months of 1960 and the Reporting of Side-Reactions

The number of reported poisoning incidents was slightly reduced compared with the corresponding periods of last year (Tables I and II). However, the decrease may be more apparent than real. During all months except January the number of reported incidents in 1960 was higher than during 1959. The larger number of incidents reported in January, 1959, may be due to a backlog of cases which were pending from 1958. No seasonal pattern is observed. Internal and external medicine account for 57.5 per cent of the total reported poisonings at all ages.

Fifty-nine fatalities were reported during the first six months of this year. This compares favorably with the number of deaths (71) reported in the same period of 1959. A considerable reduction is noted in fatalities caused by barbiturates.

The number of fatalities caused by lead poisoning was exactly the same as in 1959.

TABLE I.—NUMBER OF INCIDENTS REPORTED TO THE NEW YORK CITY POISON CONTROL CENTER

Causes of Poisoning Incidents	January		February		March		April		May		June		Cumulative Total (6 Months)	
	1960	1959	1960	1959	1960	1959	1960	1959	1960	1959	1960	1959	1960	1959
Internal medicines	480	645	428	377	414	341	432	411	378	316	347	343	2479	2433
External medicines	79	141	71	87	65	65	67	72	80	64	79	70	441	499
Rodenticides	12	24	13	6	13	16	11	10	14	12	13	12	76	80
Insecticides	53	69	33	28	25	12	33	21	43	29	65	59	252	218
Disinfectants	15	38	16	12	7	15	11	9	18	15	13	15	80	104
Detergents	42	79	44	47	53	41	50	55	48	45	32	53	269	320
Polishes	23	30	12	19	7	8	12	3	16	9	9	5	79	74
Bleaches	29	58	31	32	22	28	37	24	36	27	30	27	185	196
Solvents	19	56	28	44	36	22	33	32	43	25	40	42	199	221
Cosmetics	50	73	49	40	43	32	35	36	41	44	33	39	251	264
Miscellaneous	147	229	109	124	136	103	122	132	124	118	121	132	759	838
TOTAL	949	1,442	834	816	821	683	843	805	841	704	782	797	5,070	5,247

TABLE II.—FATALITIES REPORTED TO THE NEW YORK CITY POISON CONTROL CENTER

Cause of Fatalities	January		February		March		April		May		June		Cumulative Total (6 Months)	
	1960	1959	1960	1959	1960	1959	1960	1959	1960	1959	1960	1959	1960	1959
Plastic bag	..	..	2	..	..	..	..	..	1	1	..	..	3	1
Barbiturate	2	5	1	3	2	4	2	3	2	2	..	6	9	23
Sleeping pills	1	1	2	..	1	1	..	1	2	..	..	1	6	4
Lead	1	3	..	..	..	..	1	..	2	1	1	1	5	5
Unknown	4	5	1	..	3	2	2	..	4	3	..	2	14	12
Narcotics	1	..	3	..	4	1	..	1	..	2	2	2	10	6
Aspirin	..	..	1	..	..	..	1	1	..	1	..	..	2	2
Sodium fluoride	..	..	..	..	..	..	..	..	..	1	1	..	1	1
Quinine and turpentine	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Demerol	..	..	..	..	..	..	..	..	1	..	..	..	1	..
Atropine	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Methyl alcohol	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Methyl salicylate	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Anacin	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Cyanide	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Oil of Wintergreen	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Digitoxin	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Lye	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Ammonia water	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Equanil	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Salicylate	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Dioxigin	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Barbiturate and thorazine	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Eye drops	..	..	..	1	..	..	..	..	..	..	..	..	..	1
J-O paste	..	..	..	..	..	..	..	2	..	..	..	1	..	3
Arsenic	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Denatured alcohol	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Penicillin	..	..	..	1	..	..	..	..	..	..	..	..	..	1
Bichloride of mercury	..	..	..	1	..	..	..	..	..	..	..	..	..	1
Carbon tetrachloride	..	..	..	1	..	..	..	..	..	..	..	..	..	1
Isotox garden spray	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Aminophylline	..	..	..	..	..	..	..	1	..	..	..	..	..	1
TOTAL	10	17	12	8	14	9	7	10	12	13	4	14	59	71

These deaths were all preventable and lead poisoning accounted for twice as many deaths as were caused by poliomyelitis at all ages in the same period. With earlier diagnosis and prompt and appropriate treatment, the fatalities due to lead poisoning could have been prevented.

Regional Activities

Eighty-five communities from upstate New York requested and received aid, and more than 38 localities from New Jersey also received such aid from the New York City Poison Control Center.

Requests for aid also were received from Alabama, California, Colorado, Connecticut, Illinois, Indiana, Louisiana, Michigan, Minnesota, Pennsylvania, Virginia, and Wyoming. France, Denmark, and Sweden requested guidance on the development of centers.

Reporting of Side-Reactions

In a recent brief we reported 2 cases of aminophylline intoxication and side-reactions resulting from overdosage.* The brochure from the manufacturer did not mention possible side-reactions or treatment of overdosage.

Some of the major emergencies encountered by practicing physicians are the accidental ingestion of massive doses of toxic agents by children, and alarming manifestations due to side-reactions from therapeutic drugs. At present the side-reactions to drugs, the contraindications to administration, and the effects of overdosage are not always included in the professional literature distributed to physicians.

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* Jacobziner, H., and Raybin, H. W.: Aminophylline and other severe poisonings, NEW YORK STATE J. MED. **60**: 3300 (Oct. 15) 1960.

Over three years ago the advisory committee of the Poison Control Center recommended that "pharmaceutical companies should in their brochures and package circulars to physicians on new drugs describe briefly the maximum therapeutic dose; the dosage level of serious toxicity, particularly in children; symptoms and signs of massive overdosage; treatment." Although this recommendation was promptly released to the drug industry, to appropriate professional and trade publications, and to enforcement agencies concerned with drug control, it has not yet been fully observed.

With the increasing number of reported incidents and the steadily growing number of new drugs, the New York City Poison Control Center became more vitally concerned about this problem of side-reactions and toxicity from new drugs.

The New York Academy of Medicine was requested to endorse the Department's recommendation that practicing physicians report any side-reactions which they observe, particularly with the use of new drugs, so that more may be learned about the ill-effects of drugs which are widely used in modern therapy. The information obtained would be promptly disseminated as a guide to physicians, and the use of unsafe and toxic drugs thus would be restricted.

At a stated meeting in 1959 of the Public Health Committee of the New York Academy of Medicine, we reviewed the problem of adverse reactions and the possible danger resulting from misleading advertising which often omits mention of contraindications and side-reactions or adequate warning against misuse.

Knowing of the Academy's interest in the problem of information and education of the physician, we solicited their support in the whole area of iatrogenic accidents, side-reactions due to drugs, and misleading advertising.

We suggested that the reporting of side-reactions could be handled logically and effectively by the Department of Health through the existing reporting system of the Poison Control Center since side-reactions are truly poisonings.

We are very grateful to the Public Health Committee of the New York Academy of Medicine for its endorsement of our request and for urging that the information obtained through the reporting "be publicized to the medical profession as part of an educational program directed toward the reduction of hazards from drugs."

In keeping with the Academy's suggestion the following notice was sent to all hospital superintendents, hospital emergency rooms, and directors of medicine and surgical services, and it also was inserted in all local county medical society bulletins.

Reporting of Adverse Drug Reactions

The Department of Health is very much concerned about the lack of accurate information available to the physician in the literature disseminated by pharmaceutical manufacturers relating to adverse drug reactions and contraindications, especially to the ever-increasing number of newer drugs.

Although new drugs are evaluated for safety by the Food and Drug Administration prior to their release for general use, wider clinical use may uncover adverse effects which were not observed in the trial investigations.

In order to protect the public from the possible use of harmful drugs and to obtain accurate information promptly, the Health Department requests all physicians and hospitals to report to the New York City Poison Control Center, not only "poisonings," but all side-reactions and effects of overdosages, that is, any untoward reaction from the use of a drug.

Only by means of such wide reporting to a central agency will it be possible to accumulate promptly accurate information about previously unknown hazards and to determine whether a drug is safe for specific use. The information and knowledge thus obtained will be analyzed and the results widely publicized so that physicians will be alerted to the possible dangers and the need for preventing harmful effects. Physicians may be assured that all information which they submit will be treated very confidentially.

The New York Academy of Medicine, through its Committee on Public Health, endorsed the action of the Department of Health in establishing a system for the reporting of side-reactions and urged that the data thus assembled be disseminated among physicians as part of an educational program directed toward the reduction of hazards from drugs.

Poison Control officers therefore are requested to report in detail every side-reaction to any drug and any reaction from an overdosage to the Poison Control Center. Specially designed forms are available for this purpose and may be forwarded to you on request. Reports also may be submitted, however, on the regular 45VX discharge form.

Reporting Program

The Food and Drug Administration also is vitally concerned with the problem of unusual or adverse reactions to drugs.

In May, 1960, it announced a program which it has initiated for the reporting of such reactions. Initially, it will be conducted with a limited number of hospitals selected to represent a cross section of medical specialties. As the program develops, it is planned that additional hospitals will be included and that ultimately a national reporting system will be developed. The information obtained from such reporting will be utilized by the Food and Drug Administration in the resolution of medical and administrative problems under the Federal Food, Drug, and Cosmetic Act. Appropriate measures will be taken to protect the public from the possible ill-effects of drugs.

We plan to work very closely with the Food and Drug Administration and to make freely and promptly available to them all the information which we may have relating to toxic effects from drugs. It is regrettable that the Food, Drug, and Cosmetic Law does not legally require the reporting of untoward reactions. However, the agency is to be congratulated for its recent efforts in proposing sweeping changes in the labeling requirements of prescription drugs, devices, and new drugs. It makes it mandatory for the label or for the printed material within the package to include adequate information for the use of the drug, including indications, effects, dosages, routes of administration, methods, frequency and duration of administration, and any relevant hazards, contraindications, side-effects, and precautions under which practitioners licensed by law to administer the drug can use the drug safely and for the purpose for which it is intended, including all purposes for which it is advertised or represented. This is more in keeping with the labeling requirements of the New York City Health Code.

Incidentally, it is gratifying to relate that Congress has just enacted the Federal Hazardous Substance Labeling Act, Public Law 86-613. This brings under Federal control, for the first time, the labeling of hazardous substances intended for household use. While it is as yet not an ideal law, it is a distinct improvement and will result in the protection of the public and the prevention of many accidental occurrences.

Poisonings by drugs or other toxic agents are legally reportable to the Department of Health according to the New York City Health Code. Since "side-reactions" is an euphemism for poisonings, such occurrences must be reported promptly to the Department of Health as required by law. Physicians are respectfully requested to report promptly and completely to the Poison Control Center every side or untoward reaction to any drug. Physicians may be assured that all information will be treated very confidentially. The accumulated knowledge, particularly about the action and the effect of new drugs, which will be disseminated to the medical profession will result in greater protection of the public and the saving of many lives.

(*Number sixty-seven in a series of Briefs on Accidental Poisonings*)

CASE REPORT

Changing Concepts in Therapy of Etiologically Obscure Pericarditis

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(From the Department of Cardiology, Kingston Hospital)

PERICARDITIS that is integral to rheumatic fever, ischemic heart disease, collagen disease, and uremia seldom creates diagnostic perplexity or therapeutic anxiety because the pericardial process is an anticipated event in the course of the disease and rarely per se the ultimate cause of death. Suppurative pericarditis and neoplastic involvement, almost invariably secondary to a pulmonary focus, require more vigilant diagnostic and definitive therapeutic measures. However primary nonsuppurative pericarditis may defy less than extraordinary procedures. This enigma largely comprises tuberculous and benign idiopathic nonspecific pericarditis. The former may be primary in the clinical sense that the disabling symptoms result solely from pericardial disease, in the latter primary in that the morbid process is anatomically confined to the pericardium. The increasing prevalance and morbidity of aseptic pericarditis and possible confusion with other maladies stimulated the report of the following cases.

Case Reports

CASE 1.—A white male, nineteen years of age, was first seen January 13, 1946, because of left chest pain and pyrexia, attributed to pleurisy with effusion (Fig. 1A) following a pneumonitis. After penicillin therapy progressive clearing of the effusion occurred, but on Febru-

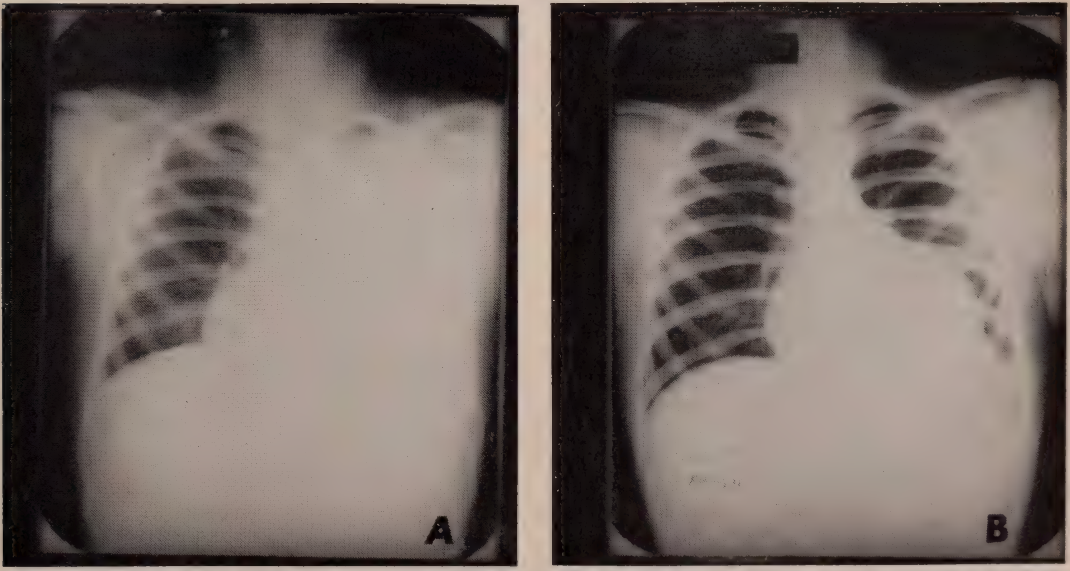

FIG. 1. (*A*) Left chest pain and pyrexia attributed to pleurisy with effusion. (*B*) Pericardial friction with enlarged cardiac silhouette.

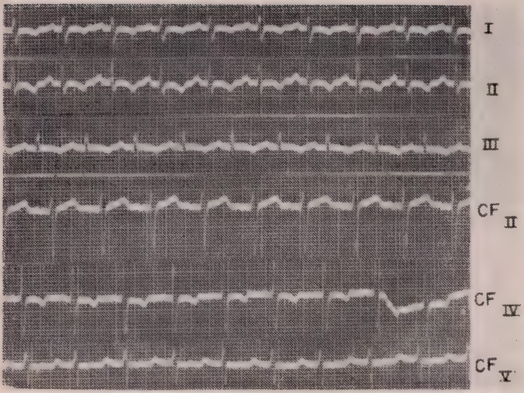

Fig. 2. Serial electrocardiograms with T-wave inversion.

ary 9 a loud pericardial friction rub was found, accompanied by an enlarged cardiac silhouette (Fig. 1B) with only mild pyrexia, weight loss, and asthenia but with no dyspnea or chest pain. Serial electrocardiograms demonstrated persistent T-wave inversion (Fig. 2) but no RS-T segment elevations, and an intradermal tuberculin test showed no reaction. Three weeks later apyrexia, weight gain, and a sense of well-being were associated with a diminution in the size of the cardiac silhouette; but tachycardia, T-wave inversion in electrocardiograms, a slightly accelerated rate of erythrocyte sedimentation, a low pulse pressure, and slightly increased venous pressure continued. Sequential data at this time appeared tenable with a healing septic pericarditis, a not-infrequent sequela of left suppurative pleuritis.

On April 27, concomitant with a hemolytic streptococcal throat infection, the initial overt signs of cardiac tamponade were manifested by facial edema, hepatomegaly, and ascites. Intensive penicillin therapy alleviated the acute tonsillitis with its constitutional reaction, but subsequently increasing signs and symptoms of cardiac tamponade ensued with diminution in the cardiac silhouette (Fig. 3), stable electrocardiographic T-wave inversions, patent dyspnea, and a normal rate of erythrocyte sedimentation.

It was now postulated that the prolonged clinical course following a respiratory infection was compatible with a polyserositis (Concato's disease) and that current grave signs and symptoms indicated a severe constrictive pericarditis and therefore warranted pericardiectomy. An unsuccessful operation at a metropolitan center revealed a markedly thickened pericardium (2.5 cm.), which at autopsy proved to be tuberculous and coexisted with pulmonary miliary tuberculosis and myocardial atrophy.

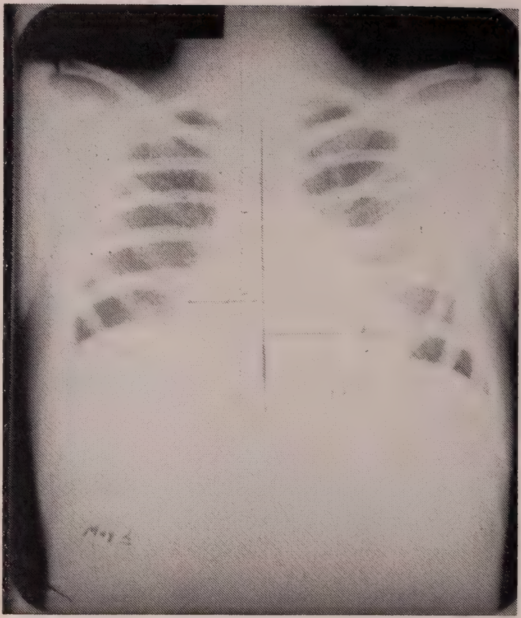

Fig. 3. Diminution in cardiac silhouette.

Comment.—Axiomatically a primary pleural effusion is tuberculous unless it is otherwise verified. The clinical course characterized by pleural effusion, pericarditis, and ascites seemed to fulfill the criteria of Concato's polyserositis. This syndrome has been considered a precursor of chronic constrictive pericarditis[1] and is presumed to be of tuberculous origin.[2] Misleading pertinent data included an apparent initial beneficial response to penicillin with dissolution of the pleural effusion, negative results of a tuberculin skin test, and a normal rate of erythrocyte sedimentation prior to operation. An important clue to the definitive nature of the disease process might have been obtained from the serial electrocardiograms. Noteworthy were the absence of RS-T segment elevation which Bellet and McMillan[3] observed in tuberculous pericarditis. But the single influential factor deterring early pericardiectomy and enhancing procrastination was the seemingly benign manner of the disease for a period of four months.

In the light of present knowledge early pericardiectomy might not only have forestalled an imminently swift mortality but also might perhaps have modified favorably the morbidity, particularly in view of the now-available specific antituberculous drugs. Immediately before operation the symptoms could be accounted for as isolated disease of the pericardium, and in this sense a clinically primary tuberculous pericarditis existed. Even if it is acknowledged that clinically primary tuberculous pericarditis is not synonymous with anatomically primary pericarditis, because another focus of infection, perhaps superficially occult, if painstakingly sought is invariably found—in this instance an undetected pulmonary miliary process—nevertheless adequate early pericardiectomy could at least have ameliorated the presenting disabling symptoms.

Pursuing this vein of thought, in the not-too-remote past many authorities considered tuberculous activity a formidable contraindication to surgical intervention. But in 1937 Blalock and Levy[4] firmly established the efficacy of pericardiectomy notwithstanding acute inflammatory reaction. Of 24 proved cases of active tuberculous pericarditis, 3 of 6 patients who were subjected to pericardiectomy survived, but all of the 18 patients who were not operated on succumbed. In 1951 Holman and Willett[5] stressed the insidious, devastating, progressive course of tuberculous pericarditis and recommended pericardiectomy in the stage of inflammatory effusion before the inevitable enveloping fibrous pericardial incarceration of the myocardium.

In Case 1, granted the occult presence of pulmonary miliary tuberculosis, one can only speculate about the results of antituberculous drugs complemented by pericardiectomy during the stage of acute effusion. But with the available data contemporary medical opinion would justify thoracotomy at least for pericardial biopsy.

Case 2.—A white male, fifty-two years of age, was referred to the Kingston Hospital August 6, 1954, with a tentative diagnosis of acute myocardial infarction. Thirty-six hours earlier while walking he noted a neuralgic pain in the right neck and face that was alleviated somewhat by household analgesic agents. Subsequently, he experienced a pain in the right anterior chest that was aggravated by inspiration and bodily movements. Exertional dyspnea with faintness ensued, and the chest pain, now confined to the precordial area, worsened progressively and was intensified with even normal inspiration and trunk movements. The nonradiating precordial pain during the early hours of August 6 became excruciating, necessitating massive parenteral opiates, and it was accompanied by profound respiratory embarrassment. Singularly absent was a history of antecedent respiratory infection, cough, rigors, or peripheral circulatory collapse. The past history was free from evidence of cardiovascular or respiratory disease.

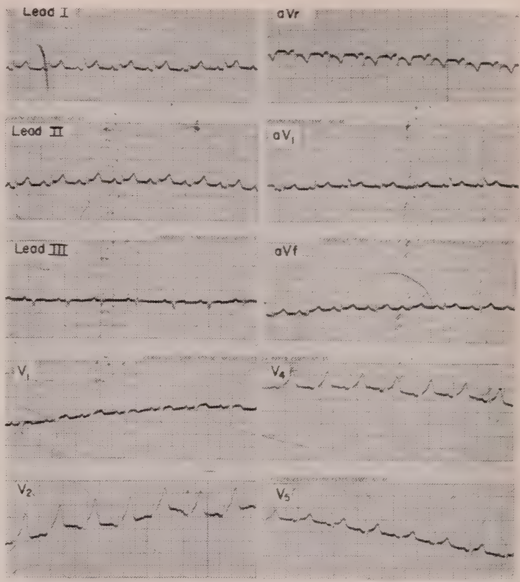

Fig. 4. Specific electrocardiographic alterations.

A routine examination revelaed an acutely ill, prostrate, asthenic white man with moderate respiratory embarrassment, who was complaining of severe, constant, nonradiating precordial pain. A blood pressure of 90/64 to 90/60 in the right arm was accompanied by tachycardia (120) without pulsus paradoxus. The pulmonic second sound was greater than the aortic second heart sound, but no adventitious sounds were audible over the precordium and no cardiac enlargement was detected. Occasional bilateral basal coarse rales were not associated with detectable pleuritis. Retinopathy, clubbing of fingers, distended neck veins, and hepatomegaly were absent. Moderate pyrexia (of 102.2 F.) was associated with leukocytosis (white blood count 22,000), with 90 per cent granulocytes and with an erythrocyte sedimentation rate (Cutler) of 5 mm. in sixty minutes. The urine and serologic studies were not informative. A teleroentgenogram disclosed an enlargement of the cardiac silhouette, and specific electrocardiographic alterations (Fig. 4) inspired the diagnosis of acute pericarditis, despite the absence of a pericardial rub.

The precordial pain, patently aggravated by trunk movements and inspiration, proved refractory to parenteral opiates, the pyrexia and sinus tachycardia persisted despite massive parenteral penicillin, and respiratory embarrassment necessitated oxygen. On August 8 pleuritic pain in the left axilla was noted, followed twenty-four hours later by the initial detection of a loud diffuse pericardial friction rub accompanied by pulsus paradoxus; the roentgenographic cardiac silhouette was suggestive of pericardial effusion. A pericardiocentesis done by Joseph Jacobson, M.D., thoracic surgeon at Kingston Hospital, yielded 50 cc. of a serosanguineous fluid with an occasional erythrocyte, free from organisms on direct smear, sterile after prolonged incubation, and free from evidence of tuberculosis on inoculation into a guinea pig.

With the appearance of pericardial friction rub the precordial pain abated, and only slight fever continued (a temperature of from 100 to 101 F.); the leukocytosis diminished (white blood count 13,400 with 70 per cent granulocytes). Episodes of profuse diaphoresis no longer occurred, and on August 13 the removal of the patient from the oxygen tent was not attended by a recurrence of precordial pain or of respiratory embarrassment; but pulsus paradoxus and pericardial rub persisted without significant neck vein distention, and electrocardiograms revealed less RS-T segment elevation. Subsequently, despite massive penicillin and streptomycin therapy, low-grade fever continued, with only a slight diminution in the pericardial friction rub; but the tachycardia abated and the sense of well-being returned. On August 16 electrocardiograms disclosed isoelectric RS-T segments with inverted T_2 and T_3; the leukocytes numbered 12,900 per cubic millimeter, with 71 per cent granulocytes, and repeated blood cultures were sterile.

On August 17, notwithstanding empiric antibiotic therapy, the clinical status deteriorated abruptly. A fever (temperature of 103.8 F.) was attended by profuse diaphoresis, return of severe precordial pain magnified by inspiration, intensified pericardial rub, and granulocytic leukocytosis. A paradoxical pulse persisted, prostration followed, and respiratory embarrassment again necessitated oxygen therapy. Tetracycline (Achromycin) was tried as a replacement for penicillin therapy but to no avail.

On August 19 the grave clinical picture still persisted, and now cortisone, 50 mg. every six hours, enhanced the therapy in a desperate search for succor. Within eighteen hours spectacular clinical improvement ensued, with defervescence, loss of chest pain, pronounced diminution in pericardial rub, and restoration of the sense of well-being. On August 22, under cortisone, tetracycline, and streptomycin therapy, the patient was afebrile and asymptomatic, with only a barely audible localized pericardial friction rub. With successive elimination of streptomycin and tetracycline his clinical course continued to be uneventful, but a barely audible pericardial friction rub with pleural quality persisted, and skiagrams of the chest disclosed a left lower pleuritic reaction. On August 28 the patient was afebrile, asymptomatic, and ambulant about the room, with only an ephemeral faint pericardial rub; the cortisone was diminished gradually in dosage until on September 5 the daily dosage was only 25 mg. On this day fever and pericardial rub were absent, but moderate granulocytic leukocytosis with slight eosinophilia and an increased rate of sedimentation persisted.

Surprisingly enough, within twenty-four hours prostration, pyrexia, severe precordial pain, loud pericardial rub, sinus tachycardia, and profuse diaphoresis recurred. Now cortisone exclusively, 100 mg. per day in divided doses, unencumbered by other drugs, effected a dramatic clinical improvement, and in twenty-four hours defervescence occurred, associated with loss of chest pain, disappearance of pericardial friction rub, and return of the sense of well-being. Over a period of one week the cortisone dosage was diminished gradually, and on September 12, 1954, the patient was discharged home ambulant, afebrile, and asymptomatic, and receiving cortisone, 10 mg. twice a day. The latter therapy was discontinued after two weeks, and thereafter he has been under observation without recurrence of any symptoms; the electrocardiograms together with the cardiac silhouette have maintained a normal pattern.

Comment.—Case 2 fulfills the criteria for acute nonspecific idiopathic pericarditis established by Barnes and Burchell,[6] that is: early almost simultaneous onset of characteristic pain, fever, and leukocytosis with prolonged pericardial rub; electrocardiographic pathognomonic evolutionary patterns; and cardiac enlargement with sterile pericardial effusion and pleuritis and a tendency

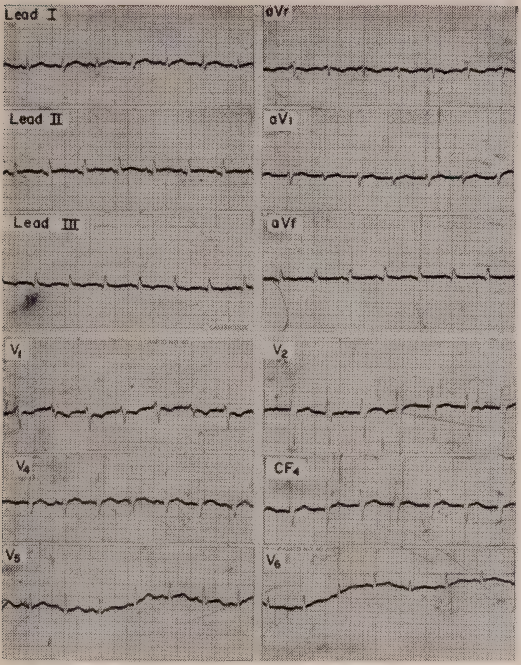

FIG. 5. Electrocardiographic RS-T elevations.

to relapse.

A filterable virus cause[7,8] for acute nonspecific primary pericarditis has been postulated and this type of pericarditis has proved unresponsive not only to empiric antimicrobial[9] measures but also to salicylates. With few exceptions such nonbacterial infections are refractory to drug therapy, including antimicrobial agents.[10]

Theoretically, in such a nonspecific disease process, corticosteroids would suppress the sterile local inflammatory reaction, mitigate the toxic systemic symptoms, and preclude fibrogenetic pericarditic sequelae. Adversely, such therapy inhibits specific antibody response, but this apparently plays a minor role in the sterile inflammations. Furthermore, short-term oral corticosteroid therapy would obviate latent hazards because the prompt and brief activity of such agents facilitates control. Kursban and Iglauer[11] after sixteen days of unsuccessful therapy with penicillin, chloramphenicol, chlortetracycline (Aureomycin), and salicylates noted a spectacular response with adrenocorticosteroid therapy (corticotropin), such as: defervescence, dissipation of chest pain and pericardial friction rub, and diminution of cardiac silhouette within forty-eight hours. Weiss[12] in 1952 noted gratifying results with cortisone in 2 cases of acute idiopathic pericarditis.

In this case distressing pain, respiratory embarrassment, and toxic symptoms were speedily ameliorated by short-term oral cortisone therapy, and, additionally, the pericardial friction rub vanished. A conclusive opinion of such therapy on the basis of a few cases is not contemplated.

CASE 3.—A thirty-one-year-old white male, a dry cleaner, entered Kingston Hospital on March 26, 1959, because of exertional dyspnea and chest pain. On December 24, 1957, following an automobile accident, he was hospitalized at a neighboring facility for four weeks for cerebral concussion, severe laceration of the forehead, multiple contusions of the chest with fractured ribs, compression fracture of the second lumbar vertebra, and a purported but not substantiated contusion of the heart. The present illness had had an insidious onset in early January, 1959, of respiratory discomfort of progressive intensity, latterly evoked by minimal exertion, ill-defined slightly oppressive chest pain, and a 60-pound weight loss but with no orthopnea, patent pyrexia, excessive diaphoresis, cough, or pleuritic-type chest pain.

A physical examination revealed a chronically ill-appearing, wan, white male with a slight fever of from 99 to 100 F. accompanied by physical signs of large effusion in the left pleural cavity and a loud pericardial friction rub. A pulsus paradoxus (10 to 15 mm. Hg) was associated with neck vein pulsation but with only slight distention, when the subject was semirecumbent in bed, and with slight hepatomegaly but no ascites or pedal edema. The electrocardiographic RS-T elevations (Fig. 5) connoted acute pericarditis, and the teleroentgenogram (Fig. 6A) disclosed gross cardiac enlargement with a left pleural effusion. An x-ray film of the lumbar spine demonstrated the old compressed fracture of the body of the second lumbar vertebra. The hemogram, serology, and urinalysis were not remarkable and the Mantoux test with 0.0001 mg. of purified protein showed negative results. On April 8, 1959, a thoracentesis yielded 1,200 cc. of sterile, cloudy, hemorrhagic fluid containing 4.7 Gm. per 100 ml. of protein but with no neoplastic cells and free from acid-fast bacilli on culture and guinea pig inoculation. Within six days the pericardial rub was dissipated but the cardiac silhouette remained enlarged. After only expectant therapy the patient was discharged home April 14, 1959, for further observation with a diagnosis of idiopathic non-

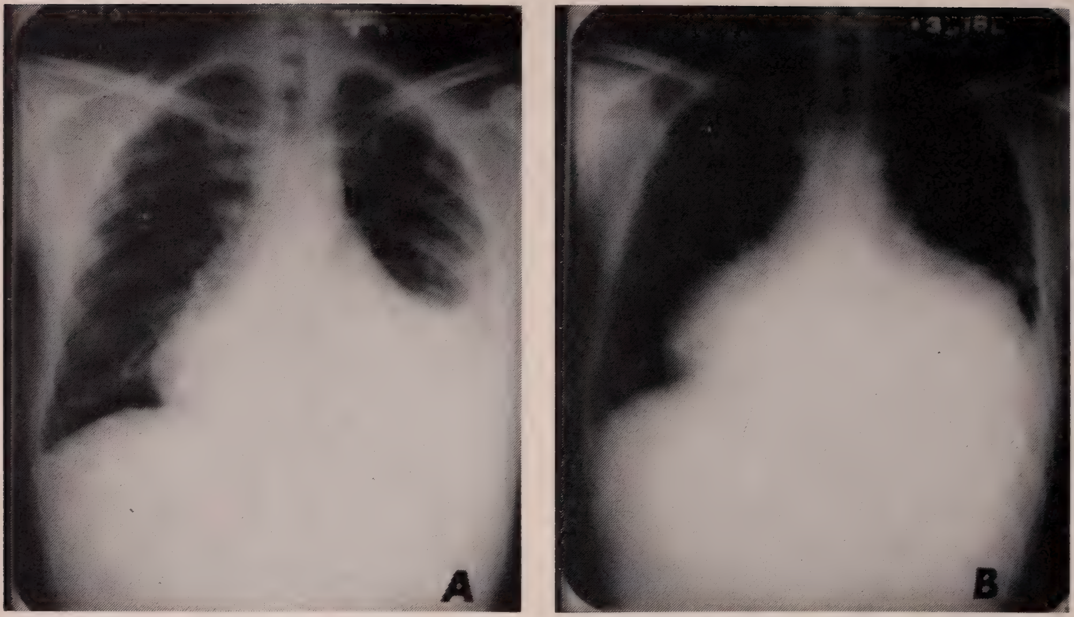

FIG. 6. Teleroentgenograms. (*A*) Gross cardiac enlargement with left pleural effusion. (*B*) Residual pleural thickening at base of left lung and persistent, gross enlargement of cardiac outline.

specific pericarditis, although earlier, the diagnosis of pulmonary neoplasm with involvement of the pericardium had been entertained and, as less likely, traumatic hemorrhagic pericarditis.

For the next six weeks the patient's clinical course was characterized by moderate exertional dyspnea and easy fatigability but no significant fever. A teleroentgenogram (Fig. 6B) on May 25, 1959, revealed residual pleural thickening at the base of the left lung and persistent gross enlargement of the cardiac outline. Electrocardiographic T-wave alterations suggested chronic pericarditis (Fig. 7) as evidenced by low voltage complexes.

On June 10, 1959, a thoracotomy for pericardial biopsy, performed by Joseph Jacobson, M.D., revealed no mediastinal disease or adenopathy, and a biopsy of the free, smooth, injected, nonadherent, parietal pericardium evidenced only a nonspecific inflammatory reaction. After a suction evacuation of 3,500 ml. of sterile, clear, straw-colored fluid from the pericardial sac, a pleuropericardial "window" permitted residual drainage into the left pleural cavity. Following an uneventful postoperative course the patient was discharged on June 17, 1959.

Convalescence at home brought a gradual return of strength and endurance; the dyspnea abated; the cardiac silhouette (Fig. 8) returned to normal size; and since early September, 1959, when the patient returned to his usual work, there have been no untoward signs or symptoms, attesting to his complete recovery.*

Comment.—The benignity of idiopathic nonspecific pericarditis has been mentioned prominently, and because the disease is purportedly self-limited and the clinical course commonly is favorable, only expectant symptomatic therapeutic measures are employed. In Case 2 a profound toxic constitutional reaction and a potentially prolonged morbidity warranted more vigorous corticosteroid therapy. The apparent beneficial effects may have depended on chance in the natural course of the disease, since corticosteroid therapy has proved fruitless in other instances. Zinsser *et al.*[13] in September of 1959 reported a series of individuals who were refractory to steroid therapy, and they illustrated a new form of disability that is due to chronic idiopathic pericarditis. Their patients developed "a state of invalidism characterized by recurrent episodes of fever, pleuritis, and constitutional symptoms. Their illness failed to respond to medical treatment but was terminated in all cases after pericardiectomy. It is proposed that this form of in-

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* This case was presented with the cooperation of Virgil DeWitt, M.D., and William Pugliese, M.D., New Paltz, New York.

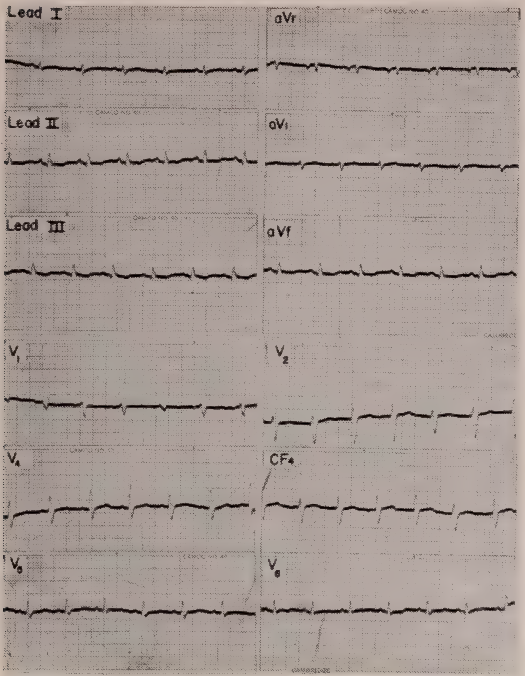

FIG. 7. Electrocardiographic T-wave alterations.

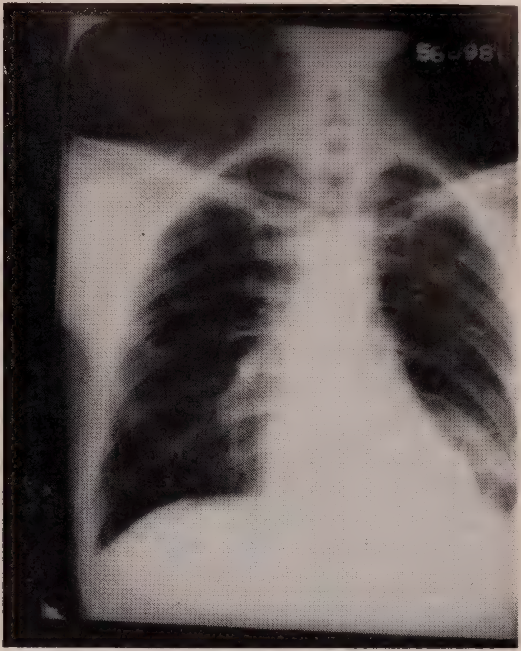

FIG. 8. Normal cardiac silhouette.

validism represents an indication for pericardiectomy entirely apart from considerations of constriction or tamponade." Almost simultaneously Jaffe and Kallman[14] in August, 1959, noted the similarity between chronic idiopathic pericarditis with massive effusion and chronic constrictive pericarditis in a case cured by pericardiectomy. Earlier in 1950 Barker and Johnston[15] ascertained the entity of chronic idiopathic pericarditis with effusion, and Shumacker and Harris[16] in 1956 recorded cases of chronic idiopathic pericarditis with massive effusion treated by pericardiectomy. That chronic constrictive pericarditis can also complicate acute benign pericarditis and be alleviated by pericardiectomy was established by Rabiner *et al.*[17]

An erroneous diagnosis of "nonspecific" for tuberculous pericarditis should be of no concern nor should it be a contraindication to pericardiectomy since Mannix and Dennis[18] in 1955 extolled the virtues of early pericardiectomy not only in idiopathic pericarditis with effusion but also in tuberculosis, and they decried conservative repeated pericardiocenteses. Of 6 patients, 5 idiopathic and 1 tuberculous, 4 who were operated on during the stage of effusion exhibited relief of tamponade and striking improvement.

In 1954 Williams and Soutter[19] counseled a less hazardous procedure for chronic nonsuppurative pericarditis with effusion occurring in tuberculosis, tumor, and nonspecific pericarditis. "The establishment of a large opening between the pericardium and pleural cavity will give immediate relief of tamponade. Accumulated fluid in the pleural cavity can then be drained with little hazard of causing suppurative pericarditis." Proudfit and Effler[20] in 1956 confirmed this conservative meritorious surgical approach for chronic idiopathic pericarditis with effusion, involving only diagnostic pericardial biopsy and therapeutic drainage via a pleuropericardial window. Of 16 cases, 1 was tuberculous, 6 were nonspecific, 5 were chronically hemorrhagic, 1 had a malignant condition, 1 had chylopericardium, 1 had radiation sickness, and 1 had a chronic bacterial condition.

When Case 3 was subjected to this reasonable, relatively innocuous procedure, he made a salutary recovery. From accessible information the aforementioned 3,500 ml. of pericardial fluid is the greatest amount that has been recorded in pericardial effusion.

Surprisingly enough with this tremendous source of tamponade, respiratory discomfort and other profound untoward symptoms were not striking.

Conclusion

Minimal symptoms in early pericardial inflammation may be a prologue to dire disabling disease. Chronic effusion demands definitive action other than pericardiocentesis. A precise diagnosis is a prerequisite of adequate therapy. Pericardial biopsy assures prompt proficient therapy for presumptively benign but often potentially pertinacious pericarditis.

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* I am deeply indebted to Walter Levy, M.D., Kingston, New York, for the translation of this article.

Rare Family Occurrence of Myasthenia Gravis Reported

The extremely rare occurrence of myasthenia gravis, a muscular disorder, among three members of the same family has been reported by two Pittsburgh physicians.

Francis F. Foldes, M.D., and Pearl G. McNall, M.D., reported the disease in a seventy-three-year-old mother and her two daughters, ages forty-five and thirty-eight, in the September 24 *Journal of the American Medical Association.*

The disease, characterized by weakness and easy fatigability, has not been considered an hereditary disease.

However, the statistical possibility of the disease occurring in three members of this six-member family is "less than one in a trillion," according to the authors.

Consequently, the possibility cannot be excluded that either hereditary or environmental factors might be involved in the etiology of myasthenia gravis.

The disease most frequently affects muscles of the face, throat, and respiratory system. It causes a sleepy facial expression and abnormal speech. The disease occurs at all ages and in both sexes.

NECROLOGY

Francis Caponegro, M.D., of Brooklyn, died on October 14 at the age of sixty-three. Dr. Caponegro graduated in 1919 from New York University and Bellevue Hospital Medical College and interned at St. Catherine's Hospital. He was director of urology at Greenpoint and Evangelical Deaconess Hospitals and an attending in urology at St. Catherine's Hospital and the Hospital of the Holy Family. Dr. Caponegro was a Diplomate of the American Board of Urology, a Fellow of the American College of Surgeons, a Fellow of the International College of Surgeons, and a member of the American Urological Association, the New York Society of the American Urological Association, the Brooklyn Urological Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association

Charles Goodliffe Darlington, M.D., of New York City and Plainfield, New Jersey, died on November 5 in Muhlenberg Hospital at the age of sixty-eight. Dr. Darlington graduated in 1915 from the Medico-Chirurgical College of Philadelphia and interned at Beekman-Downtown Hospital. He was a consultant in tissue pathology at Muhlenberg Hospital (Plainfield, New Jersey), a consultant in pathology at Beekman-Downtown Hospital, and a consultant in oral pathology at Veterans Administration Hospital (New York City). Professor of pathology at New York University's College of Dentistry as well as director of the Undergraduate Cancer Teaching Program there, until last year he was also chairman of the Pathology Department. Dr. Darlington was a founding Fellow of the American College of Pathology, a Diplomate of the American Board of Pathology, and a member of the American Society of Clinical Pathologists, the New York Academy of Medicine, the New Jersey Society of Clinical Pathology, the New York Pathological Society, the New York State Society of Pathologists, the Medical Society of New Jersey, and the American Medical Association.

Else Farmer, M.D., of Great Neck, died on October 24 at her home at the age of sixty-three. Dr. Farmer received her medical degree from the University of Freiburg in 1921. She was an attending in pediatrics at North Shore Hospital and pediatrician emeritus at Long Island Jewish Hospital Dr. Farmer was a member of the Nassau Pediatric Society, the Nassau County Medical Society, and the Medical Society of the State of New York.

Miron Filiurin, M.D., of New York City, died on October 12 at the age of sixty-six. Dr. Filiurin received his medical degrees from the University of Odessa in 1919 and the University of Frankfurt in 1926. He was a member of the American Geriatrics Society and the East Side Clinical Society.

Francis Murphy Harrison, M.D., of New York City and Stamford, Connecticut, died on October 18 in St. Joseph's Hospital, Stamford. Dr. Harrison graduated in 1922 from Jefferson Medical College of Philadelphia. He was chief of surgery at St. Joseph's Hospital and a senior in surgery at Stamford Hospital. Dr. Harrison was a Fellow of the American College of Surgeons and a member of the New York Academy of Medicine, the Connecticut State Medical Society, and the American Medical Association.

Isidore Josephson, M.D., of Huntington, died on October 29 at the age of seventy-two. Dr. Josephson graduated in 1915 from New York University and Bellevue Hospital Medical College. He was an assistant adjunct physician at the Bronx Hospital. Dr. Josephson was a member of the Bronx County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Sylvester Dee Keller, M.D., of Fulton, died on September 8 in the Beadle Nursing Home, Oswego, at the age of eighty-one. Dr. Keller graduated in 1906 from Syracuse University College of Medicine. He was an attending in surgery at the Albert Lindley Lee Memorial Hospital. Dr. Keller was a member of the Fulton Academy of Medicine, the Oswego County Medical Society, the Medical Society, of the State of New York, and the American Medical Association.

Charles Ranney Lewis, M.D., of Troy, died on September 6 at St. Mary's Hospital at the age of sixty-one. Dr. Lewis graduated in 1928 from Albany Medical College. He was a consultant in obstetrics at St Mary's and Cohoes Memorial Hospitals. Dr. Lewis was a Fellow of the American College of Obstetricians and Gynecologists, a Fellow of the International College of Surgeons, and a member of the Rensselaer County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Robert Stewart McGraw, M.D., of New York City, died on October 24 at the age of thirty-one. Dr. McGraw graduated in 1954 from Johns Hopkins University School of Medicine.

Elmer William O'Brien, M.D., of Webster, died on September 25 at St. Mary's Hospital at the age of sixty-three. Dr. O'Brien graduated in 1920 from the University of Buffalo School of Medicine. He was an attending in ear, nose, and throat at St. Mary's Hospital, Monroe County County Infirmary, and Park Avenue Hospital, and a consultant in bronchoscopy-esophagology at Buffalo General and Genesee Hospitals and Highland Hospital of Rochester, and an attending in bronchoscopy-esophagology at Buffalo State Hospital. Dr. O'Brien was a Diplomate of the American Board of Otolaryngology and a member of the American Academy of Ophthalmology and Otolaryngology, the Rochester Academy of Medicine, the American Broncho-Esophagological Association, the American Laryngological, Rhinological and Otological Society, the Rochester Pathological Society, the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Walter Joseph O'Connell, M.D., of Rocky Point, died on November 9 at his country home at the age of sixty-six. Dr. O'Connell graduated in 1917 from New York University and Bellevue Hospital Medical College. He was an assistant in surgery at St. Catherine's Hospital. Dr. O'Connell was a member of the Brooklyn Surgical Society, the Kings County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Philip Childs Potter, M.D., of New York City, died on November 7 at his home at the age of sixty-eight. Dr. Potter graduated in 1918 from Columbia University College of Physicians and Surgeons and interned at Presbyterian Hospital. He was a consultant in surgery at Bellevue Hospital and from 1953 until 1956 was president of the medical board of Doctors Hospital. Dr. Potter was a Diplomate of the American Board of Surgery, a Fellow of the American College of Surgeons, and a member of the New York Academy of Medicine, the New York Surgical Society, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Leon H. Prior, M.D., of Snyder, died on October 25 at Buffalo General Hospital at the age of seventy-two. Dr. Prior graduated in 1911 from the University of Buffalo School of Medicine. Retired in 1959, Dr. Prior was a member of the Erie County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Ahbrohm Xerxes Rossien, M.D., of Huntington Station, died on November 9 at his home at the age of sixty. Dr. Rossien graduated in 1925 from Jefferson Medical College of Philadelphia and interned at Mary Immaculate Hospital. Founder of the gastrointestinal divisions of Queens General, Triboro, and Jamaica Hospitals, he was an attending in gastroenterology and gastroenterologist-in-charge of the Thoracic Division at Queens General Hospital Center, a consultant in gastroenterology at Peninsular General Hospital (formerly Rockaway Beach Hospital), Kings Park State Hospital, and Long Beach Memorial Hospital. A former assistant clinical professor of medicine at New York Medical College, during World War II he was a member of the Procurement and Assignment Committee of Queens County and for his work with the committee received a citation from President Harry S. Truman. He was also instrumental in the founding of the Albert Einstein College of Medicine of Yeshiva University, the Bronx. Dr. Rossien was a Life Fellow and charter member of the American College of Gastroenterology and a member of the American Geriatrics Society, the New York Academy of Medicine, the New York Academy of Gastroenterology, the New York Society of Internal Medicine, the Queens County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Emery Andrew Rovenstine, M.D., of New York City, died on November 9 at his home at the age of sixty-five. Dr. Rovenstine graduated in 1928 from the University of Indiana Medical School. He was professor and chairman of the Department of Anesthesiology at New York University Medical Center and director of anesthesiology at University, Bellevue, and Gouverneur Hospitals, senior consultant in anesthesiology at the Veterans Administration Hospitals in New York City and the Bronx, a consulting anesthesiologist at Beth Israel and Knickerbocker Hospitals and the Hospital for Special Surgery, and anesthesiologist-in-charge at Goldwater Memorial Hospital. He was the recipient of the New York University Presidential Citation, and Czechoslovakia awarded him the

Order of the White Lion, the greatest honor it bestows on foreigners. Dr. Rovenstine was a Diplomate of the American Board of Anesthesiology, a Fellow of the American College of Anesthesiologists, and a member of the American Society of Anesthesiologists, Inc., from which he received the distinguished service award and for which he had served two terms as president, the Society for Experimental Biology and Medicine, the New York Academy of Medicine, the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Schneider, M.D., of Rochester, died on October 16 in Genesee Hospital at the age of seventy. Dr. Schneider graduated in 1929 from Cornell University Medical College and was a member of the Monroe County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

A. Alver Shapiro, M.D., of New Dorp, Staten Island, died on October 20 at the age of sixty. Dr. Shapiro graduated in 1925 from Jefferson Medical College of Philadelphia. He was an associate in surgery at Richmond Memorial Hospital. Dr. Shapiro was a member of the Richmond County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Louis Harry Taylor, M.D., of New York City and Long Island City, died on November 2 at Wickersham Hospital at the age of seventy-four. Dr. Taylor graduated in 1905 from New York University and Bellevue Hospital Medical College. He was medical adviser to the Nursing Sisters of the Sick Poor and the Dominican Sisters of St. Joseph in Long Island City. Dr. Taylor was a member of the New York County Medical Society, the Medical Society of the State of New York, and the American Medical Association.

Medical Society of the State of New York

ANNUAL CONVENTIONS

1961	May 8 to 12	Rochester
1962	May 14 to 18	New York City
1963	May 13 to 17	New York City

MEDICAL NEWS

Low-Fee Psychiatric Clinic Opened in Staten Island—A psychiatric department with a low-fee adult clinic, has been opened at St. Vincent's Hospital, West New Brighton, Staten Island. The director of the new department is Harvey J. Tompkins, M.D.

Editor Appointed for New Publication on Sports Medicine—Albert Salisbury Hyman, M.D., New York City, has been appointed by the American College of Sports Medicine as editor of the *Encyclopedia of Sports Medicine.*

The *Encyclopedia,* the first of its kind, will be a 1,000-page volume with 60 contributors selected for their work in the fields of medicine, surgery, physiology, physical education, cardiology, orthopedics, gynecology, and other specialties insofar as these are related to the modern concept of sports medicine.

The *Encyclopedia* is scheduled to make its appearance at the 1963 meeting of the American Medical Association.

Medical History of War Offered—Many of the medical lessons learned during World War I had to be relearned under fire during World War II because of the paucity of distribution of the World War I medical history.

The Army Surgeon General, Lieutenant General Leonard D. Heaton, in an effort to prevent this costly relearning process in the event of another war, has directed the preparation, publication, and distribution of the *History of the Medical Department, United States Army, in World War II.* General Heaton is particularly anxious that information of the existence and availability of this History be circulated widely among the profession, both military and civilian.

Fifteen of the 48 volumes programmed for the series have been published under the editorial direction of Colonel John Boyd Coates, Jr., and can be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

The volumes available are: General Surgery; Neurosurgery, Volume I (head injuries); Neurosurgery, Volume II (spinal cord and peripheral nerve injuries); Hand Surgery; Ophthalmology and Otolaryngology; Orthopedic Surgery, European Theater of Operations; Orthopedic Surgery, Mediterranean Theater of Operations; Physiologic Effects of Wounds; Vascular Surgery; Cold Injury, Ground Type; Dental Service; Environmental Hygiene; Personal Health Measures and Immunization; Communicable Disease, Volume IV; and Hospitalization and Evacuation, Zone of Interior.

Mary Putman Jacobi Fellowship—The Women's Medical Association of the City of New York offers the Mary Putnam Jacobi Fellowship to a graduate woman physician, either American or foreign. The Fellowship of $1,000 will begin on October 1, 1961, and will extend for a period of one year. At the discretion of the Committee, an award of $2,000 may be given biannually. The recipient of the Fellowship will be expected to make a report at the end of the fourth month following which the balance of the award will be given, subject to the approval of the Committee.

The fellowship is given for medical research, clinical investigation, or postgraduate study in a special field of medicine. The recipient is expected to devote full time to the Fellowship, but exception may be made under special circumstances.

Applications must be returned before March 1, 1961. Successful candidates will be notified not later than May 1, 1961. For applications write to: Ada Chree Reid, M.D., Chairman, The Mary Putnam Jacobi Fellowship Committee, 118 Riverside Drive, New York 24, New York.

Courses in Ophthalmology—The Institute of Ophthalmology of the Americas of the New York Eye and Ear Infirmary announces the following courses:

"Retinal Detachment Surgery" by professor Ernst Custodis, director, Eye Clinic, Academy of Medicine, Dusseldorf, Germany. A series of three lectures to be given March 27 through 29, 1961.

"Pleoptics" by Dr. Heinz Gortz, docent, Academy of Medicine, Dusseldorf, Germany. A series of two lectures to be given March 30 through 31, 1961.

Applications may be made to Mrs. Tamar Weber, Registrar, The Institute of Ophthalmology of the Americas of the New York Eye and Ear Infirmary, 218 Second Avenue, New York 3, New York.

Postgraduate Courses at University of Michigan—The annual short postgraduate courses in internal medicine, obstetrics and gynecology, ophthalmology, otolaryngology, pediatrics, and radiology will be given from January through April, 1961, at the University of Michigan Medical Center, Ann Arbor.

Personalities

Awarded

William S. Reh, M.D., Flushing, a citation from the Queens County Chapter of the National Multiple Sclerosis Society.

Elected

William Goldring, M.D., New York City, re-elected as president of the New York Heart Association.

Appointed

Wallace M. Sheridan, M.D., Hartsdale, and Donald R. Reed, M.D., Irvington, to the Westchester County Board of Health . . . Win Henry Watters, M.D., Bronxville, as medical consultant to the New York State Workmen's Compensation Board.

Speakers

Harold H. Golz, M.D., New York City, on a panel discussion at a meeting of the American Public Health Association, on November 1, in San Francisco . . . Yale Kneeland, Jr., M.D., New York City, at the eightieth anniversary commemoration dinner of the House of the Holy Comforter on November 12 . . . Irwin I. Lubowe, M.D., New York City, before the Southern Medical Association on November 2, in St. Louis, Missouri. . . Clifford Sager, M.D., New York City, before the scientific meeting of the Association for the Advancement of Psychotherapy, on November 18 on the topic "Recent Trends in the Training of Psychotherapists" . . . Donald M. Shafer, M.D., New York City, on the subject "Retinal Detachment" before the Long Island Ophthalmological Society on November 28 . . . Irwin D. Stein, M.D., Mount Vernon, before the combined meeting of the Michigan Academy of General Practice and the Wayne County Academy of General Practice, Detroit, Michigan, on November 9 and 10, on the topic "The Management of Thrombophlebitis."

Medical Society of the State of New York

ANNUAL CONVENTIONS

1961	May 8 to 12	Rochester
1962	May 14 to 18	New York City
1963	May 13 to 17	New York City

MEDICAL MEETINGS

Buffalo Academy of Medicine

The Buffalo Academy of Medicine will present a panel discussion on "Recent Advances in the Study of Diseases of the Biliary Tract" on Wednesday, January 4, 1961, at the University of Buffalo Medical School.

Panelists will include: Richard Cattell, M.D., senior surgeon, Lahey Clinic, Boston; Frank Glenn, M.D., professor of surgery, Cornell University, and surgeon-in-chief, New York Hospital, Cornell University Medical College.

For further information contact: Mr. Melvin F. Hall, 220 Delaware Avenue, Buffalo 2, New York.

Northeast Florida Heart Association Cardiovascular Seminar

The Northeast Florida Heart Association will hold its eighth annual cardiovascular seminar in the Prudential Auditorium, Jacksonville, Florida, January 26 through 28, 1961.

Among the physicians who will participate in the meeting are William Dock, M.D., State University of New York Downstate Medical Center, Brooklyn, and Milton Rosenbaum, M.D., Albert Einstein College of Medicine, Bronx.

For further details write to: Daniel R. Usdin, M.D., President, Northeast Florida Heart Association, 1628 San Marco Boulevard, Jacksonville 7, Florida.

Symposium at the University of Texas M. D. Anderson Hospital and Tumor Institute

"The Molecular Basis of Neoplasia" is the theme of the 1961 symposium on fundamental cancer research, sponsored by the University of Texas M. D. Anderson Hospital and Tumor Institute, to be held February 23 through 25, 1961.

Sessions of the meeting will be devoted to nucleic acids, nucleic acids and proteins, mutation and protein structure, ribosomes and protein synthesis, controlling mechanisms and enzyme synthesis, and biochemical alterations induced by viral nucleic acids.

For information write to: Publications Department, The University of Texas M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston 25, Texas.

West Virginia Academy of Ophthalmology and Otolaryngology

The West Virginia Academy of Ophthalmology and Otolarngology will hold its annual meeting at the Greenbrier Hotel, White Sulphur Springs, West Virginia, April 6 through 8, 1961.

For information write to: Worthy W. McKinney, M.D., Secretary-Treasurer, The West Virginia Academy of Ophthalmology and Otolaryngology, 109 East Main Street, Beckley, West Virginia.

Thirty-fourth Spring Congress of Gill Memorial Eye, Ear and Throat Hospital

The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Virginia, will hold its thirty-fourth annual spring congress in ophthalmology and otolaryngology and allied specialties, April 10 through 15, 1961.

For information write to: Elbyrne G. Gill, M.D., Gill Memorial Eye, Ear and Throat Hospital, 711 South Jefferson Street, Roanoke, Virginia.

Spring Meeting of the Alumni Association of the New York Eye and Ear Infirmary

The annual spring meeting of the alumni association of the New York Eye and Ear Infirmary will be held April 17 through 20, 1961.

The subject of glaucoma will be featured in the portion of the program devoted to the eye. Symposia will be offered on diagnostic workup, medical management, and surgical management. There will be courses on related subjects and a closed circuit demonstration of surgical procedures.

Symposia on otosclerosis and benign lesions of the larynx as well as lectures and closed circuit television will be presented on the ear, nose, and throat portion of the program.

For further information write to: John R. Finlay, M.D., Secretary, Alumni Association, 218 Second Avenue, New York 3, New York.

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(1) Boland, E. W.: World-Wide Abstracts 3:11, 1960. (2) Kolodny, A. L.: J. Chron. Dis. 11:64, 1960. (3) Talbott, J. H.: Arth. & Rheumat. 2:182, 1959. (4) Burns, J. J.; Yü, T. F.; Berger, L., and Gutman, A. B.: Am. J. Med. 25:401, 1958. (5) Beckman, H.: Pharmacology in Clinical Practice, Philadelphia, Saunders, 1952, pp. 515-516. (6) Talbott, J. H.: J. Bone & Joint Surg. 40-A:994, 1958. (7) Batterman, R. C., and Grossman, A.: J.A.M.A. 159: 1619, 1955. (8) Connor, T. B.; Carey, T. N.; Davis, T., and Lovice, H.: J. Clin. Invest. 38:997, 1959. (9) Reed, E. B.: Unpublished data.

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MONTH IN WASHINGTON

Election of Sen. John F. Kennedy as President made it probable that the issue of providing health care for the aged under Social Security again will be raised in Congress next year.

Kennedy will go into the White House pledged "to the immediate enactment of a program of medical care for the aged through Social Security." His intentions present a serious challenge to the nation's physicians who have vigorously opposed use of the Social Security system to provide health care for the aged.

Kennedy's program would provide what he described as "a life policy of paid-up medical insurance" for older persons. "It would provide them hospital benefits, nursing home benefits, and x-rays and laboratory tests on an outpatient basis," he said in his campaign for the Presidency.

He said the Kerr-Mills legislation enacted into law last summer is inadequate. The medical profession supports this Federal-state program to provide health care for needy and near-needy aged persons. In approving the Kerr-Mills program, Congress rejected the Social Security approach espoused by Kennedy and union labor leaders.

Kennedy's medical program also included: Federal grants for construction, expansion, and modernization of medical, dental, and public health schools; Federal loans and scholarships for medical students; Federal grants for renovating older hospitals; increased Federal financial support for medical research, including basic research, and expansion of Federal programs for rehabilitation of handicapped or disabled persons.

* * *

Food and Drug Administration employes have been cleared of conflict-of-interest charges brought up in the Senate Antitrust and Monopoly Subcommittee's investigation of the drug industry.

A three-member investigating group appointed by Arthur S. Flemming, Secretary of Health, Education, and Welfare, examined the financial records of 900 F.D.A. employes. The special investigators then reported:

"On the basis of all the evidence before us, it is our judgment that there are no present employes of the F.D.A. whose sources of personal income are incompatible with their government employment."

The investigators continued to analyze "a mass of fact and opinion" in connection with charges that there has been too close a relationship between some F.D.A. employes and drug companies which they check for conformance to government regulations.

The investigators anticipated that their final report would show the possibility of organization or procedural improvements in the F.D.A.

The charges were triggered by disclosure at the Subcommittee investigation that Henry A. Welch, Ph.D., director of the F.D.A.'s Antibiotics Division, had received $287,000 over eight years as a writer and editor for antibiotics publications. After the disclosure, Flemming ousted Welch from the government post.

* * *

The Federal Children's Bureau reported that the infant death rate in the United States has declined since 1958 but still shows the effect of a 1957–1958 setback.

There was a steady decline in U.S. infant deaths during the 1950's but increases in 1957 and 1958. Since then, the infant death rate has headed downward again but still hasn't made up the lost ground, even though the provisional rates for 1959 (26.4 deaths under one year per 1,000 live births) and the first half of 1960 (25.9 per 1,000) showed improvements.

In 1915, when data were first gathered on infant mortality in this country, the rate was 99.9 per 1,000. By 1940, this had been cut to 47 and by 1950, it had been reduced to 29.2.

An all-time low of 26 was registered in 1956. It edged up to 26.3 in 1957 and 27.1 in 1958.

According to the 1959 United Nations Demographic Yearbook, nine other countries reported lower infant mortality rates than the United States in 1958. They were: Sweden 15.8, Netherlands 17.2, Australia 20.5, Norway 20.5, Switzerland 22.2, United Kingdom 23.3, Denmark 23.4, New Zealand 23.4, and Finland 24.5.

Russia reported a rate of 81 in 1950 and 40.6 in 1957, latest year for which data were reported.

* * *

Persons with heart and blood vessel diseases have been urged to consult their physicians about routine vaccination against influenza.

In a joint statement, the American Heart Association and the National Heart Institute of the U.S. Public Health Service said that "evidence of the

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Prepared by the Washington Office of the American Medical Association, Washington, D.C.

past three years abundantly confirmed that dangers of influenza are much greater for patients with heart or lung disease than for others." The risk was described as "particularly high for those with lung congestion due to heart disease."

The joint statement added that three recent influenza epidemics had "again emphasized the fact that individuals with cardiovascular or pulmonary disease are more susceptible to the hazards of influenza than is the general population." The epidemics were in the fall of 1957, the spring of 1958, and early this year.

The increased risk was shown both by more severe illness and by higher fatality rates among patients with heart and blood vessel disease, the statement said.

The association and the Federal agency said influenza virus vaccine had been shown "of definite value" in preventing the disease. Side reactions were reported as "extremely few."

ANNOUNCEMENT

Medical Society of the State of New York
1961 Annual Convention

PRIZE ESSAYS

The Lucien Howe Prize and the Merit H. Cash Prize will be open for competition at the next Annual Convention of the Medical Society of the State of New York, May 8 to 12, 1961, in Rochester.

The *Lucien Howe Prize* of $100 will be presented for the best original contribution on some branch of surgery, preferably ophthalmology. The author need not be a member of the Medical Society of the State of New York.

The *Merit H. Cash Prize* of $100 will be given to the author of the best original essay on some medical or surgical subject. Competition is limited to the members of the Medical Society of the State of New York who at the time of the competition are residents of New York State.

Essays shall be typewritten or printed with the name of the prize for which the essay is submitted, and the only means of identification of the author shall be a motto or other device. The essay shall be accompanied by a sealed envelope having on the outside the same motto or device and containing the name and address of the writer.

If the committee considers that no essay or contribution is worthy of a prize, it will not be awarded.

Any essay that may win a prize automatically becomes the property of the Medical Society of the State of New York, "to be published as it may direct."

All essays must be presented not later than *February 1, 1961,* and sent to the Chairman of the Committee on Prize Essays of the Medical Society of the State of New York, 750 Third Avenue, New York 17, New York.

ALFRED A. ANGRIST, M.D., *Chairman*
Committee on Prize Essays

BOOKS RECEIVED

(The following books were received during the month of October, 1960)

Complications in Surgery and their Management. Edited by Curtis P. Artz, M.D., and James D. Hardy, M.D. Quarto of 1,075 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $23.

Epidemiologic Methods. By Brian MacMahon, M.D., Thomas F. Pugh, M.D., and Johannes Ipsen, C.M. Octavo of 302 pages, illustrated. Boston, Little, Brown and Company, 1960. Cloth, $7.50.

Modern Occupational Medicine. Edited by A. J. Fleming, M.D., and C. A. D'Alonzo, M.D. Associate Editor, J. A. Zapp, Ph.D. Second edition. Octavo of 587 pages, illustrated. Philadelphia, Lea & Febiger, 1960. Cloth, $12.

The Normal Skull. By Robert Shapiro, M.D., and Arnold H. Janzen, M.D. Quarto of 257 pages, illustrated. New York, Paul B. Hoeber, Inc., 1960. Cloth, $18.

Hypnosis in Treatment. By William Moodie, M.D. Octavo of 168 pages. New York, Emerson Books, Inc., 1960. Cloth, $4.00.

The Structure and Dynamics of the Human Mind. By Edoardo Weiss, M.D. Octavo of 472 pages. New York, Grune & Stratton, 1960. Cloth, $8.75.

Cirrhosis of the Liver. By Martin Seler Kleckner, Jr., M.D. Octavo of 729 pages, illustrated. Springfield, Charles C Thomas, 1960. Cloth, $24.50.

Projective Techniques with Children. Edited by Albert I. Rabin and Mary R. Haworth. Quarto of 392 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $11.75.

Adventure to Motherhood. By J. Allan Offen, M.D. Duodecimo of 70 pages, illustrated. Miami, Audio Visual Education Company of America, Inc., 1960. Cloth, $2.95.

Ciba Foundation Symposium on Congenital Malformations. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. With 91 illustrations. Octavo of 308 pages. Boston, Little, Brown and Company, 1960. Cloth, $9.00.

Ciba Foundation Colloquia on Endocrinology. Volume 13, Human Pituitary Hormones. Editors for the Ciba Foundation, G. E. W. Wolstenholme, M.B., and Cecilia M. O'Connor, B.Sc. With 86 illustrations. Octavo of 336 pages. Boston, Little, Brown and Company. Cloth, $9.50.

Care of the Well Baby. By Kenneth S. Shepard, M.D. Duodecimo of 224 pages, illustrated. Philadelphia, J. B. Lippincott, 1960. Paper, $3.25.

Fundamentals of Chest Roentgenology. By Benjamin Felson, M.D. Quarto of 301 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $10.

The Medical Clinics of North America. Peter Bent Brigham Hospital Number. September, 1960. New Applications of Basic Science in Effective Treatment. Octavo. Philadelphia, W. B. Saunders Company, 1960. Published bimonthly (six numbers a year). Cloth, $18 net; paper, $15 net.

The Management of Fractures and Soft Tissue Injuries. By the Committee on Trauma, American College of Surgeons. Based on *An Outline of the Treatment of Fractures*, seventh edition, and *Early Care of Acute Soft Tissue Injuries*, second edition. Octavo of 372 pages, illustrated. Philadelphia, W. B. Saunders Company, 1960. Cloth, $5.00.

Pseudomonas Aeruginosa Infections. By Claude E. Forkner, Jr., M.D. Octavo of 104 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $5.25. (Modern Medical Monographs)

Diverticulitis. By Sara M. Jordan, M.D., and Russell S. Boles, Jr., M.D. Octavo of 90 pages, illustrated. New York, Grune & Stratton, 1960. Cloth, $4.75. (Modern Medical Monographs)

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1. Weissberg, G.: Clin. Med., June 1960.

2. Spoor, H. J.: N. Y. St. J. Med., Oct. 15, 1958.

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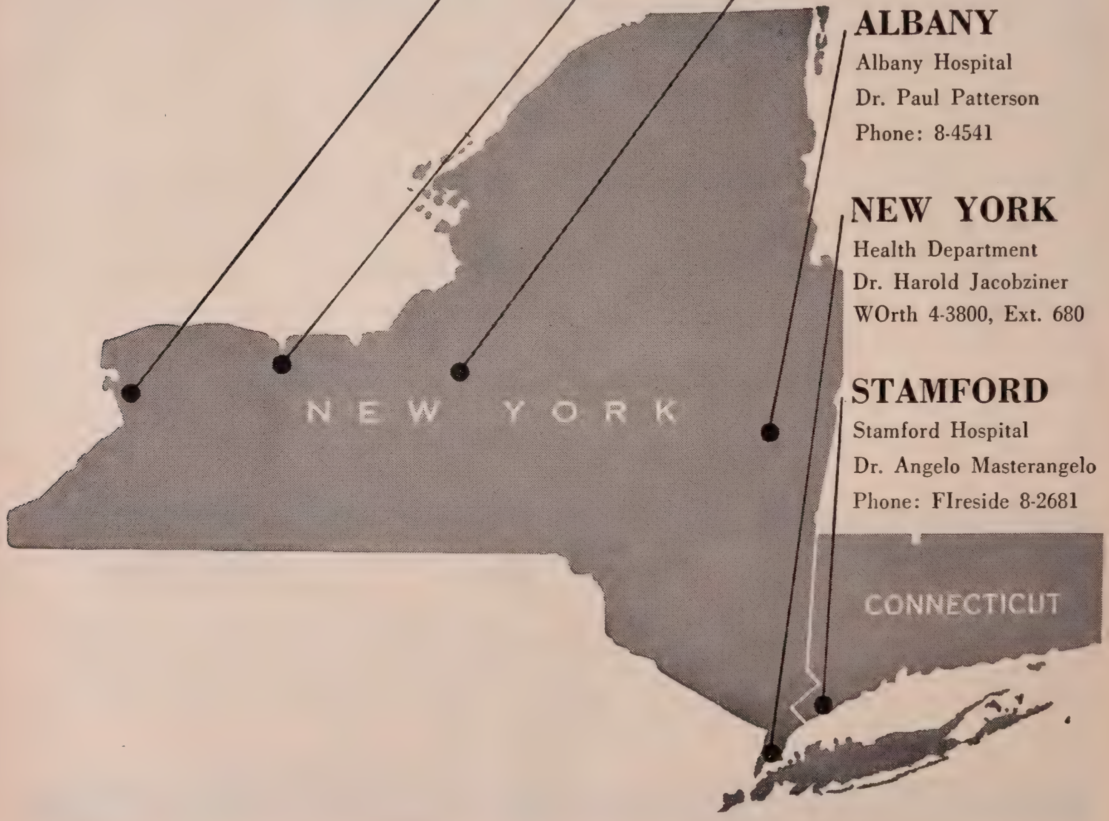

Officers—County Medical Societies—1960

TOTAL MEMBERSHIP AS OF NOVEMBER 1, 1960—25,292

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Allegany......	Vincent Ciampa.............Cuba	George E. Taylor, Jr.........Cuba	Frederick H. McCarty...Wellsville
Bronx........	Leonard L. Heimoff.........Bronx	Frank La Gattuta..........Bronx	Herbert G. Cohen...........Bronx
Broome......	Herbert Bandell.......Binghamton	Michael J. Maggiore......Endicot	Judson S. Griffin......Binghamton
Cattaraugus...	James F. Durbin............Olean	Frank T. Frost.............Olean	Ruth R. Knobloch....Little Valley
Cayuga.......	Bernard J. Hartnett.......Auburn	Donald W. Delahanty......Auburn	Alfred E. Dooley..........Auburn
Chautauqua...	Alfred D. Heinemann.....Dunkirk	Joseph V. Karnes.........Dunkirk	C. Otto Lindbeck.......Jamestown
Chemung.....	Robert E. Good............Elmira	Frank V. Hertzog..........Elmira	James A. Mark............Elmira
Chenango.....	Primitivo T. Cruz........Norwich	Paul J. Christenson.......Norwich	Paul J. Christenson.......Norwich
Clinton.......	Dean H. Wheeler......Plattsburgh	Harold Singer.........Plattsburgh	William L. Ladue......Plattsburgh
Columbia.....	Thomas C. Seymour.......Hudson	Roger C. Bliss............Hudson	Roger C. Bliss............Hudson
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Delaware.....	Harold W. Hayne..........Sidney	Marvin Huyck............Walton	Marvin Huyck............Walton
Dutchcss.....	Barbara B. Stimson...Poughkeepsie	James K. Keeley....Poughkeepsie	Philip V. Buckley....Poughkeepsie
Erie..........	Kenneth H. Eckert........Buffalo	Helen Toskov.............Buffalo	Francis W. O'Donnell .....Buffalo
Essex........	Rudolph J. Martin....Ticonderoga	George G. Hart.......Lake Placid	Harold J. Harris........Westport
Franklin......	Carl P. Sherwin, Jr.........Malone	Daisy H. Van Dyke .....Malone	Daisy H. Van Dyke .....Malone
Fulton........	Samuel L. Russell......Gloversville	James E. Zullo........Gloversville	William H. Raymond...Johnstown
Genesee......	Myron E. Williams........Batavia	Sawyer A. Glidden........Batavia	Emil Kimaid..............Le Roy
Greene.......	Jerome Gerber............Catskill	John A. Vosburgh.......Coxsackie	Mahlon H. Atkinson......Catskill
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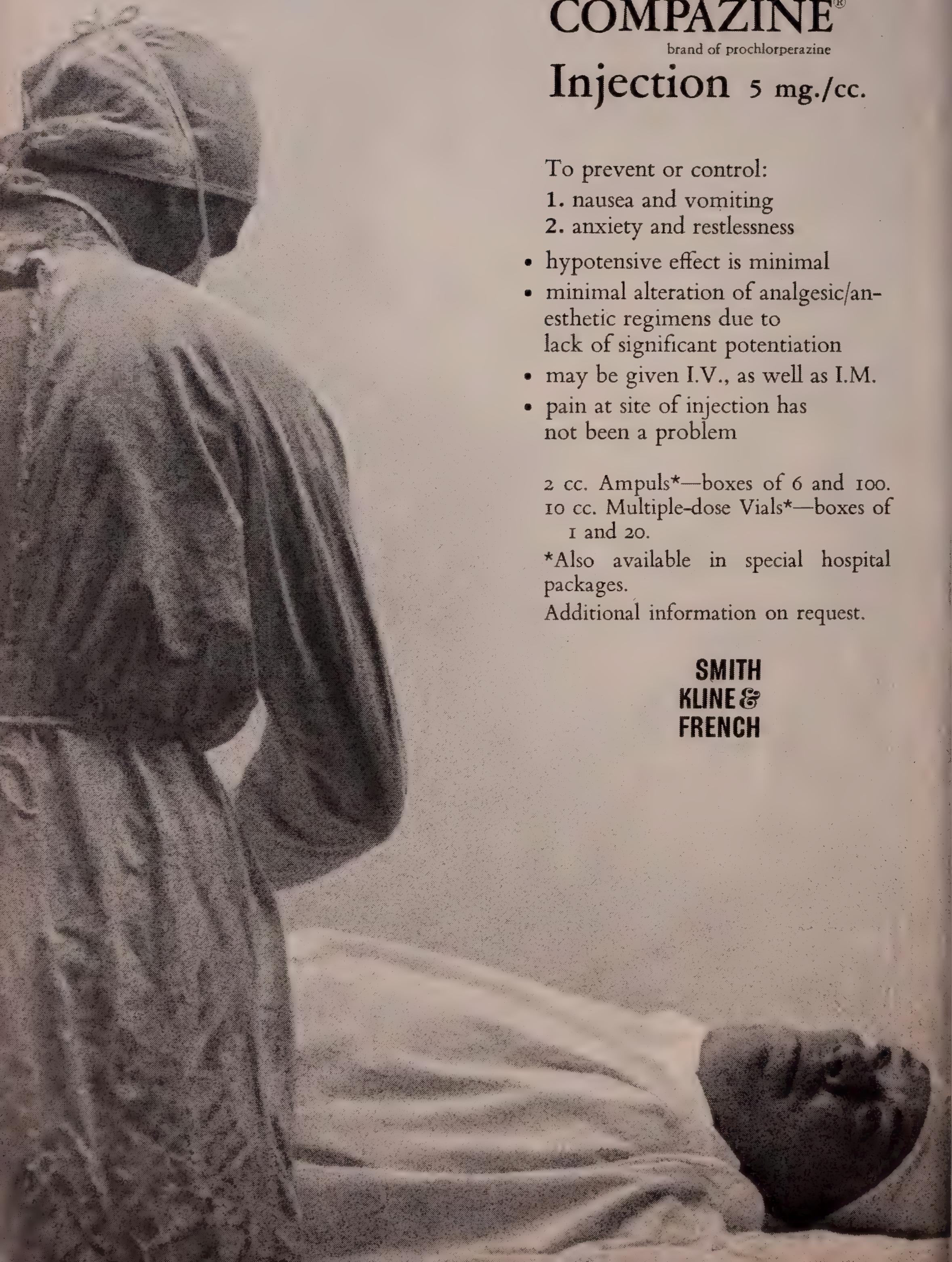

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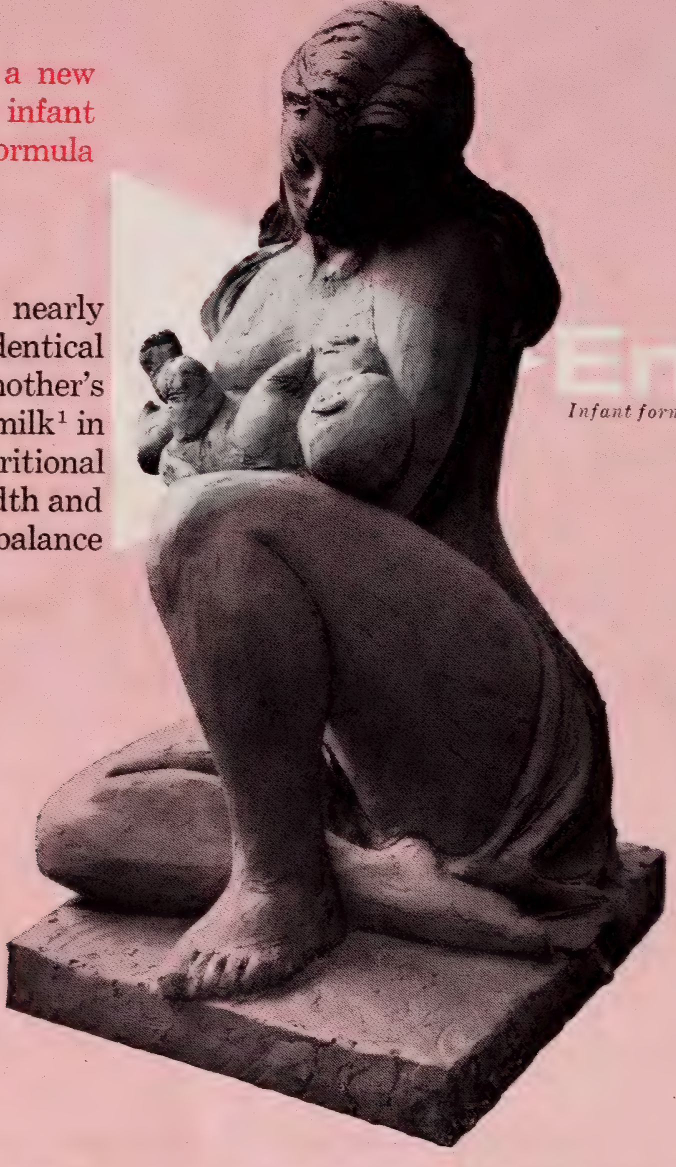

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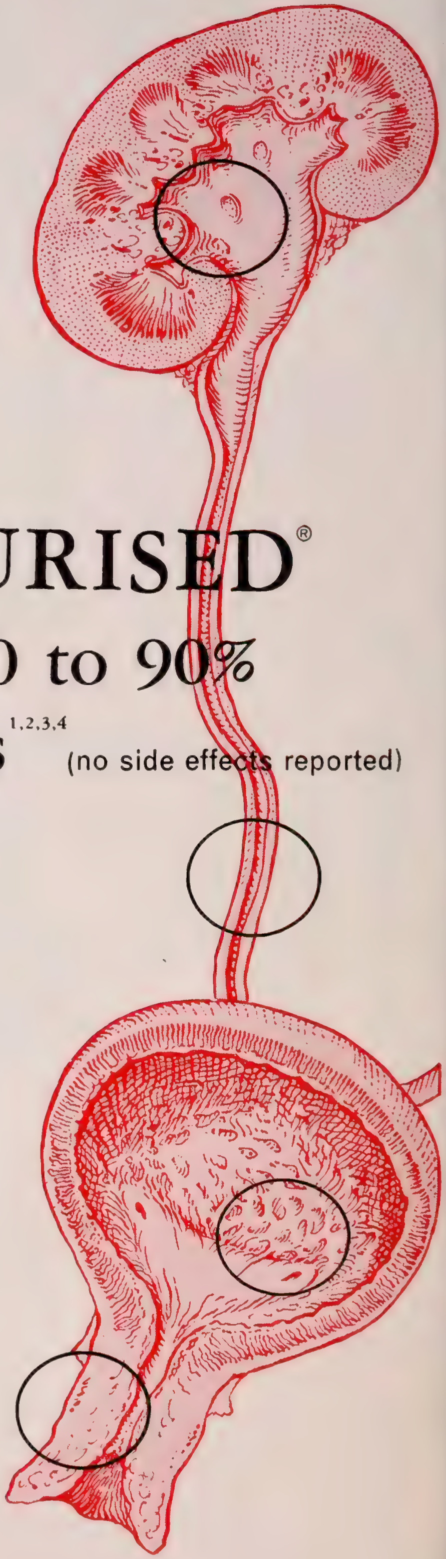

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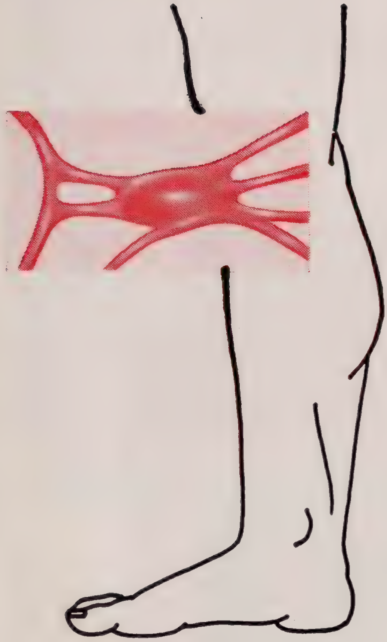

Stress, unrelated to diabetic control. A relatively uniform latent time interval between the stress factor and the onset of neuropathy is directly parallel to the time interval that exists in situations wherein neuropathy follows a known inciting factor.

Source: Ellenberg, M.: Am. J. M. Sc. *238*:418, 1959.

THE LATENT INTERVAL OF ONSET OF NEUROPATHY FOLLOWING VARIOUS STRESSES

(20 patients)

Stress Factor	No. of Patients	Time Interval, Days
Surgery:		
prostate	2	22 (Av.)
amputation	1	10
abdominal	1	10
Infection	2	17.5 (Av.)
Myocardial infarction	2	22 (Av.)
Barbiturate coma	1	7
Corticosteroid therapy	1	23
Cerebral vascular accident	1	30
Control with insulin	6	17.5 (Av.)
Control with tolbutamide	3	20.3 (Av.)
	Average	18.5

Adapted from Ellenberg, M.: *op. cit.*

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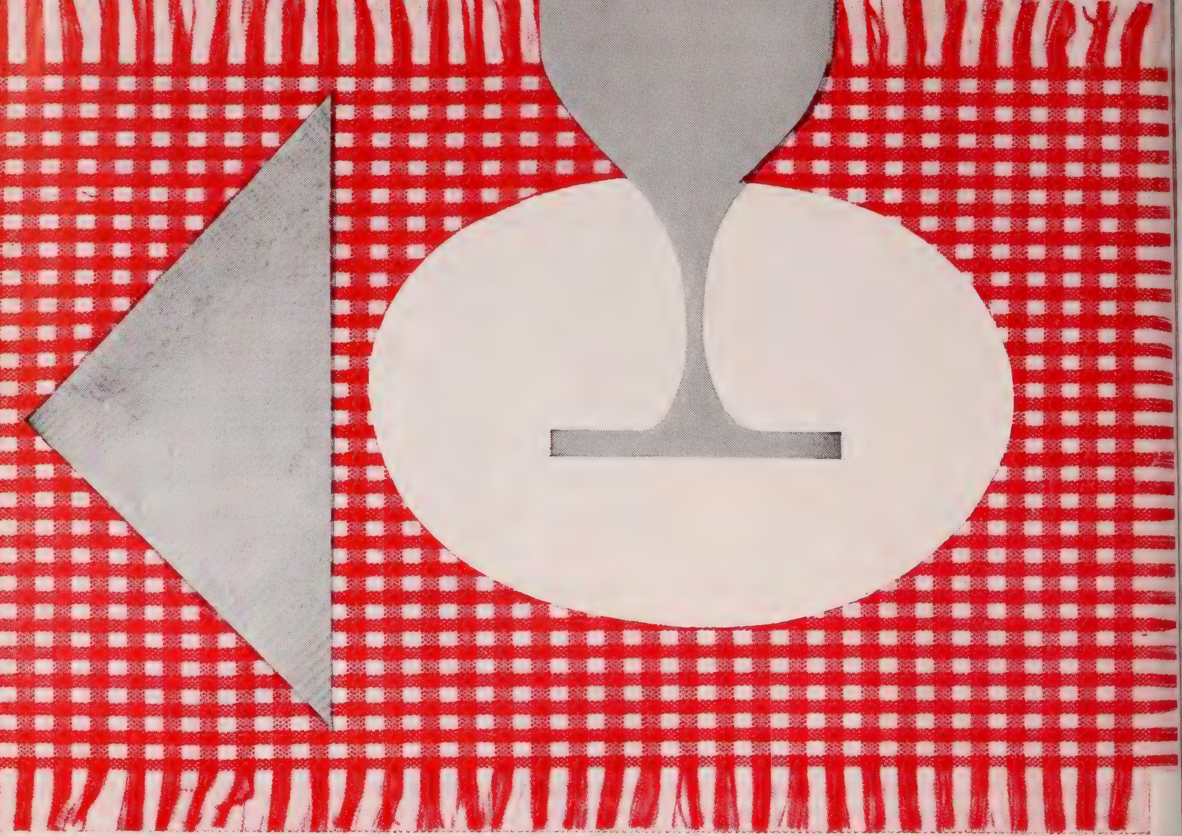

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